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**The Victoria History of the
Counties of England**

EDITED BY H. ARTHUR DOUBLEDAY

**A HISTORY OF
CUMBERLAND**

VOLUME I

4909/1 221
8

A HISTORY OF THE COUNTY
OF CUMBERLAND IN
FOUR VOLUMES EDITED
BY JAMES WILSON, M.A.

THE
VICTORIA HISTORY
OF THE COUNTIES
OF ENGLAND
CUMBERLAND

WESTMINSTER
ARCHIBALD CONSTABLE
AND COMPANY LIMITED

A. 155967

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INSCRIBED
TO THE MEMORY OF
HER LATE MAJESTY
QUEEN VICTORIA
WHO IN HER LIFETIME GRACIOUSLY
GAVE THE TITLE TO
AND ACCEPTED THE
DEDICATION OF
THIS HISTORY

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GENERAL ADVERTISEMENT

THE VICTORIA HISTORY of the Counties of England is a National Survey showing the condition of the country at the present day, and tracing the domestic history of the English Counties back to the earliest times.

Rich as every County of England is in materials for local history, there has hitherto been no attempt made to bring all these materials together into a coherent form. There are, indeed, histories of English Counties; but many of them—and these the best—are exceedingly rare and costly; others are very imperfect; all are out of date.

THE VICTORIA HISTORY will trace, county by county, the story of England's growth from its prehistoric condition, through the barbarous age, the settlement of alien peoples, and the gradual welding of many races into a nation which is now the greatest on the globe. All the phases of ecclesiastical history; the changes in land tenure; the records of historic and local families; the history of the social life and sports of the villages and towns; the development of art, science, manufactures and industries—all these factors, which tell of the progress of England from primitive beginnings to large and successful empire, will find a place in the work and their treatment be entrusted to those who have made a special study of them.

Many archæological, historical and other Societies are assisting in the compilation of this work, and the editor also has the advantage of the active and cordial co-operation of The National Trust, which is doing so much for the preservation of places of historic interest and natural beauty throughout the country.

The names of the distinguished men who have joined the Advisory Council are a

guarantee that the work will represent the results of the latest discoveries in every department of research. It will be observed that among them are representatives of science ; for the whole trend of modern thought, as influenced by the theory of evolution, favours the intelligent study of the past and of the social, institutional and political developments of national life. As these histories are the first in which this object has been kept in view, and modern principles applied, it is hoped that they will form a work of reference no less indispensable to the student than welcome to the man of culture.

Family History will, both in the Histories and in the supplemental volumes of chart pedigrees, be dealt with by genealogical experts and in the modern spirit. Every effort will be made to secure accuracy of statement, and to avoid the insertion of those legendary pedigrees which have in the past brought discredit on the whole subject. It has been pointed out by the late Bishop of Oxford, a great master of historical research, that 'the expansion and extension of genealogical study is a very remarkable feature of our own times,' that 'it is an increasing pursuit both in America and England,' and that it can render the historian useful service.

Heraldry will also in this Series occupy a prominent position, and the splendours of the coat-armour borne in the Middle Ages will be illustrated in colours on a scale that has never been attempted before.

The general plan of Contents, and the names of the Sectional Editors (who will co-operate with local workers in every case) are as follows :—

Natural History. Edited by AUBYN B. R. TREVOR-BATTYE, M.A., F.L.S., etc.

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The Histories will contain, in the Topographical Section, manorial pedigrees, and accounts of the noble and gentle families connected with the local history ; and it is proposed to trace, wherever possible, their descendants in the Colonies and the United States of America. The Editor will be glad to receive information which may be of service to him in this branch of the work. The chart family pedigrees and the arms of the families mentioned in the Heralds' Visitations will be issued in a supplemental volume for each county.

The Rolls of Arms are being completely collated for this work, and all the feudal coats will be given in colours. The arms of the local families will also be represented in connection with the Topographical Section.

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The issue of this work is limited to subscribers only, whose names will be printed at the end of each History.

Doncouter

THE
VICTORIA HISTORY
OF THE COUNTY OF
CUMBERLAND
VOLUME ONE

WESTMINSTER
2 WHITEHALL GARDENS
1901
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p. 86 *for* Tallentine Hill *read* Tallentire Hill
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P R E F A C E

FOR a long time workers in scientific and archæological research have been waiting for a History of Cumberland which would cover the whole field of local investigation, and aim at a more complete and accurate account of the north-western county than it was possible to give when the older histories were compiled. Valuable additions have been made to our knowledge of the natural history and archæology of the district by the labours during the past thirty years of the Cumberland Association for the Advancement of Literature and Science and the Cumberland and Westmorland Antiquarian and Archæological Society. But the scientific observations and antiquarian researches of the various workers remain scattered throughout the numerous publications of these societies. Before the materials thus collected could be used, they required to be sifted and arranged by experienced specialists with a view to supervising the work of the local student and of centring interest on the characteristic features of the district. For the first volume of this History the editors have had the co-operation of men who are well acquainted with the county and have taken a prominent part in the work of these societies in the several departments with which their names are identified.

In former histories of Cumberland no systematic effort worthy of the name has been made to examine the physical features of the county or to treat it as a floral or faunal area. With the exception of Hutchinson, who has recorded the results of some excavations undertaken in the eighteenth century, the archæology of the district has been a sealed book to the older historians of the county. Attempts to reduce to order the confused evidences of prehistoric Man, or to classify the earthworks and early lapidary remains with which Cumberland abounds, have been of a very meagre description. Even now our knowledge must not be considered complete either in the flora and fauna or in the archæology. The less popular orders in the fauna are here as in other counties inadequately studied and recorded ; and great as has been the activity in recent years in the field of archæological research, much has been lost through carelessness in the past, and the spade has not been used with the frequency and thoroughness that the importance of the subject requires.

The editors regret that in one particular the chronological sequence of the contributions to this volume has been broken. The section on Romano-British Cumberland has had to be held over for the second

PREFACE

volume. It is believed that the value of the section will be enhanced by the postponement.

No attempt has been made to disturb popular usage in the spelling of place-names. A reasonable liberty has been allowed to contributors to adopt the methods with which they were familiar. Local nomenclature as it was employed at different periods of history will be discussed in the Topographical section of this work.

Since the present work was undertaken the promoters have had to deplore the removal by death of two valued contributors, from one of whom much was expected and whose loss to the History is almost irreparable. Richard Saul Ferguson, chancellor of the diocese of Carlisle, who held for a quarter of a century the hegemonic place in all matters of local knowledge, died before his first contribution was set in type. His unrivalled knowledge of the county, as well as his genial and helpful sympathy, have been greatly missed by the colleagues engaged with him in the production of this work. William Hodgson, a man of another type, the venerable botanist, who loved nature in all its moods, passed away after he had given the final touches to his catalogue of the flora of the county. In their respective spheres both men were distinguished, both were Cumbrians by birth and descent, and both deserve an honoured place in the dictionary of Cumbrian biography.

The nature and scope of the *Victoria History of Cumberland* may best be gathered from a perusal of the General Advertisement which is prefixed to this volume. The main section of the work will consist of the history of the parishes and manors in the county, to which the greater portion of the succeeding volumes will be devoted. The work which has already been done in this field of research will be duly considered in the later volumes.

The editors are anxious to acknowledge their obligations to Mr. J. Horace Round for valued assistance and criticism, and to Mr. George Neilson for not a few suggestions as the contribution on the Domesday Book, Pipe Rolls, and Testa de Nevill was passing through the press. It should be mentioned that the writer of that article is alone responsible for the statements there made. For the right to reproduce certain of the illustrations in this volume they are indebted to the courtesy of Mr. John Murray of Albemarle Street, London; to the Cumberland and Westmorland Antiquarian and Archæological Society; and to Mr. C. W. Dymond of Ambleside.

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AN INTRODUCTION TO THE NATURAL HISTORY OF CUMBERLAND

THE rugged heights which crown the lofty eminences of central and western Cumberland have been carved into strange and fantastic forms by the action of weathering. Stern and forbidding as they may appear to be on first acquaintance, they serve to include many beautiful dales within their outlying spurs, while their own surface is sufficiently fertile to afford subsistence to the hardy Herdwick sheep which are characteristic of this region. The Cumbrian group of hills embraces many of the higher summits of England, including Scaw Fell Pike, 3,208 feet; Scaw Fell, 3,161 feet; Helvellyn, 3,118 feet; Skiddaw, 3,058 feet; Great Gable, 2,949 feet; Saddleback, 2,847 feet; Grassmoor, 2,791 feet; as well as many other eminences of approximate altitude. The scarcity of animal life, or at least of the higher forms of life, upon the mountains of this area has often awakened surprise among those who spy out the beauties of the 'Wordsworth country'; the only wild mammal that deserves notice here is the pine marten, better known to the shepherds of the dales as the 'clean' or 'sweet mart.' The raven and the common buzzard are often to be observed crossing from one hill to another, or circling around some dizzy cliff on the face of which their young are being reared. The glory of the local avifauna departed when the Lakeland race of sea eagle became extinct about the end of the eighteenth century; but a few pairs of the tame and unobtrusive dotterel continue to rear their young upon the slopes of certain favourite mountains.

The Cumbrian mountains include in their fauna many interesting insects, notably the mountain ringlet butterfly, the only *alpine* butterfly of which the British Islands can boast. The mountain carpet, the red carpet and the striped twin-spot carpet are certain finds, reposing on the stone dykes of the mountains or resting on the faces of the rocks. The most characteristic Coleoptera of this county are found among the mountains, including such well known species as *Carabus glabratus*, *Calathus micropterus*, *Pterostichus æthiops*, and many others. The lakes, which fill the hollows of the valleys that run among the hills, are celebrated for their abundance of fish. The vendace is only found in Derwentwater and in Bassenthwaite Lakes. The gwyniad or skelly swims in large shoals in Ulleswater

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lake, whence single individuals occasionally find their way into the Eden. Buttermere Lake is famous for the charr which are taken in its waters, as also in Ulleswater and Crummock Water.

The mountains of eastern Cumberland form part of the Pennine range. In beauty of outline they are inferior to the more celebrated Cumbrian group, but they are perhaps superior in the variety of their bird-life. The dunlin has never nested to our knowledge among the lake hills proper, but it is one of the most characteristic birds of Cross-fell and neighbouring summits. The snow-bunting is seldom present in any numbers among the Keswick mountains even in winter, but like the twite it assembles in large flocks upon the fell lands of our eastern border.

The Eden valley is a fine, well-watered region, containing the remains of Inglewood Forest, which was formerly the home of many wild red deer. This tract is enriched with very extensive woodlands, which are often visited by crossbills, as well as by some rarer birds. Among typical woodland moths may here be mentioned the great emerald, occurring where birch wood is plentiful, together with the barred red and the tawny-barred angle, both characteristic of fir plantations.

No account of this county would be complete which failed to lay stress upon the mosses or bogs which diversify its surface. Some of these are found in the valleys of the Eden and other rivers, but the most remarkable are those which are found in the north and west of the county, including Solway Flow, a tract of historic interest, Bowness Moss, Salta Moss, Weddholm Flow, and others of greater or less extent. These mosses are covered with heather, varied with stretches of white cotton grass or tussocks of coarse grass, or again by beds of reeds and bulrushes.

These mosses afford a home to many foxes and to a few individuals of the polecat or 'foul mart,' which was at one time very abundant in the 'soughs' of the mosses, and in the rough pasture which frequently abuts upon these wastes of moorland. The hen-harrier used to nest upon these vast stretches of morass; it still visits its ancient haunts in the winter season. The merlin is very faithful in returning every spring to rear its progeny upon the mosses of its choice, which afford a retreat likewise to the short-eared owl. I have found the white eggs of this owl on our mosses and seen the owlets crouching under the shelter of a tuft of heather, blinking their eyes uneasily in the strong sunshine. The golden plover resorts to several of our mosses for breeding purposes, as do the dunlin and the curlew. Of wildfowl the sheldrake has in recent years nested upon our flows in considerable plenty, outnumbering the mallard and the teal, the latter of which is on the decrease. The black-headed gull and the black-backed gull form large breeding colonies on the flows and mosses; several pairs of great black-backed gulls reproduce their kind in a few favoured spots. A butterfly always associated with our mosses is the marsh ringlet; the forms present represent an interesting mixture of the three recognized British races of this insect.

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Among the larger and better known moths of the mosses, the oak eggar, the fox, the emperor, the clouded buff, and the light tussock may be cited as eminently typical of the ground upon which they are found ; while the gray rustic among the Noctuæ, and the smoky wave, the gray scalloped bar, and the Manchester treble bar among the Geometræ may also be referred to.

When we leave the mosses of the northern and western borders of the county, we enter at once upon the so-called 'marshes.' These are really extensive areas of reclaimed grazing lands, drained by an intricate system of creeks. They extend from Skinburness to Abbey, and on the other side of the river Waver nearly to Kirkbride, and again follow the banks of the Wampool to the sea. Similar marshes stretch from the neighbourhood of Port Carlisle to Burgh Marsh Point and the banks of the Eden ; the latter river unites its waters with those of the Esk below the extremity of Rockcliffe marsh, which is washed by the stream of both of these fine salmon rivers. The whole of the Solway marshes are covered with grass, and large portions of their surface glow in summer with the crimson carpeting of the thrift ; many redshanks wheel across the wide expanse of salting with vociferous cries, while their young crouch like those of the peewit under the shelter of any convenient tuft of grass. The shoveler also rears its young upon these marshes. Endless skylarks rise from under the feet of the pedestrian who seeks to cross the marsh, while the common sandpiper chants its familiar notes along the margins of the sandy shores, which are enlivened as autumn draws on by the arrival of hundreds of ringed plover and other little waders. Indeed, the marshes are most frequented by migrating birds in the month of September ; redbreasts skulk in the sides of the creeks ; wheatears dart from turf to turf ; little stints probe the tiny pools or 'dubs' for minute worms ; greenshanks, ruffs, bar-tailed godwits, and other birds of the same family feed on the wide expanse of sand laid bare by the ebbing tide, or resort for shelter to the marshes, as the gravel scaurs upon which they congregate are covered with the swiftly advancing waters. In winter, such hardy birds as curlews and knots replace the waders that are less tolerant of cold ; wild ducks and geese then arrive in large or small flocks and feed upon the marsh grass or the various forms of animal life to be found in the creeks. Many different species of duck resort during the day to a small group of freshwater 'loughs' or lakes, which are situated within a short flight of the great estuaries of the Solway Firth. Of these sheets of water, the most favoured is Monkhill Lough, which is resorted to by whooper swans, Bewick's swans, long-tailed ducks and certain other species. But of all the birds which frequent our marshes no species more deserves mention than the bernacle goose, which has resorted to our marshes from time immemorial to feed upon the finer grasses throughout the colder months of the year.

Westward of Silloth, the flat shores of the Solway Firth are flanked by a fine belt of sand dunes, among which innumerable rabbits sport and gambol ; Pallas's sand grouse showed a marked partiality for these sand

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dunes in the year 1888. The fine bay which extends from Maryport to Dub Mill is visited by hundreds and even thousands of peewits and other waders in early winter ; it is also much favoured by wild duck in rough weather, when the birds leave the open channels of the firth for more sheltered quarters. The country between Maryport and Whitehaven is singularly devoid of zoological interest ; but the fine red sandstone cliffs which rise immediately above the town of Whitehaven have ere now afforded nesting ledges to the peregrine.¹ I have myself stood upon the brink of the high precipices which break the force of the Irish Sea while a pair of breeding peregrines flew around my head in noisy distress. Herring gulls rear their young on the Sandwith rocks, as do the common guillemots, of which unnumbered multitudes are cast up upon our shingled beach during the prevalence of winter gales. Pursuing the coast line southward from St. Bees, we soon arrive at Drigg Common, a famous bird nursery ; here many Sandwich terns lay their beautiful eggs in the hollows of the sand dunes, sharing with the oystercatcher and other birds in the protection bestowed upon them by the laudable thoughtfulness of Lord Muncaster. Flocks of wigeon and other species of ducks frequent the estuaries of the Irt, Mite and Esk, and in a lesser degree of the Duddon ; but the avifauna of this part of the coast has not hitherto proved to be so rich as that of the Solway Firth.

In concluding this sketch of some few of the most remarkable features which present themselves to the naturalist who seeks to investigate the animal life of this county, it is only fair to observe that its fauna has been studied with considerable care for more than a hundred years. Dr. Heysham, the famous physician, settled at Carlisle in 1778, and devoted his leisure to the pursuit of local natural history. He spent a vast amount of time in working at the life history of the salmon, dissecting no fewer than 198 'brandlins' in the year 1796. His list of 'Cumberland Animals' appears from internal evidence to have been completed in 1797. It was published in Hutchinson's *History of Cumberland*. Though the doctor was a *bon vivant*, he lived to a good old age, dying in his own house in Carlisle in 1834, in his 81st year. He was of a more stirring and sociable disposition than his son, Thomas Coulthard Heysham, whose name is generally confused with that of his parent ; but though by nature shy and retiring, there can be no doubt that T. C. Heysham was a man of fine intelligence and a most versatile and accomplished naturalist. Though he was more of a collector than a writer, he published an excellent account of the nesting habits of the dotterel, besides contributing a few useful notes to the works upon British birds and British fishes which bear the honoured name of William Yarrell. There cannot be any question that the Heyshams ranked among the best zoologists of the times in which they lived. Their names should always be held in kindly remembrance by Cumbrian naturalists.

¹ Henry VIII. used to receive from the abbots of 'Saynt Maries besides York' an annual gift of a 'caste' of falcons from this eyrie. After the disestablishment of 'the lait monesterie' the 'same haukis' were sent 'to be presented to the Quene hir grace' (*Hamilton Papers*, ii. 442).

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THE County of Cumberland affords an excellent illustration of the close connection that exists between the geological structure of a district and its local history. That such is the case will be sufficiently evident from a consideration of the fact that the great surface features are in all cases due to causes of a geological nature. It need not be insisted upon here that it is the relative position of the hills, the passes, and the plains, quite as much as the configuration of the coast line, which have repeatedly proved to be factors of prime importance in determining both the locations of the earlier settlers and the movements of those others who in later times have tried to gain a footing in the land. Equally important factors in the evolution of historical events are such matters as the distribution of mineral wealth, the conditions relating to water supply, and the suitability or otherwise of particular areas for agricultural purposes. With all of these geology is very intimately concerned. Indeed, one may justly remark that the true sequence of many historical events of far-reaching importance can only be rightly understood by tracing those events back to a starting-point which may date many thousands of years prior to the dawn of history, and which are due entirely to those operations of nature with which it is the special province of the geologist to deal. This statement may be regarded as equivalent to saying that the respective provinces of the archæologist and the geologist of the present day extensively overlap. This of course is most especially the case in that part of the domain of science which includes the study of prehistoric man, in which branch of enquiry it is difficult, or impossible, to indicate precisely where the science of archæology ends and that of geology begins. Under these circumstances it is obvious that the best way of regarding their relative positions is to consider them as continuous with each other, and to treat the geology of a district simply as a record of all the events which have taken place in the interval between the dawn of civilization and the remotest periods of which there are traces in the past.

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PROTEROZOIC PERIOD

SILURIAN ROCKS.

- B. Kirkby Moor Flags.
Bannisdale Slates.
Coniston Grits and Flags.
- A. Pale Slates.
Graptolitic Mudstones.

Unconformity.

ORDOVICIAN ROCKS.

- B. Bala Volcanic and other Rocks.
- A. Borrowdale Volcanic Series and Milburn Rocks.
Upper part of the Skiddaw Slates.

CAMBRIAN ROCKS.

Lower part of the Skiddaw Slates.

I. THE SKIDDAW SLATES.—(a) The geological records of Cumberland date back to an early period in the history of the earth, long prior to the existence of any mountain, valley, or coast feature now to be seen, and also long before any but the very simplest forms of animal or plant life now existing on the earth had come into being. The evidence from which we can draw any safe conclusions regarding the events which occurred in the earlier chapters of the historical geology of Cumberland is, as might be expected, very fragmentary and imperfect, and not a few of the known facts are capable of more interpretations than one. Still after a careful and prolonged search, carried on by many patient investigators in this field of study, a sufficient number of facts has been brought to light to warrant us in drawing a few conclusions with a tolerable amount of certainty. We do know that the earliest records of Cumberland are by no means the oldest even in Britain ; but, omitting any further reference to these areas outside the county, we may begin by considering the facts presented by the vast pile of slates, mudstones, and grits, which form the upland area lying to the east and the south-west of Bassenthwaite, and which includes Grassmoor, Saddleback, and Skiddaw (or Skidda). To these, the most ancient rocks of Cumberland, the name Skiddaw Slates is usually applied. Internal evidence supplied by these rocks makes it quite clear that they are the broken, much-disturbed, and greatly-altered, representatives of what was at one time a vast pile of marine sediments, representing the mud, sand and shingle brought down to a delta by a large river draining a great tract of land some distance away. Every particle of these old rocks represents what was formerly part of some older solid rock constituting that land, and its present position is due entirely to the prolonged action of rain and rivers upon that old land surface. The evidence further assures us that the area now occupied by Cumberland was in those remote times being gradually lowered by earth movements, which proceeded at a very slow rate, and which, on the whole, kept pace with the deposition of the sediment. Occasionally a somewhat less slow subsidence than usual brought about a greater depth of water ; while at other times the sediments forming the old delta pushed seaward a little faster than the subsidence carried

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them downward. Probably if we could have measured the rate at which these movements were progressing we should have found them almost imperceptible, even when the observation extended over centuries. At whatever rate the subsidence may have proceeded it continued through a sufficiently long period to allow of the accumulation of layer upon layer until a pile several thousands of feet in thickness was accumulated.

At a late period in the history of these rocks there seems to be evidence that some upheaval took place, and there was laid down one or more bands of pebbles, of which bands, now hardened into conglomerate, we have now traces near Keswick, and also at Cockermouth and elsewhere. After that followed a period of somewhat deeper water conditions, during which finer mud subsided to the sea bottom here. It was chiefly during this period that the animals lived of which fuller mention will be made presently.

(b) The peculiar conditions under which these old sediments were deposited extended in one direction beyond where the Isle of Man is now, and, in the other, into north Cumberland. It is possible, however, that they did not extend much farther north. It may well prove some day that the earlier deposits of this age are contemporaneous with the upper part of the Durness Limestone of north-western Scotland. In this case there must have been deeper water conditions in that direction, and therefore, possibly, the old land from whose waste the Skiddaw Slates were derived may have lain to the south-east. Be that as it may, we can feel much more certain regarding the nature of the sea bottom, and the physical geography in general of the area adjoining the Solway during the latter part of the period when the Skiddaw Slate was being formed. We have records in the southern uplands of Scotland (the old Valentia of the Romans) of an important series of volcanic outbursts taking place on the ocean floor and apparently in deep water. There is no clear evidence that these volcanic conditions extended into the area where Keswick is now, although some volcanic rocks in the Caldbeck Fells may eventually prove to belong to this period. The conditions that obtained in what is now north Cumberland at this period may have borne a close resemblance to those now found on the eastern margin of the Indian Ocean, where volcanic rocks, rocks of oceanic types, and terrigenous deposits from the land are being laid down in close contiguity to each other, and sometimes change their relative places.

Beneath what are now the Border Counties there lies buried at a great depth another phase of sedimentation, of which it is probable representatives may occur in Cumberland. We have good reason to believe that while the middle part of the Skiddaw Slates was being formed, the ocean floor in the northern part of the area sank to a vast depth, so that the sea bottom there at the period under consideration lay for a vast length of time at a depth of between two and three miles below sea level. The nature of the deposit that accumulated there is in all essential respects comparable with the Radiolarian Ooze which is being slowly formed in the greater ocean depths at the present day, especially

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in the central Pacific, as well as in those parts of the Indian Ocean where the ocean floor lies at a greater depth than 2,500 fathoms. To understand the full significance of the fact a brief digression is needed. In nearly all the warmer parts of the ocean surface-waters there exist vast numbers of minute animals of lowly organization (the Protozoa), some of which secrete from the sea water carbonate of lime, which forms the harder and outer parts of the creature (the Foraminifera); while another allied set of minute animals secrete from the fine clay present in all sea water corresponding shells of siliceous composition. These latter animals referred to are the Radiolaria. When these Protozoa die, their harder parts slowly descend through the sea water, and in course of time may sink to a great depth below the surface. But as this quiet drizzle of shelly matter settles towards the bottom, the sea water begins to exercise a solvent effect upon the calcareous shells, the effect increasing with the depth below the surface; while the associated siliceous shells are not so acted upon by the water. As a consequence, few, if any, of the calcareous shells survive a descent of more than 2,500 fathoms, while the siliceous shells that set out on the same journey with them reach the bottom undissolved. In other words, below 2,500 fathoms few or no calcareous organisms are to be found, those of siliceous composition alone remaining. The Radiolarian Ooze of the present day is found only at depths exceeding 2,500 fathoms. Geologists usually reason on the basis that principles founded upon facts observed now hold good equally well in similar cases in the past. That is to say, a Radiolarian Ooze, whatever its age, denotes a depth at the place where it was found of more than 2,500 fathoms. Now, a Radiolarian Ooze of well marked character and of considerable thickness, lies close above, and is partly interstratified with, the deep-sea volcanic rocks just mentioned as contemporaneous with some of the Skiddaw Slate rocks near Keswick. It is quite likely that a cherty deposit found in connection with the Skiddaw Slates near Ousby may represent this deep sea deposit here. At any rate, we can feel sure of this point, that at the period when some of the slates near Skiddaw were being deposited as layers of fine clay at the bottom of a moderately deep sea, there existed a great oceanic depression only a few miles to the north. This again suggests that the old land at this period lay somewhere to the south of Cumberland.

The Radiolarian deposit referred to may some day be detected in the Lake district itself. Whether that prove to be the case or not, we have in this old oceanic ooze one more of the many proofs that are coming to light in various parts of the world, and in connection with rocks of all ages, that oceanic areas and continents have really changed places, and that, too, more than once at the same spot.

(c) During the latter part of the time when the oceanic phase of geographical conditions prevailed near the site of the English border, the parts of Cumberland a few miles farther south began to be the theatre of a series of changes of a different kind. A slow movement of upheaval of a very local character set in, and there is reason to believe that the

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effect of this movement in the course of time was to ridge up the sea bottom by slow degrees until, from shallow water, it passed into land. The immediate effect was to bring about the waste and destruction of the newly-exposed sediments by the combined action of the waves and the subaerial waste brought about by rain and the agents working with it. There are several facts connected with the behaviour of the rocks in the district on each side of the present Bassenthwaite Water which seem to indicate that the local upheaval referred to was one of a series, which commenced at an early stage in the history of the rocks there, and was continued intermittently, while a considerable subsidence was in progress in the area to the south. But the full discussion of this matter is of too technical a nature to be treated in an article like the present one. These local upheavals were intimately connected with the evolution of an important group of volcanoes which finally grew up so as to extend over a large part of Cumberland, and to which attention will be more fully directed further on.

(d) Leaving for the present the consideration of the events which followed the advent of these volcanic conditions we may notice here the more prominent features connected with the life of the period. Records of the vegetable life of the period are too scanty to enable us to form any very clear notion of what it was like ; but such fragments as are known suggest that the more lowly forms of vegetation, little higher in grade than the seaweeds, were predominant. Of animal life more is known. It seems from the available evidence that nothing approaching vertebrate forms of life had yet come into existence ; and that, in the sea, at any rate, the most highly organized beings were creatures more or less closely allied to the Nautilus. On the fine mud which formed the sea bottom there certainly lived a considerable variety of the curious jointed-legged creatures which are known as Trilobites, from the characteristic three-fold arrangement of their larger parts. These in some respects find their nearest allies at the present day in the King Crab (*Limulus*), and perhaps also in the Spiders and Scorpions. Remains of Trilobites are occasionally found on various platforms in the Skiddaw Slates. The writer of this chapter figured in the *Proceedings of the Geologists' Association*, ix. No. 7, all that were known at that time. With these Arthropods lived some few lowly forms of Crustacea ; and there were also some representatives of the important group of Brachiopoda, which are animals distantly allied on the one hand to the Worms, and on the other to the Mollusca. But the best known fossils from the Skiddaw Slates are those remarkable zoophytes which are known collectively as Graptolites. These animals were, in many respects, not very different from the Sea Firs of the present day ; and, like those so-called 'seaweeds,' lived at the sea bottom in little colonies, sometimes attached to some stony object, but more often anchored to the mud by means of a special arrangement with which they are provided for that purpose. Both geologically and zoologically these obscure organisms are objects of considerable importance. Those from the Skiddaw Slates have lately been described in an important paper

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published in the *Quarterly Journal of the Geological Society of London*, vol. x., by Miss Ellis.

II. We may now turn to the fuller consideration of the volcanic episode to which brief reference has just been made, and in connection with which so much that is of geological interest in the present Lake district is intimately concerned. The history of the volcanoes cannot be completely made out ; but we already know quite enough to give us a much clearer view, as we look back into the past, than is possible in the case of the Skiddaw Slates. One thing is quite clear : the volcanoes began with a series of extremely violent eruptions, in the course of which the explosions tore away vast quantities of the older sediments through which the volcanic vents arose, and ejected those fragments to a considerable distance from their starting-point. It is not a little remarkable that fragments of lava in many cases form but a small proportion of these ejected materials from the earlier-formed vents. Fragments of the Skiddaw Slates abound in these old tuffs, thereby proving, if proof were still needed, that the volcanic rocks are of *later* date than the rock referred to.

On theoretical grounds we may suppose that these violent paroxysmal explosions were due to the water finding its way down through the outer zones of the lithosphere (or rocky crust of the earth) to the inner zones, where, from one or other of several possible causes, there existed a temperature sufficiently high to produce conditions favourable to the generation of new compounds. Heated waters, containing but a small percentage of the alkalis present in combination in sea water, are competent to dissolve almost any rock material known, and are able to do so at a comparatively low temperature—far below that which lavas have when first poured out of a volcano. A compound of the nature referred to possesses violent explosive properties, and, indeed, can only be kept from exploding by the influence of enormous pressure. If by any terrestrial movement the pressure at the critical time happens to be relieved, liquefaction at once commences, and steam in a highly explosive condition is generated throughout the area where the pressure has been eased off. Under these circumstances the fluid rock material begins to eat its way in the direction of least resistance, and finally reaches the surface, where the pressure is relieved by a succession of more or less violent detonations, whose general nature may be likened to that of boiler explosions. One of the determining causes of both a local rise of underground temperature and a spasmodic relief of pressure must have been the local bending of the outer part of the lithosphere to which reference has already been made. Indeed, it seems unnecessary to invoke any other factors in the generation of volcanic action than this local conversion of the energy of motion into heat energy, combined with the downward transference by osmosis of alkaline waters from the floor of the ocean, and the subsequent release of the imprisoned gases by the local and spasmodic relief of pressure which accompanies the folding mentioned above.

The Cumberland volcanoes were probably small to begin with, and probably there were several in an irregular line ranging southward

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through the site of Keswick. But we have no further evidence upon this point than the analogy afforded by the behaviour of volcanoes at the present day, and the fact that volcanoes of the same period occur also in Wales.

After the first violent paroxysm and the discharge of fragments of sedimentary rock into the air, the relief of pressure below the surface appears to have favoured the liquefaction of the rock. Under these conditions, that heated mixture of the component gases of water and liquefied rock of which lavas consist, began to make its way to the surface. But the explosive forces pent up below were so vastly more powerful than was needed for merely propelling the fluid mass to the surface, that they sufficed, each time the pressure was relieved, to drive the fluid rock with terrific violence to a great height—probably miles—into the air, whence, as the force expended itself and gravitation came more into play, the coarser fragments of lava, now hardened by their passage through the cool air, fell back in great piles upon the surface, close to the orifice whence they were ejected, while the finer material was distributed far and wide by the action of the wind.

The evidence shows that a succession of such explosive outbursts took place, with pauses of varying length between each, during which marine sediments were deposited here and there to a small thickness between such of the volcanic mounds as reached to no great height above the sea.

Eventually the eruptions occasionally assumed a less violent character, and on these occasions a quiet outpouring of lava took place, followed in turn by more explosive outbursts and the dispersal of fragmentary material over an increasingly large area. There can be but little doubt that the central area of volcanic action soon rose to a sufficient height to stand well above the waves, and that it probably continued to maintain that elevation while the additions to the surface of the volcano kept pace with the depression caused by the general subsidence which set in at an early stage.

(a) Several minor events occurred in connection with the central portion of the volcano, some of which have to be noticed here. Amongst the effects of these may be mentioned the curious 'faulting' so well seen in some of the Cumberland 'green slates,' and also the crumpling and contortion that accompanies these 'faults.' Both appear to be due to the fact that a period during which fine volcanic dust was ejected was followed by another when floods of molten rock poured over the sides of the crater and down the slopes of the cone, the flood of lava thus rolling over the lately-deposited tuff. The effect upon these unconsolidated beds of rock fragments was naturally to produce the same result as if a gigantic road-roller had passed over them. The beds were folded, crumpled and fractured, and, being compressed obliquely downwards, the faults generally took the form of *reversed* faults. Thrusts due to the flow of the lavas affected the tuffs beyond the lava flows themselves, and it therefore frequently happened that a bed of tuff which had been frac-

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tured and crumpled at one stage was soon after that covered by other layers of fine dust which had, of course, not shared in the disturbance. The 'green slates' of Tilberthwaite and of many other localities in the Lake district show these interesting records of contemporaneous disturbance very beautifully, and museum specimens, or even specimens that will go into a waistcoat pocket, may easily be obtained which will show these features well.

Another set of features of general interest connected with the tuffs has been produced by the action of rain, or of aqueous vapour from the volcano, chilled by its upward passage into the air. Such vapour condenses readily upon the cooler and finer fragments of volcanic dust in the upper part of the column shot out from the volcano during eruption. Once such a nucleus is formed it tends to enlarge by the addition of more water and more dust as the pellet descends. Finally it reaches the surface as a small ball of mud, and may plump down into the fine dust and there become entombed. There are many examples of this kind, especially near Ambleside.

Also it often happens that the torrential rains precipitated from the column during an eruption wash vast quantities of the finer material down the slopes of the cone, and give rise to such floods of volcanic mud as those (*lava d'aqua*) which overwhelmed Herculaneum during the Plinian eruption of Vesuvius. Many beds of rock of origin similar to this occur in connection with the Cumberland volcanoes.

It is from the combined results of these explosive eruptions, violent or gentle, from the outpourings of the floods of lava, from the action of surface causes, and from the forcible injection of materials underground derived from the volcanic focus, that the great pile of rocks was formed, out of whose much-altered remains the finest scenery of the Lake district has since been carved. It may be remarked here that these rocks underwent many changes and modifications long before they were finally exposed. These will have to be considered in chronological order, and will be therefore referred to again.

The volcanic eruptions were by no means continuous, but were often separated by long periods of repose, during which surface agencies modified the slopes of the volcanoes. Furthermore, it is very unlikely that the volcanoes attained their maturity without the episodes of destruction which almost every other volcano, ancient or modern, seems at some time or other in its history to have undergone.

The length of time required for the growth of this stage of the Cumberland volcano must have been very great indeed. Notwithstanding the apparent evidence to the contrary, the growth of a volcano is by no means rapid. Taking one volcano with another, it would seem a fair estimate of their rate of growth if it is set at one foot in 300 years. The Cumberland volcano certainly rivalled Etna in dimensions; and Mr. Ward's estimate of 12,000 feet as the maximum thickness of these rocks is, if anything, below, rather than above, the actual thickness to be found.

County Boundary shown thus ———

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It may be well to state here that the material shot out from a volcano during an explosive eruption is called *tuff* (or 'ash') in the cases where the material falls outside of the crater, quite without regard to whether that material is coarse or fine. The material which fills up an old vent or 'neck' is called *agglomerate*, whether it is coarse or fine. The term *lava* is restricted to the floods of rock which have poured out of the vents over the surface of the cone; while the same kind of material injected below the surface gives rise to a *sill* if it consolidates in the form of a more or less horizontal sheet, and to a *dyke* if it consolidates in a wall-like mass.

The Cumberland volcanic series consists of rocks of Upper Arenig and Llandeilo age. Lithologically, the greater part of the rocks consist of andesites and andesite tuffs, which approach basalts in the earlier part. Furthermore, there is a newer and higher volcanic group of different lithological character associated with the rocks just noticed, and to which fuller reference will need to be made further on.

(b) In the meantime we have to notice a group of rocks which are contemporaneous with those of volcanic origin, and which consist mainly of sediments. To enable the reader to understand their relation to the rocks just noticed, he is asked to bear in mind that a volcano is necessarily limited in horizontal extent, and that the lava streams which reach its flanks, as well of course as the tuffs beyond, will tend to be laid down alternately with marine sediments if the volcano is anywhere near the sea, and that the relative proportion of volcanic to sedimentary matter diminishes as we advance outward from the central area until it finally comes to nothing. It must be obvious on reflection that this must have been the case as much in connection with the volcanoes of the past as it is with those of the present.

We are therefore quite prepared to find that while the old Cumberland volcano was gradually rearing its cone above the level of the sea the deposition of sediment went on contemporaneously on the sea bottom outside its flanks. Nearer to the sphere of volcanic action the old sediments occasionally received showers of fine tuff which had been wafted far out to sea during explosions of a more violent character than usual. Such volcanic material thus became mixed in every proportion with the sedimentary matter—the proportion of the former to the latter increasing relatively to the nearness of the cone. To put these statements into a terser form, we may say that on the flanks of the volcano there was a passage from purely volcanic to purely sedimentary material, chiefly through interstratification.

Hence we may safely conclude that wherever such passage beds occur, they mark the seaward flank of the volcano of that particular period.

In north-eastern Cumberland the map shows that there is a narrow strip along the foot of the Cross Fell range along which some of the oldest rocks of the district have been abruptly elevated to the surface.

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These afford a most important insight into the history of Cumberland during the remote period under consideration. The nature of some of these rocks clearly points to the presence of geographical conditions in which sediments of marine origin were deposited alternately with layers of the fine dust which had been transported seawards by the winds during some of the more violent eruptions of the old volcanoes, but at too great a distance to be reached by the lava streams. That these alternations of old marine sediments, fine tuffs, and mixtures of both, are contemporaneous with the volcanic rocks in the heart of the Lake district, is shown in the most unmistakable manner by the fossils which they contain. Their general nature indicates quiet deposition on a steadily subsiding ocean floor at no great distance from a group of volcanoes. As it is often convenient to employ some definite name for the larger subdivisions of a great pile of rocks like these, taken from the locality where the rocks are now best seen, the present author several years ago proposed for these sedimentary equivalents of the volcanic series the name of the Milburn Rocks. They are well seen below Cross Fell, and they are particularly well exposed in John Robinson's Pastures, on the north side of the village of Milburn: whence the name. Their aggregate thickness cannot be made out with certainty, but it can hardly be less than between 5,000 and 6,000 feet. The principal fossils are Graptolites, Trilobites and Brachiopoda, all of Lower Llandeilo types.

The fact that we have perfectly clear evidence of marine conditions and of continued subsidence within twenty miles of the centre of the volcano would prepare us for the idea that the later stages of volcanic activity coincided with a subsidence at least of part of the volcanic area itself. And, further, the facts quite justify us in regarding the volcano as one which was only enabled to keep its summit above the waves by the fact that the eruptions piled up the volcanic material at a rate which, on the whole, kept pace with the rate of lowering of the sea floor until at least the later stages in the history of the volcano.

(c) Volcanic areas usually coincide with areas of unequal subsidence, and that of Cumberland appears to have been no exception to the general rule. Some of the geological facts which may be observed in the areas around Bassenthwaite seem to point to the conclusion already referred to, that this area did not sink at the same rate as the area around where Ambleside is now. There may even have been some upheaval in the northern part while subsidence was going on in the south. To put this statement into another form, we may say that, while the southern end of the area sank as fast as the volcanic material was piled upon it, the northern end either remained stationary or else was slowly ridged up from the sea bottom, and thus was wasted by the weather and the sea almost as fast as it rose. The idea is not easy to grasp, and would not need to be again referred to here if the fact had not an important bearing upon some events of later date to which subsequent reference will be made.

(d) There is some doubt as to the exact nature of the events which

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succeeded the period of maximum development of the volcano, for the structure of the rocks was highly complicated to begin with, and the complexity has been considerably increased by later events. But a broad review of the facts, by the light obtained from the structure of similar rocks of the same age which occur elsewhere, seems to point to there having ensued a period during which the volcano was apparently extinct, and the earth movements may have been taking the form of upheaval over the entire area. During this period of quiescence the whole surface underwent much of that waste which invariably arises from prolonged exposure of rocks above the level of the sea. To the present author the facts appear to suggest that in the area now represented by northern Cumberland the remnants of the older volcano were exposed long enough to be wasted away entirely, and, with these remnants, were also removed much of the older rock which underlay the volcano.

Subsequently, another group of volcanoes, different in character from the first, and in form and arrangement more like the 'puys' of central France, broke out here and there over the whole area, and their lava streams and tuffs were spread out across the wasted surface of those older rocks to which reference has just been made. Then subsidence again set in, and some bands of sediment and one or two bands of limestone were deposited on the sea floor both on and amongst the rocks of volcanic origin. On the southern flanks of Roman Fell, in Westmorland, there is displayed a fine series of alternating sedimentary and volcanic rocks, which mark this phase in the history of Cumberland; and it is just possible that the same kind of rocks may occur in still greater development in the Caldbeck Fells and near Melmerby in north Cumberland. The character of the fossils which occur in the sedimentary rocks associated with these latter volcanic rocks indicates that their formation commenced in Lower Bala times, and was continued until late on in the Upper Bala period. The rocks in question are contemporaneous with a vast thickness of strata of the same kind which occur in Wales. In Cumberland at least they appear to lie unconformably upon the older rocks beneath: in other words, an upper volcanic series there lies discordantly upon a lower.

It may be well to state at this point that the older group of rocks heretofore noticed, including the upper part of the Skiddaw Slate, the Milburn Rocks, and the older volcanic rocks of the Lake district (the Borrowdale Series) are comprehended in the Lower Ordovician group; while the latter series, including the associated limestone, shales, and other sedimentary rocks, are here ranked as Upper Ordovician: that is to say, in Cumberland the Bala Rocks are unconformable to those of Llandeilo and Arenig age.

Neither of these volcanic episodes appears to have extended far to the north, as in the southern uplands of Scotland the rocks formed during this period are mainly fine-grained muds, slowly formed on the floor of the ocean at a great depth below the surface, rocks of volcanic origin being almost unrepresented.

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Some scraps of evidence obtainable in the Craven area seem to indicate that the older set of volcanic cones may not have extended far in that direction either. But that the later (Upper Ordovician) set was not far away from that area is shown by an interesting group of sediments which occurs there, and in which are mingled some of the finer products of the chief explosions of the volcano, which therefore could not have been far distant at this time.

(e) *Life during Ordovician Times.*—So far as is known at present no animal of higher zoological grade than the Invertebrata had come into existence during Ordovician times. The highest forms of life yet found belong to the Mollusca, and to that section of the Mollusca (the Cephalopoda) which includes the Nautilus of the present day. The Arthropoda were represented mainly by some Phyllocarida, and by an abundance and great variety of Trilobites, which reached their maximum development during this period, and whose different forms have a zonal value of much the same character as the Graptolites. Brachiopoda were also very abundant. All the other classes of the Invertebrata were represented. Of the plants we know as yet but little, and we are not likely to know much more, seeing that most of the strata of which remains exist were formed in the sea or else are of volcanic origin.

(f) The events briefly summarised in the foregoing paragraphs must have required for their accomplishment from first to last a period of time of inconceivable length, if we may judge by the importance of the changes in both the inorganic and the organic worlds which took place in the meantime. Group after group of invertebrate organisms was slowly evolved from pre-existent forms, its various species reached their maximum of development, gradually passed away, and gave place to others. Oceanic areas and land more than once exchanged places. Mountain masses were slowly built up, elevated above the sea, and in the course of long ages wasted away, and their materials were gradually transferred to that cradle of new lands, the ocean floor, there to be again used up in the formation of later rocks. Geologists, fully cognisant of all these changes, and duly taking into account the rate at which such changes are proceeding now, may well be pardoned if they regard the time represented by these Upper and Lower Ordovician Rocks of Cumberland as one of enormous length. The author of this article, in his address to the Royal Physical Society, has estimated it at 45,000,000 of years.¹

III. THE SEQUENCE OF EVENTS DURING SILURIAN TIMES.—(a) Over a large part of Britain there is evidence that the close of Ordovician times was marked by considerable disturbance and slow upheaval of the land. In some localities, large areas consisting of the previously-formed rocks were upheaved, and exposed for lengthy periods to the wasting influence of atmospheric causes, and the process continued until, in some parts, a

¹ See Goodchild, 'Some Geological Evidence Regarding the Age of the Earth,' *Proc. Roy. Phys. Soc. Edin.*, xiii. p. 302.

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thickness of many thousands of feet of the older rocks was stripped off. Thus rocks of very different ages came to be exposed at different parts of the surface. At the conclusion of this period, which must, if we may judge by what took place in the meantime, have been a period of immense length, there began a second great period of subsidence beneath the ocean, and the deposition of a new set of strata. The rocks referred to are those which now form most of the southern part of the Lake district. They are exposed here and there, also in some parts of Cumberland, and therefore call for notice here.

(b) The earliest chapter in the history is recorded in an old bed of shingle, which evidently marks the rolling and wearing action of the sea upon the loose fragments of rock which were present on the surface as the land quietly sank beneath the waves.

Then follows a stratum of great interest, thin though it be—the well-known Graptolitic Mudstone. This is a bed of what was originally fine mud, evidently formed at a great depth below the level of the sea, and in very quiet water, far beyond the influence of tides or currents, and outside the zone of deposition of any muddy outflows brought by rivers from the land. On the bed of fine clay which slowly accumulated on the sea floor, there lived one set after another of those curious organisms already referred to as Graptolites. No doubt these, like their predecessors, lived in little colonies, each moored to the bottom in much the same way as seaweeds are attached to stones and shells on the sea floor of the present day. But beyond the fact that they pertained to the same subdivision of the animal kingdom as those which preceded them, these and their predecessors had but little in common. Every one of the older forms that had come into existence had gradually died out, and those which lived during the earlier part of the Silurian Period were different in many essential particulars from the graptolites of Ordovician times. A few Brachiopods, and some hardy Crustaceans, lived in the ocean depths along with the Graptolites. There are many good reasons for believing that one generation of these Graptolites succeeded another for a very long time without undergoing any marked change in character, or without becoming extinct. Moreover, in the quiet depths of the ocean, where the conditions remained uniform, as they usually do now over a very large area, the same species of Graptolites were to be found far and wide wherever the nature of their surroundings remained uniform. For this reason as well as others Graptolites have been found to be of great value as affording a clue to the particular chapter of the geological record which they represent. To put this statement into another form: these Graptolites lived over very extensive areas of the sea bottom, but they thrived best only where the water was perennially clear, or, in other words, where only a very thin film of sediment found its way to the ocean floor in the course of a century. In many cases it would appear that the chief deposit there consisted of the remains of the Graptolites themselves, mingled with a very small proportion of extremely fine mud, the deposition of which was characterized as much

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by its uniformity of rate as by the enormously long time required for the accumulation of a single inch. There are many analogous phenomena recently brought to light in connection with the deep sea oozes of modern times. By careful study and comparison of these facts over a large area geologists have now obtained sufficient knowledge to be able to state with certainty at what particular epoch in the Silurian Period any given species of Graptolite lived. Or, conversely, if they find the Graptolite, its occurrence informs them unerringly of the geological dates of the film of clay in which that particular species was entombed.

These quiet deep-water conditions remained unaltered through a long period of time. In the meantime important changes of the sea bottom were in progress elsewhere, and in course of time these gradually affected the area under consideration. The next change gave rise to a deposit which, although evidently formed in quiet and deep water, does not appear to have afforded the conditions suitable for the growth of organisms of any kind. The deposit in question took the form of very fine grey mud, which in some respects appears to correspond to one of the grey oceanic oozes of the present day, or, possibly, to the fine azoic mud which is slowly accumulating in the depths of the Black Sea. In its present compacted and altered condition we know it by the name of the Pale Slates—a not altogether appropriate name seeing that, although characterized by a grey tint, the rocks rarely form what may be called slates, in any sense of the word.

While the deposition of the Pale Slates went on in the tranquil depths of the sea over the area now under consideration, coarser sediments, laid down in shallower water, were deposited in the areas to the north of the Border; and the same occurred also in what is now the western part of Wales. The total thickness of the Pale Slates rarely exceeds 600 feet; but the deposits found nearer the land attain a thickness in both Wales and Scotland of some thousands of feet. It is only near the upper and the lower limits that the Pale Slates contain any traces of life.

After this deep-water and azoic episode in the history of Cumberland there followed a long period of conditions of moderate depth, during which subsidence went on concurrently with the deposition of mud, clay and sand, which, as in other cases, represents the materials worn off the land—wherever that may have been—and transported to the sea by the agency of rivers. It was during this period the Coniston Flags, Coniston Grits, Bannisdale Slates and the Kirkby Moor Flags, etc., were formed. The thickness of sediments found in this way cannot be less than 15,000 feet in the north-west of England, and may have been more even than that.

To-day, these old sediments, indurated and changed in many ways, are known by the following names, counting from the lowest upward, and have at least the thicknesses stated: Graptolitic Mudstone and Pale Slates, 600 feet; Coniston Flags and Grits, 8,000 feet; Bannisdale Slates, 4,000 feet; Kirkby Moor Flags, 3,000 feet. No traces of

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volcanic action of any kind have yet been found here in rocks of this age.

Life of the Silurian Period.—As the Ordovician Period was one of great length many important changes in the organic world took place. If, to the time required for the evolution of these changes, we add the enormously long interval represented by the unconformity; and, again, to these, add the time required for the accumulation of the Silurian Rocks, we may be prepared to find that the slow march of organic evolution had given rise to many and important developments in the organic world. Most of the Trilobites, a group so characteristic of the different zones of the Ordovician Rocks, had now died out; the last of the Graptolites disappeared near the close of the Silurian Period, and so with various other groups not so conspicuous as fossils. On the other hand, the Arthropoda developed along a new line, and we find the great water-scorpions, or Eurypterids, amongst the dominant forms of invertebrate life. Near the close of the Silurian Period true vertebrates of low zoological grade, make their appearance. They are represented by several varied types of fishes, all primitive creatures belonging to the very lowest ranks of the same group as the sharks, skates, and rays of the present time. These Silurian fishes can hardly be said to be provided with any true fins except the tail.

Of the plants of the Silurian Period, again, we know but little. The few traces of plants that occur in the Cumberland rocks of this age were probably of the nature of seaweeds.

(c) Taking into account the thickness of rock stripped off by denudation in the interval between the close of the Ordovician Period and the commencement of Silurian times, and adding to that the time estimated to be required for the formation of the Silurian sediments, the author of this article considers that a period of 68,000,000 of years is required.

DEUTEROZOIC PERIOD

CARBONIFEROUS ROCKS.

- B. Upper, including the true Coal Measures and the Millstone Grit.
- A. Lower, including the Yoredale Rocks, the Mountain Limestone, and the Lower Limestone Shale.

OLD RED ROCKS.

- B. The Upper Old Red Sandstone.
- Great Unconformity.*
- A. Traces of the Caledonian Old Red (Granites, etc.).
- Great Unconformity.*

IV. PRE-DEVONIAN UNCONFORMITY.—(a) Hitherto we have had no clue to any of the geographical conditions that prevailed during the periods noticed, except those mentioned in the foregoing notes. But as we trace the history of Cumberland nearer and nearer to our own times, more complete evidence is available, and we are able to get a much clearer insight into the nature of several events of the past. This is especially true of the period that succeeded Silurian times. The evidence afforded by rocks of this age in southern Scotland informs us that

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after the prolonged period of subsidence, during which the Silurian Rocks were formed, the sea bottom remained for a time stationary, then began a set of earth movements which, at great depths, gradually and quietly compressed the lately-formed strata into folds, closer and closer, as the compression continued, and at the same time the lateral thrusts forced up the surface, so that by degrees great ridges of considerable extent were elevated above the level of the sea. Narrow areas of sea water were thus isolated by the upheaval, and gradually passed from the condition of lagoons into that of shallow inland lakes. As the movement extended, the whole of the part under notice gradually passed into the state of a continental area, from which the sea margin receded farther and farther as the upheaval slowly progressed. One of the consequences of these conditions was that the annual rainfall gradually decreased in amount, and fell only at irregular and often distant intervals. As a consequence, vegetation could no longer thrive; land animals, such as there were at the time, were forced to migrate to districts where the climatal conditions were more favourable; and hence, by degrees, the whole area gradually passed into an upland desert region far removed from the sea. When it did happen to rain the amount precipitated in a given time was often very large; so that after one of these occasional thunderstorms roaring torrents were quickly formed, and soon tore their way down the hill slopes, thereby spreading great masses of torrential debris on the plains around. In the intervals between these spates the dry climate gave rise to great diurnal extremes of temperature, which caused any rocks exposed to their influence to expand rapidly with the heat during the day and to contract to the same extent at night, as a consequence of the rapid radiation which always takes place where there is but a small amount of moisture in the air. In other words, the lately formed marine sediments, now consolidated into stone, were shivered into fragments by the diurnal extremes of temperature, in much the same manner as they are in the Syrian wadies of to-day. The wind blew the rock fragments about from place to place, bowling them along and against each other until they were worn into perfectly-rounded grains, and it finally heaped these sands up in great ridges much as it does in all desert regions to-day.

Lakes were represented here and there by a few shallow pools, each one of the same nature as the schatts of Algeria, or the shallow inland lakes of the Aralo-Caspian area of Central Asia, and containing more or less saline waters, such as are now to be found in desert regions in various parts of the world. There is no reason to suppose that the *average* daily temperature was higher than we experience in these islands now, but the maxima and minima were much greater, and it was certainly much hotter in the sun of a day and equally colder at night, and in this respect more like the climate of Natal than it is with us now.

Analogy with modern desert areas quite warrants us in picturing to our mind's eye the skies of these days in ancient Cumberland as usually cloudless, and as characterized rather by a yellow haze, due to the vast

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quantities of fine dust constantly suspended in the air, than by the tender blue of the purer skies with which we are familiar.¹

Perhaps it may be as well to mention in this place, that concurrently with the progress of these events in the northern parts of the kingdom, geographical conditions of a different kind existed further south and south-east. In the areas referred to, marine sediments, including important beds of marine limestone, were in process of formation. These are well seen in the Rhineland, and almost equally well in Devonshire, where they were first studied by geologists. For the latter reason the southern type of rocks is termed the Devonian Rocks, and the period when they were formed, the Devonian Period. Henceforth, therefore, the events now under description will be referred to here as having occurred during the Devonian Period. But the northern type of *rocks*, which consist largely of sandstones of a dominant red colour, will still be referred to as the Old Red Sandstone Rocks.

(b) The Devonian Period in the northern parts of the kingdom was, as already mentioned, one of considerable terrestrial disturbances, which manifested themselves by great local upheavals, accompanied by earthquakes, and followed by volcanic outbursts, which eventually assumed extensive proportions. With the volcanoes themselves, as well as with the stratified rocks that grew up with them, we happen not to be very much concerned, for reasons which will be stated presently. But the former presence of the volcanoes has left its mark in Cumberland in a striking manner, and in many different ways, the nature of which will be considered after the following preliminary explanation.

(c) There is reason to believe that within the lower part of the core of a volcano the rocks have been reduced to a pasty or semifluid condition by the uprise of those superheated alkaline waters, which have already been mentioned as forming one of the principal factors in all volcanic eruptions. It is within this plutonic region, which may be situated several miles below the summit of the volcano, that such rocks as granites and the rocks allied thereto are generated. Indeed, there is reason to believe that the greater part of all such plutonic masses have originated deep within the earth's crust at the root of a volcano. In other words, areas of granitic rocks generally mark the site of former volcanoes. The zone within which these rocks are generated may conveniently be referred to as the 'granitic zone.'

Furthermore, the same superheated alkaline waters, whose uprise is so essentially connected with volcanic action, permeate the sedimentary and other rocks contiguous to the lower part of a volcano, and there produce very important changes by giving rise to what is termed contact metamorphism. This zone may be referred to as the 'zone of thermo-metamorphism.'

If the reader will bear these general principles in mind it will enable him to understand the nature and origin of some important

¹ Goodchild, 'Desert Conditions in Britain,' *Trans. Geol. Soc. Edin.*, vii. pp. 203-222 (1896-97).

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changes which affected the rocks of Cumberland at this period, and which have left vestiges at many places, both within the county and around it. These will be stated in historical order, even though doing so involves a reference to events that took place prior to the period under notice.

(*d*) During the later history of the Cumberland volcanoes, the granitic zones beneath the focus of each gradually ate their way upwards through the sedimentary rocks and into the material of the volcano itself; so that the lavas, tuffs, and intrusive masses of the inner parts of some of the volcanoes were gradually replaced by, or perhaps transformed into, material which afterwards consolidated as granitic masses. Furthermore, with the enlargement of the granitic zones, the zones of thermo-metamorphism also extended farther and farther into the overlying rocks, so that the lately formed volcanic rocks themselves were in some few cases reduced to a softened state, and kept in that condition long enough to permit of a certain amount of rearrangement of their constituents. As the temperature of the whole mass gradually fell, this process finally led to the crystallization of some of these rearranged materials. The reader who wishes to understand the geology of the country around Keswick, Ambleside, Buttermere, etc., should try to comprehend this, for a large proportion of what was at one time loose fragmentary tuff has been altered by these changes into rock which, in many cases, can only be distinguished from lava by patient investigation in the field, supplemented by the careful study of thin sections of the rock under the microscope. The rocks in question were referred to by the Geological Survey officers who mapped the ground (and who, therefore, had an intimate knowledge of the true relations of these rocks) as 'altered ashes.' The late Mr. Clifton Ward very rightly laid great stress upon this point, the importance of which in the present connection, can hardly be overestimated. It was not only the tuffs which were altered in this way, but the lavas themselves also underwent a certain amount of change by the same process; while the sedimentary rocks were first softened and subsequently recrystallized to such an extent that they are hardly any longer recognizable as sediments. A fine series of these altered rocks was placed by Mr. Ward in the Keswick Museum, the Museum of Practical Geology in London, and in the Carlisle Museum, and they were admirably described by him in the Geological Survey Memoir on the 'Northern Part of the English Lake District.'

(*e*) Complicated alterations of also the earlier-formed volcanic rocks later originated as a further consequence of the growth of the volcano and the progressive uprise of the granitic zone at its base. The lava streams, beds of tuff, dykes and sills, of which the volcano was built, gradually passed through every stage of conversion into crystalline masses, and became more and more interlaced with, and traversed by rocks which had been crystalline from their first stage of consolidation, until these inner zones of the old volcano assumed the structure of a complex mass, whose details seem at first sight to offer endless difficulties to the geologist.

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Carrock Fell is a striking example of the feature referred to. It was described at some length by the late Mr. Ward, and has since formed the subject of an important memoir by Messrs. Marr and Harker. Another area of the same general nature occurs around the foot of Thirlmere.¹

There are several other areas in the Lake district which are of the complicated nature here referred to, and as most of these give rise to striking scenery, the subject can hardly be passed over without some kind of reference, even though that reference involves certain technicalities.

(f) There is another set of phenomena which originated soon after the close of the Silurian Period, and which gives rise to effects of considerable commercial importance, as well as being largely concerned in the evolution of the scenery. This is the phenomenon known as CLEAVAGE. Under its influence rocks of various kinds split with more or less facility in parallel directions, which bear no necessary relation to any of the original planes of structure. All true slates split solely under the influence of this structure. The exact origin of slaty cleavage has not yet been quite satisfactorily explained; but it will suffice for the purpose at present in view to state that it is certainly due to a slight rearrangement of the particles composing the rock affected, which has been brought about by intense lateral pressure exerted under certain special conditions at present imperfectly understood. The true nature of cleavage does not strike one so much in connection with the slates of Wales as it does with those of the Lake district, because in this latter case the bands which mark the original bedding of the rock are much more prominently displayed, and because slate in one form or another is largely quarried and is so extensively used, in Cumberland especially, for building purposes. It may be remarked here that the slates of the Lake district do not quite accord with the definition laid down in text-books, inasmuch as most of them consist of rocks of volcanic origin; and these are not, and never were, rocks of argillaceous composition, to which, judging by the statements copied into text-books, cleavage is supposed to be confined.

In whatever way slaty cleavage may have originated, the date when the structure was impressed upon the rocks is clearly one shortly after the close of the Silurian Period. It affects the rocks in different degrees, in accordance with their composition. Tuffs and fine-grained rocks of argillaceous composition cleave to the highest degree of perfection.

¹ The explanation generally given of the plutonic phenomena referred to in the last paragraph is that they are due to the effects of heat given off by incandescent molten rock, which has been bodily and violently transferred from a lower level to a higher from some zone of fusion within the earth's crust. It will be seen that the writer of this article regards them primarily as manifestations of the effects of superheated alkaline waters, which have effected a gradual transformation of rocks *in situ*, in the case of metamorphic rock, and an equally gradual replacement in the case of the so-called 'igneous' rock. According to this view, therefore, all eruptive rocks represent the products of consolidation from aqueous solutions; and water, not dry heat, is the chief agent concerned.

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Next to these in this respect come argillaceous limestones, as, for example, some of the beds of Coniston Limestone. Lavas in Cumberland show only faint traces of cleavage, while grits and greywackes hardly show any cleavage at all. It may be remarked that in North Wales Pre-Carboniferous rocks of all kinds are cleaved more or less ; while in Scotland the same rocks, even where most intensely compressed and contorted, rarely show any trace of cleavage. In Ireland cleavage affects rocks of Carboniferous age, as in the case of the Carboniferous Slate near Cork. Cleavage affects these rocks in Cumberland to a decreasing extent as we go northward, and it ceases to produce any marked effect north of an east and west line through Cross Fell. It is hardly discernible in the northern part of the Caldbeck Fells, where, by the way, true bedding has been mistaken for cleavage.

(g) After this digression we are in a better position to understand the events which took place in Cumberland in Devonian times. The period of upheaval crumpling and cleavage of the strata, added to that of their subsequent waste and removal by surface agencies, which followed the Silurian Period, must have been one of prolonged duration, if we may judge by the amount of disturbance and the enormous thickness of rock removed. It seems probable that mountains of considerable elevation and consisting of these Silurian rocks had arisen, and that it was in connection with these upheavals that the later set of volcanoes had arisen to which previous reference has been made. There is good reason to believe that a considerable mass of these Devonian volcanic rocks accumulated here, and that they formerly extended, with a marked unconformity, over all the Lake district rocks, and have been subsequently removed by denudation. But although the volcanic rocks themselves have disappeared, the volcanoes have left their mark in other ways, for there is reason to believe that several of the granite masses, such as those of Shap, Skiddaw, and Eskdale, not to mention smaller areas less well known, mark the site of former volcanoes belonging to the period under consideration. The granites of Cumberland are therefore of two ages, Ordovician and Devonian.

In connection with these Devonian volcanoes there was a repetition of the phenomena already noticed under the Ordovician Period. Contact alteration took place around the granite areas, and the more ancient lavas and tuffs, more or less altered by changes due to the long-continued circulation of underground waters, underwent considerable change in lithological character. It is important to remember in studying this set of facts that the contact-alteration of rocks which have lost part of their alkalies and have suffered chemical change in other ways, must necessarily give rise to a kind of rock quite different from what resulted from contact-alteration before they were so changed. The effects have been very remarkable in some cases, and were described many years ago by Mr. Ward, and more recently, by the light of much fuller knowledge, by Mr. Harker in the case of the tuffs, etc., around the Shap granite.

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The decomposition products of the lava have been reconstituted, and have given rise to Epidote (after Saponite), Garnets, Biotite, Hornblende, Felspar and other minerals ; while the limestones, where so acted upon, have passed into crystalline marbles, like those of the counties of Perth, Aberdeen and Inverness, and now yield Idocrase and other ordinary lime silicates which occur in impure limestones in general when these are affected by prolonged contact metamorphism.

Another result of the same cause has been the welding of the cleavage planes, which has taken place in zones of variable width around the intrusive masses, by which the slates have been recompactd.

(b) *Life of the Devonian Period.*—In Cumberland not a single trace of organic remains of any kind occurs in connection with the rocks of this period, because they were mostly of desert origin, and barren of life. It may, however, be well to make reference to the fact that a great abundance and variety of animal life is known to have existed in the seas of the same period. The organic remains found elsewhere in the deposits formed in the old inland lakes of this time inform us of a great advance in the evolution of vertebrate life, for we find in these rocks a considerable variety of fishes whose zoological grades extend from some of the simplest to some as highly organized as any yet living in the waters of the present day. Furthermore, vegetation had advanced to an equal extent.

(i) Continental conditions accompanied by an arid climate, with the land undergoing slow upheaval, continued for a very long time after the decline of the volcanic episode. We know by the important series of changes which elsewhere took place in both the organic and the inorganic world that this period must have been one of enormous length. In Cumberland there exist only very fragmentary records of these changes, because the period succeeding that which has just been noticed was one during which a vast thickness of the older strata, including almost every trace of the volcanic cones, was slowly and gradually swept away. There is some reason for believing that at the period next to be considered the area now occupied by Cumberland and Westmorland consisted of a low-land tract which lay at the foot of a great mountain region nearly coincident with the area occupied at present by the southern uplands of Scotland and the Cheviots. From this area the torrents which were formed during the irregular periods when rain fell, by degrees transported vast quantities of shingle, gravel and sand from the mountain area lying to the north-west, and gradually spread these wasted fragments of the old northern land over a large part of the area under consideration. This fact is rendered quite evident by an examination of the materials of the conglomerates of the Upper Old Red Sandstone in Cumberland. At Melmerby these contain abundant fragments of the Cheviot andesites, together with some rocks from the southern uplands of Scotland ; while the same conglomerates at the foot of Ullswater, which form the rounded hills, Easter and Wester Mell Fells, yield abundant representatives of the Silurian and Ordovician greywackes of the south of Scot-

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land. As we trace these Upper Old Red conglomerates towards Shap, we find the same evidence continued, with the addition that, near Shap, fragments of the Shap Granite itself set in, and may be readily gathered from these rocks.

The full significance of the fact just mentioned may be realized when it is remembered that such a rock as the Shap Granite could have been found only at a great depth below the surface, which depth may well be stated as several miles. In order, therefore, that a rock found at such a depth should make its appearance at the surface, there must be an upheaval equal to at least that extent, and the overlying thickness of rock must have been totally removed. This waste usually takes place *pari passu* with the upheaval. At the present day the rate of the removal of similar rock can hardly exceed one foot in about 4,000 years, and may be at as slow a rate as one in 6,000. But, if we set the rate at the time under consideration at one foot in *three* thousand years, it will be evident that the time required must extend to a great many millions of years. And yet all this took place after the period when the Old Red Sandstone volcanoes had ceased to erupt, and prior to the commencement of the deposition of the Upper Old Red! As an additional fact of the same nature it may be mentioned that the aggregate thickness of the strata across whose edges in the Lake district the Upper Old Red unconformably lies exceeds *five miles*. That is to say, before the Upper Old Red was laid down, an aggregate thickness of five miles of rock, mostly of a very durable nature, had been slowly and gradually swept away from this area.

(j) *The Life of the Upper Old Red Sandstone*.—The rock under notice having been formed under desert conditions, might be expected to be, as it actually is, without traces of life. Evidence obtained elsewhere, however, shows that under favourable conditions marine life flourished. In the rivers, and perhaps also in the inland lakes, there still remained some of the wonderful fishes which characterized the Caledonian Old Red Sandstone, but nearly all of them are of different species—the long lapse of time since the commencement of the older period, added to the equally long time represented by the great unconformity, having sufficed for the gradual evolution of many new forms and the consequent extinction of those of the older types.

(k) A very long period of time is implied by the vast unconformity which followed the Silurian Period and preceded the formation of the rocks of Devonian age. To that there must be added the time required for the formation of the Old Red Sandstone itself. If, instead of using these data in computing the time required, we base this estimate upon the rate of formation of the marine limestones formed elsewhere during the period under consideration (assuming that rate to be one foot in 25,000 years), we arrive at a total of 250,000,000 years for the period between the close of the Silurian Period and the commencement of Carboniferous times.

V. CARBONIFEROUS PERIOD. — (a) With the deposition of the

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Upper Old Red Sandstone commenced an important change in the order of things. From being part of a great continental upland, far from the sea, with a small and irregular rainfall, and with but scanty traces of life, it gradually passed to conditions in all essential respects almost the very opposite. The change was brought about, first, by a cessation of the repeated upheavals of the land, which had previously gone on so long a time, and then to an equally slow and gradual movement in the opposite direction. As the land quietly subsided the sea, which was distant at the outset, gradually advanced nearer and nearer. With closer proximity to the sea, the rainfall became more regular, and the former extremes of temperature were gradually mitigated. Finally, the climate passed from one of a continental type to the type usually found under insular conditions. With the advent of conditions more favourable to life, a varied and abundant vegetation began to spring up, and animal life on the land, so scarce during the former period, now immigrated in great force ; and its growth advanced by leaps and bounds. The transition phases in climate are marked by a series of deposits which English geologists term the Lower Limestone Shale, which in Ireland form part of the Carboniferous Slate, and which the geologists of Scotland know as the Ballagan Beds. The general character of these rocks is very uniform, wherever they occur throughout the kingdom. They are very imperfectly developed on the margin of the Lake district near Penruddock, but are much better seen at several places in Westmorland, notably at Shap Summit. They also occur in the north-east of the county, and are traceable at Melmerby. In general terms they may be said to consist of old beds of clay, silt and sand, which were deposited mainly in sea water, in shallow lagoons and in deltas, at a time when the subsidence of the land first gave admittance to the sea, and just when the climate was changing from the arid condition of Old Red times to the humid climate that succeeded, or from a continental climate to one that was insular.

The general behaviour of these old sediments where they are studied over a large area, shows that their materials have been transported in the main in a south-easterly direction. We may conclude from that fact that the old land from whose waste they were derived lay somewhere to the north-west.

The deposition of the Upper Old Red Sandstone had not by any means quite levelled up all the inequalities of the surface. One of the larger ridges thus left can easily be made out still. It ranged in a nearly east and west direction through Cumberland, passing through Whitehaven, the south side of Ullswater, Penrith, below Cross Fell, past the High Force in Teesdale, beyond which point the evidence fails.

(b) After a time, as the land slowly sank, the sea advanced farther and farther northward, and Cumberland subsided at a sufficiently rapid rate to allow of the extension of fairly deep and quite clear sea water over the greater part of the area. After that stage had been reached

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there set in a very long period during which the principal materials laid down upon the sea bottom were beds of limestone, all of them more or less of the nature of the various calcareous oozes which are in process of formation in the deeper recesses of the ocean at the present day. There is no proof of the existence of anything at all resembling coral reefs; although, as is well known, isolated groups of corals, all belonging to an extinct order, locally occurred in abundance. The general nature of the fossils found in these limestones suggests the presence of equable and moderately warm surface currents, which are usually favourable to the development of animal and vegetable organisms.

With the evidence we now possess it is not difficult to fill in a few details regarding the physical geography of the Cumberland area at this time. To begin with a feature about which a widespread misapprehension exists: There is not a particle of evidence to show that the present Lake district represents an old island in the seas of the period under notice. There was, it is true, the easterly ridge already referred to; but the subsidence of the sea bottom carried this below water at an early stage, and there is not a single fact that would indicate an area of even shallow water, let alone an island, which coincides with any part of the present Lake district. It will be shown presently that the Lake district as an upland area did not come into existence until Tertiary times. We have clear evidence of the delta of a great river, which represents the materials brought south-eastward from a land area somewhere to the north-west. As the land subsided the seaward edge of the delta receded in the direction of the continent. A study of the present distribution of the terrigenous deposits of this period (that is to say, the gravels, sands, and muds derived from the land, as distinguished from the limestones) shows that the axis of the delta lay far to the east of the area under notice. As a consequence we find the proportional thickness of the deposits from clear and quiet water to that of those deposits which have been mechanically transported from the land steadily increasing as we advance from east to west. This is true of the rocks belonging to the period under notice, not only in Cumberland, but also in most other parts of the kingdom as well.

To gain a clear conception of the sequence of events to which the Lower Carboniferous Rocks of Cumberland are due, the reader should endeavour to realize the effect of periodic subsidences of level alternating with periods when the land was stationary, or even subject to occasional oscillations of level. With a subsidence the clear water of the sea advances over an area where prior to that subsidence there stood the estuary lagoons and shallow seas of a delta, the waters of which were more or less turbid and laden with the materials wasted from the old land. While the land remained stationary the delta gradually pushed seaward and covered the deposits found in clear water with the sediments derived from the land. With oscillations of level, in which the net result of the movement is one of subsidence, alternations of deposits proper to clear water alternate with the clay, sand and gravel,

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and other terrigenous deposits from the land. If, further, this conception can be still more extended by realizing that the various deposits laid down under any given set of conditions formed a series of crescents one within another, in which the inner crescents are made of coarse materials transported from the land, and the outer ones of organico-chemical deposits laid down in the clear water of the sea, the reader may obtain a good generalized view of the sequence of events that arose during Carboniferous times in Cumberland.

It has already been stated that, while purely marine conditions prevailed in Cumberland and in the areas to the south-east, those not farther off than the south of Scotland were more or less of an estuarine nature. Furthermore, no traces of any kind of volcanic action occur in these rocks in Cumberland, although there is abundant and perfectly clear evidence of the existence of numerous small volcanoes in the northern area referred to. To put this statement into a more definite form : While a deep-sea limestone was in process of formation, say at Greystoke, deposits of fine mud were being laid down in the Bewcastle area, and volcanoes were in full activity in Dumfries and Roxburgh. Further north still, at the same period, there was land, upon which flourished a luxuriant vegetation, whose remains being drifted seaward, and becoming entombed in the terrigenous sediments, gave rise to much carbonaceous matter, which in extreme cases took the form of seams of oil-shale and beds of coal. It is the presence in deposits of the same age as that of the limestones of Greystoke Park of an abundance of these carbonaceous materials that has given rise to the name Carboniferous Limestone, which is applied to the rocks now under consideration. Around the head waters of the River Eden the aggregate thickness of this subdivision attains to fully 3,500 feet ; but as these rocks are traced towards the Solway, or in other words as they are traced from an area where they were found under deep-water conditions towards the part where the conditions on the whole were shallower, the limestones gradually become thinner, and are more and more divided by beds of shale and sandstone, until in the northern part of the county the aggregate thickness of the beds of limestone is barely one-tenth as much near the mouth of the Eden as it is near its source.

(c) The Carboniferous Limestone Series is locally divisible into a lower subdivision, to which the term Mountain Limestone is usually restricted, and an upper, the Yoredale Rocks. These two subdivisions, bracketed with the Lower Limestone Shales, form the Lower Carboniferous Rocks of geologists. In Cumberland the Carboniferous Limestone Series may be said to present three types. Of these we may take as one type that found in south-east Cumberland, which is much the same as that occurring throughout most of Westmorland and north-west Yorkshire. In its fullest development this consists of an almost undivided mass of pure grey marine limestone, locally exceeding 2,000 feet in thickness. Above this come the Yoredale Rocks, which consist essentially of a great mass of shale with interbedded sandstones and flag-

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stones, and with a few relatively thin beds of marine limestone, which are wonderfully persistent in character over a very large area. The total thickness of this subdivision ranges from 1,500 to 2,000 feet. These Yoredale Rocks are of great commercial importance in Cumberland, as being the chief repository of much of the hæmatite and nearly all the lead ores. Their details are therefore given more fully on pp. 27, 28.

The second type of Lower Carboniferous Rocks is found in north Cumberland, and is like that which characterizes these rocks throughout Northumberland, and indeed most of southern Scotland as well. In this type (which, of course, graduates into each of the others) the Mountain Limestone consists essentially of a thick pile of sandstones, with subordinate shales, and with a few thin and impure beds of limestone, which represent the landward edge of the thick pile of wedges of limestone found on the same horizon to the south-east. Putting this statement in another form, we may say that the thick mass of limestone found at the head of Edenside gradually gives place, bed by bed, to sandstones and shales as the rocks trend from south to north, the change affecting the limestones from below upwards, so that the lowest changes farthest south and the upper retains its character farthest north. In the north Cumberland type the Yoredale Rocks, on the other hand, retain their general character with very little change. These limestones, however, also show a tendency to split up and to pass into sandstones and shales, the lowest limestones changing first as they are traced from south to north, as in the case of the older group.

The third type is that occurring in west Cumberland. This development of the Lower Carboniferous Rocks is unlike the others in some important respects. The essential difference is due to the fact that the chief axis of the delta during Lower Carboniferous times lay far to the east of Cumberland. As a result of these conditions more sand and terrigenous materials of other kinds were deposited on the east side of Cumberland than over the area where the Lake district is now, where the water remained deeper and clearer. Hence the chief deposit laid down was thalassic and consisted mainly of beds of limestone. These, traced from east to west, gradually become thinner, the beds thinning away from below upwards, as in the other cases noted, but with this difference, that, in the present case, they are not replaced by sandstones or shales. The changes just described affect all the Mountain Limestone and the Yoredale Rocks as well. The result is that bed after bed of limestone, from below upwards, thins away as we advance from Penrith in the direction of Whitehaven, until nearly the whole of the Mountain Limestones have coalesced into one or two thin beds. The sandstones and shales of the Yoredale Rocks have likewise thinned in the same manner, so that at their westernmost exposure the limestones have nearly all come together, and now form one almost undivided mass. The so-called Mountain Limestone of west Cumberland is thus of Yoredale age—the underlying beds having thinned away

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entirely. It may not be out of place to mention here that the present writer determined this point in the early 'seventies,' and officially reported the foregoing conclusion to the Director of the Geological Survey in May, 1874.

As the Yoredale Rocks are of considerable commercial importance, some details regarding them are given here, as follows :—

The highest beds are stated first ; and the local names, as employed in Alston Moor and elsewhere, are given in square brackets :—

YORED ALE ROCKS

(1) Upper Section :—

Thickness about 500 feet, strata very persistent. The sandstones and shales are not subject to the westerly thinning that affects rocks of this kind which belong to the Lower Section :—

Sandstones and shales, with an important and very persistent coal seam [The Tanhill Seam] which ranges up to 4 feet in thickness.

Shales with [The Fell Top] Limestones.

Shale.

Limestone [The Crag Limestone of Alston = the Crow Limestone and Chert of Yorkshire].

Sandstone (with two or more coals, locally worked) [The Firestone, Ten Fathom Grit].

Shale.

Limestone [The Little Limestone = the Red Beds Limestone and Chert].

Coarse grits [The Coal Sills] with a very constant seam of coal [The Tindal Fell Seam] which ranges to 4 feet 6 inches, and is locally accompanied by other seams. These represent the Edge Coals of the Lothians (*vide* Gunn, *Trans. Geol. Soc. Edin.* vii. 367), the Lickar Coals of Northumberland, and shales and cherts.

The foregoing strata represent the lower part of the Whitehaven Coal Measures.

(2) Lower Section :—

Total thickness ranging from 500 feet on the west of Cumberland, to 1,200 on the east :—

Limestone [The Main, Twelve Fathom, Dryburn, or Great Limestone].

Coal, sandstone, shale.

[The Limestone Post = The Upper Undersett Limestone of north-west Yorkshire.]

Coarse Grit [The Quarry Hazel of Alston].

Shales, thinning westward.

Siliceous limestone (*i.e.* containing organic silica, and not *sand*) [The Four Fathom, Low Dean, or Lower Undersett Limestone].

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Sandstones and shales, thinning westward.

[The Three Yards, or Acre] Limestone, persistent.

Sandstones and shales, thinning westward [Six Fathom Hazel].

[The Five Yards, or Eelwell] Limestone, persistent.

Sandstone and shales, thinning westward.

[The Scar, the Middle or Fourth Sett Limestone], persistent.

The foregoing strata probably represent what has been called the 'Carboniferous Limestone' of Scotland.

Sandstones, persistent coal and shales, thinning westward.

Two thin, but very persistent, limestones [The Cockle-Shell Limestone, and Post Limestone].

Sandstones and shales, thinning westward [Tyne Bottom Plate].

[The Tyne Bottom, Simonstone, or Fifth Sett, Limestone], generally persistent, but somewhat thinner in north Cumberland.

Sandstones, shales, and some thin limestones, the two former thinning westward.

[The Hardra, Jew, Oxford, or Sixth Sett, Limestone], generally persistent, but becoming thinner towards the north-east.

Sandstones and shales, thinning westward of Cumberland, and thickening to the north-east.

[Top of the Mountain Limestone], whose calcareous members have been already referred to as thinning steadily toward the north-west, and as being replaced by the Fell Sandstones and the lower half of the Oil Shales of the so-called 'Calciferosus Sandstone Series,' as they trend towards the north and the north-east.

So far as the Lower Carboniferous Rocks are concerned, Cumberland may be regarded as the area within which there set in changes of a most important character from both a theoretical and an economic point of view.

Hardly anywhere else in the kingdom can there be found types so diverse as the almost purely thalassic limestone series of West Cumberland, the mixed estuarine, marine and volcanic types of the Borders, and the normal types of these rocks as developed in the south and south-east of the county. In comparing them as a whole with their chronological equivalents in Scotland, the salient points of contrast are between shallow-water and volcanic types on the north, with dominantly deep-water and non-volcanic types on the south.

(d) At the close of the Lower Carboniferous times there appears to have been a very general cessation of deposit over a large area in the northern parts of Britain, including Scotland. It may have coincided with a temporary, but very general, upheaval of the sea bottom, and with more or less removal of the sediments already laid down. This episode appears to have lasted a considerable time.

Next followed a second period of slow subsidence and consequent deposition, during which the so-called Millstone Grit and the true Coal Measures were laid down. Their history may be told in a few words ;

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for, although they undoubtedly represent a vast interval of time, the physical conditions under which they were formed varied but little from first to last. The evidence seems to show that there was still a great continental area to the north-west, from which rivers continued, as in former times, to transport the spoils of the land towards the south-east. But at no time throughout a period which must have been one of enormous length, did the land ever subside to an extent sufficient to admit of the deep sea. Sand and mud, and occasional beds of fine gravel, were gradually transported seaward, chiefly at the bottom of the rivers ; deposition nearly all the time being regulated by the subsidence. During those periods when a greater depression took place, very little mud found its way seaward, except such as was for a time held in suspension in the water, and which thereafter gently subsided to the bottom, usually in thin layers. In the deeper-water phases almost the only deposit laid down consisted of the finer remains of land vegetation, which, after drifting seawards, eventually became water-logged and quietly sank to the sea floor, there to form the materials out of which in time the chemical action set up by the sulphate of lime in the sea water gave rise to the hydrocarbon compounds which eventually consolidated as coal.

Pretty pictures, relating to Carboniferous times in Cumberland, have often been drawn, in which the primæval forests, from whose remains coal has been formed, have been represented as flourishing on old hills, whose remains are now supposed to be left in the Lake district. One would fain believe that these works of art were founded upon well-observed facts ; but, unfortunately, that is not the case. Woodlands there were, it is true, and we can easily conceive what both their broader features and their minor details must have been like ; but both the growing trees and the land upon which they are supposed to have arisen had no place anywhere near Cumberland.

A small patch of true Coal Measures, let down by a powerful fault, occurs in the upper part of the basin of the Eden at Argill, near Stainmoor. Small as the outlier is, it suffices to show that Coal Measures once extended over a much larger area, and were more fully developed, than had been supposed previous to the discovery of this outlier by the present writer in 1872. This outlier probably represents the only patch of true Coal Measures occurring anywhere in Britain to the north of Lancashire.

Coal seams, throughout the whole of the Carboniferous Rocks, set in one after another from above downwards, as the rocks are followed from south to north, and thick coals of good quality occur on various platforms in different parts. It is usual, and is, perhaps, advisable also, to designate *any* strata that yield coals of economic value 'Coal Measures.' Both the lowest beds of the Upper Carboniferous Rocks and the upper beds of the Lower Carboniferous yield valuable coal seams in Cumberland. It would prevent much confusion if this well-known fact were

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expressed by speaking of these productive beds as 'Coal Measures,' with some qualification connected with the locality where they occur. Thus we may speak of the Whitehaven Coal Measures, even though the beds in question may prove to be (as the present writer has long believed) of the same age as the Upper Yoredales and the Millstone Grit. In like manner we may speak of the Brampton Coal Measures, or the Newcastle Coal Measures, even though it may prove, as just stated, that no remnants of the true Coal Measures occur anywhere in Britain to the north of the tiny remnant before referred to as occurring in the basin of the Eden.

(e) *Organic Remains from Carboniferous Rocks.*—Just as the animals and plants of the Devonian Period mark a stage of organic evolution greatly in advance of that presented by Silurian life, so does the life of the Carboniferous Period, on the whole, surpass the Devonian. Probably the waters of the Carboniferous seas in the Cumberland area had a moderately high maximum temperature, and a minimum temperature but little below the mean. These are amongst the conditions most favourable for the development of animal life in the sea; and they are almost equally favourable for the growth of vegetation on the land. The chief organic advance was made by the Vertebrata, as some of the higher grades of fishes (probably the Dipnoi, the ancient representatives of the modern *Ceratodus*) gradually took to an amphibious mode of life, which in time led to the evolution of the Amphibia, from which parent stock first the Anomodontia, and then the true Reptiles and the Birds, as well as the Mammalia, eventually arose.

It is very interesting to note that several air-breathing Invertebrates, of forms not very distantly removed from those now living, had already come into existence in Carboniferous times. The Scorpions and the Galley Worms are especially noteworthy in this respect.

As for the vegetation, we have abundant evidence of what that was like, even though the remains are those of plants grown at a distance. No plants of grade quite as high as the true Conifers had yet arisen. The bulk of the forest growth consisted of gigantic plants of much lower grade than the firs, a large number of which were allied to the Club Mosses (especially to *Selaginella*). With these were others, distantly allied to the modern Equisetums. It is from the spores, and from the macerated leaves and vegetable tissues of these in general, that our coal seams have arisen.

(f) A computation of the time required for the formation of the Lower Carboniferous Rocks, estimated chiefly on the assumed rate of one foot in 25,000 years for the marine limestones, gives 62,000,000 years. To this has to be added the time required for the formation of the coal seams and the other rocks of Upper Carboniferous age, occurring in other parts of Britain, which is here set at 31,800,000 years. This gives a total of 93,800,000 years as the time required for the formation of the whole of the Carboniferous Rocks.

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NEOZOIC PERIOD

POST-PLIOCENE DEPOSITS : Peat, Alluvium, Raised Beaches, and the various deposits of Glacial origin.

Unconformity.

Dykes and Mineral Veins of TERTIARY age.

Unconformity.

TERTIARY CRETACEOUS rocks represented by scattered Chalk flints, etc.

Great Unconformity.

LIAS.

RHÆTIC ROCKS.

NEW RED ROCKS :

B. Keuper Marl.

St. Bees Sandstone.

Bunter Marl.

A. Magnesian Limestone and Plant Beds.

Penrith Sandstone and the Brockrams.

Great Unconformity.

VI. THE NEW RED SERIES.—(a) After the protracted period of subsidence and deposition, during which the Carboniferous Rocks were formed—a period which may well have extended over very many millions of years—the downward movement which prevailed during that period came to an end, and a movement in the opposite direction began. Just as in previous times the old Silurian sediments, after a protracted period of subsidence, were gradually crumpled and folded by earth creep, so that they were slowly squeezed up into mountain ranges and gradually wasted away ; so it was with the Carboniferous sediments at the period now under consideration. The evidence clearly points to the fact that part, at least, of the area which now forms the Lake district was one of the chief centres of upheavals at this early period. So, too, with part of the area of the southern uplands of Scotland. The old Carboniferous sediments, after being carried downward by subsidence miles below the sea level, and there gradually folded, were slowly upheaved, folded by lateral thrusts, and fractured and faulted as they arose. As the masses slowly and quietly emerged and were elevated into uplands, atmospheric waste favoured the removal of the rock material, just as it had done with the predecessors of these rocks on the same spot in times previous. And just as in former times the rate of upheaval in the earlier stages of movement kept slightly ahead of the rate of waste, so the newly-exposed land gradually increased in elevation, and Cumberland found itself farther and farther removed from the sea, and therefore from the main source of rain. Hence, after a long transition period, desert conditions again set in. The change of conditions was a very gradual one, so that many wadies were gradually shaped by the streams before the period when the rainfall reached its minimum. In later times these old valleys, or wadies, were gradually filled up by the waste of the rocks of which their sides were formed. It may be repeated here that, under continental conditions, where the air generally contains a smaller percentage of aqueous vapour than usual, the sun's heat exercises a much more powerful influence by day, because the temperature of its rays near the earth has not been lowered by a passage through the moist aerial screen. In like

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manner, the same envelope of aqueous vapour which acts as a sunshade during the day, acts equally as a blanket by night, by checking the radiation from the earth. Therefore, where there is but little aqueous vapour present in the air, the rocks exposed to the sun very soon become hot during the day, and cool down with equal rapidity during the night. Hence the difference between the daily maximum temperature and the nightly minimum is much greater in an arid than in a humid district. As a consequence of a great diurnal range of temperature, rocks expand greatly during the heat of the day, and contract to an equal extent during the cold of the night. Hence they crack under these conditions and fly to splinters in a manner and to an extent both very different from what we are accustomed to meet with in more humid climates. Moreover, in an arid region *wind* comes into action to a much greater extent than water, from which cause the character of the rock fragments is different in many important respects from those found in sedimentary rocks of the ordinary type.

(b) The history of the events that ensued is much as follows : First there set in continental conditions, with the land rising locally at a faster rate than it was wasted by denudation. In the earlier part of the period there was a moderate rainfall, so that river-courses were shaped on the flanks of the uplands much as they are shaped here now. With a further uprise of the land, and a consequent recession of the sea margin to a still greater distance, the average quantity of aqueous vapour in the atmosphere steadily decreased, and the rainfall therefore became very irregular. The total quantity per annum must have been small in amount, and perhaps rarely exceeding ten inches, and most even of that was precipitated in connection with the torrential rain accompanying thunderstorms. The waste of the rocks took place chiefly through the strains set up by the rapid expansions and contractions arising from the great diurnal range of temperature. In other words, the rocks were splintered, shattered, and broken up by mechanical causes instead of being, as they are here now, mainly decomposed by chemical means. As the volume of the streams diminished with the rainfall, so that their channels remained dry except during heavy rain, there was little or none of that rounding which characterizes river gravel in general. Each rock fragment, as it split up into smaller and smaller pieces, remained angular from first almost to last, and most of the material detached from the rocks at the sides of the valleys remained as scree until a violent flood shifted them in great masses to the low ground. As the fragments split up the finer chips were driven by the wind against each other, or used in the natural sand blasts by which rock erosion was partly accomplished, until the chips were reduced to the finest dust. In this state they served to load the atmosphere with fine particles, which occasionally gathered into clouds and were then blown far and wide as desert dust. The more durable rock materials, chiefly quartz, which long resisted reduction in size, were blown to and fro by the wind so that the grains became worn by attrition against each other and eventually assumed that rounded form

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which only the grains of desert sand ever take, and which at once serves to distinguish grains of sand so formed from similar grains worn by moving waters. The prolonged action of the wind acting upon large bodies of sand served eventually to pile the sand into great dunes, whose long axes in Cumberland ran north and south (as if their form were determined by the earth's rotation) and whose steeper sides faced to the west. It is these old desert sand-dunes which now form the Penrith Sandstone, to be referred to in more detail presently.

(c) With an irregular rainfall, small in total amount, there could be but little vegetation, and what little there was must have consisted of those species which had gradually adapted themselves to the arid conditions. Their nature is unknown, for no traces of them have been met with in the old sand-dunes; but all analogy would seem to point to their being hard, thick-leaved and scrubby, with long roots adapted for extension far down into what little damp soil they found. Probably many of them were armed with thorns, to enable them to hold their own against the few animals who were driven to use them as food.

Animal life is always directly or indirectly dependent upon vegetation, so that desert conditions have sometimes been defined as those which are unsuitable for carnivorous animals. Hence, whatever may have been the case in those parts of the world where humid conditions obtained, we may take it for granted that the only terrestrial forms of vertebrate life were those of animals whose structure enabled them to stand long droughts, and to travel easily from one part of the desert to the other where there happened to be suitable feeding-ground for the time being. So far as we can form an opinion from the only vestiges that are left, which are almost exclusively spoors of one kind or another, the animals in question were chiefly reptiles. If we may judge by the variety of these footprints, the animals must have been very diverse in form and size. Some appear to have been squat and thick, with perhaps the form of tortoises. Others were more slender, and may well have been crocodilian in form. Others, again—and these probably represented some of the most advanced forms—were reptiles of kangaroo-like shape, with long and stiff tails, and with the hind limbs bigger than the fore, from which we may conclude that they occasionally progressed by the hind limbs alone. The zoological grade of some of these appears to have been intermediate between some low vertebrate form with affinities not far removed from the Amphibia, and another belonging to the ancestral stock of the Mammalia, of a structural type not far removed from that of the Echidna and the duck mole of Australia of to-day. Many of the Reptiles of this period belong to the Anomodontia, whose structural characters place them in the systematic position referred to. These Reptiles are regarded as modifications derived from an Amphibian stock, which, in the course of long ages, and as a consequence of a gradual change in physical conditions, became adapted to a life exclusively upon land. Of mammals and birds there is no trace, and there is reason to believe that they had not yet come into existence.

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It should be again mentioned here that the land surface upon which the old scree and desert sands were laid down was very irregular. One of the chief depressions lay between where Appleby and Armathwaite are now—though the reader must guard himself against supposing that the depression referred to bore the slightest relation to the inequalities of the present surface. It was on the eastern slopes of this hollow that the chief deposit of the old scree took place. It is this which now forms the Brockrams of Edenside and Whitehaven. In the deeper part of the hollow little else than wind-blown sands were swept, and it is from these that, as already mentioned, the Penrith Sandstone has been formed. The depression must have exceeded 1,200 feet in depth.

(d) Some time after this hollow had been nearly filled up by the old scree and desert sands, one of the great terrestrial undulations to which the elevations and depressions of the land are due gradually reached the site of Cumberland. The sea gradually approached, the climate ameliorated, rain fell regularly, and vegetation of a different kind, chiefly allied to the Cycads and some primitive types of Conifers, began to spring up. Under these conditions the character of the strata that were deposited changed by slow degrees, and sandstones and clays of almost normal character were laid down. It is these which form the well-known Plant Beds, which, although best developed near Appleby, are also found within the Cumberland boundary (*Desert Conditions*, p. 218).

(e) As the wave of depression slowly passed over the land, the sea once more gained admittance. It was probably never very deep here under these conditions, but to the east its depth was greater, and a thick mass of limestone, which was originally not very different in its character from the Mountain Limestone, was gradually formed. The fossils it contains inform us that the descendants of the Invertebrate animals which peopled the Carboniferous seas had not changed very much from the form of their ancestors. Some had died out, and some new forms had come in from other areas; but as most of them consist of lowly forms of life, which are least prone to change, the assemblage as a whole reminds one very much of what we meet with in the limestone which preceded it. This later limestone is called the Magnesian Limestone. In the upper part of the basin of the Eden it is about thirty feet thick, but that thickness lessens as we trace it north-westward, and in many places in Cumberland it may never have been deposited at all. It is well seen on the shore south of Whitehaven, where it yields fossils which tell us plainly of its marine origin.

North Cumberland was apparently not submerged at this period, so that it is more than likely that some of the strange uncouth reptilians may have wandered there on the seaward margin of the old land, while marine animals were living in the sea only a few miles further south.

If we measure geological episodes by centuries, the period required for the formation of the Magnesian Limestone must have been one of great length, for there is little reason for regarding it as having been

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formed at a much greater rate than any other limestone, and it is fully 550 feet in thickness on the eastern side of England.

Another phase of the terrestrial undulations finally reached Britain soon after the Magnesian Limestone had been formed. It would seem, judging by the evidence, that this undulation at first took the form of a local upheaval, sufficient in amount to elevate the lately-formed rocks into land; and it endured long enough to permit of a certain amount of waste and subsequent removal of the strata.

(f) Then came another phase of the undulation, the effect of which appears to have been to further elevate the land—perhaps only to a small vertical extent—over a large area of western Europe. The sea margin, in an easterly direction at any rate, had now receded several hundreds of miles; and we find instead of marine conditions, one or more great and shallow inland lakes, the strata formed in which show unmistakable evidence of a return of the desert conditions which had characterized the period before that of the Magnesian Limestone. The Cumberland lake received its waters, in small quantities at a time, from the adjacent mountain areas, some of which may have coincided with part of the present southern uplands of Scotland. There were certainly hills near where Moffat is now, and so there were in Galloway. Criffel is known to have formed part of an upland area at this time, for we have the old screes and wady deposits of this period left, even yet, in many places in that part of Galloway. This lake must have been comparable, in many respects, to the Salt Lake of to-day, and to many others of the same type as those existing in central Asia. It certainly extended eastward from Cumberland, past Middlesborough; and the same lake, or others of the same kind contemporaneous with it, existed in North Germany, and even Russia. Westward, it extended at least as far as the north of Ireland. It had no outlet, and the whole of the water carried into it by the few streams by which it was fed was dissipated by evaporation. Hence the various substances carried in solution into the lakes gradually accumulated, and eventually separated out in the crystalline form, when their respective points of saturation were reached. Amongst these substances were carbonate of iron (subsequently consolidating as hæmatite) carbonate of magnesia, sulphate of lime (which consolidated as gypsum) chloride of sodium (common salt) and other compounds of lesser importance in the present connection. It is to this episode that we owe our chief deposits of hæmatite and manganese; and it is likewise to the infiltrations from the bottom of this old lake that we owe the widespread staining of Carboniferous and older rocks of Cumberland, and also the conversion of many of the limestones of that county into dolomite. The rocks formed under the conditions described are the Bunter Marl, which is about 250 feet thick on the average.

(g) After a long time the lake gradually became shallower, and instead of deposits of clay, beds of sand, alternating with beds of marl, were formed. This sand, afterwards consolidated into the sandstone which is known to us as the Corby Sandstone, St. Bees Sandstone, or

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Bunter Sandstone, differs from the Penrith Sandstone not only in having been laid down almost entirely by water (instead of being deposited by the wind as desert sand-hills), but its general aspect is different in many respects, amongst which may be mentioned that it always contains flakes of mica, which is entirely absent from the Penrith Sandstone. It almost certainly overspread the whole of Cumberland and the greater part of Britain, as well as a large part of western Europe.

The few organic remains tell us of the former presence of reptiles more or less like those whose footprints occur in the Penrith Sandstone. Evidently these animals also were very varied in both form and size; and it is quite clear from the footprints they have left that they often wandered over the half-dried mud or waded in the shallows of the old lakes, where somehow they managed to pick up a scanty subsistence. Probably they were attracted to the shallows by the chance of meeting with more succulent vegetation than was to be found on the drier parts of the land. Some of them may have been carnivorous, but as we have only the footprints to judge by we cannot be at all sure upon this point.

The St. Bees Sandstone, where fully developed, measures about 1,800 feet, but it is only in a few places that anything like the original thickness has survived the many subsequent periods of denudation.

(b) During the later part of the episode just noticed, the evidence seems to show that the old lakes were often completely dried up, and then the wind piled up sandhills, just as it did before. Soon after that it appears that there was again a somewhat abrupt lowering of the land, and a temporary return to more humid climatal conditions. Then followed a repetition of the conditions under which the Bunter Marl was formed, with the formation of rock-salt, gypsum, and dolomite, as before. It was under these conditions that the Keuper Marls were formed. The lower beds of these are well seen at Stanwix. They reach a thickness of a little over 900 feet west of Carlisle, and between that and 1,000 feet appears to be their normal thickness all over Britain. It is in the Keuper Marl that most of the Midland rock-salt and gypsum occurs.

(i) The rocks which were formed during the great continental phase above described are now usually referred to collectively as the New Red. The earlier-formed part may be conveniently classed as the Lower New Red, which comprises the Penrith Sandstone and its associated breccias or 'brockrams,' and the Plant Beds, and next above them the Magnesian Limestone. These three subdivisions are frequently referred to collectively under the name of Dyas, though the older name just mentioned is better in many respects. The term 'Permian,' at one time used for them, is unsuitable for many reasons, and many geologists are agreed that it had better be dropped.

The whole of the Red Rocks above the Magnesian Limestone are best referred to under their old name of Upper New Red, a more suitable term than Trias. Their subdivisions are, at the base the Bunter Marl, next above that the St. Bees Sandstone, at the top of all the Keuper

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Marl. The aggregate thickness of the Upper New Red (Trias), in Cumberland, exceeds 3,000 feet.

The present author, taking into account the full extent of the unconformity at the base of the New Red, and adding to it the time implied by that needed for the formation of the *marine* types of the rocks of the same age deposited elsewhere, has estimated their time value at 132,000,000 years.

Forms of Life associated with the New Red.—Attention has been specially called to the evidence of a period of enormous length which intervened between the close of Carboniferous times and the commencement of the conditions under which the New Red was formed. Little wonder, when the length of this interval is taken into consideration, that vast and important changes had been gradually brought about in the meantime. In general terms, these were the extinction of most of the older forms of life which characterized the foregoing period, and the evidence of which ancient forms of life in these rocks led geologists to refer to the groups as the Palæozoic group. Now that we know more about these matters it is found desirable to subdivide the rocks in question, and to refer to all, from the lowest Skiddaw Slate to the highest Silurians, as the Proterozoic Group, and all the remainder, to the base of the New Red, as the Deuterozoic. With the advent of the New Red we find evidences of a commencement of the present order of beings, whence the name Neozoic, first used by Edward Forbes, is now often applied to all the rocks newer than the Carboniferous.

Regarding the Cumberland New Red, almost the only traces of animal life are simply the footprints of a great variety of air-breathing vertebrates, which waded in the shallows of the old lake, or wandered amongst the desert sandhills. Evidence obtained outside of Cumberland assures us of the fact that a large proportion of these animals were reptilian, although amphibia may well have been present too. In the Penrith Sandstone, as already mentioned, the old desert sandhills, now hardened into stone, frequently show the spoors of the old kangaroo-like reptiles of this period. A very interesting set of them was collected some years ago by Mr. Geo. V. Smith, F.G.S., and his brother and sister, from quarries near Edenhall. Other similar remains occur now and then on slabs of the St. Bees Sandstone, from which rock, near Dumfries, the late Sir William Jardine collected a fine series, which were figured in *The Ichnology of Annandale*, and are now in the Edinburgh Museum of Science and Art.

The vegetation of the New Red makes a nearer approach to that of Australia than to existing European types at the present day, and is distinctly of a much higher grade than the flora of the Carboniferous Period.

(j) A remarkable and well-known sheet or sill of dolerite, the Whin Sill, traverses the Carboniferous Rocks in the district immediately to the north-east of the Pennine Fault. It formed the subject of an important paper by Mr. Clough, of the Geological Survey, in which

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that author called attention to the fact that where this rock occurred an equivalent thickness of sedimentary rock was missing. Mr. Clough explained this as due to the assimilation of the sedimentary rock by the magma from which the Whin Sill was derived. Mr. Clough's views were too advanced to meet with acceptance at the time, though the case is different now.

The present author has put forward a modification of Mr. Clough's view, in which it is suggested that the Whin Sill (as well as every other eruptive rock) owes its origin to the slow solution of pre-existent rocks by heated waters containing alkalies, and the subsequent crystallization of the new compound when the temperature fell and the aqueous solvent escaped.

Beyond the fact that the Whin Sill is of later date than some of the disturbances which affect the Carboniferous rocks, its age is unknown. But it may be contemporaneous with the volcanic rocks of New Red age in Scotland.

VII. RHÆTIC BEDS.—Near the close of the New Red Period the subsidence to which reference has been made was continued until it eventually carried the surface nearer and nearer to the sea level; consequently the desert conditions came to an end and have not affected Britain since. The change was a very gradual one, extending over a period of very great length, as is shown by the vast and important changes which took place on the continent in the meantime. In Britain these changes gave rise to a set of rocks very similar in many respects to those which were formed at a previous period, when the desert conditions which prevailed when the Old Red Sandstone was formed were gradually giving way before the humid conditions which characterized Carboniferous times. The strata formed at the period now under notice probably extended far and wide over western Europe. In Cumberland they may be represented only by a small patch, which has survived denudation, and occurs at Orton, west of Carlisle, it alone having been left between Arran and the midland counties of England. The strata usually consist, in their lower parts, of reddish and greenish clays with cornstones, and in their upper parts of dark shales. The total thickness in Britain nowhere much exceeds 100 feet. On the Continent strata of the same age range to several thousand feet, including important masses of limestone, chiefly formed by the agency of plants (*Algæ*).

VIII. JURASSIC ROCKS.—With the commencement of the subsidence which ushered in the Rhætic period there set in a repetition of conditions very similar to those which prevailed during Carboniferous times. The Lias and Oolites everywhere succeed the New Red, so that where the one occurs, or can be proved to have existed, there also was the other. This is another way of stating the fact that not only the New Red extended continuously across the whole of what is now Cumberland, but that the whole district was formerly buried also beneath a great pile of the Lias and the Oolite. Of this vast accumulation all that is left now is a tiny patch at Orton, west of Carlisle, which is shown upon the

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map accompanying this article. All that need be referred to here regarding it is that it was a period of sufficient length to permit of numerous and important changes in both the organic and the inorganic worlds.

IX. CRETACEOUS PERIOD.—In most other parts of the kingdom, and indeed over a much wider area still, a prolonged period of upheaval followed the deposition of the Jurassic Rocks, and was accompanied and followed by a considerable amount of waste. This denudation, in the course of a very long time, ended by reducing the land surface over an extensive area in western Europe into a very level plain. Then the land once more sank beneath deep water, and the Cretaceous Rocks, including the Chalk, were deposited upon this level floor over the whole area. The present writer has long maintained that Cumberland participated in these changes, as much as other parts of Britain, and that the whole district was formerly covered by these interesting rocks, which of course have since entirely disappeared, as a consequence of upheaval and denudation in times later still. The only vestiges left are the remnants of the plain upon which the Cretaceous Rocks once lay, and also by here and there a few chalk flints. But the plain is an important feature in the scenery of the county.

For the vast and important biological and physical changes which took place between the close of New Red times and the commencement of the Tertiary Period it is here estimated that a length of 104,000,000 of years was required.

X. POST-CRETACEOUS CHANGES.—Few, if any, of the hills and valleys of Cumberland date farther back than Post-Cretaceous times. The history of their development will be more fully discussed presently. But in the meantime we have to take note of the fact that a very long interval of time (which the present writer would roughly estimate at 93,000,000 of years) separates the close of the Cretaceous Period from our own day. Many and very important changes in physical geography have taken place in the meantime, while in the organic world many generations of plants and animals, quite different from any now living, have come into being, and finally disappeared. The very materials out of which are formed large parts of great mountain masses, like the Alps, the Pyrenees, the Andes, and the Himalayas, had not come into existence in the earlier part of the period, and since it commenced several oceanic areas and continents have more than once changed places.

(a) The principal episode with which we are most concerned in reviewing this part of the historical geology of Cumberland is connected with the vast and important development of volcanic action in the north-western part of the United Kingdom, and which has left its mark in Cumberland as well as in the districts around. Those events may be summarized in a few lines: Long prior to the first rough shaping of any of the great natural features now existing in Cumberland, a series of volcanic vents, ranging in a northerly direction, broke out on the western side of the British Isles. This may well have happened

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at an early period of a general upheaval, and may also have been connected with the same cause to which that upheaval was due. There is no reason for thinking that any of the volcanoes themselves were reared on the area under notice ; but some of the fluid rock connected with these volcanoes ate its way upward and outward from the principal foci, and has consolidated in the form of dykes, and perhaps also in the form of sills or sheets of eruptive rock in a few places.¹ The later phases of volcanic action coincided with a general disturbance and upheaval of the greater part of Britain, and it was probably at or about this time that the principal upland areas of Cumberland—the *massifs* of the Lake district and Cross Fell—were elevated into nearly their present position. It was during the same period that the great Outer Pennine Fault, and some other lines of dislocation not so well known, received their last great uplift. The effect in the case of the Outer Pennine Fault may have been that Carboniferous Rocks surmounted by New Red were elevated on the north-east side of the Fault, and brought into horizontal contact with Cretaceous Rocks lying on New Red on the south-east. There are many reasons for thinking that the volcanic episode was one of great length, and that, during this prolonged period, the present river-courses were established for the first time. This subject will be reverted to further on.

At the close of the volcanic period, after the surface had been shaped by prolonged exposure to the action of rain and rivers into something like its present form, hot springs arose through the faults and other fissures, and from these heated waters were deposited the contents of such mineral veins as those of the Alston Moor district. Possibly the last filling of the mineral veins of the Caldbeck Fells, and of some others in the Lake district, may date from this period, though there are grounds for thinking that, as a whole, the latter veins are of older date than those of Alston, and may have originated as far back as New Red times. It should be noted that the valuable deposits of Hæmatite which have made west Cumberland what it is, date also from New Red times. All the known British deposits of Hæmatite date from this period, and nearly all of them are due to the slow replacement of pre-existent calcareous matter by ferric oxide. Such, too, is the date and mode of origin of much of the manganese. The ores of lead, zinc and copper appear to be in all cases deposits from hot springs, and have arisen from below, instead of descending from above, as the Hæmatite has.

(b) The behaviour of such dykes as the Cleveland Dyke, which is a remarkable vertical sheet of basalt, which crosses from east Yorkshire, through Teesdale, across the Eden at Armathwaite, and the Calda, or Caldew, at Dalston, and the Solway west of Dumfries, suggests that when this dyke was intruded some of the broadest features of Cumberland had already begun to assume a little of their present form. The behaviour

¹ The exact age of the Whin Sill of Cumberland is not yet known : it *may be* of Tertiary age.

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of the lead veins also is very similar in this respect. The upper limits of both the dyke and the metalliferous veins roughly conform to the broad outlines of the present surface, as if the downflow of cold waters from the surface had checked the upward growth of the dyke, and had also cooled the hot springs, so that both the dyke and the mineral vein terminated upward at a lower level where there were depressions of the surface than where there were elevations. It is remarkable that this does not apply to the low ground of Edenside; but the conformation of the surface there may well have been of more recent formation, and the depression may be due to the more rapid waste of the Cretaceous Rocks there faulted in, as compared with the surrounding rocks, which are of a more durable kind.

(c) It was probably during late Tertiary times that the last upheaval along the Pennine Faults took place. Attention has more than once before been directed to the fact that this zone of weakness is one along which differential uplifts have been many times repeated—the earliest movements probably dating back to the period following the close of Silurian times.

(d) Taking the aggregate thickness of all the marine limestones that have been formed since the close of the Cretaceous Period, and assuming that these have been formed at the rate of one foot in 25,000 years, the duration of the Tertiary Period down to the commencement of the Nival Period, or Age of Snow, may have been about 93,000,000 years.

XI. THE SURFACE-RELIEF OF CUMBERLAND.—(a) It has often been remarked that a right understanding of the various stages by which the surface-relief of any district has been reached involves reference to the whole of the later geological changes which that district has undergone. It also requires, especially, that we should know much concerning the developmental history of its rivers. This will be found to be true of Cumberland more perhaps than of any other county in the kingdom.

The subject is, therefore, one that would need considerable space for its full consideration; but it may be possible to give a general idea of the essential points even within the limits of a short article like the present.

(b) The first principle to be borne in mind is that rivers of all kinds and of all countries have themselves shaped the valleys in which they flow. That is to say, no valleys, whether in Cumberland or elsewhere, are due to the mechanical severance of the rocks of which their valley-sides consist. Nor are they due to violent or sudden action of any kind soever. None of them, again, are the work of the sea. They are, one and all, simply depressions produced by the quiet and slow removal of rock-material by the gentle and prolonged action of rain and rivers. The chemical action set up by the acids in surface waters—especially by the humus acids—and by the oxygen in the atmosphere, have been amongst the most potent agents concerned; and they have had, as auxiliaries in the work, the effects of heat and cold, the

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mechanical action of wind and rain, and a host of minor causes, each taking its own share in the work of destroying the outer part of the rock surface. The function of the rivers is mainly that of carriers of the materials rotted from the surface of the land ; but they, too, exercise a certain amount of erosive power, and co-operate with the allied forces in the general work of lowering the surface. It is easy to realize the true function of a river if any one will observe the quantity of mud being carried seawards by the Eden at Carlisle after heavy rain in the upper part of the valley. All that mud being carried past by the river was, not so long ago, solid rock *in situ*. It has been rotted by the action of the weather, and now it has been stripped off that surface of the land, which is therefore lowered by the amount represented by the quantity held in suspension by the river. Small as that quantity may appear, one has to remember that the process of stripping off the surface of the rock is going on continually, and has been doing so, on the surface of what was land for the time being, from the earliest period known. It is solely to the prolonged continuance of this process that the carving of the valleys is due.

The next general principle to be borne in mind is that no two sorts of rock yield to the same kind of attack quite at the same rate. Some appear capable of withstanding exposure for very long periods without seeming to be any the worse, while others waste appreciably in the course of a single lifetime. It is this differential rate of decay which is the chief factor concerned in producing even some of the larger physical features of the landscape. All rocks waste more or less ; but the rock that wastes at the most rapid rate will be the first to be lowered to sea level ; while the more durable rocks, whose surface is being lowered at a slower rate, soon attain to a relatively higher level, and are very much longer in wasting to the level of the sea than the rock which when first exposed stood up with them.

Lastly, the reader must endeavour to realize that the processes to which the configuration of a country is due are by no means rapid in their operation ; but that, on the contrary, they act in general quietly, gently, and usually at rates so slow as to be imperceptible. We have to deal with effects that have been produced not within a century, or within a thousand centuries, but which have required periods of time too long for the human intellect to comprehend, and the immensity of whose length can only be compared to the almost infinite intervals of space with which the astronomer has to deal.

(c) Leaving general principles, we may now pass on to consider their application to the district under notice : The reader of the foregoing section of this article will have noted that there have been three (or more) great piles of rock laid in succession one on another, upon what one may term the 'foundation stones' of the rocks of Cumberland. For the present we must dismiss the present configuration entirely from our minds, and try to realize that there was at one time an extensive plain, formed by the edges of a vast thickness of Cambrian, Ordovician

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and Silurian rocks, which extended far and wide, and far beyond the limits of the county. The rocks forming this great floor are very hard and durable, taken as a whole. It was upon this nearly-level foundation that (after many changes had arisen) the Upper Old Red Sandstone and the Carboniferous Rocks were spread out, layer upon layer, to a thickness of many thousands of feet. The general relation of the lower portion of these rocks to the floor beneath at the stage under consideration is illustrated by fig. 1. In this the general lie of the old rocks is shown, and the relationship of the granite masses, as well as the hypothetical remains of the Caledonian Old Red, to the older sediments is also indicated in a diagrammatic way. As a whole the Carboniferous Rocks are less durable than the rocks beneath. The former may waste, say, five feet in a given time, during which the latter may waste three.

Now it is important to remember that after the close of the Carboniferous Period the whole pile, floor and all, was folded and fractured. A great centre of upfolding coincided with the present Lake district; and the upward movement over that centre was carried to such an extent that the old floor was there lifted to a higher level than the top of the Carboniferous Rocks in the district to the east. Moreover the great zone of fracture and disturbance, known collectively as the Pennine Faults, already in existence as a zone of weakness, gave way once again, and the rocks on the north-east side of this zone were elevated to a higher position than those on the side opposite. While these movements were in progress denudation continually attacked the rocks on the higher ground, so that after an exposure for a great length of time the whole of the Carboniferous Rocks were worn away from the summit of the dome, and much of them from the other zone of elevation on the east side of the Pennine Faults.

It was upon an irregular surface formed out of the associated Cambrian, Ordovician, Silurian, Devonian and Carboniferous strata, all more or less disturbed, that the New Red Rocks in their turn were afterwards spread out. Fig. 2 may help to make this relationship more clear, especially if it be studied in connection with fig. 1. The section is arranged to show that at least the higher members of the New Red formerly extended right over what is now the Lake district, as well as across the Pennine Faults, on to the area which now forms the Cross Fell uplands.

To understand what ensued it may be as well if we agree to refer to the two floors just mentioned by definite names. The older one we may call 'the First Plain'—for although in minor details the surface was uneven, yet regarded broadly its nature was more or less as much a plain as most submarine surfaces around the British Isles are now. For the surface, more or less irregular, upon which the New Red was deposited, we may also employ the term 'plain,' and refer to the floor below the New Red as 'the Second Plain.'

After the close of the period which commenced with the formation

FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

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of the New Red and ended with the Neocomian (the Lower Neozoic Period) there was a repetition of the folding and faulting along the same tracts of Cumberland as before ; so that the Lake district dome, and the country east of the Pennine Faults were again elevated, and the lately-deposited strata removed from these areas just as was the case in former times. The whole of Cumberland (and indeed the whole of Britain and much of western Europe as well) underwent denudation to such an extent that a Third Plain, much more uniform in character than the other two, was gradually shaped. It is important to remember that over the Lake district this plain was shaped out of the edges of highly-inclined Cambrian, Ordovician and Silurian rocks ; and that around the Lake district and east of the Pennine Faults it was carved mainly out of rocks of Carboniferous age, just as the Second Plain was, while the remaining part consisted of New Red with some few outlying remnants of the Jurassic Rocks which had escaped destruction. This relationship is illustrated by fig. 3.

Now it was upon this very even Third Plain that the Cretaceous and succeeding rocks were laid down.

(*d*) Finally, in Tertiary times, and perhaps all through the great volcanic episode, there went on a renewal of the upheaval over the same zone as before. Now it was upon this surface, formed mainly of Tertiary and Cretaceous rocks, that the rivers of Cumberland first originated. There are many facts, which the present author has discussed elsewhere, which seem to point to the conclusion that the chief Post-Cretaceous uplands did not quite coincide with the areas which stand highest now. The behaviour of many of the rivers of north-western England seems to point to their original starting-point having lain at a spot a short distance south of where the town of Appleby is now. At the period under consideration the great depression of Edenside was covered by some Post-Triassic rock, whose upper surface stood at a relatively higher level than the rocks around. On the assumption that such was the case, it is not difficult to explain the anomalous features presented by the head waters of the Tees, the Tyne, the Lune, the Eden, the Swale and others, if we assume that they all originally started seaward from an ellipsoidal area composed of rocks softer than those which now appear at the surface. Their courses seem to have been first established in this, and then to have been modified by the unequal rate of lowering of the various surfaces upon which their courses descended in subsequent times. The idea involves many complications, and it may require much thinking over before it can be fully grasped. But a study of the diagram-sections (figs. 1 to 4) may help to make the supposed sequence of events clearer. The longer axis of the ellipsoidal area above referred to, or, in other words, the primitive watershed of the Lake district, may have coincided in position with Grasmere, High Street, Crosby Ravensworth, Warcop and the head of Lunedale.

(*e*) The elevation of this ellipsoidal area into land commenced (it is here assumed) in early Post-Cretaceous times, and the rivers began

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to flow at first over rock of uniform composition at an early stage in the process of elevation. As the land gently rose and a larger area was exposed, the streams enlarged their channels, and probably maintained their original courses without any important deviations all through the period while the channels lay exclusively through the uppermost rock. By degrees, as the upheaval slowly proceeded, and the waste of the surface went on, the outer coating (if one may so express it) of the dome, was worn through, and the head waters of the rivers flowed seawards across rocks of quite a different kind from that in which their channels commenced. For, assuming that the outer envelope consisted of Cretaceous Rocks, it has been shown that these lay upon a floor consisting of the denuded ends of various strata which comprised rocks of the most diverse powers of resistance to subaerial denudation. These embraced representatives of nearly the whole of the Pre-Cretaceous rocks of Cumberland. In some few cases the efforts of the river to maintain its primitive course were more or less successful, and where that was the case the streams made their way across every rock, durable or not durable, that their channels happened to intersect. In many instances the rivers continued to cope with and to overcome all the difficulties, one after another, that arose in their way, and succeeded in maintaining their original courses without much change. In all cases of that kind the erosive power of the river in carving its own channel has exceeded that of ordinary atmospheric waste in lowering the surface adjoining the river channels. As a rule this is so ; in other words, a river usually lowers the torrential part of its channel faster than subaerial erosion lowers any adjoining part of its basin. In a few cases the two processes go on side by side and at nearly equal rates. In some exceptional instances a part of the basin of a river adjacent to its channel may be lowered by subaerial erosion at a faster rate than the river lowers the adjoining part of the channel itself. Sooner or later this results in a diversion of the stream into the new course, which the river unavoidably follows as far as the new channel offers the easiest route seawards.

This factor in the evolution of land surfaces has brought about many important changes in the initial direction of rivers in Cumberland, as elsewhere ; and is answerable for many of the inosculating valleys which characterize so much of the scenery.

Another case of a nature analogous to the last, and which has led to many important modifications of the river-courses in the Lake district, may next be considered. It has frequently happened that a sheet of soft rock laid down upon a floor of hard has been bent by earth movements into a dome. If we think of the inner mass as the *core* of the dome, it may help to simplify the description that follows. A river-course well established in the envelope of softer rock, cuts its way after a time down to the core. Where the difference in destructibility of the outer mantle is much greater than that of the core (as where a mantle of soft limestones enwraps a core of tough greywacke), the river gradually tends to wander away from its primary course, and as the extent of exposure of

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the core increases, the river-course by degrees merges into line with the junction between the inner and the outer rock. Indeed it may finally take a very different course from what it had on first reaching the enveloping rock. The Lune between Ravenstonedale and Tebay and the upper waters of the Lowther affords good examples of these modifications. Both began to flow at a very much higher geological horizon, and in rocks which have long since wasted entirely away. Both have cut their way down into a complex mass of rocks whose weakest directions lie transverse to the original course of the stream. Hence the present trunk stream of the Lune, which at one time rose on a tributary of that river over the summit of the Howgill Fells and flowed westward, just on the north side of the line of highest ground there, has gradually followed the edge of the Mountain Limestone down hill, as the envelope consisting of this rock has gradually wasted from the hard, dome-shaped core of greywacke. This explains how it happens that the river flowing westward through low ground on the north side of the axis of the Lake district abruptly turns to the south at Tebay, and thence cuts its way right across a mountain mass, consisting of some of the toughest rocks in the kingdom, to the low ground beyond, and flows past Kirkby Lonsdale to the sea.

As this example is typical, and its comprehension involves a reference to the mode of attack of rivers in all cases of this kind, a brief explanation of the process may be given here: River valleys are wide where the waste by atmospheric agencies keeps ahead of the rate at which the river cuts down its channel; and they are narrow where the reverse is the case. That is to say a river-channel is usually narrow where the stream traverses hard rocks, and wide where it crosses soft. Now a river flows at a slower rate through a wide channel than through one that is narrow. The Eden for example quietly, almost lazily, eddies its way seaward through the soft marls and the alluvium which form the meadow land about Lazonby; but when it arrives at Eden Lacy and finds its channel narrowed to the hard rocky gorge formed by the Penrith Sandstone there, it seems to wake up and to hurry onward at a rate very different from what it had in the wide expanse formed by the softer rocks. From side to side the river at this point is not more than two thirds as wide as it was a mile above; hence its swifter flow. Thus the power of running water to transport stones, and therefore to wear its river-channel, is proportional to the sixth power of its velocity. That is to say, water flowing at a rate sufficient to roll a stone a quarter of an ounce in weight, will, if its rate of flow is *doubled*, be able to drift a stone weighing a pound, and so on in the same proportion. Where hard rocks form a river-bed, and the channel therefore is narrower, the rate of flow of the stream is increased, and the river exerts in consequence greater erosive power, just at the point where that extra effort is most required if the river is to maintain its course. In other words, where impediments are placed in their way the streams rise to the occasion and put forth an amount of energy sufficient to overcome the obstacle. The beautiful

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gorge of the Eden, extending from Eden Lacy past Nunnery Walks and Armathwaite, offers an excellent illustration of this principle ; and others little inferior to this occur elsewhere in the county.

The same principle which enables a river to cut its way from soft rocks across harder, on a small scale, is identical with that which has come into action on the larger scale under consideration. All that is needed in the initial stages is that the rock through which the river is cutting down to the harder mass beneath shall remain long enough to establish the stream in its new course, and that the rock on either side of the gradually-developing ridge shall not waste at a faster rate than the river can keep pace with in its work of excavating the gorge. It must be obvious that if the area above the gorge should happen to waste at a more rapid pace than the gorge is being excavated, there must presently come a time when the river can no longer carry on that work, but, instead, must find egress to the sea by another channel. In this case the river is severed in two ; the middle of the gorge becomes the watershed of the lower half of the original river, and after a time usually sends a small tributary to the parent stream, which may eventually for a distance flow in a direction diametrically opposite to that which it had at first.

(f) The somewhat complex and apparently theoretical section just ended is inserted here with the object of explaining some very anomalous features which characterize many of the valleys of Cumberland. Foremost amongst these features are the many so-called ' inosculating ' valleys already referred to, and which occur in various parts of the district. What is meant by that term is that there are often two streams flowing in opposite directions in what is manifestly one and the same valley, which therefore runs continuously across the present watershed. Nearly all the main roads, and most of the railway routes traversing mountain districts follow inosculating valleys. The pass at Dunmail Raise, which is traversed yearly by thousands of tourists, may serve as an example. Briefly, they may be explained as due to a gradual displacement of the watershed, as the surface has been lowered and the river has encountered rocks showing different combinations of durability from those in which its course has been originally established. Some of the rivers of Cumberland may have been severed in this way at more than one place. The Petteril, for example, probably originated near where Matterdale is now, and flowed north-eastward to join the Eden west of the present course of that river near Great Salkeld. But two sets of depressions have originated across its original course, or, what comes to the same thing, two sets of ridges have been developed at a rate faster than the erosive power of the Petteril could keep pace with. As a consequence the upper half of the Petteril has been diverted into one of these growing depressions and now joins the Eamont below Ullswater. A new watershed has arisen in what is now Greystoke Park, and the Petteril goes on in its original channel from there to near Catterlen. Furthermore, with the continued waste of the surface, the gradual evolution of the great ridge of Penrith Sandstone forming Lazonby Fell has proceeded at a rate more rapid than the river

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could keep pace with, and as a consequence the stream has turned into a new channel, leaving its former course on Lazonby Fell as a simple depression. In two addresses given before the Cumberland and Westmorland Association for the Advancement of Literature and Science, in 1880 and 1881,¹ the present author fully discussed these and some allied matters. The papers referred to contained the earliest attempts at discussing the origin of any features of the kind above briefly noticed.

The subject of the evolution of the river valleys is so intimately connected with the evolution of the broader features of the scenery that no account of the historical geology of the district would be complete without some reference to it, and more especially so now that the subject in general is attracting so much attention in America and on the Continent : furthermore, the evolution of the plains of Cumberland cannot be rightly understood until after all the factors concerned in their history have been considered, and the rivers are amongst the most important of these factors.

(g) To the casual observer the broader geological features of Cumberland resolve themselves into (1) the coast-line, (2) two mountain areas represented by the Lake district and the upland tract between Brampton and Alston, (3) the Carlisle plain. Closer examination makes it evident that other features will have to be separately considered.

The history of the coast-line may be told in a few words: The North Channel, the Solway and the Irish Sea are different parts of what was, before the Glacial Period, simply the basin of one great river. With the submergence that followed the Glacial Period, the sea has been admitted all over the area, and up the mouths of the tributary streams ; so the Solway is merely a drowned river valley. Some modifications of this earlier feature have arisen through a partial silting-up of the river mouth, and through a trifling amount of waste of the coast-line by the action of the sea. Minor details of change have also originated through the rises of the land, and the consequent formation of raised beaches.

(b) The great Cumberland plain is a remnant, now much cut up, of what was formerly a great dome, with its higher and central parts coincident with the general summit-level of the Lake district. There is no better way of grasping the plain-like character of these mountain summits as a whole than to study any good relief model of the Lake district, such as those exhibited in Keswick. The plain in question is regarded by the writer of this article as simply a re-exposed part of the very flat and even surface upon which some easily-wasted rocks, possibly the Cretaceous rocks, formerly lay. Whatever the rock in question was, it was certainly deposited in horizontal layers on a surface shaped out of the upturned ends of rocks comprising representatives of all the strata older than itself. Subsequently this pile was locally upheaved so as to form a low dome coincident with the area of the present Lake district. While that upheaval was in progress there, a more abrupt upheaval commenced along the north-east side of the great pre-existent zone of fracture, known

¹ See *Trans. Cumb. and West. Assoc.*, pt. xiv. p. 73, and pt. xiii. p. 89.

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as the Outer Pennine Fault, which extends past the western foot of Cross Fell north-westward, through Cumberland, towards Brampton. The upward movement brought hard and durable rocks of many different ages into contact with the softer rocks (the supposed Cretaceous Rocks). The date of the main upheaval was probably coincident with the great volcanic episode, and probably also continued throughout nearly the whole of that period.

In course of time the outer envelope disappeared from the uplands, leaving vestiges of its former presence in the gently inclined surface which the summit-level of the mountain areas evidently presents, from whatever elevated position we may regard it. The softer envelope would disappear latest in the parts where its base was nearest the sea level. Hence the very obvious plain extending from the foot of the Cross Fell Escarpment to Carlisle, thence northward gently rising to the Bewcastle Fells, and westward to the Solway. This plain is referred to generally as the Third Plain. The diagram-sections which accompany this chapter may serve to explain its nature better than any description.

There are two other surfaces (or plains, as they might still be termed). The next older to the third plain is that upon which the New Red once lay. It was never very even in form, or perhaps it would be more correctly described as originally very uneven. But its re-exposure has left features on the outskirts of the Lake district which cannot well be mistaken. Lastly, there is the re-exposed surface upon which the Upper Old Red and the Carboniferous rocks at one time lay. Like the other two surfaces this has shared in all the disturbances that have affected the rocks in Post-Carboniferous times ; but its re-exposure has given rise to inclined surfaces on the outer margin of the Lake district which form important elements in the surface-relief. These three 'plains' or re-exposed rock-floors, embrace between them the whole of the broader surface-features of Cumberland, except the face of the Pennine Escarpment and the line of the coast. In other words, the whole of Cumberland consists of representatives of these three plains, more or less disturbed, and variously combined with each other.

XII. POST-PLIOCENE CHANGES OF CLIMATE.—(a) One of the most important episodes in the geology of Cumberland is undoubtedly that connected with the long period of snow and ice which forms the closing chapters in the history of the past. The surface-features almost everywhere underwent considerable modification, lakes were excavated where only river valleys were before, corries were scooped out of the mountain flanks, a vast and important series of glacial grooves was formed, crags and other irregularities of the surface were rounded off, the accumulated results of many thousands of years' weathering were swept away, and, finally, nearly all the lowlands were covered with a mantle of boulder clay and other deposits of glacial origin. Important changes also took place in the elevation of the land whereby the form of the coast-line was greatly modified. Finally, biological changes, which have left their mark in many ways connected with the sequence

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of events since the beginning of the historical period, were brought about in connection with the episode about to be noticed.

During nearly all the various geological periods which have been reviewed in the foregoing section, the climate of Cumberland does not seem to have been at any time characterized by any conditions of exceptionally low temperature. It is true that evidence of glaciers is to be found in the New Red breccias near Appleby ; but that probably means no more than that on the uplands here and there might then be formed a glacier, just as there are glaciers on the upland areas not far removed from many desert tracts at the present day. The Cretaceous Period, and probably much of the succeeding Tertiary Period also, may well have been characterized by climatal conditions in which the temperature was above rather than below the present average. In this matter very much depends upon altitude above the sea, as well as upon proximity to zones of warm and moist aerial currents.

(*b*) Near the close of the Tertiary Period, and long after the volcanic eruptions had ceased, we have evidence supplied from other areas, that the area now represented by Cumberland had been gradually elevated to a considerable height above the level of the sea. At the period at which this particular episode is supposed to have commenced, all the present rivers of the district had attained something of their present form, after the long and varied ancestral history of which an outline has been given in the foregoing paragraphs. One may indeed say that under the prolonged action of rain and river the country had by this time assumed nearly the same general configuration that it has to-day.

After a time, the elevatory forces gained upon the destructive forces which were then, as now, at work lowering the surface of the land, and as a consequence its uplands rose to an elevation higher, perhaps by nearly a thousand feet, than their present position. The whole of north-western Europe participated in the movement, which appears to have reached its maximum in Scandinavia. Partly as a consequence of this elevation of the land, the *average* temperature fell at least a few degrees below what it is now ; and the climatal conditions underwent further modification, owing to the fact that, with the elevation, a great tract of land west of Britain was raised above the sea level. As a consequence, the eastern margin of the Atlantic was removed some two hundred and fifty miles to the west of St. Bees' Head. There are many reasons for believing the conjoined oceanic and aerial currents known as the Gulf Stream had been in existence long prior to the period under consideration, and that they must have remained in full operation throughout the whole of the long period of snow. But with these sources of heat removed to so much greater distance, the climatal conditions became much less equable than they are now. Indeed, for many reasons, it is probable that although Cumberland then received perhaps even more heat from the sun than it does at present, just as the snow-clad summits of the Alps receive a sixth more sun heat than the valleys, yet, in Cumberland then, as on the Alpine slopes now, the precipitation took

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exclusively the form of snow. Perhaps it is as well to push the comparison farther, and to state that although the Glacial Period was one of snow and ice, yet it was not necessarily a period of very low temperature, any more so than characterizes the higher glacier regions of Switzerland to-day.

As a consequence of the increased elevation there was land connection with the continent on both the east and the south of Britain. For what is now the North Sea was then a broad plain, through which the Rhine flowed northward, receiving as it went all the drainage of eastern Britain, and discharging it into the Atlantic, somewhere to the north-east of Shetland. The depression now occupied by the English Channel had already been shaped into much its present form as a river valley, and with the elevation referred to it remained so. The same is true of the Irish Sea; and the rivers of Cumberland, joined with those of the south of Scotland, united with the others that now discharge into that area, and reached the Atlantic to the south-west of Ireland.

(c) The occurrence of wide stretches of dry land, where now there is sea, had a most important effect in modifying the climate. Indeed, taken in conjunction with the increased elevation, and with the proximity of the mountain areas of southern Scandinavia and north-western Scotland to the vast quantities of aqueous vapour drifted north-eastward in connection with the Gulf Stream, the factor just mentioned may have played an important part in the development of the peculiar conditions which characterized this period. It may be as well to repeat in this place that the Glacial Period was not so much a period of low temperature, as one during which more snow fell during the year than the summer's heat sufficed to melt. To bring about such conditions four factors are required. (1) There must be an extensive area of ocean where distillation by the heat of the sun goes on at a high rate. (2) The products must be transferred from this area by the action of currents, aqueous or aerial. (3) There must be an upland area in the path of these currents, which acts as a refrigerator, and converts the aqueous vapour into snow. (4) The local conditions must be such that more snow is precipitated than is removed from the land. These conditions are quite compatible with a comparatively mild climate, and do not by any means require so low a temperature as is generally supposed to have prevailed during the Glacial Period. Strictly speaking, it would be more correct to refer to this period as the Nival Period, seeing that its essential characteristic was the widespread prevalence of snow.

Snow does not flow off the land like water does, hence, if only a little more fell each year than was melted, it was bound sooner or later to accumulate at the valley heads until it became compacted into ice. In this state it must soon have begun to flow down the valleys in the form of glaciers. It is as well to remember that the ice simply took the place of river water, and moved, as rivers do, outward from the main areas of precipitation, downhill and seawards.

There are good geological reasons for believing that this state of

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things continued for many thousands of years ; the snowfall, however, gradually increasing, and thereby chilling the air around, and perennial snow covering an increasingly larger area on the uplands, fogs becoming more and more prevalent, and less and less rain falling even in the summer months. These various causes tending to lower the temperature produced cumulative effects.

Long prior to the time when the snow began to lie all the year round on the lowlands, Cumberland was still inhabited, especially during the summer months, by many of the large mammalia of those days which migrated thus far from the south-east in quest of the extensive feeding grounds they required. With the great herbivorous beasts came also some of the carnivora, amongst them the ancestor of the African lion, whose shaggy mane and breast may be a vestige of the thick rough coat of spotted fur which enabled him to fare well in a cold climate. With these and other carnivorous animals it is not unlikely that savage man may also have first visited these parts, and have already begun to use his rough stone implements in contending with the other denizens of the land for the possession of the hunting grounds.

(*d*) Slowly and gradually the snow spread to the lowlands. Glaciers in the north-west of Scotland had already coalesced to such an extent as to cover the whole country there. As time went on these conditions began to prevail further south ; the areas first to be so affected being those which are characterized by the heaviest rainfall at the present day. Before the advancing ice the plants and animals not yet accustomed to cold conditions had either to migrate southward or to suffer extermination. As they disappeared, others of more boreal habits took their place, and advanced southward in proportion as the land became uninhabitable. So reindeer and arctic animals and plants eventually migrated as far south as central France. It must be remembered that these migrations were facilitated by the land connection that then existed between Britain and the continent by way of what are now the North Sea and the English Channel.

Eventually more snow fell even on the lowlands of Cumberland than the summer's heat sufficed to melt, and then glacial conditions may be said to have set in there, just as they had done long before in the country to the north. The glaciers grew, then coalesced, and eventually crept outward from their mountain birthplace to the low ground beyond. These conditions must have remained for a very long period, if we may judge by the effects produced upon the rock surfaces and by the enormous quantities of rock material transported outward from the mountain centres to the low ground beyond.

(*e*) In a county like Cumberland, in which so much interest centres upon the lakes and the mountain features, the phase under consideration is one of great importance. There can be no question whatever, amongst field geologists at any rate, that all the lake basins of Cumberland were carved out of the solid rock at this time by the long-continued action of thick masses of glacier ice. There is really but little need to

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add anything here to what Sir Andrew Ramsay has said on the subject in general, or to what the late Rev. J. Clifton Ward has written in regard to the glacial origin of the Cumberland and Westmorland lakes in particular.¹ All of them are simply old river valleys deepened and widened by the long-continued erosive action of glacier ice. The slow and persistent grinding to which this erosion is due produced most effect at the points where the motion of the bottom layers was at its greatest and where the pressure was at its maximum. It may be as well to bear in mind in this connection the important fact that ice expands with a rise of temperature, and contracts with a fall, to a greater extent than any other solid known. A thick mass of ice under cold atmospheric conditions is warmer below in proportion to its depth, because it is not so much chilled by surface cold, and, at the same time, its lower parts intercept much of the heat radiated outward from the earth. That is to say, the base of the ice is warmer than its upper surface ; and, being warmer, expands more, and therefore slowly creeps outward in the direction of least resistance, which usually follows a parabolic curve upwards from the sole of the ice and outwards from its source. As the weight of a column of ice one thousand feet in thickness on a base of a square foot is more than twenty-five tons, one can readily see that this steady upward and outward creep of the bottom layers, charged as they are with grit and rock fragments, must give rise in course of long periods to erosive effects of considerable importance. The fact that ice is nearly transparent to all the light rays and to most of the heat rays from the sun, while the foreign matter within the ice is not, helps still further to raise the temperature of the lower parts of the ice, and, by making them expand most, propels them forward over the rocks.

It may be mentioned here that several other lakes than those now existing as such formerly had a place in Cumberland and Westmorland. There was a large one, now occupied by alluvium, between Ullswater and St. Ninian's Church on the Eamont. The lip of the rock basin which contained that lake has been notched through by the river, and now forms the picturesque gorge of Udford Crags adjoining Edenhall. Another lake of larger size, also now silted up, once extended along the Eden from Appleby to Eden Lacy. Here, again, the beautiful rocky gorge and the rapids on the Eden at Eden Lacy are simply vestiges of the lip of the rock basin that formerly held in the water of the Eden and formed the lake in question, until the river notched the gorge deeper and let the water out. There was a similar lake, also with a gorge below it, at Kirkoswald. East of Keswick there was one at Threlkeld, of which the former lip is represented by the picturesque gorge on the Greta between that place and Keswick. Indeed it would be easy to multiply examples, for they are to be found here and there all over the county. All are simply enlargements of old river valleys, effected by glacial erosion. All have been true rock basins, which have once held lakes, and have been converted into meadow land by the double process

¹ *Quart. Journ. Geol. Soc.*, xxx. p. 96.

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of the lowering of their outlets by the erosive action of the river, and the carrying in of sediments at their upper ends.

During the phase of glacial action now under consideration, the same cause which enlarged and deepened the river valleys also carved great grooves upon the surface of the solid rock on the land. Some of these grooves, even in Cumberland, are so large as almost to be entitled to be called valleys. But as we advance further north into Scotland these features increase in size and importance. Even around Kelso, for example, the hill-shaded maps of the Ordnance Survey show them in great force, sweeping with an undeviating course right across rocks of the most diverse composition and age. Near Blairgowrie again, they are even more striking ; while in connection with the Highland rocks they reach even larger proportions still.

Another feature of some importance in the scenic geology of Cumberland is represented by the corries or cirques. These are usually excavations on the hillsides, shaped like half a bowl or half a funnel. Commonly they are characterized by a remarkable regularity of form, quite unlike any features produced by the action of any subaerial causes. Their origin has given rise to much difference of opinion. The present writer, dealing in 1874 especially with those of the Lake district, attributed their origin¹ to the effects of a slow rotatory movement or eddy of the ice. There are some very fine examples of these in the valley of the Calda, or Caldew, above Carrock Fell ; others equally fine, but much larger, occur at Melmerby ; while there are few dales in the Lake district that do not show some traces of them, usually near the upper part.

(f) Throughout the greater part of the Glacial Period the movements of the Cumberland ice were seawards and mainly downhill. But while the changes just referred to were in progress, the ice from Galloway had coalesced with the general stream from the southern uplands of Scotland, and had already begun to make a slow advance southwards across the Solway—the ice from northern Cumberland extending with equal slowness in the opposite direction. The result may be readily conceived : the opposing streams, after a prolonged contest for mastery, eventually became united, and began to send their surplus overflow eastward along the border counties. This is another way of stating the fact that a great conjoined stream, formed of both Cumberland and Scottish ice, once flowed over the watershed of the Eden and the Tyne, and hence seawards by the Tyne valley. On the south of the zone where the Cumberland and Scottish streams met end to end, the movement on the low ground was mainly southward, and continued thence at least as far as North Wales.

(g) Eventually, the heavy snowfall due to the condensation of the aqueous vapour of the Gulf Stream by the uplands of the west of Scotland, caused such an increase in the volume of the Scottish ice that it overcame the resistance offered by part of the ice from Cumberland, thereby bringing its movements around Carlisle to a standstill for a time,

¹ *Quart. Journ. Geol. Soc.*, xxxi. p. 99 ; *Geol. Mag.*, ii. vol. ii. No. x. p. 486.

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and, eventually, after ponding it back in Edenside, actually repelled it with such force that it was obliged to flow in a direction diametrically opposite to that which it had maintained for so long during the earlier part of the Glacial Period. Hence much of the ice of the upper parts of Edenside streamed over the Shap Fells southward by way of Kendal and Lancaster ; while the chief overflow, ponded back at the head of the valley, found its way in the direction of the North Sea by way of Stainmoor and the lower half of the valley of the Tees. Judging by the effects produced upon the rock surface, this overwhelming of Cumberland by ice of extraneous origin did not continue very long. The loading of this part of the earth's crust by a mass of ice, which must have considerably exceeded 2,000 feet in thickness (and farther north may well have exceeded 4,000 feet) is believed by many to have eventually wrought its own end. It is supposed that the weight of the vast load of ice which had accumulated on the seaward margin of north-western Europe, may have helped to bring about a slow depression of the earth's crust. The mountain-tops were gradually lowered by the depression ; rain fell and flowed off the land where previously the precipitation mainly took the form of snow ; and, finally, the depression brought the sea more and more inland. With the landward advance of the sea, those warmer currents of both water and air, which constitute the so-called Gulf Stream, extended their influence two hundred miles to the east of the former limit. Hence, the supply of snow having ceased, the glaciers were cut at their source ; whereupon the great confluent mass of ice, with all its tributaries and feeders, each charged throughout with mud, sand, stones and rock masses of various sizes, quietly melted away as it stood, and without passing in reverse order through any of the successive stages by which it reached its maximum.

(b) The glaciated and other materials *within* the ice (there was probably little or none of the so-called '*moraine profonde*' beneath) were liberated, as the ice melted, in the form of a kind of sediment. The boulder clay, and the beds of sand, gravel, peat, etc., associated with it, and also the eskers, were formed on the spot, as the varied results of this one operation of the melting of stony ice. (It may be mentioned here that this explanation of the englacial origin of glacial deposits was first put forward by the writer of this section in the year 1874, and is published in the *Quarterly Journal of the Geological Society*, vol. xxxi., and in the *Geological Magazine* for November of that year.)

The importance of these glacial deposits in connection with Cumberland can hardly be overrated, as they form the subsoil of nearly the whole of the cultivated ground, as well as much of the land under pasture.

(i) The relation of the present flora of Cumberland (and, to a certain extent, that of the fauna also) to its parent sources, is largely of a geological nature, and is intimately connected with the changes of climate that arose during the Post-Pliocene Period. As already mentioned, Cumberland was formerly connected with Ireland on the west, while on the east a land connection with western Europe also existed

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across what is now the North Sea. Moreover, southern Britain was, in like manner, connected with France and with the coast of Spain. By these several routes most of the existing plants had migrated to Cumberland at an early period. Its flora, before the Age of Snow, therefore consisted of a main stock nearly identical, on the whole, with that of central Europe, with an admixture of such Scandinavian, Lusitanian and Armorican forms of plant life as could adapt themselves to the conditions then existing. With the gradual increase of the area covered with snow, the spreading of each succeeding generation of plants was necessarily confined to the south and the south-west. So the process continued—those plants which could least tolerate the cold forming the van of the emigrants, and those best adapted to live near to snow bringing up the rear, rank behind rank—until, in the end, the main body of the Cumberland assemblage of plants had made their way into France.

With the waning of the Age of Snow, the reverse process took place. Scandinavian and Arctic plants remigrated in the front rank as the ground became clear of snow; the Germanic plants, forming the main body as before, closely followed the advanced party, and, finally, the Pyrenean and Armorican contingents slowly brought up the rear. At present the Germanic main body, after long contending for the possession of the low ground of Cumberland with their Scandinavian predecessors, have gradually won position after position on the slopes of the fells, and are on their way to taking almost entire possession of even the highest fell tops.

(j) While these changes were going on in the plant life of Cumberland, various animals, including man, finding new feeding and hunting grounds as yet unoccupied, gradually retook possession of the land. In some respects the animal immigrants differed from the plants—inasmuch as the men came of a different stock from their predecessors, and brought with them evidence of a much more advanced state of civilization. The other animals which repeopled the land were simply the ancestors of the animals that are living here now, plus the brown bear, wolf, wild-boar and a few others, which have disappeared with the extension of man's domain in Britain. Neolithic man himself, as time went on, had to give way before the advance of men more civilized still, with whose advent commences the dawn of history, as commonly understood.

(k) Long after man re-established himself here, minor changes continued in progress. The land has risen by fits and starts, with lengthy pauses between each move. It has now been elevated to about one hundred and fifty feet higher than its level when the ice first disappeared and Neolithic man first came. A few tiny glaciers gathered in the heart of some of the mountain areas during the period under consideration, and have left miniature moraine heaps here and there as evidence of their former existence. The lakes which were formed when the ice first melted away are gradually becoming shallower, through the quantity of material transported into them by rivers; indeed, a few which

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lay in the path of rivers such as the Eden, which carry down much sediment, have passed into the condition of meadow land. Other lakes, such as the once-continuous Derwent-Bassenthwaite Water, Buttermere-Crummock Water, and others, are being silted up in the middle by the material carried in by lateral streams; and all of them are reminding us that lakes are merely local and temporary conditions of rivers, and that they are all destined, sooner or later, to gradually silt up into dry land. Some few of the tarns have also shallowed-up, or have passed into moorland through the intermediate stage of a peat-bog.

The great deposits of hill-peat, containing remains of trees, at altitudes where no trees could be got to grow now, tell us of climatal conditions a few thousand years ago, long after the advent of Neolithic man, which must have been more genial than what we now experience.

Since the commencement of this period, wind, rain and frost, drought and wet, heat and cold, have all been incessantly at work modifying the character of the surface of Cumberland, and reducing more and more of it from the state in which it was left at the close of the Glacial Period to a condition suitable for the needs of man.

XIII. THE RELATION BETWEEN THE GEOLOGICAL STRUCTURE OF CUMBERLAND AND THE BOUNDARIES OF THE PARISHES.—In the South of England a very obvious relation can be made out between the distribution of the various kinds of soils and the larger divisions of the counties. This is especially the case in the Weald, as the late Mr. Topley has shown. Evidently, the earlier settlers, on taking possession of the land, agreed amongst themselves so to portion out that district that each community should have a due share of every type of land to be found there. The division of the district was so arranged that, along with the share of pasture and arable land allotted to each, there should also be a due share of riparian land, together with a like proportion of both woodland and moorland. In the Weald, the geological structure of the district was eminently favourable for such an arrangement, as the different types of rock upon which, in this case, the nature of the soil mainly depends, are naturally arranged over the whole ellipsoidal area, zone within zone, each zone comparatively narrow in one direction, but forming a continuous band in a direction at right angles to that. This arrangement of the strata and its present bearing will be easily understood on reference to any good geological map.

To carry out this principle of allotment to its fullest effect three conditions appear to be necessary. (1) There must be a definite geographical relationship between the distribution of the geological formations and the superficial deposits from which the various surface soils are derived. (2) A uniform arrangement of the rocks must prevail throughout the whole district. (3) The primary apportioning of the land must be wholly in the hands of one united people, with a common government and with common needs, and with that disposition to work together for the common good which is requisite for the welfare of both the village communities and the larger bodies into which these communities are to

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be united. It is only in the case of an agricultural people, with communistic habits, who enter at once into full and undisputed possession of the land, that any such division on the lines followed in the Weald can be possible.

In Cumberland, all the factors were different. The soils, instead of being related in composition to the underlying rock as they are in the Weald, are derived, in the great majority of cases, direct from the mantle of glacial deposits. These are spread far and wide over all the lowlands and the slopes of most of the hill-sides, and they usually bear only a remote relation in composition to that of the rocks upon which they lie. Hence, almost no definite geographical relationship subsists between the different kinds of superficial deposits in one part as compared with another. Furthermore, even where the soil is thin, and solid rock does protrude at the surface, it is exceptional to find rock of the same kind extending far enough to impart any definite agricultural type to the soil throughout any but the fell lands¹ of a Cumberland parish. For this reason, even the best geological maps of Cumberland afford but little information regarding the value of the land from an agricultural point of view. In the Weald the case is far otherwise, as already mentioned. The only part of Cumberland where even an approach is made to the type of parish boundary found in the Weald, is along the strip of the county lying to the north-east side of the Eden. But even in that case, the neat and definite coincidence observable between the geological structure and the parish boundaries in the southern area can hardly be said to exist.

The third factor, whose discussion comes perhaps more within the province of the historian, relates to the ethnology of the earlier settlers in the district. Taking it for granted that these earlier peoples were Celtic, it may be safely assumed that they were but little disposed to apply themselves wholly to agricultural operations. With them it would be a matter of but little moment whether the soil upon which they lived was suited, or was not suited, for the growth of any particular kind of crop. If fishing and hunting were to be had, and sufficient rough pasture could easily be found for their cattle, their needs were supplied. Then, again, continual conflicts with their neighbours—inevitable under the circumstances—were hardly conducive to uniformity of land-tenure over any large area. So their parish boundaries were determined by a variety of circumstances.

If we are right in supposing that the Anglian and other Teutonic settlers in Cumberland gradually supplanted the Celtic aborigines, instead of taking possession of the land all at once, we can easily understand how they took over the land with its older boundaries much as they found them, and afterwards had but small need to modify those boundaries to any important extent.

¹ It may be remarked here that the word 'fell,' in the north of England, is not synonymous with 'hill'; the word simply means land as yet unenclosed, and is exactly synonymous with the Norman word 'forest.'

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To put this into a briefer form, we may say that the parish boundaries of Cumberland were laid out chiefly by a nation of hunters, and not by an agricultural people ; and that we have kept them since very much in the form in which they passed into the hands of the first Teutonic settlers.

XIV. THE MINERALS OF CUMBERLAND.—There would have been some advantages in treating Cumberland Minerals under the various geological formations to which they belong ; but as this plan would fail to bring them, as a whole, clearly under the eye, they are given separately here.

They may be grouped (1) in accordance with the nature of their bases ; (2) according to their chemical composition considered in connection with their crystalline form ; (3) on an economic basis ; or (4) with reference to their mode of origin. Perhaps the last of these, in an article dealing mainly with the geology of Cumberland, may be regarded as the most suitable for the purpose. The customary order of treatment is as follows :—

The original Minerals of Eruptive Rocks may be taken first. These include Quartz and the Felspars, of which in Cumberland, Orthoclase, Albite, Oligoclase and Labradorite are the chief. The first three felspars are mainly confined to the acid eruptive rocks, and the last one is the usual felspar of basalts, dolerites, and of most andesites. Hornblende occurs as an original constituent of most of the granites and the rocks allied thereto, though never in any large proportion. It also forms one of the minerals of the andesites. Augite (or rather Pyroxene in one or other of its monosymmetric forms) is found in all the dolerites and basalts, and also in the andesite lavas. It also occurs sparingly in some of the aplite veins associated with the granitic rocks. The orthorhombic Pyroxenes are represented in a few basic and sub-basic eruptive rocks. The commonest mica is Biotite, which is an original constituent of nearly all the granites and the rocks allied to them, and also of the Mica traps. It probably occurred originally in many of the andesites.

Mucovite, as an original constituent, is by no means of common occurrence. One of its chief sources being a remarkable microgranite, which occurs in the Ordovician rocks near Melmerby and at other places along the foot of the Cross Fell Escarpment.

With these, the more important of the original constituents of the eruptive rocks, there also occur Ilmenite, Magnetite, Pyrites, Pyrrhotite, Molybdenite, Apatite, Sphene and a few other minerals, amongst which may perhaps be included, Zircon and Orthite.

Contact-metamorphism has developed a very interesting set of minerals, which, as might be expected, vary with the nature of the rock in which they occur. In rocks of argillaceous composition, the best known mineral of these is Chialstolite (a form of Andalusite), which occurs chiefly in the altered Skiddaw Slates in the zones around or over the granite masses. Where these Skiddaw Slates assume more the nature of sandstones, the chief mineral developed, especially in close contiguity to the eruptive rock, is Biotite.

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Of the very interesting suite of minerals found as a result of the contact-metamorphism of limestones, such as Phlogopite, Diopside, Tremolite, Wollastonite, Garnet, Idocrase, Sphene, Graphite, and Pyrrholite, no good examples have yet been detected actually in Cumberland, although they occur within a short distance of the county boundary.

Contact-metamorphism has produced marked effect upon the volcanic rocks, as already mentioned, and has given rise to some interesting minerals. Garnets occur here and there under these circumstances, chiefly in tuffs which had undergone a certain amount of decomposition prior to the intrusion of the eruptive masses with which the metamorphism is associated. Epidote is a common alteration-product of rocks with this history. In many cases in Cumberland it may represent one of the 'Green Earths' (Celedonite, Delessite, Saponite, etc.), which were originally derived from some ferro-magnesian minerals in the rocks affected, chiefly by the action of percolating water derived from the surface. These 'Green Earths' are very prone to change into Epidote when the rocks containing them have been subjected to the factors which have produced contact-metamorphism. In a few cases Biotite, Hornblende, and some other minerals, have been produced in the same way. In the case of Agates, which have been formed in the vapour-cavities of the eruptive rocks by the agency of underground waters, the Chalcedony has passed into the crystalline condition, and has now become Quartz. This is, perhaps, one of the reasons why normal agates are so rarely found in Cumberland.

In some instances of extreme contact-metamorphism of the Cumberland volcanic rocks the determining factors have probably been connected with the uprise of heated alkaline waters, which have operated upon the rocks in question before they have lost their alkalis through prolonged exposure to surface agencies. The rocks belonging to this category are chiefly confined to the heart of the older volcanic rocks. It is possible that some of the anomalies presented by the rocks and minerals of Carrock Fell, which have formed the subject of an important memoir by Messrs. Harker and Marr, may be explicable in this way. Mr. Ward regarded this complex as a case of old lavas altered *in situ*; and although this view has recently been questioned, there is still much to be said in its favour. The present writer is disposed to regard the minerals composing the complex in question as due to the influence of heated waters containing alkaline matters, which have risen through an older set of lavas and tuffs at an early period in their history, and before the volcanic rocks had lost any of their essential constituents by weathering. The granophyric rock associated with these altered lavas, may, on this view of its origin, be regarded as one in which an old basic or sub-basic mass has been softened, and subsequently recrystallized, mainly through the local operation of heated alkaline waters, which have imported into the rock a higher percentage of both silica and the alkalis. The intimate association of granophyric rocks and gabbros, here and elsewhere, can thus be readily enough explained. The constituent minerals

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of the Carrock Fell Rock are therefore here treated as partly of metamorphic origin.

There is a large class of other minerals occurring in Cumberland which are due to another cause. These embrace most (but not all) of the original contents of mineral veins. Quartz veins, so abundant amongst the older rocks of Cumberland, are here assumed to be due to the slow dissolution of the rock by heated alkaline waters, and by the equally slow deposition of silica in the place of the material removed. In a few cases it may possibly be true that the quartz fills a pre-existent fissure or cavity ; but the evidence that such has been the case has not yet been satisfactorily made out. In the case of the great quartz vein known as the 'Great Sulphur Vein' of the Alston district, the evidence of the quartz having replaced limestone is clear enough. Curiously enough in this case rocks other than those that are calcareous are left unaffected. Other mineral veins are here regarded as due to successive deposits of mineral matters originally held in solution in hot springs, from which the various substances have been left at the horizon where the temperature of the walls of the veins coincided with the depositing temperature of the particular substance in solution. To this category belong most of the Galena, Chalcopyrite, Blende, Mispickel, Barytes, Fluor and some few other minerals associated with them, such as some of the rarer ores of the Caldbeck Fells. Even the Graphite of Borrowdale may be due to this cause. It may be an ultimate product of what was formerly some metallic carbide. All of these minerals just mentioned are here regarded as hypogenic in origin. There is another class of substances occurring in the mineral veins of Cumberland which are due to the downward percolation of cold surface-water, which usually contains Carbonic Acid or some of the organic acids allied thereto. In referring to the origin of these the correlative term epigenic is used. These surface-waters give rise to a series of complex changes, by which the sulphides are converted into carbonates, sulphates, mixed carbonates and sulphates, phosphates, etc. The varied contents of the celebrated mineral veins of the Caldbeck Fells, and other areas near Keswick, as well as those of the almost equally celebrated mineral veins of the Alston district, are largely due to this 'ebbing' of the original contents of the veins. Most Calcite veins are due to the same cause.

To yet another series of changes of a geological nature are the New Red minerals due : Rock Salt, Gypsum and Anhydrite, Dolomite, Chalybite, Hæmatite, and some of the ores of Manganese. The origin of these has already been noted in connection with the Red Rocks themselves.

It may again be mentioned here that all the Hæmatite deposits of Cumberland are replacement products of some form of calcareous matter, which is usually either Calcite or Dolomite. This fact has long been known to the officers of the Geological Survey ; but it is mainly to the researches of Mr. J. D. Kendall that the public are indebted for their chief knowledge of the facts connected with the geognostic relations of Hæmatite. It may be remarked, however, that the presence of pebbles

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of Hæmatite in the New Red Breccias—a very common occurrence—is due to the selective replacement of some calcareous matter in the pebbles. Hence the presence of these Hæmatite pebbles does not imply that the mineral in question is older than the New Red, as seems commonly to be supposed. Some Manganese ores occur not uncommonly in association with Hæmatite; and it is possible that some of the west Cumberland ‘soft ore’ may consist of the bright-red form of Gæthite, which goes by the name of Rubinglimmer.

Lastly, there are a few minerals whose present character is due more directly to surface agencies, such as oxidation, and the direct influence of water. None of these call for any special remark.

For fuller details regarding localities, etc., the reader is referred to the author’s paper on ‘The Minerals of Cumberland and Westmorland,’ in the *Trans. Cumb. & West. Assoc.*, vols. vii. 101, viii. 189, ix. 175.

CLIMATE

SITUATED as Cumberland is at the extreme north-west angle of the map of England, it is usually assumed that the temperature, particularly during the winter, must necessarily be very severe.

In particular, the mountain valleys are commonly supposed to be intensely cold at that season, but the thermometer, far from countenancing this opinion, shows that the inhabitants enjoy a milder climate than those who reside in the open country. In winter, for instance, the mean of the night temperature is several degrees higher than at Cockermouth, Wigton, or Carlisle, in the open plain, where the frost is generally more severe. The indications of the thermometer are in accordance with my own observations during a residence of twenty years in the very centre of the Lake district where it was not unusual to find the roads over the open commons frozen quite hard, when they were found to be soft and clammy in the valleys among the hills. The late J. F. Miller, F.R.S., in the *Philosophical Transactions*, has the following remarks bearing on this question: 'The mean temperature of the winter months at Chiswick in Middlesex is nearly the same as in the Lake district, whilst a much greater extreme of cold is frequently felt there than in the north. In the neighbourhood of the metropolis the thermometer sometimes indicates a degree of cold almost unknown in these districts. Thus on the night between the 11th and 12th of February, 1847, the temperature at Greenwich fell to 6°, at Chiswick to 4°, and at Uckfield in Sussex to 1°, when at Seathwaite in Borrowdale the minimum was 24.5°, and the minimum for the month 20°.'

Except in the Alston district and part of the valley of the South Tyne river, which has its sources in the eastward slopes of the Pennines, the whole county of Cumberland slopes towards the south and west, and this exposure constitutes another factor in modifying the severity of its climate. During the winter season a very large amount of snow often occurs alike on the Pennine range and the more lofty peaks of the Cumbrian group, where it frequently remains until the advent of spring; but in near proximity to the coast the snowfall is inconsiderable in quantity and mostly is quickly dissolved.

The rainfall among the hills towards the south of the county is frequently excessive and as Mr. J. G. Symonds, who for many years published an account of British rainfall, has remarked, 'There is no doubt that the Lake district is one of excessive rain, there being some parts of it which have *seven times as much as London*; but if not, where would be the lakes, or to my mind the still more charming tarns? Aira

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Force would degenerate to a "dropping well," and many beauties of the district would vanish entirely.' These lakes and tarns fulfil another important and useful purpose in serving as catchment basins or natural reservoirs for the immense quantities of rain water which the river beds would be otherwise unable to contain. Away from the hills and in the plains of Cumberland, the rainfall may be set down as normal. Thus I have before me through the courtesy of R. A. Allison, Esq., of Scaleby Hall, about six miles north of Carlisle, a statement of the rainfall at that place extending over a period of eleven years from 1889 to 1900. In the year 1889 the amount of rain was as low as 29·7 inches; in 1891, 36·9 inches; and the average for the whole period of eleven years, 33·3 inches. For purposes of comparison I subjoin the following table of mean annual averages, viz. :—

	Inches		Inches
The Sty, Borrowdale	165	Gowbarrow Park, Ullswater	72
Seathwaite	140	Esk Hause	72
Sprinkling Tarn	121	Scawfell Pike	64
Styehead Tarn	110	Keswick	59
Stonethwaite	107	Watermillock, Ullswater	55
Wythburn, Thirlmere	90	Mirehouse, Bassenthwaite	50
Wastdale Head	88	Penrith	38
Watendlath	82	Scaleby Hall, Carlisle ¹	33
Matterdale Common	80		

REMARKS ON THE HELM WIND

Helm Wind is a local name of uncertain derivation (but supposed to be so called from the cloud which, like a cap or helmet, covers the top of the mountain) applied to a very violent wind blowing from some eastern point of the compass, but mostly due east, at the foot of the mountains known by the name of the Cross Fell range, and confined both in length and breadth to the space contained between the Helm and Helm Bar, hereafter described.

For a better understanding of this phenomenon, it may be necessary first to point out the peculiar situation of the neighbourhood where it occurs.

The counties of Cumberland and Westmorland are bounded on their eastern side by a chain of mountains, separately known by different names along the range, but collectively called the Cross Fell range, sometimes the Pennine chain, from their Roman name *Alpes Penini*. The general direction is from north-west by north to south-east by south, and the northern extremity is at Talkin and Tindale Fells, not far from which the railway from Carlisle to Newcastle crosses to the east, the highest point of which is rather more than 400 feet above the level of the sea. Tindale Fell rises abruptly to a considerable height, Talkin Fell more gradually, and the hills rise by degrees in the above-named direction

¹ The same rainfall as at Exeter, and slightly in excess of that recorded for Birmingham and Aberdeen, i.e. 31 inches.

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towards the summit of Cross Fell, which is 2,930 feet above the sea ; southward of this the range continues till it joins Stainmoor ; in this direction there is no great depression as at the north. The ascent on the eastern slope is much more gradual than on the west, where it is sudden, with few or no spurs or outliers, except a few conical hills near Dufton in Westmorland, called Pikes.

The annexed imaginary section (fig. 1) will perhaps assist in giving an idea of the rise on the different sides. The horizontal distance of the summit from the plain may be about 2,700 yards ; at five miles from the base on the west is the river Eden, running nearly parallel to the mountain ; on the east of the summit range is the bed of the river South Tyne, the bridge over which at Alston is 300 feet higher than the village of Melmerby on the west.

FIG. 1.

FIG. 2.

from the highest point, there is often seen a large, long roll of clouds, the westerly front clearly defined and quite separated from any other cloud on that side ; it is at times poised as it were above the mountain, sometimes resting

on its top, but most frequently descends a considerable way down its side ; this is called the Helm.

In opposition to this and at a variable distance towards the west is another cloud with its eastern edge as clearly defined as the Helm, and at the same elevation ; this is called the Bar, or Bur. The space between the Helm and the Bar is the limit of the wind.

The distance between the Helm and the Bar varies as the Bar advances or recedes from the Helm ; this is sometimes not more than half a mile, sometimes three or four miles ; occasionally the Bar seems to coincide with the western horizon, or it disperses and there is no Bar, and then there is a general east wind extending over all the country westward.

FIG. 3.

However violent the wind may be between the Helm and the Bar the violence ends there, as on the west side of the Bar there is either no wind at all, or it blows in the contrary direction or from

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various points in strong sudden gusts, but it would appear that the general direction of the wind is not changed ; when the Bar advances so far as to reach the Helm the wind ceases. Neither the Helm nor the Bar forms separate or detached clouds, but each may rather be said to be the bold, clearly-defined front of a large body of clouds extending eastward behind the Helm and westward from the Bar.

The open space between the Helm and the Bar varies from eight or ten to thirty or forty miles in length, and from half a mile to four or six miles in breadth ; it is of an elliptical form, as the Helm and Bar are united at the ends.

A representation of the Helm, Bar and space between may be made by opening the forefinger and thumb of each hand and placing their tips to each other ; the thumbs will then represent the Helm on the top of the fell, the forefingers the Bar, and the open space between the variable limit of the wind.

The wind is very irregular, but most frequent from the end of September to May ; it rarely occurs in the summer months.¹

The villages of Milburn, Kirkland, Ousby, Melmerby and Gamblesby are most subject to it ; the more distant from the highest point the less it is felt ; it seldom occurs at Castle Carrock, and is known only by name at Talkin. Sometimes when the atmosphere is quite settled, hardly a cloud to be seen and not a breath of wind stirring, a small cloud appears on the summit, and extends itself to the north and south ; the Helm is then said to be on, and in a few moments the wind is blowing so violently as to break down trees, overthrow stacks, occasionally blow a person from his horse, or overturn a horse and cart. When the wind blows the Helm seems violently agitated, but on ascending the fell and entering it, there is not much wind. Sometimes a Helm forms and goes off without a wind, and there are easterly winds without a Helm. The open space is clear of clouds, with the exception of small pieces breaking off now and then from the Helm, and disappearing or being driven rapidly over to the Bar ; but through this open space is often seen a higher stratum of clouds quite at rest. Within the space described, the wind blows continually ; it has been known to do so for nine days together, the Bar advancing or receding to different distances. When heard or felt for the first time it does not seem so very extraordinary, but when heard or felt for days together it gives a strong impression of sublimity. Its sound is peculiar, and when once known is easily distinguished from that of ordinary winds ; it cannot be heard more than three or four miles, but when in the wind or near it, it has been compared to the noise made by the sea in a violent tempest.

¹ The above information has been chiefly obtained from a paper written in 1838 and read at the meeting of the British Association at Newcastle-on-Tyne in the same year. The Rev. Jno. Watson, the writer, was many years vicar of Cumrew, under Crossfell, and was well known to me in my earlier years. There is occasionally a slight helm on the Westmorland side of Ullswater. Kidsty Pike and High Street form the summit, and the surrounding conditions are quite analogous to those mentioned by Mr. Watson. I have witnessed it frequently during seventeen years' residence on the Cumberland side of the lake.—W. H.

CLIMATE

Its first effect on the spirits is exhilarating, and it gives a kind of buoyancy to the body. The country subject to it is very healthy, but it does great injury to vegetation, by beating the grain, grass and leaves of trees till quite black.

On the eastern side of the mountain they have no knowledge when the Helm wind is blowing violently on the west; and people on the fell, when a mist comes on, do not know that there is a wind till they descend the western side.¹

It was long supposed that this wind was peculiar to this country, but it now appears that there are similar phenomena in different places. Sir J. Herschel said that he found one at the Cape; the cloud called the Tablecloth agreed with the Helm, and he observed the Bar at a considerable distance; the air rushed down the side of the mountain, and being opposed by a contrary column was reflected and formed the Bar. Professor Staveland had noticed one of the same kind near Belfast, and Professor Buche of Philadelphia, when passing the Alps, observed the like appearance.

¹ The origin of the Helm Wind was discussed before the Cumberland and Westmorland Association for the Advancement of Science by the editor of the Association's *Transactions*, Mr. Goodchild (see *Trans. Cumberland and Westmorland Assoc.* No. xiv. [1888], p. 43).

PALÆONTOLOGY

SO far as the fossil remains of vertebrated animals are concerned, Cumberland may be said to have practically no history. The absence of such fossils is to a great extent attributable to two causes. In the first place a very large proportion of the rocks of the county belong to periods when vertebrate life was either absent or but feebly represented. In addition to this, as mentioned in the chapter on Geology, the Devonian rocks of Cumberland are unfossiliferous; while no vertebrate remains appear to have been recorded from the Carboniferous deposits within the limits of the county, although in many other districts these yield more or less numerous teeth and other remains of fishes. In the second place the whole of the surface of the county appears to have been completely enveloped in ice during the Glacial epoch, when it would have been extremely unsuitable for the presence of a large fauna, while there would also have been but a poor chance for the remains of such as did exist to have been preserved.

So far as the writer can ascertain, the only fossil remains of vertebrates that have been recorded as occurring in the county are those of a few mammals obtained during the excavation of the new docks at Silloth. These were first described by an anonymous writer,¹ who recorded the antler of a red deer (*Cervus elaphus*), the humerus, or upper bone of the fore-leg, of the aurochs, or extinct wild ox (*Bos taurus primigenius*), and a tail-vertebra of a species of fin-whale (*Balænoptera*). Subsequently Mr. J. Leitch² figured the humerus above-mentioned and recorded two skulls and other bones of the wild ox from the same locality.

¹ *Trans. Cumberland Assoc.*, vol. viii. p. 210 (1882).

² *Ibid.* vol. ix. p. 164 (1884).

English Miles
0 5 10 15 20

LIST OF BOTANICAL DISTRICTS

I. South Western

II. Coast Line

III. Central Plain

IV. North Eastern

BOTANY

THE county of Cumberland, owing to the great variety of its land surfaces, possesses a large variety of vegetable life, alpine, aquatic, maritime, and plants of cultivation, besides such as are peculiar to bogs, peat mosses and open moorlands. Its botanical history is somewhat meagre. From all the information I have been able to gather, it would seem that very slight attention had been paid to botanical investigation prior to the restoration of king Charles II., and that the real pioneers of the study practically were Lawson, Ray, Willison, and Dr. William Nicolson, Bishop of Carlisle, who left behind him at his death a MS. list of Cumberland and Westmorland plants founded upon Ray's Catalogue, and supplemented by additions founded on the worthy prelate's personal gatherings around Carlisle and in the parish of Great Strickland, near Penrith, of which he had been formerly rector. He lived at the rectory when Lawson was schoolmaster at Great Strickland in the adjoining county of Westmorland. From some quaint remarks in the bishop's book, which through the courtesy of the late Bishop Goodwin I had the privilege of examining and making extracts from, there would appear to have been friendly correspondence and interchange of thought between the two. The rectory is not more than a dozen miles from Lawson's abode at Strickland. It would further seem from the frequent occurrence of the phrases 'subter mœnia,' 'inter rudera,' and 'juxta fossas,' that the city defences at Carlisle were in a ruinous condition in 1690, the date of the bishop's MS., and had probably not been repaired since the siege and capture by Cromwell's troops not fifty years before.

Some corroboration as to the scarcity of botanical information as regards Cumberland up to comparatively recent times is afforded by reference to the pages of a recently published work by Mr. W. A. Clarke, F.L.S., containing 'First Records of British Plants.' Only six species are included referring to Cumberland, chiefly on the authority of Willison and discovered by him in the course of a journey from Hexham to Penrith about 1670. These are *Vicia Orobus*, DC., to which Bishop Nicolson adds 'nostratibus, horse-pease,' at Gamblesby; *Alchemilla alpina*, L., and *Circœa alpina*, L., both by Hullswater Lake (*sic*); *Vaccinium uliginosum*, L., at Osten (now Alston); *Lobelia Dortmanna*, L., which the bishop calls 'Water gladiole' in Hullswater, and *Salix cinerea*, L., Cumberland in general. 1753.—Since Nicolson's day additions to local botany in Cumberland have been made chiefly by Dawson Turner, joint

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editor of the *Botanists Guide through England and Wales*, assisted by the Rev. John Dodd, vicar of Aspatria previous to 1804, the Rev. W. Wood of Whitehaven, and the Rev. John Harriman of Eglestone, Durham. The records left by the last-named gentleman still remain as authentic as anything that has come under the writer's personal notice. A list published in Hutchinson's *History of Cumberland* (1794), compiled mainly by the Rev. W. Richardson, vicar of Dacre, is far from being equally trustworthy, and was rather severely criticized by Mr. N. J. Winch, of Newcastle, who himself, from personal observations, published an amended catalogue in 1824. Mr. J. G. Baker of Kew Gardens says of him, 'Winch was a capital botanist.' John Rooke, a Whitehaven artist of more than local repute, who died so lately as 1872, left at his decease a collection of botanical drawings bound up into six volumes. These drawings, executed with great fidelity down to the minutest detail, were sold by the artist's executors to Mr. J. C. Brown, J.P., of Hazel Holme, Whitehaven, by whom they are justly prized. Rev. Robert Wood, sixty-two years vicar of Westward parish, Wigton, and Mr. William Dickinson, F.L.S., of Thorcroft, Workington, were zealous co-workers in natural science for more than half a century, and left behind them valuable collections of dried plants as evidences of their industrious research. It was the writer's happy lot to be their associate in his earlier botanical studies and to be able to avail himself of their experience. The late Dr. John Leitch (M.B. and C.M. of Edinburgh) who practised at Silloth, where he died so recently as 1897, was a keen botanist and did much to promote the study of plants in his own locality especially in looking after the mass of alien plants annually appearing at Silloth, from the dressings of foreign cargoes of grain discharged at the port.

It would be unpardonable to omit all notice of the *Lakeland Flora*, published by Mr. J. Gilbert Baker, F.L.S., of the Royal Gardens at Kew (the MS. of which he submitted to me for examination) as a contribution to our county flora ; or to acknowledge the courteous and invaluable aid extended to me by him in verifying the identity of alien and other plants collected by myself and co-workers at Silloth, Maryport, and Derwent Tinplate Works, Workington, the number of species amounting to about 200.

Much remains to be done before the botany of the county as a whole can be considered as approximately complete. Some districts I admit may be set down as practically exhausted, as for instance the neighbourhood of Keswick, the great resort of tourists to the Lake district. It is in the extreme north and north-east, abutting on the Pennines, that so little has been hitherto accomplished, and I leave the work to be undertaken by younger men of active habits unburdened by the infirmities of age.

I would gladly here add a word of hearty and grateful acknowledgment to the living friends and fellow-labourers who have aided me in the task of compilation of the Flora of Cumberland. These include Miss E. J. Glaister, Skinburness House ; Miss Julia Curwen,

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Roewath ; Mrs. Mary Carr, Silloth ; Mr. J. C. Smith, Penrith ; Mr. Jos. Adair, Egremont ; Rev. R. Wood, Rosley Vicarage ; Mr. R. H. Hamilton, Maryport ; Rev. Hilderic Friend, late of Carlisle and Cockermouth ; Mr. John Glaister, Skinburness ; Messrs. Lidbetter and Hall, Brookfield, Wigton ; Mr. W. Duckworth, late of Carlisle ; Mr. George Coggins, Clifton Hall ; Messrs. Dickson and Stratton, Gilgarron, Whitehaven ; Mr. Thomas Lister, Flimby ; Rev. F. Addison, Thirsk, Yorks ; Mr. S. L. Petty, Ulverston ; Mr. W. Thomson, Carlisle.

ZONES OF TEMPERATURE AND ALTITUDE

By 'range' is signified range in altitude above sea-level, and by the figures 1, 2, 3, 4 the zones of altitude in which the plant is commonly found in Cumberland. For tracing out the vertical range of species the late Mr. H. C. Watson divided the surface of Britain into two 'regions' and six 'zones' of temperature. The two regions he designated as 'agrarian' and 'arctic.' The agrarian includes the whole surface of the island from sea-level, as far up the hills as arable cultivation is practicable. This is up to about 600 yards above sea-level in the north of England, and 400 yards in Scotland or the Scottish Highlands. All above this belongs to the arctic region, which is so named because its characteristic plants have their headquarters within the Arctic Circle, or at any rate in the far north. Each of these two regions he divided into three zones: super-agrarian, mid-agrarian, and infer-agrarian; super-arctic, mid-arctic, and infer-arctic. Of these six zones the coldest and the warmest, the super-arctic and the infer-agrarian are not represented in the county, but we have all the other four. Counting from below, the zone No. 1 corresponds to Watson's mid-agrarian, zone No. 2 to his super-agrarian, zone No. 3 to his infer-arctic, and zone No. 4 to his mid-arctic. Cumberland it may be noted is the only county in England, portions of which are included in the last-mentioned zone.

Zone 1—mid-agrarian of Watson—extends in Cumberland from shore level to an altitude of 900 feet upon the hills, and includes all the larger lakes and valleys, as well as the great bulk of the surface under tillage up to an altitude corresponding to that of Castle Crag, Keswick, though not quite reaching so high as the summit of Eycott Hill, over Berrier. The average annual temperature may be estimated at from 45° to 48° Fahr.

Zone 2—super-agrarian zone of Watson—includes that portion of the hill country which lies at an elevation of from 900 to 1,800 feet, or from the summit of Castle Crag to that of Great (sometimes called) Wester Mell Fell. The average annual temperature of this zone may be set down as ranging from 42° to 45° Fahr. Broadly speaking cultivation does not reach quite to the summit of the super-agrarian but to the top of the mid-agrarian, or in exceptional instances a trifle higher. The super-agrarian flora at the lakes is materially smaller than in the eastern counties of England.

Zone 3—infer-arctic zone of Watson—includes a belt of mountains between 1,800 and 2,700 feet in altitude, or from the top of Great Mell Fell or Lord's Seat over Bassenthwaite Lake to the summit of High

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Stile in Ennerdale, or High Street, which latter mountain belongs to Westmorland. The average temperature of this zone is from 39° to 42° . Above the level of 2,700 feet but little vegetation of any kind is to be met with. Only the highest tarn, viz., Sprinkling Tarn, on the north of Scaw Fell, the elevation of which is 1,900 feet above sea-level, falls distinctly within the bounds of this zone. Here are to be found alpine plants such as *Oxyria digyna*, *Silene acaulis*, *Sedum Rhodiola*, *Saxifraga oppositifolia*, *S. nivalis*, *S. stellaris*, *Cerastium alpinum*, *Hieracium alpinum*, *H. chrysanthum*, *Thalictrum alpinum*; and also that very rare species *Saussurea alpina*, *Vaccinium Myrtillus*, *V. Vitis-Idæa* and *Epilobium alsine-folium*, with some of our hardier ferns may be found in the crevices of the slate cliffs.

Zone 4—Watson's mid-arctic zone—includes all the mountain summits in excess of 2,700 feet in height, namely :—

	Feet		Feet
Scawfell Pike	3,206	Hanging Knott	2,903
Scawfell	3,161	Great End	2,892
Helvellyn	3,118	Cross Fell	2,892
Skiddaw	3,058	Blencathra (Saddleback)	2,847
Bowfell	2,960	Great Dodd	2,804
Great Gable	2,949	Grassmoor	2,791
The Pillar	2,927	The Steeple	2,756

Here there is nothing but bare rocky hill top, with a very scanty vegetation. The only two plants which are characteristic of this zone are *Salix herbacea* and *Carex rigida*, which grow on most of the hills just mentioned, and are the two most distinctly arctic plants of our flora.

FLORA OF CUMBERLAND

SUMMARY OF ORDERS, NUMBER OF GENERA AND OF SPECIES IN EACH ORDER

	Total Genera in each Order	Total Species in each Order	Excluded Species in each Order		Total Genera in each Order	Total Species in each Order	Exclude Species in each Order
CLASS I.				9. Violaceæ	1	9	—
DICOTYLEDONES OR EXOGENEÆ				10. Polygalææ . . .	1	3	—
Div. I. <i>Thalamiflora</i>				11. Frankenaceæ (not represented)			
1. Ranunculaceæ . .	13	34	6	12. Caryophyllææ . .	13	46	14
2. Berberidææ . . .	1	1	—	13. Portulacææ . . .	2	3	1
3. Nymphæacææ . .	2	2	—	14. Tamariscinææ . .	—	—	1
4. Papaveracææ . .	3	7	3	15. Elatineæ	1	2	—
5. Fumariacææ . . .	2	8	2	16. Hypericinææ . .	1	9	3
6. Cruciferææ . . .	25	59	10	17. Malvaceææ . . .	3	5	2
7. Resedacææ . . .	1	2	1	18. Tiliacææ	1	2	—
8. Cistineææ	1	1	—	19. Lineææ	2	3	2
				20. Geraniacææ . . .	3	14	6
				21. Illicinææ	1	1	—

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	Total Genera in each Order	Total Species in each Order	Excluded Species in each Order		Total Genera in each Order	Total Species in each Order	Excluded Species in each Order
Div. II. <i>Calyciflora</i>				68. Loranthaceæ . . .	1	1	—
22. Celastrineæ . . .	1	1	—	69. Santalaceæ . . .	1	1	—
23. Rhamnæ . . .	1	2	—	70. Euphorbiaceæ . . .	3	10	5
24. Sapindaceæ . . .	1	2	1	71. Urticaceæ . . .	4	6	1
25. Leguminosæ . . .	18	59	19	72. Myricaceæ . . .	1	1	—
26. Rosaceæ . . .	14	82	13	73. Cupuliferæ . . .	7	9	1
27. Saxifrageæ . . .	4	14	3	74. Salicineæ . . .	2	16	5
28. Crassulaceæ . . .	4	8	2	75. Empetraceæ . . .	1	1	—
29. Droseraceæ . . .	1	3	—	76. Ceratophylleæ (not represented)			
30. Halorageæ . . .	3	10	2	Div. V. <i>Gymnospermæ</i>			
31. Lythraceæ . . .	2	2	—	77. Coniferæ . . .	3	4	1
32. Onograrieæ . . .	4	13	3	CLASS II.			
33. Cucurbitaceæ . . .	1	1	—	MONOCOTYLEDONES OR ENDOGENÆ			
34. Umbelliferæ . . .	41	43	17	Div. I. <i>Petaloidæ</i>			
35. Araliaceæ . . .	1	1	—	78. Hydrocharideæ . . .	3	3	2
36. Cornaceæ . . .	1	1	—	79. Orchideæ . . .	16	29	11
Div. III. <i>Corolliflora</i>				80. Irideæ . . .	5	5	4
37. Caprifoliaceæ . . .	5	6	2	81. Amaryllideæ . . .	3	4	4
38. Rubiaceæ . . .	4	14	4	82. Dioscoreæ . . .	1	1	—
39. Valerianeæ . . .	3	7	3	83. Liliaceæ . . .	19	20	14
40. Dipsaceæ . . .	2	5	1	84. Juncaceæ . . .	2	21	4
41. Compositæ . . .	48	94	57	85. Typhaceæ . . .	2	6	—
42. Campanulaceæ . . .	6	10	4	86. Aroideæ . . .	2	3	1
43. Vaccineaceæ . . .	2	4	—	87. Lemnaceæ . . .	2	4	1
44. Ericaceæ . . .	10	11	6	88. Alismaceæ . . .	5	3	3
45. Monotropeæ (not represented)				89. Naiadaceæ . . .	5	19	11
46. Plumbagineæ . . .	2	5	1	90. Eriocaulæ (not re- presented)			
47. Primulaceæ . . .	9	14	5	Div. II. <i>Glumiferæ</i>			
48. Oleaceæ . . .	2	2	—	91. Cyperaceæ . . .	9	64	21
49. Apocynaceæ . . .	1	1	1	92. Gramineæ . . .	49	99	23
50. Gentianeæ . . .	7	9	—	CLASS III.			
51. Polemoniaceæ . . .	1	1	—	ACOTYLEDONES OR CRYPTOGAMEÆ			
52. Boragineæ . . .	11	17	6	Div. I. <i>Vasculares</i>			
53. Convolvulaceæ . . .	3	5	2	93. Filices . . .	17	37	—
54. Solanaceæ . . .	5	4	2	94. Equisetaceæ . . .	1	7	—
55. Scrophularineæ . . .	14	38	11	95. Lycopodiaceæ . . .	1	5	—
56. Orobanchaceæ . . .	2	5	3	96. Selaginellaceæ . . .	2	2	—
57. Lentibularieæ . . .	2	5	2	97. Marsileaceæ . . .	1	1	—
58. Verbenaceæ . . .	1	1	—	98. Characeæ . . .	3	6	—
59. Labiatæ . . .	19	40	13	Total . . .			
60. Plantagineæ . . .	2	6	1		527	1196	364
61. Illecebraceæ . . .	4	3	4				
62. Amaranthaceæ . . .	1	—	5				
Div. IV. <i>Monochlamydeæ</i>							
63. Chenopodiaceæ . . .	6	23	3				
64. Polygonaceæ . . .	4	24	3				
65. Aristolochiaceæ . . .	1	1	1				
66. Thymeliaceæ . . .	1	—	1				
67. Eleagnaceæ . . .	1	—	—				

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Additional plants gathered at Silloth by the late John Leitch, Esq., M.D., of that town, copied from the doctor's MS.

Natives of Britain, or mentioned in Babington's *Manual*.

Alyssum calycinum, L.
 Erysimum cheiranthoides, L.
 Diplotaxis muralis, DC.
 Coronopus didymus, Sm.
 Silene noctiflora, L.
 Ornithopus perpusillus, L., introduced on Silloth
 Green, where it is *extremely* plentiful in the
 short turf
 Viola Curtisii (Forster) now also abundant
 Carum Carui, L.
 Anthemis tinctoria, L.
 Achillea tomentosa, L.
 Carduus crispus, L., v. polyanthemos (Koch)
 — pycnocephalus, L.
 Cnicus arvensis, L., v. setosus (Bess.)
 Crepis setosa, Hall. fil.
 Solanum nigrum, L.
 Calamintha arvensis, Lam.
 Lamium purpureum, L., v. decipiens (Sonder)
 Dipsacus sylvestris, Huds.
 Chenopodium polyspermum, L.
 Lolium temulentum, L.
 Avena strigosa, Schreb.
 Polypogon monspeliensis, Desf.
 Setaria viridis, Beauv.
 Bromus squarrosus, L.
 — patulus, Reich.
 — arvensis, L.
 — commutatus, Schrad.
 — diandrus, Curt.
 Caulalis nodosa, Scop.
 Mariana lactea, Hill
 Nasturtium terrestre, R.Br. } W.H., 1900

ALIENS

Malcomia crenulata, Boiss
 Lepidium perfoliatum, L.
 — virginicum, L.
 Eruca vesicaria, Cav.
 Brassica juncea, L.
 Moricandia arvensis, DC.
 Chorispora syriaca, Boiss
 Silene dichotoma, Ehrh.
 Trigonella Fœnum-græcum, L.
 — monspeliaca, L.
 Medicago Soleriolii, Duby.
 Trifolium parviflorum, Ehrh.
 Potentilla collina, Wibel
 Oenothera tenella, Cav.
 Hypecoum grandiflorum, Benth.
 Hemizonia pungens, Torr & Gray
 — Kelloggii, Greene
 Phacelia ciliata, Benth.
 Gilia achilleæfolia, Benth.
 — intertexta, Steud.
 Carthamus lanatus, L.
 Neslia paniculata, Desv.
 Valerianella coronata, DC.
 Ambrosia artemisiifolia, L.
 Madia racemosa, Torr & Gray
 Sideritis montana, L.
 Mentzelia albicaulis, Dougl.
 Grindelia (?)
 Lathyrus sphæricus, Retz.
 Herniaria hirsuta, L. Miss E. J. Glaister,
 1900

COUNTY AREAS

It is customary to distinguish the several areas into which the surface of a county may be mapped out for the purposes of a flora, by prefixing to each division the initial letter of some river of importance as representing a river basin or system. I found, in compiling my recently published *Flora of the County of Cumberland*, that this plan, which has many advantages to recommend it, would be impracticable here where we have so many leading streams with the same initial letter; e.g. Eden, Ellen, Esk (two), Eamont, Ehen; similarly Caldew, Calder, Cocker; Wampool, Waver, Wiza; Glenderamakin, Glenderaterra, Greta; and so on. To prevent confusion in this way I mapped out the areas as follows:—

DISTRICT I

This area includes the southern portion of the county, is triangular in outline, and has on the east the river Duddon and the main watershed of the Cumbrian group of mountains. The river Derwent constitutes the northern boundary for the greater part of its course, the exception being at the north-eastern corner of the triangle, where the Skiddaw and Helvellyn fells are included, though situated some miles to the northward of the sources of that river. This arrangement provides for the inclusion of Lake Ullswater, which would otherwise be segregated from the remainder of the lakes, which all lie within the limits prescribed. The western side of the triangle is bounded by the Irish Sea and the Solway Firth throughout its entire length. It will be noticed that this area is to a large extent covered by rugged and lofty hills, which consist principally of rocks of volcanic origin, mixed in places with masses of granitic or granitoid cliffs and scattered boulders. In some places, as at Honister Crag in Buttermere, the Skiddaw slate is quarried and dressed for roofing purposes; and near the

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village of Threlkeld are extensive quarries of granitic rock for street pavement. Owing in a great measure to these rocks being much affected by cleavage and to their being well jointed, they tend to give rise to screes, and especially is this the case below the foot of each crag. These screes or masses of loose rock fragments of varying sizes, from their very nature present a great variety of surface—wet or dry, sunny or shady, bare rock or thin soil—and are the chosen abode of a great variety of plants, many of which, our bonniest ferns and club-mosses among the rest, are rare in other less favoured situations.

A series of hills of inferior elevation lies along the north-western base of the Cumbrian group. These have a very distinct and remarkable outline, conoidal or plum-pudding shaped. They include Great and Little Mell Fells, Soulby Fell, and Dunmallet at the foot of Ullswater. Great or Wester Mell Fell, as it is sometimes called, attains an elevation of 1,760 feet. The rest of the series are of inferior altitude. They consist of masses of conglomerate of variable thickness, generally considered as forming part of the Upper Old Red Sandstone.

In the extreme north-western angle of the area, the cliffs composing the lofty promontory known as St. Bees Head, rising upwards of 300 feet in perpendicular altitude above the sea at their base, and continued at gradually decreasing height to the mouth of the river Derwent below Workington, belong to the New Red Sandstone formation.

Between the shore-line and the loftier mountains, and amongst the foothills of the range, large deposits of iron hæmatite ores have been discovered and extensively worked during the last half-century. Large works have been established for the smelting of these ores and the manufacture of steel rails, etc., for railway purposes, which are largely exported to all parts of the globe. The furnaces are at Millom, Cleator Moor, Whitehaven, Harrington, Workington and Maryport. The ports of export are the three last-mentioned towns and Whitehaven.

So small an interval separates the sea from the mountains in this area that the rivers are but short in their course; the descent being so rapid that, with the single exception of the Derwent, they are little serviceable for purposes of navigation. They include the Esk, Irt, Mite, Calder and Ehen.

The botanical productions of this area include of course many plants of an alpine character not to be met with elsewhere in the county, or even in England. The following are deserving of special mention, taking them in the order observed by the compilers of the *London Catalogue* as under: *halictum alpinum*, L., is found on Scawfell Pikes, overlapping, *Salix herbacea*; also near Sprinkling Tarn, Styhead Tarn and Great End; summit of Black Sail pass; Hanging Knott at about 2,000 feet, with *Juncus triglumis*, L., and on Little Helvellyn, 2,400 feet, where it flowers in great plenty, and there the writer saw it for the first time in a fully developed stage, although he had for years noticed it by the edge of rills at a lower altitude. *Epimedium alpinum*, L., mentioned by old writers as occurring on Skiddaw, Blencathra and Carrock, is now confined to gentlemen's pleasure grounds, as about Whitefield House, Overwater; Gilgarran, Whitehaven, etc. *Silene acaulis*, L., crags of Mickledore, and on the black rocks of Great End (1,500–2,000 feet). It occurs at several stations immediately beyond the border line which divides Cumberland from the adjoining county of Westmorland. *Lychnis alpina*, L., is found only on one of the lake hills (Hobcarten, over the vale of Lorton), said to have been first gathered by a schoolboy when searching for 'cill' for the home manufacture of slate pencils (Wilson Robinson). *Alchemilla alpina*, L., abundant on most of the Lakeland hills of the slate formation. It is found on Scawfell, Great End, Lingmell, Great Gable (up to 2,750 feet), Red Pike, Pillar, on the Ennerdale and Wastdale hills, Honister, etc. *Saxifraga oppositifolia*, L., high slate crags; very rare; near the summit of Scawfell. In the writer's opinion this plant may be overlooked when not in bloom, or passed by as *Thymus Serpyllum*, Fr., the more likely as it flowers early in the season. *Saxifraga nivalis*, L., near the summit of Scawfell; Helvellyn; Legberthwaite Fells, on the western or Thirlmere slope. *Epilobium alsinefolium*, Vill., on the Helvellyn group of hills, Great Gable, Styhead Pass, Ashness Ghyll, Whinlatter, etc. *Saussurea alpina*, DC., high slate cliffs; very rare; near Floutern Tarn. A specimen in the writer's possession was gathered by him at some risk on the cliffs of Little Helvellyn, just over the Westmorland border in 1882. At the same date *Saxifraga stellaris*, L., was observed in bloom within a few feet of the highest peak on Helvellyn proper. The following *Hieracia*, viz. *H. alpinum*, L., *H. chrysanthum*, Backh., *H. anglicum*, Fr., *H. pallidum*, and *H. argenteum*, Fr., have all been found on the lofty cliffs of Scawfell, Glaramara, Great Gable, or Great End. *Oxyria digyna*, Hill., high wet slate crags, not uncommon; Piers Ghyll, Mickledore, Styhead Tarn, Wastwater Screes, Honister, Helvellyn Screes, over Wythburn, 'Eandem in Westm. et Cumbriæ montosis observavit T. Lawson et nos etiam olim' (J. Ray, 1690). *Salix herbacea*,

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L., Scawfell Pikes, Helvellyn, Skiddaw, Blencathra, Grassmoor, Glaramara, Hobcarten, Red Pike and the Pillar. *Juniperus nana*, Willd., Wastdale Screes, Helvellyn, 'clothes the top ridge of Whiteside mountain like a carpet' (J. Adair). *Malaxis paludosa*, Sw., Wastwater; spongy bog at the foot of Grassmoor. *Fucus triglumis*, L., by Loweswater Lake; Scales Tarn on Blencathra (Saddleback), Fisher Place Ghyll (Helvellyn), Borrowdale (Keswick). *Carex atrata*, L., and *C. rigida*, Good., are both to be found about the summits of the Helvellyn and Scawfell group of hills, the latter being of more frequent occurrence. *Poa alpina*, L., cliffs on Helvellyn and Dollywaggon Pike; specimens gathered on Skiddaw were sent to the writer some twenty years ago by Mr. W. Duckworth, formerly of Carlisle. *P. Balfourii* (Bab.), highest Lakeland hills (J. G. Baker); Helvellyn, 1853 (Balfour). *Asplenium germanicum*, Weiss., Borrowdale Fells; Scawfell; Skiddaw; Barf Fell, Thornthwaite, on the west side of Bassenthwaite Lake. *A. septentrionale*, Hull, slate rocks; very rare; Borrowdale and Newlands Vale, Wastwater Screes, Honister Crag, and over Crummock Lake. *Polystichum Lonchitis*, Roth., Helvellyn and Carrock Fell; all the growing specimens noted by the author grew well within the Westmorland border. *Asplenium marinum*, L., is found on the cliffs at St. Bees Head; *A. viride*, Huds., sparingly on Carrock Fell and in Borrowdale.

RANUNCULACEÆ

Clematis Vitalba, L.
Thalictrum alpinum, L.
 — majus, Crantz
 — Kochii, Fr.
Adonis autumnalis, L.
Ranunculus peltatus, var. floribundus, Bab.
 — Flammula, var. radicans, Nolte.
 — reptans, L.
Caltha palustris, var. minor, DC.
Helleborus viridis, L.
Actæa spicata, L.

BERBERIDÆ

Epimedium alpinum, L.

PAPAVERACEÆ

Meconopsis cambrica, Vig.
Glaucium phæniceum, Crantz

CRUCIFERÆ

Barbarea intermedia, Boreau. 1, 2
Cochlearia Armoracia, L. 1, 3
Hesperis matronalis, L. 1, 3
Camelina sativa, Crantz
Brassica Rapa, var. *sativa*, H. C. Wats.
Lepidium sativum, L.
 — *Draba*, L.

CARYOPHYLLÆ

Saponaria Vaccaria, L. 1, 2, 3
Silene acaulis, L.
Lychnis alpina, L.
Cerastium alpinum, L.
Buda marina, Dum., var. *neglecta* (Kindb.)

PORTULACÆ

Claytonia sibirica, L.
 — *perfoliata*, Donn.

HYPERICINÆ

Hypericum calycinum, L.

MALVACEÆ

Malva parviflora, L.

GERANIACEÆ

Geranium striatum, L.
 — *phæum*, L.
Oxalis corniculata, L.
Impatiens parviflora, DC.
 — *Noli-tangere*, L.

LEGUMINOSÆ

Medicago sativa, L.
 — *falcata*, L.
Trifolium incarnatum, L.
Vicia lutea, L. 1, 2
Lathyrus Aphaca, L. 1, 2, 4
 — *sphæricus*, Retz. 1, 2

ROSACEÆ

Spiræa salicifolia, L. 1, 3
Rubus incurvatus, Bab.
 — *pulcherrimus*, Neum.
 — *rhamnifolius*, W. & N. 1, 3
 — *rosaceus*, W. & N.
 — *saxatilis*, L.
Dryas octopetala, L.
Potentilla argentea, L.
Alchemilla alpina, L.
Rosa pimpinellifolia, var. *spinosissima*, L. 1, 2, 4
 — *involuta*, var. *Sabini* (Woods)
 — *hibernica*, Sm.
 — *gracilis*, Woods
 — *tomentosa*, var. *sylvestris* (Lindl.)
 — *glauca*, var. *subcristata*, Baker
 — *canina*, var. *coriifolia* (Fr.)
Pyrus pinnatifida, Ehrh.
Cratægus Oxyacantha, var. *monogyna* (Jacq.)

SAXIFRAGÆ

Saxifraga oppositifolia, L.
 — *nivalis*, L.
 — *Geum*, L.
Ribes Grossularia, L.

CRASSULACEÆ

Sedum villosum, L.
 — *album*, L.
 — *reflexum*, L.
Sempervivum tectorum, L.

DROSERACEÆ

Drosera anglica, Huds.
 — *intermedia*, Hayne

HALORAGÆ

Callitriche hamulata, Kuetz.

BOTANY

ONAGRARIÆ

Epilobium alsinifolium, Vill.
Oenothera biennis, L.
Circæa alpina, L.

CUCURBITACEÆ

Bryonia dioica, Jacq.

UMBELLIFERÆ

Smyrniolum Olusatrum, L.
Bupleurum rotundifolium, L.
Ammi majus, L.
Carum Carui, L.
Scandix Pecten-Veneris, L.
Fœniculum vulgare, Mill.
Peucedanum Ostruthium, Koch
Caucalis latifolia, L.
 — *nodosa*, Scop.

CAPRIFOLIACEÆ

Sambucus Ebulus, L.
Lonicera Xylosteum, L.

RUBIACEÆ

Galium boreale, L.
Asperula arvensis, L.

VALERIANÆ

Centranthus ruber, DC.

COMPOSITÆ

Anthemis tinctoria, L.
Chrysanthemum Parthenium, Pers.
Petasites albus, Gærtn.
Doronicum Pardalianches, L.
Senecio saracenicus, L.
Carduus heterophyllus, Willd.
Cnicus arvensis
 d. setosus (Bess.). 1, 2
Saussurea alpina, DC.
Picris echioides, L.
Hieracium aurantiacum, L.
 — *holosericum*, Backh.
 — *chrysanthum*, Backh.
 — *anglicum*, Fr.
 — *argenteum*, Fr.
 — *cæsius*, Fr.
 b. Smithii, Baker.
 — *vulgatum*, Fr.
 — *gothicum* (Fr. pt.), Backh.
 — *corymbosum*, Fr.
 — *umbellatum*, L.
Taraxacum officinale, Web.
 b. erythrospermum (Anderz.)

VACCINIACEÆ

Vaccinium uliginosum, L.

ERICACEÆ

Arctostaphylos Uva-ursi, Spreng.
Pyrola rotundifolia, L.

PRIMULACEÆ

Primula farinosa, L.
Trientalis europæa, L.
Centunculus minimus, L.

BORAGINÆ

Borago officinalis, L.
Anchusa sempervirens, L.
Pulmonaria angustifolia, L.

CONVOLVULACEÆ

Cuscuta trifolii, Bab.

SCROPHULARINÆ

Verbascum virgatum, Stokes
Linaria cymbalaria, Mill.
 — *purpurea*, Mill.
 — *minor*, Desf.
Antirrhinum Orontium, L.
Mimulus luteus, L.

OROBANCHACEÆ

Orobanche major, L.

VERBENACEÆ

Verbena officinalis, L.

LABIATÆ

Mentha viridis, L.
 — *hirsuta*, Huds.
 b. sub-glabra, Baker
 — *sativa*, L.
 b. paludosa (Sole)
Leonurus Cardiaea, L.
Lamium maculatum, L.

PLANTAGINÆ

Plantago arenaria, Waldst. & Kit.

AMARANTHACEÆ

Amaranthus retroflexus, L.
 — *Blitum*, L.

CHENOPODIACEÆ

Chenopodium opulifolium, Schrad.
Salicornia herbacea, L.

POLYGONACEÆ

Polygonum amphibium, L.
 b. terrestre, Leers.
 — *viviparum*, L.
 b. alpinum, Wahl.
Fagopyrum esculentum, Mœnch
Oxyria digyna, Hill.
Rumex scutatus, L.

ARISTOLOCHIACEÆ

Asarum europæum, L.

EUPHORBIACEÆ

Euphorbia Esula, L.
 — *Cyparissias*, L.
Mercurialis annua, L.
 b. ambigua (L.)

CUPULIFERÆ

Carpinus Betulus, L.
Quercus Robur
 a. pedunculata (Ehrh.)
 c. sessiliflora (Salisb.)

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SALICINÆ

- Salix alba*, L.
b. vitellina (L.)
 — *repens*, L.
f. argentea (Sm.)
 — *herbacea*, L.
 — *phylicifolia*, L.
Populus nigra, L.

CONIFERÆ

- Juniperus nana*, Willd.
Taxus baccata, L.
Pinus sylvestris, L.

ORCHIDEÆ

- Malaxis paludosa*, Sw.
Listera cordata, R. Br.
Orchis militaris, L. [? ?]
Cephalanthera ensifolia, Rich.
Cypripedium Calceolus, L.

IRIDEÆ

- Sisyrinchium angustifolium*, Mill.

AMARYLLIDEÆ

- Narcissus Pseudo-narcissus*, L.
Galanthus nivalis, L.

LILIACEÆ

- Polygonatum multiflorum*, All.
Convallaria majalis, L.
Ornithogalum nutans, L.
 — *umbellatum*, L.
Lilium Martagon, L.
Colchicum autumnale, L.

JUNCACEÆ

- Juncus filiformis*, L.
 — *triglumis*, L.
Luzula spicata, DC.
 — *erecta*, Desv.
b. congesta, Koch

LEMNACEÆ

- Lemna trisulca*, L.

NAIADACEÆ

- Potamogeton polygonifolius*, Pourr.
b. pseudo-fluitans, Syme
 — *plantagineus*, Du Croz
 — *pusillus*, L.
Ruppia rostellata, Koch
Zannichellia palustris, L.
Zostera marina, L.

CYPERACEÆ

- Rhynchospora alba*, Vahl.
Carex pauciflora, Lightf.
 — *disticha*, Huds.
 — *vulpina*, L.
 — *Bœnninghausenia*, Weihe
 — *atrata*, L.
 — *rigida*, Good
 — *limosa*, L.
 — *pilulifera*, L.
 — *lævigata*, Sm.
 — *filiformis*, L.
 — *fulva*, Good

GRAMINEÆ

- Panicum Crus-galli*, L.
Setaria viridis, Beauv.
 — *glauca*, Beauv.
 — *verticillata*, Beauv.
Phalaris canariensis, L.
Milium effusum, L.
Polypogon monspeliensis, Desf.
Gastridium australe, Beauv.
Apera Spica-venti, Beauv.
Deyeuxia strigosa, Kunth.
Avena fatua, L.
Cynosurus echinatus, L.
Melica nutans, L.
Poa alpina, L.
 — *glauca*, Sm. }
 — *Balfourii*, Parn. }
 — *pratensis*, L.
b. subcœrulea (Sm.)
Glyceria distans, Wahlenb.
Festuca sylvatica, Vill.
Bromus arvensis, L.
Lolium linicola, Sonder.
 — *temulentum*, L.
b. arvense (With.)
Agropyron pungens, Roem. & Schult.
 — *acutum*, Roem. & Schult.
Lepturus filiformis, Trin.
Elymus arenarius, L.

FILICES

- Asplenium lanceolatum*, Huds.
 — *viride*, Huds.
 — *germanicum*, Weiss.
 — *septentrionale*, Hull.
Cystopteris fragilis, Bernh.
b. dentata (Hook.)
Polystichum Lonchitis, Roth.
 — *angulare*, Presl.
Lastrea Thelypteris, Presl.
 — *Filix-mas*, Presl.
b. affinis, Bab.
c. paleacea, Moore
e. abbreviata, Bab.
 — *uliginosa*, Newman
 — *æmula*, Brackenridge
Phegopteris calcaria, Fée

EQUISETACEÆ

- Equisetum maximum*, Lam.
 — *hyemale*, L.

LYCOPODIACEÆ

- Lycopodium annotinum*, L.
 — *inundatum*, L.

SELAGINELLACEÆ

- Selaginella selaginoides*, Gray
Isoetes lacustris, L.

MARSILEACEÆ

- Pilularia globulifera*, L.

CHARACEÆ

- Chara fragilis*, Desv.
 — *aspera*, Willd.
Nitella flexilis, Agardh
 — *opaca*, Agardh

BOTANY

DISTRICT II

This area is limited to the line of coast extending from Haverigg Point in the south to the estuaries of the Eden and Esk rivers at the head of the Solway Firth as far as the mouth of the Sark river, which during the latter part of its course from the 'Scots dike' southwards divides England from Scotland and Cumberland from Dumfriesshire. In a northerly direction from the estuary of the Duddon to St. Bees village the coast-line is low, flat and sandy, though the mountains are seen to be at no great distance to the eastward. A little to the south of Bootle indeed, Black Coombe (1,969 feet) appears as a sort of outpost or sentinel of the main group, approaching nearer the sea and standing in majesty alone. Other foothills of inferior altitude are also seen at varying distances. Northward of St. Bees the lofty sandstone cliffs of the promontory rise abruptly from the sea to a height of over 300 feet. With a gradually decreasing altitude they stretch along the shore as far as Harrington, and even to Maryport. Continuing northward the rugged cliffs are seen no more, and the shore-line and beach become flat and level, consisting of a mixture of sand, gravel and alluvial material, which is continued past the estuaries of the Waver and Wampool rivers, also those of the rivers Eden and Esk, to the outfall of the Sark as above mentioned. Towards this northern part several marshes occur liable in portions to be submerged by spring tides, as at Skinburness and Calvo-Whitrigg and Bowness Flow, Burgh and Rockcliffe Marshes. Further inland are also bogs or peat mosses, as Bowness and Solway Mosses on opposite sides of the firth. Altogether the tidal line cannot be much under eighty miles in length.

The more uncommon or striking plants deserving of special mention include the following, ranged as in District I., viz. *Alyssum incanum*, L., and *A. calycinum*, both found at Silloth; *Cochlearia danica*, L., Workington pier; *Diploxaxis tenuifolia*, DC., Maryport ballast since 1880 and steadily increasing; *Coronopus didymus*, Sm., at the same station; *Crambe maritima*, L., until quite lately grew nearly a mile north of Workington harbour, but has been obliterated by masses of slag from the iron furnaces; *Raphanus maritimus*, Sm., Workington north shore, will probably disappear, as a new deep-water dock is projected which will entirely cover the area of its growth; *Malva parviflora*, L., abundant near the Convalescent Institution at Silloth; *Lathyrus Aphaca*, L., has for some years occurred regularly at Silloth; *Eryngium maritimum*, L., coast-line from Workington to Maryport (it also makes a fine show by the Grune at Skinburness, where it is associated with *Salsola Kali*, L., also of remarkably fine growth); *Crithmum maritimum*, L., on the cliffs of St. Bees and, on the evidence of Bishop Nicolson, 1690, grew much farther northward, where it was probably destroyed when the Parton rocks were quarried back to make room for the L. & N. W. Railway along their base; *Asperula arvensis*, L., on a branch line from Silloth to Lord Armstrong's artillery shooting range; *Artemisia maritima*, L., sent to the writer from Duddon Sands by W. Dickinson, F.L.S., in 1879; *Lactuca Scariola*, L., Maryport and Silloth ballast, brought probably by grain ships, 1899-1900; *Statice auriculæfolia*, Vahl., Fleswick Bay, under St. Bees Head; *Samolus Vallerandi*, L., swampy ground on Couderton shore; *Galeopsis Ladanum*, L., on chalk ballast, Maryport, during the last ten years; *Chenopodium Vulvaria*, L., seen at the same station, 1890 (although many of the plants perfected seeds, there has not been any reappearance); *Suaeda maritima*, Dum., will probably disappear along with *Raphanus maritimus* when operations on the dock are commenced at Workington (it grows also about Skinburness Marsh); *Rumex maritimus*, L., about Maryport since 1895; *Euphorbia Esula*, L., on the dock junction line of the Cleator and Workington Railway, not far from the Lonsdale dock, 1893-1900; *Ruppia rostellata*, Koch, creek near the sea dyke a mile from Skinburness, and on the Cloffocks at Workington; *Zostera marina*, L., cast upon the beach near Bootle, and also about a mile south of Maryport harbour; *Catabrosa aquatica*, Beauv., in a rill which discharges on the beach below Couderton; *Lepturus filiformis*, Trin., on Brownrigg and Skinburness marshes, not uncommon; *Avena strigosa*, Schreb., on the shore a mile north of Workington; *Elymus arenarius*, L., Workington north shore, established and spreading; *Asplenium marinum*, L., cliffs at St. Bees and, like *Crithmum*, grew also at Parton cliffs in Bishop Nicolson's day.

Here it may not be out of place to mention that of late years quite a number of medicks, clovers and vetches have shown themselves in the precincts of Messrs. Carr & Co.'s large corn mills at Silloth. These have undoubtedly come with foreign grain cargoes, and the probability is that the bulk of these species came from California, whence I understand the main supply of their wheat for milling purposes is now obtained. Of medicks there have occurred *Medicago falcata*, L., established for some years past in the slate yards; *M. denticulata*, with its var. *apiculata* (Willd.); *M. minima*, Desr.; and the curiously fruited *M. scutellata*, with small

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flowers, solitary or in pairs, and seed vessels shaped like snail shells; *Trifolium striatum*, L., *T. fragiferum*, L., and *T. filiforme*, L.; *Vicia lutea*, L., and two or three other plants of the vetch family which remain unidentified. To these may be added *Melilotus messanensis*, All., also an alien.

Plants of rare occurrence found in District II. confined almost exclusively to the shoreline from Hodbarrow Point at the estuary of the River Duddon to that of the Esk and Eden at Port Carlisle :—

RANUNCULACEÆ

Ranunculus sardous, Crantz
b. parvulus (L.)

CRUCIFERÆ

Barbarea præcox, R. Br.
Alyssum incanum, L.
— *calycinum*, L.
Cochlearia danica, L.
— *anglica*, L.
Brassica monensis, Huds.
Diplotaxis tenuifolia, DC.
Coronopus didymus, Sm.
— *Ruellii*, All.
Crambe maritima, L.
Cakile maritima, Scop.
Raphanus maritimus, Sm.

RESEDACEÆ

Reseda lutea, L.

VIOLARIÆ

Viola Curtisii, Forster

CARYOPHYLLÆ

Saponaria Vaccaria, L.
Silene maritima, With.
— *noctiflora*, L.
Cerastium tetrandrum, Curtis
— *semidecandrum*, L.
Arenaria peploides, L.
Sagina maritima, Don.
Buda marina, Dum.
c. neglecta (Kindb.)

MALVACEÆ

Althæa hirsuta, L.
Malva parviflora, L.

GERANIACEÆ

Geranium sanguineum, L.
Erodium cicutarium, L'Herit.

LEGUMINOSÆ

Medicago falcata, L.
— *denticulata*, Willd.
b. apiculata (Willd.)
— *minima*, Desr.
Melilotus arvensis, Wallr.
— *parviflora*, Lam.
— *messanensis*, All.
Vicia angustifolia, L.
b. Bobartii, Koch
Lathyrus Aphaca, L.
— *sphæricus*, Retz.
— *sylvestris*, L.

ROSACEÆ

Potentilla norvegica, L.
Rosa pimpinellifolia, L.
f. spinosissima (L.).
— *canina*, var. *glauca* (Vill.)

UMBELLIFERÆ

Eryngium maritimum, L.
Bupleurum rotundifolium, L.
Fœniculum vulgare, Mill.
Crithmum maritimum, L.
Ænanthe Lachenalii, C. Gmel.
Coriandrum sativum, L.
Caucalis daucoides, L.

RUBIACEÆ

Galium tricornis, Stokes
Asperula arvensis, L.

COMPOSITÆ

Aster Tripolium, L.
Xanthium spinosum, L.
Matricaria inodora, L.
b. salina, Bab.
— *maritima*, L.
Artemisia maritima, L.
Senecio viscosus, L.
Arctium minus, Bernh.
Carduus pycnocephalus, L.
— *nutans*, L.
Onopordon Acanthium, L.
Hieracium umbellatum, L.
Lactuca virosa, L.
— *Scariola*, L.

PLUMBAGINEÆ

Statice Limonium, L.
— *rariflora*, Drej.
— *auriculæfolia*, Vahl.
Armeria maritima, Willd.

PRIMULACEÆ

Lysimachia punctata, L.
Glaux maritima, L.
Samolus Valerandi, L.

BORAGINEÆ

Asperugo procumbens, L.
Lithospermum officinale, L.
Echium vulgare, L.

CONVOLVULACEÆ

Volulus Soldanella, Junger.
Convolvulus arvensis, L.

SOLANACEÆ

Solanum nigrum, L.
Hyoscyamus niger, L.

SCROPHULARINÆ

Verbascum Thapsus, L.
Linaria purpurea, Mill.

VERBENACEÆ

Verbena officinalis, L.

BOTANY

LABIATÆ

Salvia Verbenaca, L.
Stachys annua, L.
Galeopsis Ladanum, L.
Lamium amplexicaule, L.
Ballota nigra, L.

PLANTAGINÆ

Plantago maritima, L.
 — *Coronopus*, L.

AMARANTHACEÆ

Amaranthus retroflexus, L.
 — *Blitum*, L.

CHENOPODIACEÆ

Chenopodium polyspermum, L.
 — *Vulvaria*, L.
 — *opulifolium*, Schrad.
 — *murale*, L.
 — *rubrum*, L.
Atriplex littoralis, L.
 — *deltoidea*, Bab.
 — *laciniata*, L.
Beta maritima, L.
Salicornia herbacea, L.
 β. procumbens, Moq.
Suaeda maritima, Dum.
Salsola Kali, L.

POLYGONACEÆ

Polygonum Raii, Bab.
 — *maritimum*, L.
Fagopyrum esculentum, Mœench
Rumex maritimus, L.
 — *scutatus*, L.

EUPHORBIACEÆ

Euphorbia Esula, L.
 — *Cyparissias*, L.
 — *Paralias*, L.
 — *portlandica*, L.
Mercurialis annua, L.
 β. ambigua (L.).

MYRICACEÆ

Myrica Gale, L.

JUNCACEÆ

Juncus Gerardi, Loisel.
 — *maritimus*, Lam.

NAIADACEÆ

Triglochin maritimum, L.
Ruppia rostellata, Koch
Zostera marina, L.

CYPERACEÆ

Scirpus maritimus, L.
Carex arenaria, L.

GRAMINEÆ

Phleum arenarium, L.
Apera Spica-venti, Beauv.
Ammophila arundinacea, Host.
Avena strigosa, Schreb.
 — *fatua*, L.
Phragmites communis, Trin.
Catabrosa aquatica, Beauv.
Glyceria fluitans, R. Br.
 — *maritima*, Mert. & Koch
 — *distans*, Wahlenb.
Festuca arundinacea, Schreb.
Bromus secalinus, L.
 — *erectus*, Huds.
 — *sectorum*, L.
Agropyron pungens, Roem. & Schult.
 — *acutum*, Roem. & Schult.
 — *juncum*, Beauv.
Lepturus filiformis, Trin.
Hordeum murinum, L.
 — *marinum*, Huds.
Elymus arenarius, L.

FILICES

Asplenium marinum, L.
Lastrea æmula, Brackenbridge

DISTRICT III

This area differs widely from the two preceding. It is bounded on the south by the river Derwent, with the slight exception of the deviation mentioned by the inclusion in District I. of the Skiddaw, Helvellyn and Blencathra group of mountains: on the east or more strictly speaking south-east, the river Eamont, which is the dividing line between the counties of Cumberland and Westmorland from the foot of lake Ullswater to the point where it joins the river Eden near Langwathby, commonly pronounced 'Langanby.' From this point the last mentioned river separates it from District IV. to its junction with the Solway Firth some ten miles below Carlisle. On the west or remaining side the firth constitutes the boundary to the mouth of the Derwent at Workington. This is the largest of the divisions in point of area and importance, including as it does the bulk of what is known as the great plain of Cumberland. Here are no lofty mountain peaks, the highest point being the Beacon Hill near the town of Penrith, from which a gradually decreasing ridge constituting the summit level, which separates the valley of the Eden from that of its tributary stream the Petteril, extends in a northerly direction some nine or ten miles. The valleys of the Eden, Petteril, and Caldew, another and larger tributary of the Eden, which rises in Skiddaw Forest and joins the Eden at Carlisle, are mostly and in the two first mentioned streams exclusively on the New Red Sandstone formation. This sandstone is extensively quarried for building purposes at Penrith and Lazonby Fells, Cumwhinton, and Newbiggin near Wreay. Also at Lamonby, Blencowe on the Petteril, Powbeck, Hempsgill Howe and Shawk Quarries. Farther to the westward there are extensive workings of this material at Aspatria, Westnewton and Mary-

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port. Coal mining is carried on successfully and on a large scale in the lower Derwent valley and along the course of the river Ellen from Maryport to Ireby, the produce being shipped from the ports of Workington and Maryport, exclusive of the large quantities used in the local furnaces and other industries. There is a considerable belt of limestone running diagonally across the county, from the Eamont near Skirsgill by way of Redhills to Johnby and Greystoke Park, Hewer Hill, Warnel, Catlands, Ireby and Tallentire to the river Derwent, crossing that river into District No. I. at Brigham. From this station it extends by way of Eaglesfield, Pardshaw Crag, Rowrah and Hensingham to the sea beyond Egremont. Along this line a number of plants may be found generally classed as xerophilous, which are of very rare occurrence elsewhere. Among these are *Helleborus viridis*, L.; *Hypericum hirsutum*, L.; *Dipsacus sylvestris*, Huds.; *Origanum vulgare*, L.; *Scabiosa Columbaria*, L. (this species also appears in great abundance on what is known as 'the Forge Green' at Hawksdale, probably brought down by the impetuous stream of the Caldew from the limestone of Warmel or Hewer Hill, some six miles higher up the river); *Campanula glomerata*, L., *Helianthemum Chamæcistus*, Mill, etc.

Between the Caldew and the Ellen valleys on the summit level lies a ridge, the chief points in which are Hewer Hill, Warnel Fell, Brocklebank and Catlands, all on the limestone; and between the Ellen and the Derwent rivers is another ridge bearing at different points the names of Binsey, Caermote, Whittes, Moota, and Tallentine Hill: the three first being outlying spurs from Skiddaw belong to the slate formation, the last two are on the limestone with occasional outcrops of a greyish white sandstone of highly fossiliferous nature. Northward and eastward from Aspatria to the river Eden the district is flat and of almost uniform level, composed for the most part of alluvial soil, apparently the detritus of the rocks of the Lake district brought down from the mountains and deposited where at present found. The Abbey Holme district is especially level, and towards the Solway in the Silloth neighbourhood, the soil, said to rest upon quicksand, is mostly of a fertile quality.

Some special notice must here be made of a most interesting botanical station lying within the limits of the area now under consideration. This is a plot of boggy ground about thirty acres in extent, lying about three miles westward of the town of Penrith near the ancient village of Newton Regny and known as Newton Regny Moss. It is rectangular in outline, and is owned in part by the people of Newton on the one side, and by the inhabitants of Newbiggin, a village in the adjoining parish of Dacre, on the other. A sluggish stream of moss water of almost inky blackness running the entire length of the ground divides the enclosure into two unequal portions; the larger share pertains to Newton, being equal to about 22½ acres. This part has been subdivided into a number of small allotments, answering to the number of resident proprietors, each of whom had his 'peat-pot,' separated from that of his neighbour by a 'reaine' or narrow strip of ground, on which the newly dug peats were spread to dry. The supply of peaty material seems to have become exhausted, and the 'pots' are filled well-nigh to the brim with water of the same character as that in the brook. It is impossible to make a thorough examination: the only plan to be adopted by strangers is to walk along by the 'reaines,' the remaining portions not being negotiable except during seasons of exceptionally dry weather. Besides the botanical rarities presently to be mentioned the locality has been described as the paradise of 'black-headed gulls (*Larus ridibundus*) snipes, water-hens, frogs and dragonflies.' A few of the plants may be mentioned, several of which are only to be gathered here, and those mostly of the aquatic family, viz.: **Ranunculus Lingua*, L., R. *Flammula*, L. (in abundance); *Trollius europæus*, L.; *Parnassia palustris*, L.; *Galium palustre* var. *b. elongatum* (Presl.); *Valeriana officinalis*, L. (attains to quite a remarkable growth on some of the 'reaines'); *Menyanthes trifoliata*, L.; *Veronica Anagallis*, L.; *Utricularia vulgaris*, L. (very abundant and showy in August); *Mentha sativa*, L.; *Prunella vulgaris*, L. (var. *alba*); *Salix fragilis*, L. (often planted, but truly wild at such places as Newton Regny Moss, Penrith. J. G. Baker, 1883); *Epipactis palustris*, Crantz; *Habenaria chloroleuca* Ridley; *Typha latifolia*, L.; *Potamogeton plantagineus*, Du Croz; **Schænus nigricans*, L.; **Cladium jamaicense*, Crantz; *Carex teretiuscula*, Good.; **C. limosa*, L.; **C. filiformis*, L.; *C. rostrata*, Stokes; *Equisetum limosum*, Sm.; **Chara polyacantha*, Braun.¹

Adonis autumnalis, L., grew in large quantities in a crop of flax on a farm at Flimby in 1885, where it was associated with about an equal amount of *Plantago arenaria*, Waldst. and Kit. *Glaucium phœniceum*, Crantz, at Derwent Tinplate Works, 1893-94. *Aconitum*

¹ The plants to which an asterisk (*) is prefixed are found at this station only, and most of them were recorded for the first time by the author.

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Napellus, L., right bank of river Caldew, opposite to Holm Hill mansion, established many years. *Cheiranthus Cheiri*, L., on the old walls of Dacre Castle, Penrith. *Hesperis matronalis*, L., banks of the rivers Ellen and Roe, at Aspatria and Stockdalewath respectively. *Sisymbrium pannonicum* Jacq., Derwent Tinplate Works, and Silloth for many years past, and seen on Workington south shore this season, 1900. *Linum angustifolium*, Huds., long established at Shawk quarries, near Curthwaite, in small quantity. *Trifolium incarnatum*, L., has occurred as a casual on the London and North-Western Railway near Flimby, and subsequently on the cinder mound at Derwent Tin-plate Works, Workington. *Vicia lutea*, L., on both banks of the Derwent from Seaton Mill to Camerton railway station, 1896; also at Silloth and Skinburness, 1900. *Rubus Balfourianus*, Blox., very fine examples occur near the farm belonging to Mr. Graham at Hawksdale, Carlisle. *Rosa arvensis*, Huds., in Flimby and Aigle Gill woods, abundantly. Here also, and at Whitefield House, Overwater, *Saxifraga umbrosa*, L., has multiplied exceedingly from garden waste. *Caucalis latifolia*, L., by the river Derwent, opposite to Camerton station, 1896. *Lactuca muralis*, Fresen., in the woods at Threapland Ghyll, Aspatria, the lowest station at which it has been remarked. *Lysimachia ciliata*, L., ditch by the highway, nearly opposite to Monkhouse Hill farm, Sebergham. *Centunculus minimus*, L., near Thurstonfield lough, Carlisle, where also grows *Limosella aquatica*, L. *Latræa Squamaria*, L., is found in the 'Riddings,' near Gatesgill village, also near Sebergham Hall, where it is parasitical on the roots of an avenue of lime trees. *Nepeta Cataria*, L., in a roadside hedge a few yards eastward of Dalemmain Mill, Penrith, on the south side of the highway. *Scutellaria minor*, Huds., swampy ground at Moorhouse Guards, between Seaton and Flimby. *Euphorbia Esula*, L., well established on both sides of the highway near Inglewood Bank, Penrith. *Castanea sativa*, Mill., two grand trees on the river Eamont, nearly opposite Pooley Mill, on the Dalemmain estate. *Lilium Martagon*, L., in the 'morel wood,' right bank of the Caldew at Holm Hill. *Colchicum autumnale*, L., meadow by the river Ellen, on the left bank, opposite Baggrow. *Butomus umbellatus*, L., bed of the river Wampool, a little way above the bridge at Kirkbride. *Catabrosa aquatica*, Beauv., near Blencowe railway station. *Asplenium Adiantum-nigrum*, L., hedge bank by an occupation road connected with Millstone Moor farm, Moota, near Cockermouth. *Equisetum maximum*, Lam., Flimby wood, Maryport.

It may be well to mention here that the ancient royal 'Forest of Inglewood' was included wholly within this area. It extended from the city of Carlisle to Penrith, a distance of eighteen miles, embracing both towns. The whole of the following parishes were within its limits, viz.: Penrith, Edenhall, Great Salkeld, Lazonby, Hesket, Wetheral, Warwick, St. Mary's (Carlisle), St. Cuthbert's (Carlisle), Dalston, Hutton, Skelton and Newton Regny; as also portions of Thursby, Sebergham, Castle Sowerby, Westward and Caldbeck. It remained an appanage to the Crown property until the year 1696, when it was granted to William Bentinck, first earl of Portland.

List of plants of more or less rarity to be found within the limits of District III.; the most extensive and fertile, as it is also the most highly cultivated, of the divisions which I have adopted for the purposes of this work.

RANUNCULACEÆ

Clematis Vitalba, L.
Thalictrum Kochii, Fr.
 — *flavum*, L.
Adonis autumnalis, L.
Ranunculus fluitans, Lam.
 — *Drouetii*, Godr.
 — *trichophyllus*, Chaix.
 — *peltatus*, Schrank
 c. floribundus (Bab.)
 — *Lingua*, L.
Helleborus viridis, L.
Delphinium Ajacis, L.
Aconitum Napellus, L.

PAPAVERACEÆ

Meconopsis cambrica, Vig.
Glaucium phœniceum, Crantz

FUMARIACEÆ

Neckeria lutea, Scop.
Fumaria confusa, Jord.

CRUCIFERÆ

Cheiranthus Cheiri, L.
Barbarea intermedia, Boreau
Arabis Turrita, L.
Draba muralis, L.
Cochlearia Armoracia, L.
Hesperis matronalis, L.
Sisymbrium Sophia, L.
 — *pannonicum*, Jacq.
 — *Irio*, L.
 — *Columnæ*, Jacq.
Erysimum cheiranthoides, L.
 — *perfoliatum*, Crantz
Camelina sativa, Crantz
Brassica Rapa, L.
 — *monensis*, Huds.
Lepidium rudemale, L.
 — *Draba*, L.
Thlaspi arvense, L.
Raphanus Raphanistrum, L.

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VIOLARIÆ

Viola sylvestris, Reich.
— *lutea*, Huds.

CARYOPHYLLÆ

Dianthus Armeria, L.
— *deltoides*, L.
Silene conica, L.
— *anglica*, L.
Sagina nodosa, Fenzl.

HYPERICINÆ

Hypericum calycinum, L.

TILIACEÆ

Tilia platyphyllos, Scop.

LINEÆ

Radiola Linoides, Roth.
Linum angustifolium, Huds.

GERANIACEÆ

Geranium rotundifolium, L.
Oxalis corniculata, L.

SAPINDACEÆ

Acer campestre, L.

LEGUMINOSÆ

Ulex nanus, Forster
Trifolium incarnatum, L.
— *striatum*, L.
— *resupinatum*, L.
Vicia Orobus, DC.
— *lutea*, L.

ROSACEÆ

Spiræa salicifolia, L.
Rubus suberectus, Anders.
— *affinis*, W. & N.
— *incurvatus*, Bab.
— *ramnifolius*, W. & N.
— *leucostachys*, Schleich.
— *infestus*, Weihe
— *Balfourianus*, Blox.
Fragaria elatior, Ehrh.
Potentilla norvegica, L.
Rosa involuta, Sm.
 b. Sabini, Woods
— *canina*, L.
 a. lutetiana (Leman)
 c. sphærica (Gren.)
 e. dumalis (Bechst.)
 i. urbica (Leman)
 j. dumetorum (Thuill.)
— *glauca*, Vill.
 b. subcristata (Baker)
 e. coriifolia (Fr.)
 g. Watsoni (Baker)
— *arvensis*, Huds.
Pyrus communis, L.
— *pinnatifida*, Ehrh.
Cratægus Oxyacantha, L.
 d. monogyna (Jacq.)

SAXIFRAGÆ

Saxifraga umbrosa, L.
— *stellaris*, L.
Ribes rubrum, L.

Ribes Grossularia, L.
 b. Uva-crispa, L.

DROSERACEÆ

Drosera anglica, Huds.
— *intermedia*, Hayne

HALORACEÆ

Hippuris vulgaris, L.
Myriophyllum spicatum, L.
Callitriche verna, L.
— *hamulata*, Kuetz.

ONAGRARIÆ

Epilobium obscurum, Schreb.

UMBELLIFERÆ

Caucalis latifolia, L.
— *nodosa*, Scop.

RUBIACEÆ

Galium erectum, Huds.

DIPSACEÆ

Dipsacus sylvestris, Huds.

COMPOSITÆ

Erigeron acre, L.
Filago minima, Fr.
Anaphalis margaritacea, Benth. & Hook. fils.
Gnaphalium sylvaticum, L.
Pulicaria dysenterica, Gærtn.
Matricaria Chamomilla, L.
Onopordon Acanthium, L.
Crepis paludosa, Moench
Centaurea Solstitialis, L.
Cichorium Intybus, L.
Leontodon hirtus, L.
— *hispidus*, L.
Lactuca muralis, Fresen.

CAMPANULACEÆ

Lobelia Dortmanna, L.
Campanula rapunculoides, L.
— *glomerata*, L.

ERICACEÆ

Andromeda Polifolia, L.
Pyrola minor, L.
— *media*, Sw.

PRIMULACEÆ

Lysimachia ciliata, L.
— *Nummularia*, L.
Centunculus minimus, L.

GENTIANÆ

Erythræa littoralis, Fr.
— *pulchella*, Fr.

POLEMONIACEÆ

Polemonium cœruleum, L.

BORAGINÆ

Cynoglossum officinale, L.
Symphytum tuberosum, L.
Myosotis collina, Hoffm.

CONVOLVULACEÆ

Convolvulus arvensis, L.

SCROPHULARINÆ

Verbascum Blattaria, L.
Scrophularia aquatica, L.
Limosella aquatica, L.

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Veronica montana, L.
— *scutellata*, L.
Rhinanthus major, Ehrh.

OROBANCHACEÆ

Orobanche elatior, Sutton
Lathræa Squamaria, L.

LENTIBULARIÆ

Utricularia minor, L.
— *intermedia*, Hayne

LABIATÆ

Mentha rotundifolia, Huds.
— *piperita*, Huds.
— *hirsuta*, Huds.
 b. subglabra, Baker
— *sativa*, L.
 b. paludosa, Baker
— *gentilis*, L.
Calamintha arvensis, Lam.
Nepeta Cataria, L.
Scutellaria minor, Huds.
Marrubium vulgare, L.
Galeopsis versicolor, Curt.

PLANTAGINÆ

Plantago arenaria, Waldst. & Kit.

CHENOPODIACEÆ

Chenopodium botryoides, Sm. [? ?]
Atriplex hastata, L.
— *Babingtonii*, Woods

POLYGONACEÆ

Polygonum minus, Huds.
Rumex sanguineus, L.
 b. viridis (Sibth.).
— *Hydrolapathum*, Huds.

EUPHORBIACEÆ

Euphorbia Esula, L.
— *Cyparissias*, L.
— *exigua*, L.

CUPULIFERÆ

Carpinus Betulus, L.
Castanea sativa, Mill.

SALICINÆ

Salix repens, L.
— *phylicifolia*, L.
Populus nigra, L.

CONIFERÆ

Juniperus nana, Willd.
Taxus baccata, L.

HYDROCHARIDEÆ

Elodea canadensis, Michx.

ORCHIDEÆ

Neottia Nidus-avis, Rich.
Epipactis palustris, Crantz
Orchis ustulata, L.
— *incarnata*, L.
Habenaria albida, R. Br.
— *viridis*, R. Br.
— *chloroleuca*, Ridley

LILIACEÆ

Ruscus aculeatus, L.
Allium Scorodoprasum, L.
— *vineale*, L.
— *oleraceum*, L.
Lilium Martagon, L.

Gagea fascicularis, Salisb.
Colchicum autumnale, L.
Paris quadrifolia, L.

JUNCACEÆ

Juncus compressus, Jacq.
— *maritimus*, Lam.
— *Gerardi*, Loisel.
— *glaucus*, Ehrh.
Luzula maxima, DC.
— *erecta*, Desv.
 b. congesta, Koch
Sparganium simplex, Huds.
— *minimum*, Fr.

ALISMACEÆ

Alisma ranunculoides, L.
Butomus umbellatus, L.

NAIADACEÆ

Potamogeton plantagineus, Du Croz.
— *densus* L.
— *crispus*, L.
— *polygonifolius*, Pourr.
Zannichellia palustris, L.

CYPERACEÆ

Eleocharis acicularis, R. Br.
Scirpus fluitans, L.
— *setaceus*, L.
— *rufus*, Schrad.
— *sylvaticus*, L.
Schoenus nigricans, L.
Cladium jamaicense, Crantz
Carex dioica, L.
— *disticha*, Huds.
— *vilpina*, L.
— *acuta*, L.
— *Goodenowii*, J. Gay
— *limosa*, L.
— *lævigata*, Sm.
— *flava*, L.
 c. Oederi, Retz.
— *filiformis*, L.
— *vesicaria*, L.

GRAMINEÆ

Setaria viridis, Beauv.
Phalaris canariensis, L.
Milium effusum, L.
Polypogon monspeliensis, Desf.
Apera Spica-venti, Beauv.
Avena fatua, L.
Sesleria cœrulea, Ard.
Cynosurus echinatus, L.
Catabrosa aquatica, Beauv.
Melica nutans, L.
Poa alpina, L.
Glyceria plicata, Fr.
— *distans*, Wahlenb.
Festuca sylvatica, Vill.
Bromus giganteus, L.
Lolium linicola, Sonder.
— *temulentum*, L.
 b. arvense (With.)

FILICES

Asplenium Adiantum-nigrum, L.
Cystopteris fragilis, Bernh.
 b. dentata (Hook.)

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Polystichum lobatum, Presl.
 var. *aculeatum*, Syme
 — *angulare*, Presl.
Lastrea Filix-mas, Presl.
 b. affinis, Bab.
 c. paleacea, Moore
 — *dilatata*, Presl.
 d. collina, Moore
Phegopteris calcarea, Fée

EQUISETACEÆ

Equisetum maximum, Lam.
 — *sylvaticum*, L.
 — *hyemale*, L.

LYCOPODIACEÆ

Lycopodium Selago, L.
 — *clavatum*, L.

SELAGINELLACEÆ

Selaginella selaginoides, Gray

CHARACEÆ

Chara fragilis, Desv.
 — *polyacantha*, Braun.
 — *vulgaris*, L.
Nitella flexilis, Agardh
 — *opaca*, Agardh

DISTRICT IV

This area is bounded on the south by the river Eden throughout its course in Cumberland, dividing it from District III. until its junction with the Eamont near Dolphenby; thence for a short distance to a little beyond Culgaith, where the boundary diverges to the north-eastward as far as the sources of the river Tees under Cross Fell; the course of that river is followed until the mouth of Crookburn Beck is reached at the extreme south-east corner of Cumberland. Northward from this the boundary follows along the beck to its source, and beyond until Killhope Moor is reached. The adjoining county here is Durham. From this point in a zigzag line the boundary follows the watershed of the Pennine range 'as Heaven water deals' until it reaches the river Irthing at Gilsland, which constitutes the line of demarkation between Cumberland and Northumberland, right up to its source; a little way beyond which the head of the Kershope burn is reached at the northern extremity of the county. The remaining boundary on the north-western side is much less complicated. Commencing at Kershope Head it follows the course of the burn to its junction with the river Liddle, between Cumberland and Roxburghshire. From this point the latter forms the line of separation between Cumberland and Dumfries, until a little below where it falls into the Esk. Here an arbitrary line known as the Scots' Dike, running due westward for a short distance until it abuts upon the river Sark, along which stream the boundary runs to its confluence with the head waters of the Solway Firth.

The Pennine range runs along the eastern verge of this area, from Cross Fell (2,930 feet) through a gradually decreasing series of summits, including Cold Fell (2,039 feet) Slighty Crag (1,702 feet) and Christenbury Crag (1,598 feet), with others of inferior altitude. The district is extremely well-watered. Apart from the rivers Eden, Esk and Liddle on the outskirts, we find the Raven and Croglin waters and the Irthing, with its tributaries the Gelt, Kingwater and Cambeck. The Black and White Lyne streams, which with the Bailey water from Bewcastle unite to form the Lyne river, discharge into the Esk below Longtown. In the Alston district, on the east of the Pennines, the South Tyne and the Tees have their sources, and are the aggregate of innumerable becks or burns which flow from those hills. The hills in their geological formation form quite a contrast to their mightier brethren in the south-west of the county, consisting of strata of carboniferous rocks in the form of shales, sandstones and grits, intermixed with beds of limestone never of any great thickness. In the lower valleys of the Eden, Esk, Liddle and Lyne, the New Red Sandstone rocks predominate, and are extensively quarried for builders' purposes both here and in Dumfriesshire.

The Alston district is highly metalliferous, and lead mines, which are tolerably numerous, have been worked from an early period of our history, as far back as the reign of Henry II. and were then known as the mines of 'Karliol.' King John sent thither for lead to repair some of his castles in the south of England. As many as fifty mines are reported to have been actively worked at different times. Other ores have also been worked.

In the neighbourhood of Tindall Fell and Brampton, Blenkinship and other places, collieries and limeworks are numerous.

It will thus be seen that this area has features of its own so characteristic that Mr. J. G. Baker, who spent a holiday some years ago at Alston (1887) compares it to a slice of Durham or north Yorkshire thrust into Cumberland. He also reports that certain montane species of plants are found here at a somewhat greater altitude than in either of those adjoining counties.

It may be mentioned that this area, interesting as it may seem, has been much less diligently explored in a botanical sense than the remaining portions of the county, and the

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results therefore are but meagre and incomplete. Would that some zealous worker, with youth on his side, would undertake its further exploration and development.

The following are the most noteworthy species recorded from this area as at present known, viz. : *Ranunculus fluitans*, Lam., a flore pleno variety, occurs in the river Eden, near Carlisle; the type is also reported from the river Cairn, near Heads Nook; *Berberis vulgaris*, L., near Rosehill, Gilsland, in hedgerows as a substitute for *Cratægus Oxyacantha*; *Cheiranthus Cheiri*, L., walls of Lanercost Priory; *Draba muralis*, L., nursery grounds a mile north of Carlisle; *Lhlaspi alpestre*, L., everywhere common about the lead mines at Alston, along with *Arenaria verna*, L. (J. G. Baker); *Althæa officinalis*, L., on the cliffs at Rockcliffe; *Radiola Linoides*, Roth, near Long Meg, Little Salkeld; *Rhamnus catharticus*, L., hill near Gilsland; *Vicia Orobus*, DC., 'Circa Great Salkeld copiose, sed præsertim apud Blencarn, nostratibus "Horse Pease,"' Bishop Nicolson's MS. 1690; *Rubus saxatilis*, L., lower Nent Force, Tynehead, on limestone rocks, J. G. Baker; *Rubus Chamæmorus*, L., Christenbury Crags, Knoutberry Fell, over Nenthead; *Rosa spinosissima*, L., Westlinton to Scaleby and round Gamblesby under Cross Fell; *R. mollis*, Sm., very fine about the outskirts of Solway Moss to Netherby Moat, Penton, etc.; *R. tomentosa*, var. *d. scabriuscula* (Sm.), by the river Irthing beneath Burdoswald; *Sedum villosum*, L., Hartside Fell (Ray); *Drosera intermedia*, Hayne, abundant on Solway Moss; *Epilobium alpinum*, L., springs at the east end of Cross Fell, over the Cashwell mine (600 to 700 yards) J. G. Baker; *Carum verticillatum*, Koch, Kingmoor, northward of Carlisle; *Caucalis nodosa*, Scop., gravel bed on the river Eden, opposite Grinsdale village, below Carlisle, associated there with *Asperula arvensis*, L.; *Valeriana pyrenaica*, L., in a wood between Oakbank Farm, Longtown, and Solway Moss in great plenty; *Erigeron acre*, L., on an old wall at Gelt woods, Brampton; *Cnicus heterophyllus*, Willd., by the Solport burn, near its junction with the river Lyne; *Vaccinium uliginosum*, L., at Gamblesby, six miles from Penrith (Ray); *Centunculus minimus*, L., Kingmoor, over Carlisle; *Mentha rotundifolia*, Huds., waste ground east of Rockcliffe station; *Galeopsis versicolor*, Curt., near Cumwhitton; *Myrica Gale*, L., Solway Moss, Longtown; *Salix purpurea*, L., banks of the Esk, Longtown; *S. rubra*, Huds., by Brunstock Beck, near Drawdykes Castle; *Elodea canadensis* Mich., pool by the river Eden, a little way above Lazonby Bridge; *Habenaria conopsea*, Benth., extremely fine in meadows from Soalmaine to Kirkcambeck; *Allium Schœnoprassum*, L., near Edward the Sixth's wall at Wall Town; near Gilsland on the Roman Wall; *Butomus umbellatus*, L., associated with *Elodea canadensis*, near Lazonby Bridge; *Rhynchospora alba*, Vahl., Bolton Fell and other northern moors; *Carex pendula*, Huds., Lyneside woods, below Racks Bridge; also by the Liddle at Penton Linns, where also *C. remota*, L., abounds; *C. vulpina*, L., estuary of river Eden, near Rockcliffe; *Deschampsia flexuosa*, Trin., very abundant about the edges of the Scaleby and other northern peat mosses; *Avena pratensis*, L., limestone rocks near Ashgill Force, Alston; *Cryptogramma crispa*, R. Br., very luxuriant on Cross Fell; *Phegopteris Dryopteris*, Fee., Geltside woods, near Brampton; *Botrychium Lunaria*, Sw., 'fields 'twixt Glassenby and Gamelsby,' Bishop Nicolson, 1690; *Equisetum maximum*, Lam., luxuriant in woods and hedgerows by the river Cambeck; *E. variegatum*, Schleich., on rocks by river Irthing near Gilsland Spa; *Selaginella selaginoides*, Gray, limestone of High Mains and Windy Brow, Alston.

List of plants of more or less rarity to be found in Division IV. being the most northern portion of the county, the botany of which has been less carefully investigated than the remaining divisions, principally owing to the lack of resident students of the science :—

RANUNCULACEÆ

Thalictrum collinum, Wallr.
— *flavum*, L.
Ranunculus fluitans, Lam.
— *sardous*, Crantz
Trollius europæus, L.
Aquilegia vulgaris, L.
Aconitum Napellus, L.

BERBERIDEÆ

Berberis vulgaris, L.

NYMPHÆACEÆ

Nymphæa lutea, L.

PAPAVERACEÆ

Papaver Argemone, L.

FUMARIACEÆ

Neckeria lutea, Scop.

CRUCIFERÆ

Cheiranthus Cheiri, L.
Nasturtium palustre, DC.
Arabis hirsuta, Scop.
Draba muralis, L.
Cardamine amara, L.
Cochlearia alpina, H. C. Wats.
— *Armoracia*, L.
Lepidium latifolium, L.
Thlaspi alpestre, L.
Teesdalia nudicaulis, R. Br.
Raphanus Raphanistrum, L.

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RESEDACEÆ

Reseda Luteola, L.

VIOLARIÆ

Viola odorata, L.
f. alba (Lange)
 — *lutea*, Huds.

POLYGALÆ

Polygala serpyllaceæ, Weihe

CARYOPHYLLÆ

Saponaria Vaccaria, L.
Stellaria nemorum, L.
Arenaria verna, L.
 — *serpyllifolia*, L.
c. leptoclados (Guss.)
Sagina nodosa, Fenzl.

HYPERICINÆ

Hypericum humifusum, L.
 — *hirsutum*, L.

MALVACEÆ

Althæa officinalis, L.
Malva rotundifolia, L.

LINEÆ

Radiola Linoides, Roth.
Linum catharticum, L.

GERANIACEÆ

Geranium phæum, L.
 — *sylvaticum*, L.
 — *pusillum*, L.
 — *lucidum*, L.
Erodium cicutarium, L'Herit.

RHAMNÆ

Rhamnus catharticus, L.

LEGUMINOSÆ

Genista anglica, L.
Ulex Gallii, Planch.
Ononis spinosa, L.
Medicago sativa, L.
Melilotus officinalis, Lam.
Ornithopus perpusillus, L.
Vicia Orobus, DC.
 — *sativa*, L.

ROSACEÆ

Prunus domestica L.
Rubus fissus, Lindl.
 — *affinis*, W. & N.
 — *ramnifolius*, W. & N.
 — *villicaulis* (sp. collect.)
 — *Koehleri* (sp. collect.)
 — *infestus*, Weihe
 — *cæsius*, L.
 — *saxatilis*, L.
 — *Chamæmorus*, L.
Rosa pimpinellifolia, L.
f. spinosissima (L.)
 — *involuta*, Sm.
b. Sabini (Woods)
 — *mollis*, Sm. = *R. villosa*, L.
 — *tomentosa*, Sm.
d. scabriuscula (Sm.)
 — *rubiginosa*, L.
 — *arvensis*, Huds.

SAXIFRAGACEÆ

Saxifraga stellaris, L.
 — *aizoides*, L.
 — *hypnoides*, L.
Ribes Grossularia, L.
 — *rubrum*, L.
 — *nigrum*, L.

CRASSULACEÆ

Sedum Rhodiola, DC.
 — *villosum*, L.
 — *album*, L.
 — *anglicum*, Huds.
Sempervivum tectorum, L.

DROSERACEÆ

Drosera anglica, Huds.
 — *intermedia*, Hayne

HALORAGEÆ

Hippuris vulgaris, L.
Callitriche hamulata, Kuetz.

LYTHRARIÆ

Peplis Portula, L.

ONAGRARIÆ

Circæa alpina, L.

UMBELLIFERÆ

Apium nodiflorum, Reichb. fils.
Carum verticillatum, Koch
Pimpinella Saxifraga, L.
Chærophyllum temulum, L.
Scandix Pecten-Veneris, L.
Peucedanum Ostruthium, Koch
Daucus Carota, L.
Caucalis latifolia, L.
 — *nodosa*, Scop.

CAPRIFOLIACEÆ

Sambucus Ebulus, L.

RUBIACEÆ

Galium boreale, L.
 — *Mollugo*, L.
 — *sylvestre*, Poll.
Asperula arvensis, L.

VALERIANÆ

Valeriana pyrenaica, L.

DIPSACEÆ

Scabiosa Columbaria, L.

COMPOSITÆ

Aster Tripolium, L.
Erigeron acre, L.
Filago minima, Fr.
Antennaria dioica, R, Br.
Gnaphalium sylvaticum, L.
Pulicaria dysenterica, Gært.
Bidens cernua, L.
b. radiata, Sond.
Artemisia Absinthium, L.
Doronicum Pardalianches, L.
Senecio erucæfolius, L.
 — *Saracenicus*, L.
Arctium intermedium, Lange
Cnicus heterophyllus, Willd.
Mariana lactea, Hill

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Serratula tinctoria, L.
Centaurea Scabiosa, L.
 — *Cyanus*, L.
Crepis paludosa, Moench
Hieracium cæsium, Fr.
 — *vulgatum*, Fr.
 — *corymbosum*, Fr.
 — *crocatum*, Fr.
 — *boreale*, Fr.
Leontodon hispidus, L.
Lactuca muralis, Fresen.
Tragopogon pratense, L.
 b. minus, Mill.
 CAMPANULACEÆ
Jasione montana, L.
Campanula glomerata, L.
 — *latifolia*, L.
 VACCINIACEÆ
Oxycoccus quadripetala, Gilib.
Vaccinium uliginosum, L.
Schollera oxycoccus, Roth.
 ERICACEÆ
Andromeda Polifolia, L.
Pyrola media, Sw.
 — *minor*, L.
 PRIMULACEÆ
Lysimachia nemorum, L.
Glaux maritima, L.
Centunculus minimus, L.
 GENTIANEÆ
Gentiana Amarella, L.
Menyanthes trifoliata, L.
 BORAGINEÆ
Symphytum officinale, L.
 — *tuberosum*, L.
Borago officinalis, L.
Lycopsis arvensis, L.
Myosotis cespitosa, F. Schultz.
 — *versicolor*, Reichb.
Lithospermum arvense, L.
 CONVOLVULACEÆ
Volulus sepium, Jung.
 SOLANACEÆ
Solanum Dulcamara, L.
Hyoscyamus niger, L.
 SCROPHULARINEÆ
Linaria Cymbalaria, Mill.
 — *vulgaris*, Mill.
Scrophularia aquatica, L.
 — *nodosa*, L.
Mimulus luteus, L.
Veronica hederifolia, L.
 — *persica*, Poir.
 — *Tournefortii*, Gmel.
 — *montana*, L.
 — *scutellata*, L.
Rhinanthus major, Ehrh.
Melampyrum pratense, L.
 var. *d. montanum* (Johnst.)
 LENTIBULARIÆ
Utricularia intermedia, Hayne
 VERBENACEÆ
Verbena officinalis, L.

 LABIATÆ
Mentha rotundifolia, Huds.
 — *piperita*, Huds.
 — *sativa*, L.
 b. paludosa (Sole)
Origanum vulgare, L.
Calamintha Clinopodium, Spenn.
Galeopsis versicolor, Curt.
Lamium maculatum, L.
 PLANTAGINEÆ
Plantago maritima, L.
 — *Coronopus*, L.
 CHENOPODIACEÆ
Chenopodium album, L.
 a. incanum, Moq.
 b. viride, Syme
Atriplex littoralis, L.
 — *deltoidea*, Bab.
Salicornia herbacea, L.
 POLYGONACEÆ
Polygonum Hydropiper, L.
 — *lapathifolium*, L.
 — *amphibium*, L.
 b. terrestre, Leers
 THYMELÆACEÆ
Daphne Laureola, L.
 EUPHORBIACEÆ
Euphorbia Peplus, L.
 URTICACEÆ
Humulus Lupulus, L.
 MYRICACEÆ
Myrica Gale, L.
 CUPULIFERÆ
Betula verrucosa, Ehrh.
 — *pubescens*, Ehrh.
Carpinus Betulus, L.
Castanea sativa, Mill.
 SALICINEÆ
Salix alba, L.
 — *aurita*, L.
 — *repens*, L.
 — *phylicifolia*, L.
 — *purpurea*, L.
 × *viminalis* (rubra, Huds.)
Populus tremula, L.
 — *alba*, L.
 — *nigra*, L.
 HYDROCHARIDEÆ
Elodea canadensis, Michx.
 ORCHIDEÆ
Listera cordata, R. Br.
Goodyera repens, R. Br.
Cephalanthera ensifolia, Rich.
Epipactis latifolia, All.
Orchis ustulata, L.
 — *latifolia*, L.
Habenaria conopsea, Benth.
 — *bifolia*, R. Br.
 — *chloroleuca*, Ridley
 AMARYLLIDEÆ
Galanthus nivalis, L.

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LILIACEÆ

Allium Scorodoprasum, L.
— *vineale*, L.
— *Schœnoprasum*, L.
Narthecium ossifragum, Huds.

JUNCACEÆ

Juncus Gerardi, Loisel.
— *lamprocarpus*, Ehrh.
— *supinus*, Mœnch
— *triglumis*, L.

TYPHACEÆ

Typha latifolia, L.

AROIDEÆ

Arum maculatum, L.

ALISMACEÆ

Butomus umbellatus, L.

NAIADACEÆ

Triglochin palustre, L.
— *maritimum*, L.
Potamogeton polygonifolius, Pourr.
— *heterophyllus*, Schreb.
— *prælongus*, Wulf.
— *crispus*, L.
— *densus*, L.

CYPERACEÆ

Eleocharis palustris, R. Br.
Scirpus cæspitosus, L.
— *setaceus*, L.
Rhynchospora alba, Vahl.
Carex dioica, L.
— *vulpina*, L.
— *remota*, L.
— *curta*, Good
— *irrigua*, Hoppe
— *limosa*, L.
— *pallescens*, L.

Carex pendula, Huds.
— *hirta*, L.
— *acuta*, L.
— *rigida*, Good

GRAMINEÆ

Alopecurus pratensis, L.
Milium effusum, L.
Agrostis canina, L.
Deschampsia flexuosa, Trin.
Avena pratensis, L.
Sieglingia decumbens, Bernh.
Melica nutans, L.
Poa nemoralis, L.
Glyceria plicata, Fr.
Festuca Myuros, L.
— *elatior*, L.
— *fallax*, Thuill.
Brachypodium gracile, Beauv.
Agropyron caninum, Beauv.

FILICES

Cryptogramme crispa, R. Br.
Asplenium Adiantum-nigrum, L.
— *viride*, Huds.
Athyrium Filix-fœmina, Roth.
Polystichum lobatum, Presl.
Lastrea dilatata, Presl.
Phegopteris Dryopteris, Fée.
Botrychium Lunaria, Sw.

EQUISETACEÆ

Equisetum maximum, Lam.
— *sylvaticum*, L.
— *palustre*, L.
— *variegatum*, Schleich.

LYCOPODIACEÆ

Lycopodium Selago, L.
— *alpinum*, L.

SELAGINELLACEÆ

Selaginella selaginoides, Gray

MOSSES (*Musci*)

As most readers are aware, Cumberland can claim the doubtful privilege of possessing the wettest spot in the British Islands. And in the combination within a small geographical area, of elevation, mildness, and, as regards the western portion of the county, atmospheric humidity, we have conditions essential to the occurrence of a rich and interesting moss-flora.

Elevation alone, however, when it is represented by bleak moorland is not necessarily a favourable condition. Of this we have our share in Cumberland, but there is also a large area of highly elevated rock which affords habitats for arctic, or semi-arctic, species of mosses.

It may be well to remark here that the British moss-flora is connected for the most part with that of Scandinavia ; and in the mountains

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of Norway one may see at their best mosses that seem only just able to maintain a foothold in our British hills. The moss-flora of the British Islands is not exclusively of a northern type, but has also affinities with that of more genial climes, species which may be called Mediterranean occurring here and there in our islands, especially, as might be expected, at their southern and western extremities, and in the mild districts of the west of Cumberland we occasionally come across mosses that are usually associated with the southern types.

This is also the case with the Hepaticæ, and if the reader has the opportunity of referring to Mr. W. H. Pearson's splendid work upon the Hepaticæ of the British Isles he will see (under *Lejeuneæ* especially) that several of the species which are commonly found in the south of Ireland have also been observed at Lodore, where in addition to humidity and mildness of climate there exists another essential of a rich moss-vegetation, viz. shelter. It is in such places as Lodore, sheltered from strong winds, that mosses and Hepaticæ are found in the greatest luxuriance all the world over.¹

There may be some real affinity between the causes which produced the peculiar moss-flora of the south of Ireland and, in its degree, that of Lodore. The matter is one of great interest whether from a geological or botanical point of view, and the student of the mosses of Cumberland will not fail to keep it in mind.

The essentials of atmospheric humidity, mildness and elevation being prevalent in a considerable portion of Cumberland, one is prepared to expect a long list of county records. The writer however is not aware of one having been published; and, labouring under the disadvantage of not living in the county, he does not feel that he has sufficient data to hand to warrant his attempting to compile a complete list.

What the student of our mosses most wants to know is the occurrence of rare and interesting species. Some that would be thus designated have been found by the writer in Cumberland, and he is also aware of interesting finds having been made by other bryologists. He therefore proposes to enumerate these. There must of necessity be many omissions due to the difficulty stated above, but enough will be recorded to show that Cumberland must rank high amongst the counties of England for wealth of mosses, and enough omitted to stimulate future observers to fill up gaps in the list of rare species.

Sphagnaceæ. In the present transition stage through which the determination of these mosses appears to be passing, it might be hazardous for any but an expert to enumerate varieties. It must suffice then to remark that the county is rich in *Sphagna*, especially in that portion which lies to the north of Wigton and borders on the Solway. Indeed there are probably few districts in England in which a greater wealth of these mosses is to be found. The extensive peat bogs in the region

¹ For further remarks both on the occurrence of some southern types of mosses in our British Islands, and on that of shelter as a condition of luxuriance in moss-vegetation, the reader might consult two very interesting articles by the late Dr. Spruce in the *Journal of Botany*, February and March, 1887.

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indicated afford a splendid field for exploration by the student of these plants.

On the sandstone in the north of the county several rather uncommon mosses occur, amongst which may be mentioned *Tetraphis Browniana*, Grev., *Brachyodus trichodes*, Fürnr., *Dicranella crispa*, Schp., *Campylostelium saxicola*, B. & S., and *Weisia tenuis*, C. M. They mostly flourish in and about the quarries.

- Diphyscium foliosum*, β *acutifolium*, Ldb. Mr. H. N. Dixon has found this rather curious variety at *Wastdale*
- Cynodontium polycarpum*, Schp. *Lodore*. Not uncommon in the *Lake district* about rocks and crags
- Dicranella curvata*, Schp. *Ennerdale*. Another of Mr. Dixon's discoveries. A rare species
- Dicranum uncinatum*, C. M. Luxuriant on shaded granite rocks in *Eskdale*
- Grimmia incurva*, Schwgr. (*G. contorta*, Schp.). Rare. Near the summit of *Sca Fell Pike*, on granite
- *subsquarrosa*, Wils. Rocks near the lake at *Friar's Crag, Keswick*. Common in the *Lake district* on rocks near water
 - *decipiens*, Ldb. *Eskdale* and *Borrowdale*. Not common in the *Lake district*. The var. *robusta*, Ferg., occurs in *Eskdale* and doubtless elsewhere in the district, being partial to rocks near water
 - *Hartmani*, Schp. Rocks and walls
 - *ovata*, Schwgr. Rare in Britain. Rocks in river *Duddon*, but poor specimens
 - *montana*, B. & S. Rocks at *Braithwaite*. Not common
 - *elongata*, Kaulf. One of the rarest British mosses. As found in our islands this species is the reverse of 'elongate.' It occurs in the Clova mountains of Scotland and on the mountains between *Grassmoor* and *Thornthwaite* in Cumberland, being not uncommon in the latter district, but difficult to recognize amongst the other *Grimmiæ* with which it is associated
- Rhacomitrium ellipticum*, B. & S. Not common. Rocks and crags. The other British species of the genus are all found more or less plentifully in the county
- Coscinodon cribrosus*, Spr. Found locally, and beautifully fertile, about *Bassenthwaite* on dry walls and rocks
- Glyphomitrium Daviesii*, Brid. *Borrowdale*. Rare. Dr. Carrington and W. H. Pearson, 1884
- Hedwigia imberbis*, Spr. Dry rocks, *Buttermere*, and doubtless elsewhere in Cumberland
- Pottia Heimii*, Fürnr. A coast moss. *Bowness-on-Solway* and *Ravenglass*
- Barbula inclinata*, Schw. On banks of sandy mud, *Bowness-on-Solway*
- Eucalypta ciliata*, Hoffm. *Honister Crag*. W. B. Waterfall, 1885
- Zygodon Stirtoni*, Schp. Occasionally on limestone rocks and walls at *Isel* near *Cockermouth*
- Ulota calvenscens*, Schp. Reputed to have been found at *Lodore*—a very probable locality for it. The writer has found it on the west coast of Scotland, and abundantly at its headquarters at *Killarney*, in the south-west of Ireland. It is to be hoped that its occurrence at *Lodore* may be established, and that at the same time another link in the apparent bryological connection between *Killarney* and the famous cascade near *Keswick* be forged. This beautiful moss is readily known by its smooth calyptra terminating the long seta which commonly grows out from the tuft of moss at some unusual angle. (*Ulota Ludwigii*, Brid. and *U. Drummondii*, Brid., ought also to be sought for about *Lodore*. *U. Hutchinsiae*, Hamm., is a moss of the rocks and walls, and has been found in *Westmorland*. The other species of the genus are common in Cumberland)
- Orthotrichum cupulatum*, Hoffm. On the limestone above *Plumblond*
- *Sprucei*, Mont. On trees by river *Ellen*, near the last named place
 - *tenellum*, Bruch. *Westnewton*, on elders
 - *pulchellum*, Bruch. This pretty little moss is not uncommon in the county, particularly on elders and twigs in hedges
- Ædipodium Griffithianum*, Schwg. In rock crevices on the higher mountains
- Aulacomnion androgynum*, Schwgr. On peaty soil in bank by road, *Bowness-on-Solway*
- Bartramia Halleriana*, Hedw. A beautiful species found occasionally on rocks in ravines and cascades. Found also in *Tasmania*
- Philonotis capillaris*, Ldb. *Esk Hause*; H. W. Dixon, 1895
- Bryum Marratii*, Wils. Sandhills at *Drigg*. Rev. A. Ley

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- Bryum Duvallii*, Voit. Boggy places, *Lorton Vale*, and doubtless elsewhere
- Mnium orthorrhynchum*, B. & S. *Lodore*. Fine, but sterile
- Cryphæa heteromalla*, Mohr. *Bassenthwaite*, on trees
- Habrodon Notarisii*, Schp. *Bassenthwaite*, trees. Not uncommon in the *Lake district*. Usually more plentiful on sycamores
- Leptodon Smithii*, Mohr. One of the most interesting of our Cumberland mosses, being usually found only in the south of England, on trees. *Lodore*. G. Stabler, 1881
- Thuidium delicatulum*, Mitt. Fine and abundant at *Lodore*. Fertile
- Hypnum demissum*. Discovered at *Lodore* by Messrs. Carrington and Pearson, the latter of whom informed the writer of its occurrence there in 1884. This is a rare moss, and it is worthy of note in connection with what was said above that this species is more or less abundant at *Killarney*, where it grows upon damp rocks. It has also been found in north Wales, near the coast
- Hypnum callichroum*, Brid. Shaded rocks at *Lodore*. Fertile
- *crista-castrensis*, L. This lovely species is not uncommon in the woods about *Keswick*
- *eugyrium*, Schp. Rare. Rocks in the cascade at *Lodore*, where the var. *Mac-kayi*, Schp. is abundant, as elsewhere in similar habitats. The type, which may easily be mistaken for a form of *H. palustre*, L., bears very little resemblance to the variety which has claims to rank as a distinct species
- *micans*, Wils. Said on good authority to occur in *Borrowdale*. This species is associated with *H. demissum* in the *Killarney district* of the south of Ireland and occurs in similar habitats, namely on damp rocks, usually in shade
- Hylocomium umbratum*, B. & S. Plentiful in woods at *Lodore* and *Thornthwaite*

The neighbouring county of Westmorland has been fortunate in possessing several resident bryologists of repute, and their observations, extending over many years, have resulted in the publication in 1899, by Mr. G. Stabler of Levens, of a list of county records the wealth of which is probably not surpassed by that of any other county in England. Students are recommended to study the list of Westmorland species, the majority of which may be expected to be found in Cumberland.

LIVERWORTS (*Hepaticæ*)

The writer of the above notes upon the Musci is unable to supply detailed information upon the Hepaticæ of the county, and as no one has been found to undertake the work, he would suggest that students of these fascinating plants refer to Mr. W. H. Pearson's splendid work upon the Hepaticæ of the British Isles, just about to be completed (all parts will be out, I believe, about February, 1902). In it the author gives full lists of localities for the species, and the botanist will be interested to note how large a number, including many rare species, have been found by Mr. Pearson himself, in conjunction with Dr. Carrington, in Cumberland. The publication of this very complete work should give a fresh stimulus to the study of the British Hepaticæ. They were always fascinating to the bryologist, but the scarcity of satisfactory literature made the study too difficult. The Hepaticæ of Cumberland, perhaps even more than the Musci, will fully repay further research.

ZOOLOGY

MOLLUSCS

Although there are but few published lists for this county, so well has Capt. Farrer in especial worked the district¹ that no less than 93 species have been recorded out of a total of 139 for the whole of the British Islands.

One other species, the scarce and local *Vertigo moulinsiana*, was chronicled but subsequently withdrawn by Capt. Farrer as wanting confirmation, though since it occurs quite as far north in Ireland, there is no inherent improbability in its also living in the Lake district.

No southern species is of course to be met with, and though Capt. Farrer tried to establish a colony of *Helicella cantiana* near Bassenthwaite, the experiment did not succeed. A colony of *Helix lucorum* from Italy, on the other hand, has thriven.

Several northern forms, such as *Acanthinula lamellata* and *Unio margaritifer*, are present.

The common garden snail (*Helix aspersa*) is curiously scarce in the county as a whole, especially in the inland parts, and some common fresh-water forms, like *Limnæa auricularia*, *L. stagnalis*, *Planorbis corneus*, and both species of *Vivipara*, are absent altogether.

A. GASTROPODA

I. PULMONATA

a. STYLOMMATOPHORA

Testacella maugei, Fér. Bassenfell, Bassenthwaite
 — *haliotidea*, Drap. Ravenstone, Bassenthwaite
Limax maximus, Linn.
 — *flavus*, Linn. Bassenthwaite; Uldale; Keswick
 — *arborum*, Bouch.-Chant.
Agriolimax agrestis (Linn.)
 — *lævis* (Müll.)
Amalia sowerbii (Fér.). Keswick; Braithwaite; Bassenthwaite
 — *gagates* (Drap.). Buttermere; Rosthwaite; Keswick; Bassenthwaite
Vitrina pellucida (Müll.)

Vitrea crystallina (Müll.)
 — *lucida* (Drap.). Keswick; Penrith
 — *alliaris* (Miller). Bassenthwaite
 — *glabra* (Brit. Auct.). Keswick; Bassenthwaite; Drigg; Allonby
 — *cellaria* (Müll.)
 — *nitidula* (Drap.)
 — *pura* (Ald.)
 — *radiatula* (Ald.)
 — *excavata* (Bean)
 — *nitida* (Müll.)
 — *fulva* (Müll.)
Arion ater (Linn.)
 — *hortensis*, Fér.
 — *circumscriptus*, John.
 — *intermedius*, Norm.
 — *subfuscus* (Drap.)
Punctum pygmæum (Drap.)

¹ *Journ. Conch.*, vol. viii. p. 152, and *Science Gossip* (new series), vol. i. pp. 58, 192. Cf. also Miss Donald, *Trans. Cumberld. Assoc.*, vols. vii. p. 153, and xi. p. 150.

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Pyramidula rupestris (Drap.)
 — *rotundata* (Müll.)
Helicella virgata (Da C.). Silloth; Allonby;
 Crosscannonby; Ravenglass
 — *itala* (Linn.). Ravenglass [dead specimens]
 — *caperata* (Mont.). Cotehill, near Carlisle;
 Silloth; Blaithwaite; Bassenthwaite
 [where a reversed example was also taken]
 — *barbara* (Linn.). Silloth (?); St. Bees;
 Seascale; Drigg; Ravenglass
Hygromia fusca (Mont.). Caldbeck; Bassenthwaite; Alston
 — *granulata* (Ald.). Corby; Wetheral;
 Keswick; Piel Wyke, Bassenthwaite
 — *hispida* (Linn.)
 — *rufescens* (Penn.)
Acanthinula aculeata (Müll.)
 — *lamellata* (Jeff.). Wreay; Bothel; Bassenthwaite; Keswick; Lodore Falls
Vallonia pulchella (Müll.). Bassenthwaite;
 Keswick; Penrith; Gelt Woods, near Carlisle
 — *arbutorum* (Linn.)
Helix aspersa, Müll. Uncommon: more plentiful on the coast than inland, where it has so far been met with in the Lake district only at Bassenthwaite, Keswick, Buttermere and Bowness, it occurs at Carlisle, and is common about Maryport, Whitehaven, Ennerdale, Drigg and Calder Bridge
 — *nemoralis*, Linn.
 — *bortensis*, Müll.
Buliminus obscurus (Müll.)
Cochlicopa lubrica (Müll.)
Azeca tridens (Pult.). Wetheral; Grimsdale Woods; Caldbeck; Bothel; Buttermere
Pupa anglica (Fér.)
 — *cylindracea* (Da C.)
 — *muscorum* (Linn.). Silloth; Drigg; Ravenglass
Sphyradium edentulum (Drap.)
Vertigo antivertigo (Drap.). Mockerkin Tarn; Calder Bridge
 — *substriata* (Jeff.)

Vertigo pygmæa (Drap.)
Balea perversa (Linn.)
Clausilia laminata (Mont.). Near Carlisle; Wigton; Caldbeck; Thornthwaite; near Penrith
 — *bidentata* (Ström.)
Succinea putris (Linn.)
 — *elegans*, Risso

b. BASOMMATOPHORA

Carychium minimum, Müll.
Ancylus fluviatilis, Müll.
Velletia lacustris (Linn.)
Limnæa pereger (Müll.)
 — *palustris* (Müll.)
 — *truncatula* (Müll.)
 — *glabra* (Müll.). Corby; Bassenthwaite
Amphipeplea glutinosa (Müll.). 'Pond near Windermere' (Bulwer)
Planorbis albus, Müll.
 — *glaber*, Jeff. Rare: Pond at Blaithwaite
 — *nautilus* (Linn.). Corby; Bothel; Allonby; Maryport; near Penrith
 — *carinatus*, Müll. Uldale; Nunwick Hall, Great Salkeld
 — *marginatus*, Drap.
 — *vortex* (Linn.). Rare: Allonby
 — *spirorbis*, Müll.
 — *contortus* (Linn.)
 — *fontanus* (Lightf.)
 — *lineatus* (Walker). Rickerby; Blaithwaite; Ennerdale; Bassenthwaite
Physa fontinalis (Linn.)
 — *hypnorum* (Linn.). Rare: near Carlisle; Wigton

II. PROSOBRANCHIATA

Bithynia tentaculata (Linn.). Rickerby Beck; Thurstonfield Lough
Valvata piscinalis (Müll.). Rickerby Beck; Petteril; Bassenthwaite; Derwentwater
 — *cristata*, Müll. Caldbeck; Bassenthwaite
Acicula lineata (Drap.). Bassenthwaite; Lodore; Borrowdale; Scale Force

B. PELECYPODA

Unio pictorum (Linn.). 'R. Brathay, near Ambleside' (Capt. Brown)
 — *margaritifer* (Linn.)
Anodonta cygnæa (Linn.). Wreay; Great Salkeld
Sphærium corneum (Linn.). Near Carlisle; Ullswater; Piel Wyke, Bassenthwaite
 — *lacustre* (Müll.). Corby; Rickerby Beck; Blaithwaite; Ullswater (?)

Pisidium amnicum (Müll.). Rickerby Beck; Cockermouth; Denton Hill Dam
 — *pusillum* (Gmel.)
 — *nitidum*, Jenyns. Dalston; Wreay Wood
 — *fontinale* (Drap.). Blaithwaite; Bassenthwaite; Portinscale
 — *milium* (Held.). Blaithwaite

INSECTS

ORTHOPTERA

This order of insects, comprising the Earwigs, Cockroaches, Grasshoppers, Locusts and Crickets, is poorly represented in the British Isles, the full list barely exceeding fifty species, and of these twelve are not indigenous but merely stragglers from abroad, being introduced with vegetable produce, fruit, etc. There has been no systematic work done at the order in Cumberland, and the subjoined brief account may be said to cover all that is known. Though it is hardly likely that the county possesses anything but a poor orthopterous fauna, on account of its northern position and the absence of chalk, still careful observation would no doubt augment this list very considerably—probably double it.

FORFICULARIA

Earwigs

The Lesser Earwig (*Labia minor*, L.) appears to be very local in the county, having as yet only been noticed in the Lazonby district, where it is quite common in gardens, frequenting dung heaps and decaying vegetable matter. It is an active insect and readily takes to the wing. The Common Earwig (*Forficula auricularia*, L.) is only too common. To the rural population it is known as the 'Twitchbell.'

BLATTODEA

Cockroaches

Phyllodromia germanica, L., is said to have been introduced into Britain by soldiers returning from the Crimea in 1857. It has spread rapidly and in certain localities has become very abundant, occurring in restaurants, warehouses, etc. In Carlisle it inhabits flour mills. It is much smaller than the next species, the Common Cockroach (*Blatta orientalis*, L.), which is a pest in houses, etc., throughout the county. The American Cockroach (*Periplaneta americana*, L.) has been found sparingly in hothouses near Carlisle. This is another introduced species.

ACRIDIODEA

Grasshoppers

Stenobothrus viridulus, L., *S. bicolor*, Charp., and *S. parallelus*, Zett., are found throughout the county in meadows and grassy places, the last

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two species being especially abundant. *Gomphocerus maculatus*, Thunb., is another common species, but is usually met with on heaths, where its dark colours assimilate beautifully with its surroundings. It is much smaller than the other grasshoppers just cited, and this, together with its spotted appearance, readily separates it from them. *Tettix bipunctatus*, L., has occurred near Carlisle and elsewhere and is probably common. It frequents dry ground where the herbage is scanty and is a curious little insect.

LOCUSTODEA

Locusts

Locusta viridissima, L. In the south of England this fine insect is common and is familiarly known as the 'Great Green Grasshopper,' but it is absent in the north, and its only claim to notice in the present work rests on a record in Stephens' *Illustrations* from Cumberland. It is more than likely that the specimen (or specimens) upon which the record was based was introduced into the district from the south. *Platycleis brachyptera*, L., I have found in some numbers on heath land near Lazonby. It is a decidedly local insect in Britain and has not been previously recorded from further north than York.

GRYLLODEA

Crickets

The House Cricket (*Gryllus domesticus*, L.) is common and is the only species of Cricket known in the county.

NEUROPTERA

ODONATA

Dragonflies

These magnificent insects, so far as species are concerned, are not numerous in the British Isles, only about forty species being known, and of these about a quarter have been found in Cumberland. They have not however received the attention they deserve and probably a diligent student could easily double the county's present list.

Sympetrum scoticum, Don., is a common species on and near heaths in most parts of the county. *Libellula quadrimaculata*, Linn., is another heath species, and though more local than the preceding species, at times abounds in favourite haunts such as Bolton Fell and Bowness Moss. In dull weather it may sometimes be noticed resting among heather. *Cordulegaster annulatus*, Latr., may often be seen on the wing in Borrowdale and other parts of the Lake District, but is an exceedingly difficult species to capture on account of its lofty, soaring flight. I have seen it in great numbers on the shores of Buttermere lake. It is one of the finest of the British species. *Æschna juncea*, Linn., occurs in moderate numbers near Carlisle and probably elsewhere. Its usual habitat is a fir

INSECTS

wood in which there are ponds. Its habits are restless and it is not easily netted. *Æ. cyanea*, Müll., I have taken in the same locality as the preceding, but it is a scarcer insect. *Calopteryx virgo*, Linn., is not uncommon in Newbiggen Wood near Carlisle, through which the river Petteril runs. Its flight is weak. *Pyrrhosoma nymphula*, Sulz., occurs generally throughout the county, being found near running streams and pools. *Ischnura elegans*, Lind., and *Agrion puella*, Linn., are both common, inhabiting similar localities to the preceding species. *Enallagma cyathigerum*, Charp., has been found in the Brampton and Keswick districts.

The other divisions of the Neuroptera have not been worked in Cumberland, so I cannot give any information about them.

HYMENOPTERA

ACULEATA

Ants, Bees and Wasps

The order Hymenoptera in its widest sense is one of the most extensive of the orders of insects, including as it does the Ants, Bees, Wasps, Sand Wasps, Saw Flies, Gall Flies and Ichneumon Flies. The Aculeata are the highest section of the order, and their social habits and generally large size have induced hymenopterists to devote most of their attention to them. In Cumberland the Aculeata are imperfectly known, but from the little which has been done it is probable that the fauna is a rich one. Among the more interesting species which have occurred may be mentioned *Vespa austriaca* (males) and *Nomada roberjeotiana*, the latter being captured with *Andrena analis* as its host. Mention should also be made of *A. lapponica*, of which the first recorded British males were taken near Carlisle in 1899.

HETEROGYNA

FORMICIDÆ

- Formica, Linn.
- *rufa*, Linn. *Keswick*; abundant in *Ashness Wood*
- *fusca*, Linn. Occurs everywhere; one of the commonest ants in the county
- *flavus*, De Geer. Rather local, but common where it occurs; *Borrowdale, Silloth*
- *niger*, Linn.
- „ *race alienus*, Först.

MYRMICIDÆ

- Leptothorax, Mayr.
- *acervorum*, Fab. Locally abundant; *Carlisle district, Cumrew Fell*
- Myrmica, Latr.
- *rubra*, Linn.
- *race ruginodis*, Nyl. } Common
- „ *scabrinodis*, Nyl. }
- „ *lobicornis*. One specimen taken near *Carlisle*, March 11th, 1900

MYRMICIDÆ (continued)—

- Monomorium pharaonis*, Linn. This minute ant, though not indigenous to the British Isles, swarms in flour mills in *Carlisle*

FOSSORES

POMPIDIDÆ

- Pompilus, Fab.
- *plumbeus*, Fab. Swarms on the sand hills at *Silloth*
- Salius*, Fab.
- *exaltatus*, Fab. *Wan Fell*

SPHEGIDÆ

- Gorytes, Latr.
- *mystaceus*, Linn. *Carlisle*
- Nysson, Latr.
- *spinosus*, Fab. *Carlisle*
- Mellinus, Fab.
- *arvensis*, Linn. *Silloth*; rather common
- *sabulosus*, Fab. *Silloth*
- Crabro, Fab.

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SPHEGIDÆ (continued)—

- Crabro tibialis, Fab. *Brampton district*
- leucostomus, Linn. } *Carlisle*
- podagricus, v. d. Lind. }
- chrysostomus, Lep. Widely distributed and rather common; sometimes taken freely on dead trees
- cribrarius, Linn. *Carlisle, Lazonby district*, etc.; not uncommon

DIPLOPTERA

VESPIDÆ

- Vespa, Linn.
- vulgaris, Linn. Common everywhere
- rufa, Linn. Common in the neighbourhood of *Carlisle*
- austriaca, Panz. Of this rare wasp two males were taken in 1900—one near *Carlisle*, the other in the *Lazonby district*
- sylvestris, Scop. *Penton*, near the Scotch border
- norvegica, Fab. Common; nests in bushes

EUMENIDÆ

- Odynerus, Latr.
- spinipes, Linn. *Carlisle*
- pictus, Curt. *Lazonby district*
- parietinus, Linn. } *Carlisle*
- antilope, Panz. }

ANTHOPHILA

Sub-division I. OBTUSILINGUES

COLLETIDÆ

- Colletes, Latr.
- fodiens, Kirb. *Silloth*; on ragwort
- marginata, Smith. '*Cumberland*' (F. Smith)

Prosopis, Fab.

- confusa, Nyl. }
- brevicornis, Nyl. } *Carlisle*

Sub-division II. ACUTILINGUES

ANDRENIDÆ

- Sphecodes, Latr.
- subquadratus, Smith. *Lazonby district*
- similis, Wesm. *Brampton district*
- ferruginatus, Schenck. } *Carlisle*
- variegatus, v. Hag. }
- Halictus, Latr.
- rubicundus, Christ. Common everywhere
- cylindricus, Fab. Very common and variable
- albipes, Kirb. }
- nitidiusculus, Kirb. } *Carlisle*
- minutus, Kirb. }
- tumulorum, Linn. }
- leucopus, Kirb. }
- Andrena, Fab.
- albicans, Kirb. Very common

ANDRENIDÆ (continued)—

- Andrena rosæ, Panz.
- „ race trimmerana, Kirb. *Carlisle*
- cineraria, Linn. *Brampton district*
- clarkella, Kirb. *Carlisle*
- nigroænea, Kirb. *Carlisle*; common
- gwynana, Kirb. } *Carlisle*
- fucata, Smith. }
- nigriceps, Kirb. Two specimens at *Silloth* in 1900
- tridentata, Kirb. One specimen in the *Lazonby district* in 1900; on ragwort
- denticulata, Kirb. *Carlisle*; abundant (F. Smith)
- cingulata, Fab. *Carlisle*
- albicus, Kirb. *Brampton district*
- analis, Panz. *Carlisle*
- coitana, Kirb. *Brampton and Lazonby districts*
- minutula, Kirb. *Carlisle and Brampton districts*
- nana, Kirb. }
- wilkella, Kirb. } *Carlisle*
- lapponica, Zett. *Carlisle*; the first recorded British males were taken here in 1899 (*vide E. M. M.*, vol. xxxvi. p. 88)

Nomada, Fab.

- roberjeotiana, Panz. *Carlisle*; a few taken in 1900, associated with *A. analis*
- alternata, Kirb. *Carlisle*, etc.; common
- ruficornis, Linn. } *Carlisle and Brampton districts*
- bifida, Thoms. }
- borealis, Zett. *Carlisle*
- ochrostoma, Kirb. *Carlisle and Lazonby districts*
- flavoguttata, Kirb. *Carlisle*

APIDÆ

- Megachile, Latr.
- versicolor, Smith. *Carlisle* (F. Smith)
- Psithyrus, Lep.
- vestalis, Fourc. *Carlisle*
- quadricolor, Lep. *Brampton district*
- Bombus, Latr.
- smithianus, White. *Brampton district*
- venustus, Smith. *Carlisle*
- agrorum, Fab. Very common
- latreillellus, Kirb.
- „ race distinguendus, Mor. *Silloth*
- derhamellus, Kirb. *Brampton district*
- lapidarius, Linn. Very common
- jonellus, Kirb. *Carlisle*
- pratorum, Linn. Common
- soroensis, Fab. *Carlisle* (F. Smith)
- terrestris, Linn. Very common
- „ race lucorum, Smith. Very common
- Apis, Linn.
- mellifica, Linn. Common

INSECTS

PHYTOPHAGA

Sawflies

The following is a list of the Phytophagous Hymenoptera which occur in the county :—

<i>Tenthredo livida</i>	<i>Selandria stramineipes</i>
— <i>atra</i>	— <i>serva</i>
— <i>colon</i> (?)	<i>Taxonus agrorum</i>
— <i>rufiventris</i>	— <i>equiseti</i>
— <i>mesomela</i>	<i>Pœcilosoma liturata</i>
— <i>viridis</i>	<i>Eriocampa limacina</i>
— <i>olivacea</i>	<i>Blennocampa fuscipennis</i>
— <i>velox</i>	<i>Emphytus succinctus</i>
<i>Tenthredopsis scutellaris</i>	<i>Pachynematus capreæ</i>
— <i>coqueberti</i>	<i>Fenusa ulmi</i>
— <i>liturata</i>	<i>Athalia rosæ</i>
— <i>dorsalis</i>	<i>Lygæonematus astutus</i>
— <i>tristis</i> (?)	<i>Hoplocampa testudinea</i>
— <i>thornleyi</i>	<i>Tomosthetus luteiventris</i>
<i>Allantus maculatus</i>	<i>Rhogogastera lateralis</i>
— <i>ternulus</i>	— <i>viridis</i>
— <i>scrophulariæ</i>	— <i>punctulata</i>
— <i>arcuatus</i>	<i>Crœsus septentrionalis</i>
<i>Dolerus fulviventris</i>	<i>Nematus ribesii</i>
— <i>vestigialis</i>	— <i>abdominalis</i>
— <i>æneus</i> , var. <i>elongatus</i>	<i>Trichiosoma lucorum</i>
— <i>coruscans</i>	<i>Abia sericea</i>
— <i>gonagra</i>	<i>Hylotoma cyanella</i>
— <i>picipes</i>	— <i>ustulata</i>
— <i>niger</i>	<i>Lopyrus pini</i>
— <i>thomsoni</i>	<i>Sirex gigas</i>
<i>Strongylogaster cingulatus</i>	

Ichneumon Flies occur very abundantly, and a large number have been collected by myself and friends, the bulk of which still await identification. Very little appears to be known of these insects in the British Isles, and the preparation of a county list could only be attempted after some years of careful study.

COLEOPTERA

Beetles

Of this extensive order of insects upwards of 3,500 species inhabit the British Isles, about one-third of which have been found in Cumberland, and the county fauna is by no means exhausted—indeed it cannot be said to have yet been much more than sampled.

New species are added to the county list annually. During the past year (1900) over 150 were found of which there were no previous records, so that it is in every way likely that close on 1,700 species will ultimately be found in the county by the active though small band of resident collectors now investigating the coleopterous fauna of the mountains and the moors, the plains and the seashore.

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As is to be expected in such a mountainous county as Cumberland, many of those species only found at considerable elevations are in the county list, and the diligent collector will not be disappointed in his search for them. That typical mountain beetle, *Carabus glabratus*, occurs in all the mountain systems, and when in quest of it such species as *Pterostichus æthiops*, *P. vitreus*, *Cymindis vaporariorum* and *Bembidium nigricorne* may be confidently expected to turn up; while in pools *Agabus congener*, *A. arcticus* and *Hydroporus morio* are to be looked for. From the stunted hawthorns on the slopes of the fells *Telephorus obscurus* is to be beaten. Beneath stones on Cross Fell, the highest point of the Pennines, *Otiorrhynchus maurus* has been found. Many interesting species are found inhabiting the thick moss under waterfalls in the mountain streams, of which perhaps *Stenus guynemeri* and *Quedius auricomus* are the most characteristic.

The sand hills and extensive salt marshes along the shores of the Solway Firth have a rich and varied fauna, as yet far from fully known. Here *Dyschirius nitidus*, *Agabus femoralis*, *Homalium exiguum* and *Telephorus darwinianus* occur, with hosts of other species; and *Anthicus scoticus*, occurring at Allonby, is interesting as being the only known locality in England for this Scotch and Irish beetle.

Passing inland again, mention may be made of the capture of *Lebia crux-minor* near Carlisle, a handsome but one of the rarest British species. The discovery of a colony of the pretty *Hydrothassa hannoverana* in the Lazonby district during the past summer (1900), after being missing in the British Islands for a number of years, is also worthy of passing notice.

The genus *Bembidium*, one of the coleopterist's favourite genera, is well represented in the county, many of the rarer species being found, chief among which is *B. schüppeli*, first made known as British from captures made in Cumberland on the banks of the Irthing, where it still occurs.

The following list may be taken as a fairly complete one so far as present knowledge goes.

A LIST OF THE COLEOPTERA OCCURRING IN THE COUNTY

Where no locality is given with a species it may be inferred that it is of general distribution.

CICINDELIDÆ

Cicindela campestris, L.

CARABIDÆ

Cychrus rostratus, L.

Carabus catenulatus, Scop.

— *nemoralis*, Müll.

— *glabratus*, Payk. *Lake mountains and Pennines*

— *violaceus*, L.

— *nitens*, L. *Cumrew Fell*

— *granulatus*, L.

— *monilis*, F. *Lazonby district*

— *arvensis*, F.

CARABIDÆ (continued)—

Notiophilus biguttatus, F.

— *substriatus*, Wat. *Brampton district*

— *4-punctatus*, Dej. (Stephens)

— *aquaticus*, L.

— *palustris*, Duft.

— *rufipes*, Curt. 'Once down *Wadling*'
(T. C. Heysham in Stephens'
Illustrations)

Leistus montanus, Steph. *Skiddaw* (Stephens)

— *fulvibarbis*, Dej.

— *rufescens*, F.

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CARABIDÆ (continued)—

- Nebria brevicollis*, F.
 — *gyllenhali*, Sch.
Blethisa multipunctata, L. *Carlisle* (Fowler)
Elaphrus riparius, L.
 — *cupreus*, Duft.
 — *lapponicus*, Gyll. *Skiddaw* (J. T. Harris)
Loricera pilicornis, F.
Clivina fossor, L.
 — *collaris*, Herbst.
Dyschirius impunctipennis, Daws. *Solway district*
 — *nitidus*, Dej. *Burgh Marsh*
 — *angustatus*, Putz. Banks of the *Irthing* (T. J. Bold)
 — *salinus*, Schaum. *Solway marshes*
 — *globosus*, Herbst.
Brosicus cephalotes, L. *Coast district*
Badister bipustulatus, F.
 — *sodalis*, Duft. *Carlisle* (T. C. Heysham)
Chlænienus nigricornis, F. *Talkin Tarn* (T. J. Bold)
 • *Oodes helopioides*, F. *Carlisle* (T. C. Heysham)
Bradycellus placidus, Gyll. *Carlisle*
 — *cognatus*, Gyll. *Cumrew Fell*
 — *verbasci*, Duft. *Carlisle*
 — *harpalinus*, Dej.
 — *collaris*, Payk. *Skiddaw*, etc.
 — *similis*, Dej.
Harpalus rufibarbis, F.
 — *ruficornis*, F.
 — *æneus*, F.
 — *rubripes*, Duft. *Brampton district*
 — *latus*, L.
 — *tardus*, Panz. *Brampton district*
Dichirotrichus pubescens, Payk. *Solway district*
Anisodactylus binotatus, F. *Carlisle*
Stomis pumicatus, Panz.
Pterostichus cupreus, L. *Silloth*, etc.
 — *cupreus*, var. *affinis*, Sturm. *Carlisle*
 — *versicolor*, Sturm.
 — *madidus*, F.
 — *æthiops*, Panz. *Cumrew Fell*, *Scaw Fell*
 — *vitreus*, Dej. *Pennines* and *Lake mountains*
 — *niger*, Schall.
 — *vulgaris*, L.
 — *anthracinus*, Ill. *Cumberland* (Stephens)
 — *nigrita*, F.
 — *strenuus*, Panz.
 — *diligens*, Sturm.
 — *vernalis*, Gyll.
 — *striola*, F.
Amara fulva, Dej.

CARABIDÆ (continued)—

- Amara apricaria*, Sturm.
 — *consularis*, Duft. *Castle Carrock*
 — *spinipes*, Auct.
 — *bifrons*, Gyll.
 — *ovata*, F.
 — *similata*, Gyll.
 — *acuminata*, Payk.
 — *tibialis*, Payk.
 — *lunicollis*, Schiöd.
 — *familiaris*, Duft.
 — *trivialis*, Gyll.
 — *communis*, Panz.
 — *plebeia*, Gyll.
Calathus cisteloides, Panz.
 — *fuscus*, F.
 — *flavipes*, Fourc.
 — *mollis*, Marsh. *Coast district*
 — *melanocephalus*, L.
 — „ var. *nubigena*, Hal.
High districts
 — *micropterus*, Duft. *Pennines*
 — *piceus*, Marsh
Taphria nivalis, Panz.
Pristonychus terricola, Herbst.
Anchomenus angusticollis, F.
 — *dorsalis*, Müll.
 — *albipes*, F.
 — *marginatus*, L. *Sebergham*
 — *parumpunctatus*, F.
 — *viduus*, Panz., var. *mœstus*, Duft.
Lazonby district
 — *fuliginosus*, Panz.
 — *gracilis*, Gyll.
 — *piceus*, L.
Olisthopus rotundatus, Payk.
Bembidium rufescens, Guér.
 — *quinquestriatum*, Gyll.
 — *obtusum*, Sturm.
 — *guttula*, F.
 — *mannerheimi*, Sahl.
 — *biguttatum*, F.
 — *æneum*, Germ.
 — *doris*, Panz. *Silloth*
 — *minimum*, F. *Solway district*
 — *normannum*, Dej. *Skinburness Marsh*
 — *schüppeli*, Dej. Banks of *Irthing* and *Eden*
 — *lampros*, Herbst.
 — *nigricorne*, Gyll. *Wan Fell*
 — *tibiale*, Duft.
 — *atrocæruleum*, Steph.
 — *decorum*, Panz.
 — *monticola*, Sturm.
 — *stomoides*, Dej. Banks of *Irthing* and *Gelt*
 — *quadriguttatum*, F. *Carlisle* (T. C. Heysham)
 — *lunatum*, Duft. *Burgh Marsh* and banks of *Irthing*

A HISTORY OF CUMBERLAND

CARABIDÆ (continued)—

- Bembidium concinnum*, Steph. *Burgh Marsh*
 — *femoratum*, Sturm. Banks of *Eden* and *Irthing*
 — *bruxellense*, Wesm. Banks of *Gelt*
 — *saxatile*, Gyll. *Allonby* and *Castle Carrock*
 — *anglicanum*, Sharp. *Lanercost* (T. J. Bold)
 — *littorale*, Ol.
 — *pallidipenne*, Ill. *Silloth*
 — *bipunctatum*, L. *Burgh Marsh*
 — *punctulatum*, Drap.
 — *prasinum*, Duft.
 — *varium*, Ol. *Skinburness Marsh*
 — *paludosum*, Panz. Banks of *Eden* and *Gelt*
Tachypus pallipes, Duft. *Lanercost* (T. J. Bold)
 — *flavipes*, L. Banks of *Irthing*
Trechus discus, F. Banks of *Eden* near *Salkeld*
 — *micros*, Herbst. *Carlisle* (Fowler)
 — *longicornis*, Sturm. *Lanercost* (T. J. Bold)
 — *rubens*, F. Banks of *Irthing* (T. J. Bold)
 — *minutus*, F.
 — *secalis*, Payk. *Lazonby district*
Patrobus excavatus, Payk.
 — *assimilis*, Chaud. *Mountain districts*
Pogonus chalceus, Marsh. *Silloth*, etc.
Cymindis vaporariorum, L. *Cumrew Fell, Wan Fell*
Lebia chlorocephala, Hoff. *Carlisle* and *Lazonby districts*
 — *crux-minor*, L. *Carlisle* (vide *E. M. M.* vol. xxxv. p. 145)
Dromius linearis, Ol.
 — *agilis*, F. *Brampton district*
 — *meridionalis*, Dej. *Lazonby district*
 — *quadrimaculatus*, L.
 — *quadrinotatus*, Panz.
 — *melanocephalus*, Dej.
 — *nigriventris*, Thoms. *Lazonby district*
 — *sigma*, Rossi (Dawson, *Geod. Brit.*)
Metabletus foveola, Gyll.

HALIPLIDÆ

- Brychius elevatus*, Panz.
Haliplus obliquus, F. *Cumberland* (T. J. Bold)
 — *confinis*, Steph. *Talkin Tarn* (T. J. Bold)
 — *fulvus*, F. *Lazonby district*
 — *ruficollis*, De G.
 — *fluviatilis*, Aubé
 — *lineatocollis*, Marsh

DYTISCIDÆ

- Laccophilus obscurus*, Panz. *Carlisle*

DYTISCIDÆ (continued)—

- Hyphydrus ovatus*, L. *Crosby-on-Eden* (T. C. Heysham)
Cœlambus inæqualis, F.
 — *parallelogrammus*, Ahr. } *Carlisle*
 — *impressopunctatus*, Sch. }
Deronectes latus, Steph. *Lanercost* (T. J. Bold)
 — *assimilis*, Payk. *Keswick* (H. Francis, *E. M. M.* vol. xii. p. 175)
 — *depressus*, F.
 — *12-pustulatus*, F.
Hydroporus granularis, L. *Cardew Mire* (T. C. Heysham)
 — *lepidus*, Ol. *Carlisle*
 — *rivalis*, Gyll.
 — *septentrionalis*, Gyll.
 — *davisii*, Curt. *High districts*
 — *halensis*, F. *Carlisle* (T. C. Heysham)
 — *lineatus*, F. *Carlisle*
 — *tristis*, Payk.
 — *umbrosus*, Gyll.
 — *gyllenhali*, Schiöd.
 — *morio*, Dej. *Pennines*
 — *vittula*, Er. *Carlisle*
 — *palustris*, L.
 — *erythrocephalus*, L.
 — *melanarius*, Sturm. *Lanercost* (T. J. Bold)
 — *memnonius*, Nic.
 — *obscurus*, Sturm.
 — *nigrita*, F.
 — *discretus*, Fairm.
 — *pubescens*, Gyll.
 — *planus*, F.
Agabus guttatus, Payk.
 — *paludosus*, F.
 — *unguicularis*, Thoms. *Carlisle*
 — *congener*, Payk. *Mountain districts*
 — *nebulosus*, Forst.
 — *femoralis*, Payk. *Silloth*
 — *arcticus*, Payk. *Mountain districts*
 — *sturmii*, Gyll.
 — *chalconotus*, Panz.
 — *bipustulatus*, L.
Platambus maculatus, L.
Ilybius fuliginosus, F.
 — *ater*, De G. *Carlisle*
 — *guttiger*, Gyll.
 — *ænescens*, Thoms. *Brampton district*
Rhantus exoletus, Forst. } *Carlisle*
 — *pulverosus*, Steph. }
 — *notatus*, Berg. *Carlisle* (Fowler)
 — *bistriatus*, Berg. *Brampton district*
Colymbetes fuscus, L.
Dytiscus punctulatus, F. *Lazonby district*
 — *marginalis*, L.
Acilius sulcatus, L.

INSECTS

GYRINIDÆ

- Gyrinus natator*, Scop.
— *marinus*, Gyll. *Carlisle* (T.C. Heysham)
Orectochilus villosus, Müll.

HYDROPHILIDÆ

- Hydrobius fuscipes*, L.
— *picicrus*, Thoms. *Lazonby district*
Anacæna globulus, Payk.
— *limbata*, F.
Philydrus nigricans, Zett.
— *minutus*, F.
Helochares lividus, Forst. *Brampton district*
— *punctatus*, Sharp
Laccobius sinuatus, Mots.
— *alutaceus*, Thoms.
— *minutus*, L.
Limnebius truncatellus, Thoms.
Helophorus rugosus, Ol. } *Cardew Mire*
— *nubilus*, F. } (T. C. Heysham)
— *aquaticus*, L.
— *æqualis*, Thoms. *Lazonby district*
— *æneipennis*, Thoms.
— *brevipalpis*, Bedel
— *arvernicus*, Muls.
Henicocerus exsculptus, Germ. *Cross Fell*
Octhebius bicolon, Germ.
— *rufimarginatus*, Steph.
Hydræna riparia, Kug.
— *nigrita*, Germ. *Carlisle* (T. C. Heysham)
— *gracilis*, Germ. *Cross Fell*
Sphæridium scarabæoides, F.
— *bipustulatum*, F.
Cercyon littoralis, Gyll. *Silloth*
— *depressus*, Steph. Banks of the *Irthing*
— *hæmorrhoidalis*, Herbst.
— *obsoletus*, Gyll.
— *flavipes*, F.
— *lateralis*, Marsh.
— *melanocephalus*, L.
— *unipunctatus*, L.
— *quisquilius*, L.
— *nigriceps*, Marsh. *Brampton district*
— *pygmæus*, Ill.
— *analisis*, Payk.
Megasternum boleotophagum, Marsh.
Cryptopleurum atomarium, F.

STAPHYLINIDÆ

- Aleochara ruficornis*, Grav. *Brampton district*
— *fuscipes*, F.
— *bipunctata*, Ol.
— *cuniculorum*, Kr.
— *lanuginosa*, Grav.
— *mœsta*, Grav. } *Brampton district*
— *succicola*, Thoms. }
— *nitida*, Grav.
— *morion*, Grav.
— *grisea*, Kr. }
— *algarum*, Faur. } *Silloth*
— *obscura*, Er. }

STAPHYLINIDÆ (continued)—

- Oxypoda spectabilis*, Märk. *Carlisle*
— *lividipennis*, Mann. *Brampton district*
— *opaca*, Grav.
— *alternans*, Grav.
— *longiuscula*, Er.
— *hæmorrhœa*, Mann. *Brampton district*
Ischnoglossa proluxa, Grav. *Carlisle*
Phlœopora reptans, Grav.
Ocalea castanea, Er.
— *latipennis*, Sharp. *Carlisle*
— *badia*, Er. *Gelt valley*
Ilyobates nigricollis, Payk. *Lanercost* (T. J. Bold)
Chilopora rubicunda, Er. *Cumberland* (Fowler)
Myrmedonia collaris, Payk. *Carlisle*
— *humeralis*, Grav.
Astilbus canaliculatus, F.
Homalota curax, Kr. Banks of the *Gelt*
— *insecta*, Thoms. Banks of the *Irthing*
— *pavens*, Er. Banks of the *Gelt*
— *gregaria*, Er.
— *luridipennis*, Mann. } Banks of the
— *elongatula*, Grav. } *Irthing*
— *vestita*, Grav.
— *vicina*, Steph.
— *graminicola*, Gyll.
— *fungivora*, Thoms. *Brampton district*
— *linearis*, Grav.
— *circellaris*, Grav.
— *immersa*, Heer. *Carlisle*
— *analisis*, Grav.
— *depressa*, Gyll.
— *xanthoptera*, Steph.
— *trinotata*, Kr.
— *xanthopus*, Thoms. *Carlisle*
— *fungicola*, Thoms. } *Brampton district*
— *gagatina*, Baudi. }
— *sericea*, Muls. }
— *nigra*, Kr.
— *atramentaria*, Gyll.
— *longicornis*, Grav. *Carlisle*
— *sordida*, Marsh.
— *aterrima*, Grav. } *Carlisle*
— *muscorum*, Bris. }
— *fungi*, Grav.
— „ var. *dubia*, Sharp
Gnypeta labilis, Er.
Tachyusa flavitarsis, Sahl.
— *atra*, Grav. *Lazonby district*
Autalia impressa, Ol.
— *rivularis*, Grav. *Lazonby district*
Gyrophæna gentilis, Er.
Encephalus complicans, Westw. *Lazonby district*
Placusa complanata, Er. *Wan Fell*
Leptusa fumida, Er.
Bolitochara obliqua, Er.
Phytosus balticus, Kr. *Silloth*

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STAPHYLINIDÆ (continued)—

- Oligota inflata, Mann.
- Myllæna brevicornis, Matth.
- Gymnusa brevicollis, Payk. *Carlisle*
- Hypocyptus longicornis, Payk.
- Conosoma littoreum, L.
- pubescens, Grav.
- immaculatum, Steph. *Carlisle*
- lividum, Er.
- Tachyporus obtusus, L.
- obtusus, var. nitidicollis, Steph.
- chrysomelinus, L.
- humerosus, Er.
- tersus, Er. *Carlisle*
- hypnorum, F.
- pusillus, Grav.
- brunneus, F.
- transversalis, Grav. *Silloth*
- Lamprinus saginatus, Grav. } *Lazonby*
- Cilea silphoides, L. } *district*
- Tachinus flavipes, F. *Brampton district*
- humeralis, Grav.
- rufipes, L.
- subterraneus, L.
- marginellus, F.
- laticollis, Grav.
- collaris, Grav.
- elongatus, Gyll.
- Megacronus cingulatus, Mann. *Carlisle*
and *Brampton*
- analis, F.
- inclinans, Grav.
- Bolitobius lunulatus, L.
- trinotatus, Er.
- exoletus, Er. *Carlisle*
- pygmæus, F.
- Mycetoporus lepidus, Grav.
- longulus, Mann.
- clavicornis, Steph. } *Carlisle*
- splendidus, Grav. }
- Heterothops binotata, Er. *Silloth*
- Quedius lateralis, Grav.
- mesomelinus, Marsh.
- cinctus, Payk.
- fuliginosus, Grav.
- tristis, Grav.
- molochinus, Grav.
- picipes, Mann.
- nigriceps, Kr.
- fumatus, Steph. *Gelt Woods*
- maurorufus, Grav. *Brampton district*
- umbrinus, Er.
- scintillans, Grav. *Brampton district*
- auricomus, Kies. *Cross Fell*
- rufipes, Grav.
- attenuatus, Gyll. *Carlisle*
- semiæneus, Steph.
- fulvicollis, Steph.
- boops, Grav.
- Creophilus maxillosus, L.

STAPHYLINIDÆ (continued)—

- Leistotrophus nebulosus, F. } *Carlisle*
- murinus, L. }
- Staphylinus pubescens, De G.
- fulvipes, Scop. *Keswick*
- stercorarius, Ol. *Maryport*
- erythropterus, L. *Carlisle*
- Ocypus olens, Müll.
- similis, F. *Lanercost* (T. J. Bold)
- brunnipes, F.
- cupreus, Rossi
- morio, Grav.
- Philonthus splendens, F.
- laminatus, Creutz
- æneus, Rossi
- proximus, Kr. *Brampton district*
- scutatus, Er. *East Cumberland* (T. J. Bold)
- decorus, Grav.
- politus, F.
- varius, Gyll.
- marginatus, F.
- albipes, Grav. *Carlisle*
- cephalotes, Grav.
- nigriventris, Thoms. *Brampton district*
- fimetarius, Grav.
- sordidus, Grav. *Burgh Marsh*
- ebeninus, Grav.
- umbratilis, Grav.
- fumigatus, Er.
- sanguinolentus, Grav.
- longicornis, Steph. *Brampton district*
- varians, Payk.
- micans, Grav. *Silloth*
- trossulus, Nord.
- fulvipes, F.
- puella, Nord.
- Cafius xantholoma, Grav. *Silloth*
- Xantholinus glabratus, Grav.
- punctulatus, Payk.
- linearis, Ol.
- longiventris, Heer. *Brampton district*
- Baptolinus alternans, Grav.
- Othius fulvipennis, F.
- melanocephalus, Grav.
- myrmecophilus, Kies.
- Lathrobium elongatum, L.
- boreale, Hoch. *Brampton district*
- fulvipenne, Grav.
- brunnipes, F.
- atripalpe, Sharp. *Brampton district*
- quadratum, Payk. *Silloth*
- terminatum, Grav. *Brampton district*
- angusticollis, Lac. Banks of the *Irthing*
(T. J. Bold)
- Cryptobium glaberrimum, Herbst.
- Stilicus rufipes, Germ. *Carlisle*
- orbiculatus, Er.
- affinis, Er.

INSECTS

STAPHYLINIDÆ (continued)—

- Pæderus littoralis*, Grav. } *Carlisle* (T. C.
 — *riparius*, L. } *Heysham*
Evasthetus scaber, Thoms.
Dianous cœrulescens, Gyll.
Stenus biguttatus, L. *Cumberland* (Fowler)
 — *guttula*, Müll.
 — *bimaculatus*, Gyll.
 — *juno*, F.
 — *guynemeri*, Duv. *Cross Fell*
 — *speculator*, Er.
 — *providus*, Er.
 — *lustrator*, Er. } *Brampton district*
 — *buphthalmus*, Grav. }
 — *melanarius*, Steph.
 — *atratus*, Er. *Brampton district*
 — *canaliculatus*, Gyll. *Cumberland* (Fowler)
 — *pusillus*, Er. *Brampton district*
 — *declaratus*, Er.
 — *nigritulus*, Gyll. *Cumberland* (Fowler)
 — *brunnipes*, Steph.
 — *subæneus*, Er. *Silloth*
 — *ossium*, Steph.
 — *impressus*, Germ. *Brampton district*
 — *erichsoni*, Rye. *Cumberland* (Fowler)
 — *flavipes*, Steph. *Carlisle*
 — *binotatus*, Ljun. *Cumberland* (Fowler)
 — *pallitarsis*, Steph.
 — *bifoveolatus*, Gyll. *Carlisle*
 — *nitidiusculus*, Steph.
 — *picipes*, Steph. *Brampton district*
 — *similis*, Herbst.
 — *tarsalis*, Ljun.
 — *paganus*, Er.
Bledius spectabilis, Kr. *Solway marshes*
 — *tricornis*, Herbst. *Near Carlisle* (T. C. Heysham)
 — *arenarius*, Payk. *Silloth*
 — *pallipes*, Grav. *Brampton district*
 — *subterraneus*, Er.
 — *longulus*, Er. *Gelt valley*
 — *erraticus*, Er. *Lanercost* (T. J. Bold)
Platystethus arenarius, Fourc.
 — *cornutus*, Gyll.
Oxytelus rugosus, Grav.
 — *sculptus*, Grav.
 — *laqueatus*, Marsh.
 — *inustus*, Grav.
 — *sculpturatus*, Grav.
 — *maritimus*, Thoms. *Silloth*
 — *nitidulus*, Grav.
 — *tetracarinatus*, Block
Ancyrophorus omalinus, Er. } *Wetheral*
 — *aureus*, Fauv. }
Trogophloeus arcuatus, Steph.
 — *bilineatus*, Steph.
 — *elongatulus*, Er.
Coprophilus striatulus, F. *Lazonby district*

STAPHYLINIDÆ (continued)—

- Deleaster dichrous*, Grav. *Carlisle* (T. C. Heysham)
Anthophagus testaceus, Grav. *Carlisle*
Geodromicus globulicollis, Mann. *Cumberland* (Stephens)
Lesteva longelytrata, Goeze
 — *pubescens*, Mann. *Carlisle*
 — *sicula*, Er.
Acidota crenata, F.
Olophrum piceum, Gyll.
Lathrimæum atrocephalum, Gyll.
 — *unicolor*, Steph.
Deliphrum tectum, Payk.
Arpedium brachypterum, Grav. *Brampton district*
Philorhinum sordidum, Steph.
Coryphium angusticolle, Steph. *Brampton district*
Omalium rivulare, Payk.
 — *rugulipenne*, Rye } *Silloth*
 — *riparium*, Thoms. }
 — *exiguum*, Gyll. *Burgh Marsh*
 — *oxycanthæ*, Grav.
 — *excavatum*, Steph.
 — *pusillum*, Grav.
 — *punctipenne*, Thoms. *Brampton district*
 — *rufipes*, Fourc.
 — *vile*, Er.
 — *iopterum*, Steph. *Cross Fell*
 — *planum*, Payk. *Brampton district*
 — *concinnum*, Marsh.
 — *striatum*, Grav.
Eusphalerum primulæ, Steph.
Anthobium minutum, F.
 — *torquatum*, Marsh.
 — *sorbi*, Gyll.
Proteinus ovalis, Steph.
 — *brachypterus*, F.
Megarthrus denticollis, Beck } *Carlisle*
 — *affinis*, Mill }
 — *depressus*, Lac. *Brampton district*
Phlæobium clypeatum, Müll.

PSSELAPHIDÆ

- Pselaphus heisei*, Herbst.
Tychus niger, Payk. *Carlisle*
Bythinus validus, Aubé
 — *bulbifer*, Reich.
Bryaxis fossulata, Reich.
 — *juncorum*, Leach

SCYDMÆNIDÆ

- Scydmaenus collaris*, Müll.
Euconnus fimetarius, Chaud. *Carlisle*

SILPHIDÆ

- Agathidium atrum*, Payk. } *Carlisle*
 — *varians*, Beck }
Liodes humeralis, Kug.
 — *glabra*, Kug. *Cumberland* (Stephens)
Anisotoma calcarata, Er.

A HISTORY OF CUMBERLAND

SILPHIDÆ (continued)—

- Anisotoma rugosa, Sahlb. *Carlisle* (Stephens)
 Necrophorus humator, F.
 — mortuorum, F.
 — ruspator, Er.
 — vespillo, L.
 Necrodes littoralis, L.
 Silpha tristis, Ill.
 — nigrita, Creutz. *Carlisle* and *Brampton*
 — quadripunctata, L. *Gelt Woods*
 — opaca, L.
 — thoracica, L.
 — rugosa, L.
 — atrata, L.
 — „ var. brunnea, Herbst.
 Choleva angustata, F.
 — cisteloides, Fröhl. } *Carlisle*
 — spadicea, Sturm. }
 — agilis, Ill.
 — velox, Spence
 — wilkini, Spence
 — nigricans, Spence. *Carlisle*
 — longula, Kell. *East Cumberland*
 — morio, F.
 — grandicollis, Er.
 — nigrita, Er.
 — tristis, Panz.
 — chrysomeloides, Panz.
 — fumata, Spence
 — watsoni, Spence. *Brampton district*
 Ptomaphagus sericeus, F.

HISTERIDÆ

- Hister unicolor, L. *Carlisle*
 — cadaverinus, Hoff.
 — succicola, Thoms. *Brampton district*
 — purpurascens, Herbst. *Carlisle* (T. C. Heysham)
 — neglectus, Germ. *Skiddaw*
 — carbonarius, Ill.
 — bimaculatus, L.
 Gnathoncus nannetensis, Mars.
 Saprinus nitidulus, Payk.
 — æneus, F. *Silloth*
 — rugifrons, Payk. *Brampton district*
 — maritimus, Steph. *Silloth*
 Onthophilus striatus, F.

SCAPHIDIIDÆ

- Scaphisoma boleti, Panz. *Carlisle*

COCCINELLIDÆ

- Hippodamia 13-punctata, L. *Rockcliffe* (T. C. Heysham)
 Adalia oblitterata, L.
 — bipunctata, L.
 Mysia oblongoguttata, L.
 Anatis ocellata, L.
 Coccinella 10-punctata, L.
 — hieroglyphica, L.
 — 11-punctata, L. *Coast of Cumberland*
 — 5-punctata, L. *Carlisle*
 — 7-punctata, L.

COCCINELLIDÆ (continued)—

- Halyzia 16-guttata, L.
 — 14-guttata, L.
 — 18-guttata, L.
 — 22-punctata, L.
 Scymnus nigrinus, Kug. *Carlisle*
 — pygmæus, Fourc. *Silloth*
 — suturalis, Thunb.
 — capitatus, F. *Carlisle* (Fowler)
 Chilocorus bipustulatus, Ill.
 Rhizobius litura, F.
 Coccidula rufa, Herbst.

ENDOMYCHIDÆ

- Endomychus coccineus, Panz. *Newbiggen Wood* (T. C. Heysham)

PHALACRIDÆ

- Olibrus æneus, F. *Skinburness*

MICROPEPLIDÆ

- Micropeplus porcatus, Payk. *Carlisle* (Fowler)
 — staphylinoides, Marsh. *Lazonby district*

NITIDULIDÆ

- Brachypterus pubescens, Er.
 — urticæ, F.
 Cercus pedicularius, L.
 — bipustulatus, Payk.
 — rufilabris, Latr.
 Epuræa æstiva, L.
 — deleta, Er. *Lazonby district*
 — obsoleta, F.
 — pusilla, Er. *Brampton district*
 Omisiphora limbata, F. *Gilsland*
 Nitidula bipustulata, L.
 Soronia grisea, L. *Lazonby district*
 Omosita depressa, L.
 — colon, L.
 — discoidea, F.
 Pocadius ferrugineus, F.
 Meligethes lumbaris, Sturm.
 — æneus, F.
 — viridescens, F.
 — picipes, Sturm.
 Cychnus luteus, F. *Carlisle*
 Ips quadriguttata, F. *Carlisle* (T. C. Heysham)
 — quadripunctata, Herbst. *Carlisle*
 — quadripustulata, L.
 Pityophagus ferrugineus, F. *Brampton district*

TROGOSITIDÆ

- Tenebrioides mauritanicus, L. *Carlisle*

COLYDIDÆ

- Cerylon histeroideus, F. *Carlisle*

CUCUJIDÆ

- Rhizophagus cribratus, Gyll. *Carlisle*
 — depressus, F.
 — parallelocollis, Er. *Lanercost* (T. J. Bold)
 — ferrugineus, Payk. *Brampton district*
 — dispar, Gyll.

INSECTS

CUCUJIDÆ (*continued*)—

- Rhizophagus bipustulatus, F.
Silvanus surinamensis, L. *Carlisle*

LATHRIDIIDÆ

- Lathridius lardarius, De Geer.
Coninomus nodifer, Westw. *Brampton district*
Enicmus minutus, L.
— transversus, Ol.
Cartodere ruficollis, Marsh. *Eden bridge* (T. C. Heysham)
Corticaria pubescens, Gyll.
— denticulata, Gyll. } *Brampton district*
— elongata, Humm. }
Melanophthalma fuscata, Humm.

CRYPTOPHAGIDÆ

- Telmatophilus caricis, Ol.
Antherophagus nigricornis, F.
— pallens, Gyll.
Cryptophagus setulosus, Sturm.
— pilosus, Gyll. *Brampton district*
— saginatus, Sturm.
— scanicus, L.
— dentatus, Herbst. *Carlisle*
Micrambe vini, Panz.
Paramecosoma melanocephalum, Herbst. *Carlisle*
Atomaria fuscipes, Gyll. } *Brampton district*
— apicalis, Er. }
— fuscata, Schön.
— pusilla, Payk.
— analis, Er.

- Ephistemus gyrinoides, Marsh

MYCETOPHAGIDÆ

- Typhæa fumata, L.
Mycetophagus quadripustulatus, L. *Lazonby district*

BYTURIDÆ

- Byturus tomentosus, F.

DERMESTIDÆ

- Dermestes lardarius, L.
Attagenus pellio, L.
Anthrenus musæorum, L.

BYRRHIDÆ

- Byrrhus pilula, L.
— fasciatus, F. *Carlisle* (T. C. Heysham)
— dorsalis, F. *Brampton district*
Cytillus varius, F.
Simplocaria semistriata, F.

PARNIDÆ

- Elmis æneus, Müll. *Cross Fell*
Limnius tuberculatus, Müll. *Cross Fell*
Parnus prolifericornis, F.
— auriculatus, Panz.

HETEROCERIDÆ

- Heterocerus marginatus, F. *Burgh Marsh*
— brittanicus, Kuw. *Silloth*

LUCANIDÆ

- Sinodendron cylindricum, L.

SCARABÆIDÆ

- Onthophagus fracticornis, Payk.
— nutans, F. *Armathwaite* } T. C.
— nuchicornis, L. *Wastdale* } Heysham
Aphodius erraticus, L.
— subterraneus, L. *Rockcliffe* (T. C. Heysham)
— fossor, L.
— hæmorrhoidalis, L.
— fœtens, F. *Lazonby district*
— fimetarius, L.
— scybalarius, F. *Carlisle* (T. C. Heysham)
— ater, De G.
— sordidus, F. *Rockcliffe* (T. C. Heysham)
— rufescens, F. *Lazonby district*
— lapponum, Gyll. *Pennines and Lake Mountains*
— porcus, F. *Lazonby district*
— pusillus, Herbst.
— merdarius, F.
— inquinatus, F.
— conspurcatus, L. *Carlisle*
— punctato-sulcatus, Stm.
— prodromus, Brahm
— contaminatus, Herbst.
— luridus, F.
— rufipes, L.
— depressus, Kug.
Ægialia sabuleti, Payk. Banks of *Eden* and *Irthing*
— arenaria, F. *Silloth*
Geotrupes typhœus, L. *Wan Fell* (*Lazonby district*)
— spiniger, Marsh.
— stercorarius, L.
— sylvaticus, Panz.
— vernalis, L. *Wastdale*
Trox sabulosus, L. *Wan Fell*
Hoplita philanthus, Füss. *Seathwaite*
Serica brunnea, L.
Melolontha vulgaris, F.
Phyllopertha horticola, L.
Anomala frischii, F. *Silloth*
Gnorimus nobilis, L. *Carlisle* (T. C. Heysham)

THROSCIDÆ

- Throsus dermestoides, L.

ELATERIDÆ

- Lacon murinus, L.
Cryptohypnus riparius, F.
— dermestoides, Herbst.
— quadriguttatus, Lap. *Brampton district*
Elater balteatus, L.
Melanotus rufipes, Herbst.
Athous niger, L.
— longicollis, Ol. *Rose Castle* (T. C. Heysham)
— hæmorrhoidalis, F.

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ELATERIDÆ (continued)—

- Limonium cylindricus*, Payk.
- *minutus*, L. *Lazonby district*
- Sericosomus brunneus*, L.
- Adrastus limbatus*, F.
- Agriotes sputator*, L.
- *obscurus*, L.
- *lineatus*, L.
- *sobrinus*, Kies.
- *pallidulus*, Ill.
- Dolopius marginatus*, L.
- Corymbites pectinicornis*, L. *Carlisle*
- *cupreus*, F.
- „ var. *æruginosus*, F.
- *tessellatus*, F. *Wan Fell*
- *quercus*, Gyll.
- „ var. *ochropterus*, Steph.
- *impressus*, F. *Carlisle*
- Campylus linearis*, L.

DASCILLIDÆ

- Dascillus cervinus*, L.
- Helodes minuta*, L.
- *marginata*, F.
- Microcara livida*, F.
- Cyphon coarctatus*, Payk.
- *nitidulus*, Thoms.
- *variabilis*, Thunb.
- *pallidulus*, Boh.
- *padi*, L.
- Hydrocyphon deflexicollis*, Müll. *Banks of the Irthing*

MALACODERMIDÆ

- Lampyrus noctiluca*, L.
- Podabrus alpinus*, Payk.
- Ancistrioncha abdominalis*, F. *Gelt valley*
- Telephorus rusticus*, Fall.
- *lividus*, L.
- *pellucidus*, F.
- *nigricans*, Müll.
- „ var. *discoideus*, Steph.
- *obscurus*, L. *Keswick*
- *lituratus*, F. *Carlisle*
- *darwinianus*, Sharp. *Burgh Marsh*
- *figuratus*, Mann.
- *bicolor*, F.
- *hæmorrhoidalis*, F.
- *flavilabris*, Fall.
- *thoracicus*, Ol. *Lazonby district*
- Rhagonycha fulva*, Scop.
- *testacea*, L. *Barron Wood* (T. C.
- *limbata*, Thoms. [Heysham]
- *pallida*, F.
- Malthinus punctatus*, Fourc.
- *frontalis*, Marsh.
- Malthodes marginatus*, Latr.
- *dispar*, Germ. *Brampton district*
- *atomus*, Thoms. *Lazonby district*
- Malachius bipustulatus*, L.
- *viridis*, F. *Barron Wood* (T. C. Heysham)

MALACODERMIDÆ (continued)—

- Anthocomus fasciatus*, L. *Rose Castle* (T. C. Heysham)
- Dasytes ærosus*, Kies.

CLERIDÆ

- Tillus elongatus*, L. *Barron Wood* (T. C. Heysham)
- Necrobia ruficollis*, F. *Penrith*
- *violacea*, L. *Lazonby district*

PTINIDÆ

- Ptinus sexpunctatus*, Panz. *Carlisle* (T. C. Heysham)
- *fur*, L.
- Niptus hololeucus*, Fald.
- *crenatus*, F. *Brampton district*
- Hedobia imperialis*, L. *Lazonby district*
- Gibbium scotias*, F. } *Carlisle*
- Dryophilus pusillus*, Gyll. }
- Anobium domesticum*, Fourc.
- Xestobium tessellatum*, F. *Carlisle* (T. C. Heysham)
- Ernobius mollis*, L.
- Ochina hederæ*, Müll. *Lanercost* (T. J. Bold)
- Priobium castaneum*, F. *Carlisle*

CISSIDÆ

- Cis boleti*, Scop.
- *bidentatus*, Ol. } *Brampton district*
- *alni*, Gyll. }
- *nitidus*, Herbst. *Carlisle*
- Octotemnus glabriculus*, Gyll.

CERAMBYCIDÆ

- Aromia moschata*, L. *Keswick*
- Asemum striatum*, L. *Brampton district*
- Callidium alni*, L. *Rose Castle* (T. C. Heysham)
- *violaceum*, L. *Eskdale* (W. W. Fowler, *E. M. M.* vol. xxxv. p. 292)
- Clytus arietis*, L.
- *arcuatus*, L. *Barron Wood* (T. C. Heysham)
- Rhagium inquisitor*, F.
- *bifasciatum*, F.
- Pachyta cerambyciformis*, Schr. *Gelt Woods*
- Strangalia armata*, Herbst. *Keswick*
- *melanura*, L. *Carlisle*
- *quadrifasciata*, L. *Barron Wood* (T. C. Heysham)
- Grammoptera tabacicolor*, De G. *Carlisle*
- *ruficornis*, F.
- Leiopus nebulosus*, L.
- Pogonochærus bidentatus*, Thoms.
- *dentatus*, Fourc.
- Saperda scalaris*, L. *Gelt Woods*
- *populnea*, L. *Carlisle*
- Oberea oculata*, L. *Barron Wood* (T. C. Heysham)

CHRYSOEIDÆ

- Donacia crassipes*, F. *Upperby* (T. C. Heysham)
- *dentata*, Hoppe. *Cumberland* (Stephens)

INSECTS

CHRYSEMELIDÆ (continued)—

- Donacia dentipes*, F. *Borrowdale*
 — *simplex*, F.
 — *sericea*, L.
 — *discolor*, Panz. *Hayton Moss, Sty Head Pass*
Zeugophora subspinoso, F. *Carlisle*
Lema lichenis, Voet.
 — *melanopa*, L.
Crioceris asparagi, L. *Woodside (T. C. Heysham)*
Clythra quadripunctata, L. *Keswick*
Cryptocephalus fulvus, Goeze } *Carlisle*
 — *labiatus*, L. }
Chrysomela marginata, L. *Burgh Marsh (T. C. Heysham)*
 — *staphylea*, L.
 — *polita*, L.
 — *orichalcia*, Müll. *Armathwaite (T. C. Heysham)*
 — *varians*, Schall. *Lazonby district*
 — *graminis*, L. *Sandsfield (T. C. Heysham)*
 — *menthrasti*, Suffr. 'Cumberland' (Stephens)
 — *fastuosa*, Scop. *Gelt Woods*
 — *hyperici*, Forst.
Melasoma æneum, L.
 — *populi*, L. *Allonby*
Phytodecta olivacea, Forst.
 — *olivacea*, var. *nigricans*, Weise. *Carlisle*
 — *rufipes*, De G. *Armathwaite (T. C. Heysham)*
Gastroidea viridula, De G. *Lazonby district*
 — *polygoni*, L.
Phædon tumidulus, Germ.
 — *armoraciæ*, L.
 — *cochleariæ*, F.
Phyllodecta vulgatissima, L.
 — *cavifrons*, Thoms. *Carlisle*
 — *vitellinæ*, L.
Hydrothassa aucta, F.
 — *marginella*, L.
 — *hannoverana*, F. *Lazonby district (vide E. M. M. vol. xxxvi. p. 262)*
Prasocuris junci, Brahm
 — *phellandrii*, L.
Luperus rufipes, Scop.
 — *flavipes*, L.
Lochmæa caprææ, L.
 — *suturalis*, Thoms.
Galerucella nymphææ, L. } *Brampton district*
 — *sagittariæ*, Gyll. }
 — *lineola*, F. } *Carlisle*
 — *calmariensis*, L. }
 — *tenella*, L.
Adimonia tanacetii, L.
Sermyla halensis, L.
Longitarsus anchusæ, Payk.

CHRYSEMELIDÆ (continued)—

- Longitarsus luridus*, Scop.
 — *atricillus*, L.
 — *melanocephalus*, All.
 — *pusillus*, Gyll.
 — *jacobææ*, Wat.
 — *suturellus*, Duft. *Lazonby district*
Haltica ericeti, All.
 — *oleracea*, L.
Phyllotreta undulata, Kuts.
 — *nemorum*, L. *Carlisle*
 — *tetrastigma*, Com. *Wetheral*
 — *exclamationis*, Thunb.
Sphæroderma testaceum, F.
Apteropeda orbiculata, Marsh.
Mantura obtusata, Gyll. *Carlisle*
 — *rustica*, L.
Crepidodera transversa, Marsh.
 — *ferruginea*, Scop.
 — *rufipes*, L. *Lazonby district*
 — *aurata*, Marsh.
 — *ventralis*, Ill. *Holme Gate* } (T. C. Heysham)
 — *helxines*, L. *Rose Castle* }
Hippuriphila modeeri, L.
Plectroscelis concinna, Marsh.
Psylliodes chrysocephala, L. *Penrith*
 — *napi*, Koch.
 — *marcida*, Ill. *Silloth*
 — *picina*, Marsh.
Cassida equestris, F. *Rickerby (T. C. Heysham)*
 — *flaveola*, Thunb. *Carlisle*
 — *viridis*, F.
 — *hemisphærica*, Herbst. *Carlisle*

TENEBRIONIDÆ

- Blaps mucronata*, Latr.
Heliopathus gibbus, F. } *Silloth*
Microzoum tibiale, F. }
Diaperus boleti, L. *Dauston Hall Wood (T. C. Heysham)*
Tenebrio molitor, L.
 — *obscurus*, F. } *Carlisle*
Tribolium ferrugineum, F. }
Helops striatus, Fourc. *Silloth*
 — *cœruleus*, L. *Carlisle (T. C. Heysham)*

MELANDRYIDÆ

- Conopalpus testaceus*, Ol., var. *vigorsi*, Steph. *Cumberland (Weaver)*
Melandrya caraboides, L. *Carlisle*

PYTHIDÆ

- Salpingus castaneus*, Panz.
 — *foveolatus*, Ljun.
Rhinosimus ruficollis, L.
 — *viridipennis*, Steph.
 — *planirostris*, F.

CEDEMERIDÆ

- Nacerdes melanura*, Schmidt. *Silloth*

PYROCHROIDÆ

- Pyrochroa serraticornis*, Scop. *Carlisle*

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MORDELLIDÆ

- Anaspis frontalis, L.
- rufilabris, Gyll.
- geoffroyi, Müll. *Carlisle*
- ruficollis, F.
- subtestacea, Steph. *Carlisle*
- maculata, Fourc.

RHIPIDOPHORIDÆ

- Metæcus paradoxus, L. *Carlisle*

ANTHICIDÆ

- Anthicus floralis, L.
- scoticus, Rye. *Allonby*

MELOIDÆ

- Meloë proscarabæus, L.

ANTHRIBIDÆ

- Brachytarsus varius, F.

CURCULIONIDÆ

- Apoderus coryli, L. *Barron Wood* (T. C. Heysham)
- Attelabus curculionoides, L.
- Rhinomacer attelaboides, F.
- Byctiscus betuleti, F. } *Barron Wood* (T. C. Heysham)
- Rhynchites cupreus, L. }
- æneovirens, Marsh. } *Carlisle*
- minutus, Herbst. }
- nanus, Payk. *Brampton district*
- uncinatus, Thoms.
- Deporaus megacephalus, Germ.
- betulæ, L.
- Apion ulicis, Forst.
- hæmatodes, Kirby
- viciæ, Payk.
- apricans, Herbst.
- dichroum, Bedel
- nigritarse, Kirby
- stolidum, Germ. *Carlisle*
- æneum, F. *Botcherby* (T. C. Heysham)
- radiolus, Kirby } *Brampton district*
- onopordi, Kirby }
- carduorum, Kirby
- virens, Herbst.
- punctigerum, Payk. *Carlisle*
- pisi, F.
- æthiops, Herbst.
- ebeninum, Kirby } *Carlisle*
- striatum, Kirby }
- ononis, Kirby. *Silloth*
- spencei, Kirby. *Brampton*
- ervi, Kirby
- gyllenhali, Kirby
- unicolor, Kirby. *Brampton district*
- scutellare, Kirby }
- loti, Kirby }
- seniculum, Kirby }
- affine, Kirby }
- violaceum, Kirby }
- hydrolapathi, Kirby. *Etterby* (T. C. Heysham)
- humile, Germ.

CURCULIONIDÆ (continued)—

- Apion assimile, Kirby
- Otiorrhynchus atroapterus, De G. *Silloth*
- maurus, Gyll. *Cross Fell*
- scabrosus, Marsh. *Dalston* (T. C. Heysham)
- ligneus, Ol.
- picipes, F.
- sulcatus, F.
- ovatus, L.
- Trachyphlæus scaber, L. *Newby Cross* (T. C. Heysham)
- aristatus, Gyll. *Lazonby district*
- Strophosomus coryli, F.
- capitatus, De G.
- retusus, Marsh.
- lateralis, Payk.
- Exomias araneiformis, Schr.
- Omius mollinus, Boh. *Cross Fell*
- Brachysomus echinatus, Bonnd.
- Sciaphilus muricatus, F.
- Tropiphorus tomentosus, Marsh.
- Liophlæus nubilus, F.
- Polydrusus micans, F. *Carlisle* (Fowler)
- tereticollis, De G. *Carlisle*
- pterygomalis, Boh.
- cervinus, L.
- Phyllobius oblongus, L.
- calcaratus, F.
- urticæ, De G.
- pyri, L.
- argentatus, L.
- maculicornis, Germ.
- pomonæ, Ol.
- viridiæris, Laich.
- viridicollis, F.
- Tanymecus palliatus, F. *Solway Marshes*
- Philopodon geminatus, F. *Silloth*
- Atactogenus exaratus, Marsh.
- Barynotus obscurus, F.
- schönherri, Zett.
- elevatus, Marsh.
- Alophus triguttatus, F.
- Sitones griseus, F. *Silloth*
- cambricus, Steph.
- regensteinensis, Herbst.
- tibialis, Herbst.
- hispidulus, F.
- flavescens, Marsh.
- „ var. longicollis, Fahr. *Wreay*
- puncticollis, Steph.
- lineatus, L.
- sulcifrons, Thunb.
- Hypera punctata, F.
- rumicis, L.
- polygona, L.
- suspiciosa, Herbst.
- plantaginis, De G.
- trilineata, Marsh. *Carlisle*
- nigrirostris, F.

INSECTS

CURCULIONIDÆ (continued)—

- Cleonus sulcirostris*, L. *Silloth*
Lixus paraplecticus, L. *Burgh Marsh* (T. C. Heysham)
Liosoma ovatum, Clairv.
Hylobius abietis, L.
Pissodes pini, L.
Orchestes quercus, L. *Carlisle*
 — *scutellaris*, Gyll. *Dalston* (T. C. Heysham)
 — *ilicis*, F. *Lazonby district*
 — *fagi*, L.
 — *rusci*, Herbst.
 — *stigma*, Germ.
 — *salicis*, L.
 — *saliceti*, Payk. } *Carlisle*
Rhamphus flavicornis, Clairv. }
Grypoidius equiseti, F.
Eirrhinus bimaculatus, F. *Solway Marshes*
 — *acridulus*, L.
Dorytomus vorax, F. *Carlisle*
 — *tremulæ*, F. } *Cardew Mire* (T. C. Heysham)
 — *tortrix*, L. }
 — *maculatus*, Marsh.
 — *pectoralis*, Gyll.
 — *majalis*, Payk. *Carlisle* (T. C. Heysham)
Bagous glabrirostris, Herbst. *Dalston* (T. C. Heysham)
Anoplus plantaris, Næz.
Elleschus bipunctatus, L. *Carlisle*
Miarus campanulæ, L. *Carlisle* (T. C. Heysham)
Gymnetron beccabungæ, L. } *Carlisle*
 — *labilis*, Herbst. }
Mecinus pyrastrer, Herbst.
Anthonomus ulmi, De G. *Lazonby district*
 — *pedicularius*, L.
 — *pomorum*, L. *Brampton district*
 — *rubi*, Herbst.
Cionus scrophulariæ, L.
 — *pulchellus*, Herbst.
Orobitis cyaneus, L.
Cryptorrhynchus lapathi, L.
Cœliodes rubicundus, Herbst.
 — *quercus*, F.
 — *ruber*, Marsh. *Brampton district*

CURCULIONIDÆ (continued)—

- *quadrimaculatus*, L.
 — *cardui*, Herbst. *Dalston* (T. C. Heysham)
 — *geranii*, Payk. *Gelt Woods*
 — *exiguus*, Ol. *Brampton district*
Poophagus sisymbrii, F.
 — *nasturtii*, Germ. *Lazonby district*
Ceuthorrhynchus assimilis, Payk.
 — *ericæ*, Gyll.
 — *erysimi*, F.
 — *contractus*, Marsh.
 — *cyanipennis*, Germ.
 — *quadridens*, Panz.
 — *pollinarius*, Forst.
 — *pleurostigma*, Marsh.
 — *marginatus*, Payk. *Blackball Wood* (T. C. Heysham)
 — *euphorbiæ*, Bris. *Carlisle*
 — *litura*, F.
Ceuthorrhynchidius floralis, Payk. *Brampton district*
 — *troglodytes*, F.
Rhinoncus pericarpus, L.
 — *castor*, F.
Phytobius quadrituberculatus, F. *Burgh Marsh*
Limnobaris T-album, L. *Lazonby district*
Balaninus nucum, L. *Blackball Wood* (T. C. Heysham)
 — *villosus*, F. *Carlisle*
 — *salicivorus*, Payk.
Magdalis carbonaria, L. *Carlisle* (T. C. Heysham)
 — *armigera*, Fourc. *Lazonby district*
 — *pruni*, L. *Carlisle* (T. C. Heysham)
- ### SCOLYTIDÆ
- Scolytus destructor*, Ol. *Carlisle*
Hylastes ater, Payk.
 — *palliatu*s, Gyll.
Hylesinus crenatus, F. *Lazonby district*
 — *fraxini*, Panz.
Myelophilus piniperda, L.
Phlæophthorus rhododactylus, Marsh. *Brampton district*
Pityogenes bidentatus, Herbst.
Trypodendron domesticum, L.

LEPIDOPTERA

RHOPALOCERA

Butterflies

Some forty-nine species of Butterflies have been recorded from Cumberland, but four of these have little or no claim to be considered true natives. These doubtful species are *P. machaon*, *A. latona*, *L. sibylla* and *H. comma*. *Pieris brassicæ*, L., Large White, is the most un-

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certain of the three common 'whites' in its appearance. Though usually common in both spring and summer broods, some seasons it is almost rare. Larvæ are sometimes seen feeding in gardens until the end of November. *P. rapæ*, L., Small White, is always abundant everywhere, and so is *P. napi*, L., Green-veined White. This last varies considerably in the colouration of the veins, some specimens having them rusty brown. *Euchloë cardamines*, L., Orange Tip, is common in lanes, meadows and wood rides from May to July. The usual food plant of the larva is lady's smock, but it is often noticed feeding on the seed pods of towering mustard, and I have seen the female butterfly ovipositing on watercress. The larvæ feed up very rapidly, the larval existence seldom exceeding three weeks, usually it is much less. Eleven months of the year are probably spent in the pupal state. *Leucophasia sinapis*, L., Wood White, is very rare in the county. It has occurred in Barron, Orton, and Newbiggen Woods near Carlisle, in the Great Wood near Keswick, and elsewhere among the lakes. Two specimens taken at Orton about the year 1887 are the most recent captures I am acquainted with. Here as elsewhere *Colias edusa*, Fb., Clouded Yellow, is very erratic in its appearance. A few were taken in 1858 and 1859 in different parts of the county. In 1877 a few occurred near Keswick and Carlisle, but near Workington it was common. Three years later it was again reported to be common in west Cumberland, but I am not quite sure of this record. A specimen taken at Rockcliffe near Carlisle in 1892 is probably the most recent capture.¹ *C. hyale*, L., Pale Clouded Yellow, is recorded from Workington (*E. M. M.*, vol. xiv. p. 64) and from Newbiggen Wood by the late J. B. Hodgkinson. Keswick is the only reliable locality for *Gonopteryx rhamni*, L., Brimstone, where it is said to be moderately common. There is a single record from Orton, but it has never been verified. The distribution of *Argynnis selene*, Schiff., Small Pearl Border, and *A. euphrosyne*, L., Pearl Border, in the county is rather peculiar. In the Carlisle and Brampton districts *euphrosyne* is scarce, while *selene* abounds on rough meadows and commons. Near Lazonby both species are common, but in the lake country *euphrosyne* appears to become the predominating species. *A. aglaia*, L., Dark Green Fritillary, is widely distributed, being equally at home among the sand-dunes of the Solway or on the precipitous sides of the highest mountains. *A. adippe*, L., High Brown Fritillary, is very rare, but has been recorded from such widely separate stations as Scale Hill Woods, Keswick, and Newbiggen near Carlisle. I can make out very little that is definite concerning *A. paphia*, L., Silver-washed Fritillary, as a Cumberland insect; certainly it has not been taken for many years. The record in *Science Gossip*, 1894, is an error, *A. aglaia* being the species intended. The Carlisle forms of *Melitæa aurinia*, Rott., Greasy Fritillary, are well known to lepidopterists in Britain. It is a singularly local insect, but in its two haunts near Carlisle occurs in amazing numbers. A few speci-

¹ During the past season (1900) *C. edusa* was taken twice near Maryport, and one was seen near Carlisle.—F. H. D.

INSECTS

mens were taken on the west side of Derwentwater by the late W. Greenip. Single specimens have occurred recently at Maryport and on Wan Fell near Lazonby. Though the larvæ invariably feed on devil's-bit-scabious, they may at times be found on honeysuckle, plantain and great valerian ; but from personal observation I am led to believe that the ova are always deposited on the scabious. The larvæ are much tormented by parasitic Hymenoptera, and there are probably two broods of the parasite bred at the expense of one brood of the butterfly—one appearing at the time the larvæ leave their hybernacula in early spring, the other when they are full fed some six weeks or two months later. The imagines vary considerably. A fine form occurring annually has the basal three-parts of the wings black. Another has the two yellow spots on the inner margin of the primaries very large and confluent and the other yellow markings are also usually much enlarged. In the 'fifties' and perhaps before, *Vanessa c-album*, L., Comma Butterfly, was taken in some numbers in Barron Wood to the south of Carlisle by Armstrong, Hodgkinson and other collectors now deceased, but since then I have heard nothing of it in the county. *V. polychloros*, L., Large Tortoiseshell, is said to appear in the neighbourhood of Keswick at uncertain intervals, and many years ago one or two were probably taken near the shores of the Solway Firth. *V. urticæ*, L., Small Tortoiseshell, is universally common. I have seen it careering over the summits of our highest mountains. A pretty form occurs in Borrowdale of a salmon-pink colour. The late James Barnes of Carlisle had a variety—which I always understood was a Cumberland insect—which resembled Newman's fourth figure, but was darker and larger. This in time passed into the possession of J. B. Hodgkinson, and when his well-known collection came to the hammer in 1897 the 'Barnes' *urticæ* realized £7. 10s. *V. io*, L., Peacock, was formerly as abundant as the preceding species, but in most parts of the county it is now one of the rarest butterflies. I have never myself come across it, though I have spent a large portion of the last ten years in active field-work.¹ *V. antiopa*, L., Camberwell Beauty, has been taken on half a dozen occasions, but not very recently. Carlisle and Cockermouth are localities. *V. atalanta*, L., Red Admiral, is invariably common every season. Near Carlisle in 1894 it swarmed.² I have bred the butterfly as early as the second week of July and as late as the last week of October. Hibernated specimens are seldom seen on the wing earlier than June, unlike its congener *urticæ*, which is quite active in early April. Though it occurs throughout the county, *V. cardui*, L., Painted Lady, is very erratic in its appearance. Near Carlisle in 1887 it was abundant, and since then more than two or three have seldom been captured in a season, and in several seasons none at all. Perhaps Cumberland's most characteristic butterfly is *Erebia epiphron*, Knoch, Mountain Ringlet, which has its headquarters on the sloppy ground contiguous to Sty Head and Sprinkling

¹ In 1900 *V. io* was not uncommon near Maryport and several specimens were noticed in the Carlisle district.—F. H. D. ² In 1900 *V. atalanta* was again extremely abundant.—F. H. D.

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Tarns under the shadow of Scaw Fell, where it was discovered by Thomas Stothard hard upon a century ago. It appears to be extending its range much lower down, and one can now meet with it close to the village of Seathwaite at the foot of Sty Head Pass. In the summer of 1898 I was pleased to meet with an extensive colony on a grassy plateau over Buttermere, where apparently it had not before been observed. It is also recorded from the Vale of Newlands, and indeed I expect it will ultimately be found in many more localities. It should be mentioned that most of the Cumberland specimens are referable to the var. *cassiope*, Fb., characterized by the absence of white pupils to the ocellated spots on the wings. *E. æthiops*, Esp., Northern Brown, strange to say appears to have escaped detection in Cumberland as yet. There have been rumours of its capture within the confines of the county, but after much inquiry I cannot find out anything satisfactory concerning them. But that it does occur I can hardly bring myself to doubt, as it is common in all the adjoining counties—Dumfriesshire to the north, Westmorland to the south, and Northumberland and Durham to the east. *Pararge egeria*, L., Speckled Wood, is very rare, having only been noticed near Keswick. *P. megæra*, L., Wall Butterfly, however is locally abundant. It can be seen in any lane near the county town in May and early June, and again in late July and throughout August. It is also abundant on the coast road between Silloth and Maryport, but among the lakes and also in the east of the county it is seldom seen. I have at times seen numbers of this butterfly resting on the wooden posts set up to carry wire fencing, as well as on tree trunks and walls. Its predilection for resting on walls is well known however. *Satyrus semele*, L., Grayling, is abundant all along the coast. Near Leigate, in the vicinity of Wigton, it frequents railway banks. It occurs sparingly at other inland stations, but its true home seems to be the coast sandhills. *Epinephele ianira*, L., Meadow Brown, is very abundant everywhere and occasionally 'bleached' specimens are to be taken, but by a singular fatality the best freaks of this kind I have come across have been too wasted to pin. *E. tithonus*, L., Large Heath, must be accounted rare. Keswick is the only reliable locality I know of. I am sure there is something wrong about Mawson's record from St. Bees in the *Transactions of the Cumberland and Westmorland Scientific Association*, 1883, as no one else appears to have met with it there, though the locality has been frequently visited. Though always very local, *E. hyperanthus*, L., Ringlet, in some of its haunts occurs in profusion. It is probably nowhere so common in the county as in the meadows fringing the south side of Orton Woods near Carlisle, where beautiful forms may be obtained. Other localities are Keswick, Wigton, Silloth, Brampton and Penrith. It is noteworthy that the Cumberland insect has the underside of a grey hue, quite unlike the rich yellowish brown of the southern insect. A butterfly eminently typical of this county of 'mosses' is *Cænonympha typhon*, Rott., Marsh Ringlet, which is common throughout the county wherever ground suited to its tastes is to be found. Bowness Flow, Todhills Moss and Bolton Fell may be

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cited as localities. Its powers of flight are not great, but owing to the nature of the ground it frequents it is not an easy insect to capture. Before sunrise and after sunset and in dull weather a few may be found resting on grass stems and amongst heath, but they are hard to see. This interesting species varies extensively both in colour and ocellation, though I have not seen any quite so dark or so well ocellated as the Lancashire form. Most of the Cumberland specimens may be referred to Dr. Buckell's 'British middle form.' *C. pamphilus*, L., Small Heath, occurs commonly in grassy places everywhere. The var. *lyllus*, Esp., characterized by a black border to the wings, is not scarce. But three of the 'Hairstreaks' are to be recorded, and the first, *Thecla betulæ*, L., Brown Hairstreak, should almost be relegated to the doubtful list, as but one specimen has occurred, and that at Barron Wood many years ago. The species does not find a place in Porritt's Yorkshire list nor in Robson's more comprehensive work on the Lepidoptera of Northumberland and Durham. *T. quercus*, L., Purple Hairstreak, is widely distributed but local and seldom common, except among the oaks in Barron Wood, where it abounds. Also a local species, though usually to be taken freely when found, *T. rubi*, L., Green Hairstreak, is one of our earliest butterflies. It occurs at all the regularly worked stations and frequents bilberry-covered banks in and near woods, sometimes taking soaring flights among the pine-tops like its congener *quercus* does among the oaks. *Polyommatus phlæas*, L., Small Copper, is common as a rule all over the county, especially the August emergence. In 1899 a specimen was taken near Carlisle with a large bleached patch on the right primary, and in 1894 a fine example of the var. *schmidtii*, Gerh., was obtained in the same district.¹ *Lycæna ægon*, Schiff., Silver-studded Blue, and *L. astrarche*, Bgstr., Brown Argus, are only recorded from Keswick and they are far from common. *L. icarus*, Rott., Common Blue, is abundant along the coast and in meadows and lanes inland. Some of the females are very blue, especially those from the coast. Concerning *L. corydon*, Fb., Chalk Hill Blue, the late J. B. Hodgkinson wrote (*Ent.*, vol. xxi. p. 24), 'It used to occur at Grisedale, at the foot of Saddleback; I have seen some specimens taken by the late Mr. Hope of Penrith.' I cannot add anything to this. *L. argiolus*, L., Holly Blue, occurs among holly in the Borrowdale Road and many years ago was taken at Wetheral by the late T. Armstrong. *L. minima*, Fues., Small Blue, usually occurs on railway banks and is locally abundant. Localities are Wreay, How Mill, Wigton and St. Bees. *Nemiobius lucina*, L., Duke of Burgundy Fritillary, has not been met with since Hodgkinson's time, when it appears to have occurred in some abundance in Barron Wood. Two skippers only are known. *Nisoniades tages*, L., Dingy Skipper, frequents grassy places and abounds in certain places near Carlisle. In the Keswick district it is uncommon. It often occurs contemporaneously with *Euclidia mi*, Clerck, and *E. glyphica*, L. But few Cumberland lepidopterists appear to have met with *H. sylvanus*, Esp.,

¹ A specimen of var. *schmidtii* was taken last year (1900) near Ellenborough.—F. H. D.

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Large Skipper, though it occurs annually in tolerable abundance in meadows near woods in the neighbourhood of Carlisle. Near Keswick it is rare.

HETEROCERA

Moths

SPHINGES

Acherontia atropos, L., is met with almost every year in one part of the county or another, but it is never common. The rare brown variety of the larva has been found in the Brampton district. *Sphinx convolvuli*, L., is less seldom taken, though three or four specimens were obtained in Carlisle in 1897. *S. ligustri*, L., is only recorded from Penrith and Keswick and is rare. A good many *Deilephila galii*, Schiff., have occurred during the last half-century, mostly on the coast about Workington. The most recent captures are one at Hayton near Brampton in 1888 and one at Maryport about the year 1895. Of the very rare *D. livornica*, Esp., at least half a dozen captures have come under my notice, the last being at Heads Nook in June, 1892, the others being from the neighbourhood of Workington and Maryport on the coast. *Cbærocampa celerio*, L., has occurred on several occasions in various parts of the county. One taken near Keswick may be seen in Keswick Museum. *C. porcellus*, L., is not often met with, most captures being made on the coast. *C. elpenor*, L., is much commoner, occurring in the same localities and frequenting various flowers. *Smerinthus ocellatus*, L., and *populi*, L., are both tolerably abundant and are especially fond of an osier-fringed stream, on which plant the larvæ are usually found. *S. tilia*, L., is rare near Keswick. *Macroglossa stellatarum*, L., though uncertain in its appearance is met with by most local collectors sooner or later. In 1899 it abounded, and both ova and larvæ were freely found on *Galium*. Of the Bee Hawks *M. bombylifformis* (narrow) only occurs, and though seldom seen is probably commoner than is suspected; Carlisle and Wan Fell near Lazonby are localities, where it frequents heathy ground. Very few 'Clearwings' have as yet been noticed. *Trochilium bembeciformis*, Hb., is rather common in the larval state in the main stems of willow bushes in one or two places near Carlisle. *Sesia tipuliformis*, Clerck, is found in gardens at Keswick, and is probably overlooked in other parts of the county. *S. myopiformis*, Bork., *culiciformis*, L., and *formiciformis*, Esp., are recorded from Flimby Wood by the late G. Mawson, whose records however must be treated with some diffidence. In the Carlisle district *Ino statice*, L., occurs in plenty in meadows in June, flying most readily just before sunset. *I. geryon*, Hb., is recorded from Keswick by Barclay, and *I. globulariæ*, Hb., from Orton Moss by Kirby, but I have not myself had an opportunity of examining Cumberland examples and indeed have considerable doubts of the correctness of the latter record. Of the 'Burnets' *Zygæna loniceræ*, Esp., has occurred near Keswick, and *Z. filipendulæ*, L., is locally common in most places, preferring as a habitat damp meadows and railway banks.

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BOMBYCES

That curious little moth, *Sarothripus undulanus*, Hb., is taken near Carlisle almost yearly, but in limited numbers and usually after hybernation. *Hylophila prasinana*, L., is widely distributed and in some seasons is not uncommon, flying towards evening among oaks. *Nola cucullatella*, L., and *N. confusalis*, H.-S., though equally wide in their distribution are always scarce and have been found resting on tree trunks. *Nudaria mundana*, L., frequents walls and rock faces, but is only of common occurrence here and there. The 'Footmen' are badly represented in Cumberland. *Lithosia mesomella*, L., is the only species which can be called common and it is local to the neighbourhood of Carlisle. On a moist, warm evening at midsummer I have seen it flitting about on a damp heath near the village of Durdar in immense numbers. *L. lurideola*, Zinck., has occurred sparingly near Keswick, and in the same locality the late W. Greenip captured *Gnophria rubricollis*, L., a species which was among Heysham's captures at Blackwell in the early part of the century. *G. quadra*, L., has probably occurred at Newby Cross on several occasions, but not to any of the present school of collectors.¹ *Euchelia jacobææ*, L., formerly very abundant, is now a rarity from some unexplained cause, though the capture of four specimens at Maryport during the past season (1900) and of one near Lazonby makes one hope the species has started on a new lease of life in Cumberland. A moth characteristic of the moors is *Nemeophila russula*, L. The female is not often taken on the wing, but in breeding one gets the sexes in nearly equal numbers. The larvæ are very active if irritated and can cover the ground at a great pace. *N. plantaginis*, L., often occurs in company with the last and is very powerful on the wing in the sunshine. Its range extends high up the mountains.² From Skiddaw larvæ I have bred the beautiful var. *hospita*, Schiff., in which the normal yellow colouration is replaced by white. *Arctia caja*, L., is very common in some districts; in others, such as Brampton and Keswick, it is seldom seen. Near Carlisle the larvæ are common objects on hedgebanks and also among the Solway sand-dunes. *Spilosoma fuliginosa*, L., is generally common, being in my experience most at home on a heath where there is a rank growth of *Ulex*, among the branches of which the larvæ love to spin their cocoons, where they become conspicuous objects, but sometimes take a lot of cutting out. Most Cumberland specimens are referable to (or closely approach) the var. *borealis*, Stgr. *S. lubricipeda*, Esp., is local and in some districts does not seem to occur at all. About Carlisle it is abundant in gardens, and the larvæ are fond of feeding on the undersides of rhubarb leaves, but will eat almost anything in a garden, whether wild or cultivated. *S. menthastri*, Esp., is generally common, sometimes visiting street lamps in great numbers. Several specimens of the var. *walkeri*, Curtis, have

¹ *G. quadra* has been taken by Mr. T. Swainson near Maryport during the past year (1900).—F. H. D.

² *N. plantaginis* has been taken at great elevations on Scawfell, Great Gable, etc., by Mr. H. Goss.—F. H. D.

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been taken in a lane near Burgh-by-Sands. All the British representatives of the genus *Hepialus* occur commonly in the county : *humuli*, L., and *sylvinus*, L., in meadows ; *velleda*, Hb., and its var. *gallicus*, Ld., on heaths ; *lupulinus*, L., in lanes and along hedgebanks ; and *hectus*, L., in damp woods. *Cossus ligniperda*, Fb., is not often taken in the perfect state, but judging by the number of larva-infested trees in various parts of the county it cannot be called a scarce species ; oaks are the trees most favoured. *Porthesia similis*, Fues., and *Leucoma salicis*, L., do not appear to have been noticed for many years. The late T. C. Heysham took both in the vicinity of Carlisle. A moth characteristic of the wide stretches of moorland is *Dasychira fascelina*, L., the pretty larva being usually found on ling, but in confinement taking readily to such other plants as birch and hawthorn. It is much pestered by parasites and dead larvæ may be frequently found on the stems of the ling. *D. pudibunda*, L., has been found near Keswick and Carlisle but not recently. *Orgyia antiqua*, L., is rather peculiarly distributed. Near Carlisle it is rare, at least the present school of lepidopterists find it so. On some of the extensive moors to the north, Bolton Fell for instance, it occurs in great numbers and about Lazonby and Penrith it is fairly abundant. From the Brampton district I can only hear of one capture, while near Keswick it does not appear to be known at all. *Trichiura cratægi*, L., has occurred near Carlisle, Keswick and Cockermouth, but not of late years apparently. *Pæcilocampa populi*, L., is spread all over the county and here and there occurs with tolerable freedom. The moth visits street lamps in November and December and larvæ are beaten from oak in June. *Eriogaster lanestris*, L., is recorded from Keswick by Mr. H. A. Beadle of that town, who also includes *Bombyx neustria*, L., in his list, adding that it is rare. This latter species occurred to the late T. C. Heysham near Carlisle, which I fancy will be the northern limit of its range in the British Islands. On most of the moors at the right season of the year the scurrying form of *B. rubi*, L., is a familiar object. It flies much closer to the ground than its congener *B. quercus*, L., and while the latter favours the mid-day sunshine for its flight, *B. rubi* does not appear on the wing until late in the afternoon and is most freely seen towards sunset. It is the var. *callunæ*, Palmer, of *B. quercus*, L., which occurs exclusively in Cumberland. On that extensive moorland plateau in the north of the county known as Bolton Fell it may at times be seen on the wing in bewildering numbers. It should be mentioned however that only the males fly during the middle of the day ; I have only noticed females on the wing in the dusk of evening, when, owing to their pale colouration, they look tremendous in the uncertain light. Mr. Beadle records *B. trifolii*, Esp., from Keswick, but says it is rare. *Odonestis potatoria*, L., frequents grassy hedgebanks, and though very common near Carlisle, in the east of the county and among the lakes appears to be hardly known. *Saturnia pavonia*, L., is usually abundant on heaths, the larvæ feeding on a variety of plants ; in confinement hawthorn is taken to most readily. About two o'clock in the afternoon appears to be the

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natural time of flight. I only know of two 'Hooktips' as being satisfactory natives, viz. *Drepana lacertinaria*, L., and *D. falcataria*, L., both of which are found pretty generally wherever there is any great growth of birch, on which the larvæ feed, spinning the edges of the leaves loosely together and living inside the tent-like structure thus formed. *Cilix glaucata*, Scop., is thinly scattered, most captures of the species being made when it is on the wing in the evening along whitethorn hedges. *Dicranura vinula*, L., is generally distributed and usually common, while *D. furcula*, L., is nearly as widely spread but seldom occurs in any numbers, and *D. bifida*, Hb., is rare, Keswick and Great Salkeld being the only places where recent captures have been made. Mr. Charles G. Barrett in his work on the Lepidoptera of the British Isles records the very rare *D. bicuspis*, Bork., but gives no data. *Pterostoma palpina*, L., is rather scarce but occurs in most districts. *Lophopteryx camelina*, L., is attached to birch and is fairly common. *L. carmelita*, Esp., occurs rarely among the lakes. *Notodonta dictæa*, L., and *N. dictæoides*, Esp., are met with throughout the county amongst sallow and birch respectively. The very variable larva of *N. dromedarius*, L., is to be beaten in surprising numbers from stunted birches growing on wet moors in the Lazonby district; it is taken elsewhere in small numbers. *N. ziczac*, L., is widely distributed and like the other 'prominents' is usually taken in the larval state. *N. trepida*, Esp., is very rare; one or two specimens have been captured by the Keswick collectors. *N. chaonia*, Hb., is also very rare and is largely confined to the southern half of the county. Cockermouth is given in Stainton's Manual as a locality of *N. dodonea*, Hb., but I cannot learn anything concerning the source of this record. Occurring everywhere, *Phalera bucephala*, L., is so well known as to call for no remark. *P. pigra*, Hufn., is at times extremely common in the larval state on sallow near Carlisle, despite Barrett's assertion that it occurs 'very rarely in the county.' The late Thomas Armstrong of Carlisle records *P. curtula*, L., as plentiful (*Weekly Intell.*, vol. vii. p. 30) and Barrett says that Cumberland 'seems to be its northern limit,' but I do not know of its recent occurrence with us. *Tbyatira batis*, L., is fairly common at 'sugar' everywhere. *T. derasa*, L., is common at Keswick, which is the only locality known at present. *Cymatophora or*, Fb., appears to be nearly altogether confined to the neighbourhood of Carlisle, where it is a regular visitor to 'sugar' in June, and the larvæ may be found spun up in aspen leaves later on in the year. *C. duplaris*, L., is attached to birch and is more widely distributed than the last-named. *C. fluctuosa*, Hb., is not uncommon near Keswick on the authority of Mr. Beadle.¹ *Asphalia diluta*, Fb., visits sugared trees in small numbers, while *A. flavicornis*, L., may be found in March resting on the main stems of birch bushes. *A. ridens*, Fb., has occurred near Keswick and Cockermouth in very limited numbers.

¹ Mr. H. Goss informs me that he has taken *C. fluctuosa* at "sugar" on a "moss" near Keswick.—F. H. D.

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NOCTUÆ

Bryophila perla, Fb., is found on old walls, often commonly. *Demas coryli*, L., is rare, Keswick and Cockermouth being the only localities where it has been taken. Of the two 'Daggers,' *Acronycta tridens*, Schiff., is reported to occur rarely near Keswick, but *A. psi*, L., is of universal distribution. *A. leporina*, L., is taken at 'sugar' all over the county, and the beautiful larva, which is green with long snowy-white hairs, is not unfrequently found and dearly loves a lump of cork to pupate in. *A. megacephala*, Fb., and *A. ligustri*, Fb., though of wide distribution are somewhat local; the first-named is attached to willow and poplar, the latter entirely to ash. One of the most abundant of the genus is *A. rumicis*, L., which is a regular visitor to the lepidopterist's treacle patches in June; the larva is often found in kitchen gardens feeding on the leaves of strawberry and raspberry. *A. menyanthidis*, View., is confined to moors and heaths, where it is found resting on tree trunks and sometimes on the bare ground; the larvæ are taken on heath and sweet gale. *Diloba cæruleocephala*, L., is abundant in the larval state on hawthorn and crab. *Leucania conigera*, Fb., and *L. lithargyria*, Esp., visit flowers pretty freely in June. *L. littoralis*, Curt., is said by Stephens to have been taken on the Cumberland coast by Weaver in 1827, about which period T. C. Heysham is credited with having captured *L. impudens*, Hb., on Cardew Mire, but neither species have been heard of since. *L. comma*, L., *L. impura*, Hb., and *L. pallens*, L., are common in reed beds during the summer. *Tapinostola fulva*, Hb., frequents damp meadows, heaths and woods, and may be noticed in plenty on the wing towards dusk at the end of August. Red forms are not uncommon. Of that fine species *Nonagria arundinis*, Fb., Mr. J. E. Thwaytes took a single specimen at light on the railway in Carlisle in 1898, but as there is no other Cumberland record it is possible that this specimen was introduced into the district in a railway truck. *Hydræcia nictitans*, Bork., is common at most of the stations, and is fond of visiting the flower heads of black knapweed and devil's-bit-scabious. *H. petasitis*, Dbl., has been found amongst butterbur near Carlisle. *H. micacea*, Esp., is very common at the flowers of ragwort and at 'sugar'; pupæ may be freely taken at the roots of the common dock. *Axylia putris*, L., is rather scarce, and does not appear to have been noticed at all in the southern half of the county. *Xylophasia rurea*, Fb., and its var. *combusta*, Dup., *X. lithoxylea*, Fb., and *X. monoglyphæ*, Hufn., are generally abundant; but *X. sublustris*, Esp., is confined to Keswick and Salkeld; while *X. hepatica*, L., though occurring in many places, is seldom common. *Dipterygia scabriuscula*, L., has not been seen near Carlisle for some years, but still visits 'sugar' in Castle Head Wood, Keswick. *Neuronia popularis*, Fb., is common at light, at least the males are, few females being captured. *Charæas graminis*, L., is very common in meadows and at street lamps, and on more than one occasion during the nineteenth century has been known to do considerable damage to grass pastures. *Cerigo matura*, Hufn., is rare,

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most captures being made at light. *Luperina testacea*, Hb., is rather local, though usually common where it occurs at all; it is one of the most frequent captures at street lamps in Carlisle; I have found a good many pupæ under stones on the coast. *L. cespitis*, Fb., also occurs at light, sparingly however. *Mamestra albicollis*, Hb., does not appear to have been met with in Cumberland since Weaver took it in 1827 as recorded by Stephens in the *Illustrations*. *M. abjecta*, Hb., and *M. furva*, Hb., are found near Keswick, and *M. brassicae*, L., is everywhere a pest. *Apamea basilinea*, Fb., and *A. gemina*, Hb., are taken all over the county; the latter varies considerably. A much scarcer species is *A. unanimitis*, Tr., though of wide distribution; it is generally taken on the wing along hedgerows. One of the commonest and most variable Noctuae is *A. didyma*, Esp., which varies into the most puzzling forms. All the genus *Miana* occur, being taken at 'sugar,' flowers or light. Of *M. strigilis*, Clerck, the black variety known as *æthiops*, Haw., is the predominating form. A red form of *M. fasciuncula*, Haw., is not uncommon. *M. literosa*, Haw., is chiefly met with in the northern half of the county, and *M. bicoloria*, Vill., is local, though sometimes it swarms on thistle heads near Carlisle. *M. arcuosa*, Haw., occurs freely in meadows at dusk in many parts of the county. *Photobedes captiuncula*, Tr., which is a tolerably common species in the adjoining counties of Westmorland, Northumberland and Durham, has not apparently been found in Cumberland except by the late George Mawson, who records it as rather rare in the Cockermouth district. *Celæna haworthii*, Curt., is not uncommon on moorish ground in and near woods where the cotton grass grows. *Grammesia trigrammica*, Hufn., without being common, is hardly a scarce species, though missing from several of the local lists I have received from collectors for the purposes of this summary of the entomology of the county. *Stilbia anomala*, Haw., is a rarity. It is recorded from Keswick by the late W. Greenip and figures in Mawson's Cockermouth list; in July, 1899, Messrs. Britten and Wilkinson each secured a beautiful specimen on the side of Lazonby Fell. *Caradrina alsines*, Brahm, is in the Keswick list as a scarce species. *C. taraxaci*, Hb., is widely distributed and visits 'sugar.' *C. morpheus*, Hufn., abounds in gardens at Carlisle, visiting various flowers in the evening. *C. quadri-punctata*, Fb., is the commonest species of the genus in the county. *Hydrilla palustris*, Hb.,¹ I have taken twice near Carlisle—the first specimen in 1896, the second in 1897, both being captured while on the wing towards evening. It is a fenland insect and its occurrence so far north is interesting. More interesting still is the fact that these two Cumberland specimens appear to be the only females recorded from the British Isles. *Rusina tenebrosa*, Hb., is a fairly regular summer visitor to 'sugar,' but few females are taken. *Agrotis vestigialis*, Hufn., occurs rarely on the coast. *A. puta*, Hb., and *A. ripæ*, Hb., are said by Barrett to be rare in the county. *A. suffusa*, Hb., is not uncommon in late autumn throughout the county. *A. saucia*, Hb., has been taken

¹ See my notes, *Ent. Rec.*, vol. x. p. 110.—F. H. D.

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twice in the east near Brampton by Mr. G. B. Routledge. It also appears in Mawson's Cockermouth list as 'rare.' Two of the commonest species of this genus are *A. segetum*, Schiff., and *A. exclamatoris*, L., especially the latter. *A. nigricans*, L., is locally abundant at the flower heads of ragwort. *A. tritici*, L., is found both inland and on the coast. *A. aquilina*, Hb., is scarce on the coast, but more diligent collecting would probably turn up this and other Agrotids in greater numbers than hitherto. *A. agathina*, Dup., is attached to the moors, where larvæ may be freely swept but are seldom reared. The moth is at times netted as it flies over the heath. It also visits 'sugar.' *A. cinerea*, Hb., is recorded from Carlisle by Humphrey and Westwood (vol. i. p. 118). *A. strigula*, Thnb., is another moorland species, and in a suitable habitat occurs in profusion, flying rapidly over the heath. Occasionally it visits 'sugar' in great numbers. *A. simulans*, Hufn., is recorded from the county by T. Armstrong and C. S. Gregson. *A. lucerneæ*, L., occurs among the rocks under Falcon Crag near Keswick. This record is from Mr. Beadle, who says his specimens are 'a dark form.' *A. corticea*, Hb., *A. cursoria*, Bork., *A. obelisca*, Hb., *A. præcox*, L., and *A. obscura*, Brahm, all require confirmation as Cumberland natives. *Noctua glareosa*, Esp., sometimes swarms at 'sugar' on the moors, the specimens when fresh being suffused with pink. *N. depuncta*, L., has got very rare of late years in the county. At one time it was abundant and it is probable that the first British specimens were taken near Carlisle. Other localities where it occurs are Brampton, Keswick and Salkeld. *N. augur*, Fb., *N. plecta*, L., *N. c.-nigrum*, L., and *N. baia*, Fb., are all more or less abundant. *N. triangulum*, Hufn., is not uncommon, being usually taken in the larval state by searching low plants under hedgerows on warm nights in spring. *N. brunnea*, Fb., and *N. festiva*, Hb., visit 'sugar' in summer, the latter varying considerably. Two other summer species are *N. dahlîi*, Hb., and *N. rubi*, View., and though widely distributed are not common. *N. umbrosa*, Hb., is fond of visiting the flowers of reed and is rather common as a rule. *N. castanea*, Esp., abounds on some of the heaths, the drab form known as var. *neglecta*, Hb., predominating. *N. xanthographa*, Fb., is a roadside pest. *Triphæna ianthina*, Esp., is not particularly common, though most collectors meet with it sooner or later. *T. fimbria*, L., is commoner and some lovely forms are bred from larvæ taken in the spring on birch, sloe, etc. *T. comes*, Hb., abounds everywhere and so of course does *T. pronuba*, L. *Amphipyra pyramidea*, L., is said by Stephens to have occurred in Cumberland, and Mawson records it from the west, but I do not know of any recent captures. *A. tragopogonis*, L., is common at 'sugar,' in out-houses, railway wagons and other odd places. *Mania typica*, L., is common in and near gardens, while its larger relative, *M. maura*, L., is a certain capture at 'sugar' on trees along the banks of rivers. *Panolis piniperda*, Panz., is common in fir plantations and visits sallow bloom in spring. *Pachnobia leucographa*, Hb., does not appear to have been noticed for some years, but *P. rubricosa*, Fb., is common every spring. *Tænio-*

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campa gothica, L., *T. incerta*, Hufn., *T. stabilis*, View., and *T. pulverulenta*, Esp., are very abundant, while *T. opima*, Hb., *T. populeti*, Fb., and *T. gracilis*, Fb., though nearly as widely distributed are of less frequent occurrence. *T. munda*, Esp., is not uncommon near Keswick but scarce elsewhere. *Orthosia suspecta*, Hb., is very erratic in its appearance. Near Carlisle in 1895 it swarmed, but I have not heard of it since, at any rate in that district. It has also occurred near Keswick and Brampton. *O. upsilon*, Bork., occurs sparingly near Keswick. *O. lota*, Clerck, and *O. macilenta*, Hb., are regular autumnal visitors to 'sugar,' along with *Anchocelis rufina*, L., and *A. litura*, L. *A. pistacina*, Fb., so common further south, appears to be extremely rare in this county. *A. lunosa*, Haw., is usually a scarce species, but Mr. G. B. Routledge took it freely in 1878 near the village of Hayton. *Cerastis vaccinii*, L., and *C. spadicea*, Hb., occur throughout the county, the last-named in my experience being much the scarcer of the two. One of the latest visitors of the year to 'sugar' is *Scopelosoma satellita*, L., and hibernating is met with again in the spring. *Xanthia citrargo*, L., is not often noticed, but *X. fulvago*, L., and *X. flavago*, Fb., abound. They may be freely bred from catkins of willow. *X. circellaris*, Hufn., is common at 'sugar' in the autumn and I have taken the var. *macilenta*, Haw. *Cirrhædia xerampelina*, Hb., is found throughout the county in small numbers resting on ash trunks or on gas lamps at night. *Tetbea subtusa*, Fb., is rare. Mr. George Wilkinson bred two specimens in 1897 from larvæ spun between aspen leaves near Carlisle. This is the only recent record I can hear of. *Cosmia paleacea*, Esp., is very rare, only occurring in Barron Wood. *Calymnia trapezina*, L., is common and variable, but *C. affinis*, L., appears to be very rare. It has occurred near Keswick. *Dianthæcia conspersa*, Esp., is abundant near Maryport and has occurred in other localities. *D. cucubali*, Fues., is always scarce though found all over the county. *D. capsicola*, Hb., is common wherever much white campion grows, *D. carpophaga*, Bork., being much scarcer, while *D. capsophila*, Dup., is scarcer still. *Hecatera serena*, Fb., is taken sparingly near Carlisle and Mawson appears to have met with it in the west. *Polia chi*, L., is plentiful everywhere, the var. *olivacea*, St., occasionally being taken. Carlisle is the only locality in the county where *Dasypolia templi*, Thnb., has been found. It frequents street lamps but is far from common. *Epunda lutulenta*, Bork., is taken near Brampton and Carlisle. The vars. *luneburgensis*, Frr., and *sedii*, Gn., occur as well as the typical form. *E. nigra*, Haw., is generally diffused throughout the county and not uncommon. *Cleoceris viminalis*, Fb., varying from the type to var. *obscura*, Stgr., is sometimes common at 'sugar' and the larvæ may readily be found between united willow leaves. *Miselia oxyacanthæ*, L., in its typical form is common everywhere. The pupæ of *Agriopsis aprilina*, L., may be freely dug up at the roots of oak in August. The variation of this species is in the direction of a banded form. *Euplexia lucipara*, L., is a moderately common summer moth in all the districts which are regularly worked. The autumn brood of *Phlogophora meticulosa*, L., is usually very numerous.

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I have taken a specimen as late as December 17th. *Aplecta prasina*, Fb., is widely diffused but seldom common. *A. occulta*, L., has been taken sparingly near Brampton by Mr. Routledge. *A. nebulosa*, Hufn., occurs generally, but *A. tincta*, Brahm, does not appear to have been taken away from the lakes, where at times it is not uncommon. *Hadena adusta*, Esp., is moderately common throughout the county. One of the most variable Noctuæ is *H. protea*, Bork., which is always abundant, while *H. glauca*, Hb., is scarce and appears to be peculiar to heaths. *H. dentina*, Esp., is rather commoner and varies extensively. *H. oleracea*, L., abounds in gardens, *H. pisi*, L., amongst broom, etc., and *H. thalassina*, Rott., visits 'sugar' in early summer. *H. contigua*, Vill., is found sparingly near Brampton by Mr. Routledge. The beautiful *H. rectilinea*, Esp., was taken near Keswick years ago, and the Carlisle lepidopterists have taken a fair number quite recently. One of the earliest Noctuæ of the year is *Xylocampa areola*, Esp., which is readily found resting on trees, walls, etc., wherever there is much honeysuckle, its food plant, growing. *Calocampa vetusta*, Hb., is rare, but *C. exoleta*, L., is universally common. *C. solidaginis*, Hb., is confined to hilly districts; I have taken it on Lazonby Fell, and other localities are Keswick, Gelt Valley and Penrith Beacon. *Asteroscopus sphinx*, Hufn., occurs sparingly at light and I have beaten the larva from crab. *Cucullia umbratica*, L., is common at flowers in gardens. *C. chamomillæ*, Schiff., is sometimes taken near Carlisle. *Gonoptera libatrix*, L., visits 'sugar' or may be easily bred from larvæ taken on sallow and osier. *Habrostola tripartita*, Hufn., and *H. triplasia*, L., occur pretty generally at flowers in gardens and lanes. The commonest *Plusias* are *P. chrysis*, L., *P. iota*, L., *P. pulchrina*, Haw., and *P. gamma*, L. *P. bractea*, Fb., has been taken near Carlisle by Mr. G. Wilkinson and in other localities by other collectors but is rare. *P. festucae*, L., is moderately common. *P. interrogationis*, L., occurs among heath on the hills, though it has been found quite close to Carlisle. A typical heath-loving species is *Anarta myrtilli*, L., and as is to be expected in this county of heaths and 'mosses' is abundant. It flies rapidly during the heat of the day. *Heliaca tenebrata*, Scop., occurs in meadows, but its short jerky flight easily escapes observation. Of the very rare *Heliothis scutosa*, Schiff., two specimens were taken in Cumberland upwards of sixty years ago. The first of these, which was also the first British specimen, was captured on the banks of the Caldew near Dalston in July, 1833; the second being taken on the coast near Skinburness. It is not improbable that other specimens were found subsequently but no trace can now be made of any. *Chariclea umbra*, Hufn., occurs in a railway cutting near How Mill and will likely turn up when the coast sandhills are more diligently worked. *Hydrelia uncula*, Clerck, does not appear to have been noticed for some years, though formerly common at Orton when the 'moss' there was more extensive than now. *Phytometra viridaria*, Clerck, is common on heaths though easily overlooked. *Euclidia mi*, Clerck, and *E. glyphica*, L., haunt grassy places. *Rivula sericealis*, Scop., is taken near Keswick,

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but *Zanclognatha grisealis*, Hb., is widely distributed. *Hypena proboscidalis*, L., swarms amongst nettles. *Hypenodes costæstrigalis*, St., is picked up occasionally. *Tholomiges turfosalis*, Wk., is common in boggy places near Keswick, and in the same district *Brepbos parthenias*, L., occurs amongst birch. This species has also been taken in Barron Wood by the older school of lepidopterists, who also appear to have met with *B. notha*, Hb. (see Morris' *British Moths*, vol. iii. p. 146).

GEOMETRÆ

Urapteryx sambucaria, L., is common in and near woods and is a conspicuous object when on the wing of an evening. *Epione apiciaria*, Schiff., is not uncommon in places, and though *E. parallellaria*, Schiff., has been recorded several times I have not myself seen an authentic Cumberland specimen. *Rumia luteolata*, L., is one of the commonest hedgerow moths. *Venilia macularia*, L., is restricted to the woods of the southern half of the county. The late G. Mawson records *Angerona prunaria*, L., as common near Keswick, but it seems strange that such a large distinct species should not have been noticed by others. *Metrocampa margaritaria*, L., is common in and near woods. *Ellopia prosapiaria*, L., is confined to fir woods and plantations and is often common, but to be fit for the cabinet must be bred. *Eurymene dolobraria*, L., is decidedly rare, though it has been taken in widely separate districts. Another scarce moth is *Pericallia syringaria*, L., which has been taken near Carlisle and Brampton. *Selenia bilunaria*, Esp., is spread all over the county, occurring in small woods and along hedgerows. The summer brood, known as var. *juliaria*, Haw., is also met with. *S. lunaria*, Schiff., though considerably scarcer, has much the same distribution. *S. tetralunaria*, Hufn., is rare, while *Odontopera bidentata*, Clerck, and *Crocallis elinguaris*, L., occur everywhere. *Eugonia alniaria*, L., is taken on street lamps. *E. erosaria*, Bork., was taken in 1896 at Keswick and at Carlisle in 1900. *E. fuscantaria*, Haw., and *E. quercinaria*, Hufn., are doubtful natives of the county. *Himera pennaria*, L., is a woodland species and may be found at night on bushes and trees with the aid of a lantern. *Phigalia pedaria*, Fb., is common early in the year. Though widely distributed, *Nyssia hispidaria*, Fb., is always rare. Two specimens taken by Mr. H. Britten in the Lazonby district are probably the most recent captures. *Amphydasys strataria*, Hufn., is also rather a scarce insect, being usually taken in oak woods. *A. betularia*, L., occurs all over the county in moderate numbers, the black race, var. *doubledayaria*, Mill., being seldom met with. *Cleora glabraria*, Hb., has not to my knowledge been taken for some years. At one time I believe Barron Wood produced a good many specimens. The larva of *C. lichenaria*, Hufn., is met with in many localities feeding on lichen on trees and is an admirable instance of adaptation to environment. *Boarmia repandata*, L., is found resting on trees in woods, while *B. gemmaria*, Brahm, is more attached to gardens and hedgerows. Considering *Tephrosia crepuscularia*, Hb., and *T. biundularia*, Bork., as distinct species, I find that

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the former (the 'brownish insect') has only been found near Keswick and that the latter (the 'whitish insect') is common near Carlisle, Brampton and Lazonby. The last-named locality is the only one where *T. punctularia*, Hb., occurs in any numbers. *Gnophos obscuraria*, Hb., has been taken on Barrow Mountain near Keswick and in Barron Wood. On rough heaths where furze grows freely *Pseudoterpna pruinata*, Hufn., is a sure find. That fine 'Emerald' *Geometra papilionaria*, L., is fairly common. It flies amongst birch about 10 p.m. towards the end of June, but to get really fine specimens they must be bred. The larva may be found on birch in spring, feeding from the extremity of a twig down to the main stem of the bush. *Iodis lactearia*, L., is common in most woods. *Zonosoma punctaria*, L., and *Z. pendularia*, Clerck, are also woodland species. *Z. obicularia*, Hb., was taken on Heskett Moss by the late T. C. Heysham, and *Z. annulata*, Schulz., at Great Orton by the same enthusiastic naturalist. *Hyria muricata*, Hufn., though occurring in Barron Wood and near Rose Castle in Heysham's time, appears now to be only taken on peaty bogs near Keswick. *Astbena luteata*, Schiff., is to be captured in woods near Carlisle but is not common. *A. candidata*, Schiff., is more widely spread and frequents grassy places amongst trees. *A. sylvata*, Hb., is very rare. *A. blomeri*, Curt., is recorded from Barron Wood by J. B. Hodgkinson (*Wk. Int.*, vol. vi. p. 156). *Eupisteria obliterata*, Hufn., occurs sparingly near Carlisle; near Lazonby it is more abundant. *Venusia cambrica*, Curt., affects tree trunks in woods, but is seldom taken in any numbers. *Acidalia dimidiata*, Hufn., and *A. bisetata*, Hufn., are woodland and hedgerow species. *A. dilutaria*, Hb., and *A. immutata*, L., are found near Keswick. *A. virgularia*, Hb., occurs more generally about honeysuckle, etc. By far the commonest 'Wave' of the woods is *A. remutaria*, Hb. *A. fumata*, St., is a 'moss' species and is not uncommon in a suitable habitat. The var. *spoliata*, Stgr., of *A. aversata*, L., is generally distributed and common but the type is rare. *A. inornata*, Haw., has been once taken near Carlisle by Mr. G. Wilkinson. *Cabera pusaria*, L., and *C. exanthemata*, Scop., are common in woods. *Macaria notata*, L., was taken by Heysham near Kirkandrews-on-Eden. *M. liturata*, Clerck, is fairly abundant in fir woods and sometimes visits 'sugar.' *Halia vauaria*, L., is a common garden moth, the larva feeding on currant and gooseberry. *Strenia clathrata*, L., is partial to grassy railway cuttings and sandhills and is locally abundant. In woods where much bracken grows *Panagra petrararia*, Hb., is to be looked for. *Numeria pulveraria*, L., is found in many woods in limited numbers. *Scodiona belgiaria*, Hb., is only taken on the moors. Every heath in the county harbours *Ematurga atomaria*, L., and every fir wood *Bupalus piniaria*, L. On some of the 'mosses' *Aspillates strigillaria*, Hb., is at times excessively abundant. *Abraxas grossulariata*, L., is a garden pest. *A. sylvata*, Scop., occurs in plenty in most woods where there are many elms. *Ligdia adustata*, Schiff., has only been taken near Keswick. *Lomaspilis marginata*, L., is common amongst willow. *Hybernia rupicaprararia*, Hb., *H. leucopheararia*, Schiff., *H. aurantiaria*, Esp., *H. marginaria*,

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Bork., and *H. defoliaria*, Clerck, are more or less abundant in woods and hedges. *Anisopteryx æscularia*, Schiff., is another common species. *Cheimatobia brumata*, L., swarms, and *C. boreata*, Hb., is fairly common amongst birch. The variable *Oporabia dilutata*, Bork., is plentiful in woods in autumn, its congener *O. filigrammaria*, H.-S., much less so. *Larentia didymata*, L., *L. multistrigaria*, Haw., and *L. viridaria*, Fb., are common everywhere. *L. cæsiata*, Lang, *L. salicata*, Hb., and *L. olivata*, Bork., occur locally in fair numbers. *L. flavicinctata*, Hb., has not been noticed for some years. *Emmelesia affinitata*, St., is rare in woods. *E. alcbemillata*, L., is more often captured, and *E. albulata*, Schiff., swarms in meadows. *E. decolorata*, Hb., occurs amongst campion. *E. tæniata*, St., and *E. unifasciata*, Haw., are both rare. *E. minorata*, Tr., and *E. adæquata*, Bork., are confined to hilly districts, and if specially worked for may be found freely enough. Of the large and perplexing genus *Euphithecia*, Curt., *E. venosata*, Fb., and *E. oblongata*, Thnb., are scarce; *E. pulchellata*, St., is bred freely from foxglove; *E. subfulvata*, Haw., is not uncommon amongst ragwort; *E. plumbeolata*, Haw., *E. pygmæata*, Hb., *E. satyrata*, Hb., and *E. castigata*, Hb., occur in meadows; *E. indigata*, Hb., is common in fir woods; *E. nanata*, Hb., and *E. minutata*, Gn., swarm on heaths; *E. absinthiata*, L., and *E. vulgata*, Haw., are frequent in lanes; *E. assimilata*, Gn., inhabits gardens; *E. tenuiata*, Hb., is bred from sallow catkins; *E. lariciata*, Frr., is found in larch woods; *E. abbreviata*, St., is beaten from the leafless branches of oak in March and April; *E. exigua*, Hb., and *E. pumilata*, Hb., are taken in various odd places; *E. rectangulata*, L., is sometimes caught along hedges; and *E. togata*, Hb., has once been taken in Gelt Woods. It is highly probable that careful work would considerably extend the foregoing list of Cumberland 'Pugs.' *Lobophora sexualisata*, Hb., and *L. carpinata*, Bork., are found in many of the woods. *L. halterata*, Hufn., is confined to the neighbourhood of Carlisle, and *L. viretata*, Hb., and *L. polycommata*, Hb., to that of Keswick. *T hera simulata*, Hb., has been taken amongst juniper near Barrow Falls, Keswick. *T. variata*, Schiff., and *T. firmata*, Hb., inhabit fir woods. *Hypsipetes ruberata*, Frr., occurs locally, and *H. sordidata*, Fb., of course abounds. *Melanthia bicolorata*, Hufn., is locally abundant, especially favouring alders fringing streams. The var. *plumbata*, Curt., is rare. *M. ocellata*, L., generally frequents lanes, and *M. albicillata*, L., is partial to woods with an undergrowth of bramble. *Melanippe sociata*, Bork., *M. montanata*, Bork., and *M. fluctuata*, L., are abundant. *M. bastata*, L., *M. tristata*, L., *M. rivata*, Hb., and *M. galiata*, Hb., also occur, but are local to special habitats. *Anticlea badiata*, Hb., is common along hedges in early spring. *A. nigrofasciaria*, Göze, is a woodland species and less common. *Coremia munitata*, Hb., is met with in hilly districts. *C. designata*, Hufn., *C. ferrugata*, L., and *C. unidentaria*, Haw., are widely distributed. *Camptogramma bilineata*, L., abounds in hedges in summer. *Phibalapteryx vittata*, Bork., has lately been taken freely in several localities. *Triphosa dubitata*, L., is local and scarce. *Eucosmia certata*, Hb., is locally abundant. *Cidaria siterata*,

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Hufn., and *C. miata*, L., visit 'sugar' in autumn. *C. corylata*, Thnb., is a common moth in some woods. *C. truncata*, Hufn., *C. immanata*, Haw., *C. fulvata*, Forst., *C. testata*, L., *C. populata*, L., *C. dotata*, L. (*pyraliata*, Fb.), *C. associata*, Bork. (*dotata*, Gn.), *C. prunata*, L., and *C. suffumata*, Hb., are all more or less common. The var. *piceata*, St., of the last species is occasionally captured. *C. silaceata*, Hb., though generally diffused is always scarce. *C. reticulata*, Fb., probably now on the verge of extinction as a British insect, was formerly taken in the Great Wood, Keswick, by the late James Edmondson. *Pelurga comitata*, L., is hardly known in the county away from Carlisle, where it sometimes visits light freely. *Eubolia cervinata*, Schiff., is local and scarce; *E. limitata*, Scop., common everywhere. The reputed 'only' British specimen of *E. mæniata*, Scop., was taken in Barron Wood many years ago. I do not know if this specimen is still in existence, but the late J. B. Hodgkinson used to have it. *E. plumbaria*, Fb., is common on heaths and waste places. *Carsia paludata*, Thnb., is common on some of the moors. *Anaitis plagiata*, L., is rather scarce. *Cbesias spartiata*, Fues., is abundant amongst broom. *C. rufata*, Fb., has been taken once at Hayton. *Tanagra atrata*, L., is abundant in meadows in summer.

PYRALIDES

Aglossa pinguinalis, L. Common in stables
Pyralis farinalis, L. In stables, flour-mills, etc.
Scoparia ambigualis, Tr.
 — *basistrigalis*, Knaggs. *Borrowdale*; rests on rocks, etc.
 — *cembrae*, Haw.
 — *murana*, Curt. Moderately common; occurs on walls
 — *ingratella*, Zell.
 — *cratægella*, Hb.
 — *resinea*, Haw. *Lake district*; common (Stainton's *Manual*)
 — *truncicolella*, Sta. Common everywhere
 — *angustea*, St. *Lake district* (Stainton's *Manual*)
Nomophila noctuella, Schiff. Common everywhere
Pyrausta aurata, Scop. *Lake district*; common (Stainton's *Manual*)
 — *purpuralis*, L. Abundant on the *Silloth* sandhills
 — *ostrinalis*, Hb. *Keswick* (Stainton's *Manual*)
Herbula cespitalis, Schiff. Sparingly in meadows; *Carlisle*
Ennychia cingulata, L. Very common on grassy hillsides near *Seathwaite-in-Borrowdale*
 — *nigrata*, Scop. } *Lake district* (Stainton's *Manual*)
 — *octomaculata*, Fb. }
Eurrhpara urticata, L. Abundant in nettlebeds everywhere

Scopula lutealis, Hb. Very common everywhere
 — *olivalis*, Schiff. }
 — *prunalis*, Schiff. } In and near woods
Botys fuscalis, Schiff. Swarms in meadows throughout the county
Pionea forficaris, L. Common in gardens
Hydrocampa nymphæata, L. } Common round the margins of ponds
 — *stagnata*, Don. }

PTEROPHORI

Chrysocoris festaliella, Hb. Rare; *Hayton Moss* and *Kingmoor*
Platyptilia ochrodactyla, Hb. Common amongst yarrow
 — *gonodactyla*, Schiff. Abundant amongst coltsfoot, especially on railway banks. Larvæ may be found freely in early spring in the flowers
Amblyptilia acanthodactyla, Hb. On heaths, etc.
 — *cosmodactyla*, Hb. *Lake district* (Stainton's *Manual*)
Mimæseoptilus bipunctidactyla, }
 Haw. } *Carlisle district*
 — *plagiodactylus*, Sta. }
 — *pterodactylus*, L. Common along hedgerows
Œdematophorus lithodactylus, Tr. *Kingmoor*
Leioptilus osteodactylus, }
 Zell. } *Lake district* (Stainton's *Manual*)
Acitilia tetradactyla, L. }

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- Aciptilia pentadactyla*, L. Apparently rare in the county. Two have been taken near *Carlisle*, and it has also occurred sparingly near *Lazonby*
- Alucita hexadactyla*, L. Common everywhere amongst honeysuckle; often seen on windows in houses

CRAMBI

- Crambus pratellus*, L. Everywhere common in meadows
- *ericellus*, Hb. A mountain species. Not uncommon on some of the lake mountains; *Honister Crag*, *Sty Head Pass*, etc.
- *sylvellus*, Hb. Common on that extensive heath known as *Bolton Fell* in the north of the county. It is however very local there and easily overlooked
- *pascuellus*, L. Locally abundant on damp heaths
- *furcatellus*, Zett. Another mountain species. Occurs in the same localities as *C. ericellus*, but, if anything, is a scarcer insect
- *margaritellus*, Hb. Sometimes swarms on some of the moors
- *perlellus*, Scop. Widely distributed
- *perlellus* var. *warringtonellus*, Zell. Occurs near *Carlisle*
- *tristellus*, Fb. Everywhere abundant
- *geniculeus*, Haw. Local, but common at times; *Lazonby Fell*, *Silloth*, etc.
- *culmellus*, L. } Very common every-
— *hortuellus*, Hb. } where in meadows
- Eromene ocella*, Haw. Mr. C. Eales captured two specimens at *Silloth* on 27th June, 1885
- Ephestia passulella*, Bar. About houses
- *kuhniella*, Zell. Very common in mills in *Carlisle*
- Cryptoblabes bistriga*, Haw. One near *Carlisle* in June, 1897
- Plodia interpunctella*, Hb. Not uncommon in some of the *Carlisle* mills
- Phycis fusca*, Haw. Common on heaths which have been recently burnt
- Dioryctria abietella*, Zinck. Taken on *Lazonby Fell* July 30th, 1899, by Mr. Wilkinson. *Lake district* (Stainton's *Manual*)
- Oncocera ahenella*, Zinck. *Lake district* (Stainton's *Manual*)
- Galleria mellonella*, L.
- Aphomia sociella*, L.

TORTRICES

- Tortrix xylosteana*, L. Common near *Carlisle*; visits 'sugar.'
- *sorbiana*, Hb. } *Carlisle*
— *rosana*, L. }

- Tortrix heparana*, Schiff. *Carlisle*; common
- *ribeana*, Hb. *Carlisle*
- *corylana*, Fb. }
- *unifasciana*, Dup. } *Carlisle*; common
- *viburnana*, Fb. Very common on *Lazonby Fell*, *Bolton Fell* and other moors
- *palleana*, Hb. var. *icterana*, Fröl. Abundant on the steep slopes of *Cowran Cut* to the east of *How Mill*
- *viridana*, L. Common everywhere
- *minstrana*, L. Common everywhere; very variable
- *forsterana*, Fb. Not uncommon in woods
- Amphisa gerningana*, Schiff. Taken freely on *Kingmoor* near *Carlisle*, in July, 1900, by Mr. Wilkinson
- *prodromana*, Hb. Rare near *Carlisle*, but occurs more freely amongst heath right to the summit of *Cumrew Fell* (1,500 feet) in the *Pennines*
- Leptogramma literana*, L. Scarce; woods near *Carlisle*
- Peronea sponsana*, Fb. Scarce; *Carlisle*
- *rufana*, Schiff. Not uncommon
- *mixtana*, Hb. On several heaths near *Carlisle*
- *schalleriana*, L. Common everywhere along hedgerows
- *comparana*, Hb. }
- *perplexana*, Bar. } Common near *Carlisle*
in woods and along hedges
- *variegana*, Schiff. Common and variable
- *cristana*, Fb. Scarce; taken at fallow bloom in spring after hibernation
- *hastiana*, L. Scarce
- *ferrugana*, Tr. Common in lanes near *Carlisle*
- *aspersana*, Hb. Common
- Rhacodia caudana*, Fb. Very common in woods and lanes throughout the county. Beautiful varieties occur
- Teras contaminana*, Hb. Common in white-thorn hedges
- Dictyopteryx læflingiana*, L. Common
- *holmiana*, L. Rather common near *Maryport*
- *bergmanniana*, L. Common amongst rose
- *forskaleana*, L. One at *Wetheral*, 1900
- Argyrotoza conwayana*, Fb. Scarce; *Carlisle*
- Ptycholoma lecheana*, L. Not uncommon near *Carlisle*; bred from fallow, etc.
- Diluta semifasciana*, Haw. Occurs yearly, but sparingly
- Penthina corticana*, Hb. Scarce
- *betulætana*, Haw. In profusion amongst birch
- *sororculana*, Zett.
- *pruniana*, Hb. Common amongst sloe
- *dimidiana*, Tr. Scarce; *Bowness Moss*, etc.

A HISTORY OF CUMBERLAND

- Penthina marginana*, Haw. One specimen near *Carlisle*
- Heyda aceriana*, Dup.
- *dealbana*, Fröl. Common amongst willow
- Spilonota trimaculana*, Haw.
- Pardia tripunctana*, Fb. Very common in hedges
- Aspis udmanniana*, L. Occurs throughout the county, but is hardly a common insect
- Sericoris rivulana*, Scop. Locally common near *Carlisle*
- *lacunana*, Dup. } Very common
- *urticana*, Hb. }
- *micana*, Fröl. In profusion in a certain meadow near *Carlisle*; also in other localities, but uncommon
- Mixodia schulziana*, Fb. Very common on the moors
- Orthotænia antiquana*, Hb.
- *ericetana*, Westw.
- Cnephasia musculana*, Hb. Common
- Sciaphila conspersana*, Dougl. In rough meadows
- *subjectana*, Gn. Common everywhere
- *virgaureana*, Tr.
- *pascuana*, Hb.
- *chrysanthæana*, Dup.
- *hybridana*, Hb.
- *octomaculana*, Haw.
- Capua flavillaceana*, Hb. In woods
- Bactra lanceolana*, Hb. Common in damp places; very variable
- Phoxopteryx unguicella*, L. Not uncommon on heaths
- *uncana*, Hb. Also a heath species, but scarce
- *biarcuana*, St.
- *myrtillana*, Tr.
- *lundana*, Fb. Everywhere abundant
- *mitterpacheriana*, Schiff. Sparingly in woods
- Grapholitha ramella*, L. Very common amongst birch
- *nisella*, Clerck.
- *nigromaculana*, Haw. One taken at *Sil-lot* in 1892 on a head of ragwort
- *subocellana*, Don. Common amongst willow
- *penkleriana*, Fisch. Not very common
- *nævana*, Hb. Common near *Lazonby*
- Phlæodes tetraquetra*, Haw. Common in and near woods
- *immundana*, Fisch. Freely bred from alder catkins
- *crenana*, Hb. Rare; one specimen taken by Mr. Wilkinson at *Threlkeld* and one at *Sebergham*
- Hypermeia angustana*, Hb.
- *cruciana*, L.
- Pædisca bilunana*, Haw. One specimen taken on a birch trunk near *Carlisle* in 1896
- *rubiginosana*, H.-S. Scarce, in fir plantations
- *corticana*, Hb. Generally abundant amongst oak
- *occultana*, Dougl. One taken in the *Lazonby* district in 1899
- *solandriana*, L. Sometimes not uncommon in and near woods; very variable
- Ephippiphora similana*, Hb.
- *cirsiana*, Zell. } Common amongst
- *pflugiana*, Haw. } rough herbage
- *brunnichiana*, Fröl. Common amongst coltsfoot
- *turbidana*, Tr. *Carlisle* (*Stainton's Manual*)
- Coccyx cosmophorana*, Tr. This interesting species occurs yearly in fair numbers in one of the fir woods near *Carlisle*
- *strobilella*, L. *Gelt Woods*
- *splendidulana*, Gn. *Carlisle*
- *argyrana*, Hb. Abundant on oak trunks
- *tædella*, Clerck.
- Heusimene fimbriana*, Haw. One specimen taken near *Carlisle* in an oak wood
- Retinia turionana*, Hb. Very common on young fir trees. Pupæ may be freely found in the terminal shoots of the branches
- *pinivorana*, Zell. Occurs sparingly among firs near *Carlisle*
- Carpocapsa splendidana*, Hb.
- Stigmonota dorsana*, Fb. This rare species has been taken yearly by Mr. Wilkinson and others on a railway bank near *Carlisle*. In 1900 it turned up in great numbers on another railway bank in quite a different district
- *coniferana*, Ratzb. Near *Carlisle*; scarce
- *perlepidana*, Haw. Very common
- *internana*, Gn. Not uncommon in some seasons near *Carlisle*
- *nitidana*, Fb.
- *regiana*, Zell. Very common on sycamore trunks in the *Lazonby* district
- Dicrorampha petiverella*, L. Sometimes abundant amongst yarrow
- *plumbana*, Scop. } Common
- *herbosana*, Bar. }
- Pyrodes rheediella*, Clerck. Scarce; *Carlisle*, *Allonby*, *Gross Fell*
- Catoptria ulicetana*, Haw. Abundant everywhere amongst furze
- *hypericana*, Hb.
- *cana*, Haw. Locally common near *Carlisle*
- Symæthis pariana*, Clerck. *Lake* district (*Stainton's Manual*)
- *oxycanthella*, L. Swarms amongst nettles

INSECTS

Eupoecilia nana, Haw. Not uncommon
 — *angustana*, Hb. Very common on moors
 — *atricapitana*, St. Scarce
 — *maculosana*, Haw. A few taken amongst wild hyacinth in *Newbiggen Wood* in 1899
 — *ciliella*, Hb. Locally common near *Carlisle*
Zanthosetia zoegana, L. Not very common
 — *hamana*, L. Commoner than the last
Lobesia reliquana, Hb.
Argyrolepis hartmanniana, Clerck.
 — *cnicana*, Dbl. Marshy places
Conchylis straminea, Haw. Common in meadows
Aphelia osseana, Scop.
Tortricodes hyemana, Hb. Very common everywhere

TINEÆ

Lemnaphila phryganella, Hb.
Exapate congelatella, Clerck.
Diurnea fagella, Fb. Very common everywhere; some very dark forms are taken
Epigraphia steinkellneriana, Schiff. Not uncommon in lanes
Semioscopus avellanella, Hb.
Talæporia pseudo-bombycella, Hb. } *Lake district*
Diplodoma marginepunctella, St. } (Stainton's *Manual*)
Ochsenheimeria birdella, Curt. Near *Carlisle*; scarce
Scardia corticella, Curt. } *Lake district* (Stainton's *Manual*)
 — *granella*, L. }
 — *cloacella*, Haw. Very common
Blabophanes rusticella, Hb. Common in birds' nests
Tinea tapetzella, L. In houses
 — *misella*, Zell. Common in a stable in *Carlisle*
 — *pellionella*, L. In houses
 — *fuscipunctella*, Haw.
 — *pallescentella*, Sta.
 — *lapella*, Hb. Scarce
Phylloporia bistrigella, Haw. *Lake district* (Stainton's *Manual*)
Tineola biselliella, Hml.
Lampronia luzella, Hb. }
 — *prælatella*, Schiff. } *Carlisle district*
 — *rubiella*, Bjerk. }
Incurvaria muscalella, Fb. Along hedgerows
 — *oehlmanniella*, Hb. On heaths

Micropteryx calthella, L. Very common in flowers of *Caltha palustris* in marshy places
 — *seppella*, Fb. Near *Wreay*, etc.
 — *mansuetella*, Zell. Once in *Newbiggen Wood*
 — *aureatella*, Scop. Very common in damp woods
 — *thunbergella*, Fb. *Lake district* (Stainton's *Manual*)
 — *purpurella*, Haw. }
 — *semipurpurella*, St. } Common on birch
 — *unimaculella*, Zett. }
 — *sparmanella*, Bosc.
 — *subpurpurella*, Haw. Common on oak
 — *sangiella*, Wood. Not uncommon near *Carlisle*
 — *caledoniella* Griffith. Taken freely near *Carlisle* by Hodgkinson and Eales. Mr. Wilkinson has lately turned it up in a new locality in the *Carlisle district*
Nemophora swammerdammella, L. Common in woods
 — *schwarziella*, Zell. Common in woods
 — *pilella*, Fb. } *Lake district* (Stainton's *Manual*)
Adela fibulella, Fb. }
 — *rufimitrella*, Scop. Not uncommon near *Carlisle*
 — *degeerella*, L. In woods near *Carlisle*; scarce
 — *viridella*, L. Common
Nematois cupriacellus, Hb. *Lake district* (Stainton's *Manual*)
Swammerdamia combinella, Hb.
 — *cæsiella*, Hb.
 — *pyrella*, Vill. *Lake district* (Stainton's *Manual*)
Hyponomeuta padellus, L. Very common
 — *cagnagellus*, Hb. *Wetheral*
 — *evonymellus*, L. *Lake district* (Stainton's *Manual*)
Anesychia funerella, Fb. *Lake district* (Stainton's *Manual*)
Prays curtisellus, Don. }
 — „ var. *rustica*, Haw. } *Carlisle*
Plutella cruciferarum, Zell. Very common
 — *porrectella*, L.
 — *dalella*, Sta. *Lake district*, common (Stainton's *Manual*)
Cerostoma sequella, Clerck. *Lake district* (Stainton's *Manual*)
 — *radiatella*, Don. In and near woods
 — *vitella*, L.
 — *costella*, Fb. Common in woods
 — *sylvella*, L. *Lake district* (Stainton's *Manual*)
Harpiteryx scabrella, L. }
 — *nemorella*, L. } *Carlisle*
 — *xylostella*, L. Common about honey-suckle

Note.—The records from Stainton's *Manual* apply to the Lake district of both Cumberland and Westmorland.—F. H. D.

A HISTORY OF CUMBERLAND

- Orthotelia sparganella*, Thnb. *Carlisle*; near ponds
Phibalocera quercana, Fb. Not uncommon in and near woods
Exæretia allisella, Sta. *Lake district* (Stainton's *Manual*)
Depressaria costosa, Haw. Amongst furze
 — *flavella*, Hb. *Lake district* (Stainton's *Manual*)
 — *umbellana*, St. Common amongst furze
 — *assimilella*, Tr. „ „ broom
 — *arenella*, Schiff.
 — *propinquella*, Tr. *Lake district* (Stainton's *Manual*)
 — *alstroemeriana*, Clerck. Amongst hemlock
 — *liturella*, Hb.
 — *ocellana*, Fb. Amongst sallow
 — *yeatiana*, Fb. *Lake district* (Stainton's *Manual*)
 — *applana*, Fb. Common everywhere
 — *ciliella*, Sta. } *Lake district* (Stainton's *Manual*)
 — *pimpinellæ*, Zell. }
 — *pulcherrimella*, Sta. *Lake district*; common (Stainton's *Manual*)
 — *badiella*, Hb.
 — *heracleana*, De Geer. Very common near *Carlisle* on hemlock
Gelechia ericetella, Hb. Abounds on every heath
 — *mulinella*, Zell.
 — *soroculella*, Hb.
 — *longicornis*, Curt. Sparingly on heaths near *Carlisle*
 — *diffinis*, Haw. *Lake district*; common (Stainton's *Manual*)
 — *confinis*, Sta. *Armatbwaite* (J. B. Hodgkinson)
Bryotropha terrella, Hb. Common in meadows
 — *desertella*, Dougl. Common on the *Solway* sandhills
 — *politella*, Dougl.
 — *senectella*, Zell. *Silloth*
 — *affinis*, Dougl. Very common on a mossy wall on the road between *Carlisle* and *Blackwell*
Lita viscariella, Logan
 — *æthiops*, Westw. Common on *Bowness Moss*, *Cumrew Fell*, etc.; amongst burnt heath
 — *maculea*, Haw. *Silloth*
 — *fraternella*, Dougl.
 — *junctella*, Dougl. Taken near *Castle Carrock* by Mr. G. B. Routledge
 — *marmorea*, Haw. *Silloth*
Teleia proximella, Hb.
 — *notatella*, Hb.
 — *vulgella*, Hb. *Sty Head Pass*; common
Teleia dodecella, L.
Nannodia stipella, Hb. } *Lake district*
 — „ var. *næviferella*, Dup. } (Stainton's *Manual*)
Ergatis ericinella, Dup. On heaths
Monochroa tenebrella, Hb. *Lake district* (Stainton's *Manual*)
Tachyptilia populella, Clerck. Common near *Carlisle*
Brachycrossata cinerella, Clerck. Common
Chelaria hubnerella, Don. Very common in *Orton Woods* amongst old birches
Anarsia spartiella, Schr. On commons and waste land
Sophronia humerella, Schiff. One specimen near *Carlisle*
Pleurota bicostella, Clerck. Swarms on many of the heaths
Dasycera sulphurella, Fb. Not uncommon
Æcophora minutella, L.
 — *fulviguttella*, Zell. Common amongst *Umbelliferæ*
 — *stipella*, L. *Lake district* (Stainton's *Manual*)
 — *subaquilella*, Edl. Once near *Carlisle*
 — *fuscescens*, Haw.
 — *pseudopretella*, Sta. Everywhere abundant; a nuisance in houses
Endrosis fenestrella, Scop. Very common in houses
Butalis grandipennis, Haw. Common amongst furze
 — *fusco-ænea*, Haw. }
 — *senescens*, Sta. } *Lake district*
 — *fusco-cuprea*, Haw. } (Stainton's *Manual*)
Amphisbatis incongruella, Sta. }
Pancalia lewenhoekella, L. }
Glyphipteryx fuscoviridella, Haw. Very common in meadows
 — *thrasonella*, Scop. Not uncommon
 — *haworthana*, St. } *Lake district* (Stainton's *Manual*)
 — *equitella*, Scop. }
 — *fischeriella*, Zell. Common; *Carlisle*, etc.
Perittia obscurepunctella, Sta. In woods; not uncommon
Heliozele sericiella, Haw. } *Lake district*
 — *stanneella*, Fisch. } (Stainton's *Manual*)
 — *resplendella*, Dougl. }
Argyresthia ephippella, Fb.
 — *nitidella*, Fb. Extremely abundant on hawthorn hedges
 — *semitestacella*, Curt. Common near *Carlisle*
 — *spiniella*, Zell. *Lake district* (Stainton's *Manual*)
 — *albistria*, Haw. } All occur near *Carlisle*, etc.
 — *conjugella*, Zell. }
 — *retinella*, Zell. }

INSECTS

- Argyresthia semifusca*, Haw. }
 — *mendica*, Haw. } *Lake district*
 — *glaucinella*, Zell. } (Stainton's
 — *dilectella*, Zell. } *Manual*)
 — *curvella*, L.
 — *sorbiella*, Tr.
 — *pygmæella*, Hb. Common amongst
 sallow near *Carlisle*
 — *gœdartella*, L. Common on trunks of
 alders ; *Carlisle*
 — *brochella*, Hb. Common amongst birch ;
Carlisle
Cedestis farinatella, Dup. Not uncommon in
 fir woods
Ocnerostoma piniariella, Zell. Amongst
 firs
Gracilaria alchimiella, Scop. Very common
 in almost every wood in the county
 — *stigmatella*, Fb. *Burgh-by-Sands*
 — *stramineella*, Sta. *Wreay*
 — *elongella*, L. *Carlisle*
 — *tringipennella*, Zell.
 — *syringella*, Fb.
 — *auroguttella*, St.
Coriscium brongniardellum, Fb. } *Lake district*
 — *cuculipennellum*, Hb. } (Stainton's
Manual)
Ornix anglicella, Sta. }
 — *torquillella*, Sta. } All occur in the
 — *scoticella*, Sta. } *Carlisle district*
 — *loganella*, Sta.
 — *guttea*, Haw.
Goniodoma auroguttella, Fisch.
Coleophora deauratella, Lien. *Lake district*
 (Stainton's *Manual*)
 — *alcyonipennella*, Kol. *Carlisle* ; on *Cen-*
taurea nigra
 — *pyrrhulipennella*, Tisch. Common on the
 heaths
 — *albicosta*, Haw.
 — *currucipennella*, Fisch.
 — *discordella*, Zell. *Lake district* (Stainton's
Manual)
 — *genistæ*, Sta. *Kingmoor* ; on *Genista*
anglica
 — *cæspititiella*, Zell. Swarms amongst reeds
 everywhere
 — *laripennella*, Zett. *Lake district* (Stain-
 ton's *Manual*)
 — *laricella*, Hb. Swarms on larch everywhere
 — *nigricella*, St. Common on hawthorn ;
Carlisle
 — *fuscedinella*, Zell. On birch, etc. ;
 common
 — *gryphipennella*, Bouché. On rose ; *Car-*
lisle
 — *viminetella*, Heyd. } *Lake district*
 — *lutipennella*, Zell. } (Stainton's *Manual*)
Batrachedra præangusta, Haw. Locally
 common near *Carlisle* amongst sallow
Chauliodus chærophyllellus, Göze. *Lake dis-*
trict (Stainton's *Manual*)
Laverna lacteella, St. *Carlisle*
 — *propinquella*, Sta. } *Lake district*
 — *epilobiella*, Schr. } (Stainton's *Manual*)
 — *atra*, Haw.
Chrysoclysta aurifrontella, Hb. Amongst
 hawthorn
Anybia langiella, Hb. } *Lake district* (Stain-
Elachista gleichenella, Fb. } ton's *Manual*)
 — *magnificella*, Tgstr. *Corby* (J. B. Hodg-
 kinson)
 — *apicipunctella*, Sta. *Lake district* (Stain-
 ton's *Manual*)
 — *albifrontella*, Hb. }
 — *atricomella*, Sta. } *Carlisle*
 — *luticomella*, Zell.
 — *cinereopunctella*, Haw. } *Lake district* ;
 — *kilmunella*, Sta. } common (Stain-
 — *bedellella*, Sircom. } ton's *Manual*)
 — *trapeziella*, H.-S. *Corby* (C. Eales)
 — *nigrella*, Hb. *Lazonby*, etc.
 — *obscorella*, Sta. } *Carlisle*
 — *zonariella*, Tgstr. } *Lake district* (Stainton's
 — *adscitella*, Sta. } *Manual*)
 — *cerussella*, Hb. }
 — *rhynchosporella*, Sta. *Lazonby*
 — *eleochariella*, Sta. *Lake district* (Stainton's
Manual)
 — *biatomella*, Sta.
 — *rufocinerea*, Haw. } Abundant every-
 — *argentella*, Clerck. } where
Tischeria complanella, Hb. Not uncommon
Lithocolletis roboris, Zell. *Lake district*
 (Stainton's *Manual*)
 — *amyotella*, Dup.
 — *irradiella*, Scott. Common on oak
 — *pomifoliella*, Zell. } On beech
 — *faginella*, Mann. }
 — *ulmifoliella*, Hb.
 — *spinoella*, Dup. *Kingmoor* ; on sallow
 — *quercifoliella*, Fisch.
 — *messaniella*, Zell. *Upperby* ; on beech
 — *corylifoliella*, Haw.
 — *caledoniella*, Sta. *Lake district* (Stainton's
Manual)
 — *viminiella*, Sircom.
 — *alnifoliella*, Hb.
 — *heegeriella*, Zell. } Common on oak
 — *cramerella*, Fb. }
 — *emberizæpennella*, Bouché } *Lake district*
 — *dunningiella*, Sta. } (Stainton's
Manual)
 — *tristrigella*, Haw. *Orton*
 — *trifasciella*, Haw. } *Lake district* (Stain-
Lyonetia clerckella, L. } ton's *Manual*)
Cemiostoma spartifoliella, Hb. Common on
 broom ; *Carlisle*, etc.
 — *laburnella*, Heyd. Extremely abundant
 on laburnums in and near *Carlisle*

A HISTORY OF CUMBERLAND

Cemiosoma scitella, Zell. <i>Bellevue</i> and <i>Durdar</i> near <i>Carlisle</i>	Nepticula atricapitella, Haw.	} All occur in the <i>Carlisle district</i>
Opostega crepusculella, Fisch. Near <i>Cum- mersdale</i>	— anomalella, Göze.	
Bucculatrix nigricomella, Zell. <i>Lake district</i> ; common (Stainton's <i>Manual</i>)	— floslactella, Haw.	
	— salicis, Sta.	
	— argentipedella, Zell.	
	— angulifasciella, Sta.	
	— æneofasciella, H.-S.	

DIPTERA

Flies

This large order of insects consisting of two-winged flies has very few students in the British Isles, and in Cumberland it has been quite neglected, so that the following list of species, hurriedly collected for the purposes of the present work, can hardly be said to be representative of the county's fauna. With few exceptions the whole of the species enumerated have been taken in the neighbourhood of Carlisle by myself.

BIBIONIDÆ

- Biblio pomonæ, F.
- marci, L.
- laniger, Mg. (?)
- lacteipennis, Ztt. (F. Milton)
- Dilophus febrilis, L.

CULICIDÆ

- Culex pipiens, L.

PTYCHOPTERIDÆ

- Ptychoptera lacustris, Mg.

TIPULIDÆ

- Pachyrrhina crocata, L.
- Tipula confusa, V. de Wlp.
- vernalis, Mg. (F. Milton)
- vittata, Mg.
- oleracea, L.
- Xiphura atrata, L.

STRATIOMYIDÆ

- Sargus infuscatus, Mg.
- Chloromyia formosa, Scop.
- Microchrysa flavicornis, Mg.
- Beris vallata, Forst.

TABANIDÆ

- Hæmatopota pluvialis, L.
- Tabanus bovinus, L.
- Chrysops cæcutiens, L.

LEPTIDÆ

- Leptis scolopacea, L.
- tringaria, L.
- Chrysophilus aureus, Mg.
- Atherix ibis, F.

ASILIDÆ

- Dioctria rufipes, Deg.
- Dysmachus forcipatus, L.
- Isopogon brevirostris, Mg.

BOMBYLIDÆ

- Bombylius major, L.

THEREVIDÆ

- Thereva annulata, F.

EMPIDÆ

- Hybos grossipes, L.
- Empis tessellata, F.
- livida, L.
- trigramma, Mg.

LONCHOPTERIDÆ

- Lonchoptera tristis, Mg.

SYRPHIDÆ

- Chrysogaster metallica, F.
- Chilosia grossa, Fln.
- cæstracea, L.
- Leucozona lucorum, L.
- Melanostoma scalare, F.
- Pyrophæna ocymy, F.
- Platychirus manicatus, Mg. (?)
- albimanus, F.
- scutatus, Mg.
- angustatus, Ztt.
- Syrphus balteatus, Deg.
- nitidicollis, Mg.
- vitripennis, Mg.
- ribesii, L.
- cinctus, Fln.
- Catabomba pyrastris, L.
- Sphærophoria dispar, Lw.
- menthastri, L. (?)
- Baccha elongata, F.
- Rhingia rostrata, L.
- Volucella bombylans, L.
- pellucens, L.
- Sericomyia borealis, Fln.
- Eristalis tenax, L.
- intricarius, L.
- arbustorum, L.
- pertinax, Scop.
- Helophilus pendulus, L.
- Criorrhina berberina, F.
- Xylota sylvarum, L.
- Syritta pipiens, L.

INSECTS

CONOPIDÆ

- Conops flavipes, L.
- Sicus ferrugineus, L.
- Myopa buccata, L.

MUSCIDÆ

- Gymnochæta viridis, Fln.
- Epicampocera vulgaris, Fln.
- Oliviera lateralis, F.
- Micropalpus vulpinus, Fln.
- Erigone radicum, F.
- Tachina grossa, L.
- Servillia ursina, Mg.
- Sarcophaga carnaria, L.
- Pollenia rudis, F.
- Musca domestica, L.
- Graphomyia maculata, Scop.
- Cyrtoneura curvipes, Mcq.
- Mesembrina meridiana, L.
- Lucilia cornicis, F.
- cæsar, L.

ANTHOMYIDÆ

- Mydæa impuncta, Fln.
- Hydrophoria brunneifrons, Ztt. (?)
- Caricea trigrina, F.

CORDYLURIDÆ

- Scatophaga stercoraria, L.

SCIOMYZIDÆ

- Tetanocera ferruginea, Fln.

PSILIDÆ

- Psila fimetaria, L.

TRYPETIDÆ

- Tephritis vespertina, Lw.
- miliaria, Schrk.
- leontodontis, Deg.

SEPSIDÆ

- Sepsis punctum, F.
- cynipsea, L.

BORBORIDÆ

- Borborus vitripennis, Mg. (?)

HEMIPTERA

HETEROPTERA

Bugs, etc.

GYMNOCERATA

PENTATOMINA

PENTATOMIDÆ

- Piezodorus, Fieb.
- lituratus, Fab.
- Tropicoris, Hahn.
- rufipes, Lin.

ASOPIDÆ

- Picromerus, Am. S.
- bidens, Lin.
- Asopus, Burm.
- punctatus, Lin.
- Zicrona, Am. S.
- cærulea, Lin.

ACANTHOSOMIDÆ

- Acanthosoma, Curt.
- dentatum, De G.
- interstinctum, Lin.

LYGÆINA

LYGÆIDÆ

- Nysius, Dall.
- thymi, Wolff

PACHYMERIDÆ

- Stygnus, Fieb.
- rusticus, Fall.
- pedestris, Fall.
- arenarius, Hahn.
- Peritrechus, Fieb.
- luniger, Schill.

PACHYMERIDÆ (continued)—

- Drymus sylvaticus, Fab.
- brunneus, Sahlb.
- Scolopostethus, Fieb.
- affinis, Schill.
- decoratus, Hahn.
- Gastrodes, Westw.
- ferrugineus, Lin.

TINGIDINA

TINGIDIDÆ

- Monanthia, Lep.
- cardui, Lin.

HYDROMETRINA

HYDROMETRIDÆ

- Hydrometra, Latr.
- stagnorum, Lin.

VELIIDÆ

- Velia, Latr.
- currens, Fab.

GERRIDÆ

- Gerris, Fab.
- costæ, H.S.
- gibbifera, Schum.

REDUVIINA

NABIDÆ

- Nabis, Latr.
- flavomarginatus, Scholtz.
- limbatus, Dahlb.

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SALDINA

- Salda, Fab.
- saltatoria, Lin.
- " var. vestita, D. & S.
- c.-album, Fieb.
- orthocila, Fieb.
- scotica, Curt.
- cincta, H.S.

CIMICINA

ANTHOCORIDÆ

- Lyctocoris
- campestris, Fall.
- Temnostethus, Fieb.
- pusillus, H.S.
- Anthocoris, Fall.
- confusus, Reut.
- nemoralis, Fab.
- sarothamni, D. & S.
- sylvestris, Lin.
- Acompocoris, Reut.
- pygmæus, Fall.

MICROPHYSIDÆ

- Microphysa, Westw.
- pselaphiformis, Curt.

CAPSINA

CAPSIDÆ

- Pithanus, Fieb.
- maerkeli, H.S.
- Miris, Fab.
- calcaratus, Fall.
- holsatus, Fab.
- Megaloceroæa, Fieb.
- ruficornis, Fourc.
- Leptoterpna, Fieb.
- dolobrata, Lin.
- Monalocoris, Dahlb.
- filicis, Lin.
- Bryocoris, Fall.
- pteridis, Fall.
- Phytocoris, Fall.
- populi, Lin.
- tilia, Fab.
- ulmi, Lin.
- Calocoris, Fieb.
- striatellus, Fab.
- sexguttatus, Fab.
- bipunctatus, Fab.

CAPSIDÆ (*continued*)—

- Calocoris chenopodii, Fall.
- roseomaculatus, De G.
- striatus, Lin.
- Lygus, Hahn.
- pratensis, Fab.
- contaminatus, Fall.
- viridis, Fall.
- lucorum, Mey.
- pabulinus, Lin.
- cervinus, H.S.
- kalmii, Lin.
- Liocoris, Fieb.
- tripustulatus, Fab.
- Rhopalotomus, Fieb.
- ater, Lin.
- Cyllocoris, Hahn.
- histrionicus, Lin.
- Mecomma, Fieb.
- ambulans, Fall.
- Orthotylus, Fieb.
- chloropterus, Kb. (?)
- ericetorum, Fall. (?)
- Macrotylus, Fieb.
- paykulli, Fall.
- Phylus, Hahn.
- melanocephalus, Lin.
- Psallus, Fieb.
- betuleti, Fall.
- variabilis, Fall.
- varians, H.S.
- Plagiognathus, Fieb.
- viridulus, Fall.
- arbustorum, Fab.

CRYPTOCERATA

NEPINA

- Nepa, Lin.
- cinerea, Lin.

NOTONECTINA

- Notonecta, Lin.
- glauca, Lin.

CORIXINA

- Corixa, Geoffr.
- mœsta, Fieb.
- fabricii, Fieb.

HOMOPTERA

Cicadas, etc.

CICADINA

MEMBRACIDÆ

- Centrotus, Fab.
- cornutus, Lin.

CIXIIDÆ

- Cixius, Latr.
- nervosus, Lin.

CERCOPIDÆ

- Aphrophora, Germ.
- alni, Fall.
- Philænus, Stål.
- spumarius, Lin.

BYTHOSCOPIDÆ

- Macropsis, Lewis

INSECTS

BYTHOSCOPIDÆ (*continued*)—

- Macropsis lanio, Lin.
- Idiocerus, Lewis
- fulgidus, Fab.

TETTIGONIDÆ

- Evacanthus, Lep. & Serv.
- interruptus, Lin.
- Tettigonia, Geoffr.
- viridis, Lin.

ACOCEPHALIDÆ

- Acocephalus, Germ.

ACOCEPHALIDÆ (*continued*)—

- Acocephalus bifasciatus, Lin.

JASSIDÆ

- Deltocephalus, Burm.
- ocellaris, Fall.
- Allygus, Fieb.
- mixtus, Fab.
- Thamnotettix, Zett.
- prasina, Fall.
- subfuscula, Fall.

MYRIAPODA

The myriapoda of Cumberland have been but little studied. It is impossible therefore to form a fair estimate of the number of species occurring in the county. Nevertheless it is safe to predict that out of the fifty odd species known from the British Islands at least thirty could without difficulty be collected in the sheltered valleys of the lake district. It is highly probable moreover that diligent and systematic search would bring to light species never previously recorded from England, possibly indeed species new to science.

The species mentioned in the subjoined list were collected by Mr. F. O. Pickard-Cambridge.

CHILOPODA

Centipedes

LITHOBIIDÆ

Short-bodied, swift-running centipedes furnished with eyes and only fifteen pairs of legs.

1. *Lithobius variegatus*, Leach. *Zool. Misc.*, iii. p. 40 (1817).
Carlisle.

This species, which is of peculiar interest on account of its being confined so far as is known to the British and Channel islands, may be distinguished from the commoner brown form *L. forficatus* by its larger head, variegated colouring, etc.

2. *Lithobius calcaratus*, C. Koch. *Die Myr. Gatt. Lithobius*, p. 86 (1862).
Carlisle.

A much smaller and darker species than the preceding and characterized by the presence of a tubercle on the fourth segment of the anal legs in the male.

GEOPHILIDÆ

Long-bodied vermiform centipedes without eyes and furnished with a large but variable number of legs.

3. *Geophilus flavus*, De Geer. *Mém. Ins.*, vii. p. 561 (1778) (= *longicornis*, Leach).
Carlisle.

This species is distinguished from the rest of the British species by its long cylindrical antennal segments.

4. *Geophilus carpophagus*, Leach. *Zool. Misc.*, iii. p. 43.
Carlisle.

Differing from the preceding and from the rest of the British species by the 'ball and socket' method of articulation of the anterior sternal plates.

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DIPLOPODA

Millipedes

POLYDESMIDÆ

Millipedes in which the body consists of from nineteen to twenty segments most of which in all the British species are furnished on each side with a repugnatorial pore supported upon a lateral crest or keel.

5. *Polydesmus complanatus*, Linn. *Faun. Suecic.*, ed. 2, p. 502 (1761).

Carlisle.

The commonest and largest British species.

6. *Polydesmus denticulatus*, C. Koch. *Syst. der Myriap.*, p. 135 (1847).

Carlisle.

Distinguishable from the preceding by its smaller size and squarer antero-lateral angles of the keels. Hitherto this species has only been known from one or two localities in the south of England.

CHORDEUMIDÆ

Millipedes with almost invariably thirty body-segments furnished dorsally with six symmetrically disposed bristles, without repugnatorial pores and usually keeled much as in the *Polydesmidæ*.

7. *Atractosoma polydesmoides*, Leach. *Zool. Misc.*, iii. p. 36, pl. 134, fig. 15 (1817).

Carlisle.

This species with its large lateral keels closely resembles an elongate *Polydesmus*.

IULIDÆ

Millipedes in which the body consists of a large but variable number of segments furnished with pores but without the lateral keels characteristic of the two preceding families.

8. *Iulus sabulosus*, Linn. *Syst. Nat.*, ed. 10, p. 639 (1758).

Carlisle.

A large species distinguishable from the rest of the British species that are furnished with a caudal process by the presence of a pair of dorsal longitudinal pale bands.

9. *Iulus niger*, Leach. *Zool. Misc.*, iii. p. 34 (1817).

Carlisle.

Nearly as large as the preceding and also furnished with a caudal process, but distinguishable by the absence of dorsal bands and the presence of transverse grooves on the anterior portion of the segments.

10. *Iulus pilosus*, Newport. *Ann. Mag. Nat. Hist.*, xi. p. 316 (1842).

Carlisle.

Resembling *I. niger* in colour, but smaller and without the transverse grooves on the anterior half of the segments.

ARACHNIDA

Spiders, etc.

Although some little work has been done in the collecting of members of this order in the county of Cumberland, yet one cannot consider the following account of the spider-fauna of the region under consideration in any respect a full one.

So far as the physical characters of the county are concerned, the area may be roughly divided into three districts, speaking of course entirely from an arachnological point of view.

First we have the *Eden Valley district*, comprising all those valleys formed by the courses of the Eden, the Caldew, the Esk and the Irthing, consisting of more or less undulating country, richly wooded and clothed with rank vegetation in the glens, gradually blending in their upper reaches with the heather regions and higher moorlands of the Fell Country. There will of course be found throughout the county regions of a somewhat similar nature formed by the watercourses which empty

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themselves on the west into the Irish Sea and on the south into Morecambe Bay.

The second, or *Solway district*, consists of an immense tract of level mud and sand, meadow and marshland, forming the delta of the united waters of the four rivers mentioned above. In connection with this district must be recollected certain areas and spots of a swampy rushy boggy nature known as the Mosses, amongst which may be noted Solway Moss and Newtown Moss near Penrith.

The *Lake district* itself to some extent comprehends the physical characters of both the foregoing areas, comprising meadow-lands, moorlands, grass and heather districts and, in addition to the ordinary fell regions, the higher rocky desolate mountain heights where several rare species peculiar to them are found.

Another region, which might almost be said to constitute a fourth area, consists of the sand-dunes which lie to the south of the entrance of the Solway Firth, extending with interruptions as far as St. Bees, and beyond this further south until it ends, so far as Cumberland is concerned, at the mouth of the river Duddon, near Broughton-in-Furness. Many species almost confined to the sand-dunes are to be found in this district.

So far as the geology of the district is concerned it is of a very uniform character, consisting of the two forms of slate known as the Skiddaw and Green Slates, with an occasional outcrop of granite on Scafell for instance and in Wastwater, of syenite in the Ennerdale valley, with a mere streak of limestone running from Coniston in the direction of Windermere and Long-Sleddale. These geological features, with the New Red Sandstone of the Eden, Armathwaite and Penrith districts, undoubtedly furnish us with a country whose physical constitution and consequent climatic temperament should afford us a fauna rich in itself and in some respects decidedly different to that which we find on the limestone and chalk formations of the south of England.

We may in this connection point to a few species which are not only peculiar to our own hill country, but also many of them characteristic of the hill districts of the continent, as for instance, the sub-alpine regions of France, the Austrian Tyrol, the mountains of Tatra, Silesia, Galicia and the highlands of Germany: namely *Bolyphantes alticeps*, *Leptyphantes tenebricolus*, *L. pinicolus*, *L. angulatus*, *Micryphantes sublimis*, *Macrargus adipatus*, *Oreoneta rudis* and *Pardosa traillii*.

Of the 550 and upwards of species recorded from England and Wales 219 are all that have hitherto been placed to the credit of Cumberland, though this is, comparatively speaking, a very creditable list. Of these the most worthy of notice are *Prosthesima electa*, *Agræca celans*, *Philodromus fallax*, *Lycosa miniata*, *Pardosa traillii*, *Cryphæa diversa*, *Singabamata*, *Tetragnatha pinicola*, *Leptyphantes tenebricolus*, *L. pinicolus*, *Bathypantes setiger*, *Oreoneta rudis*, *Centromerus expertus*, *Leptothrix hardii*, *Mengea scopiger* and *M. warburtonii*, *Microneta sublimis*, *Dicymbium tibiale*, *Cornicularia karpinskii*, *Caledonia evansii*, *Gnephlocotes curtus*, *Lophocarenum mengei*, *Asagena phalerata* and *Hyptiotes paradoxus*.

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The localities given in the following list are well authenticated, and the initials of those who collected the specimens or recorded their occurrence are added. The species were mostly collected by A. Randall-Jackson, Esq., M.D., of Southport and the Royal Infirmary, Liverpool, and by the present writer.

In cases where the generic or specific name quoted is not that under which the spider has usually been recognized in the works of English authors, a note has been added calling attention to the fact. With these few preliminary remarks, we may proceed at once with the list of the spiders of Cumberland.

ARANEÆ

ARACHNOMORPHÆ

DYSDERIDÆ

Spiders with six eyes and two pairs of stigmatic openings, situated close together on the genital rima; the anterior pair communicating with lung books, the posterior with tracheal tubes. Tarsal claws, two in *Dysdera*, three in *Harpactes* and *Segestria*.

1. *Harpactes bombergii* (Scopoli).

Carlisle, Lake districts.

Common; April to July.

2. *Segestria senoculata* (Linnæus).

Carlisle and district, Lake districts.

Common; July.

OÖNOPIDÆ

3. *Oönope pulcher*, Templeton.

Lake districts.

Rare; adult in July.

DRASSIDÆ

Spiders with eight eyes, situated in two transverse rows. The tracheal openings lie immediately in front of the spinners. The tarsal claws are two in number, but the anterior pair of spinners are set close together at their base, and the maxillæ are convex and not impressed in the middle.

4. *Drassodes cupreus* (Blackwall).

Carlisle and district.

Abundant on the fell sides, under stones; adult from May to December.

5. *Drassodes troglodytes* (C. L. Koch).

Lake districts.

Not common; adult in June and July.

6. *Prosthesima latreillii*, Simon.

Lake districts, Eskdale, Borrowdale, Grisedale (A. R. J.).

Not uncommon; adult in August and September.

7. *Prosthesima petiverii*, O. P.-Cambridge.

Lake districts, Eskdale (A. R. J.).

Rare; adult in August and September.

8. *Prosthesima electa* (C. L. Koch).

Ravenglass Sandhills (A. R. J.).

Probably common on all the sandhills from Southport to the Solway; August.

CLUBIONIDÆ

Spiders with eight eyes, situated in two transverse rows. The tracheal openings lie immediately in front of the spinners. The tarsal claws are two in number, but the anterior pair of spinners are set close together at the base, and the maxillæ are convex, and not impressed in the middle.

9. *Micaria pulicaria* (Sundevall).

Lake districts (A. R. J.).

10. *Phrurolithus festinus*, C. L. Koch.

Eden Valley.

Rare.

11. *Clubiona reclusa*, O. P.-Cambridge.

Lake district.

Abundant on the borders of the lakes in June.

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12. *Clubiona compta*, C. L. Koch.
Carlisle, Gilsland and Lake district.
Common amongst foliage in June.
13. *Clubiona pallidula* (Clerck).
Lake districts.
Fairly common in June on low shrubs along the margins of the lakes. Known also as *C. epimelas*.
14. *Clubiona phragmitis*, C. L. Koch.
Solway district and Penrith.
Abundant in May and June.
15. *Clubiona terrestris*, Westring.
Eden Valley district.
Not uncommon in June and July.
16. *Clubiona stagnatilis*, Kulczynski.
Solway district and Penrith.
Known also as *C. grisea*.
17. *Clubiona trivialis*, C. L. Koch.
Amongst heather in the Lake districts (A. R. J.).
18. *Clubiona diversa*, O. P.-Cambridge.
Lake districts (A. R. J.).
Rare ; under stones in August.
19. *Chiracanthium erraticum*, Walckenaer.
Eden Valley district (F. O. P. C.) ; Lake districts (A. R. J.).
Not uncommon amongst brambles in the neighbourhood of Carlisle.
20. *Agræca brunnea* (Blackwall).
Eden Valley district.
Rare ; amongst herbage in the woods.
21. *Agræca proxima* (O. P.-Cambridge).
Lake district (A. R. J.).
Common everywhere on the fells, especially in damp places.
22. *Agræca celans* (Blackwall).
Eden Valley.
Very rare ; a few adult females only amongst moss in the woods at Wreay in April.
23. *Zora maculata* (Blackwall).
Eden Valley district.
Common. Known also as *Hecarge maculata* or *spinimana*.

THOMISIDÆ

24. *Xysticus erraticus* (Blackwall).
Newtown Moss, Penrith. May.
A single adult male only.
25. *Xysticus cristatus* (Clerck).
Eden Valley and Lake districts.
Common throughout the summer.
26. *Xysticus sabulosus* (Hahn).
Ravenglass Sandhills (A. R. J.).
A few adult examples of both sexes. August.
27. *Oxyptila atomaria* (Panzer).
Lake districts (A. R. J.).
Not uncommon in marshes, among long grass. Known also as *Thomisus versutus*, Blackwall.
28. *Philodromus aureolus* (Clerck).
Eden Valley districts.
Not abundant.
29. *Philodromus fallax* (Sundevall).
Ravenglass Sandhills (A. R. J.).
Very abundant. A dozen can be obtained from a single tuft of marram grass. Adult in spring and late autumn.
30. *Tibellus oblongus* (Walckenaer).
Newtown Moss, Penrith ; Solway district ; Ravenglass Sandhills (A. R. J.).
Common ; adult in May and June.
31. *Thanatus striatus* (C. L. Koch).
Newtown Moss, Penrith.
Not uncommon. Adult in May, and known also as *Thanatus hirsutus*.

SALTICIDÆ

The spiders of this family may be recognized in a general way by their mode of progression, consisting of a series of leaps, often many times their own length. More particularly they may be known by the square shape of the cephalic region and the fact that the eyes are arranged in three rows of 4, 2, 2 ; the centrals of the anterior row being much the largest and usually iridescent. Those of the second row are the smallest, while the posterior pair is placed well back and helps to give the quadrate character to the carapace. Otherwise these spiders are simply specialized *Clubionids* with two tarsal claws and other minor characters possessed in common with members of this latter family.

They can be beaten from foliage or found amongst herbage and under stones. The

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commonest, *Salticus scenicus*, will be well known to all observers, running and leaping on the walls of houses in the bright sunshine.

32. *Salticus scenicus* (Clerck).

Eden Valley, Carlisle.

Not common, on the walls of houses ; June. Known also as *Epiblemum scenicum*.

33. *Euophrys erraticus* (Walckenaer).

Eden Valley, Gilsland, Lake districts.

Common on the stone walls, under the coping stones, in June.

34. *Euophrys frontalis* (Walckenaer).

Newtown Moss, Penrith.

Not common ; adult in May.

35. *Neon reticulatus* (Blackwall).

Newtown Moss, Penrith ; Lake districts (A. R. J.).

Rare ; adult in May.

36. *Ergane falcata* (Clerck).

Lake districts (A. R. J.).

Not uncommon ; on bushes in August. Known also as *Hasarius falcatus* and *Salticus coronatus*.

37. *Attus saltator*, Simon.

Ravenglass Sandhills (A. R. J.).

Abundant ; at the roots of the marram grass in August.

38. *Dendryphantus bastatus* (Clerck).

Newtown Moss, Penrith.

Three adult females only in May.

39. *Heliophanus flavipes* (Hahn).

Ravenglass Sandhills (A. R. J.).

Common ; amongst the grass in August.

PISAURIDÆ

Spiders with eight eyes in three rows, and three tarsal claws. The first row of eyes consists of four small eyes which are sometimes in a straight line, sometimes recurved and sometimes procurved. Those of the other two rows are situated in a rectangle of various proportions. *Pisaura* runs freely over the herbage, carrying its egg-sac beneath the body.

40. *Pisaura mirabilis* (Clerck).

Eden Valley, Solway and Lake district.

Very common ; adult in June and July. Known also as *Dolomedes* or *Ocyale mirabilis*.

LYCOSIDÆ

The members of this family have also eight eyes, similarly situated to those of the *Pisauridæ*, the tarsal claws also being three in number. The spiders are to be found running freely and carrying their egg-sac attached to the spinners. Many of the larger species make a short burrow in the soil and there keep guard over the egg-sac.

41. *Lycosa accentuata*, Latreille.

Lake districts (A. R. J.).

Common all over the fells in June. Known also as *Tarentula andrenivora*.

42. *Lycosa pulverulenta* (Clerck).

Lake districts.

Common in June. Known also under *Tarentula*.

43. *Lycosa cuneata* (Clerck).

Lake districts.

A single male and female adult in June. Known also under the name *Tarentula*.

44. *Lycosa miniata* (C. L. Koch).

Ravenglass Sandhills (A. R. J.).

Very common in August. Known also as *Tarentula*,

45. *Lycosa perita*, Latreille.

Ravenglass Sandhills (A. R. J.).

Very common in August. Known also under the name *Trochosa picta*.

46. *Lycosa ruricola* (De Geer).

Lake district.

Very common ; adult in June. Known also under the name *Trochosa*.

47. *Lycosa terricola* (Thorell).

Eden Valley and Lake districts.

Not uncommon amongst dead leaves in Armathwaite woods ; adult in June. Known also under the name *Trochosa*.

48. *Lycosa spinipalpis*, F. P.-Cambridge.

Lake Derwentwater.

A single adult male and female only.

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49. *Pardosa lugubris* (Walckenaer).
Eden Valley.
A very abundant species in April, running over the dead leaves in the woods at Armathwaite and Wreay. This and the following species are known also under the name *Lycosa*.
50. *Pardosa monticola* (Clerck).
Eden Valley, Solway and Lake districts.
Very common ; adult in May and June.
51. *Pardosa palustris* (Linn.).
Solway and Lake districts.
Very common ; adult in May and June.
52. *Pardosa purbeckensis*, F. P.-Cambridge.
Solway.
Not abundant ; adult in May.
53. *Pardosa agricola* (Thorell).
Eden Valley and Lake districts.
A species confined to the mountainous districts ; adult in May and June.
54. *Pardosa annulata* (Thorell).
Lake districts.
Not common ; adult in May and June.
55. *Pardosa pullata* (Clerck).
Eden Valley, Solway and Lake districts.
Abundant everywhere ; adult throughout the summer.
56. *Pardosa nigriceps* (Thorell).
Lake districts.
Occurs commonly throughout the heather districts on the Fells ; adult in June.
57. *Pardosa amentata* (Clerck).
Lake districts.
Common and adult in May and June.
58. *Pardosa trailii* (O. P.-Cambridge),
Lake districts.
Common on Styhead Pass amongst the loose stones of the screes ; adult in May and June. Confined to mountainous regions.
59. *Pirata piraticus* (Clerck).
Lake districts ; Newtown Moss, Penrith.
Both sexes of this and the two following species were found adult in June.
60. *Pirata hygrophilus*, Thorell.
Newtown Moss, Penrith.
61. *Pirata latitans* (Blackwall).
Newtown Moss, Penrith.

AGELENIDÆ

Spiders with eight eyes, situated in two transverse rows. Legs with three tarsal claws. The species of this family spin a large sheet-like web, and construct a tubular retreat at the back of it, which leads to some crevice amongst the rocks or the herbage or the chinks in the walls of outhouses, wherever the various species may happen to be found. The posterior pair of spinners is usually much longer than the other two pairs.

62. *Cryphæa sylvicola* (Blackwall).
Lake districts.
Common ; beneath stones.
63. *Cryphæa diversa* (O. P.-Cambridge).
Eden Valley, on the banks of the Caldew.
A single adult female in October.
64. *Argyroneta aquatica* (Clerck).
Newtown Moss, Penrith ; Eden Valley, near Carlisle.
Abundant throughout the whole county in the Fell and Lake districts up to an altitude of 2,000 feet. It is found under logs of wood, in stone walls or beneath isolated stones, where a sheet of white webbing often betrays the presence of the spider. A long tube runs beneath the log or stone, and both male and female can be found living together at the end ; while later the young spiders will be found spending the early days of their childhood with their mother. Adult in June. Mr. Randall-Jackson has taken them at an altitude of 3,180 feet on the summit of Helvellyn.
65. *Cælotes atropos* (Walckenaer).
Carlisle and Lake district.
66. *Tetrax denticulata* (Olivier).
Eden Valley and Lake districts.
Very abundant under the loose coping-stones of walls throughout the Carlisle district and Fell regions. Adult in May and June.
67. *Tegenaria derhami* (Scopoli).
Eden Valley, Carlisle and Rockcliffe.
Known also as *Tegenaria civilis*.
68. *Tegenaria silvestris*, L. Koch.
Lake districts ; Derwentwater.
Adult in June. Known also as *T. campestris*, C. L. Koch.

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69. *Agelena labyrinthica* (Clerck).

The Lake districts ; Eskdale and Wastdale (A. R. J.).

Very common, spinning its sheet-like web on gorse bushes. Adult in July.

70. *Habnia montana* (Blackwall).

Lake districts.

Common in the Tilberthwaite heath districts ; adult in June.

71. *Habnia elegans* (Blackwall).

Newtown Moss, Penrith.

Amongst the roots of aquatic plants close down at the top of the water. June.

72. *Habnia nava* (Blackwall).

Lake districts. 1,100 feet (A. R. J.).

73. *Habnia helveola*, Simon.

Lake districts.

Females were found adult in June.

ARGIOPIDÆ

The spiders included in this family have eight eyes, situated in two rows, the lateral eyes of both rows being usually adjacent, if not in actual contact, while the central eyes form a quadrangle. The tarsal claws are three, often with other supernumerary claws. The web is either an orbicular (wheel-like) snare, or consists of a sheet of webbing beneath which the spiders hang and capture the prey as it falls upon the sheet.

74. *Nesticus cellulanus* (Clerck).

The Gelt, Gilsland, Eden Valley.

Common ; adult in both sexes in May and June under damp herbage on rocks along the river margin. Known also as *Linyphia crypticolens*.

75. *Meta merianæ* (Scopoli).

Eden Valley ; Carlisle, Wetheral, Rockcliffe.

Abundant in cellars and beneath the overhanging rocks and steep damp banks throughout the district. Known also as *Epeira antriada* and *celata*, Blackwall.

76. *Meta segmentata* (Clerck).

Eden Valley, Solway and Lake districts.

Very common. Known also as *Epeira inclinata*, Blackwall.

77. *Meta menardi* (Latreille).

Lake districts ; Boot (A. R. J.).

About a dozen specimens found in one small cave, but in no other cave or mine. Known also as *Epeira fusca*, Blackwall.

78. *Zilla atrica* (C. L. Koch).

Eden Valley and the Lake district.

Abundant on the stone walls and amongst shrubs. Known also as *Epeira callophylla*.

79. *Zilla* × *-notata* (Clerck).

Eden Valley and Lake district.

Adult in June and July. Known also as *Epeira similis*.

80. *Araneus quadratus* (Clerck).

Eden Valley.

This fine spider is abundant in the mature state on the heathy common of Kingmoor, near Carlisle. This is the bee-catching spider.

81. *Araneus redii* (Scopoli).

Lake districts.

Common in the heather districts in June and July. Known also as *Epeira solers*.

82. *Araneus umbraticus* (Clerck).

Eden Valley ; Gilsland ; Pooley Bridge (A. R. J.).

83. *Araneus diadematus* (Clerck).

Eden Valley, Solway, Lake districts.

Very abundant everywhere ; adult in October. Black varieties common on the Fells.

84. *Araneus cornutus* (Clerck).

Lake and Fell districts.

Common on the Watendlath Fells, Borrowdale ; July. Known also as *Epeira apoclisia*.

85. *Araneus patagiatus* (Clerck).

Eden Valley, Solway and Lake districts ; St. Herbert's Island, Derwentwater ; Shores of Haweswater (A. R. J.).

86. *Araneus cucurbitinus* (Clerck).

Eden Valley district.

This beautiful species, grass-green with red tip to the abdomen, is very common in the nursery gardens near Carlisle.

87. *Singa hamata*.

Ulpha Fell (A. R. J.).

About twenty-five specimens were taken from their webs spun among the heather branches in a swampy bit of moorland.

88. *Tetragnatha extensa* (Linnæus).

Fells and Lake district (A. R. J.).

Heather districts ; common.

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89. *Tetragnatha solandri* (Scopoli).
Lake districts (A. R. J.).
Common in woods. Eskdale and Ulleswater.
90. *Tetragnatha pinicola*, L. Koch.
Solway Moss.
A single adult male.
91. *Pachygnatha clerkii*, Sundevall.
Solway, Eden Valley, Lake districts.
Abundant amongst grass on the shores of the Solway, in the adult state in September.
92. *Pachygnatha degeerii*, Sundevall.
Eden Valley, Lake district.
93. *Pachygnatha listeri*, Sundevall.
Eden Valley.
Rare; a few examples of the female sex amongst dead leaves in the Armathwaite woods.
94. *Linyphia montana* (Clerck).
Eden Valley, Solway, Lake district.
Common on the islands in Lake Derwentwater. June. Known also as *L. marginata*, Blackwall.
95. *Linyphia clathrata*, Sundevall.
Eden Valley.
Common in the neighbourhood of Carlisle; June.
96. *Linyphia pusilla*, Sundevall.
The Gelt, near Carlisle (H. Friend).
A single specimen only; April.
97. *Linyphia triangularis* (Clerck).
Eden Valley and Lake district.
Known also as *L. montana*, Blackwall; July and August.
98. *Linyphia peltata* (Wider).
Eden Valley and Lake districts.
Common on the foliage of trees throughout the district; June.
99. *Linyphia insignis*, Blackwall.
Eden Valley.
Very common amongst grass on the banks of the Irthing at Gilsland. Males and females adult in September.
100. *Taranucnus setosus* (O. P.-Cambridge).
Newtown Moss, Penrith.
Abundant in August. Known also under the name *Linyphia*.
101. *Labulla thoracica* (Wider).
Eden Valley.
Abundant under overhanging rocks and banks at Wetheral. Known also as *Linyphia cauta*, Blackwall.
102. *Floronia bucculenta* (Clerck).
Eden Valley.
A few examples of both sexes in the neighbourhood of Dalston in September. Known also as *Linyphia frenata*.
103. *Bolyphantes alticeps* (Sundevall).
Penrith and Lake district.
Adult males on Penrith Beacon and Helvellyn in September. Known also under the name *Linyphia*.
104. *Bolyphantes luteolus* (Blackwall).
Silloth and Penrith Beacon.
Abundant among marram grass on the sand-dunes in September. Known also under *Linyphia*.
105. *Drapetisca socialis* (Sundevall).
Eden Valley; Eskdale (A. R. J.).
Common on rocks overhanging the Eden at Wetheral and the Irthing at Gilsland; also on pine-trees near Carlisle, and in Muncaster woods, Eskdale.
106. *Stemonyphantes lineatus* (Linnæus).
Eden Valley and Solway districts.
Not uncommon. Known also as *Linyphia bucculenta*.
107. *Tapinopa longidens* (Wider).
Eden Valley and Lake districts.
Common under stones at Elterwater and Talkin Tarn. Known also under *Linyphia*.
108. *Leptyphantes nebulosus* (Sundevall).
Carlisle.
Two adult male examples only in an out-house. This and the following species under *Leptyphantes* and *Bathypantes* are known also under the name *Linyphia*.
109. *Leptyphantes leprosus* (Ohlert).
Carlisle.
110. *Leptyphantes terricolus* (C. L. Koch).
Eden Valley.
Abundant in the adult state amongst dead leaves at Armathwaite and Wreay in April. Known also as *Linyphia alacris*, Blackwall.
111. *Leptyphantes tenuis* (Blackwall).
Eden Valley.
Abundant amongst grass on the banks of the Irthing at Gilsland in September. Known also as *Linyphia tenebricola*, Blackwall.
112. *Leptyphantes blackwallii*, Kulczynski.
Eden Valley.
Abundant amongst grass on the banks of the Irthing in September. Known also as *Linyphia zebrina*.

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113. *Lepthyphantes tenebricolus* (Wider).
Eden Valley.
A single adult male near Armathwaite.
114. *Lepthyphantes flavipes* (Blackwall).
Eden Valley.
A few examples among grass in the neighbourhood of Carlisle.
115. *Lepthyphantes pinicolus*, Simon.
Lake district (A. R. J.).
Common under stones on the slopes of Helvellyn, and Croslin, or Cross Fell, in the Pennine range; September.
116. *Lepthyphantes cristatus*, Menge.
Eden Valley.
Rare under stones in the woods at Armathwaite in April.
117. *Lepthyphantes obscurus* (Blackwall).
Eden Valley.
A few examples of both sexes amongst dead leaves at Armathwaite in April.
118. *Lepthyphantes pallidus* (Blackwall).
Eden Valley.
Amongst dead leaves at Armathwaite (April) and in Newtown Moss, Penrith, in September.
119. *Lepthyphantes minutus* (Blackwall).
Eden Valley.
Common in the crannies of stone walls in the neighbourhood of Carlisle in August.
120. *Lepthyphantes ericæus* (Blackwall).
Lake districts (A. R. J.).
Under stones on the Lower Fells.
121. *Bathyphantes concolor* (Wider).
Eden Valley and Lake district.
Common throughout the whole district in the summer months.
122. *Bathyphantes meadii* (O. P.-Cambridge).
Carlisle and Newtown Moss, Penrith.
Common and adult in May and October. Known also as *Linyphia approximata*, O. P.-Cambridge.
123. *Bathyphantes nigrinus* (Blackwall).
Carlisle; Newtown Moss, Penrith; Lake districts.
Common and adult in July.
124. *Bathyphantes setiger*, F. P.-Cambridge
Newtown Moss, Penrith.
A few adults of both sexes in May.
125. *Bathyphantes gracilis* (Blackwall).
Carlisle; Newtown Moss, Penrith.
Common and adult in July.
126. *Bathyphantes pullatus* (O. P.-Cambridge).
Eden Valley and Solway districts.
127. *Bathyphantes dorsalis* (Wider).
Carlisle.
Abundant in the adult state on gorse bushes and trees in the summer.
128. *Pæciloneta variegata* (Blackwall).
Lake districts.
Abundant under stones, but apparently local. Known also under *Linyphia*.
129. *Porrhomma pygmæum* (Blackwall).
Carlisle.
Common on railings in the autumn. Known also under *Neriene*.
130. *Macrargus adipatus* (L. Koch).
Penrith Beacon. Helvellyn (A. R. J.).
A few adults of both sexes in September. Known also as *Linyphia reticulata*.
131. *Macrargus rufus* (Wider).
Eden Valley.
Abundant among dead leaves at Armathwaite in April. Known also under *Neriene*.
132. *Macrargus abnormis* (O. P.-Cambridge).
Eden Valley.
Not uncommon in the woods at Armathwaite. Known also under *Linyphia*.
133. *Oreoneta rudis* (O. P.-Cambridge).
Lake District.
Adult males and females were taken on the summit of Helvellyn in September. Known also as *Tmeticus* and *Oreoneta niger*, F. P.-Cambridge.
134. *Hilaira uncata* (O. P.-Cambridge).
Lake district. Fairfield (A. R. J.).
135. *Leptorhoptrum huthwaitii* (O. P.-Cambridge).
Newtown Moss, Penrith; Eden Valley and Lake districts, Haweswater (A. R. J.).
Beneath stones on the banks of the Eden in June and July. Known also under *Neriene*.
136. *Centromerus bicolor* (Blackwall).
Eden Valley.
Abundant near Carlisle and Gilsland in September and October. Known also under *Linyphia*.
137. *Centromerus concinnus* (Thorell).
Eden Valley.
Not uncommon near Carlisle and Gilsland in September and October. Known also under *Linyphia*. This species is possibly only a dwarf form of *bicolor*.

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138. *Centromerus expertus* (O. P.-Cambridge).
Newtown Moss, Penrith.
A few adult males and females in September. Known also under *Linyphia*.
139. *Centromerus sylvaticus* (Blackwall).
Penrith Beacon.
Very rare. Known also under *Nereine*.
140. *Leptothrix hardii* (Blackwall).
Ravenglass Sandhills (A. R. J.).
A common spider on sand-dunes in August. Known also as *Walckenaera hardii* and *Leptothrix clavipes*, Menge.
141. *Mengea scopiger* (Grube).
Lake districts (A. R. J.); Eden Valley and Solway districts.
Abundant amongst herbage on the banks of Eden, shores of Solway and in Newtown Moss, Penrith, in August and September. Known also as *Linyphia rufa*, *Pedina scopiger* and *P. cristata*, Menge. *Pedina* is preoccupied.
142. *Mengea warburtonii* (O. P.-Cambridge).
Newtown Moss, Penrith.
Fairly common in the month of August.
143. *Microneta viaria* (Blackwall).
Eden Valley.
Found in profusion in the springtime amongst dead leaves in the woods at Armathwaite and Wreay. Known also under *Neriere*.
144. *Microneta decora* (O. P.-Cambridge).
Newton Moss, Penrith.
A single adult male in May. Known also under *Neriere*.
145. *Microneta conigera* (O. P.-Cambridge).
Lake district.
A single adult male amongst grass on Lingmoor Fells, Elterwater in June. Known also under *Neriere*.
146. *Micryphantes sublimis* (O. P.-Cambridge).
Lake district.
A very local species, but taken plentifully under stones on the slopes of Helvellyn in September. Known also under *Neriere*.
147. *Micryphantes fuscipalpis* (C. L. Koch).
Eden Valley.
Common in the neighbourhood of Carlisle. Known also under *Neriere*, possibly including also *M. rurestris*, L. Koch.
148. *Erigone dentipalpis* (Wider).
Eden Valley ; Solway and Lake districts.
Common. Known also under the name *Neriere*.
149. *Erigone atra* (Blackwall).
Lake district ; Solway and Eden Valley.
150. *Tiso vagans* (Blackwall).
Carlisle.
A single male only. Known also under the name *Neriere*.
151. *Gongylidium rufipes* (Sundevall).
Lake districts.
Known also as *Neriere rufipes*.
152. *Coryphæus distinctus* (Simon).
Carlisle.
A single adult male. Known also as *Coryphæus glabriceps*, F. P.-Cambridge.
153. *Stylothorax apicatus* (Blackwall).
Lake district.
Not common, June. Known also under *Neriere*.
154. *Kulczynskiellum gibbosum* (Blackwall).
Lake district.
Not common, June. Known also under *Neriere*.
155. *Kulczynskiellum tuberosum* (Blackwall).
Lake districts, and Newtown Moss, Penrith.
Not uncommon in May and June. Known also under *Neriere*.
156. *Kulczynskiellum retusum* (Westring).
Newtown Moss, Penrith.
Not uncommon in May and June. Known also under *Neriere*.
157. *Kulczynskiellum fuscum* (Blackwall).
Newtown Moss, Penrith.
Known also under *Neriere*.
158. *Kulczynskiellum agreste* (Blackwall).
Lake district.
On the shores of Ulleswater in July. Known also under *Neriere*.
159. *Trachygnatha dentata* (Wider).
Solway, and Newtown Moss, Penrith.
Known also under *Neriere*.
160. *Neriere rubens* (Blackwall).
Eden Valley, Carlisle.
Occasionally met with in October. Known also under *Gonatium*.
161. *Neriere isabellina* (C. L. Koch).
Eden Valley, Carlisle.
Not uncommon in October. Known also as *Neriere rubella*, Blackwall.
162. *Hypomma bituberculatum* (Wider).
Eden Valley, Solway and Lake districts.
Abundant in spring and autumn in New-

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- town Moss, Penrith. Known also under *Neriene*.
163. *Dicymbium nigrum* (Blackwall).
Eden Valley.
Common in the woods of Armathwaite and Wreay in April. Known also under *Neriene*.
164. *Dicymbium tibiale* (Blackwall).
Eden Valley ; Lake district (A. R. J.).
Rare ; in woods at Wreay in April. Known also under *Neriene*.
165. *Lophomma herbigradum* (Blackwall).
Newtown Moss, Penrith (A. R. J.).
Both sexes adult in June. Known also under *Neriene*.
166. *Lophomma punctatum* (Blackwall).
Newtown Moss, Penrith.
Both sexes adult in June. Known also under *Walckenaera*.
167. *Tapinocyba subitanea* (O. P.-Cambridge).
Eden Valley.
A single adult male near Carlisle. Known also under *Walckenaera*.
168. *Tapinocyba beckii* (O. P.-Cambridge).
Lake district.
Adult males and females in June. Known also under *Walckenaera*.
169. *Viderius anticus* (Wider).
Lake districts.
Adult males in June. Known also under *Walckenaera*.
170. *Viderius melanocephalus* (O. P.-Cambridge).
Lake district.
A single adult female in June. Known also under *Walckenaera*.
171. *Prosoponcus cristatus* (Blackwall).
Eden Valley.
A single adult male near Carlisle in February.
172. *Walckenaeria acuminata* (Blackwall).
Eden Valley, Gilsland.
Abundant amongst grass on the banks of the Irthing of both sexes in September.
173. *Walckenaeria nudipalpis* (Westring).
Keppelcove Tarn, Glenridding (A. R. J.).
A single adult male. Known also under *Walckenaera*.
174. *Cornicularia cuspidata* (Blackwall).
Newtown Moss, Penrith.
Adult males and females in May. Known also under *Walckenaera*.
175. *Cornicularia karpinskii* (O. P.-Cambridge).
Red Tarn, Helvellyn (A. R. J.).
An adult of both sexes in August. This is the first record of this Siberian species as British.
176. *Cornicularia clara* (O. P.-Cambridge).
Eden Valley.
Adult females amongst leaves in the woods at Wreay. Known also under *Neriene*.
177. *Savignia frontata*, Blackwall.
Eden Valley, Carlisle.
A few adults of both sexes in October. Known also under *Walckenaera*.
178. *Plæsiocrærus fuscipes* (Blackwall).
Eden Valley.
Abundant amongst dead leaves at Armathwaite in May and October.
179. *Plæsiocrærus permixtus* (O. P.-Cambridge).
Newtown Moss, Penrith.
A single adult male only in September. Known also under *Walckenaera*.
180. *Plæsiocrærus latifrons* (O. P.-Cambridge).
Eden Valley, Carlisle.
Adult males and females in February. Known also under *Walckenaera*.
181. *Areoncus humilis* (Blackwall).
Eden Valley, Carlisle.
A single adult male on the banks of the Caldew. Known also under *Walckenaera*.
182. *Caledonia evansii* (O. P.-Cambridge).
Grisedale Pass, Helvellyn (A. R. J.).
Three adult males.
183. *Cnephalocotes curtus*, Simon.
Lake districts (A. R. J.).
An adult male and several immature under stones on the summit of Fairfield, 2,650 feet, in August.
184. *Nematogmus obscurus* (Blackwall).
Eden Valley.
Amongst dead leaves in Armathwaite woods. Rare. Known also under *Cnephalocotes* and *Walckenaera*.
185. *Pocadicnemis pumila* (Blackwall).
Eden Valley and Newtown Moss, Penrith.
Known also under *Walckenaera*.
186. *Brachycentrum nemorale* (Blackwall).
Armathwaite.
A few adult in April. Known also under *Walckenaera*.

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187. *Lophocarenum menzei*, Simon.
Lake district.
A few males and females on an island in Lake Elterwater in July. Only British record.
188. *Minyriolus pusillus* (Wider).
Newtown Moss, Penrith.
Known also under the name *Walckenaera*.
189. *Entelecara acuminata* (Wider).
Carlisle.
A few adult males in May and June ; rare. Known also under *Walckenaera*.
190. *Entelecara erythropus* (Westring).
Carlisle.
Common on foliage in May and June.
Known also under *Walckenaera*.
191. *Entelecara trifrons* (O. P.-Cambridge).
Eden Valley and Newtown Moss, Penrith.
Known also under *Walckenaera*.
192. *Ceratinella scabrosa* (O. P.-Cambridge).
Newtown Moss, Penrith.
Known also under the name *Walckenaera*.
193. *Ceratinella brevipes* (Westring).
Solway district.
194. *Ceratinella brevis* (Wider).
Windermere (A. R. J.).
Females in woods ; August.
195. *Maso sundevallii* (Westring).
Newtown Moss, Penrith.
Known also under the name *Nerienne*.

MIMETIDÆ

Spiders of this family are similar in general respects to the *Theridiidæ*, having eight eyes and three tarsal claws. The species of *Ero* construct a small brown pear-shaped or cylindrical egg-cocoon suspended on a fine silken stalk.

196. *Ero furcata* (Villers).
Eden Valley, Solway and Lake districts.
Not common. Known also as *E. thoracica* and *Theridion variegatum*.

THERIDIIDÆ

The members of this family have eight eyes situated very much like those of the *Argiopidæ*, but the mandibles are usually weak, the maxillæ are inclined over the labium, and the posterior legs have a comb of stiff curved spines beneath the tarsi. The web consists of a tangle of crossing lines, and the spider often constructs a tent-like retreat wherein the egg-sac is hung up.

197. *Episinus lugubris*, Simon.
Eden Valley district.
Not common amongst dry grass. Known also as *E. truncatus* and *Theridion angulatum*.
198. *Asagena phalerata* (Panzer).
Lake districts (A. R. J.).
Not uncommon under stones at a low elevation in August on Loughrigg Fell, Ambleside ; Eskdale, Wastdale, Grisedale and Bor-rowdale ; but the adult male has not yet been taken. Known also as *Theridion signatum*, Blackwall.
199. *Steatoda bipunctata* (Linn.).
Eden Valley district, Carlisle.
A few only in stables and outhouses.
Known also under *Theridion*.
200. *Theridion tepidariorum* (C. L. Koch).
Eden Valley district.
Abundant in the conservatories of the nursery gardens near Carlisle and at Dalston.
201. *Theridion sisypium* (Clerck).
Eden Valley district.
Plentiful on holly and gorse bushes in the neighbourhood of Carlisle. Known also as *T. nervosum*, Blackwall.
202. *Theridion pictum* (Walckenaer).
Eden Valley district.
Abundant in the nursery gardens near Carlisle, and also amongst gorse bushes on the banks of the Eden in June.
203. *Theridion varians*, Hahn.
Eden Valley and Lake district.

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204. *Theridion denticulatum* (Walckenaer).

Eden Valley and Lake district.

Abundant on stone walls near Lodore, Derwentwater, in July.

205. *Theridion vittatum*, C. L. Koch.

Eden Valley district.

Rose Castle, Dalston, on railings in June. Known also as *T. pulchellum*.

206. *Theridion pallens*, Blackwall.

Eden Valley district.

Common on the foliage of trees at Wetheral and near Carlisle in May and June. The curious little white egg-cocoon, like an inverted peg-top with four small lateral prominences, is fastened by the broad end to the surface of the leaves and not balanced on or hanging by the point as usually represented.

207. *Theridion ovatum* (Clerck).

Eden Valley and Lake district.

Plentiful on bramble bushes, where the

female constructs her sea-green egg-sac within a folded leaf in June and July. Known also as *Phyllonethis lineata*.

208. *Theridion lepidum* (Walckenaer).

Lake district.

A few examples only under a stone on the Tilberthwaite Fells, Coniston, in July. Known also as *Phyllonethis instabilis*.

209. *Pedonostethus lividus* (Blackwall).

Eden Valley and Lake districts.

Abundant under stones throughout the summer. Known also under *Neriene*.

210. *Enoplognatha thoracica* (Hahn).

Eskdale (A. R. J.).

Females only taken under stones on the fells and on bushes in the valleys.

211. *Pholcomma gibbum* (Westring).

Solway Moss.

Not common; amongst dry grass. Known also under *Theridion*.

ULOBORIDÆ

The species of this family are remarkable for the possession of the calamistrum and cribellum, but many of the spiders construct an orbicular web similar to that of many members of the *Argiopidæ*. They are very rare in England, being mostly denizens of the tropics.

212. *Hyptiotes paradoxus* (C. L. Koch).

Grange; Lake district (J. H.).

Though comparatively a small spider it is of great interest on account of its extraordinary habits. Most of the orb-web spinners having constructed their net retire into a hiding-place having a line leading from the centre of the web to the retreat. This line they hold with the claws of a fore-leg, and thus receive instant notice of any insect touching the web and viscid lines. Directly this occurs the line is often jerked several times to encourage the entanglement of the insect, and the spider hastens to ascertain the nature of its capture. *Hyptiotes* however derives an even more refined amusement from the daily task of providing itself with food. In this case the web is simply an isosceles triangle with cross-lines between the legs and the central radius, the legs being continued further than the base and fastened to a twig. From the apex of the triangle, which lies horizontally, a line is attached and held in the claws of the first two pairs of legs of the spider, being also attached to a twig a short distance behind the spider,

and held in the claws of the two hind pairs of legs. This trap-line, as it is called, is gathered in a coil close to the spinners and held fast while the web is strained tight. Directly an insect touches the net, *Hyptiotes* lets go the slack, the net springs back and naturally falls more or less loosely on the struggling insect; while the spider, still holding tight to the trap-line with its fore claws, is dragged forward by the spring of the net. Sometimes the slack is drawn in again and the net again sprung to make sure of a capture. I have observed cases in which the trap-line is not continuous but broken off, and the hinder portion proceeds directly from the spinners. The web has also often more than one central radius, but beyond slight differences such as these the mode of operation is the same in all cases which have come under my notice.

These very rare spiders have only been elsewhere taken in the New Forest, Hampshire, and the specimen taken by Mr. Hodgkinson in 1868 was the first record for Great Britain, and remained the only record until 1894.

DICTYNIDÆ

The species possess the calamistrum and cribellum and three tarsal claws, but the eyes, eight in number, are situated in two transverse rows, the laterals being in contact. They con-

SPIDERS

struct a tubular retreat with an outer sheet of webbing which is covered with flocculent silk made with the calamistrum with threads from the cribellum.

213. <i>Amaurobius ferox</i> (Walckenaer).
Eden Valley, Carlisle.
Known also under <i>Ciniflo</i> .	216. <i>Dictyna arundinacea</i> (Linnæus).
Lake districts.
Known also as <i>Ergatis benigna</i> .
214. <i>Amaurobius similis</i> (Blackwall).
Eden Valley ; Solway and Lake districts.
Known also under <i>Ciniflo</i> .	217. <i>Dictyna uncinata</i> , Thorell.
Eden Valley and Lake districts.
215. <i>Amaurobius fenestralis</i> (Strœm.).
Eden Valley and Lake districts.
Known also as <i>Ciniflo atrox</i> .	218. <i>Dictyna latens</i> (Fabricius).
Eskdale (A. R. J.).
Fairly common on gorse bushes in August and September.

CHERNETES

CHELIFERIDÆ

Out of twenty species of false scorpions hitherto recorded as indigenous to Great Britain only two have been taken in this county. The various species can usually be found amongst moss and dead leaves or beneath stones and the bark of trees. They are unmistakable on account of their possession of a pair of forcipated palpi like those of the true scorpion. These are usually extended wide open when the Arachnid is alarmed while it hastens backward to take shelter. The two species which have occurred in this county are the following :—

219. <i>Obisium muscorum</i> (Leach).
Carlisle ; Armathwaite ; Wreay.
Common in the woods amongst dead leaves. | 220. <i>Chernes nodosus</i> (Schrank).
Carlisle.
This species is usually found attached to a fly by the forcipated palpi. |
|--|---|

OPILIONES

The harvestmen are spider-like creatures with eight long legs, the tarsi very long and flexible. Eyes simple, two in number, situated on each side of an eye eminence. Body not divided into two distinct regions by a narrow pedicle as in spiders ; abdomen segmentate.

221. <i>Phalangium opilio</i> , Linn.
Solway district.	224. <i>Oligolophus morio</i> , Fabricius.
Lake districts.
222. <i>Phalangium parietinum</i> , De Geer.
Carlisle.	225. <i>Oligolophus agrestis</i> , Meade.
Eden Valley.
223. <i>Megabunus insignis</i> , Meade.
Eden Valley.	226. <i>Nemastoma lugubre</i> , O. F. Müller.
Solway district.

CRUSTACEANS

The abundance and variety of the marine crustacea recorded from the waters of Lancashire to the south, from the Isle of Man on the west and from the Firth of Clyde to the north of this county are an ample guarantee that Cumberland itself is richly supplied with a similar fauna. Many crustaceans are rapid and powerful swimmers. Some walk and run with great agility. Those that can only tardily creep and crawl often have a tortoise-like perseverance. Many are carried along by currents. Many attach themselves more or less permanently to divers kinds of moving objects. Almost all or not improbably all are so extremely prolific that the wide dispersal of their offspring is an obvious necessity of existence, and is well provided for in the restless waters they inhabit. It follows that no county can plume itself except quite accidentally on the possession of species denied to its immediate neighbours. Occasionally an erratic may be brought by a warm current or a cold current from some alien climate, or may come from far distant waters entangled among the incrustations on the sides of an ocean-going vessel. Such strangers, if they can maintain their ground, will soon spread from the port of entry to adjacent points of vantage. The neglect then which has befallen this branch of the marine fauna of Cumberland must not in any way be attributed to dearth of materials. All that can be fairly inferred is that the coast line by its bold protrusion westward has proved unattractive to collectors. The naturalist usually prefers to work in tranquil bays and the retired nooks of winding inlets, leaving the treasures of exposed waters to such adventurers as Horace describes with ribs of oak and triple bronze.

In regard to the inland crustaceans of the county there is much interesting information available. Unfortunately for the terrestrial isopoda or woodlice I have only been able to find a single notice. This however testifies to their occurrence and to a singular community of taste between them and several other kinds of Arthropoda. In a paper entitled 'Reminiscences in the Study of Natural History' Mr. Tom Duckworth describes the process of sugaring trees with rum and treacle for entomological purposes just before dark and waiting till the moths began to fly, after which, he continues, 'if it were a good night, we were pretty busy for some time boxing the insects; then came a lull, and after a little rest other species came to our sweet compound. I don't know what teetotalers may think, but I have seen centipedes, woodlice, earwigs, beetles, spiders, and slugs all attracted to the mixture. I have seen them with their eyes shining like little globes of fire

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fall off the trees helplessly drunk.'¹ It would have added much to the interest of this passage had the author been able to discriminate a little, since, though the general intoxication is credible, the globes of fire do not seem equally probable in slugs and spiders as in beetles and woodlice.

The well-known amphipod *Gammarus pulex* was brought to me some years ago by a friend from a mountain tarn in the Lake district. The specimens and records of locality were unluckily destroyed by fire, but this is of less importance, as it may be taken for granted that the species is not confined to a single tarn but generally distributed.

Dr. G. S. Brady's paper 'On Entomostraca Collected in the Solway District' might be relied on for attributing to Cumberland several marine and brackish water species of Ostracoda and Copépoda. But the evidence is weakened by the circumstance that his collections were confined to the Scottish side of the firth.²

For the freshwater Entomostraca of the county there are definite reports by several competent observers. From their investigations, though confessedly incomplete, a fair conception may be formed of the diversity, the multitude, and the value of the living creatures in question. None however can be brought to understand the fascination of studying these minute objects except by studying them. It is a case in which it may be truly said that the appetite comes by eating.

The Entomostraca are divided into three orders, Branchiopoda, Ostracoda and Copepoda. The Branchiopoda are again divided into four sub-orders, all of which are likely enough to be represented in Cumberland, although actual records entitle us to deal with only one of them, the Cladocera. This is by far the most extensive of the four, but the animals in most of its species are the smallest. One of them, *Alonella nana* (Baird), claims to be the smallest arthropod known, a hundred and ten specimens placed end to end being required to cover an inch.³ The name Cladocera means 'branching antennæ,' and this should be borne in mind, as it refers to a characteristic feature alike important for the locomotion of the animals and for the discrimination of their families and genera. For though all the species, with a solitary exception in one sex, have the second antennæ two-branched, yet the number of the joints is variable and so also is the number of setæ with which they are armed. Another basis of classification has been found in the varying characters of the feet. This permits an arrangement of the genera under four sections, each with a significant name. The Ctenópoda, or 'comb-footed,' have six pairs of feet, all similar, leaf-like, branchial, non-prehensile, and furnished with a comb-like arrangement of setæ. The Anomópoda, or 'dissimilar-footed,' that is to say with feet not all alike, have five or six pairs, of which the front ones are more or less prehensile and non-

¹ *Transactions of the Cumberland and Westmorland Association for the Advancement of Literature and Science*, No. xvii. p. 97 (Carlisle, 1893).

² *Nat. Hist. Trans. Northumberland, Durham and Newcastle-upon-Tyne*, vol. xiii. pt. i. (1895).

³ Scourfield, *The Essex Naturalist*, vol. x. p. 194 (1897).

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branchial, while the hinder feet are as in the Ctenopoda. The Onychópoda, or 'nail-footed,' have only four pairs of feet, these being prehensile, ending in strong nails, and having a toothed process at the base. The Haplópoda, or 'simple-footed,' are so called because their six pairs of feet are simple, without a process.¹ All these sections are represented in the waters of Cumberland.

To the Ctenopoda belongs *Sida crystallina* (O. F. Müller), of which Miss Edith M. Pratt, in her paper on 'The Entomostraca of Lake Bassenthwaite,' reports that 'it was the most common species taken in April, 1898. In June very few specimens were taken, but these were of a large size, with well-developed ova and embryos.'² This species has a very transparent carapace, and a singular apparatus on the back of its head for attaching itself to weeds or to other objects such as the wall of an aquarium. At present it stands alone in the genus *Sida*, but that genus itself is one of a considerable family named after it, the *Sididæ*. Among these *Sida* is easy to recognize, because in its second antennæ it alone combines a three-jointed dorsal with a two-jointed ventral branch, and it alone has a row of twenty or more simple and isolated teeth on the dorsal margin of its tail-piece.³ In the same family stands '*Daphnella brachyura*,' which Miss Pratt reports as common in lake Bassenthwaite in June but absent in April.⁴ The name *Daphnella*, applied by Baird in 1850, was pre-occupied, and has therefore to give way to *Diaphanosóma*, Fischer, 1851, and here it will be noticed that the generic name, meaning 'a diaphanous body,' testifies to the transparency of the valves, just as the specific name does for the crystalline *Sida*. How greatly this character adds to the ease and pleasure of studying the living animals under the microscope will be understood without any laboured discussion to prove it. In *Diaphanosoma* the tail-piece has no teeth, and the very large second antennæ have two joints to the dorsal and three to the ventral branch. The species mentioned is far from being confined to lake Bassenthwaite. It can be obtained also in the Sea of Galilee and in very many other parts of the world.

The Anomópoda, being by far the largest of the four sections, is here as commonly elsewhere the best represented. While the other three sections have four families among them, this has four families to itself, and within these are distributed a very considerable number of genera and species. Of the families, the Daphniidæ is that which has been able to force itself most into notice, so that occasionally members of it swim into the ken, not only of scientific students, but of ordinary observers. The genus *Daphnia*, O. F. Müller, is credited with about a hundred species and varieties. But these species and varieties are not all credited with being 'good' in the scientific sense of that much enduring epithet. The characters on which they have been founded often prove

¹ Jules Richard, *Ann. Sci. Nat.*, ser. 7, vol. xviii. p. 331.

² *Ann. Nat. Hist.*, ser. 7, vol. ii. p. 471 (1898).

³ J. Richard, *Ann. Sci. Nat.*, ser. 7, vol. xviii. p. 335. On p. 337 the words *ventrale* and *dorsale* are accidentally transposed.

⁴ *Ann. Nat. Hist.*, ser. 7, vol. ii. p. 470.

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to be so provokingly variable that the new names which they have lured authors into inventing for their specification eventually only confuse the story instead of helping to unravel the plot. When the same name may easily be applied to two or more forms really though not obviously distinct, or a single species may be called unwittingly by several different names, local records are inevitably exposed to some indefiniteness. The 'common water-flea' is *Daphnia pulex* (Linn.), or *D. pulex*, de Geer, or *D. pulex*, Latreille, or *D. pulex*, Baird, or *D. pulex*, Leydig, or *D. pulex* of a great many other authorities. But, according to Dr. Jules Richard, Leydig was the first to give such a description as can be depended upon for isolating the form he was describing. Miss Pratt reports from lake Bassenthwaite '*Daphnia pulex*, Latreille,' and remarks upon it that 'this species, while being widely distributed in pools and ditches in Britain, occurs but rarely in large sheets of water; it was very rare in Bassenthwaite in April and no specimens were taken in June.'¹ A reference is added to Baird's *British Entomostraca*, but the number of the plate is unluckily misprinted. The name of Latreille is of no assistance, as he did not contribute any first-hand information to this particular subject. Of a nearly allied species, *Daphnia obtusa*, Kurz, Dr. G. S. Brady states that he has 'found it in a shallow pool on the line of the Roman wall near Garthside, Walton, Cumberland (July, 1897),' and in his account of *Daphnia propinqua*, G. O. Sars, which he agrees with Richard in regarding as a variety of *Daphnia obtusa*, he says, 'In the summer of 1897, in a shallow pool by the side of the Irthing at Walton, Cumberland, I took many specimens, all of them immature, which seem to be referable either to *obtusa* or its variety.'² This variety was reared by Sars out of dried mud sent from the Cape of Good Hope, and its propinquity to *Daphnia obtusa* is so close that Dr. Richard apparently upholds it more out of respect to the distinction of its author than for any other distinction. Even in regard to the original *D. obtusa* he observes, 'Like *D. pulex*, this species does not always appear identical with itself; the variations may be tolerably extensive. Many authors even consider *D. obtusa* to be a variety of *D. pulex*, and it is certain that it has often been mentioned under the latter name.'³ As to its geographical distribution he declares that it appears to be much more common than *D. pulex*, and that probably a great number of the localities attributed to the latter ought to be referred to the former.⁴ Of *Daphnia longispina* Miss Pratt says, 'This species was taken by Beck in the English lakes and by Scott in some of the Scottish lochs. It was rare [in Bassenthwaite] in April and no specimens were taken in June.'⁵ No author's name is given for the species, but a reference to '*Daphnia longispina*, Baird,' which should have been *Daphnia pulex*, var. *longispina*. The specific name dates back to O. F. Müller in 1785, and is allowed to stand in spite of the vagueness attach-

¹ *Ann. Nat. Hist.*, ser. 7, vol. ii. p. 472.

² *Nat. Hist. Trans. Northumberland, etc.*, vol. xiii. pt. ii. pp. 224, 226.

³ *Ann. Sci. Nat.*, ser. 8, vol. ii. p. 259.

⁴ *Loc. cit.* p. 261.

⁵ *Ann. Nat. Hist.*, ser. 7, vol. ii. p. 472.

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ing to descriptions of that early period. By Sars it is held to be even more variable than *D. pulex*, so that he was led to make out of it several distinct species, which he has since reduced to the rank of varieties. To that which Baird figures Dr. Richard gives the designation '*Daphnia longispina*, O. F. M., var. *leydigi*, Hellich.' According to the French author, 'one may say without exaggeration that there are as many forms of *D. longispina* as there are localities for it.'¹ The long spine to which the specific name refers is the strongly produced hinder extremity of the carapace, while in *D. pulex* this caudal spine is very short and in *D. obtusa* rudimentary or wanting. Moreover in the two latter species the terminal claws or unguis of the body are provided with secondary denticles, whereas in *D. longispina* they are simply ciliated.

To the same family of the Daphniidæ belongs *Moina rectirostris* (O. F. Müller), which in comparison with the forms already discussed may be set down as one of the very rare species. Dr. Brady in 1898 says, 'I have myself only once met with it in a pond on Walton Common near Brampton, Cumberland, July, 1897.'² The genus is easily distinguished from *Daphnia*, because the valves, though they have rounded corners, are quadrangular instead of oval, and the head by a constriction all round has the appearance of being articulated, whereas in *Daphnia* the hind margin of the shell is as a rule continuous. In spite too of the specific name *rectirostris*, the head is not produced downward into a prominent beak or rostrum as it is in *Daphnia*.

From the next family, the Bosminidæ, Miss Pratt reports the occurrence of *Bosmina longirostris* (O. F. Müller), remarking, 'This species appears to be fairly common and widely distributed in Britain. In Bassenthwaite it was very common in all the tow-nettings in April, but rare in June.'³ This minute animal looks as if it had a trunk like an elephant. To this appearance the specific name refers, though rather inaccurately, because it is not the rostrum itself that is so very long, but the first antennæ which are attached to its apex, and by their close proximity seem in lateral view to be an actual prolongation of it. The Bosminidæ, like the Daphniidæ, have four joints to the dorsal and three to the ventral branch of the second antennæ, but these appendages, unlike those of the Daphniidæ, are small instead of large. Here also the feet are equally spaced, instead of having the fifth pair as in the preceding family separated from the rest by a considerable interval.

A third family is represented by the exceedingly common species *Chydorus sphaericus* (O. F. Müller). Miss Pratt speaks of it as *Chydorus sphaericus*, Baird, and rightly says that it is 'common in ponds and ditches in Britain almost all the year round,' including it among those species which in Bassenthwaite were abundant in April but rare in June.⁴ This little spherical species was described by Müller in 1776 as *Lynceus sphaericus*, and the family to which it belongs has often been called

¹ *Ann. Sci. Nat.*, ser. 8, vol. ii. pp. 277, 290.

² *Nat. Hist. Trans. Northumberland, etc.*, vol. xiii. pt. ii. p. 245.

³ *Ann. Nat. Hist.*, ser. 7, vol. ii. p. 471.

⁴ *Loc. cit.* pp. 470, 471.

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Lynceidæ, but that name is wanted elsewhere, so that the present family is properly named Chydoridæ from the typical genus *Chydorus* established for this very species by Dr. Leach in 1816. It agrees with the Bosminidæ in having five or six pairs of feet equally spaced, but is distinguished by having only three joints in both branches of the second antennæ. There is also another peculiarity, not difficult to observe through the pellucid valves of various species. The intestine, which in the two preceding families may make a more or less serpentine bend, here goes the length, not exactly of tying itself into a knot, but of forming one complete convolution and half another.

Within the compass of this same family two species were recorded in 1867 by Norman and Brady, as having been found by the latter author in Thirlmere. Already numerous genera had been carved out of the original *Lynceus*, but not all of these at that date commended themselves to the two writers just named as worthy of adoption. Consequently they called the specimens from Thirlmere respectively *Lynceus guttatus*, G. O. Sars, and *L. exiguus*, Lilljeborg.¹ According to the nomenclature now generally accepted the former will stand as *Alona guttata*, Sars, and the latter as *Alonella exigua* (Lilljeborg). Both occur in Norway as well as in England, and in regard to the second Professor Sars makes the interesting comment that he had at one time confused it with *A. excisa* (Fischer), but had afterwards found these two little species to be easily distinguishable, when alive, even by the unassisted eye. Fischer's species, he explains, swims with quite a smooth motion, whereas *A. exigua* gets along by jerks and rapid leaps.²

The Onychopoda possess but one family, the Polyphémidæ, in which the genera are few, and of those few some are exclusively or almost exclusively marine. There are two freshwater genera, both of which are represented in Cumberland. These are *Polyphemus*, O. F. Müller, and *Bythotrephes*, Leydig.

According to Miss Pratt *Polyphemus pediculus* (Linn.) 'was very rare in Bassenthwaite in April, but very abundant and universally distributed at the surface and some little distance below the surface in June, with eggs, embryos and larvæ in all stages of development.'³ In this remarkable family the feet project from the shell and assist the antennæ in the function of swimming. The brood cavity is very large. So also is the eye, the ever-trembling eye, which is so striking a feature in many Cladocera. For *Polyphemus* Müller effectively says that the head is all eye.

In 1883 Conrad Beck, writing 'On some new Cladocera of the English Lakes,' makes the following remarks on *Bythotrephes cederströmi*, Schödler :—

'The anterior portion of the head is almost entirely occupied by the eye, a large pigment mass surrounded by a number of long trans-

¹ *Nat. Hist. Trans. Northumberland*, etc., vol. i. pp. 381, 385 (1867).

² *Vid.-Selsk. Forhandl. Christiania*, No. 1, (1890), p. 48.

³ *Ann. Nat. Hist.*, ser. 7, vol. ii. p. 472.

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parent crystalline lenses.' 'The most striking feature however of this Cladoceran is that it possesses an extremely long spine at the end of its abdomen, more than twice as long as the rest of the animal itself.' 'The matrix sometimes attains an enormous size, holding as many as from ten to twenty embryos at a time. These are readily distinguished by their large eyes and long spines which are curled round them.' 'The mandibles (fig. 4) are long and are articulated on the shell at the back; they curve round the body and meet in front of the mouth. In front they have a set of large teeth. Although I have dissected several specimens I have altogether failed to find any maxillæ. I cannot but think however that there must be some, although they may be rudimentary.' 'There are two known species of *Bythotrephes*, *B. Cederströmi* and *B. longimanus*. The latter has never yet been found in England. These two species, together with *Polyphemus*, *Pleopis* and *Evadne*, form the family Polyphemidæ.' 'Distribution. I found *B. Cederströmi* first in Grasmere, but subsequently in most of the large lakes in Cumberland and Westmorland. It lives in the middle of large pieces of water and seems to be more abundant in the autumn than the spring.'¹

In passing it may be noted that the family has been augmented since Mr. Beck's paper was published, and that the name *Podon*, Lilljeborg, is now used in preference to its equivalent, *Pleopis*, Dana. More important to our present purpose is Miss Pratt's record of *Bythotrephes longimanus*, Leydig, of which she observes, 'This species has not been recorded before from the English lakes. In Bassenthwaite it was very rare in April, but very abundant in June, with eggs, embryos, larvæ and young.'² Miss Pratt calls attention to Beck's description of the companion species, but was doubtless unaware that in the interval between Beck's paper and her own Professor G. O. Sars had reduced *B. cederströmi* to a synonym of *B. longimanus*.³ The differences on which Schödler relied were due, it seems, only to the circumstance that he examined specimens in good condition, while those which Leydig described and figured were extracted from the stomach of a fish, a repository from which the naturalist may sometimes obtain prizes, but must expect not unfrequently to find them slightly out of repair.

The Haplopoda, like the Onychopoda, own but a single family, namely the Leptodoridae. But this family has a special interest, because so far as known it is only in its single genus, *Leptodora*, that the embryos hatch in the nauplius stage, other Cladocera passing through this phase of existence while still in the egg. Professor S. J. Hickson, F.R.S., when initiating the researches in lake Bassenthwaite, evidently felt himself partly repaid for his trouble by this very nauplius. He says, 'In April, 1897, when the weather was still very cold and blasts of icy wind blew down in gusts from the snow-capped Skiddaw, I took a few samples of the Plankton as a preliminary step to further

¹ *Journal of the Royal Microscopical Society*, ser. 2, vol. iii. pp. 780-82, pl. xii. figs. 1-8 (1883).

² *Ann. Nat. Hist.*, ser. 7, vol. ii. p. 472 (1898).

³ *Vid.-Selsk. Forhandlinger*, No. 1, p. 51 (1890).

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investigations. The material I then obtained proved to be of considerable interest, containing among other things the interesting *Nauplius* larvæ of *Leptodora*.¹ Of the species *Leptodora hyalina*, Lilljeborg, Miss Pratt says, 'In April only the larvæ and very young forms were taken, chiefly at the surface, in Bassenthwaite. In June this species was exceedingly abundant, with eggs, embryos, and young, but no young larvæ were taken. It was moreover confined to the middle of the lake, where the water is deep (see map, p. 475). Very few mature specimens were taken at the surface or at the depth of 2 feet to 4 feet, but from 6 feet to 10 feet (10 feet=greatest depths at which tow-nettings were taken) it was taken in great quantities.'² An examination of the adult animal will show several points which if not absolutely peculiar are shared with but few other species, such as the large number of setæ on the second antennæ, the acuteness of the mandibles, and the great length of the tract of the body between the last pair of feet and the two dorsal setæ of the abdomen.

The Ostracóda are readily distinguished from the Cladocera by the fact that instead of having the head distinct they keep that part in common with the rest of the body sheltered within their two mollusc-like valves. They no doubt occupy the waters of Cumberland in accustomed variety and abundance, but the only record I have come across is one which reports *Cypris obliqua*, Brady, from Derwentwater on the authority of the late David Robertson, LL.D.³

The Copepoda have received more attention. These by their distinctly segmented body and the absence of enclosing valves wear a much more appreciably shrimp-like aspect than the groups already discussed. Dr. G. S. Brady has recorded five species as belonging to this county, and Miss Pratt has recorded eleven species of which two only are common to Dr. Brady's list, the two lists combined thus producing a total of fourteen species, which after certain necessary modifications becomes thirteen species and one variety. This may be regarded for the time as a respectable assemblage, but Mr. D. J. Scourfield in 1897 reckons the known British freshwater Copepoda at fifty-four, so that the percentage from Cumberland will easily admit of being greatly raised in the future.

Most of the species to be mentioned belong to the family Cyclopidae and to the well-known freshwater genus *Cyclops*, O. F. Müller, of which the species are tolerably numerous, but, as M. Canu observes, differing by characters of feeble intensity. It is impossible here to enter into all the minute details by which they are discriminated, for which reference must be made to such works as Dr. Brady's *Monograph of the British Copepoda*, published by the Ray Society (1878-80), and the more recent German treatise by Dr. Otto Schmeil, published in the *Bibliotheca Zoologica* (1892-96).

Of *Cyclops gigas*, Claus, Dr. Brady says, 'I have found it plentifully in

¹ *Ann. Nat. Hist.*, ser. 7, vol. ii. p. 468.

² *Loc. cit.* p. 471.

³ Brady and Norman, *Trans. R. Dublin Soc.*, ser. 2, vol. iv. p. 77 (1889).

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many of the lakes of Cumberland, Westmorland and Northumberland.'¹ But in 1891 he recognized that this species was not distinct from the much older *C. viridis* (Jurine). The 'giant' examples reach a length of something a little over a fifth of an inch, as distinguished from the normal length of about one-seventh of an inch. But there are various intermediate lengths, so that with only the character of size to rest upon it is impossible to say where the species *viridis* ends and the species or variety *gigas* begins.²

For *Cyclops vicinus*, Uljanin, 1875, Dr. Brady gives among other localities 'Sprinkling Tarn and Ennerdale Water, Cumberland.'³ But Schmeil decides that this species is undoubtedly synonymous with *C. strenuus*, Fischer, 1851. As the latter is one of the species reported from Bassenthwaite by Miss Pratt, a deduction must be made from the total which included it under two different names.

In regard to '*Cyclops signatus*, Koch,' Miss Pratt says, 'Examples with serrated and with simple ridge on antennæ were taken. They are supposed to represent different stages in development (Herrick). This species is widely distributed and common in Britain.'⁴ References are added to the accounts given in 1878 and 1891 by Dr. Brady, who in the latter year is disposed to agree with the opinion quoted from Herrick. But here Dr. Schmeil intervenes with a different decision to the effect that two distinct species are in question, for which the names are respectively *C. fuscus* (Jurine) and *C. albidus* (Jurine). For easy marks of recognition he points out that *C. fuscus* is usually gaily coloured, and that the packets of eggs lie so close to the abdomen as to cover a not inconsiderable part of it, whereas *C. albidus* is generally colourless, occasionally dark brown, often with dark patches on certain parts, and carries the egg-packets outstanding almost at right angles to the abdomen. The serrate ridge on the last joint of the first antennæ belongs to *C. fuscus*, the simple ridge to *C. albidus*. By this ruling therefore, which shows that two species have been recorded under a single name, our original total is reinstated.

'*Cyclops Thomasi*, Forbes,' according to Miss Pratt, 'was rare in Bassenthwaite in April, this being the first time that it has been recorded from the English lakes. No specimens were taken in June.'⁵ This is identified by Schmeil with the earlier *C. bicuspidatus*, Claus. Dr. Brady supposed that Herrick might be right in considering it a mere variety of that species, but Schmeil will not allow it even that humble measure of distinctness.

Specimens of *Cyclops insignis*, Claus, 'were fairly common in the middle of the lake [Bassenthwaite] in April, but rare in June.'⁶ In this species the first antennæ are fourteen-jointed as opposed to the seventeen-jointed antennæ of the species previously mentioned. For our purpose the name is exposed to some uncertainty. Dr. Brady originally described a species as *C. lubbockii* which he afterwards identified with *C. insignis*,

¹ Ray Soc. Monograph, vol. i. p. 106 (1878).

² Schmeil, Bibl. Zool., vol. iv. p. 101 (1892).

³ Nat. Hist. Trans. Northumberland, etc., vol. xi. pt. i. p. 78.

⁴ Ann. Nat. Hist., ser. 7, vol. ii. p. 473.

⁵ Loc. cit. p. 473.

⁶ Loc. cit. p. 473.

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Claus, and the name quoted by Miss Pratt is given in reliance not on Claus but on Brady. Now Dr. Schmeil is strongly disinclined to admit the identity of *C. lubbockii* with *C. insignis*, thinking the former more likely to be a variety with fourteen-jointed antennæ of *C. bicuspidatus*, to which he assigns the designation 'var. *odessana*, Schmankewitsch.'¹

Cyclops ewarti, Brady, is one of the few species of this genus which have strayed from inland waters into the sea. In lake Bassenthwaite 'only a few specimens of this species were taken in April and none were taken in June.'² Its first antennæ are eleven-jointed and Dr. Brady remarks upon this, 'One is liable to look with suspicion on the validity of small species of *Cyclops* with eleven-jointed antennæ, seeing that the possession of that number of joints is characteristic of one stage in the development of the seventeen-jointed forms. But we have in this case the swimming feet all perfectly developed and three-jointed, and no examples of any seventeen-jointed forms were found in the gathering.'³

Cyclops affinis, Sars, 'was taken in Bassenthwaite in April, 1897, and has not since been taken.'⁴ The antennæ are eleven-jointed.

For *Cyclops kaufmanni*, Uljanin, Miss Pratt gives references to Brady, 1878 and 1891, and remarks, 'This species, although very limited from all accounts in its distribution, was by far the most abundant species taken in April, 1898; in June it was rare' in Bassenthwaite. Its antennæ are ten-jointed. Schmeil is doubtful whether Brady's *C. kaufmanni* be the same species as that so named by Uljanin, but he had apparently not seen Brady's new figure of the species in 1891.

Cyclops phaleratus, Koch, 'was taken in Bassenthwaite in April, 1898, when it was rather rare. No specimens were taken in June.'⁵ The first antennæ are ten-jointed. Any doubt of this species being rightfully attributable to Koch is removed by an interesting feature in the species itself. Contrary to what is the case in all other members of the genus, in this one the oviducts penetrate far into the abdomen, and Koch, who was ignorant of their nature, so represents them in his figure.⁶

Cyclops serrulatus, Fischer, is said to be the commonest species of the genus. The first antennæ are twelve-jointed. 'Specimens were only taken in Bassenthwaite in June.'⁷

From the Cyclopidae we now turn to the family of the Diaptomidae.

Diaptomus castor (Jurine) according to the often-quoted report was taken in lake Bassenthwaite not very abundantly in April and not at all in June.⁸ It should not be overlooked that Dr. Brady in 1891 modifies what he has to say of this species in 1878.

Diaptomus gracilis, Sars, is reported from Bassenthwaite by Miss Pratt,⁹ and by Dr. Brady from Talkin Tarn and Tindale Tarn, Cumber-

¹ *Bibl. Zool.*, vol. iv. p. 82 (1892).

² *Ann. Nat. Hist.*, ser. 7, vol. ii. p. 474.

³ *Nat. Hist. Trans. Northumberland, etc.*, vol. xi. pt. i. p. 87.

⁴ *Ann. Nat. Hist.*, ser. 7, vol. ii. p. 474.

⁵ *Loc. cit.* p. 474.

⁶ Schmeil, *Bibl. Zool.*, vol. iv. p. 171.

⁷ *Ann. Nat. Hist.*, ser. 7, vol. ii. p. 474.

⁸ *Loc. cit.* p. 476.

⁹ *Loc. cit.* p. 476.

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land.¹ Two species may possibly here be included, as Dr. Brady makes *D. graciloides*, Lilljeborg, a synonym of *D. gracilis*, while Dr. Schmeil keeps it distinct.

Eurytemora affinis (Poppe) is reported by Dr. Brady from Burgh Marsh near Carlisle.²

In yet another family, the Pontellidæ, is the species *Acartia longiremis* (Lilljeborg), of which Dr. Brady appears to regard *Dias bifilosus*, Giesbrecht, as a variety, for while including the latter name in the synonymy of the former he says, 'I have no note of the occurrence of any species of *Acartia* in fresh or brackish water except in one locality, Burgh Marsh, Cumberland, where I took the *bifilosus* form abundantly many years ago. *Eurytemora affinis* occurred in the same pools and in equal abundance.'³ Giesbrecht and Schmeil in 1898 make *Acartia bifilosa* (Giesbrecht) an independent species, in which 'rostral-threads' are present, whereas in *A. longiremis* they are wanting.⁴

In a preliminary note to the discussion of the Entomostraca from lake Bassenthwaite Professor Hickson remarks that 'a complete list will be drawn up only when a series of gatherings are taken every month for two or three years.' Further he says, 'It is well known to fishermen that the lakes in Cumberland vary very considerably in their "trout" reputation. Bassenthwaite is not regarded as a very good lake for trout, but on the other hand it contains an abundance of perch and pike. It would be extremely interesting if in time a systematic study of the relations between the fish fauna and the Entomostracan fauna could be undertaken.'⁵ As will have been seen from the foregoing accounts, the seasonal distribution of these small animals cannot be determined without rather elaborate investigation. The young and the adults are variously affected by light, heat, available food and the extent and other conditions of the tracts of water in which they reside. Against numerous and sometimes very formidable foes they have characters, habits and places of retreat which supply them with some individual and temporary protection. Fortunately for the feeding of many valuable fishes these safeguards are only partially efficacious. Still more fortunately for the very same purpose the Entomostracan species are preserved from extinction not by the thrift or scruples of their voracious enemies but by their own prodigious fertility. Of the widely distributed *Diaptomus gracilis* for example Dr. Brady writes, 'By the deep-water net in depths of 50 to 80 fathoms it is often taken in abundance, and in one instance at least (Talkin Tarn, Cumberland) I have seen the net come up from a depth of 6 or 8 feet below the surface with a dense mass consisting almost entirely of *D. gracilis*.'

¹ *Nat. Hist. Trans. Northumberland, etc.*, vol. xi. pt. i. pp. 96, 98.

² *Loc. cit.* p. 108.

³ *Loc. cit.* p. 110.

⁴ *Das Tierreich, Copepoda Gymnoplea*, p. 153 (1898).

⁵ *Ann. Nat. Hist.*, ser. 7, vol. ii. p. 468.

FISHES

The shallow waters of the Cumberland coast, with their soft bottom and numerous sandy bars, are ill adapted to satisfy the tastes of rock-loving fishes, which are almost entirely absent from this faunal area. As a result we find that the account of the fishes of our fresh and inshore waters here subjoined does not include more than 100 species ; of these many are generally distributed along the British coasts. It may be well to draw attention to the presence of the vendace (*Coregonus vandesius*) in two of our Cumbrian lakes, as well as to the relative abundance of another rare form, the gwyniad (*Coregonus clupeoides*) in Haweswater and Ulleswater. Nor can we omit all reference to the Alpine charr (*Salmo alpinus*) for which the Lake district is famous.

Of the rarer pelagic forms that have been captured within our inshore limits, perhaps the most interesting are the tunnies (*Scombridae*), three or four species of which have occurred on various occasions in the Solway Firth, the maigre (*Sciæna aquila*), and the sword-fish (*Xiphias gladius*).

TELEOSTEANS

ACANTHOPTERYGII

- * 1. Perch. *Perca fluviatilis*, Linn.

Locally, Basse, Barce, Barcelle (*obs.*).

Perch are plentiful at Talkin Tarn and in Ulleswater, as well as in smaller ponds and rivers.

- ** 2. Sea Bass. *Morone labrax*, Linn.

Locally, Perch.

A spring and summer visitant to our inshore waters, chiefly taken in the draught-nets.

3. Maigre. *Sciæna aquila*, Lacép.

The only specimen that I have seen is one which was procured near Whitehaven for the Museum of that town. It was taken between 1874 and 1880. Dr. I'Anson saw it in the hands of the taxidermist who preserved it, and found that worthy about to dine off its flesh. It measured between 4 and 5 feet.

4. Sea Bream. *Pagellus centrodontus*, Delaroche.

An irregular visitant, sometimes present in considerable numbers.

5. Red Mullet. *Mullus barbatus*, Linn.

Occasionally taken off the coast, but relatively rare.

6. Cook Wrasse. *Labrus mixtus*, Linn.

In November, 1897, Mr. Webster, of Whitehaven, obtained a highly-coloured individual, which he gave to Dr. I'Anson, from whom I received early notice of its capture. I have never obtained any species of wrasse in the Solway Firth ; the environment provided by our sandy bays is eminently unsuitable to a rock-loving genus.

7. Bergylt. *Sebastes norvegicus*, Müller.

A single specimen of this northern species was taken near Whitehaven early in August, 1894, and carried to Dr. I'Anson. When placed in spirits, its beautiful red colour lost its brilliancy.

- * 8. Miller's Thumb or Noggle-head. *Cottus gobio*, Linn.

Locally, Tom Carle.

A resident in our more sluggish streams, but seldom searched for in its natural haunts.

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9. Father-lasher or Bullhead. *Cottus scorpius*, Linn.

A plentiful species in the shallow waters of the Solway Firth. The young are often captured in great numbers in the shrimp nets.

10. Grey Gurnard. *Trigla gurnardus*, Linn.

A common resident species; the small fry prefer the shallow inshore waters, and are caught in great numbers in the shrimp nets.

11. Red Gurnard. *Trigla cuculus*, Linn.

An irregular visitant, or, if stationary, its numbers seem to vary from year to year.

12. Sapphirine Gurnard or Tub-fish. *Trigla hirundo*, Linn.

Our fishermen consider the present species of uncommon occurrence. I received a fine female fish from the Solway Firth in the summer of 1894. It weighed $7\frac{3}{4}$ lb., and was preserved for the Carlisle Museum.

13. Pogge or Armed Bull-head. *Agonus cataphractus*, Linn.

A common shallow-water species, plentiful in the tideway of the Solway Firth.

14. Lump Sucker. *Cyclopterus lumpus*, Linn.
Locally, Sea Hen, Lump, Sea Owl, Pad, Sea Pad (*obs.*).

Not perhaps sufficiently abundant to be termed common, but of frequent occurrence. I have often received specimens of different sizes from the Solway Firth.

15. Sea Snail. *Liparis vulgaris*, Flem.

I have not seen specimens from the open coast; but the sea snail is common in the shallows of the Solway Firth.

16. Diminutive Sea Snail. *Liparis montagui*, Donovan.

This small fish is taken in our inshore water by shrimp fishermen. It has only been observed during the summer months.

17. Spotted Goby. *Gobius minutus*, Linn.
(*Gobius gracilis*, Jenyns)
Locally, Groundling.

This goby is of common occurrence in the Solway Firth.

18. White Goby. *Latrunculus albus*, Parnell.

A resident species, often netted by shrimpers in the shallows of the Solway Firth.

19. John Dory. *Zeus faber*, Linn.

A scarce fish on this coast, and small specimens seem to be more often met with than large ones. The last I heard of was caught in a flounder-net near Silloth in the summer of 1898. Dr. P'Anson has seen two or more

specimens which had been caught near Whitehaven.

20. Scad or Horse Mackerel. *Caranx trachurus*, Linn.

An uncommon species in our inshore waters. Curiously enough I never handled a local specimen until December, 1897, when a full-grown horse mackerel was found dead on the sand near Silloth. Another was sent to me to identify the following year. It had been taken near Port Carlisle.

21. Mackerel. *Scomber scombrus*, Linn.

A common visitant, chiefly taken in draught nets and with the trawl.

22. Tunny. *Orcynus thynnus*, Linn.

An irregular visitant to our inshore waters. In August, 1893, a small specimen was sent to me from Silloth, but owing to the heat of the weather it was not preserved. In February, 1896, a large example of the same fish was stranded by an ebbing tide on the sands near Skinburness. It was secured by W. Nicol, whose attention was drawn to it by the actions of a pair of great black-backed gulls, which were anxiously waiting for the tide to retire and expose the great fish. He towed the fish up the creek opposite his house, until it could be landed. I conveyed it to Penrith on the following day, that it might be preserved for the Carlisle Museum. This fish measured 7 feet 9 inches from tip to tip. Its greatest girth was 5 feet 2 inches. It weighed 392 lb.

23. Germon. *Orcynus germon*, Lacép.

A rare visitant, but one which has twice come under my notice in the Solway Firth. The first specimen was found stranded in a creek on Burgh Marsh by a fisherman, early in October, 1889. It was skinned by James Smith, who brought the fresh skin to me for identification. I purchased it and had it mounted for the Carlisle Museum. On October 25th, 1897, a man named Backhouse McVittie found a living specimen of the long-finned tunny lying on the sands near Silloth. It was still alive and strong. He secured the prize, and then rode off on his bicycle to Allonby to inform me that he had found a strange fish. Unfortunately, I was away from home, and in my absence the fish was declined by our taxidermist, who supposed it to be a common tunny. On returning home, I drove over to Skinburness and enquired for the fish, but found that McVittie had buried it and left home. With the help of a spade I disinterred the fish, and found to my regret that a very fine germon

FISHES

had been wasted. It was too stale to preserve, but had altered in appearance very little. The length from the tip of the snout to the fork of the tail was 38 inches, and the greatest girth was $27\frac{1}{2}$ inches. The left pectoral fin was somewhat damaged, but the right one, which I cut off as a memento, measured 16 inches. This fish did not taper as sharply to the tail as might be inferred from Couch's figure, with which I compared it; but I thought that the difference, such as it was, probably lay in the fact that my fish was in better condition than that portrayed by the Cornish naturalist.

24. Bonito. *Orcynus palamys*, Linn.

The only fresh specimen that has come into our hands is the bonito preserved in the Carlisle Museum. This specimen was sent to me from Skinburness, where it had been taken by John Byas. But prior to this, a bonito of 12 lb. weight had been trawled between Workington and Whitehaven in September, 1856. This specimen measured 27 inches. It entered the collection of the late Mr. Wallace, of Distington, in whose museum I found it when his collections were sold by auction, August, 1899.

25. Sword-fish. *Xiphias gladius*, Linn.

A rare visitant, occasionally captured in the waters of the Solway Firth. On August 31, 1876, a specimen which measured about 8 feet in length, was taken in a whammle-net in the channel between Silloth and Annan. It was carried away to Annan, where it was exhibited to the public at threepence a head. The sword is described as having been entire (*Carlisle Journal*, Sept. 5, 1876).

26. Greater Weever. *Trachinus draco*, Linn.

A rare fish inshore, since I know of no local specimen save one which was caught off Whitehaven, and which was, on June 20, 1871, presented to J. R. Wallace of Distington, by the late Mr. Rook. It remained in the Distington Museum until that institution was broken up. I examined it at that time, and retain the original label.

27. Lesser Weever. *Trachinus vipera*, Cuv. and Val.

Locally, Sting-fish.

Extremely abundant in our shallow tidal waters, sometimes causing great inconvenience to our fishermen when sorting their shrimps at night.

28. Dragonet. *Callionymus lyra*, Linn.

Of occasional occurrence. I have procured specimens from the Solway Firth, and T. C.

Heysham did the same; so that this fish is probably resident in our waters.

29. Angler. *Lophius piscatorius*, Linn.

Locally, Devil-fish, Shoulder-fish, Monk-fish.

Not uncommon in our inshore waters. I have seen very large anglers stranded on the sands of the Solway Firth after stormy weather. Small specimens are frequently taken in the stake nets set for flounders.

30. Shanny. *Blennius pholis*, Linn.

I have received specimens of this small fish from Skinburness, and believe it to be far from uncommon.

31. Butter-fish. *Centronellus gunellus*, Linn.

Locally, Cat-fish.

A resident species in shallow water, but not numerous. I have only observed its presence in the Solway Firth, but no doubt it occurs all round our coast.

32. Viviparous Blenny. *Zoarces viviparus*, Linn.

Specimens have been procured near Whitehaven, and it is occasionally met with in the Solway Firth. I found a specimen stranded near Cardurnock.

ANACANTHINI

33. Cod. *Gadus morrhua*, Linn.

Locally, Keeling, Killing (*i.e.* a large spent fish); Robin (a poor misshapen fish); Whitefish.

The line fishing for cod is often pretty good on certain ground, as, for example, in the open channel west of Silloth; but at no season is the flesh of these Cumbrian cod comparable for excellence with that of fish from the North Sea. At Allonby, the custom is to set lines at the edge of the tideway—the hooks being baited with shrimps, mussels, or sea anemones—and to allow the fish to remain upon the hooks until the tide ebbs. Crabs destroy many of the codfish captured by short lines.

34. Haddock. *Gadus aeglefinus*, Linn.

An irregular visitant, sometimes taken off the Cumberland coast in very large numbers.

35. Whiting. *Gadus merlangus*, Linn.

Locally, Silver Whiting.

A fairly common fish, but I have never known of any large takes.

36. Pollack. *Gadus pollachius*, Linn.

Locally, Kellat.

I never met with this species in the Solway Firth, but there is good pollack fishing near St. Bees.

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37. Coal-fish. *Gadus virens*, Linn.

Locally, Greenback, Bluffin, Coalmouth.

A very common fish upon our coast, occurring in various stages of growth.

38. Hake. *Merluccius vulgaris*, Fleming.

Occasionally taken off Whitehaven, but even there it is comparatively rare. I have never found it in the Solway Firth.

39. Fork-beard. *Phycis blennoides*, Bl. Schn.

A fine specimen was sent to Yarrell from the Solway Firth, taken on March 28, 1837. He owed it to T. C. Heysham, who had previously had the good luck to procure two others, one in December, 1833, the other in March, 1836. I have never met with this fish myself in Cumbrian waters.

40. Ling. *Molva vulgaris*, Fleming.

This fish is often taken on long lines in winter, but large specimens seldom enter our estuary waters.

41. Three-bearded Rockling. *Motella tricirrata*, Bl.

Specimens of this pretty fish have been sent to me from the Solway Firth on several occasions; always, however, as a supposed rarity.

42. Tadpole Hake. *Raniceps trifurcus*, Walb.

A rare visitant. A single specimen was caught near Whitehaven in 1887, and taken to Dr. P'Anson.

43. Halibut. *Hippoglossus vulgaris*, Fleming.

Large halibut are not often taken upon the Cumberland coast, but the species is well known to the Whitehaven fishermen.

44. Turbot. *Rhombus maximus*, Linn.

Locally, Chicken Turbot (referring to the comparatively small size of most local specimens).

Turbot are not plentiful in our inshore waters, and their numbers vary in different seasons; but a few specimens are taken every summer, sometimes in nets, and occasionally upon shore lines.

45. Brill. *Rhombus lævis*, Linn.

Locally, Brett.

A common fish in the Solway Firth, though of uncertain abundance. Several stone of these fishes are sometimes taken in a single tide, but such an experience is, of course, very exceptional.

46. Common Topknot. *Zeugopterus punctatus*, Bloch.

A single specimen was once taken in the Solway Firth near Cardunock, and forwarded to a Mrs. Miller in the Fishmarket at Carlisle,

who sent it on to T. C. Heysham. I have never met with any topknot locally.

47. Plaice. *Pleuronectes platessa*, Linn.

A very abundant fish at almost all stages of life. Crowds of tiny plaice find their way into the shrimp nets. Older specimens fill the trawl nets with many stones weight.

48. Dab. *Pleuronectes limanda*, Linn.

This fish frequents our sand banks like the plaice, and is often taken in our inshore waters in considerable numbers.

49. Lemon-Dab. *Pleuronectes microcephalus*, Donovan.

A summer visitant to the shallow waters of the Solway Firth, but in limited numbers.

- ** 50. Flounder. *Pleuronectes flesus*, Linn.

Locally, White Flounder, Black Flounder (according to colour).

A resident species of wonderful fecundity, netted in many ways, speared in shallow water, hooked on short lines, and yet always one of the most common fish in our inshore waters.

51. Sole. *Solea vulgaris*, Quens.

A resident but decreasing species; fine specimens are scarce. One of the largest that I have seen of late years was caught on a line at Allonby, in July, 1899; it weighed 1 $\frac{3}{4}$ lb.

52. Lemon Sole or French Sole. *Solea lascaris*, Risso; *Solea aurantiaca*, Günther.

A summer visitant to our inshore waters, often trawled in fair numbers. On one occasion I saw a good many lemon soles netted a few miles west of Silloth.

PERCESOCES

- ** 53. Grey Mullet. *Mugil capito*, Cuv.

At one time a fair quantity of grey mullet used to be taken at Drigg; and though I was informed some years ago that this species had become less numerous, there can be no doubt that it is tolerably common in our waters. In July, 1899, I saw the head and shoulders of a large grey mullet, which I was assured had weighed 12 $\frac{1}{2}$ lb. It had been taken near Silloth, where grey mullet are not unfrequently enclosed in the draught nets among other species of fish.

54. Larger Launce or Sand-Eel. *Ammodytes lanceolatus*, Lesauv.

A rare species in the waters of the Solway Firth, though the sandy bottoms seem admirably adapted to suit its requirements. I have not been able to ascertain whether it frequents the open coast.

FISHES

55. Lesser Launce. *Ammodytes tobianus*, Linn.
Locally, Sand-Eel.

Exceedingly abundant on all suitable parts of the coast, and preyed upon by birds of many species.

56. Garfish. *Belone vulgaris*, Fleming.
Locally, Horn-Eel, Mackerel Guide, Herring Guide.

Of occasional occurrence, generally during the summer months, when gravid females are sometimes taken in brackish water, as, for example, at the mouth of the Eden.

57. Saury. *Scombresox saurus*, Walb.

Rarer in our inshore waters than the preceding species. Dr. P'Anson showed me a specimen taken near Whitehaven in 1890. Curiously enough, it was caught with a hook and line by a boy who was fishing off the Whitehaven quay. I have seen two or three others, all of which had been left by the tide upon the shores of the Solway Firth.

HEMIBRANCHII

- ** 58. Three-spined Stickleback. *Gastrosteus aculeatus*, Linn.

Locally, Cock-hardy (male), Hen-hardy (female).

A common resident in becks and ditches. The marine form, *G. trachurus*, frequents the creeks of the salt marshes. I have also seen many in the nets of shrimpers. The late Captain Kinsey Dover, procured some examples of the four spined variety (var. *spinulosus*) from the neighbourhood of Keswick.

- * 59. Ten-spined Stickleback. *Gastrosteus pungitius*, Linn.

Locally, Prickly Dick.

A resident species in our smaller becks, especially in the south of the county.

60. Fifteen-spined Stickleback. *Gastrosteus spinachia*, Linn.

A visitant to the inshore waters, sometimes numerous enough to be termed plentiful in the Solway Firth.

LOPHOBRANCHII

61. Great Pipe-fish. *Syngnathus acus*, Linn.

A fairly plentiful species in the waters of the Solway Firth. The largest that I have seen was taken near Silloth, and measured 15½ inches.

62. Worm Pipe-fish. *Nerophis lumbriciformis*, Linn.

Possibly of general distribution through our inshore area, but the only local specimens that

I have seen were taken near Whitehaven where it is not uncommon.

HAPLOMI

- * 63. Pike. *Esox lucius*, Linn.

Large pike exist in some of the lakes of this county : Derwentwater, for example, and Bassenthwaite can supply records of very heavy fish, and big pike are sometimes taken out of the Eden. Destructive to its own kind, nothing comes amiss to the hungry maw of this voracious fish ; woe betide the hapless duckling that incautiously ventures within reach of its cunning foe. In the thirteenth century, the moats which then surrounded Carlisle Castle were filled with pike ; presumably, that a supply of fish for fast days might thus be secured to a besieged garrison.

OSTARIOPHYSI

- * 64. Carp. *Cyprinus carpio*, Linn.

Carp only exist in a few ponds, into which they have apparently been introduced at one time or another. Tarn Wadling, drained in 1858, was famous for the size of its carp, some of which measured as much as 2 feet in length and 14½ inches in girth.

- * 65. Roach. *Leuciscus rutilus*, Linn.

A resident species in the Eden, Irthing, and other rivers suitable to its habits.

- * 66. Chub. *Leuciscus cephalus*, Linn.

Locally, Skelly, Chevin (*obs.*).

Only too abundant in our salmon rivers, much to the regret of fly-fishermen. A great many chub are destroyed in the Eden, to make room for more sporting fishes.

- * 67. Dace. *Leuciscus dobula*, Linn. (*L. vulgaris*, Day.)

A few dace are to be found in the Eden, between Carlisle and the estuary. Their presence in other rivers has never been reported to me.

- * 68. Minnow. *Leuciscus phoxinus*, Linn.

This small species is abundant, and serves as valuable food to larger fishes.

- * 69. Tench. *Tinca vulgaris*, Cuv.

Single specimens have been taken in the Eden, near Carlisle. I never myself have seen a local specimen, but T. C. Heysham did so.

- * 70. Bream. *Abramis brama*, Linn.

The late T. C. Heysham received two specimens from the neighbourhood of Bowness,

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taken in February, 1831, and May, 1832. I have not seen any recent specimens.

- *71. Loach. *Nemachilus barbatulus*, Linn.
Locally, Liggy, Tommy Loach, Gobbly.
 A common resident in our smaller streams.

MALACOPTERYGII

- **72. Salmon. *Salmo salar*, Linn.

A source of much expense and some little revenue, the salmon is still an object of the deepest solicitude to a large portion of our local population. It remains to be seen what measures can be adopted to augment the sport which it supplies. Pages might be filled with tales of the amusing ruses practised by salmon poachers, but many of their pranks would have been lightly regarded in earlier days. Salmon used to be sent up to London on horses from Carlisle and Workington, which, travelling night and day, delivered the fish in such fresh condition that it fetched from half a crown to four shillings a pound. I refer to the middle of the eighteenth century. The weight of Eden and Esk salmon do not, of course, come up to those from some Scottish rivers, such as the Tay. One of the best fish ever taken out of the Eden was the male salmon caught by Mr. Francis, in 1888. It was landed after being played for half an hour, and scaled 55½ lb.

- **73. Sea Trout. *Salmo trutta*, Fleming.
Locally, Whiting (immature fish).

The Esk is specially famous for the sport to be obtained with the immature fish, known locally as 'whiting.' These young fish begin to run in June, when they average four or five to a pound, but improve in condition until in August they reach half a pound or even a pound apiece. A few sea trout are taken from time to time in our estuaries and larger rivers. Occasionally they become entangled in drift nets on the open coast.

- *74. Common Trout. *Salmo fario*, Linn.

Cumberland is a county of many trout streams, and the lakes are reputed to contain very large fish, sometimes erroneously called 'great lake trout.' Ulleswater was formerly famous for 'grey trout,' supposed to weigh from 30 to 40 lb.

- *75. Alpine Charr. *Salmo alpinus*, Linn.

Charr were indigenous to Ulleswater, Ennerdale Lake, Buttermere, Crummockwater, as well as several lakes in Westmorland. They are reported to have become extinct in Ulleswater.

76. Smelt. *Osmerus eperlanus*, Linn.

Locally, Sparling.

The sparling fishing in the Solway Firth is an industry of considerable importance. The best takes are generally made in September, but the industry is continued during the winter.

- *77. Gwyniad. *Coregonus clupeoides*, Lacép.

Locally, Skelly.

This fish was formerly abundant in Ulleswater, and in autumn congregated in large shoals, known to the dalesmen as schools. In recent years the numbers decreased, but of late the number of 'skellies' netted in the lake has increased. It sometimes happens that this fish enters the Eamont and subsequently the Eden.

- *78. Vendace. *Coregonus vandesius*, Rich.

This species inhabits Derwentwater and Bassenthwaite Lake, but is seldom taken alive, as it does not care for a bait. Those that are procured have usually been washed up at the side of Derwentwater after a storm.

- *79. Grayling. *Thymallus vexillifer*, Linn.

The grayling was first introduced into the Eden about 1860 by the late Mr. Carruthers, of Eden Grove, but it died out in the lower reaches of the river about 1880. In 1883 the species was re-introduced, in the upper waters of the same river, near Appleby, whence it has descended into our county waters.

80. Anchovy. *Engraulis encrasicolus*, Linn.

An occasional visitant. In the summer of 1890 a small number of anchovies entered the Solway Firth, and about a score were caught near Silloth.

81. Herring. *Clupea harengus*, Linn.

Locally, Rock Herring (for large race).

The herring fisheries of the Solway Firth were once remunerative, but evil days followed. The fish deserted the Firth, the boats rotted, and so did the nets. The custom of spreading small nets on the edge of the sands, to be lifted by the flowing tide, still survives at Allonby. But the number of herrings so secured is very small. Maryport and Whitehaven boats occasionally secure huge catches.

82. Sprat. *Clupea sprattus*, Linn.

A very common fish in our inshore waters at certain seasons.

- **83. Shad. *Clupea alosa*, Linn.

An occasional summer visitant to inshore waters, such as the mouth of the Eden, in which specimens have been taken; the males being full of milt in the month of June.

FISHES

**84. Thwait. *Clupea finta*, Cuv.

An uncommon visitant, having been taken within our inshore limits in a very few instances. The Distington Museum contained a specimen caught near Harrington.

APODES

**85. Eel. *Anguilla vulgaris*, Turt.

Abundant in our lakes and ponds, the

broad-nosed males are chiefly found in the lower portions of our rivers. Quantities of eels used at one time to be speared in Ulleswater on summer mornings.

86. Conger. *Conger vulgaris*, Cuv.

This voracious fish is taken in considerable numbers at the entrance to the Solway Firth, while small specimens are of frequent occurrence inshore.

GANOIDS

**87. Sturgeon. *Acipenser sturio*, Linn.

A summer visitant; adult specimens occasionally endeavour to enter the mouths of the larger rivers between April and July, when the females are gravid. I have known of large sturgeon being taken in the Solway Firth on a good many occasions, both in draught nets and with the haf net. A fish which I saw in July, 1891, soon after its capture in the Eden a few miles below Carlisle,

weighed 11 stones, but a specimen was taken off Flimby in July, 1850, which weighed 17 stones, and measured 8 feet 6 inches. On July 2, 1900, John Byas secured a female sturgeon which measured about 10½ feet and weighed 35 stones. It was stranded on the sands at Skinburness, as was a male fish secured by the same fisherman eight days later. The latter measured about 6½ feet, and weighed 16 stones.

CHONDROPTERYGIANS

88. Tope. *Galeus vulgaris*, Flem.

Locally, Blue-black, Bastard Shark.

A common species on our coast, especially in autumn, when 20 or 30 are sometimes taken at one draw of a draught net.

89. Porbeagle. *Lamna cornubica*, Gmelin.

An occasional visitant. I examined a large specimen of this shark at Whitehaven, and found it to measure 7 feet 9 inches in length. It had been taken with the trawl off St. Bees, October 30, 1889. When hauled into the trawler, it disgorged a number of plaice and other flat fishes.

90. Small-spotted Dog-fish. *Scyllium canicula*, Linn.

Not uncommon on our open coast, but I have not met with it in the highest part of the Solway Firth.

91. Picked Dog-fish. *Acanthias vulgaris*, Risso.

Locally, Bastard Shark.

Not usually abundant in our inshore waters. But it occurs pretty frequently off Whitehaven.

92. Mouse-fish or Angel. *Rhina squatina*, Linn.

Rarely taken by our fishermen. Dr. Heysham knew of a male and female which were

caught near St. Bees in the autumn of 1793 and carried about the country as curiosities. Dr. P'Anson showed me a specimen taken in the same neighbourhood in January, 1884.

93. Torpedo. *Torpedo hebetans*, Lowe.

A rare visitant. The first identified locally was caught near Whitehaven in October, 1880. A second specimen was procured in the same neighbourhood in November, 1882.

94. Thornback. *Raia clavata*, Linn.

A very abundant species in inshore waters, preying largely upon the common shrimp, of which it must consume great quantities.

95. Starry Ray. *Raia radiata*, Donovan.

Locally, Star Ray.

A scarce species, occasionally taken off Whitehaven, whence I received a specimen in July, 1891.

96. True Skate. *Raia batis*, Linn.

Locally, Bluet, Maid.

A very plentiful species, often taken with the trawl, and, in winter, with long lines.

97. Long-nosed Skate. *Raia vomer*, Fries.

This species is occasionally taken off Drigg. The only specimen that ever occurred to W. Nicol was caught in a stake net off Grune Point. It was a large fish, weighing about 30 lb.

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CYCLOSTOMES

**98. Sea Lamprey. *Petromyzon marinus*, Linn.

The Eden was at one time famous for the excellence of its lampreys, which were specially reserved in some titles of river rights. The Esk was also visited for spawning purposes. This species has been taken of late years in a very few instances. On July 20, 1898, I purchased a lamprey weighing about $2\frac{1}{2}$ lb., which had been taken in the Eden, a beautifully coloured fish. It was in company with another which eluded capture.

*99. Lampern. *Petromyzon fluviatilis*, Linn.

Fairly numerous in our larger rivers. Great numbers have been killed in the Eden by sudden frost.

*100. Mud Lamprey. *Petromyzon branchialis*, Linn.

Locally, Lamper Eel.

Not uncommon in small becks in the Eden valley and north and west of the county. It is delightful to watch the engineering feats displayed by this tiny fish in moving stones from the gravelly bottom of a clear stream.

Note.—A single asterisk (*) accompanies the names of such species as are confined to fresh-water. Two asterisks (**) distinguish such species as may be taken in either fresh or salt-water.

REPTILES AND BATRACHIANS

The meagre fauna of the British Islands (meagre, that is, regarding these classes of animals) renders it unnecessary for me to dwell upon the forms indigenous to Cumberland at any length. It is possible that the smooth snake (*Coronella austriaca*) may yet be found upon Bowness Moss, where I fancied that I once recognized a pink-bellied specimen; but, in the meantime, the natterjack (*Bufo calamita*) and the palmated newt (*Molge palmata*) must be considered the most interesting species established within the area now under consideration. The precise distribution of the last-named animal has still to be worked out in detail.

REPTILES

LACERTILIA

1. Common Lizard. *Lacerta vivipara*, Jacq.
Locally, Land Ask, Dry Ask.

A common resident upon our high fells as well as low grounds.

2. Slow-worm. *Anguis fragilis*, Linn.

Very thinly distributed, but tolerably constant to favourite localities.

OPHIDIA

3. Grass Snake. *Tropidonotus natrix*, Linn.;
Natrix torquata, Ray.

A very local resident in wooded parts of the county, chiefly in the south and west, though present also in the north.

4. Viper. *Vipera berus*, Linn.

Locally, Hag-Worm.

Abundant on our moors and mosses, but I have never met with the red variety outside the Whitehaven Museum. That institution possesses a specimen which was caught near Rig House, Dean, and is remarkable for being of a dull ferruginous red, with markings of a dark mahogany colour.

BATRACHIANS

ECAUDATA

1. Common Frog. *Rana temporaria*, Linn.
Locally, Paddock.

Universally distributed, and frequently preyed upon by polecats. I have seen many pleasing varieties, chiefly immature specimens.

2. Common Toad. *Bufo vulgaris*, Laur.
Locally, Paddock.

A very abundant resident.

3. Natterjack Toad. *Bufo calamita*, Laur.
Unknown in the interior of the county,

except at Egremont, but present at several points of the coast abutting the Solway Firth. I have often obtained specimens from Castle-town, where many of these toads frequented an old yew hedge. I have also taken specimens from Bowness to Maryport, but not further south. At Allonby the natterjack showed a great partiality for my strawberry beds. It was likewise in the habit of visiting my cellars. In my experience this species is almost entirely nocturnal in its habits, at least, I have never seen it stirring earlier than about dusk.

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CAUDATA

4. Great Crested Newt. *Molge cristata*, Laur.

A local species, but not uncommon in this county. It is partial to disused brickfields.

5. Common Newt. *Molge vulgaris*, Linn.

Locally, Wet Ask, Water Ask.

Very generally distributed, and regarded as poisonous by the majority of country people.

6. Palmated Newt. *Molge palmata*, Schn.;
Triton palmipes, Daud.

The palmated newt has so far appeared to be very local, but may prove to be of more general distribution than my material has hitherto suggested. In June, 1892, I procured specimens of both sexes from a small pond to the north of Carlisle, which were placed in the Carlisle Museum.

BIRDS

The county of Cumberland possesses a rare combination of physical features, all of which exercise an influence upon its bird life. The hills of such a portion of the 'Lake District' proper as happens to be situated within our political boundaries, were in former days the haunt of the sea-eagle (*Haliaëtus albicilla*) which possessed several eyries in the neighbourhood of Keswick. It is believed that ptarmigan (*Lagopus mutus*) frequented the summits of the loftier mountains until the close of the eighteenth century. Dotterel (*Eudromias morinellus*) have nested on their slopes from time immemorial, while numerous ravens and buzzards rear their young upon the bolder precipices. The fells of the Pennine range are less rugged ; but they present even greater attractions to red grouse (*Lagopus scoticus*) and black game (*Tetrao tetrix*), and are also frequented in the breeding season by many pairs of dunlin (*Tringa alpina*), golden plover (*Charadrius pluvialis*), and curlews (*Numenius arquata*). When we descend into the valleys, we meet with many fine stretches of ancient woodland such as adorn the Eden valley, affording an attractive cover to the pied flycatcher (*Muscicapa atricapilla*), as well as to the various warblers (*Sylviniæ*). The lakes and rivers of Cumberland attract a number of wildfowl in winter, but the greatest variety of birds must be looked for in the vicinity of the Solway Firth. Many large and imperfectly reclaimed mosses, covered with heather and a variety of marsh plants, such as Bowness Moss and Wedholm Flow, exist in the neighbourhood of the estuaries of the Esk and Eden or the Wampool and Waver rivers. These secluded wastes afford breeding grounds to large quantities of gulls, including the great black-backed gull (*Larus marinus*) the lesser black-backed gull (*Larus fuscus*) and the black-headed gull (*Larus ridibundus*). Here the short-eared owl (*Asio accipitrinus*) not infrequently deposits its white eggs under a tuft of heather, which also affords a screen for the nests of a good many sheldrakes (*Tadorna cornuta*), though the larger proportion of sheldrakes nest in rabbit burrows. Hen-harriers (*Circus cyaneus*) visit the flows and mosses in winter, when the merlin is often more numerous than in the summer time. Our mosses pass almost insensibly into the salt marshes which line the estuaries from Floriston to Port Carlisle and Grune Point. These marshes are flat stretches of reclaimed meadow land, used exclusively for grazing purposes, and are drained by a network of creeks which afford feeding ground to many waders, especially the redshank (*Totanus calidris*), which also breeds plentifully upon the roughest portions of pasture. The marshes pass into the open coast at Grune Point; but the shores of the Solway

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Firth lying between Silloth and Allonby are flanked by a long stretch of sand dunes which are tenanted in the summer by quantities of wheatears (*Saxicola ænanthe*), and other small birds. The fine sandy bay which lies between Mowbray and Maryport is visited by many species of sea-fowl, and affords feeding grounds to enormous flocks of peewits (*Vanellus vulgaris*) in early winter. The coast line west of Maryport is spoilt by many iron works and other industries ; but when we approach Whitehaven the red sandstone cliffs of St. Bees rise up from the sea level, and offer suitable breeding ledges to the herring-gull (*Larus argentatus*) and the common guillemot (*Uria troile*). The kestrel generally nests upon the cliffs at Sandwith, where we once found a fine pair of peregrines (*Falco peregrinus*) established. Proceeding south we find the coast offers little shelter for birds until we reach the Ravenglass estuary. This locality is a winter haunt of wigeon (*Mareca penelope*) and many other species of duck ; but it is chiefly remarkable for the quantity of breeding oyster-catchers (*Hematopus ostralegus*), black-headed gulls (*Larus ridibundus*), and especially terns (*Sterninæ*), of which the most interesting is the Sandwich tern (*Sterna cantiaca*), which lays its handsomely marked eggs among the sand-hills of Drigg Common in increasing numbers. The remainder of the coast is bare and exposed until we arrive at the estuary of the Duddon. The salt marshes of the Duddon have not been worked with the same diligent care as those of the Solway Firth, and consequently have yielded few species of interest.

The county of Cumberland suffers, in common with Lancashire and Cheshire, from its westerly position, which deprives us of the pleasure of detecting as many avian waifs as are procured upon the coasts of Norfolk and Yorkshire. It must however be borne in mind that the more systematically any region is explored, the richer will its fauna be proved to be. A migratory line of some importance appears to strike the Solway Firth from the eastward, to which circumstance we are inclined to ascribe the occurrence of such eastern or southern forms as the Isabelline wheatear (*Saxicola isabellina*), the ruddy sheldrake (*Tadorna casarca*), the crane (*Grus communis*), the collared pratincole (*Glareola pratincola*), the cream-coloured courser (*Cursorius gallicus*), and even the little gull (*Larus minutus*).

Every true naturalist must feel regret that the sea-eagle (*Haliaëtus albicilla*) has ceased to rear its young among our mountain solitudes ; nor can we view with equanimity the fact that the hen-harriers have long ceased to rear their young upon Newton Common, or that other birds of prey have become rarer than they were even a generation ago. The draining of such marsh lands as Cardew Mire have deprived us of the gratification of listening to the bellowing of the bittern (*Botaurus stellaris*) on a summer's night ; the drumming of the snipe (*Gallinago cælestis*) no longer enlivens every morass as in bygone days. But we thankfully recognize that the close of the nineteenth century finds certain other species more firmly established than ever before, especially the starling (*Sturnus vulgaris*), the stock-dove (*Columba ænas*), the sheldrake

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(*Tadorna cornuta*), the redshank (*Totanus calidris*), the shoveler (*Spatula clypeata*), and the black-headed gull (*Larus ridibundus*). Continued research may possibly add to the numerical census of the Ornis of Cumberland. At the present time (October, 1900) we recognize 259 species as having undoubtedly occurred in Cumberland.

1. Missel-Thrush. *Turdus viscivorus*, Linn.

Locally, Stormcock, Churr-Cock, Shell-Cock, Shrite, Shalary, Shrailie, Mountain Throssel.

A partial resident ; formerly rare as a breeding bird (1782), but generally distributed since the 'thirties' ; nesting chiefly in gardens and orchards, often in close proximity to a pair of chaffinches. The nest is frequently built in most exposed situations ; but the owners are indefatigable in driving away jackdaws, magpies and other marauders. Many flocks of missel-thrushes migrate through Cumberland in autumn.

2. Song-Thrush. *Turdus musicus*, Linn.

Locally, Throssel, Grey Throssel.

Resident in large numbers, and occasionally nests in very singular positions. Some years ago a thrush reared her young in a nest built into an old log at Burgh. In May, 1891, another thrush built on a railway waggon standing at the Caledonian Railway shed, Carlisle. The first egg had just been laid when the nest was accidentally destroyed. A large proportion of the thrushes annually reared in Cumberland migrate in autumn, and probably fall victims to the snares of foreign fowlers. But many return in spring. On March 22nd, 1899, the fields between Cockermouth and the Solway Firth were literally alive with flocks of song-thrushes and blackbirds.

3. Redwing. *Turdus iliacus*, Linn.

Locally, Felty, Fell fo !

A numerous winter visitant, and a favourite quarry of the sparrow-hawk. During severe frost redwings often haunt the creeks which drain the salt-marshes of the Solway Firth. I have not seen an albino of this species in Cumberland, but two pied individuals have been obtained locally. One of these has the entire under surface pure white.

4. Fieldfare. *Turdus pilaris*, Linn.

Locally, Felty, Pigeon Felty, Blue Felty, Blue-wing, Blue-back, Fell fo !

A winter visitor, arriving in October and late in September, often represented by hundreds and hundreds, but of varying numerical force. The stay of this bird is rarely prolonged after the middle of May ; but, in 1899, a single bird was captured near Carlisle in

July. Some injury had probably hindered it from departing with its fellows. Several white and cream-coloured specimens have been procured locally.

5. Blackbird. *Turdus merula*, Linn.

Locally, Blackie.

An abundant resident, even in elevated districts, though less numerous where stone walls replace thorn hedges. Many of those reared in our midst appear to leave the country in autumn ; their numbers being replaced in early winter by fresh contingents which frequent the turnip fields.

6. Ring-Ousel. *Turdus torquatus*, Linn.

Locally, Fell-Throssel, Crag-Starling, Crag-Ousel.

A summer visitant in very moderate numbers ; less frequently met with among the crags of the Lake hills than upon the fells which form our boundaries to the east. Some individuals reach us at the end of March ; others appear in their summer haunts in May and April. I have known young birds to leave their nest as early as May 28th, and have handled newly-fledged nestlings, with flakes of down still adhering to their feathers, in August ; but the majority of broods fly in June.

7. Wheatear. *Saxicola ænanthe* (Linn.).

Locally, White-rump.

The first of our summer visitants to arrive and the last to quit our shores ; its hardy disposition tempts this bird to push forward its spring journey while showers of sleet are falling in the beginning of March, but one wheatear does not make a spring, for the first pioneer often precedes the bulk of its companions by a month or even more. The first individuals to arrive are males, followed by flocks composed of both sexes.

8. Isabelline Wheatear. *Saxicola isabellina*, Rüppell.

Early in November, 1887, I paid a hurried visit to the Solway Firth, for the express purpose of hunting for wheatears, as I had a distinct impression that a rare chat was likely to occur. Having traversed a great extent of coast-line unsuccessfully, and being obliged to return south, I begged my friends, Mr. Thomas Mann and his brother of Aigle Gill,

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to continue the search. On November 11th a wheatear appeared in a large field upon their farm, which perched on clods of earth like the common species, but did not appear to be as lively in its movements as that bird. Thomas Mann shot the little stranger, and his brother Richard posted it to me the same day. I showed it in the flesh to Mr. Howard Saunders, Mr. R. B. Sharpe, Mr. Ogilvie-Grant, Mr. J. E. Harting, and the late Mr. Seebohm, by whose consensus of opinion its identity was at once established.

9. Whinchat. *Pratincola rubetra* (Linn.).

Locally, Utick, Grass-chat, Wood-chat.

A summer visitant of tolerably general distribution as a breeding bird. It has a strong homing predilection, and will resort to a favourite nook for several successive summers. The sweet song of the male is chiefly uttered while the female is engaged in the duties of incubation.

10. Stonechat. *Pratincola rubicola* (Linn.).

A partial resident, which had recently recovered from the diminution wrought in its numbers by severe seasons, but which the present hard winter (1899-1900) will again render scarce. Chiefly characteristic of our fell-sides, but breeding also in the vicinity of the coast.

11. Redstart. *Ruticilla phœnicurus* (Linn.).

Locally, Jenny Red-tail.

A summer visitant, and one which often disputes the choice of nesting sites with the pied flycatcher, though much more generally distributed, especially among our gardens and wooded lonnings.

12. Black Redstart. *Ruticilla titys* (Scopoli).

A rare visitant, reported to have occurred in both spring and autumn. The specimens which have come directly under my notice during the last seventeen years were secured in the month of November. The only black redstart which the late Mr. Tom Duckworth ever saw in his native county appeared at Home Head, Carlisle, in November, 1886. Similarly, the only black redstart which Mr. Mann and his brother have ever seen in their extended experience was an immature bird which Mr. Thomas Mann shot in a field at Aigle Gill, November 9th, 1898. On November 17th, 1899, I sent W. Nicol, jun., to search the foreshore between Silloth and Skinburness. He found a solitary black redstart flitting about one of the jetties above tide-mark. It was very shy and difficult to approach, but he succeeded in shooting it. I had it preserved for the Carlisle Museum.

13. Redbreast. *Erithacus rubecula* (Linn.).

A partial resident, numerous represented at almost every season, but nesting chiefly in our large woods and copses, from which it withdraws with the advance of autumn when numbers migrate. I have seen a hedgerow near the coast crowded with robins, apparently on migration, as early as September 5th.

14. Whitethroat. *Sylvia cinerea* (Bechstein).

Locally, Nanny Whitethroat, Peggy, Nettle-Creeper.

A plentiful summer visitant, enlivening most of our hedges with its familiar notes. Mr. Mann shot a pretty cinnamon specimen in September, 1888, and a few years later a pure white specimen was brought to me. It had been captured on the banks of the Eden when in company with the parent birds.

15. Lesser Whitethroat. *Sylvia curruca* (Linn.).

An exceedingly scarce summer visitant, unknown in the most exposed districts, and only met with exceptionally in sheltered situations, e.g. near Keswick and Carlisle.

16. Blackcap. *Sylvia atricapilla* (Linn.).

A summer visitant, but thinly distributed, and present in much smaller numbers than in the southern counties. Its delicious song supplies a special charm to the wooded ghylls in which it loves to find a summer home, preying upon the green caterpillars which infest the leaves of the oaks, until the elderberries hang in dark and tempting clusters, when the blackcap becomes frugivorous. This warbler generally leaves us in September; but, in 1898, Mr. T. Mann shot a fine male specimen on November 17th, a very late date, though not unprecedented.

17. Garden-Warbler. *Sylvia hortensis* (Bechstein).

A summer visitant to the more wooded portions of our plain and valleys, but thinly distributed and very scarce in the immediate vicinity of the Solway Firth. Perhaps the retiring habits of this bird may cause it to be overlooked. Dr. Heysham considered it rare a hundred years ago, though he found it nesting at Carlisle in 1797.

18. Goldcrest. *Regulus cristatus*, Koch.

Locally, Miller's Thumb (Alston).

A fairly numerous resident in most wooded districts, the numbers of our home-bred birds being swelled in autumn by fresh arrivals from other parts. The goldcrest becomes strongly attached to particular spots. I knew of a tree in a garden at Rockliffe, which held the nest of a goldcrest for seven successive summers.

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19. Firecrest. *Regulus ignicapillus* (Brehm).

A very accidental visitant. In 1845 Mr. John Graham of Carlisle, a keen field naturalist, killed a firecrest at Rose Hill, near Carlisle. It proved to be an adult male, and was readily distinguished from the goldcrest by the triple dark bands on the sides of the head, and by the golden colour above the wings.

20. Chiffchaff. *Phylloscopus rufus* (Bechstein).

A scarce summer visitant, arriving while the trees and thickets that it loves are still unclothed with verdure, and ceaselessly reiterating the restless burden of its simple song, until it pairs and settles down to the duties of nuptial life. It nests near Carlisle, Gilsland, Keswick, Workington, etc., but in small numbers; a pair or two establish themselves here and there, but no great numbers congregate in any single area.

21. Willow-Warbler. *Phylloscopus trochilus* (Linn.).

Locally, Miller's Thumb.

A numerous summer visitant, nesting generally throughout the county. The vernal migration extends over several weeks, large numbers having been found to visit the lantern at Sandwith Lighthouse as late as May 20th, when most of the summer visitors were advanced in the labours of incubation. The return movement commences in early autumn; I have seen our hedges crowded with willow-warblers on August 10th. Two white specimens, blotched with olive above, were shot near Cummersdale in 1879; in 1885, Mr. W. Duckworth saw a very pretty cream-coloured variety near Warwick Bridge, on August 5th.

22. Wood-Warbler. *Phylloscopus sibilatrix* (Bechstein).

A summer visitant, fairly represented in well-timbered localities, but certainly local in its choice of quarters. It is pretty to watch the toying actions of paired birds, when their erotic passions are in full ascendancy and they pursue their loves hither and thither in a merry game of hide and seek among the green leaves of the old forest trees that clothe the banks of many of our northern rivers.

23. Reed-Warbler. *Acrocephalus streperus* (Vieillot).

A rare summer visitant, known to have nested once in the Eden valley. A single specimen, probably a straggler on migration, was seen near Allonby in the spring of 1899, my latest note of its occurrence.

24. Sedge-Warbler. *Acrocephalus phragmitis* (Bechstein).

Locally, Water-Nannie, Nightingale's Friend.

A summer visitant in large numbers, which nests in all of our valleys, often at some distance from any water; though the willow garths of our lakes and rivers afford him the most welcome cover.

25. Grasshopper-Warbler. *Locustella naevia* (Boddaert).

A scarce summer visitant, more local than any other of our regular migrants, and varying much in numbers in different years. A few pairs nest in four or five spots near Carlisle; there are also small colonies near Curthwaite, Drumburgh and in other parts of the Solway plain, as well as in the Eden valley and on the eastern borders of the county; it is less often met with in the west of the county. It reaches us about April 29th, and if unmolested returns to a suitable nesting-place for several successive years. Clutches of fresh eggs have been found from the middle of May to the first half of August. Both sexes sing. William Little showed me a specimen which he had felled with a stone in a hedge-bank near Cumwhinton whilst engaged in singing, and it contained a perfect egg. The song of this warbler is heard to the greatest perfection at dusk and in the hours of early day; but it is frequently poured forth in the forenoon.

26. Hedge-Sparrow. *Accentor modularis* (Linn.).

Locally, Dykey, Blue Dykey, Creepy-Dyke, Hemplin (Bewcastle).

A resident of general distribution and abundance, often met with in abnormal dress. Mr. J. B. H. Robinson secured a white specimen at Kirkandrews in 1889, and the late Mr. J. B. Hodgkinson presented a very pretty pied example to the Preston Museum.

27. Dipper. *Cinclus aquaticus*, Bechstein.

Locally, Bessy Dooker, Water-Pyat, Water-Crow.

A common resident on all our wilder streams, delighting in picturesque situations and nesting among the rocks in Geltsdale and most of the prettiest waterside nooks in the county. Occasionally the dipper betakes itself to the margins of small inland ponds; but running water is most to its taste, especially where it boils and eddies among the boulders in mid-stream. It has been found in rare instances to desert its favourite nesting ledges in order to build in the branches of a tree.

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28. Whiteheaded Long-tailed Tit. *Acredula caudata* (Linn.).

A rare visitant. The late Mr. Tom Duckworth, a veteran naturalist, observed three examples of this species in company with about nine of the common long-tailed tits in a lane between Orton and Thruston-field, November 26th, 1891. The morning was bright and frosty; the light was excellent. He at once reported the matter to me, and instantly recognized a continental skin as agreeing precisely with the three specimens which he had met with.

29. British Long-tailed Tit. *Acredula rosea* (Blyth).

Locally, Bobble-Tit.

This tit is a fairly common bird in the wooded districts, but is seldom or never seen in the neighbourhood of the coast. It is very partial to thickets at the edge of small streams, probably owing to the abundance of insect food to be obtained in such situations.

30. Great Tit. *Parus major*, Linn.

Locally, Blackcap, Bee-Eater.

A resident in our gardens and orchards, of frequent occurrence all over the county. Some years ago a great tit paired with a blue tit and the couple nested at Crookhurst, near Allonby. They were closely watched by Mr. Mann, who recollects that eggs were duly laid, but it is not known whether any hybrids were reared from this rare union. I hesitated to record so singular a circumstance in print until my friend Count Arrigoni degli Oddi showed me a painting of a hybrid between these two species which he obtained in Italy, and now retains in his fine collection.

31. British Coal-Tit. *Parus britannicus*, Sharpe and Dresser.

A common resident in our fir plantations, abundant in the woods round Keswick and Penrith; but virtually absent from treeless wastes.

32. Marsh-Tit. *Parus palustris*, Linn.

A resident but very local species, not uncommon in the centre and south of the county, and becomes more scarce in the west and north.

33. Blue Tit. *Parus cæruleus*, Linn.

Locally, Bluecap, Tomatty Ta.

A resident of general distribution, singularly constant to its breeding sites. A letter-box at Carlisle was continuously occupied by a pair of blue tits for more than thirty years. A curious yellow and blue variety was shot at Cotehill by Mr. W. Little, December 25th, 1888.

34. Nuthatch. *Sitta cæsia*, Wolf.

A rare visitant. In 1782, a pair of nuthatches were shot at Armathwaite on May 11th, and sent to Dr. Heysham. In 1848, Mr. T. C. Heysham was informed by a Penrith birdstuffer named Turner that the nuthatch was common about Lowther, and had occurred in this county on the banks of the Eamont. The nuthatch has been reported to me from the south of the county in recent years; but I have neither observed the species, nor handled a local specimen.

35. Wren. *Troglodytes parvulus*, Koch.

Locally, Chitty.

A numerous resident; but the individuals which frequent the creeks of the salt marshes in autumn are probably immigrants. A very pretty nestling was brought to me in the flesh a few years ago. It had been picked up dead in a wood near Penrith, and was of a uniform pale primrose yellow.

36. Tree-Creeper. *Certhia familiaris*, Linn.

A resident, perhaps less migratory than any other of our small birds, and common in the wooded dales. It is not confined, however, to dense forest. Mr. R. H. Thompson showed me a stone wall on his property near Nunwick in which a pair of creepers nested and reared their young in the summer of 1891.

37. Pied Wagtail. *Motacilla lugubris*, Temminck.

Locally, Waterty Wagtail, Grey Hemplin (Bewcastle).

A partial resident; but chiefly a summer migrant, returning in March, when male birds in lovely spring dress scatter themselves over our fell-sides, as I have observed in many wild districts. The most curious nesting place occupied by this species known to me was the grease-box of an old railway waggon. Many flocks of pied wagtails pass through the county in autumn, adults and young birds often journeying in company.

38. White Wagtail. *Motacilla alba*, Linn.

A spring immigrant, passing through the county on the way to more northern breeding grounds. Mr. T. C. Heysham first detected the presence of this bird in the county in April, 1842, and since then it has been observed on many occasions, especially in the north of the county. I believe that on one occasion a bird of this species paired with a pied wagtail; the birds in question nested near Cummersdale. Such individuals as visit us in April, rarely prolong their stay with us for more than a few days. In the spring of 1899, a small flock of white wagtails visited

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the sea-bank near Allonby; but single individuals have more often come under my observation than little companies.

39. Grey Wagtail. *Motacilla melanope*, Pallas.

A resident to a limited degree, but mainly a summer visitor; building its nest of dry grass stems and root fibres, lined with horse-hair, upon the banks of most of our north country rivers, though nowhere a very numerous bird.

40. Blue-headed Yellow Wagtail. *Motacilla flava*, Linn.

A rare visitant. After searching for this species for more than sixteen years, I at length fell in with a single specimen in the neighbourhood of Allonby. On May 1st, 1899, a single specimen appeared on the sea-bank in company with a flock of meadow-pipits. It was raining hard, but I long studied the actions of the bird. It eventually flew into a grass field, and there I was obliged to leave it.

41. Yellow Wagtail. *Motacilla raii* (Bonaparte).

We never see the flocks of yellow wagtails that are to be observed in the south-east counties in spring; nevertheless a few pairs annually nest in the county. One pair nested for two successive seasons on a small patch of ground near the Carlisle Goods Station. Though chiefly a summer visitant in very small numbers, it has occurred, strange to say, in early winter. Mr. T. Mann identified a solitary yellow wagtail at Aigle Gill, on November 27th, 1890.

42. Tree-Pipit. *Anthus trivialis* (Linn.).

A numerous summer visitor to the more wooded districts, nesting freely in the north and south of the county, but scarcer in the west. The eggs of this pipit exhibit a number of varieties, perhaps more than any other species found in our area.

43. Meadow-Pipit. *Anthus pratensis* (Linn.).

Locally, Moss-Cheeper or Chilper, Mossie Lingy, Moortidy.

A resident; but large flocks migrate through the county in spring and autumn. Present in almost endless numbers on our fells, especially at the fall; indeed, its sweet but unpretentious song enlivens many a dreary waste, while its pertinacity in mobbing the cuckoo is unsurpassed by any of our smaller birds. A white specimen was sent to me from Silloth in September, 1888.

44. Richard's Pipit. *Anthus richardi*, Vieillot.

A rare visitant. Two were identified on Barrow Side by the late Mr. W. Dickinson

in the spring of 1843. A single bird was seen at Aigle Gill by Mr. T. Mann and his brother in April, 1889; another was flushed on Skinburness Marsh by W. Nicol in October, 1889; I met with another at Bowness, on Solway in September, 1891; none of the foregoing specimens were secured. But on October 10th, 1898, my friend Mr. T. Williamson was crossing Edderside Moss when his dog flushed a Richard's pipit from some rushes which he shot. I examined it early next day at Aigle Gill and found it to be a bird of the year. Mr. T. Mann and his brother met with another example of this large pipit in a turnip field on November 9th, 1898.

45. Rock-Pipit. *Anthus obscurus* (Latham).

A local resident in the neighbourhood of the coast, particularly in the neighbourhood of St. Bees, where a few pairs breed. I have never met with it inland, but solitary individuals winter upon the saltings of the Solway Firth, frequenting the creeks and drains.

46. Golden Oriole. *Oriolus galbula*, Linn.

A very rare visitant. A bird in female dress was shot at Irton in 1857. A small party of orioles was seen near Lorton in 1878. An adult male was killed some years ago near Penrith and taken in the flesh to Mr. T. Hope. A female or immature male was killed in the Caldbeck district prior to 1886. I have no more recent records.

47. Great Grey Shrike. *Lanius excubitor*, Linn.

A rare winter visitant. I have notes of at least seventeen specimens obtained in different parts of the county between 1880 and 1899, including examples secured in the neighbourhood of Egremont, Cockermouth, Bewcastle, Alston, Renwick, Penrith, Wigton, Carlisle, Brampton, Drumburgh and Skinburness. Of these the earliest arrival was shot on September 13th. That some of the birds which have passed through my hands since 1880 may have been hybrids between the great grey shrike and Pallas's grey shrike (*Lanius major*) is highly probable. A male bird which was shot some years ago about three miles from Keswick must be referred to this latter species. It is a fine adult, with a white breast almost clear of vermiculations and a very light rump; there is only one white alar bar.

48. Red-backed Shrike. *Lanius collurio*, Linn.

A rare summer visitant, unknown in the west of the county. It has nested near Carlisle on two occasions, the last at Scotby in 1884, when the eggs were brought to me for

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identification. It used to breed near Keswick as long ago as 1835, and may occasionally do so still; but it has been very scarce in that district for the last twenty years.

49. Woodchat Shrike. *Lanius pomeranus*, Sparrman.

A very rare visitant. The late Mr. W. Dickinson observed a woodchat shrike near Stainburn tannery in the spring of 1872, and stood for some minutes within twenty yards of it. Another good observer, Mr. T. Cooper, who obtained so many rarities for the younger Heysham, met with a woodchat at Woodside.

50. Waxwing. *Ampelis garrulus*, Linn.

A rare winter visitant. Only two large flights of waxwings are known to have visited the county, the first in the winter, 1786-87, and the second in the winter of 1866-67. But small numbers of these birds have appeared at irregular intervals in all parts of this area between the months of October and March. Of recent occurrences, several appeared in January and February, 1893, when a single bird was shot near Penrith and others at Carlisle; three were seen near Keswick in the autumn of 1894; two were killed near Carlisle in January, 1895; two were seen at close quarters at Wrangmire Bank by Mr. W. Little, February 19th, 1897.

51. Pied Flycatcher. *Muscicapa atricapilla*, Linn.

Locally, Laal Magpie.

A summer visitant, but much restricted in its choice of breeding grounds; the chief colonies annually returning to the same well-timbered parks, though a few pairs nest as stragglers in the neighbourhood of our smaller streams, or at a short distance from our lakes. Many details of the habits of this species will be found in the *Fauna of Lakeland* (pp. 123-129), also in the *Birds of Cumberland* (pp. 31-37).

52. Spotted Flycatcher. *Muscicapa grisola*, Linn.

Locally, Sea-Robin, French Robin.

A summer visitant, generally distributed in the breeding season, though less numerous near the coast than further inland. In 1886 a single pair reached Scotby on April 22nd, but this date is very early. I did not meet with this flycatcher in the north of Spain until April 24th.

53. Swallow. *Hirundo rustica*, Linn.

This summer visitant reached Cockermouth in 1872, as early as February 9th. Mr. T. C.

Heysham reports another early bird seen at Carlisle on March 26th (1852); a swallow was shot at Whitehaven in 1837 on April 2nd, while several birds were seen hawking insects at Carlisle on April 4th, 1896; but I have no notes of any large numbers seen in the county before the middle of April.

54. House-Martin. *Chelidon urbica* (Linn.).

The house-martin is rather later in reaching our county than its congeners, but is also generally distributed, though checked in its breeding operations by the persecution of house-sparrows. Both this and the preceding species are subject to variation of colour; white, cream-coloured, pied, and bluish varieties have come under my notice locally.

55. Sand-Martin. *Cotile riparia* (Linn.).

The last days of March witness the return of this summer migrant to its favourite water-courses. Its nesting colonies are chiefly established in the sides of quarries and other convenient slopes; one pair nested in a low ridge of sand in an open meadow at Carlisle. I have also seen this species nesting in sandstone rocks near Maryport.

56. Greenfinch. *Ligurinus chloris* (Linn.).

Locally, Greenie.

A common resident in arable districts, but nearly absent from treeless moors. It nests in gardens and hedges, gathering into great flocks in winter, when it frequents our stack-yards with other small birds.

57. Hawfinch. *Coccothraustes vulgaris*, Pallas.

Though breeding in the adjoining county of Westmorland, the hawfinch has not hitherto become established with us. A pair probably nested at Bridekirk in 1882, when Canon Sutton shot a nestling out of a family party. The hawfinch is one of our rarer birds even in winter, though single specimens have occurred far apart, as at Keswick, upon Crossfell, at Cotehill and at Cockermouth; in the beginning of 1888 a small flock of hawfinches appeared near Wigton, and one or two were caught alive.

58. Goldfinch. *Carduelis elegans*, Stephens.

Goldfinches used to nest in most of our sheltered vales until thirty years ago, but have latterly become restricted as partial residents to a few favoured spots, chiefly in the Eden valley, and in the west of the county. Mr. Hodgson, of Keswick, informed me that the goldfinch nested near Keswick in fair numbers until the severe winters of 1879-80, and 1880-81, exterminated the local breed. At Calderbridge a pair of goldfinches used to nest

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in a pear tree belonging to Mr. Halliday for more than fifty years ; during this long period there was always a nest within a few inches of the same place (*Carlisle Patriot*, May 15th, 1840).

59. Siskin. *Carduelis spinus* (Linn.).

A winter visitant in uncertain numbers, rarely appearing in any considerable plenty even in the north of the county, and of comparatively rare occurrence among our hills. A male preserved in the Keswick Museum was captured by Mr. Hodgson, who assured me that it was the only specimen that he had ever met with in the Keswick district. One or two favourite localities near Carlisle are visited by siskins every winter ; they are often caught near Drumburgh. Mr. Plenderleath assured me that a few pairs of siskins undoubtedly bred in the vicinity of Longtown between 1879 and February, 1885.

60. House-Sparrow. *Passer domesticus* (Linn.).

Locally, Housie, Spuckie, Sprug, Craff.

An ever-increasing resident, in many districts a pest to the farmer. Black, buff, white and pied birds occur in a state of freedom. This species occasionally interbreeds with the rarer tree-sparrow.

61. Tree-Sparrow. *Passer montanus* (Linn.).

A resident species, but excessively local. I have never met with it in the Lake district proper. It has certainly bred in two instances in East Cumberland, but its breeding stations are very few, extending from Allonby to Abbey and the neighbourhood of Skinburness.

62. Chaffinch. *Fringilla cœlebs*, Linn.

Locally, Scoppie, Scobbie, Shelapple, Shiltie, Spink, Shivvie.

A resident, but numbers visit us from other parts in winter. An interesting migration of chaffinches was witnessed at Allonby on November 4th, 1899. On turning out that morning shortly after 7 a.m., I found that migration was in full swing. Flock after flock of birds followed one another at frequent intervals, flying high and steering against the south-west breeze. The two species most abundantly represented were the chaffinch and the meadow-pipit. The flocks of these two species varied from eight to a hundred individuals, or even more. A few chaffinches, females only so far as observed, dropped out of the main flocks at intervals, and were to be seen running on the ground or heard calling 'pink' from the tops of the hedges. Many linnets and greenfinches passed, a few sky-larks, yellow hammers, thrushes, starlings, etc. ; but the chaffinches seemed to vastly outnumber

all the other birds except the pipits, and thousands must have passed along the coast between 7 a.m. and 10 a.m., when the movement practically ceased so far as my field of vision was concerned.

63. Brambling. *Fringilla montifringilla*, Linn.

Locally, Cock-o'-the-North.

A winter visitant, arriving as early as the first days of October, but rarely numerous earlier than November. Great numbers visited the neighbourhood of Carlisle in the winter 1894-95, feeding principally on beech-mast. The harsh chirrup of this bird is usually associated with the first frosts that blanch the summer leaves and strip the boughs of foliage ; but I did not observe any bramblings in the autumn of 1899 until December 14th, when a number of these birds frequented a stackyard at Mealo. Desiring to place a few specimens in my aviary, I laid a small clap-net in the snow, and captured about a dozen specimens in the course of an hour. One of these was a very bright-coloured male with a black throat, a variety which I had only met with in this county on one other occasion.

64. Linnet. *Linota cannabina* (Linn.).

Locally, Grey, Whin-Grey, Hemplin.

A resident of less abundance than formerly, owing to the number of female birds killed by birdcatchers ; but some very large flocks frequent a gorse-clad bank near Maryport every year. A white specimen was often seen near Hayton in September, 1898, but apparently escaped capture.

65. Mealy Redpoll. *Linota linaria* (Linn.).

A rare winter visitant, though several have been caught in recent years near Maryport, and others have been identified in the east, north and west of the county. I obtained a fine series for the Carlisle Museum, but only one or two were local specimens.

66. Lesser Redpoll. *Linota rufescens* (Vieillot).

Locally, French Grey, Banty Hemplin.

This finch breeds sporadically in most parts of the county ; I have personally observed it as a nesting bird near Stapleton, Brampton, Longtown, Bowness, Carlisle, Aspatria, Cockermouth, Bassenthwaite, Keswick, Penrith, and am able to vouch for its nesting occasionally in such upland localities as Alston and Renwick. Varieties of this redpoll are uncommon ; but I had the pleasure of adding to the Carlisle Museum a white example, shot near Cotehill in the winter 1898-99. The crimson feathers of the forehead are replaced

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in this bird by golden yellow, and a very few of the wing feathers are brown; the bird is otherwise quite white.

67. Twite. *Linota flavirostris* (Linn.).

Locally, Heather-Lintie.

The twite is an uncertain winter visitant, appearing in considerable flocks in certain seasons, but often almost entirely absent from the county. Among the hills a few pairs nest sporadically; in 1884 I saw a nest with a full clutch of eggs on Solway Moss; a pair or two nested on Toddles Moss for several years in succession.

68. Bullfinch. *Pyrrhula europæa*, Vieillot.

The call-note of the bullfinch may be heard upon the skirts of most of our plantations; the plumage of the male adds attraction to the banks of Gilsland Spa and many other picturesque nooks.

69. Crossbill. *Loxia curvirostra*, Linn.

An irregular visitant to our larger tracts of pines, occasionally present in certain favourite localities in very large numbers, but at other times either absent or represented by a very small number of individuals. Great numbers of crossbills appeared in this county in August, 1838, and still lingered with us in the autumn of 1839; other irruptions occurred in 1855, 1887 and 1894. The best authenticated nest taken in the county was that which was built in a small clump of Scotch firs at Cumwhitton in March, 1856. The late James Fell often described to me how he watched the old birds gathering material for their nest, which he took on March 20th when four eggs had been laid. The food of this species does not consist exclusively of the seeds of conifers. Some birds killed at Penrith in May, 1895, contained insects as well as fir-seeds.

70. Parrot - Crossbill. *Loxia pityopsittacus* Bechstein.

A male and female of this rare visitant were shot in the vicinity of the Irthing by the late Mr. Proud of Headsnook. This was between 1847 and 1850. In December, 1865, the late James Barnes of Carlisle shot out of a larch tree at Newby Cross two birds which he supposed to be redwings. On picking them up he found that they were crossbills. He followed up the survivors, and secured six additional specimens. He preserved the birds, and sold five of them, retaining three undoubted parrot-crossbills.

71. Two-barred Crossbill. *Loxia bifasciata* (Brehm).

The year 1845 witnessed a western movement of this species, for examples were ob-

tained near Stockholm, Gottenburg, and in Scania; as also in Denmark and in Belgium. Some of these birds appear to have continued their flight across the North Sea, for a considerable flock made its appearance in East Cumberland. The first specimen was shot near Brampton by the late Thomas Taylor on November 1st, 1845. He observed two more of these finches on January 10th, 1846; nine days later a fine red bird was shot by Mr. Proud, a local gamekeeper. Its companion which was in female dress made its escape. On March 25th, 1846, a party of two-barred crossbills flew into some larch trees at Castlesteads, and nine of them were shot by a gardener named Leslie. Five others lingered in the vicinity until April 11th.

72. Corn-Bunting. *Emberiza miliaria*, Linn.

Locally, Grass-Bunting, Bunting Lark.

I have met with a few individuals in most parts of the county from Alston to Whitehaven, but it disappears from many districts after a few years, and appears in other places without any apparent reason. It is a late breeder, sometimes flocking gregariously as late as the middle of May. It is never wholly absent from the farms along the shores of the Solway Firth.

73. Yellow Hammer. *Emberiza citrinella*, Linn.

Locally, Spink, Yellow Yorling, Yellow Yitey.

One of our commonest residents, nesting on common lands, and wintering in stackyards. Several pied specimens have come under notice, but I have not met with an albino.

74. Reed-Bunting. *Emberiza schæniclus*, Linn.

Locally, Black-Cap, Reed-Sparrow.

A resident in most parts of the county, but erratic in its movements; often to be found feeding upon open grass lands in winter. The half-reclaimed rushy pasture which is to be found in the north-east of the county is especially to the liking of this bird.

75. Snow - Bunting. *Plectrophenax nivalis* (Linn.).

Locally, Snowflake, Snow-Bird, Fell-Sparrow, Cock-o'-the-North.

A winter visitant, sparingly met with upon the slopes of the hills around our lakes, but common all along the eastern fells, especially in severe weather. Flocks of several hundred birds occasionally appear upon our coast and salt marshes, feeding upon grass seeds, and running to and fro on our village greens, sometimes venturing close to our thresholds. When disturbed these buntings seldom desert a favourite spot; if startled, they only rise with the fami-

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liar twitter, and after one or two rapid turns in the air return to the spot whence they had been driven a few moments previously. To me the snow-bunting is ever a poem in feathers, its very presence being suggestive of rocky screes and gloomy glaciers.

76. Starling. *Sturnus vulgaris*, Linn.

A scarce bird in the county at the commencement of the nineteenth century the starling has become very numerous, and now holds its own in every possible vantage point, adapting its existence to a variety of circumstances. Its present extraordinary numbers are the more surprising when we remember that it usually rears but one brood in a season. Exceptions to this rule are not uncommon, but in many districts adults and young begin to flock in June, and pass a gregarious life until the following spring.

77. Rose - coloured Pastor. *Pastor roseus* (Linn.).

This vivacious and charming bird has been procured within our present limits in very few instances, chiefly in the north and west of the county. Two specimens were killed at Hayton and Alston in the summer of 1837; another was shot near Flimby; others at Papcastle, Rose Castle, and at High Seaton. John Dawson has often described to me how his brother shot a rose pastor, which he treasures in his cottage at Allonby; the bird was obtained about the year 1877. A bird of this species was seen on several occasions near Allonby in the summer of 1898; Mr. Clarkson in particular saw it very closely near Beckfoot.

78. Chough. *Pyrrhocorax graculus* (Linn.).

The Cornish chough is not known to have bred at any time in the interior of the county, but two or three pairs of these birds nested in the sandstone cliffs between St. Bees and Whitehaven until about 1860. From the fact that this chough still breeds in a few places in the Isle of Man, we might expect that it would still visit us as a rare straggler. It has, in fact, occurred in two instances since 1860, single birds being procured near Longtown and Wigton respectively. As early as 1828 the late Dr. Stanley catalogued the chough as rare at Whitehaven.

79. Jay. *Garrulus glandarius* (Linn.).

Locally, Jay-Pyat.

Fairly numerous as a resident in our larger fir woods, especially near Penrith and Keswick, of less frequent occurrence in the north and west, breeding in favourite localities annually, appearing in others chiefly as a winter visitant.

80. Magpie. *Pica rustica* (Scopoli).

Locally, Pyat.

Less widely distributed than formerly, since every man's hand is against it; but constantly to be seen crossing the fields or jauntily perching on the tall thorn hedges in the neighbourhood of the Solway Firth, *e.g.* between Maryport and Silloth. It is also fairly common in certain dales, and would be most abundant if tolerated. A white specimen was found in a nest near Lyneside some years ago.

81. Jackdaw. *Corvus monedula*, Linn.

Locally, Jack.

An abundant and increasing resident, frequently destructive to the eggs of game birds, especially in dry summers. A pure white jackdaw was shot some years since near Little Salkeld. A grey specimen frequented the neighbourhood of Cotehill from 1888 to 1893, when it was shot. The crown was black; otherwise, this bird was entirely of a uniform silver-grey.

82. Raven. *Corvus corax*, Linn.

A local resident, almost entirely confined to the mountains in the centre and west of the county. Indeed, ravens may be seen on any of our higher fells east or west on a winter day casting about in search of carrion; but their chief strongholds, some of them very difficult of access, are to be looked for among the precipices of the Lake district proper. I placed in the Carlisle Museum a very fine pair of old birds that had been poisoned near their nest on Crossfell, and have likewise met with them, though rarely, on the cliffs at Sandwith; but their breeding area mainly corresponds with the sheep farms of the wilder regions. Mr. Marshall of Keswick informed me in 1898 that he considered the raven too numerous, as he could find a score of birds any day; but it should be borne in mind that the region which these birds inhabit is very limited, and that their nests are constantly harried by those who wish to secure either eggs or young birds. The price formerly paid by the churchwardens for the heads of ravens varied from one penny to fourpence.

83. Carrion-Crow. *Corvus corone*, Linn.

Locally, Corbie, Dope.

A resident in many parts of the county, scarce where absence of cover or persecution renders any locality unsuitable, but in certain places so well represented as to become gregarious. A reddish-fawn variety was reared near Cotehill in 1884.

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84. Hooded Crow. *Corvus cornix*, Linn.

Locally, Blue Crow, Norwegian Crow.

A winter visitant in very sparing numbers; single birds are considered rare by the country people, and large flocks are quite unknown in this county. It breeds as near as the Isle of Man, and hybrids between the present form and the black carrion-crow have at least twice been procured in the county. Perhaps the finest of these is a bird obtained at St. Bees, which I secured at the sale of the Distington Museum in August, 1899. I purchased the other from the widow of the late J. Barnes, by whom it had been obtained in Wastwater. They are preserved in the Carlisle Museum.

85. Rook. *Corvus frugilegus*, Linn.

Locally, Crow.

Thousands of pounds are sacrificed every year by farmers, owing to the ravages inflicted on their crops of corn and roots by this pest. Proscribed in the county since at least 1620, it continues to increase, and its damages to turnips, potatoes and wheat are enormous. Even after the grain has been stacked, this voracious bird abstracts large quantities, and by burrowing through the thatch admits the rain into the centre of what remains. On the sea shore it feeds upon the worms which would otherwise supply subsistence to curlews and other waders. It destroys a quantity of grub; but it is an arrant poacher, and pretty nearly omnivorous.

86. Sky-Lark. *Alauda arvensis*, Linn.

A partial resident, abundant in most parts of the county, but almost absent from a few fell districts. As lately as the seventeenth century, numbers of sky-larks were sold at Carlisle and other towns for the table, generally fetching from threepence to fourpence per dozen. Large numbers of those reared with us appear to migrate, being replaced by fresh arrivals from other districts, especially after a change of weather. In 1899 a fall of snow occurred in Scotland and the north of England in the early hours of December 12th, and in the neighbourhood of the Solway this was followed by a heavy migration from north to south or south-west. Sky-larks appeared in great numbers, and passed along the coast from daylight until 2 p.m.

87. Wood-Lark. *Alauda arborea*, Linn.

A rare winter visitant to the county generally, but it occasionally breeds in the west, e.g. at Camerton and St. Bees, and once near Brampton. The only specimen that I have seen from the east of the county was shot near Alston in March, 1866, and is now in the Carlisle Museum.

88. Shore-Lark. *Otocorys alpestris* (Linn.).

A rare winter visitant, hitherto met with only in the neighbourhood of the coast-line. In February, 1890, three shore-larks frequented the edge of Skinburness Marsh for some days when they were shot for the Carlisle Museum. A fine male was shot in precisely the same place in January, 1895, and sent to Mr. W. Mackenzie. Three other specimens had been procured at Silloth, St. Bees and Eskmeals.

89. Swift. *Cypselus apus* (Linn.).

Locally, Devilin, Killdevil, Black Martin.

This summer visitant may often be seen soaring above the crests of our highest hills, and rears its young in many of our villages. Though less influenced by favourable winds for its journey northward than many other species, the swift is most dependent upon the presence of its favourite insects; hence a snap of frost in the middle of May sometimes proves fatal to numbers of these birds.

90. Alpine Swift. *Cypselus melba* (Linn.).

A specimen of this fine swift was observed at Low Mill House on July 4th, 1842. It first attracted attention by its large size, and was shot by the late Sir R. Brisco. It is still preserved by his son, the present baronet, Sir Musgrave Brisco, at Crofton, where I saw it.

91. Nightjar. *Caprimulgus europæus*, Linn.

Locally, Moss-Owl, Night-Hawk.

A summer visitant to many of our mosses, but local in its choice of breeding grounds. I have seen fresh eggs as early as May 26th, and unfledged young as late as September, while my earliest and latest notes of its presence at Carlisle are April 17th and October 13th respectively. A male was felled by an engine while flying past the Caledonian sheds at Carlisle, on August 17th, 1894, as early as 4 p.m., and in sunshine. This bird was in good condition, but deep in moult.

92. Wryneck. *Ijnx torquilla*, Linn.

Formerly a regular though local summer visitant, well known to both Heyshams as breeding near Carlisle, where the last nest with eggs was taken in 1863 by the late James Fell, who often referred to it. A single bird was felled by a catapult near Maryport in August, 1888; Mr. F. P. Johnson reported the presence of this species at Castlesteads in May, 1891, but I have not heard of it since.

93. Green Woodpecker. *Gecinus viridis* (Linn.).

A rare visitor, but a local specimen existed in Hutton's Museum at Keswick as long ago

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as 1865. The late W. Dickinson met with a pair at Lamplugh; and other pairs are believed to have nested in Barron Wood and Blackwell Wood in single instances. In the latter case three eggs were taken from a hole in an ash tree by W. McComish.

94. Great Spotted Woodpecker. *Dendrocopus major* (Linn.).

A very scarce resident, limited as a breeding bird to a few private parks, but the resident birds receive some accessions to their numbers in some autumns. Thus in 1898 a number of these woodpeckers visited northern Britain, and several were shot in localities so far apart as the north of Sutherlandshire and the shore of the Solway Firth.

95. Lesser Spotted Woodpecker. *Dendrocopus minor* (Linn.).

A rare bird within our limits, and unknown in the west of the county. The late B. Greenwell obtained a specimen near Alston, but in Northumberland. Another single bird was obtained at Carlisle and Paw Park, while a pair was shot at Edenhall. In 1895 a charming pet bird of this species escaped from me at Carlisle; but it was never seen afterwards.

96. Kingfisher. *Alcedo ispida*, Linn.

A scarce but widely-dispersed resident, each pair selecting their own stretch of river, and resenting the presence of all intruders. Single birds wander in autumn, and appear on many beck-sides from which they are absent at other times. In January, 1890, that careful field naturalist W. Little saw a black kingfisher on the Eden near Rickerby. He had a very close view of the bird, which carried a minnow in its bill, and was certain that it was entirely black with the exception of a few blue feathers on the rump.

97. Roller. *Coracias garrulus*, Linn.

Two specimens of the roller were procured in the county in the summer of 1868. Dr. Lumb of Whitehaven showed me one of the two, a bird shot by Mr. J. Dalzell near Thornholm. The other was shot at Carleton near Carlisle, and taken in the flesh to my old friend Sam Watson, who recorded it as a female, adding that it was killed on July 17th, and that its stomach contained beetles and caterpillars.

98. Hoopoe. *Upupa epops*, Linn.

A rare visitant, but one which has been obtained fairly often in the west and north of the county. A bright adult female, with a backward ovary—the eggs in the ovary being

no larger than salmon roe—was shot to my regret near Drumburgh in April, 1894. I added this specimen to the Carlisle Museum, together with an immature bird trapped at Anthorn in October, 1889.

99. Cuckoo. *Cuculus canorus*, Linn.

Locally, Gowk.

A numerous visitant to our dales and fell-sides, often to be seen mobbed by meadow-pipits, which frequently alight on the back of the cuckoo and peck vigorously at the intruder. The date of arrival varies. In 1899 a young cuckoo left the nest of its foster parents (a pair of meadow-pipits) on May 25th, a very early date for the county.

100. White or Barn-Owl. *Strix flammea*, Linn.

Locally, Chimney-Owl, Cliff-Owl.

A tolerably common bird, but the object of much unworthy persecution, which prevents its natural increase. Resident from Bewcastle in the north to Penrith in the south of the county.

101. Long-eared Owl. *Asio otus* (Linn.).

Locally, Horned Owllet.

A local resident. Mr. T. C. Heysham knew this owl as a breeding bird, but only could procure one clutch of eggs in a decade. Keepers reduce its numbers sadly with pole-traps, but it is fairly constant in its adherence to our older fir woods, in which it breeds very early in the year; eggs are sometimes laid early in March, though owllets may be found as late, at any rate, as June.

102. Short-eared Owl. *Asio accipitrinus* (Pallas).

Locally, Moss-Owl.

A winter visitant, occasionally met with in flocks on migration, but chiefly singly, generally disappearing from our midst in early spring, though odd pairs breed with us. In 1897 two pairs of these owls reared their young on mosses near Allonby. A third pair nested on a common near Burgh, where I photographed the eggs *in situ*. The eggs were found *in nido* on April 20th, and were then six in number; but when I inspected them three days later a seventh had been laid. The moor referred to is composed of rough heather and coarse grass, and is very wet. On the occasion in question I had to jump from tussock to tussock for a considerable distance, occasionally sinking ankle deep in black mud, before I reached the nesting-ground and caught sight of one of the old owls as it skulked in the heather with its head to windward. It was possible to dis-

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tinguish the bird from its surroundings by the long, prettily-barred tail; I hoped to get a snapshot at the bird before it rose. Unluckily, it was too wild to sit to the camera, but got up with a tumbling sort of flight and sailed off at a good height. The seven fresh eggs were lying in a hollow in the green moss, which was surrounded by a border of heather standing about fifteen inches high. A nest which was shown to me on another moor, also in the vicinity of the Solway Firth, in 1889, contained two addled eggs and one owlet on May 11th. The nest so-called was in fact a mere scratching in the ground, measuring in breadth about twenty inches, and surrounded by dwarf willows and tall heather. It contained only the remains of a sky-lark, but the remains of two tiny rabbits were near. I had the melancholy satisfaction of adding to the Carlisle Museum several owlets of different sizes which had been killed with their mother on another moor near the Solway Firth in June of the same year (1889).

103. Tawny Owl. *Syrnium aluco* (Linn.).

Locally, Brown Owl, Wood-Owl, Jenny Owlet.

A common resident in the larger woodlands, especially in the south and centre of the county. It is easily tamed if taken young, and becomes an entertaining pet. Two nestlings from different broods came into my possession in May, 1891, while still covered with down. They were never caged, but enjoyed the run of a large garden in which they could forage for their own food. One disappeared; but on a search being instituted, the lost bird was discovered to have taken up his quarters in a hole in the kitchen, from which he issued only to wage war on the 'black-beetles,' until their extinction forced him to return to an outdoor life. Even then he lived largely on cockroaches, though house-mice also bulked largely in his dietary. In fine weather this bird and his companion slept during the day in a bushy hawthorn tree; but in wet weather they sought shelter under a roof. Their friendship remained intact until one of them was found drowned in the water-butt.

104. Tengmalm's Owl. *Nyctala tengmalmi* (Gmelin).

A rare visitant. This small owl has only once been procured in the county. On November 3rd, 1876, a female Tengmalm's owl was shot while perching in a fir tree in the Newton Manor coverts near Gosforth, by James Wright, the keeper on the property.

105. Little Owl. *Athene noctua* (Scopoli).

A rare visitant. Westward is the only parish in the county in which the little owl has been captured. The occurrence was notified to Mr. T. C. Heysham, who accepted the identification of Dr. Bell. Mr. Heysham's letter to Dr. Bell thanking him for a notice of the bird (which was probably sent in the flesh to Cocker-mouth for preservation since we know that Dr. Bell saw the bird before it was skinned) is dated February 16th, 1856, and the bird had only recently been obtained.

106. Scops-Owl. *Scops giu* (Scopoli).

A rare visitant. In June, 1887, I had the satisfaction of examining our only county specimen, which forms part of the collection of Mr. J. Whitaker of Rainworth. The bird made its appearance in the middle of the fell-side village of Renwick, on May 15th, 1875. Old Mrs. Dryden was fortunate enough to spy the bird as it perched towards evening in an ash tree. One of the sons, now deceased, ran out with his gun to shoot the owl, which took a short flight, but returned to the tree from which it had been disturbed and was promptly shot.

107. Marsh - Harrier. *Circus æruginosus* (Linn.).

Locally, Moor Buzzard (*obs.*).

Formerly a common breeding bird upon the moors and wastes of this county, especially in the north; but the marsh-harrier has long ranked as one of our rarest visitors. Whether it was ever common among our hills we do not know, but we have Dr. Heysham's authority for believing that this bird was 'very frequent on our moors' a century ago. It had become rare, in all probability, by 1830; the younger Heysham was evidently much gratified by receiving two immature birds that had been trapped for him near Alston, where they were then 'not often met with.' Yet this species continued to frequent Spadeam Waste and other wild tracts of country for some years longer. The late Mr. Proud recorded the capture of two marsh-harriers near Brampton prior to 1846; the late Captain Johnson, a friend of Yarrell, told me that he was quite familiar with the marsh-harrier as a resident in the same district. A specimen was killed near Netherby prior to 1880.

108. Hen-Harrier. *Circus cyaneus* (Linn.).

Locally, Glede, Ringtail (*obs.*).

A rare visitant, occasionally seen quartering the moors in winter, but too persecuted to

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have much chance of re-establishing itself. Dr. Heysham had a very extensive experience of this harrier; in his day it was relatively a common bird, especially on the unreclaimed commons and mosses between Carlisle and the Solway Firth. The younger Heysham was told by Mr. Hodgson that the hen-harrier had nested and had been plentiful in the neighbourhood of Corney at the beginning of the century, but by 1844 the species had become rare. Mr. T. C. Heysham received a pair of harriers and a single egg from the neighbourhood of Alston in 1831; but he wrote to Doubleday in 1831, that he found that hawks were 'getting scarcer every year.' The only pair of hen-harriers that ever entered my possession, locally, used to visit the mosses between Cardurnock and Burgh every winter, preying on red grouse and other birds. They always disappeared when spring returned. At last, in January, 1886, James Smith killed them for his own collection. Subsequently he was persuaded to sell them to me for the Carlisle Museum. Another blue hen-harrier haunted the same district from December, 1888, to the end of the winter, and would have been killed, but I begged Smith to leave it in peace. A female bird was trapped in Westward parish in January, 1892.

109. Montagu's Harrier. *Circus cineraceus* (Montagu).

A rare visitant. The late J. B. Hodgkinson loved to talk of the specimen which he procured near Carlisle before 1840; it must have been killed in the breeding season, for it had been feeding, as he assured me, on the eggs of other birds. Many years later another, an adult male, was killed near Edenhall. On November 2nd, 1892, an immature bird was shot by a keeper near Kirklington, and taken in the flesh to Mr. R. Raine.

110. Buzzard. *Buteo vulgaris*, Leach.

Locally, Glead, Shreak.

The buzzard is resident in our wilder dales through the year, though the number of home birds appear to be swelled in some winters by fresh arrivals. It has many favourite resorts among our hills, but its numbers are sadly thinned by trapping. Individual pairs often settle in some of our great woods for the winter. These birds if unmolested would probably revert to the primitive custom of nesting on the limbs of forest trees. The famous oaks of Inglewood Forest must have held many a buzzards' nest in earlier days. Even now the buzzard often deserts the dizzy precipices which chiefly afford it breeding

ledges, in order to rear its brood in some highly accessible spot. It is a pity that the buzzard should ever be trapped. It feeds almost entirely on field voles, moles, young rabbits, etc., together with carrion.

111. Rough-legged Buzzard. *Buteo lagopus* (Gmelin).

A rare winter visitant. Although many buzzards are unfortunately trapped among the hills every winter, the birds thus obtained are almost invariably common buzzards. In fact no specimen of the rough-legged buzzard has been procured in the county since 1879, when a fine bird was trapped at Barron Wood. But specimens have been obtained at long intervals in different parts of the county, near Silloth in the north, at Bewcastle and Alston in the east, at Lamplugh in the west; and even as near to Carlisle as Wreay Woods.

112. Golden Eagle. *Aquila chrysaetus* (Linn.).

A very rare visitant. No eagle of any species is known to have been killed in the county during the last sixty years, but eagles have been seen on different occasions by competent persons. For example, the late Mr. J. Hewetson Brown often related to me how he happened to ascend Melbreak one day with a party of friends in the summer of 1868. He outstripped his companions, and on gaining the top of the hill a little in advance of them was astonished to find himself quite close to a fine eagle which was so intent upon feeding upon a dead sheep that it had not noticed his approach. When thus surprised, it slowly prepared to fly, and rising on the wing crossed over to Grassmoor on the opposite side of Crummock Water. Again, in July, 1872, that excellent observer Mr. R. Mann saw an eagle near Crookhurst. When first noticed the bird was almost within gunshot; but it rose in wide sweeps to a great height, and finally sailed off in a northerly direction. Mr. Mann noticed that the tail of this eagle was not white, but barred, and believed it to be a golden eagle. In the spring of 1775, an eagle, said by tradition to be a golden eagle, was shot in King Meadow, Carlisle, by Mr. Foster, the landlord of the Wheat Sheaf Inn, in consequence of the raids which it had made upon lambs. This bird was stuffed with its wings extended, and hung suspended from the ceiling of the kitchen at the inn for many years. The eagles which formerly nested among our hills were principally sea-eagles; but we can hardly reject the deliberate assurance of Richardson, that some of the eagles which bred in the Lake district were golden eagles. 'One has this year

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(1793),’ he says, ‘been caught alive, and is now in the possession of Mr. Thomas Hutton of Keswick, which is unquestionably the *Falco chrysaëtus*, or golden eagle’ (*History of Cumberland*, vol. i. p. 450). This statement is corroborated by the author of a tract entitled, ‘Observations, chiefly Lithological,’ in regard of an eagle which he found preserved in Hutton’s Museum in 1803: ‘This *Falco chrysaëtus* was a very young eagle, which Hutton had bred; he said he used to feed it with rats, cats, etc. The bird killed them immediately, and then sucked their blood; this was the only drink he would ever take.’

113. White-tailed Eagle. *Haliaëtus albicilla* (Linn.).

Locally, Erne (*obs.*).

A rare visitant. An immature bird was winged by a keeper named Gill in the neighbourhood of Alston in the autumn of 1834. Another was captured upon Black Combe by a shepherd in 1838. This bird lived for several years in the possession of the Lewthwaite family. A third was seen near Alston in the early part of 1844. The sea-eagle bred constantly near Keswick until the close of the eighteenth century, the last years of which witnessed its final and complete extermination. Eyries in Eskdale, in the vicinity of Buttermere (on a shelf of rock in the centre of a great mural precipice between High Crag and High Stile) and Langdale were occasionally occupied. Eaglets were sent from an Eskdale nest to Muncaster about 1790; a bird taken from the Buttermere eyry lived and died at Greystoke Castle. But the stronghold that was chiefly frequented lay in the precipices of Eagle Crag, a lofty cliff at the head of the valley of Stonethwaite. This was the eyry that chiefly tempted the bolder spirits in Borrowdale to hazard the safety of their limbs in harrying the young birds. The churchwardens of Crosthwaite parish paid sixpence (rarely, a shilling) for young eagles, and a shilling (rarely, two shillings) for old eagles. The entries of rewards for eagles in the parish book commence in 1713; the detailed accounts terminate in 1762. During this period of fifty years a good many seasons passed in which no claim was made upon the wardens for slaughtered eagles; but upwards of thirty eagles were paid for. Of these, ten are stated to have been old birds and fourteen young birds; the age of the eagles for which four shillings were paid in 1759, has not been recorded. Several additional eagles were paid for in 1763 and 1765, though we lack detailed particulars; but, after this date, the shepherds seem to have found that it was more profit-

able to take the young birds alive and sell them to strangers, than to kill them as proscribed vermin. The poet Gray records that a single eaglet and an addled egg were taken from the Borrowdale nest in 1768. Gilpin saw a young eaglet, nearly the size of a hen turkey, which had just been taken from Eagle Crag in Borrowdale; this may have been the identical bird that was sent to Bishop Law from Borrowdale in 1774. At all events, if it was not that very bird, it came from the same eyry. W. Walker and W. Youdall were among those who robbed the birds in Eagle Crag about this date; the latter was possibly a relative of John Youdall, the carpenter, who killed a young eagle in 1763. The birds nested about 1784, in Wything’s Crag; other eyries were occasionally resorted to for single seasons.

114. Goshawk. *Astur palumbarius* (Linn.).

A very rare visitant. An immature bird was shot near Edenhall while striking at a wood-pigeon. It was mounted by Mr. T. Hope, then residing at Penrith. The late Mr. Tandy, of Penrith, informed me that he saw a goshawk on Penrith Beacon, and certainly described the bird very accurately. In olden days the goshawk sometimes nested in the county. There was an eyry of goshawks in ‘Thomas’s Wood in Bastonswayt.’

115. Sparrow-Hawk. *Accipiter nisus* (Linn.).

A common resident in our woods, especially in those which are not trapped. Males in perfect adult dress are much scarcer than females. The late Mr. Edward Tandy in the summer of 1888 found a sparrow-hawk nesting in a rabbit-hole; he took the eggs. A pretty pale cinnamon variety of this hawk was procured near Drumburgh by James Smith. It is now preserved in the Carlisle Museum.

116. Kite. *Milvus iclinus*, Savigny.

Locally, Glede (*obs.*).

A rare visitant. The last kite actually killed in the county was shot near Carlisle on November 13th, 1856. But others have been seen, though not obtained, in more recent years. A kite was observed near Lorton in 1873, and two kites were seen by the Rev. H. H. Slater in Patterdale, in the autumn of 1880, another was seen near Renwick in 1881. To my own profound astonishment, I had an excellent view of a kite which passed over Carlisle on September 11th, 1891. Earlier in the year, I had studied kites on the wing for days together, and my recollection of their appearance was particularly fresh. Earlier in the century, a few kites nested at

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Castle Head near Keswick, at Priest's Crag, at Birch Crag, and at Armathwaite.

117. Honey-Buzzard. *Pernis apivorus* (Linn.).

A rare visitant. An immature bird was shot at Raughton Head in October, 1832; another near Penrith in the autumn of 1851; another at Scratmere Scaur; a fourth near St. Bees in 1863; a fifth was killed near Wigton, and taken in the flesh to my old crony the late Sam Watson, who told me that it had been feeding on wasp grubs. All these were autumn captures; but in 1857 a female was killed near Alston in the month of June. This latter circumstance recalls the fact that Dr. Heysham was informed that the honey-buzzard nested at Lowther, whence he received a female shot in June, 1782. Mr. James Wilson informed Macgillivray about 1835, that in his earlier days he had seen at least three honey-buzzards which had been killed by the Lowther keepers and were preserved at Penrith.

118. Iceland Falcon. *Falco islandus*, Gmelin.

A very rare visitant. A female of this gyr falcon was shot near Crossfell on October 13th, 1860. It was received in the flesh by Blackett Greenwell, from whom many years later I received the sternum and some loose feathers.

119. Peregrine Falcon. *Falco peregrinus*, Tunstall.

A very scarce resident, though I have seen some lovely eggs of this bird which had been taken among our hills. But the bird itself is not excessively rare. On the contrary, it is often to be seen by any one who can identify a high-flying hawk in the distance, especially in the neighbourhood of the coast. The female feeds partly on grouse, but the male preys chiefly on smaller birds, such as knots, golden and green plover, and wood-pigeons. I have had the pleasure of witnessing several pretty flights of wild falcons, occasionally at unexpectedly close quarters.

120. Hobby. *Falco subbuteo*, Linn.

A rare summer visitant. A pair of hobbies once nested on Penrith Beacon; both birds were killed at the nest, and the eggs were taken by T. Hope. An immature bird was shot in the same neighbourhood, though just outside the county border, on August 25th, 1899. Others have been killed in Borrowdale, at Castle Rigg and Edenhall.

121. Merlin. *Falco æsalon*, Tunstall.

Locally, Blue Hawk.

A scarce resident, especially among the Lake hills, but on the decrease even on the eastern

fell. Breeding birds return to their favourite breeding grounds early in the year; generally in the month of March if the weather be bright and open, in which case the birds may be observed toying together in the air. The female scratches a slight hollow in the ground early in May, and soon begins to lay. Incubation is usually commenced by the middle of May, and the young hatch in the following month. Four is the largest number of eggs that I have ever found in a clutch; there is, commonly, an added egg in the nest.

122. Kestrel. *Falco tinnunculus*, Linn.

Locally, Red Hawk.

A common resident, often seen hovering with widely extended wings and tail spread out in fan-fashion, carefully steadying itself with head to windward, as it watches the movements of a field-mouse with many a quick turn of its head, ready to drop with foot drawn out in act to strike should fortune suggest a favourable attack; but it often rises from the ground with empty talons, its swift swoop having been successfully evaded. Dr. F. D. Power observed a white kestrel on Dent Hill in July, 1873.

123. Osprey. *Pandion haliaëtus* (Linn.).

A rare visitant on autumn and spring migration. Greenwell sent word to Mr. T. C. Heysham of a female osprey which he received in the flesh in 1841. It was shot about fourteen miles from Alston in the month of November. Other ospreys were killed at Netherby in the spring of 1837; at Barron Wood in September, 1869; at Gosforth in 1881; at Clifton on September 27th, 1890. The late Mr. J. W. Harris presented to the Carlisle Museum an osprey which had been killed on the Derwent. The Barron Wood bird was caught in a pole-trap, and recorded in the local papers as a 'brown eagle.' Whin's Pond at Edenhall has received the attention of ospreys on several occasions; a fine female was shot there in the summer of 1848. The estuary of the Eden at Rockliffe has also some attraction for this species.

124. Cormorant. *Phalacrocorax carbo* (Linn.).

Locally, Water-Crow, Black Diver.

A frequent visitor to several of our larger lakes, abundant also on our estuaries during nearly every month of the year. I have seen birds of the present species returning at a great height from fishing inland. It is interesting to notice how they circle round in slowly descending curves, until at last they reach the sea level, and alight in the tideway.

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125. Shag or Green Cormorant. *Phalacrocorax graculus* (Linn.).

A scarce bird in the waters of this county, as it was a hundred years ago according to Dr. Heysham. I have seen it on the Solway Firth, and single birds have been taken on our rivers. An immature shag was caught on the Caldew on October 2nd, 1856.

126. Gannet or Solan Goose. *Sula bassana* (Linn.).

A spring and summer visitant, often to be seen fishing in our territorial waters, occasionally venturing up the shallow waters of our estuaries. An adult was seen at Silloth in January, 1894, but we do not as a rule meet with the present species in winter.

127. Common Heron. *Ardea cinerea*, Linn.
Locally, Heronsue, Willie Fisher, Nannie.

A common resident, resorting to the estuary marshes and occasionally to our open coast in winter, at other times haunting our streams and rivers as well as marshy meadows. There are fine breeding colonies at Edenhall and Wythop; others nest at Crofton, Muncaster, Greystoke, Netherby, as also on the Gelt; but the smaller colonies are often interfered with, and changes occur from time to time.

128. Purple Heron. *Ardea purpurea*, Linn.

A rare visitant. A single specimen was shot near Alston twenty years or so prior to 1870, in which year its history was reported to the late Mr. John Gould. It was added to the Edenhall collection.

129. Squacco Heron. *Ardea ralloides*, Scopoli.

A rare visitant. A specimen was shot out of a tree near the village of Kirkoswald in July, 1845. It was shot by a Lazonby farmer. He appears to have sent it to the late Sir George Musgrave, for whom it was probably mounted by Philip Turner of Penrith.

130. Night-Heron. *Nycticorax griseus* (Linn.).

A rare visitant to the north of England, but one that seems to have strayed into this county on four occasions. Mr. T. C. Heysham knew of a young bird that was shot on the Petteril, near the village of Carleton, in October or November, 1847. It is believed that an adult bird was shot at Beckfoot, near Brampton, about 1850. Another specimen, which I have often seen, was killed in the Abbey Holme about 1866. A fourth example, in the plumage of the first year, was shot by Thomas Davidson of Cargo, in a field adjoining his garden, October 21st, 1900.

131. Little Bittern. *Ardetta minuta* (Linn.).

A rare visitant. About 1845 a specimen in female plumage was caught close to the Petteril near Carlisle in the month of July. It was sent to the late Mr. John Hancock of Newcastle, and is preserved in his collection.

132. Bittern. *Botaurus stellaris* (Linn.).

Locally, Miredrum, Bitter-drum, Bitter (*obs.*).

Formerly resident on many of our bogs, the bittern has long ceased to startle country folk with its spring 'booming,' though the local names are still current, with the exception of 'bitter,' which is only known to us from the Howard *Household Book*. Many wild-fowl were supplied from local sources to the table of Lord William Howard at Naworth Castle. Thus in 1618 two bitterns were purchased for the castle kitchen in the first week of August; the same thing happened in 1634, a bittern being bought in for sixpence, the price also of a wild duck. The fact that these birds were eaten at the very beginning of August renders it fair to suppose that the birds had been bred or had nested in the neighbourhood. Even in the later years of the eighteenth century the bittern was believed to breed on low-lying lands beside the Eamont in the south of the county. It is highly probable that the headquarters of the bitterns that once nested in the county should be looked for in the neighbourhood of the coast and its estuaries. Kelswick Mire, near Abbey, was once the bittern's home. The traditions preserved in the Timperon family show that a pair or two of bitterns nested in this morass annually. The young lads used to wade out into the reed beds on summer afternoons and capture the young of the 'miredrum,' which made good sport for their young tormentors by throwing up the frogs or 'pad-docks' which formed part of their diet. The boys had an unpleasant habit of spurting water into the mouths of the young bitterns with this result. The family were of course intimately acquainted with the love-note of the bittern, since their house was on the edge of the Mire. William Timperon's father was born there about 1780, and the Mire was drained in 1820. Cardew Mire was another famous haunt of this retiring bird. It is to be regretted that such individuals of this marsh-lover as visit the county in winter seldom escape scathless. Five specimens have been killed in the county in the last decade, including three killed at Weddholm Flow, Cumwhitton and Penrith in January, 1892; a fourth was shot near Little Bampton in November, 1893, and a fifth near Cumwhitton in January, 1900.

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The Little Bampton bird was brought to me in a fresh state by Adam Linton, who described with great gusto how he saw the strange bird running in the bottom of a beck, and how quickly it crouched behind a bush when it perceived his presence.

133. Spoonbill. *Platalea leucorodia*, Linn.

A rare visitant. A single bird of the present species frequented the shores of the Solway Firth in the winter of 1840-41. It was closely and carefully identified through a glass by James Irwin, who watched it fishing in some shallow water near Bowness. Two spoonbills made their appearance in the county in 1859, having probably travelled in company. Of these, one was shot in Scaleby meadows in November by George Bowman, who took it in the flesh to Sam Watson. The other was shot a few days later near Irthington, and stuffed by William Graham. In the west of the county an immature bird was killed on October 22nd, 1864, by John Parker, of the Tarn near Bootle. This bird was added to the museum of the late Mr. Wallace of Distington, and there remained until his entire collections went to the hammer in August, 1899. It was then that I purchased this example for the Carlisle Museum.

134. Grey Lag-Goose. *Anser cinereus*, Meyer.

A rare winter visitant, generally met with in the neighbourhood of the salt marshes. The finest local specimen known to me was shot by the late Alfred Smith upon Rockliffe Marsh, December 12th, 1890. I weighed it next day, and it scaled 8 lb. The bill was orange yellow and the legs were flesh-coloured. On December 22nd, 1899, two immature birds of the present species were killed near Skinburness by W. Nicol. These immature examples had bills of a pinky flesh colour, and orange legs with white claws. I examined them in the flesh with L. E. Hope. The late Mr. Edward Tandy presented me with a good grey lag, which had been shot in a field near Langwathby on March 29th, 1889.

135. White-fronted Goose. *Anser albifrons* (Scopoli).

A winter visitant of irregular occurrence, quite unknown in large flocks within our limits. The greatest number of white-fronted geese that have hitherto occurred together in the county consisted of nine birds of various ages, which were shot on Skinburness Marsh on January 6th, 1890. This gaggle flew up from the sea when the marsh was nearly covered by a very high tide and alighted so near to one another on a rather elevated part of the ground, that all nine were killed by a single

discharge of a punt-gun. Other specimens have been obtained in the neighbourhood of the Solway Firth, including two fine adults shot out of a flock of five near Allonby in November, 1882; a single bird shot in the same neighbourhood in November, 1884; another adult shot on Skinburness Marsh in January, 1889, when accompanying four pink-footed geese; an old bird shot in the locality last named in December, 1894; and an immature bird shot on another of the marshes in January, 1898. I handled in the flesh two old birds which had just been shot near Plumpton in January, 1891; again, in November, 1898, a mature female was killed near Greystoke. This last bird seemed to be a very old one.

136. Bean-Goose. *Anser segetum* (Gmelin).

A winter visitant to the salt marshes, met with irregularly in almost every part of the county. W. Nicol met with a flock of bean-geese near Silloth which he estimated as including about sixty birds; this was in October, 1898. But small flocks are much more often in evidence than large ones, and single birds are not uncommon, despite the gregarious habits of this genus. With us this species shows much partiality for stubble fields and swampy meadows; but the marsh grasses are also partaken of with relish, especially when young and tender. Some wet meadows upon the Eden above Carlisle are visited by a few bean-geese in most severe winters. Specimens have been procured on different occasions near Alston, Keswick, Cockermouth, and as far south in the county as Bootle.

137. Pink-footed Goose. *Anser brachyrhynchus*, Baillon.

A winter visitant, arriving in some years as early as the middle of September, but usually present in large numbers from October to March, or even April in favourite localities. Inland it is of irregular occurrence. In January, 1887, two birds of this species were shot out of a flock of sixty-seven near Brampton, and sent to Newcastle for preservation. But though many of the geese which migrate across the county may belong to this species, there can be no doubt that it chiefly frequents our salt marshes, particularly the large salting known as Rockliffe Marsh. At one time the bean-geese held the ground, but in the last decade the marsh has often been eaten bare at its extremity by the great numbers of pink-footed geese which browsed upon the herbage, covering the ground with their droppings and leaving many feathers behind them.

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138. Snow-Goose. *Chen hyperboreus* (Pallas).

This accidental visitant to Europe has been identified in the county on two occasions. In 1884 I saw an adult bird on the coast near Allonby on August 22nd. It was quite alone and apparently migrating. In January, 1891, four white geese were seen in a meadow near Mowbray by a farmer, whose dog put them up. He saw the birds at close quarters, and his evidence was independently confirmed. On the 22nd of the same month four snow-geese were observed near Carlisle by Mr. D. L. Thorpe and myself, flying down the Eden valley.

139. Barnacle-Goose. *Bernicla leucopsis* (Bechstein).

The salt marshes of the Solway Firth are the constant resort of this well-known winter visitant, which is only absent from its favourite feeding-grounds for about five months in the year. Where precisely its chief breeding-grounds may lie, we do not know, though the young in down are affirmed to have been taken in Greenland and in Spitzbergen. It returns with comparative regularity to its winter home in the month of October. There are years in which the usual advent of these birds is accelerated, owing perhaps to early breeding seasons in the far north; the geese then arrive, or rather commence to arrive, in September. Thus, in 1891, between two and five hundred birds arrived on Long Newton Marsh on September 28th; a couple were shot near Allonby two days later. In other years I have met with odd individuals soon after the middle of September. But the first large flocks arrive, as a rule, between October 9th and 20th, and are followed later by reinforcements which unite with those that have preceded them. The barnacle-geese does not resort to enclosed meadows or stubble fields, but occupies well-defined stations on the salt marshes, shifting from one marsh to another according to the food supply, but seldom abandoning a favourite haunt during the entire winter season unless a spell of exceptionally severe weather induces the birds to journey to some less-exposed coast.

140. Brent Goose. *Bernicla brenta* (Pallas).

Locally, Rotgeese (= Root Geese) (*obs.*).

A winter visitant, of tolerably frequent occurrence upon the estuaries of the county, but seldom present in considerable numbers. A quantity of brent geese appeared on the Solway Firth during the last week of 1894 and the first week of 1895. Several flocks alighted in the fields near Allonby, one of them being estimated to include between

thirty and forty birds. But gaggles of five or six birds are the rule, and the stay even of these is rarely prolonged; their favourite food is not forthcoming in sufficient abundance, and the marsh grasses, though greedily partaken of in case of necessity, are not palatable to this goose. Both dark and light-breasted birds have come under my notice, but the latter predominate.

141. Whooper Swan. *Cygnus musicus*, Bechstein.

A winter visitant, but of comparative rarity in the county. I have never handled a fresh local specimen in seventeen years, though the head of a cygnet of this species was sent to me for identification from Crofton, where the bird had been killed in December, 1895. But though it has not fallen to my lot to examine any dead whoopers in this part of England, I have found great pleasure in the study of living birds. In February, 1891, and again in January, 1893, two pairs of whoopers visited Monkhill Lough, and afforded me excellent opportunities of observing their actions in a state of nature. Their time is chiefly spent in browsing upon aquatic herbage, their long necks submerged, and the body resting buoyantly on the surface of the water. If danger is anticipated, one or more individuals remain on guard, straightening their necks and casting anxious glances in the direction from which harm is anticipated. At such moments the musical note of 'honk' is frequently uttered.

142. Bewick's Swan. *Cygnus bewicki*, Yarrell.

A winter visitant of comparative rarity, but few years probably elapse without the presence of individuals being reported, even if not obtained. A fine adult was killed at Edenhall in December, 1879; a second was killed in the same locality a little later; in 1884 a single bird was observed at Monkhill Lough on November 23rd; a herd of twenty visited Ulleswater and other lakes in the south of the county in January, 1888; and three were killed on the Solway Firth by Bryson on Christmas Day, 1888. In the following January I found that a pair of these swans had taken up their residence on Monkhill Lough; there I visited them on many occasions up to their departure, which took place late in March. On March 5th of that year, a herd of twenty-six swans, apparently of this species, was seen circling over the Ravenglass estuary. A single bird was independently noticed on the estuary. On December 4th, 1890, W. Nicol fell in with six Bewick's swans near Skinburness; two were shot there

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soon after. On December 15th, in the same year, when crossing Burgh Marsh, I observed a single cygnet sitting on the open marsh. It rose upon the wing when it saw me, but after making a flight round alighted again on the ground and began to crop the grass upon the edge of a wide creek. It was secured by my friend, Mr. D. L. Thorpe, though only after a long and difficult stalk. The only swans reported to me, apparently, in the winter of 1893-94 were a bird seen on the Wampool by Story in October, 1893, and five examples seen by W. Nicol on January 3rd, 4th and 5th, 1894. In January, 1895, T. Peal saw a single bird on the Solway Firth, and this may possibly have been the bird which James Smith observed in the neighbourhood of Drumburgh until the middle of April, when it disappeared. It had, he thought, been wounded by some one who fired at it on Bigland's Bog, and no doubt lingered in the neighbourhood until it had entirely recovered from its injury. Nicol did not meet with any wild swans in the winter of 1895-96 until February 25th, 1896, when fourteen Bewick's swans visited Silloth Bay. He eventually fired at them with his punt-gun; they rose from the sandbank on which they were resting and flew round the bay for upwards of half an hour, after which they flew off in an easterly direction. Nicol met with one herd of these swans in 1897. In 1898 he fell in with three Bewick's swans in the early part of October, and they were fairly tame; but a single bird which frequented the same estuary in November that same year was excessively wild, and always rose on the wing if it sighted his punt. Lastly, six Bewick's swans appeared at Skinburness in December, 1899. A cygnet was shot there on December 21st, and another cygnet was killed higher up the Solway Firth by Thomas Peal on December 29th, 1899.

143. Mute Swan. *Cygnus olor* (Gmelin).

Mute swans often visit the estuaries of our coast and exhibit as much wariness in some cases as any wild birds could do; but there is always the probability of their having escaped from some ornamental water. The Corporation of Carlisle keep a good many swans on the Eden, and others breed at Talkin Tarn.

144. Polish Swan. *Cygnus immutabilis*, Yarrell.

Four specimens of this species, or variety, appeared on the Wampool in January, 1892. They were exceedingly wild, and on this account were pursued with the greater eagerness by local punt-gunners, who eventually

secured them all. They weighed from 16 to 20 lb. apiece, the males being the heaviest. Three others were killed on Derwentwater in February, 1897.

145. Common Sheld-Duck. *Tadorna cornuta* (S. G. Gmelin).

Locally, Shell, Skeldrake, Skellie.

A common resident upon the sandy shores of all our estuaries, though seldom met with inland. No species of wildfowl has increased so remarkably of late years, at any rate on the coast, as this maritime duck. Its growing numbers are probably due to the protection afforded to the breeding birds under recent legislation. Thirty years ago the sheldrake was comparatively scarce in the neighbourhood of Drumburgh, and nested constantly in rabbit burrows. When James Smith first went to live there, only two or three pairs of sheldrakes nested in the locality; whereas, at the present time, upwards of thirty pairs nest within an easy walk of his house, and the birds disperse themselves freely over the neighbouring mosses. Some of this colony still nest in rabbit-holes; but not a few prefer the cover of thick furze bushes, or the tall heather. The birds are well aware of the danger to which open nests are exposed when visible to the prying eyes of crows or magpies. They are very careful to enter cover at some distance from their eggs, and to run along the ground for some yards until they reach their nests.

The males are highly combative in the pairing season. Many fights ensue before each pair settles down by common agreement to its proper location. Then comes the choice of a nesting site. The early hours are often spent in searches after suitable quarters. The female may be seen entering and leaving one burrow after another, while her champion mounts guard in the vicinity. After an hour or so spent in 'ratching about' and determining the relative merits of different positions, the birds return to sport in the waters of the river channel, or feed upon the broad extent of sand exposed by the ebbing tide.

When the pangs of hunger have been appeased by a plentiful capture of the minute shells, which form the chief food of this bird, paired birds often fly up and down the coast for exercise, or retire to some small pool of fresh water near the coast, in which they bathe and play together. I have seen as many as five pairs at once on a little shallow dub under the shelter of the sand dunes near Silloth, and even large numbers may be found consorting (not flocking, however) on more considerable pieces of water. The immature

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birds do not pair, but live a gregarious life among their own kind, feeding in the larger creeks and small runners, and resting upon the brow of the marshes. Incubation in mild seasons commences about the middle of the month of May. I have known nine fresh eggs to be laid in the nest by May 4th; but fresh eggs may also be found in the month of June, or even later, if the first clutch has been robbed.

146. Ruddy Sheldrake. *Tadorna casarca* (Linn.).

The spring of 1892 will always be remembered by the present generation of ornithologists as having witnessed a remarkable western movement of this eastern duck. The irruption affected Great Britain in a very special sense; but the extended wave of migration reached as far north as Iceland, so that the probability of the strangers having escaped from captivity was absolutely negated. On July 17th, 1892, two birds of the present species attracted the notice of a farmer at Kirkbride, by what he described as their 'grunting' note. They were then swimming together in the waters of the Wampool near the village of Kirkbride; but being disturbed they rose upon the wing and flew away like common sheldrakes, flying high and in a straight line; they soon wheeled, however, and circling round dropped quietly back into the river. Their arrival was notified to John Biglands, who searched for them on the following day. He found them without difficulty, and recognizing that they were strange to him, he shot one of the two. The bird thus obtained was in moult, at least it had been changing the smaller feathers, but the quills were quite perfect. Biglands however thought that the bird was not perfect enough in feather to make a good cabinet specimen. Accordingly, instead of sending it to me, as was his first intention, he allowed his brother to carry it off to his farmhouse. He there identified the bird to his own satisfaction as a scaup, his only book of reference being Goldsmith's *Animated Nature*. Believing rightly that the scaup was a common duck, this worthy flung his prize upon his manure-heap. When I arrived it had disappeared, and I was assured that a dog or cat had demolished it, which seemed likely enough. But I persevered. When the whole of the reeking dunghill had been turned over, a final thrust of the pitchfork brought up the remains of a bird, and sure enough it was a ruddy sheldrake. It was far advanced in decomposition, but the wing feathers were intact and showed that it had never been in confinement. We sorrowfully secured the skull and

sternum, together with a few feathers, and returned the rotting carcase to the mass of filth from which it had been disinterred for our enlightenment. I must add that I spent many days in searching for the other bird. It frequented the Wampool for about a fortnight after the death of its companion. It then took up its quarters at Crofton Park, where it was shot by Mr. L. S. Cookson. He wrote to me that it was a very fine male in splendid plumage.

147. Mallard or Wild Duck. *Anas boscas*, Linn.

Locally, Grey Duck, Mire-Duck.

A common resident, decreasing of late in most localities as a breeding species, but more mallard appeared in the neighbourhood of Abbey Holme, and the Solway Firth generally, in the severe weather of December, 1889, than had been seen for thirty or forty years. The large numbers which then appeared were to some extent supplied by the small birds which come from abroad; but may partly be explained by the attention which duck-breeding is now beginning to receive from landed proprietors. Three thousand head of wild ducks are often reared in a season on the Netherby estate, and though many of these home-bred birds are killed on the spot, it is only reasonable to suppose that others go to swell the bags of gunners on the marshes.

148. Gadwall. *Anas strepera*, Linn.

A rare visitant. The handsomest local specimen that I have seen hitherto was shot out of a flock of wigeon near Silloth, January 8th, 1892. It was a mature drake in perfect plumage. A pair of gadwall frequented the Solway marshes in March, 1886, and the female was unluckily shot. A single male was shot at Grinsdale on October 21st, 1884. I had seen this bird at the point of Burgh Marsh a few days earlier. Two female gadwall were sent to me by Greenwood of Port Carlisle in October, 1895, with the remark that he had never seen such ducks before. The gadwall is even rarer inland than on our estuaries. An immature male was shot upon the Lyne on January 3rd, 1885. In November, 1889, I observed a single drake which frequented Whin's Pond. A drake obtained on that sheet of water is preserved at Edenhall.

149. Shoveler. *Spatula clypeata* (Linn.).

Locally, Spoonbill.

A summer visitant, but in very sparing numbers. Only two or three pairs are known to breed in the county and all in

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close proximity to the Solway Firth. The first nest of the shoveler taken in the county was found on a salt marsh in May, 1886. The eight eggs which it contained were placed under a hen, and six hatched; one young bird was feathering well when it met with an accident. The others died early. Two of the nestlings are in Tullie House. The attempt to rear young birds was repeated in 1887, but unsuccessfully. Two or three pairs have nested in the same district for the last fourteen years, but the species is not increasing, possibly because the young are so far from being shy, that they are generally shot on the salt marshes in early autumn. Nine eggs of the shoveler were taken in the usual locality in June, 1899; I placed them under a hen but they did not hatch, and were added to the Carlisle Museum. The nest in 1899, as in other years, was merely a hollow in a tuft of coarse marsh grass and was placed in an exposed position, where it might have been trodden under foot by cattle. The home-bred birds, as already stated, frequent our marshes for a few weeks after their quills are strong, and then migrate. Their place is taken later by birds which appear to be genuine winter immigrants, which depart in February, while the breeding birds return to their favourite haunts in March and April.

150. Pintail. *Dafila acuta* (Linn.).

A winter visitant, chiefly met with on our salt marshes. Our wildfowlers meet with two or three pintail on the marshes nearly every winter; but full-dressed birds are rarely seen before the month of December, and usually later. Immature birds occur in October and November, but rarely make any prolonged stay. They feed indifferently on the salt marshes and on mosses inland. I have seen a few immature birds which had been killed in the Eden valley, but have never myself met with the pintail except on the marshes or at Monkhill Lough.

151. Teal. *Nettion crecca* (Linn.).

A resident which formerly bred commonly on the mosses inland and near the coast, but of recent years has been far less numerous in the nesting season. The young are very active little fellows, and are with difficulty caught, but they are easily reconciled to the loss of their liberty, as are adults also if judiciously treated. They can seldom be induced to nest in confinement, though a pair of tame teal nested successfully on a small pond at Kirkbride.

152. Garganey. *Querquedula circia* (Linn.).

A rare spring or summer visitant. In March, 1895, a farmer shot a fine drake in a field near Silloth. Two pairs of garganey were seen near Carlisle in the spring of 1848, and three of the four birds were shot. Two drakes were killed at Tarn Wadling before it was drained. A male was shot near Carlisle in 1857, and a pretty drake was shot near Gilsland in the spring of 1882. On the 15th of August, 1890, a man named Sharp shot an old hen garganey near Glasson. The specimen was secured by George Dawson. I examined it on the day after it was shot, and found that it had a very distinct hatching spot and the quills were much worn. Information reached me that this bird had been seen with a brood of young ones; there certainly was some reason to suppose that it had nested on one of the neighbouring mosses, but absolute proof was lacking.

153. Wigeon. *Mareca penelope* (Linn.).

Locally, Lough-Duck, Lough.

A common winter visitant to our estuaries, abundant at Ravenglass all through the winter months, but most numerous represented on the Solway Firth in late winter and early spring, February being now the month in which the largest bags are made. During open weather a few wigeon frequent many of our inland waters; indeed they are never absent from Monkhill and Thurstonfield loughs from October to March, except during a spell of severe frost, when they are forced to abandon their favourite freshwater haunts and betake themselves to the mud flats of the coast. Stragglers have been shot in August, and we expect a small number of birds, including both young specimens and old males in eclipse, to visit us in September. I have never been able to procure any proof of the wigeon breeding with us, but it is possible that a pair or two may occasionally do so. An adult male spent the summer of 1890 at Monkhill Lough, and from his unwillingness to leave the locality, for he was a fine full-winged drake, it was difficult to resist the inference that he had a mate nesting in the immediate vicinity.

154. Pochard. *Fuligula ferina* (Linn.).

A frequent visitant to the English lakes, chiefly in the autumn and winter months, but not exclusively so. That it occasionally nests with us is almost certain. I saw a pair of old pochards at Monkhill on the 12th of August, and found a party of immature birds at Thurstonfield a few days later. In July,

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1894, I found an old male pochard on the latter lough, and imagined that its mate must be in the vicinity.

155. Tufted Duck. *Fuligula cristata* (Leach).

Almost a resident species, yet proof of its having reared its young in our midst is still to be obtained. I have known male birds to haunt particular sheets of water, such as Whin's Pond and Monkhill Lough, all the summer through; these birds regularly assumed eclipse plumage and shed their wing quills. I have likewise seen broods of young birds in autumn, and believe that this duck must occasionally breed in the county, as it certainly does across the border. Our estuaries are not much to the taste of the tufted duck.

156. Scaup-Duck. *Fuligula marila* (Linn.).

Locally, Bluebill.

A common winter visitor to our estuaries, especially those of the Solway Firth, which are more or less frequented by scaup from October to March, at the end of which latter month the individuals that have wintered on our coast usually depart. Instances of single birds or even small parties passing the summer months with us are well substantiated by my personal experience. But such exceptions are noteworthy.

157. Goldeneye. *Clangula glaucion* (Linn.).

A common winter visitant to our lakes and rivers, generally present from October to March, sometimes arriving in the first week of the former month, and rarely delaying its departure far into April. It occurs all over the county, alike on upland tarns and on the dubs of the mosses near the coast. The majority of those seen are females, and males of the year. Adult males in full livery are very sparingly met with. It usually congregates with us in small flocks; but in the severe weather of December, 1890, a flock of between one and two hundred birds frequented the estuaries of the Esk and Eden.

158. Long-tailed Duck. *Harelda glacialis* (Linn.).

A winter visitant to the estuaries of this county, but in very sparing numbers, large flocks being locally unknown. In November, 1892, I saw a fine adult male and female immediately after they had been shot on the Wampool near Kirkbride. An immature bird was brought to me in December, 1892. In 1893, an immature drake was shot on a dub on Salta Moss in October. None appeared in 1894; but in 1895 several females were shot in the channels of the Wampool

and Waver in October and November. In January, 1896, a male was sent to me from Rockliffe Marsh; and in December, 1897, a female from the Scottish channel of the Solway Firth. In November, 1898, I watched two long-tailed ducks for about an hour, as they dived and swam in Monkhill Lough. Although I have so far failed to detect the presence of this bird with certainty on any of our larger lakes, the specimen which I met with at Monkhill in 1884 spent several weeks on that sheet of water, associating in flight with the goldeneyes. The Carlisle Museum contains a single specimen in the dress peculiar to the breeding season. This bird is an adult drake, a lame bird, which was caught on a beck near Renwick, April 18th, 1889.

159. Common Eider Duck. *Somateria mollissima* (Linn.).

A rare visitant to the west coast. An immature bird was procured near Whitehaven prior to 1829; a pair of eiders were killed on the Ravenglass estuary in June, 1880; a flock of thirteen eiders was seen near Maryport in March, 1886.

160. Common Scoter. *Ædemia nigra* (Linn.).

Locally, Black Duck.

A winter visitant, seldom noticed inland, though I have seen flocks of this scoter on Ulleswater in July, before the birds had shed their wing quills, for they could fly strongly. Odd birds sometimes visit our tarns, but the larger rivers and open waters of the coast are the chief resort of this seafaring duck during its stay with us. Its sojourn with us is limited to the winter months so far as large numbers are concerned; but a smaller number of birds appear to reside with us all through the year. Old drakes deep in moult, and unable to fly, were sent to me from Silloth in the first week of September, 1886, and from Cargo on Eden in the last week of August.

161. Velvet Scoter. *Ædemia fusca* (Linn.).

A winter visitant of comparatively rare occurrence. Inland, a female was shot on the Eden near Nunwick, March, 1898; another visited Talkin Tarn in May, 1847. A beautiful adult male was shot on the Eden at Cargo in December, 1886. Several others in female or immature dress have been shot in the neighbourhood of Silloth.

162. Surf - Scoter. *Ædemia perspicillata* (Linn.).

An accidental visitant, the only local specimen having been shot at Crofton on Novem-

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ber 2nd, 1856. It was killed by a farm servant, and entered the collection of Mr. T. C. Heysham, at whose sale it was purchased by the late Mr. J. H. Gurney, who had it remounted by Ledbeater. His son, the present Mr. J. H. Gurney, most kindly exchanged this bird for an ivory gull which I had purchased at the sale of the late Sir William Jardine, Bart. The scoter is therefore preserved in the Carlisle Museum. It is an adult male in full plumage.

163. Goosander. *Mergus merganser*, Linn.
Locally, Gravel-Duck, Dun Diver.

A winter visitant to our larger lakes and rivers, which it chiefly frequents during the coldest months of the year. The 29th of September is the earliest date upon which I have known this duck to arrive, nor does it usually delay its departure in spring beyond the month of March. I have never known it to occur between May and September.

164. Red-breasted Merganser. *Mergus serrator*, Linn.
Locally, Saw-bill.

A winter visitant to our tideways, of fairly common occurrence from October to April in sandy bays; but rarely met with inland. Odd birds postpone their departure in spring until the middle of May, and a brood of half-grown young ones appeared with their parents on the Waver in July, 1890. The only adult male in eclipse dress that I have ever seen in this faunal area was shot (with two females) on the Solway Firth about October 31st, 1890.

165. Smew. *Mergus albellus*, Linn.

A rare winter visitant, the arrival of which usually synchronises with severe weather in the Gulf of Bothnia. It is by no means a lacustrine bird, at least I cannot recall a single specimen as having been shot on any of our larger lakes. Immature birds were shot near Carlisle in January, 1841 and 1848; between which date and 1880 seven specimens of different ages were killed in the county, most of them on the Eden. A handsome drake was shot on the Lyne in December, 1883; a bird in female dress was shot on the Waver on November 13th, 1889, having been winged when it first arrived on October 30th. Two old drakes and two females were shot near Carlisle in January, 1891; I saw an immature or female bird at Monkhill Lough in the following February. An immature bird was shot, but lost, near Silloth in January, 1894; a female smew was shot on the Eden by R. Raine in the winter 1894-95.

166. Ring-Dove or Wood-Pigeon. *Columba palumbus*, Linn.

Locally, Cushat.

A common resident, though the numbers of our home-bred birds are largely augmented by arrivals from abroad in early winter. A beautiful white bird, with yellow irides and purple-red feet, was brought to me at the Carlisle Museum by T. Peal, January 16th, 1895. In November, 1887, my friend, Mr. F. W. Bailey, observed a pretty dove-coloured variety of the wood-pigeon consorting with a large number of its own species near Cummersdale.

167. Stock-Dove. *Columba ænas*, Linn.

Locally, Rock-Dove, Scotch Cushat, French Cushat, Blue Rock.

A local resident in many situations, chiefly in old parks and on the wooded banks of rivers, but nesting likewise among the high rocks on our fells, and also among the rabbit-holes of the warrens near the coast. One nest at least has been found under a thick whin bush. The present species was not known to breed in the county during the first half of the nineteenth century. The late Tom Duckworth was the first naturalist to verify its breeding with us, which he accomplished in 1861.

168. Rock-Dove. *Columba livia*, Gmelin.

An occasional visitor, reputed to breed in the cliffs at Sandwith, and likewise among the mountains of the Lake district; it appears to visit us from the west of Scotland in small flocks, generally in winter.

169. Turtle-Dove. *Turtur communis*, Selby.

An occasional spring and autumn visitant of irregular occurrence. A pair of these doves nested near Scotby in 1885, and a second pair bred at Orton in 1889. In the former instance, the old birds had an egg in their nest on June 2nd. An immature bird was killed in September, 1897, the season at which most of our local specimens have been obtained; but an old bird was killed in a turnip field near Drumburgh in the summer of 1898. Strange to say, on December 21st or 22nd, 1894, an adult male was killed near Penrith, which I examined shortly after. It was in very good condition, although its occurrence in the north of England in mid-winter is remarkable.

170. Pallas's Sand-Grouse. *Syrnhaptes paradoxus* (Pallas).

A rare visitant. The year 1863 witnessed a remarkable irruption of this sand-grouse into

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western Europe, and many individuals reached the British Isles in their wanderings. Three were procured in our county, out of a total of four birds that were identified. A female was shot in April by Mr. Jackson of St. Bees, and entered the collection of Mr. Dawson Rowley. A female bird was shot near Silloth by a man named Lightfoot, who has often told me how he unexpectedly fell in with the stranger, after it had been unsuccessfully pursued for several days by other local gunners. Its companion escaped. The bird obtained was dissected by the late James Fell (who died in 1887), and proved to be a female. A handsome adult male was killed near Penrith in May or June, and was mounted by T. Hope. No other specimens were detected until the year 1888. Small flocks were seen in that year near Stapleton and Wintershields in the month of April, unless there was any mistake as to the date; certainly two flocks were seen near Longtown on and even prior to May 21st. A flock of six or seven birds alighted in some fields near Orton on May 19th, and frequented the locality until May 26th, when three or more were shot and taken to Mr. George Dawson. The first birds observed in the neighbourhood of the Solway Firth came under the notice of my friend Tom Williamson on May 22nd, near Allonby. I made my first personal acquaintance with these birds on May 28th, after which date I had many opportunities of studying their habits, for several flocks remained in the north of the county until June 13th, when their numbers fell to a very low figure. Probably most of these birds moved in a westerly direction, since the species appeared in various parts of the west of Cumberland in July, including Cockermouth, Sandwith, Seascale, but especially Ravenglass. A flock of twenty-three birds settled among the sand dunes at Drigg on July 24th, and remained in the neighbourhood until October 17th. None were seen in the vicinity of Penrith, so far as we could ascertain, until September 13th. Most of the birds left this county in the autumn of 1888. But for more precise details, reference should be made to the account of the present species furnished in the *Fauna of Lakeland*. It remains for me to add that though I took great trouble to secure the protection of these interesting birds, and paid much attention to their habits, I could find no proof of their nesting with us. I sent to the *Field* the ovaries of two females which had unhappily been killed near Silloth on May 26th and 28th. The editor replied that 'Both the hens would have nested, the one in the course of a few days, the other in less

than a fortnight.' On November 7th I weighed five sand-grouse, which yielded the following results: 10½ oz. 1 dr.; 10¼ oz.; 10½ oz.; 9¾ oz.; 9¼ oz. The males were the heaviest. During their stay with us these birds fed chiefly in the open fields, devouring the seeds of spurrey and other weeds as well as grain; they retired at frequent intervals to the shelter of our sand dunes. Their elegance of flight combined with the beauty of their colours to render them very fascinating. They flew with great rapidity; when alarmed, they ran together before rising on the wing.

171. Black Grouse. *Tetrao tetrix*, Linn.

A resident species, very local in the north and west of the county, but fairly plentiful in the east and north-east between Alston and Brampton, as likewise in the neighbourhood of Penrith. Many birds are sent into the Carlisle poulterers during the last days of August, both adult and young. The greater number of the young birds are then in nest feather, showing few if any black feathers; but some early nestlings are three parts invested with black feathers by August 21st, and nearly as large as old birds.

172. Red Grouse. *Lagopus scoticus* (Latham).

Locally, Moorcock, Moorfowl, Gorcock (*obs.*).

A resident in small numbers on mosses near the coast, becoming more abundant when the fells are reached. Some very handsome varieties occur, especially perhaps in the neighbourhood of Alston, where many birds are unhappily netted. A female which reached me on December 13th, 1899, having been killed near Alston, has the chin and a large patch of feathers on the upper breast pure white (with the exception of one or two chesnut feathers); the flanks are rich chesnut, and the breast and abdomen reddish chesnut, each feather being broadly tipped with white; the chesnut colour extends to the greater wing coverts; the upper parts are prettily spotted with yellowish buff. An old hen shot near Bewcastle on October 5th, 1895, has the usual markings faintly traced on a pale whitey-cinnamon ground, and white wings.

173. Ptarmigan. *Lagopus mutus* (Montin).

Pennant stated in 1776 that a few ptarmigan then inhabited the hills in the neighbourhood of Keswick. The fact was endorsed later on by Dr. Heysham, and may be held to be indirectly corroborated by the circumstance that the Dumfriesshire and Galloway hills were the home of ptarmigan at a subsequent period. As long ago as 1803, the author of a tract entitled 'Observations chiefly Lithological,' reported the existence of a local specimen of

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the ptarmigan in Hutton's local museum at Keswick. The late Rev. H. T. Frere saw a bird in that same collection in 1841, which was most likely the one seen there in 1803.

174. Pheasant. *Phasianus colchicus*, Linn.

The pheasant is mentioned in old documents as early as 1251, when the Sheriff of this county was required to supply forty pheasants for the use of King Henry III.; but it is very doubtful whether the pheasant was really established as a game-bird in Cumberland before the last decade of the eighteenth century, when birds were introduced into the west of the county by Lord Muncaster, and on to the Netherby estate by Sir James Graham.

175. Partridge. *Perdix cinerea*, Latham.

Locally, Patrick.

A common resident in all suitable districts, and improved in vigour of late years by the introduction of foreign blood. I have never met with a really red variety in this county; but, as long ago as 1887, I examined specimens of an interesting blue variety, which is on the increase. In 1899, I examined a very young nestling, which in its first dress was assuming the plumage of the blue variety; so that it appears to be worn from earliest youth.

176. Red-legged Partridge. *Caccabis rufa* (Linn.).

Locally, Red-leg.

Another introduced species, but one which has never become permanently naturalized in any one part of the county, though we often hear of odd birds being shot. It was first procured in our county in 1848.

177. Quail. *Coturnix communis*, Bonnaterre.

Locally, Wet-me-lip, Wet-me-feet.

A summer visitant, but in the main a straggler, single males occurring in our meadow lands far more frequently than paired couples. At the beginning of the century a good many pairs undoubtedly nested with us; but such numbers are netted on their vernal journey through southern Europe that few are left to make their way to our northern county. The only quail's eggs that I have seen in any local collection were taken by Dr. Gabriel near Rockliffe. Stray birds have been killed in Cumberland as late as the last week of December.

178. Corn-Crake or Land-Rail. *Crex pratensis*, Bechstein.

Locally, Daker-Hen.

A common summer visitant, formerly shot on its arrival in spring by those sportsmen (?)

who enticed the bird within shot by reproducing its cry with a wooden comb or rattle. The majority of the young are hatched before the hay is cut, but many are killed by the machines. Some birds nest comparatively late, perhaps those which have lost their first eggs. In 1895, a small bird in down was sent to me from Head's Nook, on August 16th. Single individuals have been shot from time to time in the middle of winter. A pure white bird was shot near Carlisle in June, 1863. I added to the Carlisle Museum a pied specimen obtained near Carlisle in May, 1849.

179. Spotted Crake. *Porzana maruetta* (Leach).

A scarce spring and autumn visitant, which occasionally occurs in summer and winter, and is known to have nested on two of our morasses. The only bird that Dr. Heysham obtained was killed near Carlisle at the beginning of June; but its skulking habits may well lead to its being overlooked at that season.

180. Little Crake. *Porzana parva* (Scopoli).

A very rare visitant. An adult bird was captured in a ditch near Cockermouth Castle in 1850. It entered the possession of the late Mr. J. W. Harris, who allowed Mr. T. C. Heysham to have a drawing made of it in 1852, as a local rarity. Many years afterwards it was presented to the Carlisle Museum, in which it now rests. It is a fully dressed adult.

181. Water-Rail. *Rallus aquaticus*, Linn.

Locally, Water-Crake (*obs.*).

A winter visitant to suitable situations in all parts of the county; often present upon our runners and beck-sides in severe weather, and very constant to particular spots in rushy fields. In a few instances birds have been known to remain all the summer; and even to nest with us. The late Tom Duckworth procured eggs from Rockliffe Moss; they have also been taken near Penrith.

182. Moor-Hen. *Gallinula chloropus* (Linn.).

A common resident on most of our beck-sides, but many individuals pass through the county on migration. In 1894 I received a specimen which had killed itself by flying against the lantern of the East Cote Lighthouse on the night of April 20th. In June, 1877, a specimen of the so-called 'hairy' variety was caught near Gosforth and taken to Dr. Parker. This bird is 'of a light fawn colour all over, except the usual white markings.'

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183. Coot. *Fulica atra*, Linn.

Locally, Lake-Hen (*obs.*).

A common resident upon most of our ponds, and often present on our larger lakes to the number of a few hundred birds. Many of the young appear to fall victims to voracious pike. I have known odd birds to be killed on the salt marshes after a spell of boisterous weather.

184. Crane. *Grus communis*, Bechstein.

In the spring of 1869 a solitary crane appeared in the neighbourhood of Allonby. It was eagerly pursued by several local gunners. Messrs. Mann, who then resided at Crockhurst, stalked the bird in one of their fields and fired two shots at it, knocking out some feathers, which were sent to Mr. J. J. Armistead.

185. Great Bustard. *Otis tarda*, Linn.

A female was shot in a turnip field at Lees-hill in the parish of Lanercost on March 8th, 1854. It was stuffed for a local innkeeper, Joseph Mowbray of Brampton. The late John Hancock saw the specimen a few days after it was stuffed, and while it was quite soft and flexible; it had weighed 11 lb. It was eventually placed in the Newcastle Museum.

186. Pratincole. *Glareola pratincola*, Linn.

A specimen of this rare visitant was killed near Bowness-on-Solway in the year 1807. It has never been met with in the county during the last ninety-three years, so that the original record remains unique.

187. Cream-coloured Courser. *Cursorius gallicus* (Gmelin).

A stray specimen appeared at Allonby in October, 1862. It was shot by Robert Costin, a native of that village, who killed it on the top of the beach immediately in front of the bank known locally as 'The Hill.' Costin sold the bird to the late Mr. T. H. Allis of York.

188. Dotterel. *Eudromias morinellus* (Linn.).

The hills of the Lake district have long been celebrated as a summer haunt of this dainty plover. There was a time, undoubtedly, when many of these birds rested for a few days upon the slopes of our higher mountains, as well as upon certain marshes abutting on the Solway Firth, during their vernal migration. The month of May has always been the season at which the dotterel appeared, though it has occurred in exceptional instances in April, and even as early as the third week in March. Formerly the miners on Crossfell,

and in the neighbourhood of Keswick, were in the habit of ruthlessly shooting these birds on their arrival, which was eagerly looked for because the skins fetched about half a crown apiece for fly-dressing. Such destructive measures have been limited by legal protection; yet the dotterel is much less frequently seen in the county than was the case thirty or forty years ago. A herd named Percival, who lived at Rockliffe, at one time was known as the 'dotterel,' because he had killed so many of these birds. Now they are seen only once in five or six years, where formerly their arrival could safely be predicted as certain to occur within a few days. Whether this may be accounted for by the birds being more freely persecuted on their way to us than formerly is a question upon which I cannot pronounce an opinion. But I do not agree with those who argue that the dotterel ever bred numerously in our faunal area.

The evidence at my disposal, which I cannot in the interest of this species record in print, satisfies me, as it would probably satisfy any one who has a good knowledge of the wildest parts of our mountain ranges, that no large percentage of the dotterel that visited our hills ever actually bred with us. That a limited number of birds have always done so, particularly in the Lake district proper, is equally certain, for many clutches of eggs have been taken since Dr. Heysham saw three eggs that had been procured upon Skiddaw in the summer of 1784, one of the parent birds being killed at the same time. The unobtrusive habits of the dotterel, when incubation has commenced, often permit a person to pass close to its nest without any suspicion of its nearness being aroused. On the other hand, the assiduity with which the most favoured breeding quarters are ransacked by egg-collectors render it difficult for the species to increase or even to hold its own. But the young are very rarely shot; indeed, the dotterel is never molested except in spring and summer. The birds that visit us in May must journey to their winter quarters by some other route; at least I have never seen any immature specimen killed in the county, except two birds from Crossfell preserved in the Newcastle Museum. I have observed the dotterel myself on some few occasions, both on our marshes and on the hills, but only in spring and summer.

189. Ringed Plover. *Ægialitis biaticula* (Linn.)

Locally, Sea Bellet, Pellick, Ringed Dotterel.

A common resident upon our sea coast, nesting in very sparing numbers upon gravel beds in our larger rivers, such as the Esk and

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Eden, but well established all round our shores. On a sunny morning towards the end of March the male may often be seen pursuing his coy partner, which at first makes a show of eluding his pressing attentions by running in a contrary direction ; but, when hotly pursued, generally rises on the wing and takes a short flight, closely followed by her ardent suitor.

190. Golden Plover. *Charadrius pluvialis*, Linn.

A common resident, which constantly delights the visitor in our eastern fells by its plaintive whistle. It breeds in small numbers among the mountains of the Lake district proper, and a very few pairs nest upon suitable mosses in the vicinity of the Solway Firth. It is an early breeding bird, and the young often hatch as early as the middle of May, though in the Hebrides I have seen them chipping the shell late in July. But with us the majority of the young birds are strong on the wing by the middle of the latter month, when they often assemble upon the sands of the Solway Firth in very large numbers. It is exceedingly interesting to watch the movements of the birds through a good telescope. One bird may be seen to occupy a position of rest, its feathers hanging loosely around its body (instead of being tightly compressed, as taxidermists suppose); a second, with perchance a few black feathers yet lingering on the breast, stretches its wings above the back, while its next neighbour busies itself in preening its plumage; another trips across the gently undulating sands, now pecking at a tiny shell, now stopping in its course to shake up its feathers. A little stream of fresh water attracts a newcomer; it plunges into the creek, ducks its head, scratches the side of its head with the right foot, stoops to duck again and again, flaps its wings—displaying for a moment its white auxiliaries—and then falls to dressing its dripping feathers, while its mates send their mellow call-note speeding along the winding foreshore.

191. Grey Plover. *Squatarola helvetica* (Linn.).
Locally, Silver Plover.

An autumn and winter visitant, occasionally obtained in the interior of the county, but chiefly observed upon the shores and marshes of the Solway Firth. Immature birds begin to arrive in August, but are most numerous during October, a month during which this bird is fairly constant in frequenting the mussel scaurs exposed by the tide. I have occasionally handled adults in full winter dress, and on a few occasions have received others

shot in September, which still retained the nuptial livery in almost perfect condition. I once purchased an adult with a fine black breast, which had been killed near Silloth in May, and have seen birds in full breeding dress from May to July; but these last were always excessively wild and difficult to approach.

192. Lapwing or Peewit. *Vanellus vulgaris*, Bechstein.

Locally, Green Plover, Teufit, Peesweep.

The peewit is happily one of our most numerous birds, nesting freely in all suitable districts of the county, from high fell-side farms to the salt marshes of the coast. It begins to lay in March, and breeds irregularly all the summer, so that the number reared within our limits must be very considerable. It is almost bewildering to watch the figures formed by large masses of these birds, and to see them crossing and re-crossing the field of a telescope. The precision with which large numbers of birds suddenly disengage themselves from a main party, wheel around, and again reunite with the first, or travel in a wedge through the centre of the chief phalanx which opens to allow them to pass through, is truly astonishing.

193. Turnstone. *Streptilas interpres* (Linn.).

A common autumn and winter visitant to the coast of Cumberland. In August we meet with a few individuals which are changing from the bright plumage of the breeding season into the more sombre attire of winter; in fact, we find that all the various changes of plumage can be obtained on the foreshores.

194. Oyster-Catcher. *Hæmatopus ostralegus*, Linn.

Locally, Sea-Pyat, Mussel-Pecker, French Pyat.

A very abundant bird at many points of our coast, especially in the neighbourhood of Drigg, where many pairs nest, and at Beckfoot, where hundreds and hundreds assemble to feed on the mussel beds. We seldom meet with oyster-catchers inland, except during or after heavy gales; but the entire coast from Rockliffe to the Duddon is enlivened by these vociferous birds, except of course where docks or ironworks interfere with natural features.

195. Grey Phalarope. *Phalaropus fulicarius* (Linn.).

This phalarope is quite unknown in the county in red plumage; but immature birds and even adults in winter dress occur with tolerable frequency during the later months of the year. An old female in almost perfect winter feather, but still showing one red

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feather unchanged upon the rump, was shot on Burgh Marsh, December 24th, 1894. In 1898, after a lapse of four years, during which I failed to meet with any local specimens, a very small bird, still retaining much first plumage, was shot on Cardurnock Point, December 9th; on September 22nd, 1899, during the prevalence of a north-westerly gale, an immature and very lovely specimen flew ashore near Beckfoot and alighted among the sand dunes which abut upon that part of the Solway Firth. It died from exhaustion and is now in Tullie House.

196. Red-necked Phalarope. *Phalaropus hyperboreus* (Linn.).

A rare visitant, never procured to my knowledge in the interior of this county, and very rarely seen in the neighbourhood of the Solway Firth. Single specimens were observed on Rockcliffe Marsh and in the neighbourhood of Kirkbride in September, 1879, and October, 1885, both birds being added to the Carlisle Museum. I have often visited a small pond near Allonby on which a full-dressed bird was shot prior to 1883.

197. Woodcock. *Scolopax rusticola*, Linn.

A good many woodcock have nested in Cumberland since 1837, when Mr. T. C. Heysham first saw eggs of this bird which had been found in a wood about nine miles from Carlisle. Dr. Heysham had scouted the idea some fifty years earlier. There is a charm about the habits of this retiring and crepuscular bird which adds a special zest to the interest with which we catch the familiar cry of the fighting woodcock as he crosses the meadows which lie between two favoured haunts. Evening after evening the same line of flight is often repeated, and if the young have hatched two old birds may be seen instead of a single one.

The first eggs of the woodcock are laid as early as March or April (and very delicate objects they are as they repose in a slight hollow under cover of a few dead leaves or a patch of brambles), so that the few birds which are shot in August are generally as large as old birds. In 1895 I secured a little woodcock which had been shot near Carlisle on or about August 28th. This nestling was in moult, having the tail feathers still very imperfectly developed, and some of the feathers of the neck in pen. It is preserved in the Carlisle Museum.

198. Great Snipe. *Gallinago major* (Gmelin).

A rare visitant, and one which I have never met with alive during seventeen years' residence in the county. It has only occurred in

autumn, generally in October, and as a solitary straggler, not in wisps like the common bird. It is a fairly heavy bird for its size. The late Mr. L. F. B. Dykes shot one on Wardhall Common on September 11th, 1883, which weighed $9\frac{1}{2}$ ounces. Examples have been killed near Carlisle, Bewcastle, Workington, Keswick, etc., but it is always considered rare.

199. Common Snipe. *Gallinago caelestis* (Frenzel).

Locally, Hammer-Bleat, Heather-Bleat, Scape, Full-Snipe.

Drainage and multiplication of cheap guns have done much to reduce the number of snipe that breed upon our mosses and rushy meadows. No specimen of the black variety, which bears Sabine's name, has been procured locally, but cream-coloured birds have been found at different times. A bird of this description was shot near Stapleton, November 7th, 1888, and may be seen in Tullie House.

200. Jack Snipe. *Gallinago gallinula* (Linn.).

Locally, Half-Snipe, Laal, Jacky, Judcock (*obs.*).

A winter visitant, arriving late in September, and rarely delaying its departure after March and April, though odd birds have passed the summer in one or other part of the county. I frequently met with a jack snipe in July, 1899, and at first wondered if it could be a breeding bird, but it proved to be only a cripple which had been hindered from departure by an injured limb. It frequented a beck near Allonby.

201. Pectoral Sandpiper. *Tringa maculata*, Vieillot.

This American bird straggled to Cumberland in the autumn of 1888, when an immature specimen was shot near Edenhall by R. Raine, now of Carlisle. It was on October 18th that he fell in with it; it was not alone but accompanied by one if not two other individuals of the same species. He first observed two of the birds running like dotterel over the surface of a grassy meadow; but on being disturbed they betook themselves to a neighbouring pool of water. Raine shot, as he believed, two birds, but only secured one; the other fell into the water, and not being aware of the value of his prize, he went home with a single bird. The late Mr. Edward Tandy saw this bird the same evening, but supposed it was a wood sandpiper. He skinned it himself, and showed me the fresh skin before the legs had dried at all. Subsequently he generously gave me this skin for the Carlisle Museum.

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202. Dunlin. *Tringa alpina*, Linn.

Locally, Plover's Page, Plover-Provider, Sea-Mouse.

A resident throughout the year, the numbers of those which breed with us being enormously augmented by fresh arrivals in early autumn, though where precisely these immigrants come from has not been ascertained. There are two breeding areas of this wader in the county, the one being furnished by the salt marshes and mosses of the Solway Firth, while the other coincides with the wild moors in the neighbourhood of Crossfell. On our eastern fells I have often fallen in with dunlins, which were either alone or consorting with golden plover, to which habit they are curiously prone in the breeding season, and from which two of their local names are derived.

203. Little Stint. *Tringa minuta*, Leisler.

A rare autumn visitant, hitherto only obtained in the neighbourhood of the Solway Firth, and unknown inland. A few immature examples of this tiny wader generally visit the sandy shores of the Solway Firth about the first week of September, sometimes even earlier; but certain seasons pass without any individuals being detected. Thus small numbers were procured in 1887, 1888, 1889, 1890, 1891, 1892, 1893; but I do not know of any being seen in 1894. Only two were killed in September, 1895, and only a single bird in 1896. I have no entry of little stints in 1897; but the birds which arrived in September, 1898, delayed their departure into October, the last being killed on the 22nd of that month. In 1889 a bird was killed on Rockliffe Marsh on November 2nd, our latest date for specimens actually killed; but W. Nicol saw a single bird near Skinburness on January 15th, 1891. The only bird reported to us in 1889 was shot at Allonby on September 9th, by my servant, W. Nicol, jun. The late James Cooper once obtained a little stint on June 1st, the only known instance of its occurring on the vernal migration.

204. Temminck's Stint. *Tringa temmincki*, Leisler.

A very rare visitant. The late James Cooper killed two immature birds on Rockliffe Marsh, on September 1st, 1832; a third in the same locality on September 5th, 1832; and a fourth on September 2nd, 1839. I searched the creeks of Rockliffe Marsh, myself, for many years, but never detected the presence of this sandpiper.

205. Curlew-Sandpiper. *Tringa subarquata* (Güldenstädt).

An autumn visitant to the estuaries of the Solway Firth, generally arriving in September, but occasionally in August. The birds met with at this season are the young of the year. The only adult that I have known to be secured in autumn was an old female, shot near Skinburness, September 2nd, 1899. This bird was in moult, but still retained a considerable amount of red plumage. It is preserved in the Carlisle Museum. James Cooper shot two curlew-sandpipers on Rockliffe Marsh, in red dress, May 24th and 27th, 1833; he also saw a small flock in May, 1838.

206. Purple Sandpiper. *Tringa striata*, Linn.

A winter visitant to our coast in very sparing numbers. The only bird that is known to me as having been procured locally in first dress was shot near St. Bees. This species occurs in most autumns in small parties and singly, but never in flocks of any magnitude.

207. Knot. *Tringa canutus*, Linn.

Locally, Grey Knot.

A winter visitant, often present on the shores of the Solway Firth in immense flocks which perform the most marvellous aerial evolutions, rising and falling in the air and sweeping up and down the estuaries with perfect precision of action. Sometimes they rise to such a height that they become mere specks to the human vision; at others they scarcely top the surface of the flowing tide. Upon their first arrival in August they are often very wild; on the other hand, I have met with small parties in winter which were so tame that they would hardly trouble to rise from the beach on my approach. Perhaps the most interesting time to watch knots arrives when the return of the tide unites all the scattered flocks that have been feeding on the scaurs into great masses of birds that cluster together like bees, and after many wide sweeping movements, during which they dance over the waves in wild delight, now disappearing into the trough of the long rollers, only to rise at the next moment to the height of a hundred feet, turning their white breasts upwards to catch a ray of winter sunshine, and then reversing to display the contrast of their russet upper parts, finally alight upon some sea-washed prominence, such as Cardnock Point, there to wait impatiently in one dense crowd, until the tide begins to turn, and they can once more fly down to

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their oozy feeding grounds to banquet upon the tiny shell-fish upon which they largely subsist.

208. Sanderling. *Calidris arenaria* (Linn.).

This arctic bird is to be found on the shores of Cumberland from August to the middle of June, but it only occurs inland on migration. The numbers which visit us in autumn are small, composed of young birds in first dress and adults exchanging summer for winter dress, which they commence to do in August. We seldom meet with any large flocks before the arrival of winter, and those that winter with us are very irregular in their movements. It is during May and June that we expect to see hundreds, and even thousands, of sanderlings resting upon our extensive sands before continuing their journey to some great unknown land; for where the multitudes of sanderlings and knots that pass through our area at one time or another can possibly breed, is a mystery that has not been solved by any of the polar expeditions.

209. Ruff (♀ Reeve). *Machetes pugnax* (Linn.).

An autumn visitant, occasionally noticed when migrating across our moors (for birds have been killed by sportsmen on several occasions, as was the case in the autumn of 1899, when a reeve was shot near Cocker-mouth), but principally observed upon our salt marshes. The autumn of 1896 was a particularly good season for ruffs, many of which frequented our marshes throughout September. The ruff very seldom winters in England; but in the last week of January, 1895, a single male bird was shot at Skinburness by W. Nicol. I have never seen the ruff in spring, but the late James Cooper sent to Mr. C. M. Adamson a clutch of eggs of this species which had been taken in the vicinity of the Solway Firth.

210. Buff-breasted Sandpiper. *Tringites rufescens* (Vieillot).

A straggler of this species was shot on Burgh Marsh in September, 1876. It was killed by John Dawson, and given to his brother, George Dawson, the local entomologist. In 1892 that veteran wildfowler, W. Nicol, who has had a very exceptional experience of our waders, saw on Skinburness Marsh on September 17th, a bird entirely strange to him, but from what he gathered from Saunders' *Manual* he had no doubt it was a buff-breasted sandpiper. 'It passed me on the marsh scur in company with two curlew sandpipers, and alighted about 150 yards from where I was, but rose before I got

near and went off towards the creek with a redshank. It was not unlike a reeve, but a bit less in size.' The words just quoted are extracted from the report which he sent to me the same day. He did not succeed in obtaining the bird.

211. Common Sandpiper. *Totanus hypoleucus* (Linn.).

Locally, Sand-Lark, Willie Wicket, Willie Liltie, Dick-a-dee.

A summer visitant to the shores of our lakes and larger rivers, arriving in April, and rapidly distributing its numbers in pairs along the sides of our upland streams, which owe much of their charm to the presence of this bird, the dipper and grey wagtail.

212. Wood-Sandpiper. *Totanus glareola* (Gmelin).

Five birds of this species visited Whin's Pond, Edenhall, in August, 1867, and two were shot. In 1893 a single immature bird was shot on Skinburness Marsh by W. Nicol. He sent it to me, but owing to the hot weather and my absence from home the bird was spoilt. In 1898 Mr. Backhouse shot another immature bird in the same locality on or about August 20th. This was also sent to me too late for preservation, a very unfortunate circumstance.

213. Green Sandpiper. *Totanus ochropus* (Linn.).

An autumn visitant in small numbers, frequenting our rivers and salt marshes, but sparingly distributed throughout the county. Mr. W. Little once obtained a young bird near Carlisle with so much down upon it that he thought it must have been bred locally. Old and young undoubtedly appear as early as the third week of July. In 1894 a bird was killed near Drawdykes Castle on April 30th, and this is the only local specimen in summer dress that I have handled in the flesh. The species is rarely seen in winter, but single birds were killed near Brampton, January 22nd, 1846; near Cardew Lees, January 3rd, 1885; and on the Eden, near Carlisle, December 18th, 1891.

214. Redshank. *Totanus calidris* (Linn.).

Many redshanks nest upon our salt marshes, and lesser numbers upon mosses and rough pasture lands near the coast, while isolated colonies exist upon our fell lands. It is the noisiest and most suspicious of all our wild-fowl, but is also endeared to me by the recollection of the many pleasant hours that have been passed in its company, especially in the breeding season, when I examined nest

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after nest of its pyriform eggs, or dandled the pretty little downy young while the old birds circled round me with deafening lamentations. It is most abundant in autumn, but is never wholly absent from our midst.

215. Spotted Redshank. *Totanus fuscus* (Linn.).

A rare visitant, hitherto only met with in the vicinity of the Solway Firth. It frequents the foreshore in the neighbourhood of Skinburness in the autumn months, but is not noticed every year. In the decade of years between 1888 and 1897 eight individuals were reported to me; of these, four were shot and entered my hands in the flesh. One of these had been feeding on small fishes. All were immature birds.

216. Greenshank. *Totanus canescens* (Gmelin).

A few birds, chiefly young of the year, visit us every autumn, and haunt our marshes for a few weeks, uttering their plaintive whistle as they circle round the foreshores. Odd birds have wintered and even passed the summer with us, but of course the breeding haunts of this wader lie considerably further north. I have met with the greenshank inland in a very few instances, chiefly in the Eden valley.

217. Red-breasted 'Snipe.' *Macrorhamphus griseus* (Gmelin).

In the year 1835, an immature example of this American wader was shot upon Rockcliffe Marsh by James Cooper. The bird was picking up small beetles upon an elevated part of the marsh when killed on September 25th. It entered the collection of Mr. T. C. Heysham.

218. Bar-tailed Godwit. *Limosa lapponica* (Linn.).

Locally, Curlew-Knave.

Many hundreds of immature specimens of this godwit arrive upon the shores of the Solway Firth every autumn, chiefly in September, when they are often very tame and unsuspicious. They are delightful birds to study through a telescope as they scatter over the sands or feed at the edge of the tideway. In 1898 a flock of from two to three thousand godwits came flying into Allonby Bay from the westward on the morning of October 2nd, and alighted upon the wide expanse of sand laid bare by the tide; as the rising waters rippled inwards the birds rose into the air, wheeled round and round *en masse*, and alighted again a little nearer to the beach with a perfect whirl of wings; in a few seconds I saw hundreds and hundreds closely massed together, and the telescope revealed

every detail of their plumage, while their shrill cries added to the interest of the busy scene; as nearer crept the tide, so nearer and nearer did the birds edge in towards the shore; suddenly they sprang into the air with a bewildering fanning of myriads of wings, while their white rumps served as centres to the greyish upper parts and rendered their appearance the more remarkable. This time they were up in real earnest, and directed their course in an easterly direction, flying in a huge broad bar up the Solway Firth. But they returned in smaller numbers on many another day and probed the damp sand in front of my windows, often inserting their long mandibles in the sand almost up to their very base.

When feeding on sand-worms, godwits are often followed by brown-headed gulls which watch their movements very closely, and endeavour to make them drop their prey. They continue to delight us with their graceful actions until wild and boisterous weather drives the majority of young birds to winter in more genial regions, but they are apparently replaced by adults in full winter dress which generally arrive in December.

219. Black-tailed Godwit. *Limosa belgica* (Gmelin).

This godwit is one of our rarer visitants, only procured hitherto on the marsh lands of the Solway Firth, and that in very small numbers. About ten immature specimens were killed by our local wildfowlers between 1884 and 1889; in 1893 two others were killed out of a flock of three by W. Nicol, who fell in with them on October 13th. He shot two more birds in August, 1898, one of which went to R. H. Thompson; the other was preserved for the Carlisle Museum, which possesses all the specimens that have entered my hands in the flesh. On July 29th, 1890, Mr. A. Wilson came across two of these birds on Skinburness Marsh, and shot one of them, an old bird in red summer livery.

The only specimen procured locally in midwinter was shot near Bowness-on-Solway, January 1st, 1889.

220. Curlew. *Numenius arquata* (Linn.).

Locally, Curley, Whaup.

The curlew is a common bird in most parts of the county. Many individuals are to be seen scattered along our entire coast in calm open weather; but should a heavy gale assail the shipping, the curlew seeks shelter on its favourite mosses, or drops into some sheltered nook among the winding creeks of the marsh lands.

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When other fowl are sorely pinched by severe weather the curlew contrives to retain condition, while at all seasons it retains the same jaunty air of self-sufficiency. The late Mr. Seebohm fancied that the curlew was a bird of solemn gait, 'only occasionally running' (*British Birds*; vol. iii. p. 95), but this is a misapprehension. If a curlew desires to shift his feeding ground he runs all the way, and if he chanced to be in a bit of a hurry he runs very fast indeed. One would have rather expected him to take a short flight, but this he leaves for gulls to do. The webbed feet of the *Laridæ* are not so well adapted for rapid progression over a flat surface as the long toes of the curlew. Moreover, if you watch the curlew in repose you will see that its body feathers do not cling closely to the bird as artists often suggest, but are only packed together sufficiently closely to supply an adequate degree of warmth. The long mandibles are chiefly utilized for boring and probing purposes, but they are also serviceable in enabling the curlew to preen its plumage with great care. The feathers of the back and shoulders are first arranged; the tail is then bent to one side, and each of the rectrices is carefully passed through the bill; the head is then drawn backwards to enable the bird to dress the feathers of the breast with the tips of the mandibles. Having completed its toilet a curlew shakes itself to get rid of any particles of sand that may have adhered to its feathers, and flaps its wings with an air of relief. It then trips forward to the edge of a little streamlet of water and plunges its long bill into the damp sand, bringing up a worm which is either bolted summarily or dipped into the water and cleansed before being allowed to enter its gullet. Delicate as the hearing of the curlew no doubt must be, and exquisite as its sense of touch certainly is, it would be an error to suppose that the curlew is always successful in securing its prey at the first stroke. Often you will see the bird bend forward to listen, and a moment later the beak descends like a flash into the sand, only to be withdrawn empty; the second stroke may be successful, in which case the worm is drawn up like a cork out of a bottle, firmly held between the tips of the mandibles; the curlew tosses it into the air, picks it up, tosses it again, picks it up, carries it to the water, dips it in the liquid brine, and swallows it with the air of a connoisseur. But if the worm is deeply lodged, success is not so easily obtained; I have seen a curlew make seven different strokes into the same hole before he secured the struggling worm and brought it safely to the surface. When shifting its

quarters to any considerable distance the curlew generally flies nearly in a straight line and at a moderate height with slow and steady strokes of the wing; but as it draws near to the point upon which it intends to alight the beats of its wing become less marked and the bird almost glides along. When journeying between its feeding grounds on the coast and the moors which it frequents at other times, the curlew occasionally flies at a great elevation. I have often heard the whistle of this bird ringing through the air on a clear frosty day, and have been astonished to find that it proceeded from a bird that had mounted high in the heavens. When the season of love arrives, curlews delight to rise in the air and sport amorously on the wing together, soaring round and round at a great height, or flying to meet their mates, when their bills apparently touch caressingly as they unite and separate. The curlew breeds on many of our hills and fell-sides, but a few pairs also nest near our seaboard.

221. Whimbrel. *Numenius phaeopus* (Linn.).

Locally, May-Bird, Curlew-Knave, Jack-Curlew.

A spring and autumn visitant; but very few individuals appear to alight upon our shores during the autumn migration, preferring to cheer us with their familiar notes, uttered on the wing as they pass over, to resting in their spring haunts. A few immature birds frequent the salt marshes in August and September, and I once handled a local specimen in winter; but the whimbrel is much better known as a spring visitant.

222. Black Tern. *Hydrochelidon nigra* (Linn.).

A spring and autumn migrant. The birds obtained at the latter season are almost exclusively birds of the year in the usual inconspicuous dress. A lovely adult in summer livery was sent to me in the flesh in June, 1890. It had been killed with a catapult while flying over the Esk near Floriston. Immature birds have been procured inland on several occasions, as happened in 1898, when I identified a young bird which had been killed near Keswick in October.

223. Sandwich Tern. *Sterna cantiaea*, Gmelin.

Locally, Cat-Swallow.

A summer visitant to our coast, occasionally entering the waters of the Solway Firth, but restricted as a breeding bird to Drigg, where I have studied their nesting operations for many years. Several varieties of colouration are displayed by the eggs of this breeding station, some of the specimens being very rich in blotchings. The young, which correspond

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so closely with their environment as to be very difficult to detect among the sand bents, are chiefly fed upon sand eels and other small fishes; but an old bird (which I happened to open) had only been feeding on small bivalve shells.

224. Roseate Tern. *Sterna dougalli*, Montagu.

A rare visitant. A fine male was shot near the point of Burgh Marsh on July 26th, 1834. It was identified by Mr. T. C. Heysham.

225. Common Tern. *Sterna fluviatilis*, Naumann.

Locally, Sea-Swallow, Jerky, Pickman (*obs.*).

Quantities of this summer visitant nest among the sand-hills at Drigg, which possesses the largest establishment of these birds in the county; but a smaller colony has existed for many years on Rockliffe Marsh, as noted by Mr. T. C. Heysham as long ago as 1834. In this latter locality the eggs are simply deposited on the sand at the edge of the marsh or on the greensward. I have seen birds of the year which had been procured as late as November in the interior of the county.

226. Arctic Tern. *Sterna macrura*, Naumann.

A spring and autumn visitant, most abundant in our waters during August and September, though probably a few pairs nest at Raven-glass. A photo of a bird taken at Drigg during the summer of 1898 seems to be that of an undoubted arctic tern, and the bird in question was sitting on her eggs. But I was never able to identify this tern among the hundreds that nest under the protection of Lord Muncaster.

227. Little Tern. *Sterna minuta*, Linn.

A summer visitant, nesting numerously at Drigg and in increasing numbers near Silloth. A pair or two usually nest about Grune Point also. When the warrens which abut upon the precincts of this little seabird are invaded the birds rise in the distance from the beach and wheel round in lofty circles screaming their displeasure in harsh cries resembling the syllables 'yaak yaak,' occasionally prefaced by 'tuk, tuk, tuk.' If the threatened danger be withdrawn some of the birds will alight upon a ridge of the sea beach in the midst of a pile of debris, seaware, etc., while the remainder hover over the sands, curvetting with much velocity, and often skimming over the surface almost like swallows.

228. Sabine's Gull. *Xema sabinii* (J. Sabine).

A specimen of this high arctic bird was shot upon Rockliffe Marsh, September, 29th, 1893, under the following circumstances. A local gunner named William Routledge was lying up in a creek on the marsh waiting for a shot at golden plover, as the tide was rising and a strong south-west wind blowing, when the Sabine's gull rose off the Esk in which it had been swimming about 11 a.m., and flew in the direction of the wildfowler, travelling slowly against the wind. The bird did not notice Routledge, but flew so close past him that he might almost have felled it with his gun. Noticing the forked tail barred with black, and thinking that it must be a strange bird, he waited until it was a fair distance from him, and then fired and brought it down. He and Thomas Peal brought it to me on the following day, enquiring if it was some variety of tern. It looked no larger than a pigeon as it lay on my table in the flesh, but measured twelve inches and a half. The tarsi were pale grey; the webs of the feet pale yellowish; the claws dull black, irides dark brown; interior of mouth bright yellow; bill black, but the basal portion yellowish. The body was well nourished, but a good many ticks adhered to the feathers. It was preserved for the Carlisle Museum.

229. Little Gull. *Larus minutus*, Pallas.

A rare visitant, chiefly noticed in the neighbourhood of the Solway Firth, but of occasional occurrence inland, though never apparently procured among the larger lakes of the county. The specimens obtained since the publication of the *Fauna of Lakeland* in 1892, include the following: an immature bird shot on October 25th, 1893, on Rockliffe Marsh by a gunner named Park, and sent to me in the flesh by the late Alfred Smith of Castle-town; a similar bird sent to me by Irving Murray, of Priestside near Annan, January 13th, 1894; a very interesting bird, which had begun to moult in adult wing-quills, shot at Skinburness by W. Nicol, June 29th, 1894, and sent to me before the delicate rosy tint had begun to fade from the feathers of the breast; a very young specimen shot on the north side of the Esk near Rockliffe by Thomas Peal, September 16th, 1896 (the first that I had handled in the flesh in nest feather); Mr. T. Mann presented to me a very young bird which he had shot on the coast between Allonby and Mowbray, October 9th, 1896; yet another nearly mature bird was shot by T. Peal near Bowness-on-Solway, December 30th, 1897.

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230. Black-headed Gull. *Larus ridibundus*, Linn.

Locally, Chir-maw, Drake-Catcher, Black-headed Crow.

There are few more beautiful sights than a colony of these birds, which has become established upon one of our wilder mosses in early spring. The scene presented by such a locality as Salta Moss, when the banks of the dubs or small ponds are lined with the nests of this small gull, and the birds alight in every prominent position, or hover overhead in disordered crowds, sweeping this way and that, and noisily screaming their harsh cries of resentment at an intrusion of their chosen haunts, is too striking to be easily effaced from memory. These gregarious birds adapt themselves to a variety of circumstances in the choice of their nurseries. Some nest on heather-covered wastes such as Bowness Moss on Solway Flow; others nest (though not every year) upon the green turf of Rockliffe Marsh; others again build on masses of water-plants, as I have witnessed at Monkhill Lough and Moorthwaite; and yet the greatest number of all elect to rear their progeny among the sand dunes near Ravenglass. The young birds haunt our estuaries and inland waters during early autumn, but the majority of these immature birds appear to leave us before the advent of winter.

231. Common Gull. *Larus canus*, Linn.

A number of common gulls frequent our arable fields, and many haunt our shores in all stages of life all through the year; but this species has not been proved to nest in the county.

232. Herring-Gull. *Larus argentatus*, Gmelin.

A resident upon our coast-line all through the year, nesting at Sandwith and occasionally upon Bowness Flow; though this last remark only refers to a couple of pairs. Adults in all stages of plumage haunt our sandy reaches, feeding on small crabs and on all kinds of refuse, including carrion.

233. Lesser Black-backed Gull. *Larus fuscus*, Linn.

A numerous resident, many pairs nesting upon Solway Flow and Bowness Moss; and, inland, upon Butterburn Flow. At other seasons it is distributed all round our coast. It is a common visitant to our rivers, and immature birds often assemble in our fields. It is a very voracious bird, and frequently kills young wild ducks. Mr. D. L. Thorpe informs me that on two different occasions he has seen a lesser black-backed gull capture a

full-grown eel in the shallows of the Eden, and devour it upon a neighbouring gravel bed.

234. Great Black-backed Gull. *Larus marinus*, Linn.

Locally, Devoke, Water-Maw (*obs.*).

A few immature birds frequent our coast at all seasons, and adults are generally present, but there is only a single breeding station, that of Bowness Moss, where a very few pairs contrive to hold their own. Odd pairs occasionally rear their young on Wedholm Flow, and on other mosses in the vicinity of the Solway Firth.

Devoke Water was the home of this bird from the 'twenties' to the 'seventies,' when the breeding birds for some unexplained reason suddenly abandoned their time-honoured breeding-ground. Although occasionally met with far from the coast, this bird is most characteristic of the Solway Firth, where its cries often float along the shingled shore. There is something weird and striking about the deep note of *Larus marinus* that serves to distinguish it markedly from the shriller cries of all our common sea-gulls. When a heavy westerly gale has been blowing up the firth with almost hurricane force for many hours, and long green rollers come foaming landward, the great black-backed gull hovers over the raging waters with swift and veering flight, easily borne aloft by its powerful pinions, and finding its pleasure in the contemplation of the raging elements. But it is equally at home upon our sands on a summer's day, when the sunshine gilds the light ripples at the edge of the tideway; at such a time, a pair of fully adult birds make up a pretty picture, as they pose in the centre of a group of sea-fowl, slowly shifting their position as the rising tide encroaches upon them.

235. Glaucous Gull. *Larus glaucus*, Fabricius.

A rare winter visitant, occurring all round our seaboard, but only at long intervals. The only bird that I saw in life during my seventeen years' residence in Lakeland was driven upon our coast by a westerly hurricane. It was so tired of battling against the adverse elements that I was able to inspect it leisurely, though it would not permit me to approach quite within gunshot. It was in nearly adult plumage, the delicate mantle being only varied with a few immature feathers. It was resting on the beach near Allonby when first observed. On February 25th, 1892, a very pale immature bird which had frequented the Esk near Floriston since the beginning of the month was killed when feeding on a dead fish,

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and brought to me the same evening. It was a large bird, for the alar expanse exceeded five feet by half an inch. It is preserved in the Carlisle Museum.

236. Iceland Gull. *Larus leucopterus*, Faber.

Though a rare winter visitant to our coastline, this arctic bird appears to visit this county somewhat more frequently than the glaucous gull. The Carlisle Museum contains an immature bird shot near Millom, January 28th, 1882. George Dawson of Carlisle showed me a newly-mounted bird (the legs being still soft), which he assured me that he had shot in a field near Carlisle, February 28th, 1898. This was immature, as was a third seen near Maryport by Mr. R. Mann, February 10th, 1899. When observed it was crossing a rough meadow in company with a number of other gulls. The first specimen that I know to have been procured upon our borders was shot on the Solway Firth opposite to Browhouses, February 8th, 1835.

237. Kittiwake. *Rissa tridactyla* (Linn.).

A common winter visitant, present with us during almost every month, but most numerous during the colder months when it haunts our fields inland. I have seen odd birds in summer; where rocky escarpments present a shelter on the Solway Firth the kittiwake might perhaps breed with us, but I never found it doing so on the Sandwith cliffs.

238. Great Skua. *Megalestris catarrhactes* (Linn.).

An exceedingly rare bird on the west coast of England. The late Mr. T. C. Heysham recorded a specimen which was captured alive on the Rockliffe Marsh, April 27th, 1833, and taken to him on the following day. It was secured while engaged in killing a herring-gull (*Phil. Mag.*, 1834, p. 339). Other examples have been reported to me, but I never examined a fresh individual during my residence in Lakeland.

239. Pomatorhine Skua. *Stercorarius pomatorhinus* (Temminck).

This skua occurs on the coast of Cumberland with tolerable frequency—not annually, for several years often elapse between its visitations—but still four specimens entered my possession between 1884 and 1898. The first of these was a bird in the second or third winter, killed near Bowness-on-Solway by George Holmes, October 24th, 1884. A fine adult was shot by Sam Wright on the edge of the Carlisle racecourse, December 22nd, 1894. On October 28th, 1898, I

received from R. Broatch, of Rigg Foot, a bird in the brown dress of immaturity, with the information that he had shot it whilst it was feeding on a seagull. A few days later I received from the same wildfowler a second specimen, shot in the same part of the Solway Firth as the first. The foregoing birds are preserved in the Carlisle Museum. Others have been obtained as stragglers all round the coast, from Drigg to Rockliffe.

240. Richardson's Skua. *Stercorarius crepidatus* (Gmelin).

Locally, Black-Gull, Sea-Hawk, Bo'sun's Mate.

An irregular visitant to the waters of the Solway Firth, occasionally met with in the interior of the county. The dark form is that which has generally come under my notice locally; but a bird of probably the second year, shot at Beckfoot, October 4th, 1890, belonged to the light form. Skuas are not infrequently seen on the Solway Firth in May and October; but a few appear in July and August, and from that time on to Christmas.

241. Long-tailed or Buffon's Skua. *Stercorarius parasiticus* (Linn.).

A rare visitant, chiefly met with during the autumn. In 1885, an adult in lovely plumage frequented the Eden near Kirkandrews early in June, but was shot on the 3rd of that month, and presented to me by Dr. John Macdougall, whose generosity enabled me to examine it in the flesh. It is preserved in the Carlisle Museum. Birds in various stages of plumage have been obtained at different points of the coast. The most remarkable visitation of this skua occurred in October, 1891, when I examined about ten freshly-killed specimens obtained along the west coast from Walney Island to Kirkbride, and as far inland as the borders of Westmorland. None of these were in the plumage of the first year; but very juvenile specimens have also come under my notice. Birds in the plumage of the first autumn were procured at Kirkoswald, November 5th, 1890; at Skirwith, October 16th, 1891; and near Maryport, October 11th, 1895.

242. Razorbill. *Alca torda*, Linn.

The razorbill nested recently on the cliffs at Sandwith, and probably still does so; in August, 1894, a very small but feathered nestling was washed up at Allonby in a fresh condition. Birds of the year frequently perish in heavy gales, as do a lesser number of adults.

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243. Guillemot. *Uria troile* (Linn.).

Locally, Old Wife.

Present in our tideway all through the year, but the only breeding colony is at Sandwith. Enormous numbers perish in late autumn and winter, chiefly after heavy weather, when their carcasses strew our beach for many miles. Stragglers often occur far inland.

244. Black Guillemot. *Uria grylle* (Linn.).

This guillemot is a rare bird in our waters; so rare that I never myself examined but one local specimen. The bird in question was caught in a ditch between Silloth and the Abbey Holme, October, 1891. Other specimens have been obtained on our open coast, but only at long intervals.

245. Little Auk. *Mergulus alle* (Linn.).

A rare winter visitant, obtained at least as often inland as upon our seaboard. The most recent specimens that have come under my notice include the following: one sent to me from the Solway Firth by Bryson of Port Carlisle, December, 1893; two captured near Penrith, and a third taken on the Eden near Carlisle, January, 1895; a fourth procured near Port Carlisle by Greenwood the punt-gunner, and brought to me in the flesh, December, 1896; a fifth shot by W. Nicol, near Skinburness, February, 1900.

246. Puffin. *Fratercula arctica* (Linn.).

Locally, Sea-Parrot, Manx Puffin.

A tolerably common bird along our coast; but the birds that are washed ashore are usually immature. An old bird in full breeding dress was brought to me at Allonby, May 5th, 1897, having just been picked up upon the beach. I have also met with this species in the Solway Firth in mid-winter.

247. Great Northern Diver. *Colymbus glacialis*, Linn.

Our larger lakes are occasionally visited by birds of this species in summer, as well as during the winter months. It occurs likewise on our open coast, but is rare in the shallow waters of the Solway Firth. Specimens have been obtained far inland.

248. Black-throated Diver. *Colymbus arcticus*, Linn.

This diver occasionally visits Ulleswater Lake; a young female was shot on that extensive sheet of water, January 1st, 1891. I had previously examined another local bird; but this was an adult, fast acquiring summer plumage. It was killed on the Eden near Rickerby, whilst feeding on fry, March 20th, 1888. Others have been obtained on our

estuaries and inland waters, but this diver is one of our rarer birds. It is usually procured in the winter time.

249. Red-throated Diver. *Colymbus septentrionalis*, Linn.

Locally, Speckle-backed Diver.

A spring and autumn visitant to the estuaries of Cumberland, and met with incidentally in almost every month of the year, the red-throated diver is well known to our fishermen and punt-gunners; it occurs inland but very rarely, preferring the sea to freshwater lakes during its sojourn with us. I have picked up adults which have been washed ashore dead, having previously shed their wing quills and being thus disqualified for combating a succession of heavy gales.

250. Great Crested Grebe. *Podiceps cristatus* (Linn.).

This grebe has been obtained at most seasons in Cumberland, even in July, when it might have been expected to be breeding. It is however principally a winter visitant, and as such is often shot on our larger lakes as well as on such lesser sheets of water as Talkin Tarn, where an adult in winter dress was killed on February 28th, 1898. I have often seen birds that had been killed in spring, when assuming nuptial dress.

251. Red-necked Grebe. *Podiceps grisegena* (Boddaert).

A winter visitant of somewhat rare occurrence on the larger rivers. No adult in summer livery has ever been procured in the county up to date; but a very pretty bird in first dress was shot by W. Nicol at Skinburness, September 22nd, 1894. It may be seen in the Carlisle Museum.

252. Slavonian Grebe. *Podiceps auritus* (Linn.).

This small grebe occurs on our rivers and lakes from September to March, but has not been procured in either nuptial or first plumage. It sometimes appears in couples, but never in flocks. A bird killed near Drumburgh in March, 1897, was still in winter dress; but another killed near Silloth on March 17th, 1889, had newly commenced to acquire summer dress.

253. Eared Grebe. *Podiceps nigricollis* (Brehm).

A rare visitant, obtained at long intervals upon our estuaries and inland waters, but only in winter or immature plumage. During the severe weather of January, 1895, when sharp frost prevailed in most parts of England, a

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female eared grebe was shot at Ulleswater and shown to me in the flesh. Again in December, 1896, James Smith of Drumburgh shot a fine eared grebe at the side of the river Wampool.

254. Little Grebe or Dabchick. *Podiceps fluviatilis* (Tunstall).

A local resident, nesting in a few localities, and common on our rivers and ponds in winter. It is however far less plentiful than in many southern counties.

255. Storm-Petrel. *Procellaria pelagica*, Linn.
Locally, Mother Carey's Chicken.

A winter visitant to our coast, not infrequently met with off Whitehaven, and occasionally present in small flocks in Silloth Bay, especially during heavy weather in the Atlantic. The most recent specimen that I have seen locally was obtained at Silloth, November 10th, 1900.

256. Leach's Fork-tailed Petrel. *Oceanodroma leucorhoa* (Vieillot).

This petrel occurs in Cumberland at irregular intervals, principally during the autumn months, but sometimes as early as July. Single birds are chiefly met with, generally birds of the year, but all the specimens that I examined during the great visitation of September, 1891, were old birds deep in moult. The individuals that have most recently come into my hands were shot in the neighbourhood of the Solway Firth: the one shot near Newton Arlosh, November 21st, 1893, the other killed

when flying across the sands under my windows at Allonby, November 8th, 1899.

257. Wilson's Petrel. *Oceanites oceanicus* (Kuhl).

Mr. T. C. Heysham informed Yarrell of the occurrence of a specimen of this petrel in the county. The late Captain Johnson, another friend and associate of Yarrell, identified a second example found dead near Castlesteads in 1881.

258. Manx Shearwater. *Puffinus anglorum* (Temminck).

I have no notes of this seabird occurring inland; but storm-driven individuals are picked up from time to time upon our open coast, and less frequently on the shores of the Solway Firth. A specimen which came ashore near Allonby in August, 1894, was the first local specimen that Mr. T. Mann and his brother had met with in their lifelong experience. I found another derelict bird at Allonby, May 3rd, 1897.

259. Fulmar. *Fulmarus glacialis* (Linn.).

An occasional visitant to our coast, but of comparative rarity. A very good specimen of the grey-breasted form was brought to me in the flesh by Thomas Peal, who had secured it upon Rockliffe Marsh, February, 1892. A specimen of the white-breasted variety was found dead upon Newton Marsh, February 6th, 1894. A third bird was picked up exhausted near Eskmeals, October, 1896. This last was presented to Dr. Cass of Ravenglass.

MAMMALS

A region of rugged heights and secluded valleys, the sides of which are frequently broken by precipitous escarpments of rock or loose scree of debris, is well calculated to afford a safe retreat to such timid and retiring creatures as the red deer (*Cervus elaphus*), the roe (*Capreolus capreolus*), the wild cat (*Felis catus*), the badger (*Meles meles*) and the pine marten (*Mustela martes*); not to speak of animals that are more generally distributed, such as the otter (*Lutra lutra*), and the polecat (*Putorius putorius*). Accordingly, we find, that while one of these animals—the wild cat—has succumbed to centuries of ruthless persecution, the others still succeed in rearing their offspring in their natural haunts. It may be that a few years will see the extinction of the pine marten, as it is extremely difficult to afford effective protection to this rare and interesting animal; the days of the polecat also may perhaps be numbered. But, happily, these are exceptions. The red deer no longer roams unheeded over vast tracts of country; but though hedged in with fences, the master stag still does battle for his seraglio upon the fellside, and the hinds drop their spotted calves beneath the shelter of the bracken fern as though they enjoyed perfect liberty. The fallow deer (*Cervus dama*), an introduced species, adorns many of our county parks with its graceful presence and diversity of colour; while the shy roe still crops the ivy in the coverts of the Lord of Naworth.

It is perhaps to be regretted that the black rat (*Mus rattus*) has almost quitted the county; but if the brown rat (*Mus decumanus*) could also be exterminated, we should have little cause to lament the absence of either of these pests of society.

The Cetacea which visit the coast of Cumberland are imperfectly known, for the carcasses of those that are washed ashore are generally buried, or boiled down, without any pains being bestowed upon their identification; but future zoologists may perhaps be more fortunate in this respect than we have been.

The Micro-mammals call for little remark; but the extreme rarity of one or two species of bat, such as the barbastelle (*Barbastella barbastellus*), seems to suggest that some, at any rate, of those which have been taken in the county were accidental immigrants—in fact ‘waifs and strays’ from other faunal areas.

MAMMALS

CHEIROPTERA

1. Long-eared Bat. *Plecotus auritus*, Linn.

A resident species of fairly general distribution, most plentiful in our wooded districts at a low elevation. I never came across it in the immediate neighbourhood of the coast.

2. Barbastelle. *Barbastella barbastellus*, Schreber.

Bell—*Barbastellus daubentonii*.

Specimens of this bat were captured many years ago near Carlisle, and entered the collection of T. C. Heysham. As no others have been procured, in spite of a search extending over many years, it must be conjectured that the examples in question had wandered to Cumberland accidentally.

3. Pipistrelle. *Pipistrellus pipistrellus*, Schreber.

Bell—*Scotophilus pipistrellus*.

Locally, Common Bat, Flittermouse.

A resident, very plentiful even in the immediate neighbourhood of the coast. This species has often visited my windows in pairs, picking crepuscular insects off the window panes.

4. Natterer's Bat. *Myotis nattereri*, Kuhl.

Bell—*Vespertilio nattereri*.

A colony of this species was discovered at

Castletown near Rockcliff, in August, 1886.

Three living specimens were sent to me for identification by the late A. Smith. T. C. Heysham had previously obtained this species in Cumberland, so that it is probably a resident species. I have not however procured specimens in any other part of the county.

5. Daubenton's Bat. *Myotis daubentoni*, Leisler.

Bell—*Vespertilio daubentonii*.

This water-loving bat is local but hardly to be termed rare. I had not met with it up to 1892, but subsequent to that date two or three specimens were brought to me. One of them had been felled with an umbrella on the banks of the Eden near Carlisle. T. C. Heysham obtained a specimen on the Carlisle Canal near Beaumont in August, 1852.

6. Whiskered Bat. *Myotis mystacinus*, Leisler.

Bell—*Vespertilio mystacinus*.

T. C. Heysham procured a single specimen at Carlisle in August, 1852. Three others were brought to me from the same neighbourhood at intervals of several years. This bat is probably scarce, but I doubt if it is actually rare.

INSECTIVORA

7. Hedgehog. *Erinaceus europæus*, Linn.

Locally, Urchin (*obs.*).

A common resident in most wooded districts, often destroyed in consequence of its taste for eggs and young birds.

8. Mole. *Talpa europæa*, Linn.

Locally, Mowdy-warp, Mowdy-wark.

An abundant resident even among our hill-sides. Some very beautiful orange and cream-coloured varieties have come under my notice from time to time, and specimens of a dull brown are common in certain localities.

9. Common Shrew. *Sorex araneus*, Linn.

Bell—*Sorex vulgaris*.

A resident species, often killed by house cats, especially when they are rearing kittens.

It is also a favourite food of the barn-owl (*Strix flammea*).

10. Pigmy Shrew. *Sorex minutus*, Pallas.

Bell—*Sorex pygmæus*.

A resident species, but apparently much scarcer than the common species. Messrs. Mann supplied me with a fresh specimen from Aigle Gill.

11. Water Shrew. *Neomys fodiens*, Pallas.

Bell—*Crossopus fodiens*.

This shrew is local, but must be plentiful in the neighbourhood of the Eden because it occurs so often there in the pellets of owls. Both the black and the parti-coloured forms occur in Cumberland, though I believe the former to be comparatively uncommon.

CARNIVORA

12. Wild Cat. *Felis catus*, Linn.

In former days there were many wild cats among the crags and screes of this mountainous county. Christenbury Crag was famous for its breed of these animals,

and possibly it was from this neighbourhood that the household of Lord William Howard was supplied with furs. We read the following entry among 'My Lord's Parcels' in 1629: 'May—6. For a wilde cattskinne

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iiijs.* Wild cats were also numerous among the hills in central Lakeland, and generally fetched a shilling per head as vermin. Dr. Heysham observed that the breed was becoming extinct in the closing decade of the eighteenth century. The last that Mr. W. Hodgson heard of was killed on Great Mell Fell early in the nineteenth century.

13. Fox. *Vulpes vulpes*, Linn.

Bell—*Vulpes vulgaris*.

Locally, Tod (*obs.*).

In the spring of the year many lambs are killed by our foxes, which the shepherds distinguish as being either greyhound or terrier foxes. These animals were formerly proscribed owing to the damage which they inflicted upon flock-masters. My friend the late T. Lees found that the custom of the churchwardens paying 3s. 4d. for every fox's head presented at the Easter vestry, was still in vogue at Greystoke when he went there in 1856. The charge was disallowed that year for the first time on the ground that the keepers who claimed the reward were already paid by their employer to kill vermin. When analysing the Greystoke accounts, I found that the churchwardens paid for ninety-one foxes during the fifty years which elapsed between 1752 and 1802. Of this number, only eleven were cubs. The Keswick men were ardent cub-hunters. It appears from the accounts of Crosthwaite parish, that in 1723 they killed thirteen cubs in the season, and, two years later, accounted for twelve cubs and one old fox. A cub only brought in a shilling; but on the Naworth estate as much as five shillings was sometimes paid for a fox.

14. Pine Marten. *Mustela martes*, Linn.

Bell—*Martes abietum*.

Locally, Sweet Mart, Clean Mart, Crag Mart.

The pine marten is rare in the east of the county and practically unheard of in the north, but contrives to preserve a precarious footing among the mountain tops in the centre and west of Cumberland. It might become fairly numerous were it not that the value of local specimens often tempts the cupidity of keepers who naturally enough are glad to add to their modest income by trapping any 'marts' that come in their way. Mr. F. Nicholson, who has paid great attention to this animal in Cumberland, considers that it is fairly constant to its customary haunts. The pine marten of our hills is not to any great extent a woodland animal, preferring to make its home in inaccessible crags, from which it descends to raid the rabbit warrens in the valleys. Most of the speci-

mens that have come under my notice in a fresh state had been killed in winter when the pelt of this animal is much finer than during the summer months. As long as these animals were tolerably numerous they used to be hunted by the dalesmen, and many a spirited chase has been described to me by venerable sportsmen. The number of martens killed in a season was never very large, but the sport experienced was of first rate quality, for the pine marten is a game and resourceful quarry.

15. Polecat. *Putorius putorius*, Linn.

Bell—*Mustela putorius*.

Locally, Foumart, Foul Mart.

The mosses of the low lying country were always more to the taste of this animal than our high dales; but a few foumarts lingered around outlying homesteads in the hills until exterminated by rabbit traps. Thrustonfield has long been a noted haunt of foumarts, owing no doubt to its contiguity to many wet moors and commons; from this point foumarts used to travel all over the Holme Cultram district, with its numerous flows and bogs. The polecat is easily tracked by its footprints in newly fallen snow. John Dawson of Allonby has lived all his life in a good district for foumarts and is a noted tracker of wild animals. He does not consider that foumarts are quite extinct (1900) in the neighbourhood of the Solway Firth; that they are very scarce may be surmised from the fact that only two local specimens entered my hands in seventeen years' residence. Both of these were bitches, trapped near Silloth in October, 1893, and September, 1894. Reports from the south and east of Cumberland are unanimous in representing the foumart as locally all but extinct. Many particulars regarding the life history of this animal will be found in the *Fauna of Lakeland*, pp. 27-35.

16. Stoat. *Putorius ermineus*, Linn.

Bell—*Mustela erminea*.

Fairly common, especially in parts of the county where there is little game-preserving. I have seen some beautiful white stoats in the banks and hedges close to the sea, where snow seldom lies for many days. The largest stoat that I have handled was killed on our northern borders in March, 1885. It measured thirteen inches in the flesh.

17. Weasel. *Putorius nivalis*, Linn.

Bell—*Mustela vulgaris*.

This little animal is very common in all parts of the county, and shows no signs of ever becoming scarce. Reports of pure white specimens have reached me on more than one

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occasion; indeed the late J. W. Harris obtained a perfectly white weasel from the vicinity of Keswick. I was also assured that a black specimen had been killed on the Lynehow estate a few years ago.

18. Otter. *Lutra lutra*, Linn.

Bell—*Lutra vulgaris*.

The rivers and lakes of Cumberland afford many strongholds to the otter; indeed, no part of England affords grander sport to devotees of otter-hounds than the Eden valley. Trapping on the part of some who erroneously regard the presence of the otter as inconsistent with the preservation of salmon reduces our river-side population of otters periodically; but as soon as the prejudice has died away again, these plucky animals replenish their favourite waters with fresh litters of cubs. The largest males sometimes scale as much as 31 lb.; females have been found to scale as much as 20 and 21 lb.

19. Badger. *Meles meles*, Linn.

Bell—*Meles taxus*.

Locally, Brock, Gray, Pate (*obs.*).

Formerly badger-earths were to be found in most parts of the county, from the shores of the Solway Firth to the borders of Westmorland. Some years ago it appeared probable that the old race of badgers had become extinct; but of late years badgers have re-

asserted their right of domicile in some of our larger covers. Whether these animals had escaped from confinement is difficult to determine; but as wild badgers certainly exist in Westmorland, it is probable that though the numbers of badgers in Cumberland dwindled to very small proportions, the original stock never became entirely extinct. The *Field* of May 20th, 1893, contains a note that three weeks earlier a sow badger had been found in a wood near Aspatria with two young ones. Other instances of badgers being caught of late years come to me from the Cockermouth district.

The badger was formerly included in the proscribed list of vermin to be exterminated at the expense of the parish. As early as 1658, we read in the accounts of Penrith parish, 'Paid for killing of two paytes, 2s.' Thirty-six badgers were killed and paid for in Dacre parish between 1685 and 1750. A shilling was the price set upon the head of an old badger, and fourpence was given for a cub.

20. Common Seal. *Phoca vitulina*, Linn.

Immature specimens of the common seal not infrequently enter the higher waters of the Solway Firth in pursuit of fish, and in exceptional cases ascend both the Eden and Esk for a few miles. But there are no sands or rocks on the coast of Cumberland that are regularly frequented by these animals.

RODENTIA

21. Squirrel. *Sciurus leucourus*, Kerr.

Bell—*Sciurus vulgaris*.

Locally, Con, Swirl (*obs.*).

The squirrel is plentiful in wooded districts, but there are many parts of the county in which a squirrel is never seen, simply because timber and coppices are absent. The late Tom Duckworth once saw a black variety near Rose Castle.

22. Dormouse. *Muscardinus avellanarius*, Linn.

Bell—*Myoxus avellanarius*.

The dormouse is rare in Cumberland, but has been taken on a good many occasions in the south of the county. It has never been reported to me from any of our eastern fells.

23. Brown Rat. *Mus decumanus*, Pallas.

Locally, Rattan.

This pest is only too plentiful in most of our homesteads. Many frequent the coast-line, feeding on animal and other substances thrown up by the tide.

24. Black Rat. *Mus rattus*, Linn.

As long ago as 1796, Dr. Heysham considered that the old English black rat had become 'very rare' in Cumberland. I have never myself seen a fresh local specimen, though reliable reports of the presence of this animal have reached me from the west of Cumberland on several occasions.

25. House Mouse. *Mus musculus*, Linn.

The universal presence of this animal calls for no remark; but it may be noted that white varieties occasionally occur in a state of nature.

26. Wood Mouse or Long-tailed Field Mouse. *Mus sylvaticus*, Linn.

A common resident in woods and gardens, and one that is easily reconciled to the loss of liberty.

27. Harvest Mouse. *Mus minutus*, Pallas.

A rare animal in Cumberland, but specimens have been captured in the north of the

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county in isolated instances. I have never seen it myself in the north of England.

28. Water Vole. *Microtus amphibius*, Linn.

Bell—*Arvicola amphibius*.

Locally, Water Rat.

Exceedingly numerous on the Caldew and most of our rivers and inland waters; at Edenhall it forms an important item in the dietary of the heron. Melanism occurs in individual specimens, but very rarely. It is a curious fact that a species so partial to water should rear its young among the sand dunes on Drigg Common; but that it does so I have proved by personal investigation.

29. Field Vole. *Microtus agrestis*, Linn.

Bell—*Arvicola agrestis*.

This little animal is extremely common and of very general distribution, sometimes causing great damage to hill pastures. A very pretty grey and white variety was brought to me from Drumburgh. It was a full-grown animal. The Duckworths were at one time acquainted with a little colony of field voles, among which pied examples often occurred.

30. Bank Vole. *Eutamias glareolus*, Schreber.

Bell—*Arvicola glareolus*.

This interesting little mammal is probably common in the county, but is best known to

me as well established at Aigle Gill. It is generally observed in winter, at which season it makes its home in heaps of turnips, two pairs of full-grown voles and one smaller one being generally found together. In confinement it becomes a tame and fascinating pet.

31. Hare. *Lepus europæus*, Pallas.

Bell—*Lepus timidus*.

A resident species, but in very sparing numbers except upon a few large estates. Hares not infrequently lie out upon the salt-marshes; I have known of their being drowned by the tide. In November, 1884, a pied hare was killed in the county, having the forehead and muzzle, the sides of the head, two fore-paws and one hind-paw perfectly white. This, and a larger specimen in which the red hairs are plentifully mixed with white, have since been presented to the Carlisle Museum.

32. Rabbit. *Lepus cuniculus*, Linn.

Locally, Coney.

Warrens have long existed in the neighbourhood of our coast, and many black and sandy varieties occur. In 1883 I saw a tame specimen which had entered on its eleventh year of captivity. It belonged to a working man at Carlisle, and enjoyed the run of the house, being a familiar and amusing pet.

UNGULATA

33. Red Deer. *Cervus elaphus*, Linn.

The red deer of Gowbarrow Park are lineal descendants of the race of stags and hinds which cropped the sweet grass and toothsome clover of the Cumbrian hills when the Roman legions tramped across High Street and manned their forts upon the shores of the Solway Firth. All Roman settlements in the county yield remains of red deer, and the antlers were of far more vigorous growth than can be found in these days. The deer of Gowbarrow Park often receive visits from stags that have descended from Martindale Forest to the edge of Ullswater, and swum the cool waters of the lake, in order to pay court to the fat hinds of 'Wethermlake,' as the locality was anciently entitled. A famous deer-forest was that of Inglewood, which long remained a royal chase. Ennerdale Forest was the last home of the free wild deer that knew nothing of enclosed life, but took toll of the oats of the dalesmen at their own sweet will. I have inspected several fine

herds of red deer in private parks, such as those of Muncaster, Crofton, Highmoor; but only at Gowbarrow is there a strain of white blood. This is due to the introduction many years ago of a white stag, supplied by Lord Petre, and believed to be of continental origin. This white stag lived for many years at Gowbarrow, but was killed when very old (in the sixties) by the younger and more vigorous animals setting upon him, as Mr. H. Howard informed us. Several white descendants of this stag were still living at Gowbarrow when I last inquired about the herd. For a fuller account of the red deer of Cumberland reference must be made to *The Fauna of Lakeland*, pp. 50-64.

34. Fallow Deer. *Cervus dama*, Linn.

The bucks of Cumberland once afforded good sport to royalty; indeed an early chronicler accredits Edward the First with having killed two hundred bucks and does in Inglewood. The Howards kept a good stock of

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bucks at Naworth in the days when England was ruled by the Stuarts. So indispensable was a haunch of venison to public hospitality, that when the judges were entertained at the Carlisle Assizes in 1661, an entire buck was carted all the way from Millom to the scene of the banquet. The *Fauna of Lakeland* contains a digest of all that I have been able to bring to light about the fallow deer of this county. But it may be remarked that, while at Levens Park the milk-white deer, which occasionally appear in that dark herd, are perfectly white when dropped and always remain so, the white fallow deer which exist in the mixed herd at Edenhall are not pure white at birth, but a cinnamon-white, from which condition they pass to a pure white stage in a term of four or five years.

35. Roe Deer. *Capreolus capreolus*, Linn.

Bell—*Capreolus caprea*.

The roe was once plentiful in the thickets of our forests, especially in the Naworth woods, whence a draught of no fewer than thirty-two kids was despatched in carts to London for Charles the First, in 1633. The price paid to those who had captured these young animals was about five shillings a kid. Six men and seven horses were required to convey them to the south. The kids were procured in the month of June. We are assured that a few roe deer still exist in the Naworth district, and others visit the Netherby estate from the Scottish borders. Single stragglers have been known to occur as far south as Penrith.

CETACEA

36. Sperm Whale. *Physeter macrocephalus*, Linn.

A sperm whale was cast ashore near Flimby on April 21st, 1840. It measured 58 feet in length and 26 feet in girth, as recorded in the *Carlisle Patriot* of April 24th, 1840.

37. Bottle-nosed Whale. *Hyperoodon rostratus*, Müller.

This cetacean has often visited our waters, and dead specimens have frequently been washed ashore by the tide; as for example in September, 1897, and August, 1887, when specimens were beached near Mowbray and Maryport.

38. Grampus. *Orca gladiator*, Bonnaterre.

An occasional visitant to the channels of the Solway Firth, among which it is sometimes left high and dry by the retiring tide. In July, 1874, six of these animals made their appearance in Silloth Bay, and one of them, an adult female, was stranded near Skinburness. I showed a tooth of this animal to the late Sir W. H. Flower.

39. Pilot-whale, or Black Fish. *Globicephalus melas*, Traill.

Locally, Bottle-nose.

Herd of these animals occasionally appear

off our coast, and in some instances they have been known to push their way up the Solway Firth as high as Silloth and Bowness, only to be stranded upon the flat sands, and buried by the coastguard service. A single example was found dead near Silloth in the autumn of 1898.

40. Porpoise. *Phocæna communis*, Lesson.

Locally, Sea Pig, Sea Swine.

These animals often endeavour to drive shoals of herring and other round fish into our inshore waters. I have watched them careering through the swell of the Solway Firth on many a wild morning; but they rarely stay long in our partly land-locked waters, preferring to plough their way through the open main, unchecked by tortuous channels or shifting sandbanks.

41. Bottle-nosed Dolphin. *Tursiops tursio*, Fabricius.

Bell—*Delphinus tursio*.

A young example of this rather rare species was killed in the Esk near Longtown, on or about July 30th, 1896. We saw it immediately after, and had it photographed in the flesh.

THE VICTORIA HISTORY OF THE COUNTIES OF ENGLAND

EARLY MAN¹

OF the earliest inhabitants of the district now known as Cumberland, the men of the Stone Age, whose only implements for war, for the chase, or for domestic use were of stone, bone or shell, no histories written with the pen have been handed down to us : for what we know of them we are indebted to such of their relics as may be accidentally found on the surface of the ground, or beneath it, or may be turned up by the spade in the hands of trained observers. But little work with the spade, compared with what might have been done, has been undertaken. When the Cumberland and Westmorland Antiquarian and Archæological Society was formed in 1866, Canon Greenwell, D.C.L., F.R.S., F.S.A., and the late Canon Simpson, LL.D., F.S.A., both experienced excavators and trained observers, urged upon the new Society the importance of this kind of work. They also cautioned the Society as to the danger of entrusting it to unskilful hands, who too frequently disturb and disperse the contents of barrows without putting on record a satisfactory and sufficient account of the barrow itself, of the mode of burial, and, in case of a burial by inhumation, of the type of the skull ; or, in case of a burial after cremation, of the character of the urn containing the ashes. These exhortations have not been without effect in the sphere of the Society's work (viz. Cumberland, Westmorland and Lancashire north of the Sands). More exploration of this kind has been done, and better done, in Westmorland and in Lancashire north of the Sands, than in Cumberland. The chief workers in Westmorland were the two eminent archæologists just mentioned and the late M. W. Taylor, M.D., F.S.A. In Lancashire north of the Sands, Mr. H. S. Cowper, F.S.A., has done good work, which is recorded in *Archæologia*, vol. liii. For the work in Westmorland, and what little Canon Greenwell and his colleagues did in Cumberland, Greenwell and Rolleston's *British Barrows* should be consulted. That prehistoric work in Cumberland has been comparatively neglected is due largely to the existence there of the Roman Wall, and the interest it excites among all archæologists resident within reach of it. Other working archæologists resident in Cumberland have had their own

¹ As the writer of this contribution died before it was set up in type, Dr. W. Boyd Dawkins has been so good as to read the proofs. The author's statements have not been interfered with.

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special hobbies, such as early sculptured crosses, ecclesiastical antiquities, genealogies, local bibliography, and the like.

THE STONE AGE

a. LONG BARROWS

The Stone Age has been divided into two periods. In the earlier or Palæolithic when man did not know how to grind or polish a stone, but only how to chip it to a sharp edge. The remains of the Palæolithic Age are found in caves, and in river drift, but none have been found in the district we are dealing with. Two stone implements in the Keswick Museum, and one in the Carlisle Museum, have been suggested as Palæolithic, but they are more probably unfinished implements of the later or Neolithic Stone Age. It has been suggested by Sir John Evans, K.C.B., that there are gravels in the valley of the Eden in which Palæolithic (river drift) implements might be found. As to how long it is since the Palæolithic man lived, it is unnecessary here to go into that question ; dates varying from 60,000 years ago to 600,000 have been assigned to him ; it is maintained by Professor Boyd Dawkins and Sir John Evans that a period of glaciers has intervened since he roamed about this district—if he was ever there at all, and some of the very features of the country have been completely changed since he lived.

But the Neolithic man, the man of the later Stone Age, who could polish and grind a stone, saw this country much as we see it—the position of his graves tells us that. He, too, has left no histories behind him ; but the spade in the hands of Sir R. Colt Hoare, of Dr. Thurnam, and of Canon Greenwell, has been the key which has unlocked the secrets buried in his graves. The researches of Canon Greenwell have been mainly in the Yorkshire Wolds, in Durham, Westmorland, and Northumberland. Results only can be dealt with here ; for the evidence, proper works must be consulted, the chief of which are Lubbock's *Prehistoric Times*, Evans's *Ancient Stone Implements*, Thurnam's *Crania Britannica*, Greenwell and Rolleston's *British Barrows*, and Boyd Dawkins's *Early Man in Britain*.

The Neolithic man in these districts was of short stature, with a long head (technically called dolicho-cephalic). His facial angle, as measured from his skull, and other evidence afforded by it, show him to have probably had a mild and pleasant countenance. The remains of the animals on which he lived show that he led a pastoral, semi-agricultural existence, eking out his subsistence by the chase, rather of birds than bigger animals. He had for domestic animals only the *Bos longifrons*, a species of ox ; it is doubtful if he had the goat ; he had not the dog. He ground his grain with stones, and the sand and grit got into the meal and wore his teeth down to the gum. He had toothache badly, as the condition of his jaws shows. Dr. Thurnam thinks he was a cannibal ; Canon Greenwell and Professor Rolleston repudiate the slander. When he died, the man of the long head was buried in a long

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mound or barrow. (Long heads and long barrows go together ; round heads and round barrows.) That long barrow was also the place of sepulchre for his wife, or wives, and children. With him were deposited certain earthen vessels, and implements of stone and bone, apparently made new for the occasion. This may prove that he had some belief in a future state in which he would require these things.

Many long mounds exist in Cumberland which externally bear the appearance of long barrows ; in most cases, perhaps in all, positive proof by excavation is wanting ; the late Dr. Simpson, than whom no man was better acquainted with Cumberland and Westmorland farms, farmers and their ways, has suggested that some of these long mounds are mere bracken-stack-bottoms, bracken being formerly extensively cut and stacked for winter use. Others, again, may be mere natural mounds, but such natural mounds were liable to be, and have often been, adopted by prehistoric people as ready-made places of sepulchre. The greatest caution is therefore necessary in pronouncing upon such mounds, until they have been explored by competent persons.

At Latterbarrow, under Muncaster Fell, are three long mounds fenced in by large stones—two of them about 20 feet long and 3 feet high, the third smaller. Their position is near the upper side of a large grass field, on the 400 feet contour, south of the western end of Raven Crag. These were first pointed out by Mr. C. W. Dymond, F.S.A., and promise well to repay examination. At the other extremity of Cumberland, according to the late Rev. John Maughan, in the *Archæological Journal*, vol. xl., pp. 231, 232, there were once, in the parish of Bewcastle, in a field called Cairns, at a place known as the Nook, Roanstrees,

five parallel ridges of stone or barrows, averaging about 150 yards in length and about a yard deep.

They have been long cleared off to make way for the plough, and were more probably bracken-stack-bottoms than long barrows. At Cairn o' the Mount, near Peelohill in the same parish, is, according to the same authority, a mound about 80 yards in length and about 8 yards broad, pointed at each end, and terraced round. Further investigation is required here. At Harras, near the Roman Camp of Birdoswald, is what seems to be a fine long barrow. On Stockdale Moor in west Cumberland is a large tumulus 35 yards long, 12 yards across at the broadest end, while the other is pointed. This is called Sampson's Bratful. A careful search through the district would probably add to the number of mounds which might or might not be long barrows. High up on the fells would be the best hunting ground, for in the valleys mounds and tumuli are apt to be swept away by good agriculturists, who dislike to see unproductive patches of ground in their holdings.

b. IMPLEMENTS

If, however, the long barrows of the dolicho-cephalic man in Cumberland are few and doubtful, yet stone implements have been found

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in many places. At Aigle Gill, near Aspatria, a stone adze and a double-pointed stone ; Allonby, a stone hammer ; Bewcastle, six rude stone implements (hammer heads and perforated stones), also two stone adzes, and a stone axe ; Blackford, polished stone celt ; Blennerhasset, stone hammer ; Bootle, stone hammer and flint and quartz arrow-heads ; Broadfield, polished stone hammer ; Burns Common, Threlkeld, stone hammer ; Carlisle, stone axes, pestle of greenstone, length 16 inches ; Castle Carrock, flint knives ; Dearham, unpolished celt ; Distington, stone hammer ; Drigg, stone axe ; near Eaglesfield, unpolished stone celts ; Edenhall, Oxhouse Oaks, stone hatchets ; Ehenside (Gibb) Tarn, stone implements ; Garlands, near Carlisle, stone implements, flint arrow-heads ; Gelt Bridge, near Leafy Hill, flint knife ; Gosforth, stone axe ; Grinsdale Common, stone hammer ; Hallguard Farm, Birdoswald, perforated stone hammer ; Heskett Newmarket, Gillfoot, stone implements and beads, and pieces of flint ; Holm Cultram, Highlaws and Southerfield, stone implements, celts ; Inglewood Forest, large axe ; Ireby, stone hammer, thumb and finger stone ; Irton, flint spear-head, polished stone axe ; Irton Fell, unpolished celt ; Irthington, flint spear-head ; Keswick, Burns Moor, perforated hammer-head of granite ; Keswick, Castle Rigg Stone Circle, stone implements ; Keswick, celt of greenstone, a large celt, stone celts (9), perforated implements (6) ; Kidburngill, stone hammer ; Kirkbeck River, Bewcastle, stone implement ; Kirkoswald, perforated stone axe ; Kirkoswald, The Castle, stone hammers ; Lamplugh, Wood Moor, stone hammer ; Loweswater, stone hammer ; Melmerby, hammer stone ; Millom, ancient British battle axe, $13\frac{1}{2}$ inches long (? large stone celt), also Neolithic implements ; Mowbray, stone hammers, polished celts, stone adze ; Newtown of Mowbray, polished celts ; Ousby, perforated stone axe ; Penrith Beacon, polished greenstone celt ; Plumpton, Penrith, perforated stone axe ; Ravenglass, stone axe ; Red Dial, near Wigton, perforated stone axe or hammer ; Great Salkeld, stone celts ; Scotby, stone adze ; Solway Moss, hafted stone celt ; Sprunston, St. Cuthbert's, Carlisle, stone hammer ; Wanthwaite Crag, stone celt ; Wastwater Screes, flint arrow-head ; Wetheral, stone implements ; and Wigton, stone hammers and celts.¹ From this list it will appear that the most common are large stone celts or hatchets, the greater part of them made of felstone, and some of a shape almost peculiar to Cumberland (see fig. 61, Evans's *Ancient Stone Implements of Great Britain*, 1st edit., p. 106, 2nd edit., p. 118). A fine typical one found at Horsegills in Cumberland, and now in the Carlisle Museum, is $15\frac{1}{2}$ inches long, $3\frac{1}{2}$ inches broad at widest part ; 3 inches at the point, and $1\frac{3}{4}$ inches at the butt. Perforated hammers and heavy

¹ The authority for mentioning these implements will be found in 'An Archæological Survey of Cumberland and Westmorland,' communicated to the Society of Antiquaries of London by R. S. Ferguson, M.A., LL.M., F.S.A., and printed in *Archæologia*, vol. liii. ; see also his report as local secretary to the same body, *Proc. S.A.*, n.s., vol. viii. pp. 491-4. See also *Catalogue of the Museum formed on the occasion of the visit of the Royal Archæological Institute to Carlisle in 1859*, printed by the Institute ; and see also *Ancient Stone Implements*, 2nd edit., by Sir John Evans, K.C.B.

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stone axes also abound. An estimate presented in 1881 of the known stone implements in Cumberland and Westmorland put the number at about 30 stone hammers or adzes, 44 stone celts, 6 flint arrow-heads, or in all about 100 ; but many more are known now, possibly twice as many.¹

The examples of Neolithic implements from Solway Moss² and Ehenside Tarn³ are remarkable, being two out of the only three examples of celts which have been found in England attached to their original handles. A rock on Lazonby Fell has about seventy grooves upon it, from 4 to 7 inches long and about 1 inch wide and deep, pointed at either end, as if sharp-ended tools had been ground in them. The suggestion is that they were for grinding stone celts.⁴

How long these dolicho-cephalic men dwelt in this district is hard to tell. Canon Greenwell, in *Ancient British Barrows*, declines to hazard a conjecture as to when they began ; but they were intruded upon by another race, and possibly somewhere about the year 1,000 before Christ. The new comer was a round-headed or brachy-cephalic man, who buried his dead in round barrows, and appears to have belonged to a stronger, sterner race than his predecessor. His bones prove him to have been bigger (his average stature over 5 ft. 8 in.), thicker and more muscular ; he had broad jaws, turned up nose, high cheek bones, wide mouth, and eyes deep sunk under beetling brows that overhung them like a pent-house—the superciliary ridges on his skull tell that. He had arms and implements of bronze. He had learnt to domesticate the goat and the dog, as well as the *Bos longifrons*, the only animal which the long-headed man had succeeded in taming. He soon asserted his supremacy over the long-heads—he did not annihilate them. In the round barrows of the round-heads both long and round skulls appear ; and in the later round barrows the skulls begin to appear occasionally of an intermediate shape : this shows that the round-headed man with the bronze weapons probably enslaved the long-headed man with the stone weapons, and took the long-headed women for his wives.

This was the Bronze Age, when man had advanced to the knowledge of weapons and implements made of bronze : these did not wholly supersede stone weapons and implements, for the poor man would continue to use the cheaper articles.

Many of the weapons of the brachy-cephalic men, who intruded themselves upon the dolicho-cephalic men, have been found in Cumberland, but they are not so numerous in local museums as the relics of the earlier race. The bulk of them have found their way to the melting-pot. Forty or fifty years ago the travelling pedlar frequently bought bronze implements from labourers and farm servants for two pence apiece, and

¹ *Proc. S.A.*, ut ante.

² See Evans's *Ancient Stone Implements*, 2nd edit., pp. 152, 153 ; *Proc. S.A.* o.s. vol. iv. p. 112.

³ *Archæologia*, vol. xlv. p. 273.

⁴ *Ancient Stone Implements*, ut ante, p. 262.

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sold them over again to the brass founders for sixpence. Bronze implements are on record as having been found at various places : At Arthuret and at Aspatia, bronze palstaves¹; at Camp Graves, Bewcastle, bronze spear-head ; at Oxhouse Oaks, Edenhall, bronze hatchets ; in Eskdale, bronze spear-head ; in Geltsdale, near the ' Written Rock,' bronze celt ; at Southerfield, Holm Cultram, bronze spear-head ; Irthing River, between Naworth and Lanercost, bronze socketed celt ; Irthington, bronze palstave of adze form, very rare ; Keswick, bronze palstave with ribs ; Longtown, bronze flanged celt ; Naworth Castle, at or near, bronze spear-head ; Netherby, three bronze spear-heads and three bronze palstaves ; Stanwix, bronze javelin head ; and Wigton, bronze flanged celt.²

BRONZE AGE

a. BURIAL PLACES

Cumberland, like Westmorland, Northumberland and Durham, is prolific in the barrow of the dolicho-cephalic race, but a very small number of them have as yet been carefully examined. Many of these grave-mounds are simple heaps of stones, being what are usually called ' cairns.' These are very liable to be destroyed as the area of cultivation extends ; the stones of which they are composed afford good material for road making and mending, for building the stone walls so characteristic of the fells, and for the filling in of drains. Many have been thus destroyed without any record whatever being kept, beyond, in a few cases, an inaccurate paragraph in a local paper. These barrows, cairns, or tumuli, exist, or have existed, or have been thought to exist or to have existed, at various places : At Arthuret Church, large tumuli ; on Aughertree Fell, Ireby, tumulus ; Askerton Park, three cairns ; Belmont, Penrith, cistvaen only remaining ; Bleatarn, tumuli ; Boat How, cairns ; Boothby, tumulus ; Brampton, tumuli ; Barnscar, extensive settlements, enclosures, walls, cairns, burials in urns ; Bewcastle, The Curragh, Skelton Pike, two large cairns ; Bewcastle, on Baronspike or Barnspike, tumulus ; Bewcastle, the Shiel Knowe, starfish cairn ; Bewcastle, on the White Lyne river, cairns ; Binsey summit, tumulus ; Birkerthwaite, Green How, cairns and enclosures ; Blencarn, tumulus ; Blencow Bank, with urns, incense cups, burnt bones ; Brackenhill Tower, with cist and interments ; Broadfield, Inglewood Forest, tumulus, circular enclosure, stone cists ; Burnmore, cairns ; Carling Knott, tumuli ; between Carlisle and Wigton, tumuli ; Castle Carrock, Brampton, on the Fell, cairns ; Cumrew, cairns ; Castle Carrock, Caldbeck, cairns ; Cawfell Beck, cairns ; Dalston Hall, tumuli ; Dunmailraise,

¹ Professor Daniel Wilson defines palstaves as ' wedges (of bronze), more or less axe-shaped, having a groove on each side terminating in a stop ridge, and with lateral flanges destined to secure a hold on the handle.' *Preh. Ann.*, 2nd edit., vol. i. p. 382 ; cit. in Evans's *Ancient Bronze Implements*, p. 72.

² The authority for these implements will be found in ' An Archæological Survey,' etc., Evans's *Ancient Bronze Implements*, and *Catalogue of Museum*, etc., all cited ante p. 228 note.

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cairn ; Dean, Parkhill, tumuli ; Dalston, Chapel Flat, barrow, cist ; Dalston, Bracken How, tumulus, urns ; Devoke Water, cairns, tumuli ; Eamont, opposite Mayburgh, tumulus ; Ennerdale Water, cairns ; Edmund Castle Lodge, cist, urns ; Egremont Common, tumuli ; Ellenborough, tumulus ; Friar's Moor, tumulus with ditch ; Farlam, Kirkhouse, cists and urns ; Fisher's Cross, Port Carlisle, tumulus ; Geltsdale, tumuli ; Gillalees Beacon, twin barrows, tumulus, and cairn ; Grassmoor, cairn ; Greystoke, Woundel Cairn, cairns ; Garlands, near Carlisle, urns, etc. ; Gelt Bridge, Castle Carrock, and Leafy Hill, cairns, cistvaens, urns, etc. ; Hackmoor Hill, cistvaen ; Hallbank Gate, tumulus ; Hartside, Benty Hill, tumulus, called Old Anthony's Chair ; Hayton, Brampton, tumulus ; Hesketh-in-the-Forest, four small tumuli ; Hindscarth, large cairn ; How Mill, great tumulus ; Hesketh Newmarket, barrow ; Isell, tumuli, one called The Grey Barrow ; Keswick, Falcon Crag, Latrig and Skiddaw, cairns and tumuli ; Kirkoswald, Old Parks, large cairn of stones ; Knock's Cross, Port Carlisle, tumulus ; Lanercost Bridge, tumulus ; Lazonby Fell, cairns ; Moresby Hall, stone cists ; Newton Reigny, tumuli ; Ormstead Hill, near Eamont Cottage, tumulus ; Plumpton Mill Hill, cairns ; Great Salkeld, raise or cairn ; Great Salkeld, Wan Fell, tumulus ; Seatallan tumulus ; Stockdale Moor, cairns, near the long barrow called Sampson's Bratful ; Skelton, Loaden How, cairn ; Thirlmere, Deergarth Wood, cairns ; Tongue How, cairns ; Ulpha Fell, cairns ; Unthank, Gamelsby Low Fell, cistvaen ; Woodhall, The Druid Grove, barrow.¹ It must not be too hastily concluded that all the above tumuli and cairns are artificial burial places. Many of them have been put on the list on the authority of the Ordnance Survey, on whose maps they are marked with the word 'tumulus.' For instance, the two mounds near Dalston Hall, one on each side of the road, marked on the 6-inch Ordnance Survey map as tumuli, are mere undisturbed gravel knolls, the extremities of a long winding ribbon-like Esker. This was proved by excavation pluckily undertaken by two ladies, who were much disappointed with their results. The same applies to the tumulus at Lanercost Bridge, and to many or all in the Brampton neighbourhood ; they are the remains of a great sheet of gravel, which once covered the district and has been cleared away by denudation, except the harder or more compact knobs. The Brampton Eskers cover a much larger area than any group in West Cumberland, and they may be seen at a height of 600 feet above the sea. Some of them have been opened by General Pitt-Rivers and Lord Carlisle ; nothing but Esker gravel was found. The great tumulus at How Mill may probably belong to this Esker group. There is a fine isolated Esker ridge a few yards south of Arthuret Church and Rectory, which accounts for the supposed tumuli there. There are accumulations of Esker gravel and sand in the parish of Kirklington between Black Snib peat moss and Brackenhill Tower, and again between

¹ The authority for these tumuli or cairns, etc., will be found in 'An Archæological Survey,' etc., ut ante p. 228 note. Further particulars will be given in this work in the accounts of the various parishes in which they are severally situate.

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the Heather Burn and the Longtown and Brampton Road, round Horse-gills farmhouse. There is another Esker group between Crofton Hall and Thursby, a series of ridges rising occasionally into circular mounds of which Torkin, on the north side of Crofton Park, is the most conspicuous example. There are Esker ridges between Great Orton and Carlisle. These and the Crofton group probably account for the tumuli between Carlisle and Wigton. In the west there is another Esker tract between Abbey Town and Allonby.¹ The pre-historic races were, however, not above taking and improving an Esker or other natural mound as a place of sepulchre. Other pitfalls await the unwary and would-be antiquary; some of these supposed sepulchral mounds may be nothing but clearance heaps. The Parkhill tumuli in Dean, two in number, are, it is suggested, mere archery butts. The great mound at Bleatarn has been proved to be modern, piled up to support a summer house; modern pottery and tobacco pipes have been found buried at some depth in it.

In some cases the tumulus has been removed by excavators, or possibly by natural denudation, and the cist, or cistvaen, left exposed, too frequently the only record. Of the settlement on Barnscar more will presently be said, and also of the great cairn in Old Parks, Kirkoswald, which was sold to the County Council of Cumberland for road material; from it they obtained 600 cartloads of stone. The starfish cairn at Shiel House, Bewcastle, is one of a class of cairns found in Westmorland to which that name was given by the late M. W. Taylor, Esq., M.D., F.S.A. The projecting rays are later additions to the original cairn, and probably cover later burials. The celebrated cairn at Dunmailraise, under which the last king of rocky Cumberland is said to lie, is very doubtful. The navvies employed on the Thirlmere Waterworks probably opened it, if it had not already been opened by shepherds; they certainly rebuilt it one Sunday, and made it into a neat piece of work with a huge flat projecting table stone on the summit. This was afterwards undone, and the original disorder restored.

b. CONTENTS OF GRAVES

Owing to the dearth of scientific and systematic investigation into the burial places of the prehistoric races that once inhabited this district, no very certain conclusions can be drawn about these races and their modes of life, if the local evidence found within the district is alone relied upon. So far, however, as that evidence goes, it goes to show that the prehistoric race or races that once dwelt in the district now called Cumberland were the same as those that dwelt in the neighbouring districts, now called Westmorland, Durham, Northumberland and Yorkshire; we can, therefore, adopt the conclusions arrived at by Messrs. Greenwell and Rolleston in their valuable work on *British Barrows*, which is further continued in *Archæologia*, vol. lii. It is impossible to give all these conclusions, but a few of them are referred to.

¹ For information about these Esker groups we are indebted to *Memoirs of the Geological Survey England and Wales, the Geology of the Country round Carlisle*, by T. V. Holmes, F.G.S.

EARTHWORKS.

THE VICTORIA HISTORY OF THE COUNTIES OF ENGLAND

The Victoria History of the Counties of England, Lancashire, by J. G. Bartholomew

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First of all, as to the methods of burial adopted by these prehistoric people in the north of England. They practised both burial by inhumation and burial after cremation, but the former was by far the most usual, a little under twenty-one per cent. only being after cremation, that is the burials after cremation only amount to about rather less than a fourth of those by inhumation. There appears to be some rule regulating the practice, but in the present state of knowledge that rule is unknown : it is not a question of sex, or of wealth, or of position, or of age ; the instances found prove that. The unburnt body is almost always found to have been laid upon the soil in a contracted position, that is with the knees drawn up towards the head, which is generally more or less bent forward, the back, however, is sometimes quite straight. So invariable is this rule that out of 301 burials of unburnt bodies which Canon Greenwell examined in the barrows of the Wolds, he only met with four instances where the body had been laid at full length. These cases may have been subsequent interments of Angles, who buried in the extended position and flat on the back. The probability is that the contracted position was the position in which the prehistoric races were accustomed to sleep, drawing up their knees for the sake of warmth. Charcoal is frequently found scattered throughout the greater part of a burial mound. It may have been the ashes of fires on the ground from which the material of the mound was heaped up, or of the fires at which the funeral feasts were cooked. But Canon Greenwell suggests it may be the ashes of a fire through which a corpse was passed without being actually consumed—a ritualistic ceremony, resembling, as the Canon says, the substitution of aspersion for immersion in the rite of baptism. The occurrence with burials by inhumation of buttons of bone and of jet, points to the bodies having been interred dressed as in their lifetime, while the occurrence of bone pins suggests the use of some sort of shroud. Weapons and implements, either of bronze or stone, are rarely found in company with interments of either burnt or unburnt bodies. When they do occur they are much more frequently of stone or flint than of bronze, and such bronze implements as do occur are small and insignificant, conveying the idea that the round barrows are of the early Bronze Age, when only small articles were fabricated from that metal, either because it was rare and expensive, or because the workers in bronze were up to then but moderately expert. Personal ornaments also occur in barrows, generally in connection with the burials of women.

In Hutchinson's *Cumberland* (vol. i. p. 151) mention is made of the removal at Hayton about the year 1790, of a bank of sand and gravel (probably a tumulus) and the discovery of three objects of gold, which the country people called 'shekels,' as similar in form to the 'shekels' of a plough beam, 'shekel' being a name, says the writer in Hutchinson, which is applied to the ring fixed to a plough beam. They were penannular in form, plain and smooth, except the two knobs at the opening. They measured 3 or 4 inches in diameter, and about $1\frac{1}{2}$ inches in thickness. Had they had tongues they would have been fibulæ ; they

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may have been torques. They were sold to a silversmith in Carlisle, who gave £7 for one of them and £20 for another, and no doubt have long ago been melted. The evidence is not sufficient to enable any certain conclusion to be arrived at. In Whellan's *Cumberland*, a find of stone beads in a barrow of stones at Gillfoot, Hesket-Newmarket, is recorded. There was there what the writer calls a

Druid's Grove, consisting of two parallel rows of large oak trees, extending 150 yards in length, and the rows 12 yards distant. In a level field at the middle of the two rows was a barrow of stones. The trees were cut down and the barrow removed in the year 1794, when beneath the barrow several places where human bones had been burnt and deposited were discovered, as also numerous pieces of flint and stone beads and a stone battle axe (p. 225).

Nothing is said as to what the beads were like: and the writer of the above account, writing in 1860, does not tell how he got his information as to a find of beads in 1794. Beads of cannel coal, twelve in number, were actually inside an 'incense cup,' found in a large tumulus at Old Parks, Kirkoswald, as will be presently related.

The reason of these deposits is generally stated to be that this pre-historic race had a belief in a future state of which the conditions would be similar to the conditions of life upon this earth: conditions in which the man would still want his implements of war and of the chase, and the woman her ornaments. Other reasons may be imagined, such as a superstitious dislike to, or fear of, a dead man's belongings. But whatever the reason was, the puzzle is that in the majority of cases of interment, nothing whatever is found. When things are found they are of little value. This points to these people being very poor. Indeed one can hardly fancy any but a poor race clinging to the cold and barren fells and moors.

A vessel or vessels of earthenware are frequently found with interments, whether of burnt or unburnt bones. These vessels have been divided into cinerary urns, 'incense cups,' 'food vessels' and 'drinking cups'—a misleading nomenclature, but one which Canon Greenwell considers it both difficult and undesirable to alter, particularly as we do not know with absolute certainty what these vessels were originally intended for. In Canon Greenwell's experience he finds the cinerary urn and the 'incense cup' accompany burnt bodies, while the 'food vessel' and the 'drinking cup' accompany both burnt and unburnt bodies, though he states it is rare to find the 'drinking cup' with burnt bodies.

The older antiquaries used to imagine that this pottery was sun-dried; that is not so. In that case damp would long ago have caused the vessels to return to the original clay out of which they were formed. They were baked before an open fire, whose smoke has often stained the manufactured article in places. The clay of which the larger vessels is made, is largely mixed with broken stone, with the object of making the clay firmer and less likely to crack in the baking. Neither artificial colour, nor glazing is ever employed, though most of the drinking

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cups have a polish, probably produced by rubbing them with a smooth stone or a bone. The general system of ornamentation consists of combinations of straight lines in an almost inconceivable variety.

The patterns have been made by a sharp-pointed instrument, drawn over the moist clay ; by stamping with a narrow piece of bone or hard wood, cut into alternate raised and sunk squares, or simply notched ; by rows of dotted markings, round, oval and triangular, of greater and less size ; by the impression of the finger-nails ; and most commonly by impressions of a twisted thong, generally made of a strip of hide, but certainly in many cases of string manufactured out of some vegetable fibre, and consisting in some cases of two if not three plaits. Curved lines and circular markings, though they occur now and then, are uncommon, the pattern being generally made up of straight lines arranged in cross, zig-zag, chevron, saltire, reticulated and herring-bone fashion (*British Barrows*, p. 65).

The cinerary urns are those vessels which contain a deposit of burnt bones. The most common shape, indeed in Cumberland the normal shape, is that of

two truncated cones, placed the one upon the other, the broadest parts in apposition, the upper rather overlapping the lower, and being about half its depth. The mouth is therefore contracted, and the upper cone constitutes the rim, which is overhanging.
. . . The bottom of the urn is small in comparison with its mouth, and is usually not above one-third of its diameter (*British Barrows*, p. 65).

Cinerary urns of this form are of large size, ranging from 9 or 10, to 16 or 18 inches in height. Deviations from this form occur, but mainly in the south of England, and are generally smaller and of a finer clay. Those of the larger and more common form frequently contain flint implements along with the calcined bones. Flint implements rarely occur with the smaller and more unusual forms, but articles of bronze are occasionally found. Hence the conclusion is that the vessels of the larger and more common form are the most ancient in date. Their overhanging rim is available for securing by means of a cord a cover of skin or cloth over the mouth of these vessels, which are not infrequently found inverted and standing on a flat stone or piece of slate. At other times they are found erect, with a flat stone or slate covering the top : sometimes they are found in a cist of stone slabs.

Several urns of this larger and more uncommon form were found when the County Lunatic Asylum was built at Garlands, near Carlisle, in the years 1860 and 1861. This find consisted of cinerary urns, food vessels, incense vessels, stone implements and a flint arrow-head. No written or printed account of this interesting discovery exists : but the architect, the late Mr. J. A. Cory, an able and skilful antiquary, had all the objects found placed in a case and kept in the committee room at the Asylum. They remained there for some years, but were removed to the Museum in Carlisle, and are now in Tullie House, though it is doubtful if they could be all identified.¹ Several urns, also of this type, and full of calcined bones, were dug up in the year 1881 on Augher-tree Fell, near Ireby, by an enthusiast who worked at night by the light of a

¹ Personal information.

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moderator lamp. They were ranged in a circle round the centre of a tumulus. No stone or other implements, or flints, were found.¹ The ruins of these urns are now in the Museum in Tullie House, Carlisle. Another urn of the same type was found by a ploughman in the neighbourhood of Farlam, and is believed to be in private hands.²

Several urns filled with ashes were found in the year 1775 on Culgaith Moor in the parish of Kirkland. In 1784, on the same moor, two entrenchments were discovered, about 10 yards asunder, each covered over with earth, 6 or 8 inches in thickness : one of them was circular, about 5 yards in diameter, and contained four urns standing upright, enclosing bones and ashes, the mouths of each covered with a flat stone ; the other was nearly square and contained no urns.³

Urn containing ashes, skull, bones, etc., are said by Hutchinson, writing in 1794, to have been found in a tumulus in the parish of Dalston known as the Toddle Hill. It was 40 yards in diameter, and 7 yards high, and consisted of sand and gravel : it has been entirely taken away for the reparation of the roads and for building purposes.⁴ An urn of this large and common type was found in the great tumulus at Old Parks, Kirkoswald : it was full of burnt bones. Fragments of other similar urns were found scattered about this tumulus. Fragments of two cinerary urns of this type, with overhanging rim, were found in December, 1890, in a cist in a gravel pit near Brackenhill Tower, in the parish of Arthuret. The cist was standing nearly north and south, and was about 3 feet long and divided into two compartments. Unfortunately the urns and bones were broken before the workmen understood the nature of the find. An urn with calcined bones in it was found in 1815 at Croglin, and is preserved in the Black Gate Museum at Newcastle-on-Tyne. The lower part is much broken, and the upper part or neck is perpendicular, and has three heavy mouldings round it. A sketch is in the *Proceedings of the Society of Antiquaries of Newcastle-on-Tyne*, vol. iii. p. 434.⁵

With some of these finds of cinerary urns, incense cups have been found, as at Garlands, where four were found, now in Tullie House ; two at Old Parks, Kirkoswald ; two at Loaden How, Skelton ; and two at Ullock. These 'incense cups' are of rare occurrence, and are found inside the sepulchral urns, placed in or upon the calcined bones. They are diminutive in size, and vary from a little more than 1 inch in diameter to about 4 inches, and from about 1 inch to about 3 inches

¹ See *Transactions of the Cumberland and Westmorland Antiquarian and Archæological Society*, vol. vi. p. 190 ; also personal information.

² Personal information.

³ Hutchinson's *History of Cumberland*, vol. i. p. 262 ; Jefferson's *History of Leath Ward*.

⁴ Hutchinson's *History of Cumberland*, vol. ii. pp. 444, 452 ; Whellan's *History*, vol. ii. p. 162.

⁵ In 1900 the tumulus at Grayson-lands, Glassonby, was opened. Inside a stone circle was a cist, a deposit of charcoal, and a glass bead. Outside the circle, but under the tumulus, was an urn, inverted, with burnt bones ; also a deposit of burnt bones without an urn. (*Transactions of the Cumberland and Westmorland Archæological Society*, vol. i. pp. 295-9, n.s.).

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in height. The illustration, given with this section, of two found at Old Parks, Kirkoswald, gives a good idea of a common form of incense cup ; but there are numerous varieties. A singular thing is that they are sometimes perforated with holes, and that their ornamentation is continued over the bottom, as if they were meant to be viewed from below. Hence some have considered that the holes were for passing cords through for suspension, and that the incense cups were lamps, but no trace of such use has been discovered upon any incense cup. Others have suggested they were small urns to receive the ashes of infants, sacrificed perhaps at the death of their mothers, so that the smaller urns might be placed within those containing the ashes of their parents. But Canon Greenwell has scarcely ever found bones placed within them except accidentally. The Canon also dismisses as improbable the idea that they were used for the purpose of fumigation, either to conceal the odour of the burning body, or as part of a religious ceremony. He regards as a probable suggestion that put forward by the Hon. W. Stanley and Mr. Albert Way, viz.,

that they were 'chafers,' 'for conveying fire, whether a small quantity of glowing embers or some inflammable substance in which a latent spark might for awhile be retained, such for instance as touchwood, fungus or the like, with which to kindle the funeral fire (*British Barrows*, p. 81).

The 'food vessels' and the 'drinking cups' appear to have been the receptacles of some sort of provision for the departed in the new world to which he or she was bound. The food vessels are found both with burials by inhumation and after cremation, but more commonly with burials by inhumation. They generally contain a substance or a deposit, which analysis shows to be the remains of some animal or vegetable matter. They vary in height from 3 to 8 inches according to Canon Greenwell, but Mr. Llewellyn Jewitt says their average height is from 4 to 6 inches. The Canon also says that they are more diversified in shape than those of any other class. They occasionally have little projecting knobs or ears on their shoulders, sometimes pierced as for suspension by means of a string, sometimes mere ornamental survivals. Sometimes they have feet, four in number, and some have even been found with lids of pottery. Drinking vessels vary in size from 5 to 10 inches ; there are two principal shapes ; the bottom of both is more or less globular, in one class the upper part widens to the mouth in a straight line, in the other in an easy curve. The drinking cups are usually, according to Canon Greenwell, thin in the walls, very neatly made of fine paste, and much better fired than any other class of sepulchral pottery.

The recorded occurrences of food or drinking vessels in Cumberland are very few ; food vessels were found with the burials after cremation of the find at Garlands mentioned before. A cist with a skeleton in it and an urn was found near Edmond Castle Lodge.¹ The urn was broken and

¹ *Transactions of the Cumberland and Westmorland Antiquarian and Archæological Society*, vol. vi. p. 470.

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the pieces lost, so that it is uncertain to which class it belonged. Canon Greenwell records a drinking cup, as found in a cist in the parish of Castle Carrock, near Brampton; the cist which contained it was found accidentally, and the urn was broken up in order that each man working in the field might have a piece. From some of these pieces the Canon was able to make out its size, form and ornamentation. It was of the second class of drinking cups just mentioned, about $7\frac{1}{2}$ inches high, and $5\frac{1}{4}$ inches wide at the mouth.

It was ornamented with narrow encircling bands, defined by a grooved line on each side of them, every fourth band having upon it short sloping lines, these being arranged upon the bands alternately from right to left and from left to right (*British Barrows*, p. 379).

The cist contained the body of an old man, laid on the left side, with the head to north-east, having one arm extended and the other laid across the chest. The drinking cup was behind the head.

As allusion has been made more than once to the tumulus at Old Parks, in the parish of Kirkoswald, it may be desirable to give here a detailed account of that tumulus, and of its exploration, particularly as some features of singular interest were revealed. The mound or tumulus was situated in a field on Sir Richard Musgrave's farm of Old Parks, Kirkoswald, called 'Low Field,' a name which was taken by the few who knew it to refer to the position of the field itself, and not to any mound or burial place in it; the mound, indeed, was by many supposed to be a mere clearance heap, and it is probable that it had in modern times been used as such, which might account for the irregular outline. It was sold in 1892 to the County Council of Cumberland for road metal. The mound was roughly oval, with a longer diameter of 80 feet and a shorter of 63 feet, the longer diameter running east and west. Its height above the level of the adjacent ground was about 4 feet, and it was somewhat depressed in the centre. A large tree grew a little within the circumference of the mound on the south side. The work was commenced in the autumn of 1892, and about 30 cartloads of stones were removed from the extreme circumference of the mound on the north side. During the removal an incense cup was found, also some fragments of a large urn, and some bits of calcined bone. The tenant of the farm, Mr. William Potter, C.C. for the Edenhall division of Cumberland, immediately drew the attention of the present writer to these discoveries. Some excavation was consequently made in the centre of the mound, where a few large slabs of stone were lying about. A large earthfast stone was exposed, which was taken to be part of a ruined cist. On it a curious mark or grooving was observed. Two or three vertebræ and a fragment of a skull were found, none of them human. A little charcoal and stones reddened by fire were also discovered. After this the work of leading away the stones was suspended for a very considerable time, until the autumn of 1893, when it was resumed under the careful supervision of Mr. Potter, while photographs were taken from time to time of the mound. Towards the end of 1893 a second

FIG. 1.

No. 1. No. 2. No. 3. No. 4. No. 5.
TUMULUS AT OLD PARKS, SHOWING WEST SIDE OF THE DIVIDING LINE OF EARTHFEST STONES.

FIG. II.

No. 5. No. 4. No. 3. No. 2. No. 1.
TUMULUS AT OLD PARKS, SHOWING EAST SIDE OF DIVIDING LINE OF EARTHFEST STONES.

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incense cup was found, with twelve small beads of cannel coal inside it.¹ By July, 1894, about 600 cartloads of stones had been removed, and the site was virtually cleared, though a considerable heap of stones was still remaining on the west, awaiting removal. The stones were mainly of a local sandstone. The tree which grew within the circumference of the mound was cut down and up-rooted during the clearance.

Running in a straight line from north to south across the central portion of the cleared area, but not reaching to the boundary on either side, were five slabs of rough stone, set in the natural surface of the ground, but not very deep, forming a row 14 feet 9 inches long, measured on the ground (see figs. i. and ii.). The following are their dimensions, taking the most northerly stone to be No. 1 :—

	Length along the ground	Height	Thickness
No. 1.	1 ft. 8 in.	1 ft. 1 in.	4 in.
No. 2.	2 ft. 6 in.	1 ft. 5 in.	6 in.
No. 3.	2 ft. 7 in.	2 ft.	8 in.
No. 4.	3 ft. 2 in.	1 ft. 9 in.	7 in.
No. 5.	3 ft. 1 in.	1 ft. 10 in.	5 in.

The height given for No. 5 is taken at its middle, but its southern corner stands 2 ft. 4 in. above the ground, and it was this stone that was taken in 1892 to be part of a ruined cist. Of these stones, Nos. 3 and 5 have artificial grooves and markings on their east sides (see figs. iii. and iv.), and No. 4 on its west side (see fig. v). These markings continue into the ground and show that they were upon the stones before the stones were set in their present positions. But the freshness of the pick or chisel marks in the grooves proves that these stones cannot have been long exposed to weather. This row of stones thus indicates division of the area of the mound or tumulus roughly into two halves, semicircles, or, rather, semi-ovals.

In the western half of the area no less than thirty-two deposits of burnt bones were discovered ; they were in holes scooped out of the natural surface of the ground and in some cases were accompanied by

¹ The question has been asked, 'Is the finding of these beads *in* the incense cup strictly authenticated ?' The following is Mr. Potter's reply :—

THE PARKS, KIRKOSWALD, Oct. 15, 1894.

DEAR MR. FERGUSON,—

There is *no doubt whatever* about the twelve beads being found *inside* the larger incense cup. I found the cup myself, and it was never out of my sight, and scarcely out of my hands, until I took it home. It was my intention to send it on to you with its contents undisturbed, but Mrs. Potter, with the curiosity of the sex, got to poking in it with a hairpin and discovered some of the beads, and I then emptied it out and found the remainder.

Very truly yours,

WM. POTTER.

The beads were pronounced by Mr. J. G. Goodchild, F.G.S., F.Z.S., to be made of cannel coal.

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fragments of broken urns, and also by stones showing traces of fire. The first incense cup already mentioned (see figs. vi. and vii.) was found near the north end of the line dividing the two semicircles or ovals (on the continuation of the line of five earthfast stones). The second and much superior incense cup (see figs. viii. and ix.) was found a little westward of the first, and in it were the twelve small beads (see fig. x.) already alluded to. Near to where the second incense cup was found, a flat stone covered one of the thirty-two interments, a protection that was not accorded to others of them. These interments were dotted about the area of the semi-oval, but mainly towards the circumference. Under the roots of the tree, stated to have been growing on the south side of the mound, a large burial urn was found, full of burnt bones. It is much distorted by pressure, but was got out perfect, or nearly so. It stands 1 foot $1\frac{3}{4}$ inches high, with a diameter of 5 inches at the bottom, and of 1 foot 1 inch by $11\frac{1}{2}$ inches at the mouth, which has been distorted into an oval. The ornamentation on it is rude and much worn. Fragments of similar urns were found among the bones in some of the interments, and also fragments of urns of smaller and thinner paste, being probably of the class known as drinking cups.

The eastern half of the area contained no interments, but two large excavations had been made into the original soil; both ran east and west, and much resembled modern graves. The larger was 8 feet 3 inches long by 4 feet 9 inches wide and 4 feet 3 inches deep; the other was smaller, about the dimensions of an ordinary grave of the present day. Both, when first discovered, were filled up with cobble stones, and in a corner of the larger, under a flagstone, were some burnt bones and ashes.

It would seem that the excavations in the eastern half of the mound must have contained burials by inhumation in an extended position, the bodies lying east and west, and having long ago wholly disappeared; while the bones and ashes found there under a flagstone must have been a secondary interment of later date. These two burials by inhumation, 4 feet deep below the original surface, must have been the original interments over which the tumulus or low was raised. The question arises, What is the date of the thirty-two interments by cremation in the western half of the mound, and what is the meaning of the wall of separation, and of the mysterious grooves and marks cut on the east side of two of the stones, and on the west side of one of them? One can hardly imagine the interments after cremation to have been simultaneous with the two by inhumation, unless there had been a wholesale slaughter of slaves and dependents at the time of the inhumation. It would be more probable that they were made subsequently, and at different times. Dr. Thurnam (*Archæologia*, vol. xliii. pp. 328-31), gives instances of central primary interments by inhumation with secondary interments after cremation lying on or towards the circumference of the barrows towards the south side, while the north is vacant, but in the instance before us they lie towards the west, and the east is vacant. Many instances of burial by inhumation, and of burial after cremation in the same

FIG. III.

TUMULUS AT OLD PARKS : EAST SIDE
OF STONE NO. 3.

FIG. V.

TUMULUS AT OLD PARKS : WEST SIDE
OF STONE NO. 4.

FIG. IV.

TUMULUS AT OLD PARKS : EAST SIDE OF STONE NO. 5.

FIG. VI.

FIG. VII.

TUMULUS AT OLD PARKS : INCENSE CUP.

EARLY MAN

tumulus, are given in Greenwell and Rolleston's *British Barrows* (pp. 7, 8).¹ No pottery except what has been mentioned, no personal relics except the twelve rude beads of cannel coal, were found to our knowledge, but there might have been. The removal of the tumulus occupied, intermittently, over two years, and was proceeded with at such chance times as the work of a large farm and the weather left men and horses free. Hence continuous scientific supervision was impossible; but archæologists are much indebted to Mr. Potter for the care he took to record, secure, and preserve everything.¹

A granite monolith stands in the next field, 106 yards due west from the circumference of the tumulus: it stands 4 feet 7 inches high, and is 13 feet in circumference at the ground level; no artificial markings have been found upon it.

CUP, RING AND GROOVE MARKINGS

The occurrence of cup, ring and groove marked stones is not without precedent in Cumberland. Indeed the first discovery of them was made at Aspatria, in Cumberland, in the month of June, 1789, and is reported by Major Hayman Rooke, in a letter dated December 17 in that year, and read before the Society of Antiquaries of London, February 4, 1790.² The following is Major Rooke's account of the circumstances of the find, which, be it observed, is not from personal observation, but from information supplied to him by Mr. Rigg, the proprietor of the land on which stood the barrow or tumulus, during the opening of which the discovery was made. The Major had an inspection of the objects found and sketched them.

About two hundred yards north of the village, and just behind his house (Mr. Rigg's), is a rising ground called Beacon Hill, on the summit of which the barrow was placed, commanding an extensive view every way, and of course a very proper situation for a beacon, which was probably erected on the barrow. In levelling this (the base of which I found to have been 90 feet in circumference) they removed six feet of earth to the natural soil, and about three feet below they found a vault formed with two large cobble stones at each side, and one at each side (*sic*). In it was the skeleton of a man which measured seven feet from the head to the ankle bone, the feet were decayed and rotted off. The bones at first appeared perfect, but when exposed to the air became very brittle. On the left side near the shoulder was a broad sword near five feet in length; the guard was elegantly ornamented with silver flowers. On the right side lay a dirk or dagger, one foot six inches and a quarter in length, the handle appeared to have been studded with gold. Near the dagger was found part of a gold fibula or buckle, and an ornament for the end of a belt, a piece of which adhered to it when first taken up . . . Several pieces of a shield were picked up, but I did not see parts sufficient to make out the shape. There were also part of a battle axe . . . a bit shaped like a modern snaffle, part of a spur. These were very much corroded with rust. H and I are the two large cobble stones

¹ This account of the Kirkoswald tumulus is abbreviated from one by the present writer in the *Transactions of the Cumberland and Westmorland Antiquarian and Archæological Society*, vol. xiii. pp. 389-99.

² *Archæologia*, vol. x. pp. 105, 111, 113; see also Hutchinson's *History of Cumberland*, vol. ii. pp. 287, 288, note.

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which inclosed the west side of the kistvaen. H is two feet eight inches in length, I is three feet in length, and one foot eight inches high. On these stones are various emblematic figures in rude sculpture, though some of the circles are exactly formed, and the rims and crosses within them are *cut in relief*.

We reproduce, from Fergusson's *Rude Stone Monuments*, one of the two side stones, so that their similarity to the stones at Old Parks is at once seen. Major Rooke takes the circles upon the Aspatria stones to

SIDE STONE, ASPATRIA CIST.

be emblems of eternity, and from the circles and crosses he concludes the interment to be that of a person of rank after the year A.D. 596, when Christianity became established in Britain. We need not linger to argue the question with the Major's shade : his theory will

hardly find a supporter at the present day.¹ The relics, other than the cobble stones, found at Aspatria, are such as one would expect to find in a Northman's grave, and probably mark the interment as a result of the settlement of Cumberland by the Northmen.²

The next recorded discovery of these cup and ring and other rock markings in Cumberland was made by Sir J. Gardner Wilkinson in 1835, on the well known monolith Long Meg, where he found a concentric circle with four rings around a cupped centre.³ At a later date Sir J. Y. Simpson and Dr. Taylor visited Long Meg and found not one but several concentric circles carved thereon.⁴ The stone circle, so well known as 'Long Meg and her Daughters,' is situate in the parish of Addingham, which is immediately to the south of Kirkoswald : Long Meg, as the crow flies, can only be distant from the Old Parks tumulus about a mile and a half.

About the same time that Sir James Simpson discovered the circles on Long Meg, the Rev. Canon Simpson, formerly president of the Cumberland and Westmorland Antiquarian and Archæological Society, found some ring cuttings on two boulders forming part of a circle of eleven stones around a cist, situated a few hundred yards to the east of

¹ The compiler of Hutchinson's *History of Cumberland*, vol. ii. p. 288, note, asserts the marks on the Aspatria stones to be 'magical numbers and figures, the work of ignorant sorcerers and wicked wretches,' who inserted these things in the graves of bygone races in order to secure the obedience of evil spirits that dwelt therein.

² Robert Ferguson's *Northmen in Cumberland and Westmorland*.

³ *British Archæological Journal*, vol. xvi. pp. 101-18, with illustration.

⁴ 'On Ancient Sculpturings of Cups and Concentric Rings, by Sir J. Y. Simpson, *Proceedings S.A.S.* 1st series, vol. vi. pp. 17, 18, with illustration ; *Transactions of the Cumberland and Westmorland Archæological Society*, vol. vi. p. 111.

FIG. VIII.

FIG. IX.

TUMULUS AT OLD PARKS : INCENSE CUP.

FIG. X.

TUMULUS AT OLD PARKS : BEADS.

EARLY MAN

Long Meg. This cist is in a field called Whins in the township of Maughanby, hence this stone is called the Maughanby Stone.

The most remarkable cup-marked stone ever discovered in Cumberland or Westmorland was found in 1881 by Dr. M. W. Taylor, F.S.A., at Redhills, in the township of Stainton, in Cumberland, about two miles from Penrith. It is a large slab of freestone, 5 feet 4 inches in length by 3 feet 6 inches in width in the centre, and it varies from 8 to 13 inches in thickness. It is fully described by Dr. Taylor, who gives an illustration.¹ It formed the cover of a cist, which had contained an interment after cremation. The markings upon it display four types : (1) Cup-shaped hollows of various sizes and depths ; (2) Central hollowed cones surrounded by two concentric circles, each bisected by a radial groove ; (3) Hollowed channels like gutters running in various directions ; (4) Little pits or small pick marks in the stone.

One of the monoliths known as the Giant's Grave, at Lacra, in south-west Cumberland, has on it a well defined cup mark.² Some cup- and ring-marked stones were found at Maryport, in 1887, by Mr. J. B. Bailey.³

We have thus brought together all the known instances of cup, ring and groove markings in Cumberland. Two questions arise upon them : What do they mean ? What is their date ? They are not peculiar to this county. Dr. Anderson says :—

They are not confined to Scotland, or even to Britain. They are found in Scandinavia, in France, in Germany and Switzerland. They appear on the Continent in associations which refer them to the Bronze Age at least, but they also occur in associations which show that the custom survived to the late Iron Age, and even in a modified form to Christian times.⁴

Sir James Simpson and Dr. Taylor would refer their commencement at least to the late Stone Age. As to what they are, Dr. Anderson in another passage says :—

They are one of the enigmas of archæology.

Canon Greenwell says :—

In many cases these markings occur upon rocks, but they have been very frequently found upon detached stones of greater or less size, and in a large number of instances . . . they are connected with burials after cremation ; sometimes covering the deposit of bones, sometimes placed beneath it, and sometimes forming the side or cover of a cist within which the bones were deposited. This connection with burial, always a sacred rite, seems to bring them within the class of symbolic representations ; in other words, suggests the notion that they are or may have been figures, after a very rude and conventional manner, of some object embodying an idea that involved the deepest and most esoteric principle of the religion held by these people.

¹ *Transactions of the Cumberland and Westmorland Antiquarian and Archæological Society*, vol. vi. pp. 110–18 ; *Proc. S.A.S.* vol. xvi. p. 438.

² *Transactions of the Cumberland and Westmorland Archæological Society*, vol. i. pp. 278–80.

³ *Ibid.* vol. ix. pp. 435–8, where an illustration is given. One of the stones of the Grayson-lands tumulus, Glassonby (see note, p. 236), is said, on good local authority, to have been marked with concentric circles or a spiral (*ibid.* vol. i. pp. 295–9, n.s.).

⁴ *Scotland in Pagan Times ; The Iron Age*, p. 299.

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The tau symbol of Egypt, the pine-cone of Assyria, the triangular-shaped stone of India, the cross of Christianity, outward expressions of that which has been in almost every religion its most sacred belief, may well have been, however different in form, yet the same in essence with these mysterious pits and circles.¹

CISTS

In the list already given of local barrows, tumuli, and cairns, past and present, mention is made of cists. A cist is made of four or more stones set on edge, with a cover, and is in fact a stone box or coffin, which is not meant to be again opened, when once the body or bodies for whose reception it was constructed, has or have been placed within. Canon Greenwell suggests the word 'cist' should be strictly reserved for such stone boxes, and not extended to large chambers intended to be opened for future interments, and having frequently passages or galleries leading into them from near the exterior of the mound (see *British Barrows*, pp. 13, 479, etc.). Fergusson in his *Rude Stone Monuments* (p. 43, and his Index *sub voce* Kist-Vaens) applied cist or kist-vaen to both the stone boxes, and to the great galleried or passaged chambers. Other writers do the same, and this is apt to lead to confusion. Nothing has yet been found in the Cumberland district in the nature of a chambered tumulus; cists only have been found, but the long mound at Harras, near Birdoswald, might contain a chamber. The people who buried in these chambered mounds are an earlier race than those who buried in cists.

Many barrows are fenced in or closed in some way or other; thus two of the long barrows at Latter-barrow, under Muncaster Fell, are fenced in with large stones. There is (or was) a large tumulus of stones in a field called 'Grazing Land' on the estate of Mr. Rowley, not far from the site of the tumulus at Old Parks, Kirkoswald. Standing upon the top of this tumulus, one can trace a stone circle or fence a little within the circumference of the mound. The suggestion may occur that the intervals between the stones forming the circle were once built up with loose stone walling, which has from time to time fallen and formed a sort of stone apron or extension of the tumulus, outside of the stone circle. It is, however, quite probable that the stone circle in this instance was within the tumulus from the very first.² In other cases the fence or enclosure is a ditch. Thus the tumulus at Friar's Moor is surrounded by a ditch, which is now partly interfered with by the road.³ The tumulus on Baronspike, or Barnspike, in Bewcastle, 24

¹ *British Barrows*, Greenwell and Rolleston, p. 343. For the general bibliography of this subject the reader should consult 'Notes on some Stones with Cup-markings in Scotland,' by J. Romilly Allen, F.S.A. Scot., in *Proc. S.A.S.*, vol. xvi. pp. 79-143; also a paper by W. Jolly, F.S.A. Scot., in the same volume, 'On Cup-marked Stones in the Neighbourhood of Inverness,' pp. 300-401; see also *The Sculptured Rocks of Northumberland*, by Geo. Tate, Alnwick, 1865.

² The latter supposition was found to be correct when the tumulus was opened in 1900 (see note and reference on p. 236).

³ *Transactions of the Cumberland and Westmorland Antiquarian and Archæological Society*, vol. iii. p. 248.

STONE CIRCLE ON ESKDALE MOOR.

EARLY MAN

paces in diameter, is surrounded by a trench 76 paces in circumference.¹ Many authorities suppose that all barrows and tumuli were originally surrounded either by a ditch or by a stone circle. In the one case the ditch in many, nay, in most instances, silts up and is obliterated at a comparatively early date, leaving the earthen tumulus standing free, if it has not all been washed into the ditch by rains. In the other case, the earthen tumulus sometimes disappears under the influence of weather, and the stone circle alone survives, thus accounting for the smaller stone circles which occur here and elsewhere. The larger circles probably surrounded groups of barrows; or both large and small circles may have surrounded burials or groups of burials over which no mounds had ever been piled up. These enclosing circles, whether ditch or stone circle, are often found within and hidden by the tumulus; hidden or not hidden, they are nearly always incomplete, as if a place of exit or entrance had been purposely left. The idea of these surrounding fences with exits or entrances is probably that of preventing the ghosts of the dead from wandering about and doing mischief to the living.

STONE CIRCLES

The principal stone circles in the Cumberland district are the one known as 'Long Meg and her Daughters,' near Little Salkeld, in the Parish of Addingham; the Keswick Circle; the Swinside Circle, near Broughton; and the Eskdale Circle situate on Burnmoor, near Wastwater.² The last, though the finest, is only one of several similar remains on the same moor, Burnmoor, which is a boggy elevated plateau. About 100 yards to the west of the Eskdale Circle, are two smaller rings in an imperfect state, each about 50 feet in diameter, and each inclosing one barrow. A quarter of a mile west, on Low Longrigg, are two others: one apparently perfect, about 50 feet in diameter; the other imperfect, with diameters of about 75 feet and 65 feet, and inclosing two barrows. The Great, or Eskdale, Circle, for it seems to be known by that name, is a single irregular circle of 41 stones, with a long diameter of 103 feet west-north-west and east-south-east, and a short one of 95 feet north and south. Only eight of the forty-one stones are now erect; the others are prostrate, and some are of very small size. A small erect stone or menhir stands as an outlier to the north-west. The circle encloses five barrows, each with a stone circle of its own round it. These barrows were opened long ago, in 1866, and it is said that each of them was found to contain a rude chamber formed of five stones, in which were found remains of burnt bones, horns of stags and other animals.³ What may

¹ *Early Sculptured Crosses in the Diocese of Carlisle*, by the Rev. W. S. Calverley, edited by W. G. Collingwood (Kendal: T. Wilson, 1890), p. 48.

² Very detailed accounts of these four circles are given in the *Transactions of the Cumberland and Westmorland Antiquarian and Archaeological Society*, vol. v. pp. 40-57, by C. W. Dymond, F.S.A. These Burnmoor circles are at the head of Miterdale, and the Great or Eskdale Circle is rather more than a mile from the hamlet of Boot.

³ *Proc. S.A.*, o.s. vol. iii. p. 225; Fergusson's *Rude Stone Monuments*, pp. 159, 160. Fergusson, gives a purely imaginary plan of the circle showing an outer circle of fourteen

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be intended as a gateway is on the north-west opposite the small standing outlier or menhir, and points downhill.

The Swinside Circle, or Sunken Kirk, as it is called, is situate on Swinside Fell in the Parish of Millom, and is most accessible from Broughton-in-Furness in the neighbouring county of Lancashire. Its average diameter is 92 feet, and the stones, when it was surveyed by Mr. Dymond, numbered fifty-five, of which thirty-two were then standing, and twenty-three were prostrate ; it is remarkable, that of the prostrate stones, twenty-one have fallen inwards. A few stones have been removed, but when the circle was perfect, the successive stones were nearly contiguous. The stones are founded on a seating of small rammed stones which extends around the whole of the ring and across the floor of the gateway. The gateway is on the south-east side and points slightly down hill. Mr. Dymond says :—

There is no record of any barrow having been observed within or near the Swinside Circle. The ruins are those of a bold and carefully constructed peristalith. The stones were ranged nearly in a true circle, well founded on a dry site in a rammed stone bed, and placed, for the most part at least, in juxtaposition—often, indeed, so close that it is possible there was no convenient access to the interior, save through the gateway. Hence, in this case, a necessity for that feature, which was evidently thought an important one, and must have been designed to give ceremonial access to the sacred enclosure. Perhaps this is one of the best examples we have of a structure which, according to our ideas, would be eminently suited to be a hypæthral temple : and I suggest that in the absence of evidence to the contrary, this may have been the chief purpose for which the Swinside Circle was erected.¹

The best known and most often visited of the Cumberland megalithic circles, is that which goes by the name of the Keswick Circle : this arises from its proximity to the town of that name, and to its easy accessibility compared with the Eskdale and Swinside circles. It is situate on an eminence known as Castlerigg, and is much resorted to by tourists from various lands. Many printed accounts of it exist, commencing with one by Stukeley in 1725, and continuing to the Lake guide books of to-day.² These accounts contain many discrepancies, particularly as to the number of stones ; but one fact comes out, namely, that in 1769 Castlerigg was sown with corn³. This is confirmed by an oil painting of the 18th or early 19th century, at Mirehouse, the seat of the Speddings, which shows Castlerigg, including the interior of the circle, covered with a fine and ripe crop of corn. Anything that may be now pointed out, either within the area of the circle or near it, as a barrow or ring-barrow, must be of recent origin. The stones, like those of the Swinside

stones, which does not exist, and never did ; it also shows an inclosure of stones round the easternmost barrow. The same remark applies to this. From the remote position of this circle the suggested outer circle and barrow enclosure are not likely to have been wantonly removed, and Mr. Dymond in 1872 and 1877 could find no trace of them, though he carefully probed for the barrow enclosure.

¹ *Transactions of the Cumberland and Westmorland Antiquarian and Archæological Society*, vol. v. pp. 56, 57.

² These accounts have been collected by Mr. Dymond (*ibid.* vol. v. pp. 50–5).

³ Gray's Works, vol. ii. 'Letter to Dr. Wharton,' p. 332, cited by Mr. Dymond, *ut ante*.

Diameter of meige circle = 92 feet.

STONE CIRCLE AT SWINSIDE NEAR BROUGHTON.

SCALE OF FEET.
0 10 20 30 40 50
SCALE OF ORIGINAL PLAN, 1 INCH = 20 FEET

STONE CIRCLE NEAR KESWICK.

SCALE OF FEET.
0 10 20 30 40 50
SCALE OF ORIGINAL PLAN, 1 INCH = 16 FEET.

EARLY MAN

Circle, are set on a ring-bed of small rubble. The peristalith is an irregular oval, or rather a pear-shaped figure, the longest diameter being 107 feet and the shortest 96 feet 8 inches. The number of stones remaining in the peristalith at the time of Mr. Dymond's survey in 1877 was thirty-eight, of which thirty-three were erect and five prostrate. The gateway is at the north. There is a rectangular enclosure within the circle on its east side, formed by ten more stones (eight erect and two prostrate), making the total number of stones altogether forty-eight. Within the area of the peristalith is a shallow circular trench 13 feet in diameter, which looks like the remains of a barrow, and might be such but for the ploughing to which the area has been subjected. It has been conjectured by several that this circle was a temple, and that the enclosure on the east side was the most sacred place, the holy of holies to which only the priests had admission, the chancel, as it were. Possibly it merely protected the barrow of some greater man than usual. Some excavation was made in 1882 in the interior of this enclosure. A trench, 18 to 19 feet long was opened in it, having a breadth of 3 feet 3 inches, with two cross cuts of about 2 feet. The following is the report made by Mr. W. Kinsey Dover, who superintended the work:—

Depth of dark superficial soil to where the yellow undisturbed soil appears, 14 inches, with the exception of a small portion at the west end, where the black soil mixed with stones continued to a depth of 3 feet. Near the bottom here I found what I think to be a few small pieces of burned wood or charcoal, also some dark unctuous sort of earth.¹

The stone circle with external menhir, called 'Long Meg and her Daughters,' although less visited than the Keswick Circle is probably more famous. Its name is attractive, and many writers, commencing with Camden, who made a survey of Cumberland in 1599, have written accounts of it. Like those of the Keswick Circle these have many discrepancies.²

The peristalith is irregular, with a longer diameter of 360 feet east and west, and a shorter one of 305 feet north and south. The number of stones in it, excluding one or two fragments, is sixty-eight, of which twenty-seven are erect. Long Meg herself, who stands to the south-west, about 60 feet outside of the ring of her hard-featured daughters, makes the number of stones up to sixty-nine. A gateway or rudimentary avenue intercepts the peristalith in the direction of the menhir, which is a monolith of hard red sandstone, 12 feet high by 3 feet 6 inches broad, and the same thick. The cup and ring markings upon Long Meg have already been mentioned, ante p. 243. There are traces of a ring embankment, from 10 feet to 14 feet broad, and now at the most but a few inches high. This is most apparent in the western half.

Two large tumuli, or barrows, or cairns of cobble stones, were formerly within the great circle, and if they were not mere clearance

¹ *Transactions of the Cumberland and Westmorland Antiquarian and Archæological Society*, vol. vi. p. 505.

² These accounts have been collected by Mr. Dymond (*ibid.* vol. v. pp. 40–7).

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heaps, show that it protected burials, probably similar to those under the tumulus at Old Parks, Kirkoswald. They have long ago disappeared under the advance of cultivation. It should be mentioned that Long Meg stands upon the highest part of the site, and that the road through the entrance is therefore uphill. At Swinside and Keswick the road goes downhill.

A few hundred yards to the east of Long Meg, in a field called Whins, is a cist, which has been mentioned before, ante p. 243. This formerly had a mound of earth over it, and is within a circle of eleven stones, on two of which are ring cuttings : one of them is known as the Maughanby Stone.

The county histories, all copying Nicolson and Burn, published in 1777, say there was on a fell called King Harry, in the parish of Cumwhitton, seven miles south-east of Carlisle, and seven miles north-west of Kirkoswald, a stone circle, with external menhir, consisting of about eighty-eight stones in an exact circle, 52 yards in diameter. None of the stones were above 4 or 5 feet high. This circle was known as 'The Greys Yauds' or 'Grey Horses,' and was almost wholly destroyed when the common was enclosed, the stones being utilized for building walls.¹

In a field called Yamonside, on the left bank of the Eamont, nearly due south of Fluskew Hill in the parish of Dacre, Dr. M. W. Taylor traced the remains of four concentric stone circles with a central menhir. The innermost circle is formed of twelve or thirteen stones, and has a diameter of 60 feet ; the next of nine stones, with a diameter of 90 feet ; the third of eighteen or twenty stones and a diameter of 120 feet ; and the outermost of thirteen or fourteen stones and a diameter of 156 feet or thereabouts. The stones, from Dr. Taylor's account, seem to be grown over with grass and earth ; he calls them 'buried,' and he had to probe for them ; it may be that Yamonside is merely a field, covered with boulders, great quantities of which were removed from the next field in 1866. Dr. Taylor's account was written in 1868.²

There was once, according to the county histories, a stone circle, 80 feet in diameter, at a place called Chapel Flat, in the parish of Dalston. Near it was a tumulus 9 feet high and 24 feet in diameter. These have disappeared. A stone circle, near Stockhow Hall in the parish of Lamplugh, called Standing Stones, was destroyed by blasting, in the first half of the nineteenth century, for the purpose of making fences. Only six large stones of the northern segment remained in 1842. A stone circle near Motherby, in the parish of Greystoke, about 50 feet in diameter, was blasted away by order of the steward of the Duke of Norfolk in the first half of the 19th century. Another stone circle formerly existed near Seascale Hall, and a dubious second and still more doubtful third are said to have existed in the Keswick district. One of these is said to have consisted of twelve stones, none above 2 feet high, and to have

¹ Nicolson and Burn, ii. p. 495 ; and *Transactions of the Cumberland and Westmorland Antiquarian and Archaeological Society*, vol. vi. p. 468.

² Ibid. vol. i. pp. 154, 167, 168.

Diameters.

North and South, 305 feet: East and West, 360 feet.

SCALE OF FEET.

SCALE OF ORIGINAL PLAN, 1 INCH = 50 FEET.

Surveyed by C.W. Dymond, C.E., 21st Sept^r. 1875.

STONE CIRCLE AND MENHIR CALLED 'LONG MEG AND HER DAUGHTERS'
NEAR LITTLE SALKELD.

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been on a hill near the further end (from Keswick) of Bassenthwaite Lake.¹ Another vanished circle once existed near Ullock in the parish of Dean, and on Dean Common, near Studfold Gate, are the remains of another. Stone circles exist, or rather have existed, at Annaside, at Gutterby, Kirkstones (two circles), and at Standing Stones, near Hall Foss or Force, all in the parish of Whitbeck. Many more in Cumberland must have perished unrecorded.

RINGS, MOUNDS AND CAIRNS

Some of the circular enclosures of earth which occur in the district are connected with the stone circles by the fact that they protected burials. Thus Mr. Hayman Rooke found on Broadfield, in Inglewood Forest, a circular enclosure of earth, 63 feet in diameter, within which was a stone circle. Excavation disclosed three small stone cists containing interments after cremation. It may be noted that the continuity of the earthen circle was incomplete, an entrance being left.² Three small circles of earth, now destroyed, on the common at Kirkandrews-on-Eden, with diameters respectively of 5, 7 and 9 yards, protecting low barrows with urns, no doubt cinerary urns, were found about 1780.³

But every circular enclosure of earth must not be assumed to be a place of burial; some large ones appear to have been cattle kraals, probably mediæval, for defence against wolves. On the other hand, the stone circles, large and small, seem to be primarily burial places, but some of the larger may have also been hypæthral temples, or perhaps places for tribal palavers.

So far we have been dealing almost wholly with the burial places (real or supposed) of the early inhabitants of the district, and with the pottery and other objects found in those graves. That pottery is in its character funereal, or made for the purpose of being used with interments. Of the domestic pottery of corresponding date we know, so far as the Cumberland district is concerned, little or nothing; nothing that can be identified as a specimen of such pottery exists in any of the local museums. It can only be under very remarkable circumstances that an unbroken specimen could survive from so remote an era. Fragments must exist somewhere, for fragments of fire-baked pottery are indestructible, but they have not been locally recognized. The collection of local pottery in Tullie House, Carlisle, possesses no example, not even a recognized fragment, of domestic pottery earlier than Roman and late Celtic (often called Romano-British). A few beads and other trifling articles have been found in the graves of these people, and their weapons of stone and bronze have occurred in various places in the dis-

¹ The circle here referred to is situated on Elva Plain on the ridge separating the vales of Embleton and Derwent about a mile from Ouse bridge, the outlet of Bassenthwaite. It consists of fifteen stones and is about 105 paces in circumference.—J. W.

² *Archæologia*, vol. x. pp. 106–10.

³ Hutchinson's *History of Cumberland*, vol. ii. pp. 521–22; Whellan's *History of Cumberland*, p. 170.

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trict ; but of their homes and the life they led we know but little. For that little the curious must refer to writers who deal with broader areas than the district with which this book concerns itself.¹ But those who do so must bear in mind that the inhabitants of this district would be more barbarous than those of southern and eastern parts of Britain, where the Belgic immigrants from comparatively civilized Gaul exercised a considerable influence.

Other remains there are in the districts—traces of what may have been the dwelling-places of these prehistoric people ; these it is difficult to assign to their proper period, for race after race would successively seize on the same spots for their dwellings. No doubt the round-headed man with the bronze weapons, after enslaving the long-headed man and appropriating his women, would not hesitate to steal his home. At Barnscar, near Devock Water on Birkby Fell, in the parish of Muncaster, are the remains of an extensive settlement, consisting of : (1) The ruins of a group of small inclosures and hut circles, situated at the extreme west end of the settlement ; (2) sundry banks and works ranging for the most part nearly parallel with the ridge occupied by the settlement ; (3) a multitude of cairns scattered irregularly over the ground east of the village. These cairns in round numbers are about 400. About the year 1890, Lord Muncaster, to whom the property belongs, cut a few trenches, examined some of the huts in the villages, and dug into a few of the cairns. In these were found, in an inverted position, several small cinerary urns, full of ashes, and of the type mentioned earlier in this section, and also some fragments of pottery, which do not seem to have been preserved. Further investigation was abandoned owing to the reluctance of the local peasants to dig among the cairns and disturb the ashes of the dead. Enough, however, was found to connect the settlement with prehistoric people who buried after cremation.² Similar remains—and for the most part apparently of the same age—are scattered over the fells in the vicinity. Another similar settlement is to the south-east of Threlkeld railway station (near Keswick), between Threlkeld Knot and the old mountain road to Matterdale. Attention was drawn to this settlement by the late Mr. Clifton Ward, F.G.S., who pronounced it to be the ruins of a prehistoric settlement, and pointed out that many of the cairns or heaps of stones were such as would be formed by the collapse of a domed or beehive-shaped hut of stones.³ In an appendix to this section a list will be found of similar settlements in Cumberland, made by the late Mr. Clifton Ward. In the neighbourhood of Castle Carrock near Brampton, on an outlying spur of the great fell, are some circular excavations, which the late Mr. Rome Hall, F.S.A., considered to be pit dwellings, similar to those described by Professor Phillips as

¹ See Boyd Dawkins on *Early Man in Britain*, Sir John Lubbock on *Prehistoric Times*, and the other books mentioned in this section.

² A detailed account of this settlement by Mr. C. W. Dymond, F.S.A., is in the *Transactions of the Cumberland and Westmorland Antiquarian and Archaeological Society*, vol. xii. pp. 179-87.

³ *Ibid.* ut ante, vol. iii. pp. 247, 248.

NOTE
THE ARROWS INDICATE
THE DIRECTION OF SLOPE

BARNSCAR
AN ANCIENT SETTLEMENT ON BIRKBY FELL
CUMBERLAND

SURVEYED IN SEPTEMBER, 1881, BY C. W. DYMOND, F.R.S.

EARLY MAN

existing in Yorkshire, and by Sir Richard Colt Hoare in Wiltshire,¹ habitations of a type anterior to those on Birkby Fell. One or two of these circular excavations on Castle Carrock have been partially explored, but they yielded nothing. As the geological formation is limestone, these supposed pit dwellings may be mere swallow holes. Some have imagined they had found circular pit dwellings upon Caldbeck Fell, but an ancient of the place said they were old trial holes for surface coal. It would be satisfactory to clear out some of these circular excavations, and to search in their vicinity for the kitchen-middens.

With the arrival of the Romans the prehistoric era ends, and the historic period commences, but the histories give us very little information as to the people the Romans found in possession.

The Roman historians tell us of the skill of the Britons in the art of enamelling. This is evidenced by a remarkable sword found at Embleton, near Cockermouth. It was in a sheath ornamented with enamels of various colours. Sir John Evans, K.C.B., assigns it to a date not far from the Roman invasion.² A fine bronze beaded torque found in Carlisle was also assigned by Sir John to the late Celtic age.

It has been stated that this prehistoric people—the men with the long heads and the men with the round heads—saw this district in its chief features much as we see it now. But there were differences. The country was mainly forest, resembling the uncleared forests of Canada and America, and covered with dense scrub of oak, ash, thorn, hazel and birch. At Alston and other places the stools of ancient hazel and birch trees are found beneath the peat. The antlers of red deer of much larger size than of the present day have been found with Roman remains in frequent numbers, showing that the deer must have had abundance of ‘brooze’ or scrub for their support, extending over a great range of country. The valleys were swamps, and the alluvial flats bordering on the Solway and stretching eastwards from Rockcliffe along the north to Carlisle, for many miles were vast morasses, now dwindled into the puny survivals of Solway Moss, Bowness Moss, Wedholm Flow and Scaleby Moss. Edmund Sandford, who wrote in the time of Charles II. a gossiping account of the country, printed and published in 1890, tells us that great part of the country was even then forest. In prehistoric times the higher hill tops probably stood up bare and naked. The climate was cold and wet. The crops ripened but slowly.

The following is a list of prehistoric settlements in Cumberland, compiled by the late Mr. Clifton Ward, F.G.S., of the Ordnance Survey. The figures refer to the sheets of the 6-inch Ordnance Map on which the remains are, and the letters to the quarters of the sheets. The list first appeared in the *Transactions of the Cumberland and Westmorland*

¹ *Transactions of the Cumberland and Westmorland Antiquarian and Archæological Society*, vol. vi. pp. 462, 463; *Yorkshire*, by Phillips, 2nd edit., p. 203; see Wright's *The Celt, the Roman, and the Saxon* (1852), chap. ii. p. 87.

² *Archæological Journal*, vol. xxxix. p. 442; *ibid.* p. 442; *Transactions of the Cumberland and Westmorland Antiquarian and Archæological Society*.

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Antiquarian and Archæological Society, vol. iii. pp. 241, 243, and has been more than once reprinted.

Weasel Hills and West Fells	48 N.W.	Valley of the Bleng	73 S.E.
Stone Carr	57 N.E. and S.E.	Gray Borran	73 S.E.
Above Falcon Crag	64 S.W.	Greendale	79 N.W.
Threlkeld	65 N.W.	Burnmoor	79 N.W.
N. banks of Ennerdale	68 S.E.	E. of Raven Crag	83 N.W.
Ennerdale, banks of Liza	69 S.W.	Around Devoke Water	83 N.W.
Thirlmere, Deergarth Wood	70 N.E.	Ulpha Fell	83 N.E.
Tongue How	73 N.W.	Barnscar	83 S.W.
Boat How	73 N.W.	Knott	83 S.W.
Cawfell Beck	73 N.W.	Brown Rigg	83 S.E.
Stockdale Moor	73 S.E.		

Mr. Ward also gives a list of round or oval camps, among which he takes the following to be in all likelihood British, that is, prehistoric :—

Carrock Fell	48 S.W.	Maiden Castle	66 N.W.
The Fort, Fitz Wood	54 N.E.	Dunmallard Hill	66 N.W.
Castle How, Peel Wyke	55 N.E.	Maiden Castle	79 N.E.
Castle Crag, Shoulthwaite Glen	64 S.E.		

A survey of the eastern and northern fells would probably add to the list.

REMAINS OF THE PRE-NORMAN PERIOD

IN the long period of nearly seven centuries between the leaving of the Romans and the settlement of the Normans, Cumberland was the home of three successive ruling races. For the first two and a half centuries the Romano-Britons, Cymru, or Cumbri held the land ; but though they gave it their name (Cumbra-land) and continued to form a great part of the population after they had lost their power, we have but scanty records of their history as a people, and very few relics of the age of their independence. About 670–80 the Angles of Northumbria overcame them and settled among them, remaining the dominant race for a little over two centuries ; their history is almost as scanty, but we have some tokens of their arts and industries to show. In 876 the Danes burnt Carlisle, and for more than two centuries following they and a mixed multitude of Celto-Scandinavians, Vikings from Ireland and the Isles, continued to settle in Cumberland as masters of the soil, they too leaving us little in written history, but not a few works of art showing their presence and influence.

The remains of the whole post-Roman, pre-Norman age fall into three classes—sculptured stones with their inscriptions, metal-work, and earthworks or ruins of rude building hardly to be reckoned as architecture. The few pieces of architecture which have sometimes been ascribed to ‘Saxon times’ will be noticed later on in the course of this work ; but even at a period when there was probably no true building in stone—when the forts were stockades and the churches and dwelling-houses were built of wood or wattle-and-daub—it was the custom to set up carved stones as memorials of the dead. The art of carving in stone lingered on in Britain from the Roman age, sometimes falling into great debasement, but more than once reviving under foreign influence. It seems to have been kept alive during this period and in this part of the country entirely for the purpose of grave-monuments, and it implied no skill in architecture or literature ; it was a traditional art by itself, influenced perhaps by metal-working and wood-carving, and to a small extent possibly by the ornament of illuminated manuscripts, but only as it reflected current fashions in decorative design. For that reason the

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execution is generally poor, as sculpture ; but its feeling often makes it picturesque, and the quaint conceits which the artists tried to embody make it often highly interesting.

SCULPTURED STONES : CELTIC PERIOD

The sculpture of the Britons before the time when Christianity brought new life to art from Italian sources, through the converted Anglo-Saxons, is thought to have been mainly or altogether incised—

INCISED SLAB, ASPATRIA.

that is to say, not carved in relief, but sketched in grooves and scratches on the stone. It would not be safe to say that all incised stones are pre-Saxon, or we should be able to point to one slab as an evidence of a Christian church at Aspatria before 680 A.D. Still this Aspatria slab, now in two fragments walled into the vestry of the church, bears some resemblance to early Welsh monuments, such as the well-known stone of Macutrenus in the British Museum; but it is more like a series of incised monuments of which the age is doubtful, such as the shaft at Ecclesfield near Leeds, the stones at Adel near Leeds, the cross at Lanivet (Cornwall), and especially a slab from Gillespie (Glenluce) now in the Edinburgh Antiquarian Museum. Incised stones of much later than our pre-Saxon date are found in Scandinavia, and the svastika or fylfot on the Aspatria slab might be thought to connect it with eleventh century Scandinavian influence; but the svastika was used in Britain at all periods, and the Scandinavian stone, for example, at Rosas, Njudingen, Sweden, figured by Stephens in *Old-Northern Runic Monuments*, resembles this only in rudeness.

The group of British incised stones just mentioned seems to be connected with a *type* which is certainly pre-Saxon, though the date must be left undecided. We have no other stones at present known in Cumberland of this type, and no other sculpture which can be safely pointed out as a relic of the church of St. Kentigern and the independent Cumbri.

ANGLIAN

The Bewcastle cross is our finest pre-Norman monument in Cumberland, and judging by its art and inscription it is the oldest. The

BEWCASTLE CROSS.

To face p. 255.

THE CHRIST, ON BEWCASTLE CROSS.

REMAINS OF THE PRE-NORMAN PERIOD

inscription will be considered later on with other inscriptions ; here we are concerned only with the style and execution of the monuments, classed together according to their resemblance to one another and to well-known types outside the county. The Bewcastle cross is a square pillar of grey freestone from the moors above the valley ; it is $14\frac{1}{2}$ feet in height above the pedestal, 21 by 22 inches thick at the base, tapering to 13 by 14 inches at the top, from which the cross-head is lost. A written note in a copy of Camden's *Britannia* in the Bodleian records that a cross-head from 'Bucastle' was sent to the writer from Lord William (Howard), the antiquarian owner of Naworth Castle, so that the head has been missing only since the days of Queen Elizabeth. With it the cross would have been about 21 feet high from the base of the pedestal, a block weighing about 6 tons, into which the cross was anciently fixed with lead. In 1891 some repairs were done to the pedestal ; otherwise the cross is unrestored. It is said that damage has been done at different times to the carving and the inscription, but the stone is extremely hard and the design is nearly perfect.

On the west face are three panels with figures : at the top St. John the Baptist carrying the Lamb of God ; in the middle Christ standing on the heads of swine, a fine figure in long robes, carrying in His left hand a scroll, the Book of Remembrance, and raising His right hand in blessing ; His head is youthful and slightly bearded, unlike the ordinary mediæval type of the suffering Redeemer. Below is the figure of a man in a tunic and hood, carrying a stick or spear and lifting a hawk from its perch. It is a naturalistic figure, evidently meant for a portrait of some contemporary, probably the person to whom the monument was set up, who is said in the inscription to have been king Alchfrith. It cannot represent St. John with the eagle, who would have been dressed in flowing robes and posed in some such dignified way as St. John the Baptist above. The theory that only Scriptural or symbolic subjects were represented on these monuments is disproved by several of the stones we shall pass in review, and the custom of portraiture on Christian tombs was common in all ages.

On the north face are two panels of symmetrical interlacing ; two of foliage and fruits, the conventional vine-scroll of the earliest Italo-Greek Christian art ; and a central panel of chequers, which, though they have been taken as indicating a late date, are seen also in slightly different pattern on the cross at Irton.

The east face has one continuous vine-scroll, with animals in the branches—the 'fox that spoils the vines,' two squirrels and two birds.

The south face has three symmetrical interlacings and two panels of foliage, the upper one having a dial worked into the design. This dial is a semicircle with hole for the gnomon now lost, and rays marking twelve divisions between sunrise and sunset. It is certainly a part of the original monument, and such a dial at Kirkdale (Yorkshire) is proved to be Anglo-Saxon by its inscription ; there is no reason to suppose that people in the seventh century were ignorant of this ancient contrivance for

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marking time. In Cumberland, dials of a similar kind, carved on the flat surface of a wall with south aspect, and so rudely done that they must have been very insufficient for any but the roughest calculations, are found at Caldbeck, Torpenhow, Great Salkeld, Kirkoswald, and Newton Arlosh churches, and two at Dearham and four at Isel. The late Rev. W. S. Calverley, F.S.A., whose researches have added so much to our knowledge of pre-Norman art in Cumberland, thought that all these dials were pre-Norman in date, and that where they are found in mediæval walls they had been removed from Anglo-Saxon churches and rebuilt into later work ; but it would be safer to say that they are pre-Norman only in type, not in date.

It has been held by good authorities of the last generation that the Bewcastle cross should be dated tenth or eleventh century because the ornament resembles Carolingian art ; but the general opinion in more

ANGLIAN SHAFT, ADDINGHAM.

FRAGMENT, WORKINGTON.

recent times ¹ is in favour of an earlier age and an influence from Ravenna and other north Italian towns through St. Wilfrith, who is known to have brought foreign artists into the north of England. It has even been claimed as one of the works of the Maestri Comacini, but this is not proved. It can however be classed with many other works done in the flush of the great renaissance of the late seventh century, in which Benedict Biscop and St. Wilfrith were leaders, and king Alchfrith and his

¹ Prof. G. Stephens, *Old-Northern Runic Monuments* ; Dr. Sophus Müller, *Aarb. f. Nord. Oldk. og Hist.* (1880) ; the Rev. W. S. Calverley, *Early Sculptured Crosses of the Diocese of Carlisle* (1899) ; Wilhelm Vietor, *Die Northumbrischen Runensteine* (1895) ; the Bishop of Bristol (Right Rev. G. F. Browne), *The Conversion of the Heptarchy* (1896), are among the writers who have discussed the subject.

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wife Cyniburg, and her sister and brother, Cyneswitha and king Wulfhere of Mercia (all named on this cross) were chief patrons. It is not of the Hexham school, but of a school of that age and character, from which came many fine works quite alien in spirit to the art of north England in the tenth and eleventh centuries, and impossible to have been executed in that period of storm and stress, when the churches were ravaged by the Danes ; and it is equally impossible to class it as Norman. The archæological evidence is all in favour of the date assigned to it by the inscription—the first year of king Ecgrith, 670–71 A.D. ; and it has a great importance in the history of art as the starting-point from which not only all our Cumbrian sculpture was derived, but (with Ruthwell cross, its younger sister) the model for much of that so-called Hiberno-Saxon art which has been confused with it.

At Addingham church, in the porch, are preserved two red sandstone fragments of an Anglian cross, nearly equal in fineness of design and skill of workmanship to that at Bewcastle. At St. Michael's, Workington, is a fragment with a symmetrical floral design, not now very distinct, and a key-pattern beneath it, and on the edges carefully drawn interlaced work ending in a flattened loop like that at Addingham. In the same church at Workington is the beautiful fragment found in the tower by Mr. W. L. Fletcher after the fire of 1887, with the best kind of Anglian interlacing on all its four sides, but neither floral scroll-work, nor figures, nor key-patterns ; this, from the symmetry and execution of its ornament, seems to rank with good Anglian work, though it shows what the late Canon Knowles called 'the ear-shaped guilloche' and thought to be a mark of later Scandinavian influence. At Waberthwaite church, in the vestry, is part of an Anglian shaft with a good symmetrical interlacing on one side and a leaf-scroll on the other, without the fruit seen at Bewcastle and Addingham.

ANGLIAN SHAFT, WABERTHWAITE.

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This last site is interesting as being close to the ancient harbour of Ravenglass ; and just on the other side of the harbour at Irton is a famous cross in the churchyard, which in spite of some features usually put down as Celtic, or Hiberno-Saxon, must be classed as an Anglian work. The Irton cross is carved from a single block of red sandstone, head and shaft in one piece, 10 feet high from the pedestal. The carving has been all done with the chisel, without drill or pick, and is smooth, highly-finished work, very varied in depth. The parts where the pattern runs closely together are kept shallow and flattish ; here and there a few emphatic points are deeply hollowed, giving strong touches of shade and throwing the flatter parts into breadth and delicacy. On the panel now blank are said to have been Anglian runes (described under the heading of Inscriptions) ; above the panel is a symmetrical interlacing, and below it is a very elaborate symmetrical double strand interlaced. The edges bear fine scrolls of fruit, leaves and flowers, in the best style of Anglian art, and quite foreign to Irish and Scandinavian work. The east side has two panels of diagonal key-pattern, like the fragment at Workington, and two panels of geometrical 'kaleidoscope' design ; at the top is a panel of chequers, like that at Bewcastle, except that they are little $\times$ -shaped depressions instead of squares. The head has on one side a boss and ring surrounded by fifteen smaller bosses, and on the other side five small bosses arranged in a cross surrounded by a ring and framed with interlacing. A curious incised plait is on the ends of the cross-arms, which are free and not joined by a wheel ; it is like the head of Ruthwell cross, which (though now restored) can never have been a wheel-cross. Bewcastle and other Anglian crosses had probably free-armed heads, of which many still remain in Cumberland and the rest of northern England.

ANGLIAN AND CUMBRIAN CROSS-HEADS

Two good examples of these free-armed Anglian heads are at Carlisle. One, represented only by the arms and centre from which the shaft and uppermost limb have been broken, is in the Fraternity, and was found in digging the foundations of a house in the Abbey in 1857. It has square-ended interlacements on the ends of the arms like the Addingham and Workington fragments, and a six-petalled boss, with Anglian inscriptions on the arms. The other, represented only by the tips of the lateral arms, has angular interlacements at the arm-ends, a rather debased but still Anglian floral scroll on one face, and a device which is nearly what may be called the 'lorgnette' pattern, surrounded with zigzags on the other face ; this was found about 1888 in making alterations at the Bishop of Barrow's house in the abbey.

The 'lorgnette' is represented in its full form in the head found in 1855, and preserved in the room over St. Catherine's chapel in the cathedral. There is the usual boss in the centre of the head with a ring round it, making it somewhat like a magnifying glass ; and on each

IRTON CROSS.

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of the arms is a similar but smaller feature attached to the central boss by a rib or spine. The topmost arm of the head, instead of being merely enlarged by the graceful curve at the 'arm-pits,' as in the other two Car-

FRATRY, CARLISLE.

ABBEY, CARLISLE.

CATHEDRAL, CARLISLE.

lisle heads, Irton and Ruthwell crosses, and many others (by no means an exclusively Celtic form), in this case becomes a 'hammer-head.' There are two reasons for considering it Anglian: one that it resembles the Abbey head which has Anglian floral work, and the other that Carlisle, as a home of Christian population among whom such work could have been done, came to an end in 876, and therefore these crosses must be earlier than the Scandinavian period, while they are certainly not pre-Saxon.

Now these Carlisle cross-heads give us the key to a great series of Cumbrian art for which they, or others like them now destroyed, served as models. From Carlisle westward to Beckermest, and south-eastward to Addingham, there are cross-heads evidently degenerated from these well-executed types. At Bromfield is a white sandstone hammer-headed cross, with perhaps a much-worn 'lorgnette' in the topmost arm. At Distington is another without any 'lorgnette.' At Brigham is a white 'hammerhead' in which the 'lorgnette' is replaced by a small incised Latin cross; and at Kirkoswald, known by other finds as an Anglian site, is the tip of a red sandstone head with a combined + and x in a circle. At Cross Canonby is a broken white head with 'lorgnettes'; another at Bridekirk has the rest of the space filled with wandering spirals in relief. At Distington another white fragment has the spirals without the 'lorgnette,' and a third has remains of interlacing. Finally, at Dearham and St. John's, Beckermest, are similar white cross-heads with 'lorgnettes,' and enough of the shaft remaining to tell us that the whole monument was utterly unlike the Bewcastle cross,

BRIGHAM.

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THE CUMBRIAN 'SPIRAL' CROSSES

We have travelled a long way in the last paragraph, and arrived in the midst of a school of art quite strange to the Anglian, and yet evidently derived from it—the school of spiral design, not entirely confined to Cumberland, but nowhere else seen in such development. The Roolwer cross in the Isle of Man, and the Maen-y-chwyfan in Flintshire, with a very few more, show that the style travelled, but its headquarters were here. It was a rustic and debased school of art, although in its own way striking out ideas which sometimes became picturesque. The heads of the crosses are debased from Anglian of a not very early type; the interlacing, where there is any, is not naturalistic (or based on real knot-work of straps and cords), but resembles the appliqué interlacing in metal-work, in that each segment of the plait is separate, and the groove which divides the strand terminates before it tucks under the strand which crosses it, nor do the segments truly correspond with one another to suggest a continuous cord interwoven. The figures are grotesquely debased from the fine Anglian examples, as at Bewcastle; and the rest of the design is neither floral scroll nor key-pattern, but a cluster of spirals without symmetry or sense. In a few cases the spirals appear to be on the point of blossoming and becoming floral scrolls; they may be a faint reminiscence of the Hexham and Bewcastle style; in most cases they are clumsy squarish curves which could never have been regarded as intended for floral, but might have been evolved by a lazy imitation of the patterns of Irton cross. They resemble the spirals of the Kirkoswald fibula, or the Thames stirrup in the British Museum (Anglo-Saxon Room), and contemporary work in filigree; and they suggest that the artist was familiar with such metal-work, but not with any examples of flower scrolls in stone or in illumination. In some examples they have become purely symbolic patterns, the svastika and the triskele, and in all cases there is a tendency to fall into these symbolic forms rather than to attempt the naturalism of the great Anglian artists.

There can be no doubt that we have not here a very early school, feeling its way to better things and gradually developing into the Anglian; for the debased interlacing is such as could not be produced by a nascent art, in which the attempt to copy nature is always traceable. Since the models from which this school starts are late Anglian, these spiral crosses must be later; and as in some cases they seem to be influenced by the Scandinavian school of which we have still to speak, we must put them down as probably ninth to eleventh century, later than the Anglian, but earlier than the finest Irish-Scandinavian type which superseded them, though contemporaneous with the earlier Danish and Norse invasions. As they exist chiefly in Cumbria, though also in Wales, and in one instance in the Isle of Man, into which the style may have been imported from Cumberland, it is reasonable to infer that this spiral school was a Cumbrian school, and created by native Cymric artists trying to work for Anglian and Danish patrons; and it is curious that

WHITE CROSS, ST. JOHN'S, BECKERMET.

WHITE SHAFT, ST. JOHN'S, BECKERMET.

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the type of ornament seems always trying to revert to the much earlier spiral forms of the 'late Celtic' school, of which we have some remains in the district. This tendency to revert in decorative art to forgotten ancestral patterns is shown also in the Scandinavian character of the plaits in wood-carving of the seventeenth century designed by descendants of Danish and Norse settlers. But the people who made the spiral crosses were a subject and impoverished race, and never carried their art to the development of which it was capable.

The Beckermest white cross-head already mentioned, with the 'lorgnette' pattern, has no spirals, but some debased interlacing, and some rude curved lines which may be attempts at the triskele and crescents, and some small bosses or pellets, as if imitations in stone of nail heads in wood-work and rivets in metal-work—these last interpreted by those who see symbolism in all details as suns or holy wafers. But the sister fragment of similar stone and style, though not part of the same cross, is a good example of the spirals almost bursting into flower, but not the floral scrolls of Bewcastle or Hexham.

The Dearham white head seems to belong to a shaft in the church, making what has been called the 'Kenneth cross,' because the late Rev. Thomas Lees, F.S.A., and Mr. Calverley thought they saw in the 'bird and bantling' the saint's rescue as a child by birds, and in the bandy-legged figure next that group the lame saint with his bell. It is not impossible that this is the subject of the carving, though that interpretation would not prove that the cross was of the early British period, for in the tenth century the Northmen who settled hereabouts were in close touch with other settlers of their kindred in Wales. The figure on horseback (not a Flight into Egypt, as there is no child, but only a pellet, beneath the bridle) is that of a warrior with a sword, probably a portrait of the deceased. The debased plaitwork (*a*), and spirals which near the bird's tail run into key-pattern, and the two svastikas show this to be a good example of the late spiral style.

Two such shafts are at Aspatria, now built into the vestry of the church. One has debased plaitwork, spirals, and a svastika and pellets filling all intervals. The other has two twists over pellets, with spirals and a curious figure closely resembling a figure on the Maen-y-chwyfan, Flintshire. So that as Dearham is connected with south Wales by its (possible) legend, Aspatria is connected with north Wales by this identity of design. What the man over a little Maltese cross signifies cannot be made out, as we have only his lower half.

The close connection of spiral-work with symbols like the svastika and triskele is shown in two fragments at Isel in the church porch, and the tip of a cross in the church, which bears these signs and a 'thunder-bolt' with a 'sun-snake' beneath, all in work of this style. At Distington and in the tower of Plumbland church are fragments in which the triskele sign is still more distinct in the midst of debased interlacing.

A valuable example is one which Canon Knowles called the 'Norse cross' at St. Bees church, with what must have been a free-armed head

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with 'lorgnettes,' now much broken, and debased interlacing, pellets, spirals and rude key-pattern.

THE 'NORSE' CROSS, ST. BEES.

Key patterns are rather rare in Cumberland on these later crosses. The fragment from Mr. Rowley's house at Glassonby, now in Tullie House Museum, has a band of double alternate $\tau\iota\tau\iota$, as on the Maeny-Chwyfan and in crosses at Chester and St. Vigean's. Single bands of T's occur in Cheshire, Wales and Cornwall, and in a grave-slab at Clonmacnois, Ireland, dated 931 A.D. The other sides of the Glassonby

THE STANDING CROSS, ST. BEES.

shaft have a rude figure and a dragonesque interlacing, and the whole is evidently Scandinavian of the earlier type (that is, not of the fine school of Gosforth), perhaps tenth century. The 'Norse cross' at St. Bees

THE 'KENNETH' CROSS, DEARHAM.
Head with *a* and *b* patterns on the edges of the shaft, and one side of the shaft.

THE TWO SPIRAL SHAFTS IN THE VESTRY, ASPATRIA.

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THE 'GIANT'S THUMB,' PENRITH.

THE STANDING CROSS, ADDINGHAM.

REMAINS OF THE PRE-NORMAN PERIOD

from its connection with the Cumbrian school may be placed early in the tenth century, or near the beginning of the Viking settlement. Later than this is the standing cross at St. Bees, in which the spirals have disappeared; the debased interlacing has become dragonesque, and new motives of plaitwork, Irish in origin, though the interlacing is debased, have been introduced, suggesting a transition-form between the spiral style and the Gosforth cross.

Another transition example is seen in the standing cross in Addingham churchyard, with rude attempt at a wheel-head and ornament entirely spiral; and a more advanced type is the Giant's Thumb at Penrith, with what has been a wheel-head and both scroll work and interlacing on the shaft. This cross has been much damaged—indeed it was used at one time as a pillory; but since its re-erection in 1887 the lower part, formerly covered by the earth in which it was sunk, betrays the debased spirals which did duty for scrolls, and shows that it is really a transition-form between the Cumbrian and Irish-Norse (Gosforth) school, though evidently a very fine work of its time.

Transition from one age and style to another does not go on quite smoothly or along any single line. In this age there is another thread of development which we must trace, namely the connection between Cumbrian and Irish-Norse through a series of round-shafted crosses.

THE ROUND-SHAFTED CROSSES

Mr. J. Romilly Allen, F.S.A., has pointed out¹ that in Cheshire and Staffordshire, with outlying examples in Wales (the pillar of Eliseg, Denbighshire) and Nottinghamshire (Stapleton cross), there is a group of monuments of which the shaft is round in the lower part but square in section in the upper part, and he suggested a Midland origin for the style. We have also a number of such round-shafted crosses, of which one, the Gosforth cross, is very famous, though not the original from which the whole series was imitated; for, as Bishop Browne has remarked, the pillar of Eliseg bears an inscription which no one is able to put later than the ninth century (*Archæological Journal*, xliv. No. 174, 1887, p. 151), while there are many reasons for dating the Gosforth group early eleventh century.

But just as north Wales is connected with Cumbrian spiral work through the Maen-y-chwyfan, so it is through this other development of round-shafted crosses. The connection of the two districts need not be looked for so far back as Romano-British times, for we know that kindred northmen settled all along the shore of the Irish Sea from the Dee to the Solway.

On Solway shore at Anthorn is a thick round shaft with no flat panels and a free-armed head, locally said to mark the place of a battle with the Scots and named with another in Greenwood's map (1823) as

¹ *Archæol. Cambrensis*, 5th series, vi. 24; and *Trans. Hist. Soc. of Lancashire and Cheshire*, ix. new series, 1894.

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‘Taylor’s crosses.’ Mr. Calverley thought he found traces of a crucifix on the east side, but the stone is very weathered and thickly crusted with lichen. We can only mention it as a specimen of a round-shafted cross, without any attempt to date it.

Going south along the coast, at Beckermet, in St. Bridget’s church-

BACK AND EDGES OF THE INSCRIBED CROSS, ST. BRIDGET’S, BECKERMET.

yard, we find two round shafts—one the famous inscribed cross. Leaving the inscription for the present, let us look at the ornament, which has not commanded so much attention. It is a graceful development of spiral work, budding into trefoils, though not by any means resembling

SPIRAL FRAGMENT, HAILE.

what we have seen of Anglian floral scrolls. It has more resemblance to a stone built into the south side of Haile church, distinctly a Cumbrian spiral work but suggesting leafage. As we have already seen, no distinct continuity can be traced between this style and Anglian examples, but the Cumbrian artist may have seen or heard of such and tried to make his spirals flowery. The St. Bridget’s inscribed cross is therefore connected on

the one hand with the Cumbrian spiral school, while on the other it is connected with a new series. Near it is a similar pillar, comparatively slender and ornamented

THE 'GIANT'S GRAVE,' PENRITH.

REMAINS OF THE PRE-NORMAN PERIOD

only with plaits of three strands. This is a step towards what we must next visit, the Giant's Grave at Penrith and the Gosforth cross.

The Giant's Grave at Penrith as arranged at present has four hogbacks, and two crosses which are highly developed types of this second St. Bridget's monument. Both are of light grey sandstone. The western pillar stands 135 inches in height from the ground and measures a little over 5 feet in girth at about 3 feet from the bottom. For the height of $81\frac{1}{2}$ inches it is cylindrical; above that it has a band of interlacing, and higher up it is cut away into four flat panels with round bottoms filled with interlacing; the head is small and broken but never had any wheel. The eastern pillar is 126 inches high, for 61 inches cylindrical, above which are similar panels 28 inches in height, like those on the western pillar, and filled with similar ring-plaits; but a cast of the western panel seen in a side light

THE SECOND SHAFT, ST. BRIDGET'S, BECKERMET.

(necessary on account of the weathering which has nearly effaced the pattern) shows figures of a man intertwined with the plaits, another figure bending over him, and a beast above with head turned over its back. On the northern panel can be traced a stag. The head is free-armed, with a cross whose arms project through or from a ring with a boss in the middle of it, all carved in relief on the face; and the lower limb of the bas-relief cross seems to have a boss in it, and to be in fact another example of the 'lorgnette.' So that as we have a survival of the Cumbrian school in the spirals of the Giant's Thumb with its wheel-head, we have a different survival of the same school in the Giant's Grave with its free-armed head, in spite of later characteristics in the interlacing and figures (of which more presently). This gives us a clue to the place of the Penrith group, which stands on the brink of the fully developed Irish-Norse as seen at Gosforth.

The hogbacks or recumbent coped shrine-tombs are, like so many elsewhere, houses of the dead, with roofs carved to look like tiles and walls ornamented to represent ideas attaching to death and resurrection or life beyond the grave. One has spirals and plaits, another a fretted interlacing, all suggesting the dragonesque 'worm-twists' of which the

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Irish-Scandinavians were so fond. Mr. Calverley with much reason compared the descriptions in the Edda of Hel, the abode of the dead, and its walls wattled, not with withes like the houses of the living, but with snakes. This heathen idea, grafted upon the Christian faith, flowered into the pretty and favourite device which we shall see often repeated, and find here in the little figure standing on the head of the great serpent—the seed of the woman bruising the serpent's head, triumphing over death and proclaiming the hope of life to come.

A fragment of similar workmanship built into the church of

Hutton-in-the-Forest shows that there must have been other crosses of this type in the neighbourhood ; and the sundial and base in the churchyard may possibly be the original lower part of the same monument, as appears to be the case elsewhere. At Penrith is the Plague stone, evidently the socket of an ancient cross, though known only as the basin which during times of plague people filled with vinegar and put their money in to disinfect it, at the same time taking up the goods which country folk from outside had laid by the stone, themselves retiring to a safe distance.

We must now traverse the county to Gosforth and view the most famous and beautiful examples of the round-shafted cross and its associated monuments. We must treat them briefly, but they have been described at length by Mr. Calverley in *Early Sculptured Crosses of the Diocese of Carlisle* and by Dr. C. A. Parker in his book on *The Ancient Crosses at Gosforth, Cumberland*.

There are at Gosforth the remains of three crosses and two hogbacks ; one little cross-head built into the porch is probably not pre-Norman. The style and execution and the 'literary subject' of this famous group are very similar ; if the three crosses and two hogbacks were not carved by the same hand, they represent the work of the same age and race. They cannot be twelfth century, because the hogbacks were built into the foundations of the twelfth century church ; nor can they be Anglian, because they are quite unlike the work we know to be Anglian, and because two of the crosses illustrate verses from the Edda, which is a series of poems made by Scandinavian skalds under Irish and English influence in the tenth century. The sculptures do not merely reflect general ideas common to all Teutonic heathendom, but they show, carved in stone, pictures obviously intended to embody the very words of the Norse songs.

GOSFORTH CROSS.

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The great standing cross at Gosforth is of red sandstone, a monolith 14½ feet high from the pedestal, which is a rectangular block of three steps. The lower part of the shaft is cylindrical and measures 40 inches round the bottom ; for about 4 feet up it is plain and then breaks into a peculiar interlaced pattern, seen elsewhere on Scandinavian monuments, and thought by Mr. Calverley to be intended for a conventional representation of the intertwined branches of a tree, as if the whole pillar were meant for a great Tree of Life or the Yggdrasil Tree of northern mythology. Higher up, as at Penrith, the round shaft is cut away into four faces containing figure-subjects which with all the study that has been given to them are only partly interpreted.

We can see at any rate that distinctly Christian emblems are curiously mixed up with emblems as distinctly heathen. The wheel-cross at the summit of the monument is a Christian symbol, and each of its four arms contains the Triquetra, often used in Irish art to signify the Trinity. On three sides out of four great dragons attack this emblem ; on the fourth the dragon, winged but bound with many ring-fetters, appears to be flying from the cross-head, as if the artist meant to suggest the conflict of good and evil. On this last side, to the north, there is nothing more but two horsemen with spears, the lower one upside down. In such conventional art the group should mean a fight, with the fall of the one who is reversed ; it may represent some phase of the conflict of good and evil, or the actual fight in which the person commemorated lost his life or won his renown, though the warriors of the pre-Norman time did not usually fight on horseback—they were a mounted infantry ; and the rest of the figures on the cross are evidently not portraits but symbols.

The eastern side shows a crucifix of a somewhat Irish type—the Christ dwarfed like the figures on the Monasterboice cross and elsewhere in Irish art, and standing in a frame of cable-moulding. Beneath are Longinus the soldier, piercing His side with the spear, and Mary Magda-

CRUCIFIXION, GOSFORTH CROSS.

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lene with the *alabastron* or 'box of ointment'—a figure which seems to indicate an English origin, as in an Irish cross there would be a soldier

holding up the sponge. Underneath is a snake twisted up in itself, with heads at each end of its body, one attacking the other.

Over the crucifix is a headless row of the Scandinavian chain-pattern, and above is a

figure holding a spear in one hand and with the other hand and one foot wrenching open the jaws of the great dragon above. If this

figure were merely entering the dragon's mouth it would be easily recognized as the usual representation of Christ's descent into hell, but it is something more. It really illustrates a passage in the *Vaftbrúdnis-mál*, a poem of the Edda, which tells how Vidar the Silent, one of the Norse gods, should avenge the death of Odin by rending open 'the cold jaws of the wolf'—the dragon wolf, offspring of Loki the evil one.

The south side has, beside dragons and a horseman with spear, the favourite device, seen already in part at Penrith, of the stag, emblem of Christ or the Christian, chased by the dog or wolf.

The western side is pure Edda. At the bottom it contains a group which Mr. Calverley was the first to explain as representing the punishment of Loki. It is told in the prose Edda, and there are references to it in the poem called *Völuspá* in the earlier Edda, how the gods, tired of Loki's misdeeds, caught him after

a long struggle and bound him with three bonds in an underground cave over sharp rocks. Above his head they hung a serpent from whose mouth venom dripped on his face, but his faithful wife Sigun attended him and held a cup to catch the drops. 'When the cup was full she had to turn aside and empty it; then the venom dropped on Loki so that he writhed in agony.'

VIDAR, GOSFORTH CROSS.

SOUTH SIDE, GOSFORTH CROSS.

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There can be no doubt that the sculpture is meant to illustrate the story. Above is a horseman with spear upside down, and over him a man standing with a horn in his left hand and a staff in his right, with which he is restraining the attack of two plaited serpents.

This seems to illustrate lines in the same poem referring to Heimdal the warder of the gods, who at the battle of Ragnarök, the Armageddon

LOKI AND SIGUN, GOSFORTH CROSS.

HEIMDAL, GOSFORTH CROSS.

of Edda mythology, was to blow his horn when the evil powers attacked heaven. The falling horseman may be one of the attacking enemies or Odin in his fall or in his descent to hell, but this is less evident. What is quite plain is that Christian and heathen subjects are curiously mixed in this monument; while, curious as it is, the apparent confusion is not without parallel. On the Penrith crosses there are the stag and figures very like this group of Loki and Sigun; on the Dacre cross

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are the stag and the dog or wolf ; and there are resemblances in many sculptures less close and striking. In this way the Gosforth cross may be regarded as one of a series of Christian monuments made at a time when the Edda songs were in vogue, and people half believed the stories of the old gods and liked to portray them. That this was the case we know from the sagas, which tell us of men in the tenth century who had been baptized but prayed to Thor when they were at sea or in great danger, and carved Edda stories in wood or worked them in tapestry ; and we have reason for thinking that Cumberland was then the haunt of such Northmen, one of whom would be fitly commemorated in this monument.

A wheel-head now built into the church in two fragments was probably part of the cross cut down in 1789 to make the present sundial in the churchyard ; this must have been similar to the standing cross. A larger wheel-head built into the same wall probably belonged to a third cross, of which a fragment, now to be seen in the wall under the heads, was found by Dr. Parker in 1882. This third cross must have been low and broad, not tall and round-shafted ; but it was carved with another Edda subject. The story of Thor's fishing is told in the poem called *Hýmiskvida* : how Thor went out in a boat in the Arctic regions with the giant Hymir, and fished for the Midgard's-worm, the great sea-serpent which encircled the earth. He baited his line with a bull's head and got a bite, but when he was hauling up his catch the giant became terrified and cut the line with his axe. In the Fishing stone, the fragment here preserved, the picture of the incident is given : Thor with his hammer and line, let down with the bull's head among the fishes ; Hymir with his axe, and the boat with its mast and crow's-nest as seen in tapestry and other illustrations of boats of the period. Now it is thought that the *Hýmiskvida* is part of the Greenland series of poems ; Greenland was not discovered until 982-83, and so this carving must be later. The Edda songs would have been in vogue on the borders of the Irish Sea, where they were first composed, about the year 1000 ; and these illustrations of their subjects must have been done in the period of their popularity.

HOGBACKS

In 1896 under the foundations of the north-west corner of the Norman church was discovered the hogback called by Mr. Calverley the 'warrior's tomb,' a house-shaped stone with imitative tiles to its roof and interlacing on one side and a scene of battle or truce-making on the other. There are two armies with spears and round shields of the pre-Norman age, one army reversing its spears and its leader apparently giving up the flag to the leader of the other army. This can hardly mean anything but a record of victory won by the chieftain of Gosforth here buried. We know that king Æthelred in 1000 A.D. ravaged a great part of Cumberland and hoped to meet his fleet on the coast, but the

THREE CROSS-HEADS AT GOSFORTH.

A, probably head of the destroyed Sundial Cross ; B¹ and B², probably head of the Fishing Stone ; C, late cross-head.

THE FISHING STONE, GOSFORTH.

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HOGBACK, ASPATRIA.

HOGBACK, PLUMBLAND.

B is the end view of the fragment *A* : *a* is a later carving, when the stone was built into the church ;
C is the other fragment of the same hogback.

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THE 'WARRIOR'S TOMB,' GOSFORTH.

THE 'SAINT'S TOME,' GOSFORTH.

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HOGBACK, CROSSCANONBY.

DEARHAM CROSS.

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REMAINS OF THE PRE-NORMAN PERIOD

fleet did not appear and so he had to return by the way he came. Without going so far as to attempt any identification, it is worth while pointing out that he would have come round the north of Cumberland towards Ravenglass for the purpose of finding his ships, and it is possible that here at last the inhabitants, Northmen principally, made a stand. But there must have been many a battle hereabouts in those days.

In 1897 another hogback was found under the north-east corner of the nave, and called by Mr. Calverley the 'saint's tomb' because on its ends there are figures of Christ crucified and perhaps Christ in resurrection. On its sides are great serpents with human figures wrestling in their coils—another rendering of the subject already noticed in the Penrith hogback, the struggle of the seed of the woman with the serpent.

At Plumbland there are two fragments of a hogback which was built into the church and carved by the early English mason into an impost or springer for an arch with honeysuckle-moulded ornament beneath. But the serpent is plainly seen on the walls of the shrine, and at its ends a variation of the Triquetra which is so conspicuous at Gosforth.

To complete the series of Cumberland hogbacks that at Bromfield may be mentioned, built above the Norman arch inside the west doorway. It has a tegulated roof, but is too defaced and ill seen to illustrate.

At Aspatria is part of a very fine hogback, with elaborate roof and sides carved into pilasters with rich interlacing. The band of step-pattern at the eaves and the angular plait along the ridge seem to indicate a rather later date.

At Cross Canonby is another hogback fairly complete, though its sides have been defaced. It is of red sandstone, 6 feet 1 inch long, 21 inches high and 17 inches broad. It has at the gable-ends of the mimic roof some remains of the beasts' heads which were common adornments of hogbacks, perhaps in imitation of the trophies put up on the gables of dwelling-houses of the time. The tegulation of the roof is curious, for it is the same chain-pattern we have seen on the shaft of Gosforth cross and referred to a Scandinavian origin.

MINOR SCANDINAVIAN CROSSES : CHAIN-PATTERN

The same ornament is the chief feature of the Dearham cross, which stood until 1900 in the churchyard, but after some injuries was then put for safety inside the church. The western side bears out Mr. Calverley's theory that the pattern is intended to represent a Tree of Yggdrasil ; for there is the bole beneath, breaking into branches among which are two birds, and ending in curled twigs at the rim of the wheel-head. On the other side from a coil of roots four stems shoot up through an arch, which may possibly be intended for the rainbow, the bridge of the gods by which they descended from heaven ; and above it is another entanglement of branches. The idea of the artist may have been to suggest, as on so many of these gravestones, the hope of life to come, here

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using a new symbol, which however would be understood of the people whether heathen or Christian.

With Dearham cross may be classed the fragments of a head at Gilcrux church. The boss is six-petalled, like one of the Carlisle cross-heads we have noted as Anglian, but the identity of pattern is of far less importance than the identity of treatment ; and here we see interlacing of a type unlike the Anglian, but like these works which we group together as late and Scandinavian (tenth and eleventh century and Irish-Norse).

In Muncaster churchyard is another low broad cross with a new variety of the chain-pattern on its face and flatly treated braids on the back and edges. Under the main design at both front and back is a simple step-pattern ; compare the Aspatria hogback. A wheel-head lies now beside it, possibly its own ; but the socket recently added could not have fitted this cross, and shows that there were more than one such monument at Muncaster.

The same variety of chain-pattern is seen on the edges of two crosses at Bromfield and Rockcliffe churchyards, both rudely hacked or picked sculptures, but remarkable in having broad raised bands running horizontally round the shafts. It has been suggested that this indicates an original imitation of basket-work in these interlaced crosses, but we can trace the development of their various styles from the Bewcastle cross and the development of that from an adaptation of sixth and seventh century Greek-Italian art to the standing-stones of the British Christians. It is still possible however that in the search for variety artists then as now introduced new ideas by imitating work properly intended for other materials, and that basket-work, as well as illuminated manuscripts, metal-work and wood-carving, was sometimes copied. Only this does not account for the origin of the interlaced crosses as some have supposed.

The Bromfield red-sandstone cross has lost its head, but the Rockcliffe cross is complete. It is unusual in this county, because though a wheel-cross it is not four-holed ; the spaces between the arms are merely counter-sunk, not pierced. On the bands are grotesque figures of animals, which lead us to a new class of later monuments, those with beasts, birds, snakes and human figures, drawn clumsily and with none of the correctness and dignity of the fine early Anglian work, but resembling Irish art in MSS. and sculpture.

LATER ZOOMORPHIC SCULPTURES

The Dacre stone, a shaft preserved in the church, was a low broad cross, bearing at the top a figure almost identical with the animal turning its head over its back, supposed to be the lamb treading on the serpent, seen on the Fishing stone. There is a much weathered figure in the same attitude on one of the crosses of the Giant's Grave at Penrith. The stag, seen at Penrith and with the dog or wolf on the Gosforth standing cross, is here seen with the dog or wolf on its back. At the bottom is

MUNCASTER CROSS.

ROCKCLIFFE CROSS.

DACRE CROSS.

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WABERTHWAITE CROSS.

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the scene of the Temptation: Adam and Eve with the tree of Eden and the serpent. The two figures taking hands over a square object like an altar or font have been thought to represent king Æthelstan and king Constantine, who made a treaty 'at the place which is called Eamot on the 4th day before the ides of July,' July 12, 926, says the *Anglo-Saxon Chronicle*. This however is doubtful. We can see that the sculpture is similar to that which we have classed under Scandinavian influence and that it has some features recalling the spiral Cumbrian style in the curled accessories of the design. We must place it with the Giant's Grave as a transition-form on the brink of the Irish-Norse style. It may be tenth century, and it is possible that it is the grave of some such personage as Owain, king of Cumberland, but we must leave the two figures at present uninterpreted.

THE RED SHAFT, CROSS CANONBY.

A shaft re-erected by Lord Muncaster in Waberthwaite churchyard is all interlaced, with the open plaitwork which became more common at the end of the eleventh and in the twelfth century. Interlacing of the best period of this art was usually tight, showing very little ground. This is rudely hacked, not chiselled, and yet designed with some attempt at symmetry. Among the interlacing is the figure of a horse seen also at Halton, Lancashire, on a late eleventh century cross.

The wilder character of this Irish-Norse art is brought out in the standing cross at Aspatria, a red sandstone shaft 4 feet 6 inches high, from which the head is lost, though it is still possible to trace the curve of a wheel-cross, like those of Dearham and Gilcrux. Three sides bear interlacings, fairly regular, but clumsy in drawing and roughly hacked out; the fourth side has a wild entanglement without symmetry, but no

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less ingenious in the following-out of the strands through a wonderful cobweb maze. Beneath this is a beast with its head turned over its back, but ruder and wilder than the similarly posed creatures at Dacre and Gosforth.

Still wilder are those on the red shaft at Cross Canonby, beasts writhing and trying to bite themselves in two. One edge of this piece has a wildly twisted dragon, the other edge a ring-plait, and the reverse a fret—no very definite sign of date, though the cable-moulding links it to the late pre-Norman types and distinguishes it from the earliest Anglian.

A similar treatment of monsters appears on a shaft at Workington church, with angular frets on the sides, bird-like creatures on one edge and a kind of snake on the other.

THE DRAGONESQUE SERIES

Snakes interlaced have already been noticed on the Gosforth crosses and hogbacks, the St. Bees standing cross, and the Plumbland hogback, and now we have a series in which this characteristic motive of Irish and Scandinavian work is very distinctly shown, along with features different from the Gosforth style.

At St. John's, Beckermeth, there is a group of stones preserved in the church which must have formed parts of three very picturesque crosses. The main material of ornament in all is a double-strap interlacing of a rather irregular design, recalling the Aspatria standing cross, but interspersed with the conventional Irish and Norse dragon-heads. In two of these crosses there are geometrical patterns with curled ends and pellets filling the gaps, which suggest a survival of the spiral school; these, like the Penrith and Dacre examples, being transition-types between the Cumbrian and Gosforth styles. One of them is remarkable for a clever use of the drill to punctuate the intersections of the plaits, as in the braid on the north side of Gosforth standing cross and on the 'saint's tomb.' There is a fragment of a still later shaft with angular interlacing, and cable-moulding which does not appear in the three others. The socket-stone no doubt belongs to one of the three.

At Haile there are fragments of dragonesque shafts, figured by Canon Knowles (in *Trans. Cumb. and West. Ant. and Arch. Soc.* vol. iii. 1877).

The head built into High Aikton farm and noticed there by the Rev. Richard Taylor must have come from Bromfield church, though it is of a different stone from the interlaced cross already described. In the place of the boss it has a dragon's head with a ring through the snout—an adaptation of the idea we have seen carried out at Gosforth, where the serpents attack the cross-head.

The socket-stone in the tower of Brigham church is a good example of this dragonesque style. There is also a red sandstone wheel-head, with three fragments of interlacing of this age; one of them of white

THE STANDING CROSS, ASPATRIA.

THE DRILLED SHAFT, ST. JOHN'S, BECKERMET.

THE DRAGON LINTEL, ST. BEES.

CROSS-HEAD, HIGH AIKTON.

THE 'LAWRENCE' SLAB,
CROSSCANONBY.

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freestone, very loose in design, angular and disconnected, evidently belonging to the close of the period. Over the porch of the vicarage at Brigham is a head which bears a figure entangled in and grasping interlaced coils which are now too mutilated to show the dragon's head if there was one, but this is the completed type of the dragonsque subject—Christ, the seed of the woman, wrestling with and overcoming the serpent.

The idea is carried out in a shaft recovered in 1900 from the Norman foundations of Great Clifton church, where there is an echo of the Gosforth saint's tomb in the two dragons surmounted by two small human figures, a resemblance so striking as to suggest imitation ; while at the foot of the shaft is a much ruder figure, with nimbus and long robes, holding and held by the coils of a serpent. Above this is a great

SOCKET STONE, BRIGHAM CHURCH.

CROSS-HEAD, BRIGHAM VICARAGE.

dragon with an unmistakable wolf's head, and a little plaited snake with a human head, the tempter of Eve—another form of the symbolism in Dacre cross.

The most perfect example of this conflict with the dragon is the lintel at St. Bees church, representing St. Michael with helmet, sword and shield fighting the dragon. Finely designed frets are on either side. This must belong to quite the end of the pre-Norman series, if not to the twelfth century, when however Cumberland was not yet really Normanized. There are many bits of twelfth century interlacing, as at Brigham and Great Salkeld, in the capitals and details of architecture which show a continuous tradition of these earlier types, and in some slabs and fonts there are similar survivals which ought not to be omitted in a review of early Cumberland art.

The curious slab at Cross Canonby with the cable-stemmed cross, zigzag ornament as in some Welsh stones, and rude figure, is difficult to class. The 'gridiron' over the figure's head has been thought to show

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that he is intended for St. Lawrence. The little stone with a rude sketch of a similar figure incised may be a carver's trial-piece.

At Dearham is a grave-slab with open twelfth century interlacing, rosettes and leaves, a helmeted head under an arch, and three figures holding hands, one of whom, a man helmeted, has his foot in the mouth of a serpent.

At one end of the slab is the word 'Adam,' at the other are runes not satisfactorily read.

The font at Dearham has also open interlacing and a kind of chequer-work on the opposite side. On the other sides it has two monsters of a type not seen in earlier work, but perhaps intended for a griffin and a cetus, meaning the spiritual nature and the water of baptism as in several other fonts. This is a square font; that at Torpenhow is round, with late Norman interlacing and interlaced round arches.

The Bridekirk font is a famous work of the twelfth century, noticed here as showing the outcome of earlier zoomorphic interlacing under new influence from Italy. It was attributed by Prof. Stephens, not without some reason, to Richard of Durham, a great artist living about 1120-80 whose portrait is here, carved by himself as at work on the

THE ADAM SLAB, DEARHAM.

stone, with his signature in runes above, among floral scrolls of the period and Norman monsters. On one side is the picture of the Fall, Adam before the angel with the flaming sword and Eve embracing the tree of life. On the next is the baptism of Christ, and on the opposite side are a griffin and a cetus supporting a wheel or sun and framed in a pattern characteristic of twelfth century north Italian art. It is interesting to

DEARHAM FONT.

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Griffin and Cetus, BRIDEKIRK FONT.

THE BAPTISM OF CHRIST, BRIDEKIRK FONT.

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find that as we began 500 years before with north Italian influence producing beautiful work in Cumberland, so we conclude the survey with a new development under teaching from the same source.

POST-CONQUEST HIGH CROSSES

Before leaving the subject of Cumberland crosses it may be necessary to mention those which are not pre-Norman, but of a later date, though sometimes confused with the early grave-monuments. We have complete crosses of the mediæval type at Arthuret, Kirkland, Rheda (Cross Lacon) and St. Bees (the resting cross); headless shafts at Dovenby, Lanercost (dated by inscription 1214) and Lazonby; heads alone at Bromfield (two built into the out-house of the vicarage), Cumwhitton and Gosforth (built into the porch), and some sockets alone. Crosses used to exist, but are now lost, at Castle Sowerby (two corpse crosses on the common), Croglin, Lamplugh, Melmerby and at Bow said to have been brought from Grinsdale. Beside these are market crosses, as at Blennerhasset and Ireby, and finial crosses removed from the gables of churches, as at Melmerby and Workington (Crosshill), where the inscription W.H. 1103 stands for W.H. 1703, the date when it was built into its present position. In March, 1901, a fragment of a late cross was found in excavating the ruins of a chapel at the Holy Well, Gosforth.

INSCRIPTIONS

In Cumberland there have been found seven Runic inscriptions on stone and two on metal-work. Another which has been called Runic is in minuscules; and an Anglo-Saxon cross-head at Carlisle has lettering in uncials. These, if not all cut before the advent of the Normans, belong to the pre-Norman type of remains.

The Bewcastle cross has runes which have been the subject of much discussion. The reading which may be called the *Textus Receptus*, though not without difficulties, we owe mainly to the late Rev. J. Maughan of Bewcastle. It is as follows—

North side, on separate lines between the ornamental panels :

† GESSUS	† Jesus
WULFHERE	Wulfhere
MYRONAÖYNG	King of the Mercians
CYNESWITHA	Cyneswitha (his sister)
CYNNBURUG	Cyneburg (their sister, wife of Alcfrith)

South side, on separate lines between the ornamental panels :

[illegible]	
ECGFRITHU	Of Ecgfrith
RICES ThÆES	of this realm
CYNINGES	king (brother of Alcfrith)
† FRUMAN GEAR	† in the first year

The lowest lines in each set are plainly legible; Herr Wilhelm Viëtor however (*Die Northumbrischen Runensteine*, 1895) reads CYNIBURUG. The

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rest is now very far from distinct, though part of the topmost line on the north side can be read.

West side, over the figure of Christ :

† GESSUS CRISTTUS	Jesus Christ
----------------------	-----------------

There are traces of a name, possibly that of Christ, at the top of that side. On the panel below the figure of Christ is a long inscription, which we give in *facsimile* from a squeeze-tracing. The reading usually adopted is—

† THIS SIG-BEON ThUN SETTON H- WÆTRED WOTH- GAR OLFWOL- ThU AFT ALCFRI- ThU EAN CYNINg EAC OSWIUNg † GEBID HE- O SIN(N)A SOWHULA	This victory-column tall set up Hwætred, Woth- gar, Olfwol- thu, for Alcfrith late king and son of Oswiu Pray for (? the high sin of ?) his soul
--	--

Herr Vietor thinks that the name *Hwætred*, part of the *Wothgar* and the word for *king* are distinctly readable ; while he is inclined to accept the name of *Alcfrith* and the word for *son of Oswiu*. In the last two lines he sees a version of the usual formula, *Pray for his soul*.

Our *facsimile* shows how difficult these last lines are to read, and how doubtful 'the high sin' must be ; though the main purport of the inscription seems to be fairly clear. If the Bewcastle cross is to be dated 671, as its inscription and ornament seem to suggest, these runes are the earliest dated piece of English writing in existence.

The Irton cross had an inscription in runes, of which Professor George Stephens of Copenhagen read (from a cast made in 1863 by the Rev. Daniel H. Haigh) this fragment—

† GEBIDÆTH FORÆ	Pray for . . .
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Herr Vietor in 1895 said : ' I can only see at the end of the first line the remains of a B, or as Haigh thought þ (Thorn, the rune for Th), but not Haigh's † G at the beginning of the first line, F at the beginning and M at the end of the second, Æ at the beginning of the third line.'

In Carlisle cathedral a Runic inscription was found by Mr. Purday

THE DOLFIN RUNES.

in 1855 under the plaster and white-wash on the western wall of the south transept, where it may be seen framed and glazed. It is evidently not a monumental inscription, though taken on discovery as such, but the *sgraffito* of some mason—perhaps—

at the time when the cathedral was being built. After some guesses Dr. Charlton read—

TOLFIHN YRAITA ThÆSI RYNR A THISI STAIN
'Dolfin wrote these runes on this stone.'

RUNES OF BEWCASTLE CROSS.

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which Stephens adopted with slight alteration. The circumstances in which the inscription was found seem to warrant its genuineness, but the spelling is curious and the forms unusual.

Near Bewcastle at Barnspike a shepherd found runes on a rock in 1864. Mr. Maughan read—

BARANR . HRAIT . AT . GILLHES . BUETH .
IAS . VAS . DAUTHR . I . TRIKU . RAB .
D . VAULKS . AT . FADRLAND . NU .
LLANERKASTA .

He referred this to the legend, exploded by Mr. Hodgson Hinde, of the circumstances which led to the foundation of Lanercost priory ; and

BRANR . HRAIT . AT . GILLHES . BUETH .

IAS . VAS . DAUTHR . I . TRIKU . RAB .

D . VAULKS . AT . FADRLAND . NU .

LLANERKASTA .

Barnspike

11 PR * R I I I * I I F K I I * I Y D I Y I

Hazelgill

translated : ‘Baran wrote this inscription in memory of Gillhes Bueth, who was slain in a truce by Robert De Vaux for his patrimony now called Lanercost.’ We believe that the inscription was a practical joke. The runes and some of the forms are taken from Mr. Maughan’s own pamphlet, and especially from his erroneous copy of the Carlisle cathedral inscription. The word he read FADRLAND should be read FETRIANA, and it was Mr. Maughan’s theory that Petriana was the Roman name for Lanercost. No Scandinavian rune-writer in the eleventh century would have called Rodbertus de Vallibus ‘Rab D (or te) Vaulks,’ or have described Lanercost with imaginary antiquarianism as ‘Petriana now Llanerkasta.’ The F was used as initial for Petriana because P is a rare letter in late Scandinavian runes ; and the double L for Lanercost was to suggest a Welsh or British origin of the name.

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Half a mile north of Barnspike, near Hazel Gill, another shepherd found more runes on a rock in 1872. Professor Stephens read—

ASKR HRITA HEIL KIL HIMTHIKÆ
HESSIL

'Ask wrote this hill to Gil henchman to Hessil.'

We can find no **HESSIL** on the stone, but we find the names Hessil and Gil in Hazel Gill or Hessil Gill hard by, and Ask at Askerton Castle. This finding of proper names in place-names was characteristic of the period and of Mr. Maughan, and the inscription seems to have been another practical joke (see *Early Sculptured Crosses of the Diocese of Carlisle*, 1899, pp. 48-53).

Bridekirk font bears runes of the twelfth century. The second

X R I K A R P : * x : y : I K R N Y T
: T : T F : P I : Y + : R D : 3 T R : T R
: Y : B R A K X

THE BRIDEKIRK RUNES.

line is by no means clear, but the reading of W. Hamper (1820) and Professor Stephens does not seem to have been bettered—

† RIKARTH HE ME IWROKT(E)
& TO ThIS MERTHe GERNR ME BROKTE

‘Richard, he me wrought, and to this beauty carefully me brought.’

At Dearham the 'Adam Slab,' already described, has beside the word **ADAM** a few broken runes. The Rev. W. S. Calverley communi-

1880

THE DEARHAM RUNES.

cated them to Professor Stephens, who said that as later runes they would read **HNIÆRM**, which means nothing : therefore he regarded them as early runes and read—

(Krist S)U(L) GI-NIÆRA
'May-Christ his-SOUL NÆRE (save, bless)!'

He dated the stone, from this reading, '850-950?' but this date seems

THE INSCRIBED CROSS, ST. BRIDGET'S, BECKERMET.

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impossible from the character of the ornament on the slab, which suggests twelfth century work. Herr Vietor only says: 'The northern rune M (earlier R) shows that the inscription is not English in character.' We leave our tracing to the reader's consideration.

The amulet ring found at Kingmoor in 1817 or 1818 (now in the British Museum, Anglo-Saxon Room) also bears runes, which appear to be a magical formula (see Stephens, *Old-Northern Runic Monuments*, i. 496; iii. 218).

The Aspatria gold armlet, found in 1828, and now lost, had runes which were thought to read GEROT, but the drawings made at the time are not sufficiently exact to determine them (Stephens, *op. cit.* i. 160).

The Anglian cross-head found at Carlisle in 1857, and now in the Fraternity, has an inscription in uncials on both sides. At the time of its discovery Professor Westwood dated it about 700 A.D., remarking that the forms of the letters were those of MSS. of that period. The peculiar S after the cross occurs in the Durham book and in the book of St. Chad. The word SIGTTEDIS was thought to be a female name.

The cross of St. Bridget's, Beckermeth, used to be called Runic, and it has been variously read; but the rubbings (still existing) from which some of these attempts were made were very imperfect. There is no doubt that the letters are minuscules, rather tall for their breadth, with d for a. They may be read somewhat as follows—

FRAGMENT, FOUND 1857. CARLISLE.

[line wanting]

rintalegne

iuán : leair

qbre : imier

fos : fa : selfe (or safe)

i·rst·.· rhn : sí

er

To Mr. John Rogers of Barrow-in-Furness we owe suggestions leading to an interpretation which however must be regarded as only tentative. Considering the inscription as some form of Gaelic, and the q at the beginning of the third existing line as a form of d (*i.e.* a), the words might be expanded: '... rinta le gne Iuan (mh)i(c) Cairabre, ithmigh aig fos fa selbh,' '(This cross was) made for the face of (*i.e.* for the purpose or memory of) John son of Cairbre, gone to rest under the keeping of'—*I. Xst*, 'Jesus Christ.' For the remainder Mr. Rogers

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suggested : (*Fo*)*rin-si Cr(ist air)*, 'Be gracious to him, O Christ !' (see *Early Sculptured Monuments in the Diocese of Carlisle*, pp. 26-31).

METAL-WORK

In the Tullie House Museum, Carlisle, are various objects of British workmanship found with urns of a late-Celtic type at Carlisle. There is the bronze torque found in English street ; the enamelled Celtic fibula of late Roman time found in building the new market, and another fibula like it ; pins of the same period, and horse-trappings, representing native art during and for some time after the Roman occupation. A more magnificent specimen is the iron sword in a bronze sheath found at Embleton, and now in the British Museum. The sword is about 20 inches long, slightly curved and double-edged. Round the pommel are bits of paste *en cabochon*, alternately light red and emerald green. The sheath is of thin bronze with a chequer pattern ; its bands and tip are of solid bronze. The style of pattern called late-Celtic, with trumpet-shaped curves and spirals, lasted through the Roman period and into the Christian age. This is seen, for example, in the stone monuments and metal-work of Scotland ; and in Cumberland there was a curious instance in the late-Celtic disc of *champlevé* enamel (British Museum, from Crosthwaite's Museum at Keswick), which was used to attach a hook to an Anglo-Saxon bronze bowl. The locality and circumstances of the find are however unknown.

Of dated relics in metal-work we have the hoard found in June 1855 at Scotby, 6 feet deep in a peat moss, comprising about 100 coins of Edward the Elder and Athelstan (910-41) with ten or twelve ingots, an iron horse-shoe with six square holes for nails, and a small iron bill-hook. At Kirkoswald early in the nineteenth century were found more than 700 stycas, dating from 796 to 854, with a silver fibula now in the British Museum. It is trefoil-shaped, with flat red paste jewels, one of which remains in place ; the ornament is solid and in high relief. It used to be ascribed to the period of Offa, king of Mercia (d. 796), but rather resembles later Scandinavian types. Both these hoards are of the Viking age.

At Carlisle Castle was found a brooch with an Anglo-Saxon inscription, present locality unknown and description imperfect ; but another fibula, said to have been found near Carlisle, and exhibited in 1859 by the Rev. Tullie Cornthwaite, is described in the catalogue of the collection shown at the meeting of the Royal Archæological Institute as penannular, and of copper or some other base metal thickly plated with gold, about $\frac{3}{4}$ inch in diameter. Other penannular brooches have been found near Dacre and Penrith, and at Brayton. The first was discovered in Newbiggin Moor Silver Field near Fluskew Pike, Dacre, in 1785, together with silver rings, near a site of interment with stone coffins, urns and bones. It can hardly have had more than an accidental connection with these interments in urns, for the engraving in Clarke's

THE KIRKOSWALD FIBULA.

THE BRAYTON FIBULA.

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Survey of the Lakes gives us a magnificent specimen of the bulbous penannular fibula, such as elsewhere has been found in Viking graves with tenth century coins. This brooch was of silver, weighing 25 ounces, and variously described as having a ring 7 or $8\frac{1}{4}$ inches in diameter and a pin 21 or 22 inches in length. An almost identical brooch is said to have been found in a field near Penrith in 1830; it was exhibited in Carlisle 1859 by Mr. J. Teather, Alstonby. The third alluded to above, and known as the Brayton fibula, was found in a fish-pond at Brayton Park some time before 1790, when it was mentioned in Pennant's *Tour to Scotland*. It was originally—only a fragment was recovered—a flat penannular brooch of silver, ornamented with an interlaced triquetra; and though different in form from the Dacre brooch, like it resembling brooches found in Viking graves. With it was found a silver hook, weighing 2 ounces and $4\frac{2}{8}$ inches in length. We may hazard a guess that this was the bent pin of the brooch.

The Kingmoor amulet ring, of which the runes have been mentioned, was of gold, weighing nearly 15 pennyweight. Another ring is mentioned by Stephens (*Old-Northern Runic Monuments*, iii. 218) as found somewhere in the north of England, and owned in 1870 by Mr. Robert Ferguson. This seems to be an imitation in copper of the Kingmoor ring. The Aspatia gold armlet with its runes has also been mentioned; it was found in the ditch of a hedge somewhere within the parish, and at Beacon Hill was the tumulus with incised slabs and gigantic warrior buried with his arms, which has been described by Chancellor Ferguson earlier in this volume. This interment was more probably Viking than Anglian, because by the time the Anglians penetrated into Cumbria they were Christianized, and would not be buried in heathen fashion; but the Danes and Norse at first were pagan. The same may be said of the Hesket hoard, which was found in 1822 in a tumulus near the Court Thorn, and is now in Tullie House. It included an iron sword, with pommel and guard complete, but bent up and broken across, as in many Scandinavian graves; an engraved pattern is still visible on the guard—a braid of three straps, each of three strands. There was also a shield-boss, an axe, a lance-head, a dart-head and a curved knife; a spur, snaffle and buckle; a hone, and a bone comb and bone objects which may be mountings of the sword-sheath, with engraved patterns—two plaits of three strands each and a simple twist of two strands. Among the stones of the cairn were bits of querns; one of them of the dark grey volcanic rock from Andernach, used here by the Romans.

The snaffle found at Hesket recalls a bridle-bit found at Birdoswald, and exhibited in 1859 by Mr. G. Head of Carlisle. It was described in the catalogue by the late Sir A. W. Franks and other distinguished antiquaries as of 'Old English type'; and such parts of a horse's harness are common in Viking graves.

In the Anglo-Saxon room of the British Museum is a sword-handle found in Cumberland and purchased 1876, the exact locality not stated. It is of wood, with gold filigree on bands of gold, and garnets

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inserted, evidently mere remnants of a more complete covering. A triangular space is filled with red enamel in panels. Gold filigree of this kind with garnets was much used in Scandinavia in the later part of the early Iron Age, but enamel was, though not unknown, exceedingly rare. This sword may therefore belong to the earlier Anglian period; and it may be remarked in passing how few remains we have which can certainly be attributed to that age, beyond some sculptured stones in the north and west of the county. Most of these bits of metal-work, and by far the greatest part of the sculptured stones, refer to the later pre-Norman period, after the Danish and Norse invasions.

With these remains may be mentioned the 'Saxon beads of glass and other ornaments, which may be seen at the rectory' of Kirkbride, as Whellan stated in 1860; and the spinning-whorl of black and red dull glass found at Moresby, and now in the Anglo-Saxon room of the British Museum.

There can be no doubt that, as Chancellor Ferguson has remarked above, many other pieces of ancient metal-work have been found and lost again or destroyed; but such fine examples as the Embleton sword, the Dacre fibula, and those here described, show that the earlier Celts and later Teutonic settlers of Cumbria were not without wealth and art.

EARTHWORKS

The ancient earthworks of Cumberland other than those of Roman origin are taken together here, though some may have been constructed before the Romans came, and some were certainly in use after the Norman Conquest. But as a series they are connected with the dark age between Romans and Normans rather than with any other period; and it is only by taking them in series, and comparing one with another, that much light can be thrown upon what has always been an obscure part of local archæology. Many of these earthworks have disappeared since they were described by writers of 100 years ago. In those cases we must fall back on the old descriptions and plans, though skilled exploration would even yet yield interesting results, if such attention were given to non-Roman sites as lately has been given to the Roman Wall.

We can roughly divide the known remains into *dúns*, *túns* and *motes*; that is to say, strongholds of British type, many of which we may find to be post-Roman; enclosures by Teutonic settlers, probably for domestic and agricultural purposes, and only secondarily used as walls of defence; and mounds, wholly or partly artificial, on which the later settlers, whether Anglian, Danish or Norman, built their wooden houses, surrounded by trench and stockade, with or without the addition of a base-court. These last sometimes developed into the mediæval pele or the Edwardian castle; and probably, in a few cases, the early mote is now quite lost in the midst of a modern town. The better the site, the more likely it would be to find favour with successive generations of inhabitants, and to be transformed, century after century, into the kind of dwell-

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ling or stronghold in vogue at the time. Carlisle Castle, for example, may have been a pre-Roman *dun* ; and it was probably a British *caer* after the Romans left, and then an Anglian stockaded *burh*, and then a Norman castle. But the evidences of earliest occupation are lost ; and so it is with several other sites.

DÚNS AND CAERS

The stronghold—whether homestead, town, or place of safety in time of war—peculiar to British ages was usually on a hill, and surrounded with broad and high ditches and ramparts. The more perfect types have three ramparts, as seen in Shoulthwaite Castle, a fortified hill in a little valley between Derwentwater and Thirlmere. The triple rampart does not entirely surround the crag, because it is only needed on the tongue of land joining the site with the neighbouring hills. Hutchinson (ii. 154) says that pieces of freestone had been found here, and a well and wood ashes ; and there is a tradition that it was used during Scottish raids. The freestone suggests a post-Roman date, and the place may have been occasionally occupied throughout many centuries, for it lies near but hidden from the great routes through the Keswick and Thirlmere valleys by which raiders and invaders must often have advanced upon the shepherds and farmers of the dales.

Similar hill-forts, though the ramparts, if any, are not now visible, existed at Castlehead or Castlet, Keswick, where wood ashes have been found in digging ; and at Castle Crag, Borrowdale, where Hutchinson mentions finds, a century ago, of leaden vessels, an iron pot, freestone again, and two wells, and, what shows continuity of use to a very late period, the head of a halbert dated 1684. Reccastle, above Lodore, is also said to have been a fortified hill.

Dunmallet, at the foot of Ullswater, is a very fine example of a fortified hill, but with only two ramparts, though these are continuous and well marked. Freestone has been found here also ; but the story of a monastery on the site is an error. Whatever the name means, it is a British word, and shows that when the speech of Cumbria was Celtic this was known as a *dún*.

At the foot of Bassenthwaite lake, close to Peel-wyke, so named from this fortress, are the similar entrenchments of Castlehow. This however is not regular in form : there are four trenches on the side towards Peel-wyke, and only two on the more easily defensible side.

Not far north of this, and as it were an outpost of the fells, is Caermote. As an ancient road runs through the camp, which is square, about 160 by 140 yards in size, with a gate in three of its sides, Caermote has been thought Roman. Early antiquaries said that altars and inscriptions had been dug up at a camp near Ireby, and it was supposed that this was the place. But it differs from a true Roman camp in having triple earthen ramparts, characteristic of British strongholds ; and, though the buildings in and near it have been partially explored,

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no Roman remains nor distinctive Roman masonry appeared. Melted lead, iron nails and charcoal, and débris of brick were met with, showing that it was not pre-Roman. Inside the larger entrenchment a smaller one has been formed, which Chancellor Ferguson took to mean that at first a cohort was placed there to make the road, and then a century was left to guard it. In 1899 however, after revisiting Caermote, he withdrew his earlier opinion, and said that it might be omitted from the list of Roman sites.

Mr. W. Jackson of St. Bees thought the irregular entrenchment on the top of the hill, 935 feet above the sea and about 60 by 70 feet wide, was the *mons exploratorius* or look-out station of the Romans. It is called the Battery, and was the site of a beacon. But the name and remains suggest a post-Roman occupation.

Some of the hill-forts have only a single rampart. The much-discussed ring of boulders and earth on the top of Carrock Fell, oval in shape, with one end replaced by the easily defensible brow of a steep fell-side, and containing a cairn, may be an example, though some have doubted whether it is not partly natural and partly the result of miners' trial diggings. On Little Mell Fell there is another ring embankment; at Greencastle loch, east of the Maiden Way on Cross Fell, there may be found a semicircular fortification of earth on the top of Roderick heights—a name which suggests the famous king Rhydderch. At a point half a mile north of Burnmoor tarn, between Westwater and Eskdale, Maidencastle is the name given to a round enclosure, 21 feet in diameter, possibly a hill-fort of refuge, not necessarily to be connected with the Megalithic remains and cairns on the same moor.

Another Maidencastle, also known as Caerthanoc, lies on Soulby Fell near Dunmallet. It is a circular entrenchment, 82 yards internal diameter, with an area of rather more than an acre. The entrenchment has two ramparts with a ditch, 18 feet wide in parts, between them; and Dr. M. W. Taylor, writing in 1868, said that a few years earlier blocks of stone were visible in the entrenchment. Earlier still, Hutchinson found within the ring an oblong square fort, measuring 20 by 15 paces; mentioned also in the eighteenth century by Father West. At present this is hardly visible, but the ring remains, so placed that it can scarcely be called a hill-fort, though it occupies an elevated position on the fell. It is more like the site of a British settlement, the *caer* of another chief.

The peculiar form of this double rampart with the single ditch is seen also in two curious 'camps,' one on the east and one on the west of the county, far removed in position but very similar in construction. At Ousby there is the five-sided enclosure with double rampart and ditch, called Crewgarth, where foundations of walls have been seen, and an urn (type not stated), a quern, a mortar and a metal ball weighing 2 or 3 lb. have been found at different times. Chancellor Ferguson thought it Anglo-Saxon or later; and no doubt it was an inhabited site in historical ages.

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Near Ponsonby, on Infell, is a similar enclosure, with double rampart and ditch; Dr. C. A. Parker of Gosforth gives the measurements of the sides as 22 paces, 64, 52, 75 and 41, and of the ditch as $4\frac{1}{2}$ to 6 feet in depth, and 22 feet from crest to crest of the ramparts. Near the north angle is a circular tank for water. No remains have been found there. The notion that it was Roman is now abandoned.

A similar double rampart forms the D-shaped camp at Skew Hill on the Eden opposite Grinsdale, with an area of about $2\frac{1}{2}$ acres. The ordnance map marks it 'Camp, 1745,' but it is connected by its form with a much earlier date of origin. Two small round forts, with the same kind of double rampart, are on opposite sides of the Irthing valley—one called Tower Tye close to Naworth Castle railway station, and one called Watch Hill north-west of Triermain. Maclauchlan, in his *Memoir on the Roman Wall*, pointed out that they stood in striking relation to the Norman castles near them, and did not think that either were British. Tower Tye may be British, *Tŵr* meaning 'tower' and *Tŷ* 'house,' and there is another place of the same name near Walwick-on-the-Wall. The interior diameter of Tower Tye is about 50 yards, and the ramparts are very well marked, almost out of proportion to the enclosed space, evidently making it a stronghold of some importance.

In the same district is Hayton Castle Hill, a circular eminence 120 feet across within the double rampart and ditch. The ditch varies in breadth from 5 to 12 feet. The site is on the extremity of a narrow projecting eminence, separated on the south from the village by a deep ravine, the sides of which are about 15 feet high, artificially scarped. The centre of the Castle Hill is level and depressed, rising 3 or 4 feet on the west and 8 feet on the east. Chancellor Ferguson classed it as a *burh*, but the Rev. G. Rome Hall considered it a British fort; and we see that its double rampart connects it with the preceding series.

A few miles south of this, on the steep banks of the Eden, in the parish of Cumwhitton, is a round fort known as Castle Hill. Across the Eden, on Lazonby Fell, are a round camp and fort; and near them, at Castlerigg, 'ruins of a building, moated round' (Hutchinson, i. 289). South of that again, at Greystoke, is the irregular rectangular camp by Summerground Gill on Berrier Hill, the fort at Wallaway Green, and the large oval camp at Newton Reigny, near Catterlen (formerly written Kaderleng, another *caer*), and near tumuli where urns have been discovered.

Going north towards Caldew we find the sites of three hill-forts in Castle Sowerby: Knights' Hill, Southernby, a hill with foundations of buildings (Hutchinson, ii. 433) perhaps mediæval and named from the red knights of Inglewood; Castle How or Castle Hill, a rock-cut hill-fort, which is said by tradition (Jefferson, *Leath Ward*, p. 138, following Hutchinson) to have been palisaded and to have been used in comparatively modern times, perhaps to secure cattle during border forays; and How Hill, a round fort about 21 yards in diameter, with an opening on the south side.

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Other round forts are mentioned by the Rev. J. Clifton Ward at Fitz Wood, Cockermouth; the Battery, Cromwell Holes; Embleton Moat; and a mile north-east of Uldale. In West Cumberland are six more round camps, forts or settlements. At Eaglesfield, Castlesteads is the name of a circular enclosure containing an acre or more. At Gatra, near Lamplugh, is another earthen ring. At Pardshaw, the White Causeway is a stony platform adjoining a raised ring of gravel and boulders, which encloses what is now a swampy basin; though, like Hardknott Camp, it must have been drained when in use. At Dovenby Hall is an oval camp measuring 112 by 72 yards in the park, another of about 58 yards diameter in the field called Guards (Garths, a name often denoting an ancient enclosure), and a smaller one between the two. The form of the rampart of the largest suggests a resemblance to the 'British settlements' known in Westmorland.

Two other sites are connected by name with British times, though the earthworks are now too far ruined for classification. Dunwalloght or Drumwalloght, near Cumrew, on the side of the hill called Carduneth, is in the neighbourhood of many British place-names. The story that the Dacres had a seat here (mentioned by Hutchinson) is probably an error, but there used to be earthworks in a field near the church, and in 1832 two hillocks were removed, both apparently artificial; no foundations of buildings or other remains were seen. On the other hand, Castle Hewen or Ewain, just across the Eden valley from Dunwalloght, seems to have been a stone building. Jefferson (*Leath Ward*, p. 225) describes the foundations as in his time (1840) faced with large ashlar stones, in some parts 8 feet in thickness. The castle measured 233 by 147 feet, with a smaller building at one corner 49 feet square. The outward fence, which was of stone, appeared (says Jefferson) to have been circular, and from thence a ditch and breastwork ran down the skirt of the hill for several hundred yards. It was called Castel Lewen by Leland; and very ancient tradition made it the fortress of Ewain, Eugenius or Owain, king of Cumberland, and the scene of Sir Gawaine's adventure when 'king Arthur lived in merry Carlisle.' Tarn Wadling was not drained in Jefferson's time, but it had disappeared by Whellan's (1860).

TÚNS AND SQUARE CAMPS

Under this heading are collected a number of dykes, generally less massive than the great ramparts of the *dúns*, and not circular or oval. Some of them are square, or nearly square, in plan, and some irregular, but more or less following straight lines. The square camps used to be thought Roman, but lack the essential characteristics of true Roman camps.

Such are the square enclosure at Overwater, the little square 'camp' at Thistlebottom (about a mile from Aughertree Fell), and the two small square camps near Rose Castle, of which Hutchinson (ii.

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433) says that they were in his time almost defaced, and no remains known to date them ; they were about 50 yards wide, one NNE. and the other SSW. of the castle. Such also was the square camp at Cunninggarth, near Shawkbeck quarries, which used to be thought Roman because it was near the rock in the quarries with a Roman inscription, and because not far away urns containing ashes and bones were found in the barrow called Toddle Hill, long since removed. There are several minor square enclosures in this district, and some near Stockdalewath especially interesting, which were described with figures by Hayman Rooke in the eighteenth century (Hutchinson, ii. 430-1).

Of these, Castlesteads was a square camp of 188 by 160 yards, with corners rounded and two entrances, one in the middle of the north side, through which a paved way seems to have led, and one near the south-eastern corner. In the middle of the area was a smaller enclosure, 86 yards square, containing the ruins of three houses, where stones and ashes were found, but no urns. This has some little resemblance to Caermote, but it is more like the plan of an Anglian or Scandinavian settler's homestead, with its *túngarth* surrounding the *tún* or homefield, and group of dwellings in the middle.

Whitestones was a square area, 100 by 98 yards wide, enclosed by a single ditch and vallum, with corners much rounded off, and no remains observed ; one side and corner of the dyke had been obliterated. Stoneraise was a similar square of 67 yards, two sides and part of the third only remaining, for several hundred loads of stones had already been carted away from the site. Within the area were walls and ruins of buildings and cairns ; a tooth and bits of burnt bones and ashes were found in the cairns, and querns and an iron billhook. Near these was a tumulus of 63 feet diameter, on which there had once been a stone circle ; and in it stone coffins and bones were found, but it does not follow that the sites were contemporary with the circle. They appear to have been dwelling-places, and of a much more recent origin than such a tumulus would be if it was of the Bronze age type, like the similar tumulus with a circle recently excavated at Glassonby.

At the Heights, Westward, a place called Height Rigg Camp or Stoneraise Camp Trenches existed formerly, and was described by G. A. Dickson in 1816 (*Archæologia Æliana*, i. 132, with plan). Two parallel dykes, about 225 paces in length and 60 paces apart, ran east and west ; a door was in the middle of the most northerly, and on each side of the door were remains of building or entrenchment connected by a paved way (as at Castlesteads). The western enclosure was rectangular, 28 by 40 paces, with a wall running out from the middle of its western side for 45 paces, and a door opening on the causeway which led to the eastern building, and into it by another door. This eastern building, or what remained of it, was a semicircle, and a great stone stood in the centre. Four large tumuli, the writer mentions, stood about a mile away, and another half-way between them

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and these remains, of which he took the semicircle to be a temple and the great stone an altar. Comparing his plan with those of early remains of the Scandinavian settlers in Iceland—which throw much light on the domestic arrangements of the people who, as Danes and Norse, colonized our country—there is a certain resemblance to some examples of the dwelling-house and temple, of which one end was built in the form of an apse, the whole surrounded by the *túngarðr*.

Other extensive dykes may perhaps have been the *túngarðs* of such settlers. The Bishop's Dyke at Dalston, though used in the Middle Ages as a defensible barrier, may have been originally intended as marking off the homefields of the settler at Dalston Hall. Near Great Salkeld, at the hamlet of Salkeld Dyke, is a 'camp' about 400 yards long and 4 yards high, about a quarter of a mile from the stone ruins called Aikton Castle. The Baron's Dyke, Crosby-on-Eden, is mediæval.

On Cumwhitton Common were several square entrenchments from 20 to 100 yards wide (Hutchinson, i. 177). On Penrith Common was a square entrenchment 20 yards each way, at or near which cistvaens were found, and others similar were known in the neighbourhood in Hutchinson's time (i. 321).

'Collinson's Castle' at Upper Row in Hutton-in-the-Forest was an ancient fortification about 100 yards square, with a ditch 30 feet wide and a well; querns had been found there (Jefferson, *Leath Ward*, p. 438). On Pykethwaite Fell north of Bewcastle, at Christenbury Crag, the existence of a camp with ruins of a wall about $2\frac{1}{2}$ feet wide, and another about $1\frac{1}{2}$ feet wide, and 'a sunken *ἐννεάγων*' (nine-cornered pit) nearly paved round with strongly cemented stones, and sunken circles 'paved as if for fires,' was reported by J. Hudson in 1804 (*Gentleman's Magazine Library*, 'Romano-British,' i. 38). At Braystones was once a camp on the beach called Maidencastle (anonymous *Antiquities of West Cumberland*, 1849, p. 67).

These items, to which more might be added, give an idea of the variety of non-Roman, and probably post-Roman earthworks, of which many are lost and none properly explored.

A class of square ruins exists on the high fells—the remains of stone-built houses, sometimes with garths surrounding them, and possibly analogous to the Castlesteads of Stockdalewath and Height Rigg Camp at Westward. On Armboth Fell, between Thirlmere and Shoulthwaite Castle, are many little buildings with one, two or more chambers, certainly not sheepfolds. On Bootle Fell and near Gosforth are old homesteads with garths complete, exactly like Icelandic ruins of the saga time. Indeed, in spite of losses, there is a great field for study in these remains as they exist even to-day; and meantime it would be to very little purpose to theorize upon them.

NOTES

Some of the grave-mounds which have been opened in Cumberland have been proved to belong to the Anglian or Viking age. Such are

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the Beacon Hill at Aspatria and the Hesket tumulus, already described. The late Rev. J. Maughan of Bewcastle has recorded a find (about 1858) of a skeleton buried with knees contracted and lying on the left side, not in a kist, but roughly walled up and covered with a heap of stones known as Murchie's Cairn, to which he ascribed a 'Pagan Saxon' origin. We may mention Dunmail Raise as traditionally connected with the last fight (945) of the last king of Cumberland, Dummail or Domhnall, who however cannot have been buried there, as he died in Rome much later, and the cairn seems to have been opened long ago without much result. But it may be noted here that all tumuli are not prehistoric, nor are they all places of burial. Some are artificial bases for a certain type of dwelling. The moated mound, with or without a separate base-court, is found also in Normandy, Germany and Scandinavia. In its fully-developed form it was a hillock, improved into a steep cone, and surrounded by a dyke which was palisaded. On the top the lord and his family lived in a wooden house; near at hand and within view from this 'howe' was a dyked and palisaded base-court, in which the cattle and thralls were kept at night.

That this was used by the Normans in our district can be seen from a comparison of the two earliest homes of the Le Fleming family, Aldingham Moat and Carnarvon Castle at Beckermest. The former is in a fair state of preservation—not in Cumberland, but not far from its borders—in Furness; the latter has nearly disappeared, but is described by Sir Daniel Fleming in his account of Cumberland (1671). He says that the ruins consisted of an oblong square of about 100 by 85 yards, with a ditch 12 yards broad and 4 yards deep (compare some of the 'square camps' above mentioned). The entrance was at the west end, opposite to which was a round artificial hill called Coneygarth Cop, about 12 yards high, and the top 6 yards broad. It was formerly called Carnarvon Castle, he says, the early home of that branch of the Flemings who settled there in the beginning of the twelfth century. We see from this that the mote was used in Norman times, and that the country folk in Cumberland talked Welsh, for *ar-mbon* (*arfon*) means 'opposite Mona,' in sight of the Isle of Man; and Caernarvon in this sense is not a name borrowed from the castle, famous at a much later day, on the Menai Straits. Coneygarth Cop would be the English name, 'King's Court Hill,' as if, still earlier, this had been the *caer* of some British kinglet or the possession of some greater sovereign.

Not far away is Egremont, *Egener-mot*, the mote on the Ehen; and it has been remarked by antiquaries that this Norman castle is on a hill artificially scarped, and perhaps, they have said, a 'Danish fort.' The anonymous author of *The Antiquities of West Cumberland* (1849) says that similar artificial hills existed at Wotobank (formerly Wodabank), Borough Hill near Braystones, between the Ker and the Ehen, Ivy Hill near Coneygarth and another at Frizington. These are different from the British hill-fort in its more pronounced types,

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but some of the doubtful examples already given, as Hayton Castle Hill, Tower Tye, Watch Hill, and Skew Hill, approach very closely to the less distinct forms of mote-hill. A good example of the difficulty is seen in Liddel Strength, or Liddel Moat, as it is sometimes called.

Liddel Strength is on the edge of a precipice, 150 to 160 feet above the river, and on the other side of it runs a Roman road. It may have lost something by the fall of the edge of the precipice, but in General Roy's day the semicircular inner court measured 13 by 9 yards, surrounded by a great rampart and ditch, and containing the remains of a dwelling-house. Another rampart and ditch enclosed a rather larger crescent-shaped area to one side, representing the base-court. This is far different from the mote proper, and more nearly like such British forms as Shoulthwaite Castle; but it is known to have been in use in the twelfth century. Chancellor Ferguson thought it probably eighth or ninth century to Norman; others have made it the *caer* of Gwenddoleu, a Celtic chief slain 573 at Arthuret, seeing in Carwinley, or Carwhinelow, the name *Caer-gwenddoleu*. General Roy thought it Roman, but that is impossible.

But on Roman sites and out of Roman ruins later comers constructed imitation hill-forts, for such the motes are; and we cannot always tell the date of their construction, especially when the same place was continuously occupied for centuries. At Maryport the south end of the Castle Hill has been made into a moated mound, 160 yards in circumference, by digging a ditch to cut off the scarped end of the hill (Britton and Brayley, *Cumberland*, p. 207). At Beaumont, Castle Green is the old name for a space north-east of the church, where a ruined Roman mile-castle has been turned into a moated mound (Maclauchlan, *Memoir*, p. 80). Hence the name Beau-mont, as Ellenburgh is the *burb* on the Ellen.

Of moated mounds without base-courts now to be seen, there are Brampton Mote, a conical hill about 50 yards high, with a level summit about 40 paces in diameter and a breastwork round it; the similar mote near Irthington church, and another less certain in its intention at Irthington mill; and a mound and wet ditch at Holm Cultram, north of the abbey. The mound at Bleatarn on the Roman wall, it may be noted, is modern, though it has been classed as a mote by former writers.

Mounds with base-courts like Carnarvon Castle exist at Whitehall (a mile south-west of Mealsgate railway station); at Downhall, Aikton, where a square platform has been made by cutting ditches across a long narrow hill and on each side of it; at Over Denton near the old vicarage (marked 'camp' in the ordnance map), where there is a small square enclosure, and near it a mound in a circular or oval ditch about 14 yards in diameter; and at Denton Hall. Here the base-court is 85 yards long, with a ditch about $8\frac{1}{2}$ yards broad, and a rampart partly round it, extending to two sides, beyond which is a smaller ditch; adjoining the west side is a smaller enclosure in which is a mound; later on a

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pele tower was built on the mound, replacing the wooden house, and now there are farm-buildings in which the stump of the pele serves as a dairy. The so-called 'Saxon village' at High Mains, west of Over Denton church, is probably such another place (Chancellor Ferguson, *Trans. Cumb. and West. Ant. and Archæol. Soc.* vi. 194). At Headswood, near Newtown of Irthington, Maclauchlan noted indistinct remains of another such site (*Memoir*, p. 70).

One of these, we have seen, was not conical but oblong ; and there are a few sites which seem to carry out this type, becoming the simple 'moated grange.' The high mound in later times became unnecessary, and more room was wanted perhaps for the building. To get an elevated and dry site the earth from the ditch was thrown up into the central area, but the old apparatus of defence was abandoned. Such probably was the origin of a place which has puzzled antiquaries at Snittlegarth, formerly called a Roman camp. It is an oblong platform, 83 by 31 feet wide, with a ditch 5 feet deep, and 12 feet broad at the bottom, 23 feet broad at the top ; there are traces of earthworks outside. This is not the only example of the kind. At Peel at the foot of Crummock Water is a ditch surrounding a little hill, possibly the site of the manor-house of the Lindsays before Richard I. Near Weary Hall, not far from Whitehall Mote, is a space of about $1\frac{1}{2}$ acre, surrounded by a ditch and raised above the neighbouring level. Two similar earthworks used to exist at Castle Carrock ; one was about 40 yards west of the church, measuring 100 by 40 yards and formerly moated round ; the other at Hallsteads, described as about three times as large, and rising 7 or 8 yards above the surrounding meadow. At one of these sites a stake, fired at the end, was found, probably the remains of a stockade.

The enormous earthworks of Scaleby Castle—two circular moats, the outer about a mile in circumference, from which the earth has been heaped into the centre for the castle hill—are a larger and probably later application of the same method.

Plotting these earthworks on the map, it will be observed that the *düns* and *caers* group themselves on or near the high fells, while the *tüns* dot Inglewood, 'the wood of the English,' and the open country to east and west of it ; the *motes* lying thick in the Irthing valley, and more sparsely along the Eden, Wampool, Ellen and Ehen, clinging rather to the rivers than the Roman roads. No conclusions however can be drawn from such a map without the addition of ancient place-names, which are a class of 'remains' by themselves, though not included in the scope of this chapter.

DOMESDAY BOOK, PIPE ROLLS, AND TESTA DE NEVILL

THERE are few counties in England which hold so unique a position in the general history of the country as Cumberland ; and there is no county which will necessitate more exceptional treatment, both in its external relations and internal development. Far away from the great centres of national life, situated on the frontier of a hostile kingdom, inaccessible except by precarious roads over mountain passes, the territorial area now known as the county of that name had remained for centuries more of a Crown colony than a settled division of the commonwealth. Its inclusion in the old kingdom of Cumbria separated it in a large measure from the general polity of English and Scottish history, and gave it a defined isolation which made itself felt in the settlement of the district after the final overthrow of that kingdom. Owning no allegiance to its powerful neighbours, it was successively ravaged by Picts and Scots, Angles and Danes. Later it was claimed by England and Scotland alike, till it was finally ceded to the king of Scotland as a fief of the English Crown. Its southern boundary receded from Morecambe Sands¹ to the Duddon, from the Duddon to the Esk, and from the Esk to the Derwent, as if England was slowly pushing her way northward, with the view of completing her frontier from the Solway to the mouth of the Tweed. When the time arrived for its final severance from ancient Cumbria and its absorption into the English kingdom, it will not be considered strange that its peculiar position warranted exceptional administration from the statesmen among its Norman and Angevin rulers. These exceptional features present themselves at almost every turn. The early Scotie origins of the district, its late formation as

¹ Ecgrid king of Northumbria gave the land called Cartmell and the Britons in it to St. Cuthbert (*Symeon of Durham*, p. 141, Surtees Society). The kingdom of Northumbria stretched from the Humber to the Scottish sea, including the peninsula now known as Lancashire north of the Sands (Twysden, *Bromton*, 801). The region of Ulverston was surveyed in Domesday Book with part of Cumberland as having been held by Tosti earl of Northumberland (*Domesday*, i. 301b). Cartmell was reckoned among the marches (*marciones*) of Scotland as late as 1258 (*Close Rolls*, 22 Hen. III. m. 12d). Skene does not admit Scottish territory at any time south of the Derwent (*Celtic Scotland*, i. 228, 340, 396, *Maps*).

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an English county, its peculiar land tenures, its division into wards, the ubiquity of its military defences, the mottes and mounds, the earthen dykes and deep ditches, the peel towers and castellated churches, the complexity of its ethnology, the philological confusion of its folk-speech, and the sturdy self-reliance of its inhabitants, differentiate the county from the rest of England, and compel us to look at the evidences upon which its history is based, without reference to the forces which were working out the destiny of the nation of which it formed a part.

The early history of the county presents innumerable difficulties owing to the dearth of documentary materials. The northern chroniclers have little of value to relate. A mantle of silence, like the veil of Isis, hangs over it till the close of the eleventh century. Domesday Book has nothing to tell us of the holders of land in the time of Edward the Confessor, or of the settlement after the Norman Conquest. The religious houses were founded too late to throw any light upon the dark period. In fact we have no authentic history worthy of the name till Henry I. took in hand the district which his brother had added to his kingdom. In the following century a new era opened with the series of the Pipe Rolls. In order to elucidate the history of the twelfth century, as far as it can be done with the materials at our disposal, and to compensate in some measure for the absence of the Domesday Survey, it has been determined to print in full all the documentary evidences which touch on the feudal institutions of the district and their establishment under English rule.

The omission of the northern counties from Domesday can scarcely be explained by the reasons which seem to have satisfied the first editors of the great national record. Kelham thought it probable that the king's commissioners had found it impossible to make an exact survey of Cumberland, Westmorland and Northumberland, as the whole of the northern district had been laid waste by the Conqueror; and Sir Henry Ellis supported this view by quotations from the chronicles to show the completeness of the devastation.¹ In that case our north-western county was not included in its entirety in the Survey, either because it was of no value in the eyes of the commissioners, or because the inhabitants were so exasperated by the Conqueror's vengeance that no juries could be found to make the requisite returns. Alongside of this view we must place a tradition common to the religious houses in Cumberland, that it was William the Conqueror, and not his son Rufus, who first subdued the district, and made it definitively a portion of his newly-acquired dominions. There is in the Register of the Priory of Wetheral a fragmentary document called the '*Distributio Cumbirlandiæ ad Conquestum Angliæ*,'² which Dugdale³ printed with the title of the '*Chronicon Cumbrie*,' to which the early local historians had access and upon which they relied for much of their information on the Norman settlement of

¹ *Introduction to Domesday Book*, i. 38, 39.

² *The Register of the Priory of Wetheral*, p. 384, ed. J. E. Prescott.

³ *Monasticon*, iii. 584, new edition.

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the county. This compilation opens with the statement that king William duke of Normandy, the conqueror of England, gave all the land of the county of Cumbria to Ranulf Meschin; and all the county of Chester to Geoffrey his brother; and all the land of Coupland, between the Duddon and Derwent, to William, another brother. As the authority of this manuscript has been accepted and repeated, not only colouring the statements of Kelham and Ellis, but troubling the whole stream of Cumbrian history, an inquiry into its origin may be desirable.

It has been generally considered in recent years that we have in this document a monkish legend, of little or no authority, composed by the monks of the priory in whose register Dugdale found it. We cannot accept that view of its origin. No reason has been given to show its connection with Wetheral, and the historic statements in the body of the document have not even an indirect reference to the lands and endowments of that religious house. The bulk of the manuscript is concerned with the territorial succession of the lords of Allerdale and Coupland, those two great baronies which embraced nearly the whole of the seaboard on the western coast. The 'Chronicon Cumbrie' is but a maimed version of a similar document in the Register of the Priory of St. Bees.¹ The statements of both manuscripts, with some textual differences, agree as far as they go; but in the later descents of the baronies, the St. Bees copy is much fuller in genealogical detail. Another manuscript of similar purport, which is just as explicit on William the Conqueror's connection with Cumberland, has been preserved among the Miscellaneous Rolls of the Tower.² It states that Ranulf Meschin came to England with William the Bastard, who created him earl of Karliol and gave him all the land from Rerecrosse on Staynmore as far as the river towards Scotland called Sulewaht, that is, the Solway, the true marches between England and Scotland. With this preface, the writer at once proceeds to trace the history of the baronies in question, and confines his attention exclusively to their ownership, in which performance he does not display a wide divergence from the style and scope of the Wetheral and St. Bees compilations. On comparison of the three documents there cannot be two opinions, having regard to the internal evidence, that they had a common origin. If we turn to a great lawsuit³

¹ *Harleian MS.* 434, ff. 73-6.

² *Tower Miscellaneous Rolls*, No. $\frac{459}{8}$; Bain, *Calendar of Documents relating to Scotland*, ii. 64.

³ This suit furnishes a very interesting series of pleas. On the death of Aveline de Fortibus, widow of Edmund earl of Lancaster, the king's brother, without heirs, which took place before 1275 (*Calendarium Genealogicum*, i. 224), the Honor of Cockermouth was seized by the Crown, to the exclusion of the Lucy and Multon families. In 4 Edward I., John de Eston claimed the manors, but his title was waived in consideration of the gift of a 'hundred pound land.' The date of the document in the Tower Rolls, which carries the genealogy to the death of Aveline, synchronises with this royal bargain. The suit was revived in 1306 at the instance of Thomas de Multon and Thomas de Lucy as Aveline's heirs, when the king pleaded the former settlement with Eston (*Abbrev. Placit.* p. 261a). With these claimants the 'Chronicon Cumbrie' brings the baronial descent to a close. The St. Bees document carries the pedigree one generation further to the persons of Thomas de Multon of Egremont and Anthony de Lucy, as the representatives of William Fitz Duncan and Alice his wife, adding significantly *qui nunc petit* after each name. With this story the *pedegradus* entered on the rolls of the Court in 1316 agrees, the pedigree in each case ending with *qui nunc petit* as in the St. Bees document (*Abbrev. Placit.* p. 323: *Rotuli Parliament.* i. 347-9). The legal origin of this bundle of disturbing

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which occupied the attention of the king's Court at intervals from 1275 to 1316, in a historic dispute over the possession of the Honor of Cockermouth, the clue to the origin of these documents will be found. They are nothing more than memoranda prepared by the claimants for the guidance of the lawyers, and, perhaps, put together with the assistance of the monks of St. Bees and Holmcultram. As historical documents they are of slender value when standing alone, but for our present purpose they are useful in showing that the tradition of the district at the close of the thirteenth century was universal that William the Conqueror was the instrument in making the Solway the north-western frontier of the English kingdom.

Before we place any reliance upon this early tradition, or accept the plea of devastation as a sufficient reason for the omission of nearly the whole of the modern county from Domesday, it would be well to inquire briefly into the circumstances of the district, as far as we know them, about the time of the Norman Conquest. Some points come out clearly on the highest authority. In 945, so witness the chronicles,¹ Eadmund king of the West Saxons wasted all 'Cumbraland,' and gave it to Malcolm king of Scots on the condition that he should be his ally by sea and land. This uncertain vassalage continued with more or less interruption for over a century, the Scottish princes doing homage for that portion of ancient Cumbria which now embraces the English county, though at that time it was no part of England. In 1070 troubles lay thick on the Border provinces.² King Malcolm and Gospatric earl of Northumberland were at enmity, and wasted each other's territories 'with atrocious depopulation.' From a statement of Symeon of Durham, it would appear that the Scottish king's title to Cumberland was not considered at this time above suspicion. When the chronicler says that the principality was under the dominion of Malcolm in 1070, but that it was his 'not possessed by right, but subjugated by violence,' the inference is obvious.³ Two years later the Conqueror went towards Scotland with a great force to have a final reckoning with the Scottish king. On his way by the east coast he deprived Gospatric of his earldom, and advancing into Scotland he met Malcolm at a place called Abernethy, where a truce was arranged and Malcolm 'became his man.'⁴ There is no suggestion that Malcolm was deprived of any portion of his Cumbrian dominion by William I. at this or any other time. In that case the explanation of its absence from Domesday is very simple. We could not look for it, for

genealogies seems quite plain. Each revival of litigation needed argumentative material for submission to the courts, and these documents were compiled to supply it. It may be mentioned here that the succession to Aveline and John de Eston's claim to the *comitatus* of Albemarle and all Aveline's lands in England are discussed by Mr. J. H. Round in *Geneal. Mag.* i. 4-7.

¹ *Anglo-Saxon Chronicle*, in ann. 945; *Hoveden*, i. 56, ed. Stubbs; Lappenberg, *Anglo-Saxon Kings*, i. 149, ed. Thorpe; Skene, *Celtic Scotland*, i. 362.

² *Hoveden*, i. 121; *Symeon of Durham*, i. 87, Surtees Society.

³ *Symeon of Durham*, i. 88. It is right to say that Symeon was no lover of the Scottish people, on account of their depredations in the bishopric. This statement of his has been called in question by his various editors.

⁴ Freeman, *Norman Conquest*, iv. 517; Skene, *Celtic Scotland*, i. 424, 425.

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the very excellent reason that the Scottish fief, which comprised the greater part of Cumberland and Westmorland, was not under English sovereignty at the time when the Survey was made in 1086.¹

Seeing that ancient Cumbria was in possession of the royal line of Scotland at the time of the Conquest, its southern delimitation is a most important question, and much will depend on the accuracy with which that boundary can be fixed. A local document of considerable weight, known as the 'Cronica de Karleolo,' comes to our aid at the critical time. It was drawn up in 1291 by the canons of Carlisle, in obedience to the writ of Edward I., when that king claimed feudal suzerainty over the kingdom of Scotland, and was transmitted by the hand of Alan de Frizington, precentor of their church, with the guarantee that it had been compiled with the greatest diligence from the chronicles and writings in their possession. From this authentic statement we learn that the principality of Cumbria consisted of the ecclesiastical divisions known in 1291 as the bishoprics of Carlisle, Glasgow and Candida Casa; and, moreover, from the bishopric of Carlisle as far as the river Duddon.² The language is precise and intelligible, and mentions what were then and are now well-known areas. In other words, Cumbria, as it existed in 1069, stretched along the western coast from the Clyde on the north to the Dunde or Duddon on the south. The delimitation on the south-eastern side has been fixed by the Scottish chronicler, Wyntoun, as the Rerecross on Stanemore.³ A clear definition of the southern boundary of the Scottish dominion is of the utmost consequence. On these authorities we can rely. The accuracy of the Carlisle statement is further confirmed by the subsequent history of the district during the reign of king Stephen, when the ancient fief was restored to the Crown of Scotland. The paramountcy of David king of Scots over the great barony of Coupland, which was bounded by the Derwent and the Duddon, in the south-western portion of the modern county, is authenticated by many official acts in the early endowment of the priory of St. Bees.⁴ It will be a

¹ Freeman, *William Rufus*, i. 313, ii. 545-6; *Archæological Journal*, xvi. 230, 231. Cumberland was not included in Domesday on the same principle that it was not included in the Pipe Rolls till the recovery of the county by Henry II. in 1157.

² 1069. 'Cumbria dicebatur quantum modo est Episcopatus Karleolensis et Episcopatus Glasguensis et Episcopatus Candidecase et insuper ab Episcopatu Karleoli usque ad flumen Dunde, etc., ibi in passu illo' (Palgrave, *Documents and Records*, p. 70). Skene suppressed the last clause of this quotation, that it might fit in with his theory that 'the kingdom of Cumbria originally extended from the Firth of Clyde to the river Derwent, including what was afterwards the dioceses of Glasgow, Galloway and Carlisle' (*Celtic Scotland*, i. 456). The district between the Derwent and the Duddon, that is, from the old boundary of the diocese of Carlisle to the river 'Dunde,' has been omitted.

³ 'The Kyng Dawy wan till his crown
All fra the Watty off Tese off brede,
North on till the Watty off Twede,
And fra the Watty of Esk the est,
Till off Stanemore the Rere-Cors west.'

Wyntoun, vii. 1054-8 lines.

The Rerecross on Stainmore was claimed by the bishop of Glasgow as the southern boundary of his diocese as late as 1258—'obtendebat jus antiquum in partes Westmorlandiæ in præjudicium Karliolensis ecclesiæ, dicens usque ad Rer Cros in Staynmor ad diocesem suam pertinere' (*Chronicon de Lanercost*, p. 65, Maitland Club). See also Neilson's *Annals of the Solway*, pp. 35-7.

⁴ *Harleian MS.* 434 (Register of St. Bees).

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nice point to determine why it is that any portion of it should appear in the Domesday Survey, unless the Conqueror had in the meantime pushed his dominion further north than the Duddon, and exercised a sovereignty more or less effective beyond it. On reference to the record it will be seen that at least three of the villas there mentioned as the property of the English king, viz. Witingham or Whicham, Bodele or Bootle, and Santacherche or Kirksanton, were situated in the angle of Cumberland south of the Esk, though returned as part of the division of 'Hougun' in Amounderness, in what was then the West Riding of Yorkshire. The owner of the manors in the time of Edward the Confessor was Tosti earl of Northumberland, but on the extinction of that earldom the lands were claimed by the Crown. The valley of the Esk, eastward from the sea at Ravenglass, must have been a strong position during the Roman occupation, as the Roman fortifications in Eskdale from Walls to Hardknot castles amply testify. But there is no trace that this was a recognized boundary of the ancient kingdom of Northumbria, or its feudal antitype, the earldom of Northumberland, at the period under review. Moreover, the sovereignty of William the Conqueror in the district between the Derwent and Duddon does not rest on the evidence of Domesday alone. Again and again in disputes about feudal services in Coupland¹ the conquest of England was the date of tenure to which the sub-feudatories of that barony appealed in recognition of their rights and privileges. These facts are in agreement with subsequent history. The adjustment of local boundaries afterwards can only be explained on the assumption that the district of Cumbria south of the Derwent had been wrested from the Scottish king and absorbed into Yorkshire before the date of the Domesday Survey. No other alternative can be suggested except the contention of Skene that it never formed a portion of Scottish dominion, which we have shown to be untenable.

What William the Conqueror did not accomplish was left to be carried out soon after his death by his son. Amid all the uncertainties of this time, the statement of the Anglo-Saxon Chronicle brings light out of darkness and furnishes us with authentic information about the conquest of the whole district of southern Cumbria. William Rufus, the chronicle² says, with a great army went north to Carlisle in 1092,

¹ In 1204 Richard de Luci, lord of Coupland, demanded an inquest on the customs and services due to him and his antecessors, and in the same year he brought some of his tenants into the king's Court to test their claims. In these cases, the tenants pleaded the services due from their tenements 'a Conquestu Anglie' (*Abbrev. Placit.* 5 John, p. 42b; *Pipe Rolls*, 5 John). At a later period, Thomas de Multon, lord of Egremont, maintained before the judges of assize at Carlisle in 1278 that the liberties of Coupland were enjoyed by him and his ancestors 'from the Conquest' (Bain, *Calendar of Documents relating to Scotland*, ii. p. 37). It may be considered that 'from the Conquest' was a stereotyped phrase known to the courts as having no historical meaning, like our use of 'from time immemorial.' For example, in 1227, Peter de Tilliol pleaded that his land at Scaleby, on the north side of Carlisle, had descended to him from father to son *a primo conquestu*, that is, from their first acquisition (*Coram Rege Rolls*, 11 Henry III. No. 27, m. 4; Bain, *Calendar*, i. 971). But 'the conquest of England' seems much more definite. On the other hand, we know that the ancestor of Luci, like the ancestor of Tilliol, had been enfeoffed by Henry I. The tenemental services of Coupland would not originate with the grant to William Meschin, as the barony had been incorporated into the English kingdom long before that time.

² *Anglo-Saxon Chronicle*, in *ann.* 1092; Freeman, *William Rufus*, i. 313-8.

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and rebuilt the burgh, and reared the castle, and drove out Dolfin, who was ruler of that land, and placed his men in the castle, and on his return to the south sent thither a great many churlish folk with their wives and cattle to settle in the land and to till it. We are not told what Dolfin had done to provoke the king to action, but from the additional details supplied by Henry of Huntingdon, it would seem that the Scottish king made another predatory expedition into England.¹ William was determined to put a stop to these incursions by making a natural frontier and strengthening it with defences. His policy on the Welsh border was repeated on that of Scotland. The district of Carlisle had been forced for centuries to serve two masters, and the divided allegiance was not a success. Rufus, who was both a soldier and a statesman, could not tolerate any longer the unnatural position. The whole of south Cumbria ceased to be a Scottish dependency, and a new career arose before it after its incorporation into the English kingdom. The province annexed at this time by the expulsion of Dolfin, who was almost certainly the deputy of king Malcolm, must be understood to embrace that land south of the Solway which was afterwards constituted into the ancient diocese of Carlisle. It has been called the greatest exploit² of the Red King's reign. When the history of Carlisle is considered, and the part it played in international disputes as the bulwark of English power on the Border, this estimate of the event will not be reckoned a mere rhetorical phrase. A new shire had been added to the English kingdom, and 'a scientific frontier' had been found, which with infinitesimal interruption served the purposes of both countries till the necessity of a frontier had ceased to exist. With the colonization of the land of Carlisle, the curtain falls on the history of our district during the rest of this reign.

It has been alleged that it was William Rufus who founded the nunnery of Armathwaite in the valley of the Eden. The charter of foundation, purporting to have been granted in 1088-9, was inspected and confirmed by Letters Patent³ of Edward IV. One marvels that so clumsy an anachronism could have been passed in any age as a genuine document. It needed not the critical insight of a Freeman⁴ to say that it was 'spurious on the face of it.' Though the charter, coming with the authority of a Patent Roll, deceived such a master of north country history as Hodgson Hinde,⁵ and though the Record Commission⁶ described it as a grant from William the Conqueror, not the slightest credence can be attached to it in its present shape. A monument in that neighbourhood called the Sanctuary Stone,⁷ built in a pillar of ashlar

¹ *Henry of Huntingdon, in ann. 1092* ; Lappenberg, *Norman Kings*, p. 234.

² Freeman, *William Rufus*, i. 313 ; *Norman Conquest*, v. 117-8.

³ *Patent Roll*, 20 Edw. IV. pt. i. m. 4.

⁴ *William Rufus*, ii. 506.

⁵ *Introduction to the Pipe Rolls of Cumberland, etc.* p. xv. Society of Antiquaries of Newcastle-upon-Tyne.

⁶ *Calend. Rot. Pat.* p. 325.

⁷ There is a drawing of the pillar with this alleged Sanctuary Stone, made by Lysons, in the British Museum (*Add. MS.* 9642, f. 91), and also in the *Gentleman's Magazine*, 1755, p. 440, with a dissertation by S. Pegge, p. 451. See also *Add. MS.* 9642, f. 170.

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about nine feet high, and inscribed with the date 1088, has been taken as independent confirmation of the foundation of the Benedictine house. But the date on the stone is a seventeenth century addition, and there is no trace of the right of sanctuary at this place. Other documents have been cited to illustrate the history of the district at this period. In the Register of Wetheral there are two charters,¹ which, if genuine, would carry us back to the time of Rufus, and fix the date of the foundation of the priory in his reign. One of these is a palpable forgery, though Dugdale² thoughtlessly adopted it as the record of a grant from William the Conqueror. The other charter is of a different character, being nothing less than the foundation charter of the priory, by which Ranulf Meschin, the founder, gave the manor of Wetheral to the abbey of St. Mary's, York, for the soul of his lord, king William or king Henry, according as we accept the alternative version. As the oldest transcript of the charter, which is attributed to the fourteenth century,³ is practically valueless in settling the correct reading, later copies which mention the name of king William must be treated with extreme suspicion, when we remember the incurable propensity of the monks to antedate their charters with the view of strengthening their territorial titles. Indeed, the fact that the charter has been tampered with at the critical word may be taken as conclusively in favour of the later king. Two letters of William king of England to his lieges in Carlisle and the parts beyond Loedria, urging them to accept Christianity from the bishop of Durham and his archdeacon, do not carry on the face of them the usual evidence of authenticity. Dugdale⁴ has ascribed them to the Conqueror, but in view of the disputes about the ecclesiastical jurisdiction of the district of Carlisle before the foundation of the See, the king's alleged usurpation of archiepiscopal functions may be looked upon as doubtful. At the present moment not a single genuine charter, relating to the county of Cumberland, is known of a date anterior to Henry I.

When William Rufus set about the reconstruction of Carlisle and the organization of the district, two figures loom out of the darkness of the time in dim distinctness in connection with his work. It is said that he placed a certain Walter, a Norman priest who had come to England with the Conqueror, in charge of the rebuilding of the city, and that he committed the custody of the district to a distinguished soldier, Ranulf Meschin,⁵ or Ranulf de Briscasard, a cadet of the house of Bayeux in

¹ *Register of the Priory of Wetheral*, pp. 1-5, 391, ed. J. E. Prescott.

² *Ibid.* p. 391; *Monasticon*, i. 397, old edition.

³ *Transactions of the Cumberland and Westmorland Archæological Society*, xv. 285.

⁴ *Monasticon*, i. 241.

⁵ The title of 'Meschin' has been applied to several members of this family, and means 'younger.' Its usage resembles our word 'junior,' to distinguish from an older person of the same name. Ranulf, in his charters to the priory of Wetheral, and William and other members of his family, in their charters to St. Bees, invariably used it. The same rule applies, for the most part, to their signatures. 'Meschin' had been also adopted, about this time, by the families of Brus and Percy; for instance, Robert Brus Meschin witnessed the great charter of David king of Scots to the abbey of Melrose (*Facsimiles of National MSS. of Scotland*, No. xvij.), and Alan de Perci le Meschin is enumerated among the early benefactors of the abbey of Whitby (*The Whitby Chartulary*, i. 4, Surtees Society). Other instances of the same usage might be given; for instance, Osbern Meschyn (*Monasticon*, ii. 387) and

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Normandy. There can be no doubt that Walter the priest was a veritable benefactor of the city of Carlisle, and played a conspicuous part in its ecclesiastical reconstruction during the reign of Henry the Clerk. But what authority is there for his connection with the building schemes of Rufus and the first organization of the city? There is little or none except a venerable tradition which can be traced back to Leland,¹ who visited Carlisle when the religious houses were in process of dissolution, and to him its origin has been ascribed. But it must not be assumed that Leland invented the story. In the Lansdowne manuscripts there is a document of some interest of earlier date than Leland, and of local origin. After describing the expedition of William Rufus in 1092, the recovery of the city and the plans of the king for its rebuilding, it states that Walter the priest was in charge of the works on the death of Rufus, and that Henry I. completed what Walter had begun.² The document, which is of some importance for the early ecclesiastical history of Carlisle, is said to have been transcribed from the Register of bishop Strickland, a diocesan manuscript which would cover the period from 1400 to 1419, but which has not been heard of since the time of James I. But it is evidently a late compilation, fragmentary and doubtful, with nothing to indicate its purpose in the Strickland Register except what is contained in the heading.³ The date of the first coming of Ranulf Meschin, as lord or ruler of the land of Carlisle, is as perplexing as that of Walter, his contemporary and fellow-worker. If we omit the early tradition embodied in the 'Chronicon Cumbrie' and kindred compositions, Ranulf's connection with the district, as the administrative officer of William Rufus, rests on the insecure foundation of a disputed reading in a comparatively modern manuscript, which we have shown to be at the least very unsatisfactory. There is no direct proof of any sort, at present known, sufficient to place Walter the priest and Ranulf Meschin in charge of the city and district before the

Meschina Regina (*Calendar of Documents preserved in France*, No. 1054). Archdeacon Prescott has written an admirable chapter on 'Ranulf Meschin, his wife Lucia, and the Honor of Carlisle,' in which much trustworthy information will be found (*Register of Wetherhal*, pp. 468-77). Mr. J. H. Round, with his usual accuracy, has cleared up some doubtful points in the later descents of Ranulf's family (*Feudal England*, pp. 184-7).

¹ 'Walterus presbyter Normannus, quem rex W. Rufus præfecerat urbi Carleolensi, coepit inchoare monasterium in honorem B. Mariæ, quo in ipso principio morte sublato, Hen. I. rex predictum monasterium perfecit, Canonicosque Regulares introduxit, deditque monasterio 6 ecclesias, viz. Newcastle, Newburne, Warkeware, Robern, Wichingham et Corbridge, fecitque Adelwaldum confessorum suum primum Priorem' (*Collectanea*, i. 120, 121, ed. T. Hearne, 1770).

² *Lansdowne MS.* 721, f. 54.

³ The Lansdowne manuscript is headed 'Ex Registerio patris Willelmi Strickland Episcopi Carlionensis,' and its story resembles that of Leland, only it is fuller and perhaps more reliable in many particulars. Bishop Strickland's Register was in existence in 1615, and has not been traced since that date. We have several references showing that it was consulted by bishop Henry Robinson and lord William Howard of Naworth in 1606 about certain fishing rights in the 'Eaden between Irthing foot and Pow Maurham beck.' One of lord William's extracts from it was at folio 104. Other extracts from folios 7, 9, 17 and 59 were made in 1615 for the purpose of some litigation between bishop Robinson and John Denton of Cardew. All the Registers of the See of Carlisle between 1386 and 1561 are missing. Attempts to trace them have been made by chancellor Ferguson (*Trans. Cumb. and West. Archaeological Society*, vii. 295-9), and subsequently by the writer in a letter to the *Carlisle Patriot*, in June, 1894, on 'The Bishop's Lost Registers.'

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year 1100. But it is questionable whether it materially affects the importance of the work of Rufus, though it might be used as the basis of theories, in subsequent history, which ought to be deprecated. When the district was conquered it is certain that it must have been committed to the care of trustworthy officials, either as deputies or grantees, and as no other persons have been recorded in connection with Carlisle at this time except Walter and Ranulf, their names have been set back to the required date, and they have been adopted as the first settlers in possession of the annexed territory. But as no genuine charter exists to throw light on the ownership of the land, and so few allusions are found in reliable chronicles, the history of the district during the latter portion of the eleventh century must remain speculative and uncertain. There is enough, however, to show that the refounding of the city and the development of the district had been commenced with vigour by Rufus and the subordinates, whoever they may have been, to whom the task was entrusted. The compressed account of the conquest contained in the Anglo-Saxon Chronicle is the only evidence we possess of the king's dealings with the northern county. Few will dispute its value.

As we pass into the twelfth century, we cease to grope in the dark for direct evidence on the territorial settlement of the new province. In comparison with other counties, the materials at hand may be reckoned as scanty and insufficient, but they are by no means to be despised. The first document we meet with in the nature of a survey is embodied in the 'Testa de Nevill,' which gives us for the first time a synopsis of the fees held by the tenants-in-chief in Cumberland, as they existed in 1212, in the reign of king John. The survey was undertaken by the sheriff of the county in pursuance of the king's letters, and the return was made after diligent inquiry and transmitted to the king's barons of the Exchequer. Had the sheriff only reported on 'the names of the tenants and their tenements and service' as he then found them, the 'Testa de Nevill' might have been but of slender interest. But the chief importance of the undertaking, as far as the needs of Cumberland history are concerned, lies in the fact that it not only records the present owner of the fee, but also declares the title by which the land was held and the source from which it was originally derived. The value of these returns, though made at so late a period, cannot be exaggerated. They carry us back to the reign of Henry I., and form what has been happily called the foundation of the territorial history¹ of the county. We have no other Domesday Survey; from this point we must start. The details of the policy of William Rufus, as the founder of Carlisle and conqueror of the district, may be wrapped in mist; but on the work of Henry I., as the supreme instrument in the settlement and governmental organization which must inevitably follow upon conquest, there is clear sunlight. Other documents are contained in the 'Testa de Nevill,' but none can compare in value with the feodary supplied by the sheriff. There is no occasion

¹ *Pipe Rolls of Cumberland, etc.* p. v. ed. J. Hodgson Hinde, Society of Antiquaries of Newcastle-upon-Tyne; *Archæological Journal*, xvi. 235.

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to look to Pipe Rolls and Monastic Chartularies for additional confirmation of its statements. Its authority as the genuine return of a feudal inquest is inexpugnable.

When we turn to the sheriff's inquisition in the 'Testa de Nevill' for the early apportionment of the modern county among the followers of the Norman kings, it is very striking how slowly the work of territorial settlement had progressed after the expulsion of Dolfin in 1092. It is true that Ranulf Meschin was in possession of the district as its lord and ruler, but we are not told by whose act the selection had been made. Upon the grant of the land of Carlisle to its first Norman owner we have no information. The silence of the sheriff's return would seem to suggest that he had been appointed at a time back to which the memory of the oldest juror could not go. It could not be included in the *veredictum antiquorum*, for it reached beyond it. At all events, whether he was put in possession by Rufus or Henry I., he must have had some difficulty in holding it. The only acts ascribed to him in the subinfeudation of his wide domain were the creation of two baronies on the northern frontier as a protection against the Scots. The peninsula stretching along the estuary of the Solway, known as the barony of Burgh by Sands, he committed to Robert de Trivers, with the view, there will be no doubt, of guarding the shores of his new charge from any attack by sea. The narrow strip of territory extending across the Border eastward from the Solway, and embracing the vales of the Esk and Liddel, he formed into another barony, with which he enfeoffed Turgis Brundas, who, from his name, we may conclude, was a man of firmness and determination. As a defensive policy, Ranulf's plan was unquestionable, for his whole charge was effectually protected from Scottish incursions almost for the whole length of the frontier line. The custody of the forest of Cumberland he entrusted to the new owner of Burgh by Sands, for that barony, with its swamps and marshes, could not be a very profitable benefice for such a hazardous post. We need not ascribe this consummate policy to the sole initiation of the new ruler. The Crown had already set the example of the need of prudence in the borderlands of Wales and Scotland. His uncle, Hugh vicomte of Avranches, had been placed on the Welsh border as earl of Chester, invested with ample powers for military defence. The palatine jurisdiction of Durham was extended to the eastern side of the Scottish frontier, after the earldom of Northumberland had proved a failure. So that Ranulf was only imitating in a small way the statecraft of his time when he portioned out these baronies and committed their custody to trusty men.

The 'Testa de Nevill' gives no countenance to Camden's statement¹ that the great barony of Gillesland was also created by Ranulf Meschin and granted to his brother William. Not so much the appearances, as the facts, are against any such theory. It is not disputed that the family

¹ Camden, *Britannia*, ii. 1039, ed. Gibson.

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of the Scotie ruler, Bueth or Boet, held its own against the Norman intruder, both while Ranulf was in possession of Carlisle and also when Henry I. took over possession of it on Ranulf's succession to the earldom of Chester. We have it on the best authority that the first Norman foothold in Gillesland was obtained many years later, when Henry II. granted to Hubert de Vallibus 'all the land which Gille son of Boet held on the day in which he was living and dead, of whomsoever he may have held it.'¹ Besides William Meschin had the grant of the barony of Coupland from Henry I. at a date, as we believe, which would make him a contemporary in possession with his brother Ranulf. If any truth be attached to Camden's assertion, William's title could only have existed on parchment. Perhaps he was glad to resign all his claim, if he ever had any, in consideration of the richer and quieter fief on the south-western coast. Gille son of Boet was the last Scotie chieftain to hold sway in England against the power of the Norman. It is one of the most singular eccentricities of territorial conquest that a small corner of ancient Cumbria could be held without title or grant for more than half a century after it had been absorbed into the English kingdom. The position of Ranulf Meschin could not have been very secure when he permitted this state of things to continue. From his generosity to the great abbey of St. Mary's, York, we may fairly conclude that he was in effective possession of the rest of his jurisdiction. He founded the priory of Wetheral on the northern side of the valley of the Eden as a cell of that monastery, and his grants in the neighbourhood of Appleby to the same house furnish evidence that he had control of the land of Carlisle at its utmost limit.

Before we consider the policy of the Crown in the settlement of the district after Ranulf's removal to Chester in or about 1120, the nature of the fief held by him merits some inquiry. There has been a consensus of opinion that the new territory was raised to the dignity of an earldom while Ranulf held it. Freeman at first volunteered the statement that

¹ 'Totam terram quam Gilltus filius Boet tenuit die qua fuit vivus et mortuus, de quocunque illam tenuisset' (Chancery, *Cartæ Antiquæ*, DD, No. 7). This charter, which is dated at Newcastle-upon-Tyne, has been often printed with some inaccuracies from Dugdale's transcript. The king was in Carlisle on June 24, 1158 (*Benedict Abbas*, ii. p. cxxxi., ed. Stubbs), when the sheriff paid 11*l.* 3*s.* to Hubert de Vallibus as a corrody in preparation for his coming (*Pipe Rolls*, 4 Hen. II. pp. 119, 175, ed. Hunter). He went into Northumberland and fortified the castle of Werc on his way to Newcastle (*Hoveden*, i. 216, ed. Stubbs). The Pipe Rolls witness that it was in this year, soon after he got possession of Cumberland, that the grant of Gillesland was made. The story told by Camden's editors, and often repeated on Camden's authority, that Gille son of Boet was treacherously slain by Robert de Vallibus 'at a meeting for an arbitration of all differences,' in atonement for which he founded the priory of Lanercost, must be rejected as an entire fable. That Hubert had some difficulty in keeping possession of Gillesland there appears to be little doubt. When he died in 1164-5, a new grant in the exact terms of the original, recognising the former ownership of Gille son of Boet, was made by Henry II. to Robert de Vallibus, Hubert's son (*Cartæ Antiquæ*, DD, No. 20), which grant was confirmed by Richard I. immediately after his accession (*ibid.* No. 21). From the repetition of the grant and the continuous allusion to the tenure of Gille son of Boet, one may infer that the new owner wished his title to be made secure against all possibility of dispute. In both of the grants to Robert de Vallibus the original owner is called 'Gillius filius Boet,' but in the grant to Hubert de Vallibus we have 'Giltus filius Boet,' no doubt by an error in the enrolment. In Scottish record, Gille son of Boet occurs often enough. Other nominal discrepancies appear on comparison of the three charters.

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Ranulf was created earl of Cumberland,¹ but he afterwards withdrew it in favour of an earldom of Carlisle. Even a palatinate has been received with some favour.² The 'Testa de Nevill' warrants none of these dignities. The inquisition calls him lord (*dominus*) of Cumberland, a phrase of some ambiguity on the lips of jurors in the reign of king John, when applied to the district as it existed in the early years of the twelfth century. We shall presently hear something of the formation of the modern county of Cumberland out of the district of Carlisle, by the severance of the barony of Appleby and the addition of the barony of Coupland. But it was usual to apply the name of Cumberland to Ranulf's fief before its formation into an English shire.³ In that case the territorial designation of the 'Testa de Nevill' is historically correct, and of course so was Freeman's first conjecture, if the second stands good. When we turn to the authentic acts of the so-called earl of Carlisle, we get little inducement from his own language to accept him as such. Ranulf's feudal dignity must be estimated at his own valuation. Though there was a sheriff of Carlisle⁴ while Ranulf ruled the land, it cannot be admitted that the presence of a sheriff assumes the existence of an earl. In whatever aspect we view it, no matter how abnormal the condition of the district, we must infer that the fief of Carlisle, if not an earldom, was either a palatine state like the great ecclesiastical franchise of Durham, in which the sheriff was not the king's officer, or that it was of the nature of a Crown colony in which Ranulf acted as vice-gerent with unlimited powers. But Ranulf Meschin has not yet been found as claiming or using the title of earl while he was lord of Cumberland. In the foundation charter of the priory of Wetheral, it was as Ranulf Meschin, not as Ranulf Comes, nor with any other title, that he addressed the 'French and English' who lived in the Power (*Potestas*) of Carlisle. In after years when Henry I. confirmed the privileges granted by Ranulf to that foundation, the nature of the fief is described as an Honor, the monks having been permitted to exercise all the rights to which they were entitled 'while Ranulf earl of Chester had the Honor⁵ of Carlisle.' In every instance, as far as we have noticed, where he witnessed a deed before he became earl of Chester, Ranulf Meschin was the invariable signature or designation that he used.⁶ Throughout the Lindsey survey, which was made (1115-8)⁷ while he was in possession of Carlisle, he is known by no other name.⁸

The wreck of the *White Ship*, in which Richard, the young earl

¹ *Norman Conquest*, v. 118; *William Rufus*, ii. 547-8. Freeman joins Lappenberg (*Norman Kings*, pp. 234, 235) in pointing out the error of Sir Francis Palgrave (*English Commonwealth*, i. 449) that the Conqueror had created Ranulf Meschin earl of Cumberland. The manifest confusion of 'Matthew of Westminster' (in *ann.* 1072) about Ranulf and the earldom has been often noticed by historians.

² R. S. Ferguson, *History of Cumberland*, p. 144, Popular County Histories.

³ British Museum, *Cotton Charters*, xviii. 45; *Pipe Rolls*, 4 Hen. II. p. 146, ed. J. Hunter; (Cumberland), 16 Hen. II.

⁴ *Register of Wetherhal*, p. 1, ed. J. E. Prescott.

⁵ *Register of Wetherhal*, pp. 1, 2, 25.

⁶ *Calendar of Documents preserved in France*, No. 96; Rymer, *Fœdera*, i. 6, new edition; *Liber Niger*, i. 16, 23, ed. T. Hearne; Dugdale, *Monasticon*, ii. 387.

⁷ J. H. Round, *Feudal England*, p. 181. See also his note under 'Carlisle' in *Complete Peerage*, ii. 150, and his life of Randulf Meschin in *Dict. Nat. Biography*, xlvii. 284-6.

⁸ *Liber Niger Scaccarii*, ii. 399-423, ed. T. Hearne.

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of Chester, perished with William the Ætheling in the winter of 1120,¹ had an effect of great moment on Ranulf's northern charge. On his accession to his cousin's earldom, the oversight of the 'Power of Carlisle' was resumed by the Crown, and no person was appointed to fill his place. In 1122, that is, about the time of his departure or soon after, Henry I. came to Carlisle² and ordered the city to be fortified with a castle and towers, from which acts we may assume that he had taken into his own hand the vacated office. Events now began to move more rapidly, and much was done during the remaining years of Henry's reign to establish settled government in the district and to make it an integral part of the English commonwealth. The king, instead of appointing another great vassal in Ranulf's place, had recourse to the expedient of breaking up his province into baronies, and bestowing smaller parcels on various individuals for personal service. It is to Henry I. that the 'Testa de Nevill' ascribes the creation of the baronies of Allerdale, Wigton, Levington, Greystoke, and Coupland, the last named barony forming no part of Ranulf's possessions. The city of Carlisle and the forest of Cumberland were retained in demesne. The manors within the forest were destined to undergo many vicissitudes of ownership by escheat and re-grant during the reign of Henry II., about which the Pipe Rolls supply invaluable information. Various tenures by serjeanty, like the manors of Hoton, Raughton, Newton Reigny, and the rest, several of which date from Henry I., are enumerated in the later documents which make up the 'Testa de Nevill.'

But the settlement of the district by Henry I. was not confined solely to its apportionment in chartered allotments. The work of education and the arts of peace were stimulated by the foundation of monastic centres for the civilization of the district. Ranulf Meschin had founded the priory of Wetheral in the beautiful valley of the Eden about seven miles above Carlisle. Before Ranulf came, or after Ranulf left, for the exact date is in dispute, Henry the king founded the priory of Carlisle. It seems unreasonable to suppose that a religious establishment should have been placed in a lonely valley like Wetheral, so far distant from the *caput* of the district, had not a religious house been already in existence in Carlisle. Henry's interest in the affairs of his own foundation is well known. The 'Testa de Nevill' furnishes a case in point. The manors of 'Linstoc' and 'Karleton' had been given to Walter, the Norman priest above mentioned, at a stated cornage rent. Walter, who was Henry's chaplain, took the religious habit in the priory of St. Mary's, Carlisle, when by the desire and licence of the king he endowed the priory with his worldly possessions. Henry, not to be outdone by the piety of his chaplain, remitted the assessment due to him from the manors and conceded many privileges to that house. William Meschin followed the example of his brother, and founded the priory of St. Bees on the western headland as a cell of St. Mary's, York,

¹ Lappenberg, *Norman Kings*, pp. 329-30, ed. B. Thorpe, 1857.

² *Historia Regum*, i. 119 (Symeon of Durham, Surtees Society), ii. 267, ed. T. Arnold; *Chronicle of Melrose*, in ann. 1122.

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and in a few years, perhaps in 1134, Ranulf his son, while Henry I. still lived, took the first step to bring the abbey of Calder into being. The founding of no less than four religious houses during one reign, within such a small area as the modern county of Cumberland, betokens considerable advances in peaceful avocations, as it is a guarantee that the king was awake to the needs of civilizing agencies for the internal development of his northern dominions. But Henry had a greater work in contemplation for the complete reconciliation of the district to English rule. The land of Carlisle, annexed by his brother, had remained ecclesiastically in the position of a waif and stray, after the bounds of the kingdom of Scotland had been fixed at the Solway. The bishop of Glasgow and the archdeacon of Richmond were competitors for its possession and oversight, but the king, setting both aside, raised it to the dignity of a See in 1133, with the seat of the bishop in Carlisle. It was William Rufus who first conquered southern Cumbria and made the Solway the *ne plus ultra* of Scottish territory, but it was by king Henry that the district was supplied with institutions and organized as a settled division of the English kingdom.

Before we pass to the contents of the Pipe Rolls a few words remain to be said on the formation of the English county as it was recognized at the Exchequer. We have seen that the ancient kingdom of Cumbria was bounded on the south-west by the river Uddon.¹ The other southern extremity on its eastern limb, well marked by the natural features of the Pennine range, was the Rerecross on Stainmore.² The northern boundary of English Cumbria may be stated approximately as the Solway, Esk, and Liddel. That this was its furthest limit was admitted by the acts of David, both as prince and as king of Scotland.³ But the area within these bounds was not by any means a homogeneous unit when it came under English rule. Cumberland was used as a general name for the tract of territory south of the Solway and the Esk, so lately added to the kingdom. At the date of the first extant Pipe Roll, 1130, a division of this land of Carlisle or Cumberland, for the fiscal purposes of revenue and assessment, had been made at the Exchequer as 'Chaerleolium' and 'Westmarieland,' each of which was in charge of a sheriff. It can scarcely be alleged that either of these areas ranked as a fully equipped shire or county at that date. That the division was more nominal than real, a mere matter of convenience among the permanent officials of the

¹ Palgrave, *Documents and Records*, p. 70.

² *Chronicles of the Picts and Scots*, p. 204, ed. Skene; *Chronicon de Lanercost*, p. 65, Maitland Club.

³ The document in the Chartulary of Glasgow known as the *Inquisicio Davidis*, which is the record of an inquisition into the possessions of the bishopric of Glasgow made about the year 1120 by the wise old men of Cumbria, while David was prince of Scotland, states that Cumbria was the region situated 'inter Angliam et Scociam,' but that David did not at that time rule over the whole of it—'Non enim toti Cumbrensi regioni dominabatur' (*Registrum Episcopatus Glasguensis*, No. i. p. 3, ed. Innes; Haddan and Stubbs, *Councils and Ecclesiastical Documents*, ii. 17-9; Sir James Dalrymple, *Collections*, pp. 337-40). In the grant of Anandale to Robert de Brus by David as king of Scots, that is, some time after 1124, the king described the limits of his grant as extending up to the bounds of Randolph Meschin when he held Carlisle and the land of Cumberland (British Museum, *Cotton Charters*, xviii. 45; *Facsimiles of National MSS. of Scotland*, i. No. xix.). See Note A on p. 335.

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Court, appears most probable, not only from the returns made by the sheriffs, but also from the king's act in creating the old province held by Ranulf Meschin into a diocese, with the bishop's seat in the city from which both the district and the diocese took their name. There is no certain evidence that the strip of country to the east of the Eden ever acknowledged the sway of the English king before it was made into the barony of Gillesland by Henry II. The constant association of its owner, Gille son of Boet, with Scottish transactions¹ while he lived, combined with the English declaration of the spurious nature of his tenure, is enough to show that, up to the last, he looked upon the king of Scotland as his liege lord. The barony of Coupland south of the Derwent was no part of the land or district of Carlisle when Henry I. formed it into a diocese. These three separate states, if they may be so termed, were thrown into the crucible after the death of king Henry, when Stephen ceded to David king of Scots the old fief of English Cumbria as the price of his usurpation. The sovereignty of the Scottish Crown again extended along the mountain range to the King's Cross on Stainmore and to the Duddon on the western coast. David made Carlisle his residence, and died there² in 1153. When Malcolm³ the Maiden, grandson of David, was forced by Henry II. to yield up southern Cumbria in 1157, and when we find the revenues of the recovered province accounted for by that king's officers, the old territorial arrangement, as it existed in the days of Henry I., was continued. The land of the Scotie laird, Gille son of Boet, having been occupied and formed into a barony, was committed to Hubert de Vallibus, and included in the county or sherifffdom of Carlisle. In this way things went on till after the Scottish invasion under William the Lion in 1174, which upset the whole district and threw all matters of English revenue into confusion. When the war clouds cleared away, there must have been a reconstruction of the northern states at the Exchequer and a revision of existing boundaries for fiscal purposes. It is about this time that the counties of Cumberland and Westmorland rise above the surface of authentic history with defined boundaries as we now know them. The old phrase of the county of Carlisle was abandoned in the Pipe Rolls, its last appearance being in 1175, and the new designation of the county of Cumberland was introduced in 1177. The barony of Coupland, which was reckoned as a separate area in the rota of itinerant justices⁴ in 1176, was included in the accounts of the sheriff of Cumberland for 1178, though it retained some shadow of its former independence for many years, the county of Coupland, the knights of Coupland, and the countess of Coupland occurring again and again. About the same time the barony of Appleby was severed from the Honor of Carlisle,

¹ *Reg. Epis. Glasg.* i. 7; *Haddan and Stubbs*, vol. ii. pt. i. p. 18.

² Twysden, *Symeon of Durham*, 281; Palgrave, *Documents and Records*, i. 103; *Hoveden*, i. 212.

³ Radulf de Diceto, *Ymagines Historiarum*, i. 302, Rolls.

⁴ *Benedict Abbas*, i. 108, ed. Stubbs; *Hoveden*, ii. 88, ed. Stubbs; *Walter of Coventry*, i. 256, ed. Stubbs.

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formerly held by Ranulf Meschin, and thrown in with the conterminous barony of Kendal, part of the great county of York, in order to form the county of Westmorland. This new fiscal area first appears in the Pipe Rolls of Yorkshire in 1176, under the name of Westmarieland, and it remained as a sub-division of the former county till the first year of Richard I., the sheriff of Yorkshire acting as the king's officer and collecting the revenues. Westmarieland is often found as a place-name before these dates, but there can be no question that it was not known at the Exchequer as a county of the present dimensions till the years mentioned in the Pipe Rolls.

The Pipe Roll of 1130 is of unusual interest, as it is the first national document we possess referring to Carlisle and the district. Earlier deeds there are, but they are chiefly of a local character, connected with the lands and endowments of the religious houses. At this date we find the district, which was annexed by William Rufus and incorporated into the English kingdom, under the administration of a sheriff who accounted for the king's revenue to the Exchequer. The borough of Carlisle held an important place as the head or centre of the new administration, for it must be taken that the sheriffdom extended to the district outside the city boundaries. The walls around the city were in course of construction; the canons of the priory were busy with the building of their church; the burgesses were working the silver mines; Richard the Knight had been employed for several years as the king's bailiff in collecting the geld of animals, a novel assessment in kind of the utmost use for stocking the king's manors, but at this time passing into a money payment. It would be difficult to select isolated features of the sheriff's accounts, either in revenue or payments, for special notice, as every item of this unique document is of great value. It cannot be said that the Roll, as far as it relates to Carlisle, possesses the fulness of detail so conspicuous in some other counties, and the conjecture has been made that some of the rotulets are missing.¹ Be that as it may, the portions of the Pipe Roll which have survived shed a light upon Carlisle, at the date conclusively ascribed to it, which the history of the county could scarcely dispense with.

In the Roll as printed by the Record Commission, a *compotus*² of William son of Alured has been interpolated between the sheriff's returns for 'Chaerleolium' and 'Westmarieland,' which has occasioned many misgivings about its application to local events. We have omitted the section entirely, as unconnected with Carlisle or Westmorland. On referring to the printed book,³ it will be seen that 'Berchelai . . . and Chaerleoil, and William son of Alured's farm of the land of the gatekeepers and watchmen, [and] Westmarieland' are separate sections taken

¹ *Rot. Mag. Pipæ*, 31 Hen. I. p. iv., ed. Hunter, Record Commission.

² 'Willelmus filius Alur. reddit compotum de firma terre Janitorum et Vigilum. In Thesauro, 19l. 4s. Et in liberatione Vigilis Turris de Penuesel, 16s.' (*Rot. Mag. Pipæ*, 31 Hen. I. p. 142, ed. J. Hunter). This section has been inadvertently included by Mr. Bain in the Carlisle account under the heading of New Pleas and New Agreements (*Calendar of Documents relating to Scotland*, i. 26, p. 5).

³ *Pipe Roll*, 31 Hen. I. p. 133, ed. J. Hunter.

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with a number of other places and persons there named. These sections follow one another in direct sequence, the account of William son of Alured naturally falling into its place between Carlisle and Westmorland, as stated in the general rubric of that division. It should also be noticed that the same person is named in the sheriff's account for Sussex,¹ the county in which the tower of 'Penvesel' or Pevensy was and is now situated. This explanation has been made in order to lay the spectre, which troubled the dreams of Freeman,² that the tower of 'Penvesel,' mentioned in the account of William son of Alured, was an appurtenant of the county of Carlisle. It can have had no reference to the keep of any castle in that city or district.

No other Pipe Rolls are known till we come to the reign of Henry II., after the county had been recovered from the king of Scots in 1157. From this date they are continuous and furnish indispensable materials for north country history during the remaining portion of the twelfth century. It would be superfluous to attempt an analysis of their contents, either in illustration of the descent of baronies and parishes, or in declaring the various sources of the revenue of the Crown. As these Rolls will be the subject of constant reference when we come to trace the history of the landed property of the county, any further examination in this respect may be omitted. On the other hand, the sources of public revenue are not so widely different from those of other counties that they should call for separate treatment. Any peculiarities of revenue arising from the custody of the forests or the management of the mines, like the profits of the royal manors or the farm of the escheats, will be noted in their proper places in the Topographical Section. It is scarcely possible to disentangle several sources of revenue and to discuss them separately, as they are often returned by the sheriff under one rent. The farm of the county was rendered in one sum with the issues of the royal demesnes. The escheats were managed by the sheriff in the same manner as other Crown property, except for the last few years of Richard I., when Hugh Bardolf was escheator for Cumberland and the northern counties. Pleas of the forest, always of a miscellaneous character, only begin in 1167, and are continued with intermissions, the fines and payments going to the king and not to the forester. Of what may be called casual revenue, instances of dones, aids, tallages, scutages, reliefs, wardships, and marriages frequently occur. It must not be understood that any of these were of voluntary assessment. The *donum*, which perhaps came nearest our idea of a free gift and occurs earliest in the Rolls, whatever may have been its original nature, was really a tax imposed according to the necessities of state and levied by the sheriff. The other forms of imperial revenue which we have mentioned offer no special features for individual investigation.

But there was one important source of the public revenue in Cumberland which has attracted much attention from legal antiquaries, and

¹ *Pipe Roll*, 31 Hen. I. pp. 68, 69, 70, ed. J. Hunter.

² *William Rufus*, ii. 551.

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about which there is much diversity of opinion as to its origin and intention. The noutgeld was a fixed levy on the county, not varying to any great extent, and accounted for yearly to the Exchequer. The king's officer made his return in 1130 from this source at the sum of 85*l.* 8*s.* 8*d.*, whereas the computation of his successors, at dates so far distant as 1158 and 1200, was 80*l.* 10*s.* 8*d.*, the discrepancy no doubt arising from some permanent remissions. We have no means of ascertaining how this sum was made up, as the sheriff invariably accounted for the total without giving particulars. Whence arose this singular tribute? From the 'Testa de Nevill' we learn that the greater part of the county was held by cornage, a later name for noutgeld, as we shall presently see,¹ and that the revenue from this source was derived in varying sums, according to the tenure of the different proprietors, the amount of the *reddendo* having been fixed by the original grant from the Crown. It must be borne in mind that, with the exception of one barony, the great landowners of Cumberland held of the king by cornage before Henry II. began to introduce military service. The only baronies granted by Ranulf Meschin of which there is record, viz. Liddel and Burgh, were held by cornage at stated sums. Of all the great fees created in the county by Henry I., Coupland is the solitary exception to cornage tenure, and it is even now doubtful whether the knight's fee, at which it was rated in the 'Testa de Nevill,' does not exclusively refer to the lordship of Millom, which lies between the Duddon and the Esk, and is noted in Domesday Book as belonging to the ancient earldom of Northumbria. Godard de Boyvill was the first lord of this seignior, and he and his successors held it of the barony of Coupland as a knight's fee. Several manors were granted by Henry I. by tenure of serjeanty of varying position and honour. When vills held in drengage escheated to the Crown, the tenure on re-grant was changed by the same king to cornage.² So that practically before the introduction of military service by Henry II., as in the case of his grant of the barony of Gillesland to Hubert de Vallibus and the manor of Edenhall to Peter de Brus, the general tenure of the land of Cumberland was cornage and serjeanty, the former service monopolising the great fees of the county. As tenure by cornage, which was the source of a considerable portion of the national revenue arising in this district, presents many local features peculiar to Cumberland, and is found nowhere in England except in

¹ Tenure by cornage is first mentioned in the Pipe Rolls of Cumberland in 3 John.

² 'Henricus, Rex Anglie, Waltero Espec, Eustachio filio Johannis, et Odardo vicecomiti, et omnibus fidelibus suis, Francis et Anglis de Cumberland, salutem. Sciatis me dedisse et concessisse Hildredo de Karleolo et Odardo filio suo terram que fuit Gamel filii Bern et terram illam que fuit Glassam filii Brictrici, Drengnorum meorum, reddendo inde mihi per annum de servicio Gablum animalium, sicut alii liberi homines, tam Franci quam Angli, reddunt qui de me tenent in capite in Cumberlanda. Et facient inde aliud servitium tale quale alii liberi homines mihi de terris suis faciunt. Et volo et precipio ut ipsi bene et in pace et honorifice teneant in bosco et plano, in aqua, in omnibus aliis rebus, sicut alii liberi homines mei de Cumberlanda tenent. Teste, etc.' (*Abbrev. Placit.* p. 67a; Bain, *Calendar of Documents*, i. 470). The 'service' of this charter may well be compared with the words on the 1130 Roll in reference to the tenure of Etard's land which Richard the Knight held—'per tale servitium quale alius liber homo fecerit de terra sua' (*Pipe Roll*, 31 Hen. I. p. 142).

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the northern counties near to the Scottish border, it is desirable to discuss it in some detail, and to collect a few of the facts which have come under our notice.

Before inquiry is made into the principal features of this tenure, a word may be said on the older views entertained about it. Littleton ventured on an explanation, in which he was followed by the glossary-writers of the seventeenth century, and by the historians of Cumberland in later years. In the marches of Scotland, he says, some hold of the king by cornage, that is to say, to wind a horn, to give notice to the men of the country when they hear that the Scots or other enemies are come or will enter England.¹ Camden, while expressing a similar opinion, is inclined to trace the custom of the Border counties to the horn-blowing practised by the Romans for the defence of the Great Wall.² The glossarists, who derive the word from 'cornu,' a horn, describe the tenure as a kind of grand serjeanty, for the reason expressed by Littleton, that the tenants were obliged to wind a horn when any invasion of the Scots was perceived.³ The explanation of Hodgson Hinde is worthy of more attention when he suggests that 'cornagium' is the natural contraction for 'coronagium,' and means nothing more than a Crown rent,⁴ whether paid in cattle as the staple commodity of Cumberland, or in a money equivalent when rent in stock had become obsolete.⁵

The payment of this branch of the revenue is mentioned, under one name or another, in the earliest authentic documents relating to Cumberland, and it is by comparison of its various titles that we learn what the thing originally was. In the Pipe Roll of 31 Henry I. the rent or assessment, or whatever name we choose to give it, had been already received at the Exchequer in a money payment. The geld of animals, *geldum animalium*, was returned by Richard the Knight at the fixed sum of 85*l.* 8*s.* 8*d.*, though it is probable from his debts under this head for previous years that the rent was paid over in kind and used to stock the king's manors. In the early years of king John a charter of Henry I. was pleaded and entered on the rolls of the king's court.⁶ It

¹ *Tenures*, sec. 156.

² *Britannia*, ii. 1049, 1050, ed. Gibson.

³ Blount, *Law Dictionary*; Cowel, *Interpreter*, s. v. Cornage.

⁴ *Pipe Rolls of Cumberland, etc.* p. xxvii. Society of Antiquaries of Newcastle-upon-Tyne. This definition was afterwards amended to 'cornuagium,' a tribute in horned beasts (Hodgson's *History of Northumberland*, pt. i. p. 258). The comparative view of cornage in the northern counties at the latter reference (pp. 258-61) deserves respectful consideration.

⁵ My friend, Mr. George Neilson, calls my attention to a custom in Annandale and Galloway, on the other side of the Border, which possesses some features of resemblance to the payment of noutgeld. He says that one special item in the Crown revenues of the fifteenth century was the annual delivery of a fed ox or 'lardenare mart' from each parish in Annandale for the royal table. These rents were paid at Lochmaben, as the feudal capital of the lordship, and passed over ultimately to the keeper of the castle as a perquisite of his office (*Exchequer Rolls of Scotland*, xi. 341). Similar revenues were drawn from Galloway, and occur at an earlier date than those of Annandale (*ibid.* vi. 201; viij. 163, 217, 287). In early Scots law it is known that payments were calculated by 'the cow' as a currency unit (E. W. Robertson, *Historical Essays*, pp. 38-9).

⁶ *Coram Rege Roll*, Easter, 2 John, No. 41, m. 9. This roll has been ascribed to 11 John by the Record Commission (*Abbrev. Placit.* pp. 66*b*, 67*a*) and by Bain (*Calendar of Documents*, i. 470), but later study dates it in the second year. The typographical error in the printed book—*tablum animalium*—should be avoided. Bain has given the correct reading.

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contains a record of the change of two manors from drengage to free service, Hildret of Carlisle, the grantee, being bound to render yearly to the king the *gablum animalium*, as other free men, French and English, who held of him in chief in Cumberland, rendered it for their lands. In later rolls of the Pipe, that is, from their commencement in 1158 onwards for at least a century, noutgeld is the only name by which this source of revenue was recorded at the Exchequer. It was the common phrase in use for Cumberland and Westmorland. In the other Border counties names of cognate signification were employed. In Northumberland cornage was the word, whereas in Durham, when the custodian of the temporalities during a vacancy of the See accounted for 110*l.* 5*s.* 5*d.* *de cornagio animalium episcopatus*,¹ he was but employing a combination of the terms in use in the neighbouring counties. But we have not yet exhausted this storehouse of nomenclature. In 1238, in a dispute about the custody of the lands of Odard de Wigton, it was stated among the reasons for awarding the custody to the king that Odard was a tenant by cornage, which in English is called horngeld (*quod Anglicè dicitur horngelde*).² One of the earliest references to it is contained in an unprinted charter of Henry I., when he confirmed to the canons of Carlisle the grant, made by Walter the priest to that house, of his manors of Linstoc and Karleton, which had been already freed *de geldo vaccarum* and of all other customs.³ In the sheriff's inquisition in the 'Testa de Nevill,' this 'geld of cows' was reckoned as a cornage rent of 37*s.* 4*d.*, of which the canons were pardoned by the king's charter. Throughout the Pipe Rolls of Henry II. the sheriff invariably noted, after his annual return of the noutgeld, that this sum was remitted by the king's writ to the canons of Carlisle. We have here a list of names linked together in a series, each of which indisputably refers to the same source of revenue. What do all these synonyms suggest? It is clear that only one explanation is possible, viz. that noutgeld, horngeld, cornage, geld of animals, geld of cows, gavel or gafol of animals, or cornage of animals, was a rent paid in kind, that is, in cattle, and not, as it has been suggested,⁴ an assessment reckoned by head or by horn on the

¹ *Pipe Rolls*, 31 Hen. I. p. 131, ed. J. Hunter.

² *Bracton's Note Book*, No. 1270, ed. F. W. Maitland. In 50 Henry III. an inquisition was held whether the king may grant to Walter de Wigton quittance of hornegeld in his manors of Wigton and Blackhall, but the jurors said it would be of damage to the king (*Inq. p.m.* 50 Hen. III. No. 28). In this connection the service of hornegarth, on which Canon Atkinson has many interesting things to say (*The Whitby Chartulary*, i. 129, 130, Surtees Society), is very curious. See also the definition of hornebeil or horngeld as quittance of a certain custom exacted by tallage on every horned beast, as quoted by Raine from an old Rental (*North Durham*, App. No. DCX.), and also a quotation from the Cartulary of Holy Trinity (Aldgate), London, where horngelde is described as 'quieti de quadam consuetudine exacta per catalla per totam terram, scilicet, de quacumque bestia cornuta' (*MS. Hunterian Library*, V. 2, 6, f. 186). In the Annals of Burton, Henry III. is represented as attempting to levy in England in 1255 'taylagium quod dicitur horngelth' (Stubbs, *Select Charters*, p. 322, ed. 1870).

³ This charter of Henry I., which is chiefly of ecclesiastical interest, will appear in full with others on the same subject in their proper place.

⁴ *English Historical Review*, v. 627. As the researches of Professor Maitland have laid us under many obligations, it is with regret that we are compelled to dissent from his view. The article in question has been welcomed by northern antiquaries as a judicial pronouncement on Northumbrian tenures. The same view on cornage has been expressed by Seebohm (*English Village Community*, p. 71).

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animals kept by the Crown tenant. Times and places had produced variations of the name, but the thing itself remained the same.

That the noutgeld of Cumberland was at one time paid in cattle, as the name and its substitutes indicate, we have direct as well as inferential proof. If that be the case, it bespeaks a primitive mode of discharging territorial obligations perhaps more archaic than we should be willing to allow. It has been pointed out as a feature of Domesday that many of the services, which in the time of Edward the Confessor had been yielded in kind, were changed for a money payment under the Conqueror.¹ The custom of paying the noutgeld in cattle lingered on in Cumberland to the middle of the twelfth century. Of this direct evidence is obtainable in the Register of the Priory of St. Bees.² There we have two charters to the monks, by which William (I.) earl of Albemarle granted for the souls of his ancestors and of the ancestors of his wife Cecilia daughter of William Fitz Duncan six cows out of his noutgeld in Coupland in each year when he received his noutgeld in that barony, the payment in kind as between lord and tenant having survived for a longer period than the corresponding service due from the lord to the Crown. If we credit a story recorded by the anonymous

¹ Ellis, *General Introduction to Domesday Book*, i. 267, 268.

² *Harleian MS.* 434, L. i. 9. As these charters appear to be unique upon this point, we are giving them in full.

fo. 17a

- (1) 'Carta Willelmi Comitis Albemarle de vi. vaccis de Nowtegeld in Coupland. Willimus Comes Albemarle, Archiepiscopo Eborascensi et Capitulo et omnibus matricis ecclesie filiis salutem. Noverit paternitas vestra me dedisse et concessisse Deo et sancte Marie et sancte Bege in Copelandia et omnibus, vi. vaccas in perpetuam elemosinam reddendas anno omni quomeum Noutegeld debuerit fieri. Hanc autem donacionem feci pro animabus omnium antecessorum meorum et antecessorum uxoris mee Cecilie. Testibus Petro de ffalchenb', Rad. de Au'i, Henrico foliot, W. de Belnag', Heng. de Meneriis, Gilbert. [blank], Willelmo camerario, et multis aliis apud Bincheham.'

fo. 18a

- (2) 'Carta W. Comitis Albemarle de vj. vaccis. Willelmus Comes Albemarle omnibus hominibus suis tam futuris quam presentibus salutem. Sciatis quod dedi et presenti carta confirmavi Deo et sancte Marie et sancte Bege et monachis de sancta Bega vj. vaccas de meo Nautegild de Copuland uno quoque anno quando accipio Nautegild in Copuland, et volo et firmiter precipio ut illud sine impedimento habeant pro salute anime mee et uxoris mee et heredum meorum et pro animabus omnium amicorum et antecessorum meorum. Testibus hiis Helias [sic] de Mundeuilla, Magistro Rogerio, Willelmo camerario, et multis aliis.'

That the monks of St. Bees attached special importance to these charters is manifest from the marginal note—'habetur sub cera'—placed before each of them. According to *Benedict Abbas* (i. 243, ed. Stubbs), William earl of Albemarle died in 1179, but the Chronicle of Thornton (*Monasticon*, vi. 326) says it was in 1180. Several interesting facts about the rendering of the geld in cattle and its commutation to a money payment will be found in Durham documents. In the 'Boldon Buke' the payment of cows (*vaccas de metride*) is often mentioned in connection with cornage (pp. 4, 5, 6, 8, *et passim*, Surtees Society). The well-known charter of Henry I. to the monks of Durham contains what has been designated 'a classical passage' for the elucidation of this aspect of cornage. The king granted, among other things, 'cornagium de Bortona quod Unspac tenet, scilicet, de unoquoque animali, 2d.' a passage which shows that the custom of payment in kind was passing away (*Feodarium Prioratus Dunelm.* p. 145, Surtees Society). The agreement between Geoffrey abbot of St. Albans (1119-46) and Gospatric son of earl Gospatric, in connection with the church of Tynemouth, shows the transition even more clearly. Gospatric undertook to pay to the abbey twenty shillings; if money (*nummi*) were wanting, payment in oxen was at Gospatric's option, one ox to count as three shillings (*Hist. Dunelm. Scriptores Tres.* App. p. lv. Surtees Society). Those who are interested in cornage should not overlook the brilliant chapter by Mr. J. H. Round on 'Castle-ward and Cornage' in the *Commune of London and other Studies* (1899), pp. 278-88, in which we have the clear thinking and accurate definition so characteristic of that writer.

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author of the life of St. Bega,¹ the custom of payment in kind survived in Coupland for many years after the date of the latest of these charters. He tells us that at a certain time a controversy had arisen between the lord of that barony and his tenants about a custom by which oxen used to be paid as a tax (*qua boves solebant dominis pensari*), from whence the tribute (*pensio*) was called in English 'nouteheld,' but in Latin the payment of oxen (*persolutio boum*). The writer was not clear for what cause, in what places, or at what time the custom had grown into use, but men were sued and compelled to pay more than they judged that they ought to pay. The dispute, raging for a long time, was at last settled by arbitration. Adam son of Ailsa, a man of some weight in the district at that time, was selected to adjudicate between the parties. Seduced by a lying spirit, in the opinion of the narrator, he gave it as his award that the claims of the lord of Coupland were just and that the tenants were accustomed from ancient days to render what was demanded. From the date in which it is known that Adam son of Ailsa lived,² the payment of the geld in cattle cannot have ceased in that district before 1230. In the Exchequer itself there was a tradition of this sort of payment at the date when the *Dialogus* was compiled, where the author states that in the primitive state of the kingdom after the Conquest, as they had learned from their forefathers, not weights of gold or silver, but solely victuals were paid to the kings from their lands, and those who had been appointed for that purpose knew how much came from separate estates. This arrangement, he says, continued up to the time of Henry I, and he himself had seen such things done, the royal officials reducing them to a money payment and putting their value to the sheriff's account.³ Though the meaning of noutgeld, and the various phrases employed to represent it, cannot be any longer disputed, it is quite certain that the payment in cattle⁴ had at a very early period been commuted for a payment in money.

It is well to remember that the custom of cornage was not indigenous to the four northern counties, though we are not aware that

¹ Cotton MSS. *Faustina*, B. iv. ff. 122-39 (*Vita S. Begæ et de miraculis eiusdem*): *Life and Miracles of Sancta Bega*, pp. 34, 69, ed. G. C. Tomlinson, Carlisle, 1842.

² Adam son of Helsi or Ailsa was a contemporary with such well-known men as Thomas de Newton, Guy prior of St. Bees, and William parson of Wirkinton, so that the date given in the text cannot be very far wrong (*Reg. of St. Bees*, MS. L. i. 29; *Harleian MS.* 434). E. W. Robertson was of opinion that tribute in cattle was the universal custom in primitive times. As coinage prevailed at an earlier date in the southern counties of England, traces of the custom of payment in cattle became extinct there sooner than in Wales and the northern counties. If this criterion be accepted, the social condition of Cumberland made but slow progress (*Historical Essays*, pp. xxx. 38, 133, 146, 164).

³ *Dialogus de Scaccario*, bk. i. pt. iv. 7; Stubbs, *Select Charters*, p. 185; Madox, *Dialogus*, p. 20. The value of this tradition is questioned by Mr. J. H. Round (*Commune of London and other Studies*, pp. 68-9).

⁴ The name of the geld is evidence enough in itself that it was once assessed in cattle. 'Nout' is a word in vernacular use by old-fashioned people in many places in Cumberland at the present day. The nout-house or the nout-shed is sometimes heard instead of cow-house or cow-shed. Robert Anderson, the dialect poet of the county, says: 'I've fodder'd the naigs and the nowt.' Other instances will occur to persons acquainted with local literature.

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it has been found anywhere else in England.¹ Under the name of noutgeld, as the vernacular equivalent, it is peculiar to Cumberland and Westmorland. But as an institution it was known in Normandy in the eleventh century. In 1099 Richard de Aquila granted to the abbey of St. Evroul the church and vill of Laigle with quittance of cornage. The liberties of the same abbey were afterwards confirmed about 1176 by a member of that family, especially in the matter of what is commonly called cornage (*quod vulgo cornagium dicitur*²). Ducange mentions several instances between 1248 and 1348, the most striking of which occurs among the liberties of the vill of Moneto in 1269, where the grantor speaks of his knights rendering cornage or other *donum in bestiis* of his land.³ In the fourteenth century it was spoken of as a tallage on horned cattle, which exactly corresponded with its definition, *Tailage de chescune beste cornue*, at the English Exchequer.⁴ With these examples in view it would be futile to suggest that cornage was indigenous to the Border counties. It is more probable that it was the survival of some archaic original, like the 'cumal of cows' in the Brehon Laws, or the 'cane of animals' in Celtic Scotland, and was utilized by the Norman conquerors for their own purposes.⁵

Before we attempt any explanation of tenure by cornage, or the payment of noutgeld, we must collect a few instances of its occurrence in local charters and official documents. It is stated in the 'Testa de Nevill,' as well in the inquisition of the sheriff as in the feodaries which make up that compilation, that all cornage tenants were obliged, at the king's precept, to go with the army of Scotland, serving in the vanguard in going and in the rearguard in returning. This liability seems to have been originally imposed on all the land of Cumberland, not excepting the barony of Coupland, which was held at least in part as a military fee, for the owner was also obliged to go with the army of Wales and Scotland. In 1238 the service of attending the king's army through Cumberland was reckoned a grand serjeanty, by which Odard de Wigton held his barony in addition to his payment of cornage.⁶ The barony had been granted to Odard's ancestor by Henry I. at an annual cornage rent of 26s. 4d. No doubt the serjeanty was inherent in the tenure. The same principle applies to the baronies created by Ranulf Meschin at an earlier date. It was found in 1247 that Johanna de Morvill held Burgh by Sands by paying cornage, and if the king passed

¹ It is doubtful whether the thing was known in the Border counties of Scotland, though we meet often enough with the legal formula of freedom, 'ab geldis, assisis, scutagiis, *cornagiis*, et ab omni servicio' (*Liber de Mailros*, i. 108, 109, 156; ii. 588).

² *Calendar of Documents preserved in France*, Nos. 622, 643, ed. J. H. Round.

³ Ducange, *Glossarium*, s. v. *Cornagium*.

⁴ *Liber Rubens de Scaccario*, ii. p. ccxlii. ed. H. Hall.

⁵ Vallancey, *Collectanea de Rebus Hibernicis*, i. 657-8; Skene, *Celtic Scotland*, iii. 227-31. It has been suggested that the origin of cornage must be sought for at some period when the four northern counties were under one government, previous to the dismemberment of the kingdom of Northumberland in the ninth century (Hodgson's *Northumberland*, pt. i. p. 259), but from its primitive characteristics and its existence outside the Border counties, it would be hazardous to ascribe any limit to its antiquity.

⁶ *Bracton's Note Book*, No. 1270, ed. F. W. Maitland.

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through Cumberland, her obligation lay *in prima warda* of his army in going and in the rearguard in returning, her sub-feudatories holding of her by the same tenure as she held of the king.¹ It was not a military tenure in the sense of knight's service, for on the introduction of the latter tenure into a few of the fiefs by Henry II. in substitution of tenure by cornage, the sheriff had a remission of the cornage due from them, as in the case of Gillesland and Edenhall, or in the case of the manor of Old Salkeld, when granted by king Richard I. to Adam the cook for the service of one pound of pepper. That the tenure was not a military tenure, properly so called, appears more evident from the king's upholding the refusal of Richard de Levinton² to answer the military summons issued for the siege of Bedford in 1224, when it was occupied by Faukes de Breauté. The sheriff was forbidden to distrain him, as he did not hold of the king in chief by military service, but by cornage. In 1256 the freeholders of Robert de Veteri Ponte in Westmorland, who held by cornage tenure, successfully maintained their immunity from undertaking military service (*arma militaria*) against their will.³ If we couple these matters with the evidence of the Pipe Rolls that none of the tenants by cornage contributed to the scutages⁴ of Henry II. and Richard I., it will be difficult to resist the conclusion that the tenure was in some way connected with the defence of their own borders.

The relation of the payment of noutgeld, as a feudal obligation, to military service will come out clearly if we examine some of the instances in which one tenure was substituted for the other. We have already mentioned the grant of the barony of Gillesland to Hubert de Vallibus in 1158 by Henry II. as a fee of two knights. It is notable that, though the Scotie owners did not recognize English rule, as soon as the district was recovered by the Crown it was assumed that the tribute of noutgeld was due from it, as a penalty attached to all the land in the county held *in capite*. Here was 'a clean slate' on which the king could have inscribed military service without any reservation if the payment of the geld had not been a service inherent in the tenure of the Border districts. But that course was not followed. In the charter to Hubert de Vallibus creating the barony, and in the two subsequent confirmations to Robert his son, by Henry II. and Richard I., freedom from noutgeld was made a prominent feature of the baronial service. In the enrol-

¹ *Inq. p. m.* 31 Hen. III. No. 32; Bain, *Calendar of Documents*, i. 1713.

² *Close Roll*, 8 Hen. III. m. 8.

³ *Fine Roll*, 40 Hen. III. m. 2; Bain, *Calendar of Documents*, i. 2067. Does the phrase '*arma militaria*' mean knighthood?

⁴ The Pipe Rolls correspond with the Red Book of the Exchequer in making this point clear. The only fees in Cumberland assessed to scutages were Gillesland and Edenhall, which were held by knight's service, the former by the service of two knights and the latter by half a knight (*Pipe Rolls*, 18 Hen. II., 6 and 7 Ric. I., 1 John; *Liber Rubens*, i. 54, 85, 122, ed. H. Hall). Eight tenants holding by cornage paid fines in 1201 'ne transfretent,' one of whom was Adam the cook, whose cornage had been remitted by charter for the nominal rent of one pound of pepper (*Pipe*, 3 John). Tenants in serjeanty and drengage were placed in the same category of fines in 1204 (*Pipe*, 6 John). It would seem that king John was attempting innovations in the assessment for scutage, for in later Rolls of his reign a return to the assessment of tenants by knight's service is observable, though other tenants were assessed to the scutage of Ireland in 1210 (*Pipe*, 12 John).

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ment of the deeds, the anxiety of the scribe to make this immunity the more conspicuous is very noteworthy. The headings of the charters do not refer to the creation of the fee or the service due to the king. The first charter is styled a charter of Hubert de Vallibus 'for quittance of the noutgeld of Cumberland,' and that there may be no mistake at the Exchequer, or no danger of levying the geld where it was not due, the Chancery clerk added as a footnote that the other charters for this acquittance on the back of the roll should be consulted. In subsequent charters to Robert de Vallibus the same course was followed, as if freedom from noutgeld was the essential feature of the confirmations.¹ This payment also was remitted by Alienor mother of Richard I., in her grant of two manors to Adam her cook in 1200 as a reward for his services. As queen of the English, duchess of Normandy and Aquitaine, and countess of Anjou, she notified that her dearest son king Richard—may his soul be in peace for ever!—gave her at her entreaty the land of Hobriteby and Harfineby with all their appurtenances, etc., which land used to pay (*persolvere*) at the Exchequer forty shillings yearly. She (*nos*) now gave that land, etc., to her faithful servant (*servienti*) Adam the cook and Joan his wife freely, etc. . . . and quit of cornage and all other dues, which the king of the English ought to receive, paying at Michaelmas, yearly for all service, one pound of cummin to the king's bailiffs of Carlisle (*Kardolio*).² It was almost in the same terms that Adam the favoured servant had received the grant of the manor of Old Salkeld in 1194 from king Richard,³ with quittance of all dues save one pound of pepper, though cornage or noutgeld is not mentioned. For this grace the king exacted a substantial fine.⁴ The change of tenure from the payment of geld to military service in Westmorland by Richard I. corresponds with his father's dealings with the barony of Gillesland. The great baronies of Westmorland and Kendal belonging to Gilbert son of Roger son of Reinfred were freed from noutgeld on becoming a fee of one knight by payment of a fine of twenty marks. The king gave him quittance throughout all his land of 'Westmerland and of Kendale of noutegeld, viz. of 14*l.* 16*s.* 3*d.*, which he, Gilbert, was accustomed to render for noutegelde for the aforesaid land; also quittance of shires, wapentacs, trithings, aids of sheriffs and all their bailiffs.' This acquittance the king confirmed to him and his heirs for the service of one knight, which they ought to do for the aforesaid noutegeld. For

¹ The three charters end, before the testing clauses, with the words 'quietas ab omni Neutegeldo.' The charter of Hubert is headed 'Carta Huberti de Vallibus de Quietantia Noutegeldi de Cumberland'; with the note below, 'Respice Alias Cartas de eadem Quietantia in Tergo.' Robert's first charter is described as 'Carta Roberti de Vallibus de predicta Quietantia,' and his second as 'Item Carta de predicta Quietantia' (Chancery, *Cartæ Antiquæ*, DD, Nos. 7, 20, 21).

² *Calendar of Documents preserved in France*, No. 1107, ed. J. H. Round, Rolls Series. This charter, which is new to local history, is dated 'per manum Rogeri capellani nostri apud Fontem Ebraldi anno incarnati verbi millesimo C^oC^o.' It has a seal in green wax on a tag of brown silk with the legend, 'ALIENOR DEI GRACIA REGINE ANGLORUM DUCISSE NORMANNORUM'; on the reverse, 'ALIENOR DEI GRACIA DUCISSE AQUITANORUM ET COMITISSE ANDEGAVORUM.'

³ Chancery, *Cartæ Antiquæ*, F, No. 14; Rymer, *Fœdera*, i. 63, new edition.

⁴ *Pipe Roll*, 6 Ric. I.

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de Karliol, enumerated, among the obligations due from the vill, an annual cornage rent of 16*d.* and the doing of foreign service if such should arise. In subsequent transactions with the monks of Holmcultram, to whom the land of Neuby had been granted, the same royal obligations were the subject of arrangement between the parties.¹ Then again on the settlement of a dispute in the king's court in 1209 about certain lands in 'Halteclo,' a vill in the parish of 'Kaudebec,' the payment of cornage and the doing of foreign service were recognized as distinct burdens on the tenement.² When we meet with such an equation of services, it does not necessitate a hazardous deduction to infer that the doing of foreign service was in some way connected with the 'endemot' of the Gospatric charter.

But it will be necessary to inquire more closely into the signification of foreign or forinsec service, by no means the least difficult phrase in feudal terminology. And here it may be explained that 'forinsec service' was due by every tenement to the king, and had been so called, according to Bracton's definition,³ because it was rendered by the tenant outside (*foris*) and beyond the service due to the lord of the soil. Forinsec service became a matter of stipulation between the grantor and the grantee, according as either party to the bargain was called on to discharge it. The penalty was attached to the land, and lay outside the power of the owner to deal with it. For that reason of course it must be of constant occurrence in local charters. But what is the precise meaning to be attached to it? Perhaps we may learn something from the commoner term 'forinsec,' which is used in not a few connections in a subjective sense, with the significance of 'outside,' which is more restricted in its application than 'foreign' according to modern usage. As implying something beyond or outside one's own borders, *forinsecus* had a well-defined meaning when employed by the draughtsmen of local conveyancing, as, for example, the *petra forinseca*⁴ called Greyston, one of the bounds of the land of Neuton in 'Goseford,' the fourth part of one rood situated in *forinseca parte*⁵ of the toft which was formerly Gilbert's, and the *averia forinseca*⁶ which trespassed in the wood of 'Auredale.' A territorial signification is clearly indicated. The saving clauses of numbers of twelfth century charters, in the endowment of the monastic houses in the county, are concerned

¹ Reddendo mihi et heredibus meis, pro omni servicio terreno ad nos pertinente, annuatim decem solidos argenti, quinque solidos ad Pascha et quinque ad festum sancti Michaelis; et preterea xvi. denarios pro cornagio; et faciendo aliud forense servitium si quod acciderit (*Reg. of Holmcultram*, MS. ff. 23, 24).

² Reddendo de cornagio per annum v. solidos, scilicet, ad festum sancti Michaelis [*et*] faciendo forinsecum servitium quantum pertinet ad quartam partem ville de Kaudebec pro omni servicio (*Pedes Finium* [Cumberland], 10 John, p. 12, ed. J. Hunter).

³ *De Legibus et Consuetudinibus Angliæ*, L. ii. c. 16, f. 36. 'It seems constantly used,' say Pollock and Maitland, 'as though it were equivalent or almost equivalent to "royal service," "military service," "scutage," insomuch that to say of a man that he owes forinsec service is almost the same as saying that his tenure is military and therefore implies wardship and marriage' (Pollock and Maitland, *History of English Law before Edward I.* i. 239 n. second edition). In Cumberland deeds we meet with several variations of the word, such as 'forinsecum servitium,' 'foraneum,' 'forense,' and, in Norman French, 'forain.' On the latter form, as denoting a place beyond the county, archdeacon Hale's note may be consulted (*Reg. of Worcester*, p. xxxvij. Camden Society).

⁴ *Reg. of St. Bees* (Harleian MS. 434), L. iii. 6.

⁵ *Reg. of Lanercost*, MS. xii. 19.

⁶ *Feet of Fines*, p. 2, ed. Hunter.

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this concession Gilbert gave the king twenty marks of silver.¹ There is no attempt in these instances to engraft military service on tenure by cornage. The two cannot run together. If one is adopted the other must be abolished. They are analogous tenures, embodying kindred obligations in the evolution of feudal ideas.

What then do we suggest as a clue for the disentanglement of this obscure problem? The only reasonable inference which will satisfy the conditions of the case, when we find a tenure or a payment peculiar to one portion of the kingdom and embracing so large a zone on its frontier, is that it must have had a local and restricted signification. There appears to be no other hypothesis than this, that when we touch on tenure by cornage or the payment of noutgeld we are at the roots of that historic burden on the Border counties which afterwards grew into the Border service, that is to say, that the military liability of freeholders in Cumberland was confined to the defence of their own lands. How does this hypothesis agree with known facts about noutgeld? The question cannot be answered off-hand without raising subsidiary phases of the same tenure. In the twelfth century, Gospatric son of Orm, the 'old grey-headed Englishman' who was fined so heavily for surrendering the castle of Appleby² to William the Lion in 1174, in a most interesting grant to the abbey of Holmcultram, undertook to discharge all the services due from the land both to the king and the lord of 'Alredale.' We shall do for the monks, so the charter runs, all foreign and terrene service, viz. noutgeld and endemot, and whatever else belonged to the king's service. The dues pertaining to the lord of the fee, which he also undertook to discharge, are enumerated as sewake and castelwerke, all pleas and aids, and every other terrene custom and exaction.³ The service due to the Crown, therefore, was of a twofold character, foreign and terrene, and was represented by the respective obligations of rendering noutgeld and endemot. It will not be questioned that we have in this charter a statement of the royal burdens upon the land. But it may be desirable to supplement it with additional evidence in order to form a clear estimate of the royal services. It matters little what words are used, as long as we obtain a correct impression of the obligations they are designed to represent. A few instances will suffice. Richard son of Richard son of Trute, in confirming his father's gift of Neuby to Reginald

¹ Chancery, *Cartæ Antiquæ*, C, Nos. 9, 10, 11, 12; Hist. MSS. Com. *Levens Hall MSS.* p. 325 (Tenth Report, App. pt. iv.). The first charter of exemption is dated at Evreux, April 15, 1 Richard I. See also king John's confirmation in the first year of his reign (*Rotuli Chartarum*, 1 John, m. 9, p. 50, ed. Hardy).

² *Jordan Fantome*, line 1467, Surtees Society.

³ 'Ita quod faciemus pro Monachis omne forense et terrenum servicium, quodcumque ad Dominum Regem pertinet, scilicet, de Noutgeld et Endemot, et siquid aliud pertinet ad eius servicium; et quodcumque servicium pertinet ad Dominum de Alredal', scilicet, de Sewake et Castelwerke, et de placitis et de auxiliis et de omni aliena terrena exactione et consuetudine' (*Reg. of Holmcultram*, MS. f. 34). This extract, which is taken from the manuscript in the custody of the dean and chapter of Carlisle, is very interesting on account of its vernacular terminology. The service of 'endemot' is given as 'cudemot' in a later copy of the Register, c. 1300 (*Harleian MS.* 3911). Dugdale has read the word as 'ondemot' (*Monasticon*, v. 609). 'Aliena' is evidently an error for 'alia,' as the latter is found in the three British Museum copies (*Harleian MSS.* 3911, 3891, 1881).

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de Karliol, enumerated, among the obligations due from the vill, an annual cornage rent of 16*d.* and the doing of foreign service if such should arise. In subsequent transactions with the monks of Holmcultram, to whom the land of Neuby had been granted, the same royal obligations were the subject of arrangement between the parties.¹ Then again on the settlement of a dispute in the king's court in 1209 about certain lands in 'Halteclo,' a vill in the parish of 'Kaudebec,' the payment of cornage and the doing of foreign service were recognized as distinct burdens on the tenement.² When we meet with such an equation of services, it does not necessitate a hazardous deduction to infer that the doing of foreign service was in some way connected with the 'endemot' of the Gospatric charter.

But it will be necessary to inquire more closely into the signification of foreign or forinsec service, by no means the least difficult phrase in feudal terminology. And here it may be explained that 'forinsec service' was due by every tenement to the king, and had been so called, according to Bracton's definition,³ because it was rendered by the tenant outside (*foris*) and beyond the service due to the lord of the soil. Forinsec service became a matter of stipulation between the grantor and the grantee, according as either party to the bargain was called on to discharge it. The penalty was attached to the land, and lay outside the power of the owner to deal with it. For that reason of course it must be of constant occurrence in local charters. But what is the precise meaning to be attached to it? Perhaps we may learn something from the commoner term 'forinsec,' which is used in not a few connections in a subjective sense, with the significance of 'outside,' which is more restricted in its application than 'foreign' according to modern usage. As implying something beyond or outside one's own borders, *forinsecus* had a well-defined meaning when employed by the draughtsmen of local conveyancing, as, for example, the *petra forinseca*⁴ called Greyston, one of the bounds of the land of Neuton in 'Goseford,' the fourth part of one rood situated in *forinseca parte*⁵ of the toft which was formerly Gilbert's, and the *averia forinseca*⁶ which trespassed in the wood of 'Auredale.' A territorial signification is clearly indicated. The saving clauses of numbers of twelfth century charters, in the endowment of the monastic houses in the county, are concerned

¹ Reddendo mihi et heredibus meis, pro omni servicio terreno ad nos pertinente, annuatim decem solidos argenti, quinque solidos ad Pascha et quinque ad festum sancti Michaelis; et preterea xvi. denarios pro cornagio; et faciendo aliud forense servitium si quod acciderit (*Reg. of Holmcultram*, MS. ff. 23, 24).

² Reddendo de cornagio per annum v. solidos, scilicet, ad festum sancti Michaelis [*et*] faciendo forinsecum servitium quantum pertinet ad quartam partem ville de Kaudebec pro omni servicio (*Pedes Finium* [Cumberland], 10 John, p. 12, ed. J. Hunter).

³ *De Legibus et Consuetudinibus Angliæ*, L. ii. c. 16, f. 36. 'It seems constantly used,' say Pollock and Maitland, 'as though it were equivalent or almost equivalent to "royal service," "military service," "scutage," insomuch that to say of a man that he owes forinsec service is almost the same as saying that his tenure is military and therefore implies wardship and marriage' (Pollock and Maitland, *History of English Law before Edward I.* i. 239 n. second edition). In Cumberland deeds we meet with several variations of the word, such as 'forinsecum servitium,' 'foraneum,' 'forense,' and, in Norman French, 'forain.' On the latter form, as denoting a place beyond the county, archdeacon Hale's note may be consulted (*Reg. of Worcester*, p. xxxvij. Camden Society).

⁴ *Reg. of St. Bees* (Harleian MS. 434), L. iii. 6.

⁵ *Reg. of Lanercost*, MS. xii. 19.

⁶ *Feet of Fines*, p. 2, ed. Hunter.

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with the disposition of this feudal obligation. Such terms as 'saving the king's forinsec'; 'saving the king's forinsec service'; 'by doing the forinsec service belonging to that land'; 'free of all service except forinsec service'; 'and the whole forinsec service I have given and quit-claimed for me and my heirs'; 'at the annual rent of 2s., but they shall do forinsec service, and if it happen in any case that they have quittance of forinsec service they shall give us yearly 3s.' might be multiplied to any extent.¹ Whatever meaning may have been attached to the obligation elsewhere, in Cumberland at least it was represented by defensive duty on the Border.² The local application of the service is amply illustrated in a singularly relevant charter,³ wherein it is explained

¹ 'Salvo domini Regis forinseco'—*Reg. of Fountains*, MS. (Tiberius, c. xii.), f. 76. 'Salvo forinseco servicio domini Regis'—*Reg. of St. Bees* (Harleian MS. 434), L. xiii. 13. 'Forinsecum faciendo servicium quod ad predictam terram pertinet'—*Reg. of Wetherhal*, p. 113, ed. J. E. Prescott. 'Libere et quiete ab omni servicio et consuetudine et exactione, salvo forinseco servicio'—*Reg. of Holmcultum*, MS. f. 61. 'Et totum forinsecum servicium dedi et quietum clamavi de me et heredibus meis'—*Reg. of St. Bees*, MS. L. i. 13. 'Facient autem forinsecum servicium, et si aliquo casu contingat quod habeant adquietacionem forinseci servicii extunc dabunt nobis singulis annis tres solidos'—*Ibid.* L. xiii. 3. 'Et ego et heredes mei acquietabimus predictam terram de omni forensi servicio'—*Reg. of Holmcultum*, MS. f. 150. It should be distinctly understood that the phrase 'foreign service,' so often employed in this introduction, is used as the equivalent of the service variously called 'forinsecum,' 'foraneum,' 'forense' and 'forain' in Cumberland documents. It is an ambiguous phrase, but no better alternative has been suggested.

² We must not enter into the analogous term of 'utware,' so well known in the neighbouring county of Northumberland, in its relation to forinsec service. Nothing that we have seen traverses the evidence supplied by documentary materials in Cumberland. But we may mention the interesting case of the manors of Halton, Whittington and Claverworth, for which John de Halton obtained a charter from Henry III., granting him and his heirs the three manors at double the old rent of three marks which had been paid by his ancestors, with the condition that they should continue to do the king's forinsec service of cornage and suit of the county—'Forinsecum servicium nostrum cornagii et sectam comitatus sicut ipse et antecessores sui facere solebant pro omni servicio consuetudine servitute et demanda' (*Charter Roll*, 31 Hen. III. m. 6). The peculiar history of the tenure of these manors is ably discussed in *Archæologia Æliana*, xiv. 312-4, by Mr. C. J. Bates. The tenorial customs of the Welsh frontier bear intimate relations with those on the Scottish border, and should not be neglected in a general review of cornage as a frontier institution. The analogy in many features is very striking. Professor Maitland has pointed out the ancient obligation of men on the Welsh march, as noted in Domesday (i. 179), to occupy the post of honour in the vanguard or in the rearguard, as the army marched into Wales or out of Wales (*English Hist. Review*, v. 629). The lieges of Cumberland and Westmorland recognized this obligation as a principal part of their tenure. Aelred abbot of Rievaulx tells us that the Galloway men pleaded their privilege of fighting in the vanguard at the battle of the Standard in 1138 to animate by their bravery the rest of the Scottish army (Twysden, *Ethelredus Abbas*, p. 342). Bower (*Scotichronicon*, ii. 243) tells a strange story in explanation of this privilege of fighting in *vanguardia*, which is a groundless slander on Border courage. He says suspects were placed in that position for fear of their turning traitors! On the other hand, in 1385 two-thirds of the northern lords' force in Richard II.'s army for Scotland were *not* allowed to be march men (Bain, *Calendar of Documents*, iv. 340).

³ 'Sciant omnes tam presentes quam futuri quod ego Willelmus de Lancastra cum consilio et consensu et concessione Willelmi filii et heredis mei dedi et concessi et hac presenti carta mea confirmavi Cospatricio filio Orme et heredibus suis tenendam de me et de heredibus meis in feodo et hereditate totam terram suam de Cauplandia quam de me tenet sicut ius suum [et] hereditatem suam, scilicet, villam de Wirkington cum pertinenciis suis et villam de Lamplogh cum pertinenciis suis quam dedi in excambio pro villa de Medilton in Lonesdale; hanc totam predictam terram dedi predicto Cospatricio et heredibus suis tenendam de me et de heredibus meis pro homagio suo libere et quiete et honorifice in bosco, in plano, in parcis, in pascuis, in viis, in semitis, in aquis, in molendinis, cum omnibus libertatibus et liberis consuetudinibus, sicut aliquis miles liberius et quietius et honorificencius in tota terra mea tenet, redendo michi annuatim nova calcaria ad aurum vel sex denarios ad Nundinas Carliolii et faciendo michi forense servicium apud castellum de Egermundia. Hiis testibus Ketello filio Ulfe et aliis.'

By the courteous permission of Mr. A. D. Curwen this charter has been inspected and transcribed from the copy which remains among the muniments of Workington Hall. It is written on a skin of parchment with a charter of Alice de Rumeli granting the vill of Tornthayt to Patric son of Thomas, one of Mr. Curwen's ancestors. The copies, made perhaps in the sixteenth century, are far from being

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as the equivalent of castle-ward. In the grant of Workington and Lamplugh, two villis of the barony of Coupland, by William de Lancastre to Gospatric son of Orm in exchange for the vill of 'Medilton' in Lonesdale, the conditions of the transaction were the annual *reddendo* of gilt spurs, or sixpence at the market of Carlisle, and the doing of foreign service at the castle of 'Egermund,' the baronial seat of the lord of the fee.¹

We may now go back to the charter of Gospatric son of Orm, by which he endowed the abbey of Holmcultram with a portion of Flemingby, and inquire into the nature of the service there named 'endemot,' which, we have seen, was distinct from noutgeld as a liability due from the manor to the Crown. What was endemot? Has it a local signification? How does it agree with the other phrases which express a restricted military service in defence of the frontier? Is it a general name for a Border service, which obliged the tenants to march respectively in the vanguard or the rearguard of the army as the king invaded or retired from Scotland, and to protect the frontier, for which they were exempt from foreign service elsewhere? It is much easier to ask these questions than to answer them with any degree of certainty. Few instances of the occurrence of endemot have been met with in local documents. From its association with so many Old English or vernacular words in Gospatric's charter, such as noutgeld, sewake and castelwerke, we must look for its meaning in that direction. If we trust to its etymology, it seems not improbable that we reach the source of the institution which afterwards came to be known as the Border or March court. The 'endemen' as the Old English for 'Border men,' and the 'endesæta' for 'Border settler' or 'Border colonist,' seem analogous words.² If the meaning of the thing can be inferred from the etymology of the name, we have here another instance of an exceptional system of governmental institutions employed in the frontier counties. Gospatric, the grantor, undertook to pay for the monks not only the noutgeld, which was a royal obligation incumbent on the land,³ but also

textually accurate, and as the skin is very much rubbed in places, the above is the best transcript that could be made. The collation of the Workington text with the transcript of it made by Mr. William Jackson in 1881 has not revealed many differences (*Papers and Pedigrees*, i. 336; *Transactions of Cumb. and West. Archaeological Society*, v. 312). It has been recently stated that 'the original deed' of William de Lancastre was preserved in a 'small glazed cabinet' in the drawing-room of the Hall (*Trans. Cumb. and West. Archæol. Soc.* xvi. 11); the copy of course is meant. The date of the original charter must have been before 1162, when Gospatric was amerced in a plea with the lord of that barony (*Pipe Roll*, 8 Hen. II.), and probably before 1158, when his name appears in the earliest Pipe Roll of Henry II. (*Pipe Roll*, 4 Hen. II.).

¹ The obligation of furnishing 'castlemen' as distinct from cornage rent or payment of noutgeld is recognized in the *Boldon Buke* (pp. 20, 22, *et passim*, Surtees Society). For castle-ward in Northumberland, the section under that head in Hodgson's *History* (pt. i. pp. 261-3) may be consulted. The theories propounded by Mr. H. Hall in the introduction to the *Liber Rubens* (ii. pp. ccxxxvi.-ccl.) should be read in the light of the arguments advanced to the contrary by Mr. J. H. Round in the *Commune of London and other Studies*, pp. 278-88.

² Bosworth, *Anglo-Saxon Dictionary*, s.v. Ende, ed. 1848: in Toller's edition ende-sæta is described as an end or border inhabitant, one stationed at the extremity of a territory, *limitis incola*, for which explanation he quotes 'Beowulf,' Th. 487, B. 241.

³ The payment of noutgeld was a service due to the Crown. In the gift of Haresceugh to the canons of Lanercost, Ada daughter of William Engayne made it a free grant, saving the king's service,

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to do the endemot which was their duty at the Border court or meeting. In fact the lord of the manor made himself responsible for all the civil and military liability due to the king.¹ In this institution we find supplementary evidence that the defence of the frontier was the royal obligation inherent in Border tenure as the equivalent of foreign service in other counties. The fact cannot be overlooked that those who discharged this liability were excused from contributing to the scutages. In 1201 John de Reinni held two carucates of land in 'Newinton' by (*per*) suit of the county and of (*de*) hendemot whereof (*unde*) scutage ought not to be given.² From this entry in the Pipe Roll we see at a glance the military character of the term. If we turn to the 'Testa de Nevill' for the history of the tenure of Newton, we find that the vill had been granted by Henry I. to Turstan de Reigny by the serjeanty of going in the army of Scotland with a hauberk, and that John de Reigny his descendant held it by the same tenure in 1212. When serjeanties came to be arrented by Robert Passelewe about the middle of the reign of Henry III.,³ John de Reigny's, though alienated in part, was returned as owing *unum servientem equitem armatum* in the king's army for forty days at his own cost. All this is very interesting in view of 'endemot' and of the general burden on cornage tenants of marching in the vanguard or the rearguard of the army according to the requirements of the king's service. Freedom from scutage was the common privilege of all these phases of military obligation. What then was endemot? It can scarcely have been anything else than the Border meeting,⁴ to which cornage tenants were obliged to repair when summoned to arrange a

viz. eightpence of neoutegeld pertaining to the said land, the money payment discharging all obligation due to the king—'salvo servicio domini Regis, scilicet, viij denariis de neoutegeld predite terre pertinentibus' (*Reg. of Lanercost*, MS. ii. 11, 12, 13; x. 13). Exemption from foreign service was implied in cornage tenure. This view was expressed by a jury in 1274, when they found that Robert de Ros of Werk held the manor of Cargou from Sapientia widow of William de Carlisle, by paying her yearly a hawk or a silver mark, and doing foreign service for her to the king, viz. 32*d.* of cornage to the exchequer of Carlisle (*Inq. p. m.* 2 Edw. I. No. 26; Bain, *Calendar of Documents*, ii. 24).

¹ Religious men were not exempt from military service unless their lands had been in the first instance granted to them free of the liability. For instance, earl Gospatric, in making a gift to the house of Coldingham about the year 1147, while David I. was king of Scotland, did not discharge the monks of military obligation—'excepto exercitu Regis unde monachi erunt attendentes ipsi Regi et ipse Gospatricus de exercitu erit quietus in perpetuum' (Raine, *North Durham*, App. No. 21).

² 'Johannes de Reinni debet ij marcas et tenet ij carrucas terre in Newinton per sectam Comitatus et de Hendemot unde Scutagium dari non debet' (*Pipe Roll*, 3 John). This entry is repeated on the Chancellor's Roll of the same date (*Rotuli Cancellarii*, p. 70, ed. Hardy, 1833).

³ Pollock and Maitland, *History of English Law before Edward I.* i. 334, second edition.

⁴ The Border meeting is found as an institution at a date soon after John de Reigny's time. Ancient march law and custom was the subject of investigation in 1248 by six English and six Scottish knights, who reported that no one of either kingdom, although holding lands in both, was liable by march law to be impleaded anywhere *but at the march*—'Quia nullus de regno Anglie vel de regno Scoccie, licet terras habet hinc vel inde, per leges dicte Marchie debet alibi implacitari quam ad Marchiam pro aliquo facto per homines morantes in Anglia illato in Scoccia, vel pro aliquo facto per homines suos manentes in Scoccia illato in Anglia' (*Inq. p. m.* 33 Hen. III. No. 65; Bain, *Calendar of Documents*, i. No. 1749, pp. 559–60). The first document of the *Leges Marchiarum*, printed by bishop Nicolson, is dated 1249, and was the outcome of this preliminary investigation (*Border Laws*, pp. 1–9, ed. 1705). The law of *Manus de Wardsheil* of the seventh section should be compared with the 'Hand-warcelle' of the inquisition of 1280 (Bain, *Calendar of Documents*, ii. 183, p. 59). The last clause of the *Leges* of 1249 is sufficient to clear up the doubts that seem to exist about the meaning of 'inburghe' and 'outburghe' so often occurring in Border matters.

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truce or repel an invasion. In that case it was the precursor of the March court, a feature of Border law so conspicuous in subsequent centuries, to which tenants were bound to give suit by virtue of their tenure.¹ The special military service entailed by the defence of the frontier will account at once for the exemption from scutage and the doing of service beyond the limits to which the tenure applied. If not, why should the Border tenants be free from scutage unless they were bound to do some other service of equal value to the state? That is the question we have been trying to answer all along in explanation of the exceptional nature of Border institutions. The belt of territory stretching across the island from sea to sea was a conquered country: the Norman kings had driven the Scotie race across the Solway and the Tweed. As the new dominion had to be maintained, the tenure of the new settlers was adapted to the necessities of the situation, and their lands were granted to them with the military burden of Border defence. It was no novel expedient. The same principle was in force in the marches of Normandy, for when a military tenant served according to rota on castle-guard in one of the fortresses on the frontier, he was not liable to pay scutage in that year for the general defence of the country.²

If we take into consideration the military aspect of the frontier tenure, apart from the payment of noutgeld, which was a distinct burden upon the land, it will not be difficult to understand the various phases under which it is presented to us. At one time we meet with it as a grand serjeanty in holding the post of danger in the royal army on its progress through Cumberland and Westmorland; then as a service of castle-ward within a Border fortress; and lastly as suit to the Border court; but all of them are expressive of the same military obligation. The territorial position was unique and needed differential treatment from the other counties of the commonwealth. For which reason, there seems to be no doubt, the foreign service due to the Crown was confined to defensive duty at home.³ It is not to be expected

¹ This obligation inherent in Border tenure needs not to be laboured. On days of Marche, all lords, knights, esquires and gentlemen, with their tenants, were obliged to repair to the Marche bank with the lord warden, defensibly arrayed, with their best horses and nags, as time and service required (*Richard Bell MS. f. 142b*). In the preamble of a Bill read in both Houses of Parliament in 1571, it is stated that the tenants of lands in Cumberland were bound to defend the country against the Scots and to invade Scotland when required by the lord warden of the West Marches, for which service their lands were held without rent on payment of small fines on change of tenant (*State Papers, Dom. Elizabeth, Add. xx. 28, 29*).

² 'Castellania Vernonis. Philippus de Blarru tenet unum feodum loricæ de rege, unde debet unum annum et dimidium diem de custodia apud Vernonem ad costum suum et ad submonitionem domini regis, et in anno quo facit custodiam non debet escuagium, et debet exercitum et equitatum ad suum costum, excepto quod ipse in propria persona debet esse ad costum domini regis ad os suum, et harnesium suum debet esse ad costum proprium' (*Bouquet, Recueil des Historiens des Gaules et de la France, xxiii. 622*). In this feodary, service in the marches of Normandy occupies a distinct place. The bishop of Bayeux, for instance, held one hundred fees, of which he owed the service of twenty knights *in marchia* and only ten knights to the king of France (*ibid. xxiii. 612*).

³ Compare the charter of Edward I. on the immunity of the men of the bishopric of Durham, 'ut non compellantur transire ad pugnandum extra Libertates Sancti Cuthberti,' and also that of Edward III., 'ne homines episcopatus transeant extra ad pugnandum' (*Raine, North Durham, p. 7, quoting Surtees, History of Durham, i. App. Nos. xv. xvi.*).

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that the claim was always admitted, when we remember the continual fluctuation of feudal institutions. Naturally there may be found contradictory statements about a constitutional position so peculiar, at times far severed from its initiation and early growth. But as late as the reign of Edward II. the traditional faith was strong in the lieges of the two counties that they were insisting only on their rights when they contended that the service due to the king in war did not carry them beyond their own borders. The primary clauses of their petition are of unusual interest, in that they carry us back to the days when ancient Cumbria was held as a fief, owing allegiance now to Scotland, again to England, but possessing the germs of an independence which were still potent after the lapse of more than two centuries. In the first place they showed the king the service due in war to his ancestors, viz. that on his march to Scotland they should meet him 'a la Rericroiz sus Estaynmor' and go in his vanguard as far as 'la Marche de Solewathe,' and on his return from Scotland they should take the 'reeregarde' from Solway to the 'Rericroiz.' They prayed him to ratify this, and that their service otherwise made on divers expeditions should not prejudice them. Also, they said, if it happen for the defence of the realm that he require their services within it, that he should pay their wages in their own country before they started. But perhaps the strongest claim of all, involving a local sovereignty resembling in some respects the equipment of a palatine state, was that they should be allowed to go to war or truce with the Scots, according as they judged it most agreeable to the king's honour or their own profit, by the advice of his officers in those parts, without hindrance or challenge.¹

In what way the defence of the Border county was undertaken and how the feudal incidence of rural and castle ward was applied to the tenurial system of cornage are vague questions, about which very little is absolutely known for the period under review. A reflected light shines from the other side of the Border line on Ranulf Meschin's tenure of Carlisle and the lordship of Cumberland. It is on record that David king of Scots selected the English tenure as the model for his grant of the castle and land of Anandale to Robert de Brus—'that land and its castle, with all those customs which Randulf Meschin ever had in Carduil

¹ *Tower Miscellaneous Rolls*, No. 459; Bain, *Calendar of Documents*, iii. 716. The later history of this tenure by Border service, as the obligation came to be called, would furnish an interesting chapter of itself. At the time of the Union a great uproar was caused in Cumberland and Westmorland on the claim, first put forth by James I. on the royal manors, that as the Border service had come to an end, the estates themselves held by that tenure had determined. A long and bitter struggle ensued between lords and tenants, which lasted through the greater part of the reign of James I. and Charles I. In Cumberland the tenants of the manor of Brampton entered into an agreement with lord William Howard in 1610, whereby they relinquished their claims to tenant right and accepted leases (*Household Books of Lord William Howard*, pp. xxxvii., 413, 425-7). But in the sister county of Westmorland the contention dragged its weary length through the Star Chamber for many years. Dr. Burn, who has printed several valuable documents connected with the dispute, such as royal proclamations and records of the court, was of opinion that the tenants gave their case away in not insisting that they held their estates by a 'double tenure, viz. by Border service in particular, and moreover by the general military tenure by which all other tenants *in capite* were obliged' (Nicolson and Burn, *History of Westmorland and Cumberland*, i. 51-9). In this judgment the learned author of *The Justice of the Peace* spoke as the lawyer and not as the historian.

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and in his land of Cumberland.’¹ From the renewal of the grant to the grandson of Brus some thirty years later by William the Lion, the privileges bestowed on the grandfather were amply confirmed, except the custody of his castles of which the king had given him discharge.² The castle of Carlisle was a mighty factor in the early defence of the district, of which it was the centre and rallying point. The work of the Norman in rearing this fortress on a spot so rich in natural advantages has been already noticed. That its ward had been committed to Ranulf Meschin we have every reason to believe from a comparison of the Brus charters. When Ranulf left the district, the custody of the castle was the duty of the sheriff; a large manor in socage was its appanage; castlework³ was an allodial obligation incumbent on the county; payments were continually made for ‘operations’ on the castle⁴ and the precincts; the city, which grew round it and was of ancient demesne, was surrounded by a wall, with three gates, the strength and durability of which were guaranteed by serjeanties allotted to maintain them;⁵ the relations between the city and the castle were close and not always determinate; it was the county castle of the county town; the sheriff was the king’s receiver and had his exchequer therein, where all rents and services due to the Crown were paid. These things speak for themselves. If in addition we consider that the sheriff, as the king’s officer, was the military governor of the county and responsible for its safe custody, and that the cornage tenants were exempt from service outside their own borders in consideration of their defensive duty at home, the association of the freeholders for the ward of the castle and county follows as a matter of course. The division of Cumberland into wards, which has existed from a remote date, can only be explained on this supposition, for later history unquestionably proves that their origin, like that of the ‘wapentakes’ of some other shires, was connected with defensive organization.⁶

The earliest territorial division of the county we meet with, after its several parcels had been bonded together into one fiscal area, was five-fold, Carlisle, Lyth, Eskdale, Allerdale, and Coupland bearing almost the same names by which they have been known in modern times.⁷ With

¹ British Museum, *Cotton Charters*, xviii. 45; *National Manuscripts of Scotland*, i. No. 19; *Acts Parl. Scot.* i. 92.

² *National Manuscripts of Scotland*, i. No. 39; *Duchy of Lancaster Charters*, Box. ‘A,’ No. 116; *Bain, Calendar*, i. 105.

³ *Reg. of Holmcultram*, MS. ff. 34, 35, 159.

⁴ *Pipe Roll*, 14, 19 Hen. II. *et passim*.

⁵ ‘In operationibus iij. portarum Civitatis Carleol. et j. Granarii, 19s. 6d. per breve Cancellarii et per visum Widonis propositi et Rannulfi Bruni’ (*Pipe Roll*, 2 Ric. I.). Albert son of Bernard held one carucate of land by the serjeanty of making the gates of the city, and another serjeanty was held in the suburb of Carlisle for finding the iron ‘ad portas de Cardelio’ (*Testa de Nevill*). It is probable that there was but one serjeanty, that of Albert. In that case the second, mentioned in the feodary, was the same serjeanty inherited by co-heiresses.

⁶ Mr. Geo. Neilson has investigated, with his usual ability, the various features of knight’s service in Scotland, his remarks on castle ward and forinsec service being specially valuable. The wards, into which several of the southern counties were divided, resemble the rural areas of the same name in Cumberland, in that they appear to have been associated with ‘constabularies’ as administrative districts connected with royal castles (*Juridical Review*, xi. 71–86).

⁷ *Cumberland Assize Rolls*, 6 Edw. I. No. 132, m. 32d; 20 Edw. I. No. 135, m. 17d.

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the exception of Lyth or Leath, which was included for the most part in the king's demesne of the forest of Cumberland and lay entirely in the old county of Carlisle, each of the divisions was shadowed by the presence of a baronial castle, two of the wards at least being conterminous with baronies. The castle of Egremont was the seat of the *dominus capitalis* of the barony of Coupland, and the castles of Cockermouth and Liddel bore the same relations to Allerdale and Eskdale. The ward services due to the castle of Egremont may be taken as an example of the existence of the institution in the county. We have already spoken of the anomalous character of this barony after its inclusion as a part of Cumberland. On its first appearance in the Pipe Rolls, it is called the county of Coupland¹ and possessed several curious features of a quasi-independence. The position of Egremont as the castle of the so-called county or ward is ascertained by a grant of privileges to the borough of that name by Richard de Luci, lord of the barony, towards the close of the twelfth century.² One can scarcely exaggerate the importance of the services imposed upon the borough of Egremont in their relation to the castle. The evidence of the Luci charter is all the more valuable as it is the solitary instance we possess in illustration of this little understood feudal vassalage as it existed in Cumberland. If war befall, so the charter recites, the burgesses shall find twelve men, with their arms, for the defence of the castle of 'Acrimonte' for forty days at their own proper cost; but afterwards (*in ceteris*) they shall lend him clothes, food, and other merchandise for forty days; and if within that term he pay not their due, they are not bound to lend him other than merchandise until he shall have paid their due. Also they shall give him an aid for knighting one of his sons; another aid for marrying one of his daughters; and, if need be, an aid for ransom of his person or that of his heirs. They shall also give him an aid when the knights of his land contribute. All this shall be done under the oversight of the twelve burgesses, who have not to go outside the gates of the borough on the summons of any one, save only to the door of the castle with the lord or his seneschal. It should be remembered that, though Egremont castle belonged to Luci as tenant in chief, the Crown claimed the oversight of all castles, and the duty of castle guard, though nominally due to the lord, was reckoned among the services due to the king.³

As tenure by cornage has not been classified by the lawyers, it may be worthy of mention that the incidents of wardship and marriage, which were among its obligations, should place it high in the list of free services. At present it is difficult to give it a definite position owing to its promiscuous character. It includes grand serjeanty; it has features like military service; and it approximates to socage. In 1278 the judges decided

¹ *Pipe Rolls*, 24 Hen. II., 3 Ric. I. *et passim*; *Benedict Abbas*, i. 108 (R.S.); *Hoveden*, ii. 88 (R.S.).

² *Transactions of the Cumberland and Westmorland Archaeological Society*, i. 282, where the charters of this borough have been printed in facsimile by the late Rev. E. H. Knowles, honorary canon of Carlisle.

³ Pollock and Maitland, *History of English Law before Edward I.* i. 278-9, 2nd edit.

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that it was 'a certain service and not military service.'¹ At all events, over and above the defensive obligation inherent in it as a frontier tenure, its rank as a free service is obvious from the burdens of ward and marriage. It is scarcely possible to resist a smile when we read of Northumberland jurors delivering a verdict in 1295 that all the tenants-in-chief by cornage in the counties of Cumberland and Westmorland owed wardship (*custodia*) and marriage to the king, but whether a similar obligation rested on the tenants by cornage in Northumberland they were unable to say.² We have already noticed that it was decided in 1238-9 that the wardship of the land of Odard de Wigton, who held by cornage, belonged to the king.³ But a plea of great local interest had come up for judgment at an earlier date. In 1223 William de Fortibus earl of Albemarle was summoned to answer to the king why he detained the moiety of Alice de Rumelly's land belonging to the king by reason of his ward of the daughters and heirs of Richard de Lucy, who were heirs of the said land. The earl pleaded that he held no land in Cumberland of the king by knight's service, nor did his ancestors, but by cornage, and therefore the king should have no ward. Thomas de Muleton, the king's prolocutor, said that the 'Boy of Egremunt' was the king's ward with his whole Honor, and died in ward; after him, his three sisters, from whom all the lands descended, were in his ward and were given in marriage by the king, which the earl did not deny. It was decided by the court that the king should have the ward and the earl was amerced for unjust detention.⁴ The denial that these burdens were inherent in cornage was very rare. The declaration of the services due to the lord from the tenants of the barony of Liddel, on the death of Baldwin de Wake in 1282, may be taken as the usual report of a Cumberland jury on this tenure. The lands were held of the lord by cornage, and the freeholders of these lands paid yearly to the lord, instead of the said cornage, 56s.; and that the lord should answer to the sheriff of Cumberland for the king's use: and they should make suit to the lord's court of Stubhill from three weeks to three weeks, and suit to the mills; and they owed ward and relief, and aid to make the lord's eldest son a knight and to marry his daughter.⁵ It would be superfluous to adduce instances of cornage tenants paying fines for wardship and marriage, as the Pipe Rolls throughout the reign of king John contain many illustrations of these feudal exactions. William Briewere was a notorious trafficker⁶ in heiresses in various parts of the kingdom, and traces of his work are not difficult to find in Cumberland. In 1202 he paid 500 marks⁷ for having one of the daughters of Hugh de Moreville with her whole inheritance

¹ *Coram Rege Roll*, Easter, 6 Edw. I. No. 37, m. 14d, No. 38, m. 7; *English Hist. Review*, v. 631; *Abbrev. Placit.* p. 194b.

² *Inq. p. m.* 23 Edw. I. No. 43; *Calend. Geneal.* ii. 501.

³ *Bracton's Notebook*, No. 1,270, ed. F. W. Maitland.

⁴ *Coram Rege Roll*, 7, 8 Hen. III. No. 17, m. 12d; Bain, *Calendar of Documents*, i. 864.

⁵ *Inq. p. m.* 10 Edw. I. No. 26; Bain, *Calendar of Documents*, ii. 65.

⁶ Dugdale, *Baronage*, i. 700, 701.

⁷ *Pipe Roll*, 4 John; *Rot. de Oblatis*, 3 John, p. 184, Rec. Commission.

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and for liberty to marry her to his son Richard or his nephew Richard Gernun. But the bargain was not as remunerative as he expected, for the reason that Richard de Luci of Egremont, who had married the other co-heiress, made good his claim for his share of the inheritance. A list of the dames and girls in ward of Henry III. will be found among the documents included in the 'Testa de Nevill' collection. There are also instances in abundance that the heirs of cornage tenants paid fines for their relief on succession to property. In the earliest roll of Henry II. Simon de Morevill owed 50 marks for the land of Ralf Engaigne his wife's father, and Peter de Tilliol was charged 50 shillings on inheriting the land of his grandfather. Profits arising from reliefs, wardship and marriages cannot be reckoned as an inconsiderable branch of Crown revenue in the county.

The connection of cornage with serjeanty has been already alluded to as far as it involved service in the king's army on its passage through Cumberland. This relationship is further recognized in the 'Testa de Nevill,' where we find tenants by cornage and by serjeanty grouped together and arrented under one head. The idea of serjeanty as it obtained in the thirteenth century is very difficult to define. While every tenant owed service, says a great authority,¹ it was not every tenant who was a servant or serjeant (*serviens*). The central notion of the tenure seems to have been 'servantship' and not 'service,' for the latter word was used to cover every possible return which one man can make to another for the right of enjoying land. In many cases the tenant by serjeanty not only owed 'service' in this large sense, but was also a 'servant,' such as forester, steward, falconer or messenger, and as such was bound to obey orders within the scope of his employment. The element of serjeanty inherent in cornage, or rather perhaps superimposed upon cornage, was military, for the tenants were obliged to occupy the post of danger as well as of honour *in exercitu Scocie*. The serjeanty of John de Reigny was invested with a more detached military obligation, as he was required to provide an armed horseman for forty days at his own cost. The forms of this tenure found in Cumberland do not offer any great variety. We have notice of at least four serjeanties created by Henry I. Turstan de Reigny was enfeoffed by that king with the manor of Neuton, afterwards known as Newton Reigny, for the service of going in the king's army of Scotland with a hauberk. The vill of Racton or Ratton, now called Raughton, in the parish of Dalston, was granted to one Edwin for keeping the eyries of the king's hawks in the forest of Carlisle, and Hoton, now Hutton-in-the-Forest, was given to Edmund for ward of the hay (*baia*) or enclosure of Plumton. The tenure of Odo de Bochardeby may also be reckoned as a serjeanty instituted by Henry I., though in the sheriff's inquest it is stated that Bochardeby was held by cornage. As the first grantee was Guy the hunter, one of the king's serjeants, surely the confusion may have easily arisen whereby his

¹ Pollock and Maitland, *History of English Law*, i. 282-90, 2nd edit.

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tenure has been denominated a serjeanty in the 'Testa de Nevill.' The other forms which we meet with in local documents display few features of special interest. There were the serjeanties of maintaining the three gates of the city of Carlisle ; of providing bark for the king's pannage and keeping his swine till they were valued ; of carrying his letters or writs in the county ; and of purchasing stores for the king while he sojourned in Yorkshire. It needs scarcely to be pointed out that all these tenures were confined to the demesne lands or the forest of Cumberland¹ and that several of them were connected with sport.

The king's serjeanties in Cumberland and Westmorland were entered among the pleas of the Crown in 1198, and the justices itinerant were instructed to inquire about their present holders, by whom they were enfeoffed, their value, and their service.² From king John's dealings with this tenure, we learn that serjeanties were claimed by him to be inalienable without licence, for he ordered the sheriff of Nottingham and Derby³ to make inquiry about such alienation and the sheriff of Lancaster⁴ to seize all that had been alienated since the coronation of Henry II. The same policy was pursued by Henry III. when he sent out Robert Passelewe⁵ to 'arrent' the alienated serjeanties, that is, to change them to knight's service or socage. The results of the inquisition for Cumberland are contained in the 'Testa de Nevill,' where the alienation of such serjeanties as Penrith, Carleton and Hoton, and their change to knight's service, will be read with interest. From the list of the four serjeanties stated to have been changed to military service it will be noticed that they were reckoned at a value ranging from the tenth to the thirtieth part of a knight's fee. It is quite evident that whatever restraints were laid on alienation or whatever theories the lawyers may have held about their impartibility, they were disregarded in the north-western county. Several of the serjeanties in the list of Passelewe were not only 'lacerated' by partition among co-heiresses, but they were alienated in whole or in part by subinfeudation and in other ways.

Few instances of tenure by drengage have been found in Cumberland, though in the neighbouring county of Westmorland the tenure was common enough. The manors of Gamelsby and Glassanby, held in drengage by Gamel son of Bern and Glassam son of Brictric in the time of

¹ Hutchinson tells a curious story about the tenure of some ten of the principal estates in Castlesowerby, a parish in the forest of Cumberland between Carlisle and Penrith. He says that these estates went by the name of the 'red-spears,' for the owners of the lands were obliged to ride through the town of Penrith on the Tuesday in Whitsun-week, brandishing their spears, for which service they were known as the 'red-knights.' Some of the spears about nine feet in length remained, he says, in the proprietors' houses, where they were usually deposited, till within the eighteenth century (*History of Cumberland*, i. 520). If this story be true, we have in it one of the most ancient features of serjeanty. The 'red-spears' of Castlesowerby were doubtlessly survivals of the 'rod-knights' of Bracton and the 'radchenistres' and 'radmanni' or 'radmans' of Domesday found in large groups in the western counties (Ellis, *Introduction to Domesday*, i. 72-4), whose service consisted in riding with their lords or on their lords' errands (Pollock and Maitland, *History of English Law*, i. 286, 289).

² *Hoveden*, iv. 61-2, ed. Stubbs.

³ *Liber Rubens*, ii. p. cclxxxv. ed. H. Hall.

⁴ *Close Rolls*, 7 John, m. 11 (i. 55a, ed. Hardy).

⁵ *Ibid.*, ii. 38 ; *History of English Law*, i. 334-5.

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Henry I., and their enfranchisement to free service by that king¹ have been already spoken of. The only Crown manor of this tenure mentioned in the feodaries of the Exchequer is Ulnesby or Ousby, which often appears in the Pipe Rolls for various reasons. When king John was making experiments in assessments for scutage, every class of Crown tenants was included in the tax. In 1204 the owners of Ulnesby contributed to the scutage of that year in common with tenants by serjeanty and cornage,² but the experiment does not appear to have been repeated. The drengs of Westmorland were treated in a similar manner. In 1201 seventeen of them, whose names are on record,³ paid the king 50 marks as the price of their exemption from service beyond the sea (*ut remaneant ne transfretent*). But this isolated reference can scarcely be taken as investing the tenure with a military character, inasmuch as the king was dealing with his tenants in an unprecedented way and exacting services for which there was no excuse except the necessities in which he found himself.⁴ That a base tenure like drengage should have been included in this assessment goes a long way to prove that the tenures of the north-western counties, other than tenure by knight's service, were free from royal service beyond their own borders and that the king's claim to assess them to scutage could not be maintained. It must not be taken, because the manors held of the king by drengage were situated close together on the confines of Westmorland, that the tenure was unknown elsewhere in the county. There are traces of it in important manors in other parts of Cumberland, notably on the western coast, but of course not as tenancies in chief. The vill of Helsingham was held in drengage⁵ about 1140 by a certain Alan, who had inherited the vill from his ancestors, when Roger fitz Gilbert gave it to the monks of St. Bees. Early in the thirteenth century Alice de Romili daughter of William fitz Duncan substituted free service for the drengage by which William de Ribton held the manor of Ribelton, as his father Gamel had done before him. The condition of this enfranchisement is not without interest. In addition to a fine of 20 marks paid by the tenant, the *reddendo* of the charter is reckoned at 20 shillings yearly and the free service due by her other tenants, but 'saving the king's forinsec service.'⁶ In this she was following the precedent which Hugh de Morevill had set in Westmorland, when he converted the drengage of some of his tenants into free service.⁷ In 1179 a similar conversion was made in favour of Walter son of Durand, when he paid an annual fine for the quittance of his land from drengage by the king's charter.⁸

Little more may be added to what has been said about the docu-

¹ *Coram Rege Roll*, 2 John, No. 41, m. 9; *Abbrev. Placit.* p. 67a. ² *Pipe Roll*, 6 John.

³ *Oblata*, 2 John, m. 5; *Pipe Roll*, 3 John (Westmorland). The number is reckoned as eighteen in the *Pipe Roll*. ⁴ Stubbs, *Constitutional History*, i. 555, 562, 4th edit.

⁵ *Register of St. Bees*, MS. (Harleian, 434), L. i. 6.

⁶ *Ibid.* L. xiii. 13.

⁷ *Pipe Roll*, 24 Hen. II. (Westmorland).

⁸ *Ibid.* 25 Hen. II. Compare the remarks made by J. Hodgson Hinde on this tenure as it obtained in the northern counties (*Hodgson's History of Northumberland*, pt. i. pp. 253-8). E. W. Robertson shows that the tenure was well known in the southern counties of Scotland (*Historical Essays*, pp. xlv. seq. 138, 139, 165). The liabilities of the dreng will be found in the *Boldon Buke* (Surtees Society).

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ments included under the section of 'Testa de Nevill.' The aid collected by William de Lancastre and Thomas fitz John, which heads the list (No. 1), is so fragmentary that it is difficult to assign to it a certain date. Sir George Duckett has identified it with the 'quinzime' of 1225.¹ From the manuscript of the 'Testa' it would appear that the fees and serjeanties were copied from different documentary sources, as they are separated by a considerable blank space on the page.

The two documents known as 'Knights' Fees' (Nos. ii. and iii.), which are of the greatest possible interest to students of the early history of Cumberland, are the originals from which the copies in the 'Testa de Nevill' have been made. They form the first and second membranes of a series of five stitched together, the remaining three referring to Lancashire. The official view at the Public Record Office that all these membranes belonged to the same inquest was very disconcerting in face of the internal evidence of those relating to Cumberland and Westmorland.² One felt it impossible to accept the statement that the roll of 'king's wards' on the first membrane could be of the same date as the sheriff's return on the second, which is inscribed with the contemporary endorsement of 'the morrow of St. John the Baptist,' 14 John (June 25, 1212). A comparison of the handwriting of the two membranes was enough to shake confidence in the correctness of the official view. Apart from this, the internal evidence is overwhelming and conclusive that the inquest of 'wards' was taken in the early years of the reign of Henry III. and not in the reign of king John.³ In comparing these membranes with the transcripts in the 'Testa de Nevill,' the faithfulness of the scribe who made the copies is very striking. Meeting with 'T'te' in the 'roll of wards,' he copied it without alteration; but when the same name, extended to 'Truite,' occurred in the sheriff's return on the second membrane, he misread it as 'Grinte,' and so copied it. Few who consult the original record will blame the copyist for his error.

The last document (No. vi.), taken from the 'Red Book of the Exchequer' and not included in the 'Testa de Nevill,' appears to be a summary of the sheriff's inquest of 1212⁴ (No. iii.). For that reason

¹ *Duchetiana*, p. 142; *Close Rolls*, ii. 147, ed. Hardy.

² The first membrane begins with the 'Comitatus de Appelby,' and contains only a few entries under that head. Then follows the 'Comitatus Cumberland,' which has been printed in the text.

³ The whole tenor of the roll (No. 2) assumes that it was drawn up in the reign of Henry III. For example, it is said that dame Helewisa de Stutevill was in the *king's gift* and not married, but that she had made fine with *king John* that she might be in her own gift. The inference is obvious. But the historical statements are more conclusive. Let us take only the list of 'churches which are of the king's gift in Cumberland.' It is said that the church of 'Soureby' was held by 'Lodovicus' and the church of 'Penred' by Ralf de Nevell, both of the gift of king John. On reference to the Patent Rolls we find that 'Lodovicus de Rockingeham' was presented to Soureby in 1214 (*Rot. Pat.* 15 John, m. 4, p. 109b), and that Ralf de Nevill was presented to 'Penred' in 1215 (*Ibid.* 17 John, m. 24, p. 142). Many such instances might be given to show that the 'roll of wards, escheats, serjeanties, and churches' must have been made long after the great inquest of service of 1212.

⁴ The date of the 'Red Book' inquisitions has been discussed by Mr. J. H. Round in his chapter on 'The great inquest of service, 1212,' in *The Commune of London and other Studies*, pp. 261-77. The official view is set forth in *The Red Book of the Exchequer*, ii. pp. ccxxii.-ccxxx. ed. H. Hall, Rolls Series. Mr. Round's view is that the 'Testa' gave the returns of 1212 from the sheriff's inquest, while the *Liber Rubens* scribe only summarized their results independently for his own purpose.

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perhaps it was omitted from the 'Testa' by the compiler. A comparison of the documents brings out some points of curious interest. The sections (Nos. iv. and v.) of the 'serjeanties arrented by Robert Passelewe in the time of king Henry son of king John' form a collection of heterogeneous documents of different dates shovelled together and compiled into lists. The greatest care will have to be exercised if it be considered needful to disentangle them. The list printed by the Master of the Rolls from the 'Red Book' (ii. 462-3) should be compared with that of the 'Testa de Nevill' for the purpose of identifying the names of the tenants, which have been mauled almost beyond recognition by the various scribes.

NOTE A

The southern boundary of the Brus fief was afterwards declared definitely as 'aqua de Esk que dividit meam terram et terram Cumbrie' in charters granted by members of that family between 1180 and 1290 to the abbey of Melrose (*Harleian MS.* 3911, ff. 102b-5). See also the grant to Ivo de Kirkpatrick about 1190 (*Drumlanrig Castle MSS.*, pp. 38-9, *Hist. MSS. Com.* 15th Report, App. pt. viii.). The centre of the stream was the boundary under March Law during the thirteenth century (*Acts Parliam. Scot.* i. 416; Neilson, *Annals of the Solway*, pp. 42-3). In that case the quadrangular strip of territory between the Esk and Sark was stolen from Scotland in 1552. That was not so, for the barony of Liddel, created by Ranulf Meschin, extended into Scotland beyond the Esk and Liddel, and the owners exercised baronial rights further north than the present boundaries between the two kingdoms (*Nat. MSS. of Scotland*, i. No. 38; *Chancery Miscell. Portfolios*, No. $\frac{41}{126}$; Bain, *Calendar of Documents*, ii. 1606). During the reign of Henry I. the international boundary is very difficult to define. A 'debatable land' must have existed at this very early period.

NOTE ON DOMESDAY BOOK

It has been thought advisable to include the small section of Domesday Book, a portion of which relates to the south-west angle of Cumberland, in the list of documents connected with the early history of the county. The translation is made from the printed book (i. 301*b*) and the names of places are reproduced without alteration. It will be noticed that the amount of land in each vill is expressed in carucates, but the measure of the carucate varied greatly according to time and place. The essential portion of the plough (*caruca*) was its team of oxen, eight in number. The place names of Witingham, Bodele and Santacherche are now known in Cumberland as Whicham, Bootle and Kirksanton respectively. Most of the other names can be identified in the district called 'Lancashire north of the sands.'

THE KING'S LAND IN EURUIC SCIRE, WEST REDING

AGEMUNDRENESE

M[anor]. In Hougūn earl Tosti had (*bb*) 4 carucates of land for geld; 3 carucates in Chiluestreuic; 3 carucates in Sourebi; 4 carucates in Hietun; 2 carucates in Daltune; 2 carucates in Warte; 6 carucates in Neutun; 6 carucates in Walletun; 2 carucates in Suntun; 2 carucates in Fordebodele; 6 carucates in Rosse; 2 carucates in Hert; 6 carucates in Lies; 2 carucates in the other Lies; 2 carucates in Glassertun; 2 carucates in Steintun; 4 carucates in Cliuerton; 3 carucates in Ouregrave; 4 carucates in Meretun; 2 carucates in Pennigetun; 2 carucates in Gerleuuorde; 6 carucates in Borch; 4 carucates in Berretseige; 4 carucates in Witingham [Whicham]; 4 carucates in Bodele [Bootle]; 1 carucate in Santacherche [Kirksanton]; 6 carucates in Hougenai. All these vills belong to (*jacēt ad*) Hougūn.

NOTE ON THE PIPE ROLLS

The translation of the Pipe Roll 31 Henry I. has been made from the printed book of the Record Commission, and agrees in substance with that of Mr. Joseph Bain in the *Calendar of Documents relating to Scotland*. The section containing the account of William son of Alured has been omitted, as having no connection with Cumberland. The text used for subsequent Rolls is that of Mr. J. Hodgson Hinde published in 1847 for the Society of Antiquaries of Newcastle-upon-Tyne. His translation, as far as it goes, has been compared with that given in the following pages. The names of persons and places have been carefully reproduced as they are found in the record. There is no account for Cumberland for the seventeenth year of king John.

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[31 *Hen. I.* 1130—*Roll* 14*d*]

CARLISLE [CHAERLEOLIUM]

Hildret renders account of 14*l.* 16*s.* 6*d.* of the old farm¹ of CARLISLE and of the King's manors. For the works of the city of CARLISLE [Cærleolium], viz. for making the wall round the city, he has paid 14*l.* 16*s.* 6*d.* and is quit. And the same Hildret for the new farm.¹ In the treasury, 45*l.* 10*s.* And in appointed payments, 113*s.* 4*d.* And in lands granted by the King's writ to Richard the knight, 13*s.* 4*d.* of land. And he owes 4*l.* 5*s.* 8*d.*

And the same Hildret renders account of 3 ounces of gold and 15*d.* by weight. He has paid it into the treasury and is quit.

William son of Bald[win] renders account of 30*s.* of the old farm of the King's garden of CARLISLE. He has paid it into the treasury and is quit. And the same William owes 30*s.* of the farm of the same garden of this past year.

Richard the knight owes 9*l.* 16*d.* of the geld of animals of the fifth year.² But it remains in the domain manors of the King.

And the same Richard owes 8*l.* of the geld of animals of the fourth year. But it likewise remains in the domain manors of the King.

And the same Richard owes 73*s.* 6*d.* of the geld of animals of the third year.

And the same Richard renders account of 80*l.* 108*s.* 8*d.* of the geld of animals of the past year. In the treasury, 62*l.* And in gifts by the King's writ to the canons of St. Mary of CARLISLE, 10*l.* to the work of their church. And in pardons³ by the King's writ to the canons of St. Mary of CARLISLE, 37*s.* 4*d.* And in work of the wall of the city of CARLISLE, 6*l.* 2*s.* And he owes 6*l.* 9*s.* 4*d.*

And the same Hildret renders account of 80*l.* 108*s.* 8*d.* of the geld of animals. In the treasury, 31*l.* 16*s.* And in payments by the King's writ to the knights and serjeants (*militibus et servientibus*) of CARLISLE, 42*l.* 7*s.* 7½*d.* And in pardons by the King's writ to the canons of St. Mary of CARLISLE, 37*s.* 4*d.* And he owes 9*l.* 7*s.* 9*d.*

And the same Richard renders account of

¹ The word 'farm' has been used throughout as the equivalent of *firma*, that is the sum for which a county, town, or estate was 'farmed' from the Crown. By the 'old' farm is meant that of a preceding year; by the 'new' farm, that of the current year.

² *i.e.* four years back.

³ *i.e.* remissions.

20*s.* for the farm of his own land. He has paid it into the treasury and is quit.

Hildret and Odard his son render account of 40*s.* for the concession of the land of Gamel son of Ber[nard]. They have paid it into the treasury and are quit.

Herueius de Vecey owes 10*l.* for the wife of Suein son of Alric with her dower.

The burgesses of CARLISLE render account of 100*s.* of the old farm of the Silver Mine. They have paid it into the treasury and are quit.

William and Hildret ought to render account of 40*l.* for the farm of the Silver Mine of this year past.

Odard the sheriff renders account of 10*l.* of the old farm for the pleas of CARLISLE [Cærleoil] which pertain to the sheriffdom. He has paid it into the treasury and is quit.

And the same Odard owes 10*l.* of the farm of this past year for the pleas of CARLISLE which pertain to the sheriffdom.

And the same sheriff owes 55*s.* of the minute pleas of W[alter] Espec and Eustace son of John.

And the same sheriff owes 4 marks of silver of the other pleas of W[alter] Espec and Eustace son of John.

NEW PLEAS AND NEW AGREEMENTS

Roger de Stoch owes two coursers for the land and houses which were of Gueri the Fleming in CARLISLE.

Richard the knight owes 5 marks of silver for the land which was Etard's, by such service as any other freeman should make for his land.

[4 *Hen. II.* 1158—*Roll* 2, *membrane* 2]

CARLISLE [CARLEOLIUM]

Robert son of Troite renders account of the farm of CARLISLE. In the treasury, 55*l.* 3*s.* 8*d.* And to the knights of the Temple, one mark of silver. And in the corrody prepared against the arrival of the King, which he gave to Hubert de Vall[ibus], 11*l.* 3*s.* by the King's writ. And he has of surplus 100*s.* And the same sheriff renders account of 80*l.* 10*s.* 8*d.* of the notegild. In the treasury, 57*l.* And in pardons by the King's writ: to Hubert de Vall[ibus], 18*l.* 13*s.* 3*d.*; and to the canons of CARLISLE, 37*s.* 4*d.*; and in the waste of the King's domains, 60*s.*; and he is quit. And the same sheriff renders account of 50 marks of

THE PIPE ROLLS

silver of the gift of the county. In the treasury, 29*l*. And in pardons by the King's writ to Hubert de Vall[ibus], 63*s*. 10*d*. ; and to the sheriff, 23*s*. ; and he is quit. And the same sheriff renders account of 20*l*. of the gift of the city of CARLISLE. He has paid it into the treasury and is quit.

Ralf de Feritate renders account of 5 marks of silver. He has paid it into the treasury and is quit.

Finthor renders account of 5 marks for 1 ox. He has paid it into the treasury and is quit.

Gospatriz son of Orm renders account of 20*s*. He has paid it into the treasury and is quit.

Simon de Morevill owes 50 marks for the land of Ralf Engaigne.

Gospatric son of Mapbennoc owes 50 marks of silver for the land of Carlatun.

Gillo the forester owes 5 marks for a plea.

Peter de Tilliol owes 50*s*. for the land of his grandfather.

Stephen son of Wascelin owes 3 marks of silver for a plea.

William de Essebi owes 5 marks of silver for the King's writ that he may not answer till the King returned to England.

Turgis Bradfot owes 1 mark of silver for a right.

William son of Erembald renders account of 100 marks of silver of the farm of the Mine. He has paid it into the treasury and is quit.

[5 *Hen. II. 1159—Roll 5, m. 2*]

Robert son of Troite renders account of the farm of CARLISLE and of the city and of the manors. In his surplus,¹ 100*s*. And in the treasury 80*l*. 56*s*. 3*d*. in two tallies. And in alms newly appointed to the knights of the Temple, one mark. And in gifts by the King's writ to Adam son of Suein, 100*s*. ; and to Henry son of Suein, 10*l*. 10*s*. 9*d*. in corn from Langwadebi.² And in lands granted to Henry son of Suein, 10*l*. in Langwadebi and in Edenhal. And he is quit.

Simon de Morevill renders account of 50 marks for the land of Ralf Engaigne. He has paid it into the treasury and is quit.

Gospatric son of Mapbennoc renders account of 50 marks. He has paid it into the treasury in two tallies and is quit.

Gillo the forester renders account of 5 marks of a plea. In the treasury, 33*s*. 4*d*. And he owes 33*s*. 4*d*.

Peter de Tilli renders account of 50*s*. for

¹ *i.e.* standing to his credit.

² Now Langwathby.

the land of his grandfather. He has paid it into the treasury and is quit.

Stephen son of Wascelin renders account of 3 marks for a plea. He has paid it into the treasury and is quit.

William de Essebi renders account of 5 marks by the King's writ that he may not answer. In the treasury, 33*s*. 4*d*. And he owes 33*s*. 4*d*.

Turgis Bradfot renders account of one mark. He has paid it into the treasury and is quit.

William son of Erembald renders account of 100*l*. of the farm of the Mine. He has paid it into the treasury and is quit.

NEW PLEAS AND NEW AGREEMENTS

The same sheriff renders account of 60 marks of the gift of the knights of Cumberland. He has paid it into the treasury and is quit. The same sheriff renders account of 20 marks of the gift of the borough (*burgus*) of CARLISLE. He has paid it into the treasury and is quit.

The clerks of Cumberland owe 16*l*.

The same sheriff renders account of 80*l*. 10*s*. 8*d*. of the noutegild. In the treasury, 52*l*. 8*s*. And in pardons by the King's writ : to Hubert de Vall[ibus], 18*l*. 13*s*. 3*d*. ; and to the canons of CARLISLE, 37*s*. 4*d*. ; and to Henry son of Suein, 54*s*. 2*d*. ; and to the sheriff, 23*s*. 3*d*. ; and in waste of the King's domains, 60*s*. ; and to the bishop of Candida Casa, 14*s*. 8*d*. And he is quit. The same sheriff renders account of gold of 2 pennyweights (*de auro ponderis ij*d**). He has paid it into the treasury and is quit.

[6 *Hen. II. 1160—Roll 5, m. 2*d**]

Robert son of Troite renders account of the farm of CARLISLE [Carleolum], and of the city, and of the manors. In the treasury, 75*l*. 4*s*. 2*d*. And in alms newly appointed to the knights of the Temple, 1 mark. And in payments by the King's writ to William Cade, 28*l*. 9*s*. 7*d*. And in lands granted to Henry son of Suein, 10*l*. in Langwadebi and in Edenhal. And he has of surplus 6*s*. 9*d*.

Gillo the forester and William de Essebi render account of 66*s*. 8*d*. They have paid it into the treasury and are quit.

NEW PLEAS AND NEW AGREEMENTS

The same sheriff renders account of 12*l*. 5*s*. 4*d*. of pleas. He has paid it into the treasury in two tallies and is quit. The same sheriff renders account of the notegild of 80*l*. 10*s*. 8*d*. In the treasury, 52*l*. 3*s*. 10*d*. And in pardons by writ : to Hubert de Vall[ibus],

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18*l.* 13*s.* 3*d.*; and to the canons of CARLISLE, 37*s.* 4*d.*; and to Henry son of Suein, 54*s.* 2*d.*; and to the sheriff, 33*s.* 3*d.*; and in waste of the King's domains, 60*s.*; and to the bishop of Candida Casa, 14*s.* 8*d.*; and to Robert de Brus, 24*s.* And he has of surplus 3*s.* 5*d.*

William son of Holdegar renders account of 100*l.* for the mine. He has paid it into the treasury and is quit.

[7 *Hen. II.* 1161—*Roll* 6, *m.* 1*d*]

Robert son of Troite renders account of the farm of CARLISLE. In his surplus¹ 6*s.* 9*d.*; and in the treasury, 100*l.* 67*s.* And in the appointed alms to the knights of the Temple, 1 mark. And in lands granted to Henry son of Suein, 10*l.* in Langwadebi and in Edenhal. And he has of surplus 6*s.* 9*d.* And the same sheriff renders account of 80*l.* 10*s.* 8*d.* of the notegild. In his surplus, 3*s.* 5*d.*; and in the treasury, 51*l.* 15*s.* 3*d.* And in pardons by the King's writ: to the canons of CARLISLE, 37*s.* 4*d.*; and to Hubert de Vall[ibus], 18*l.* 13*s.* 3*d.*; and to Henry son of Suein, 53*s.* 2*d.*; and to Adam de Brus, 24*s.*; and to the sheriff, 23*s.* 3*d.*; and in the waste of the manors, 60*s.* And he is quit.

William son of Holdegar renders account of 100*l.* for the mine. He has paid it into the treasury and is quit.

NEW PLEAS AND NEW AGREEMENTS

The same sheriff renders account of 36*l.* 13*s.* 4*d.* of the knights of CARLISLE. In the treasury, 16*l.* 13*s.* 4*d.* And in payments by the King's writ to William Cade, 20*l.* And he is quit. And the same sheriff renders account of 20 marks for his amercement (*misericordia*). In payments to William Cade, 6 marks. And he owes 12 marks.

[8 *Hen. II.* 1162—*Roll* 4, *m.* 2*d*]

Robert son of Troite renders account of the farm of CARLISLE. In his surplus, 6*s.* 9*d.*; in the treasury, 100*l.* 63*s.* And in the appointed alms to the knights of the Temple, 1 mark. And in lands granted to Henry son of Suein, 10*l.* in Langwadebi and in Edenhal. And he is quit. The same sheriff renders account of 80*l.* 10*s.* 8*d.* of the notegild. In the treasury, 50*l.* And in pardons by the King's writ: to the canons of CARLISLE, 37*s.* 4*d.*; and to Hubert de Vall[ibus], 18*l.* and 1 mark; and to Henry son of Suein, 54*s.* 2*d.* . . .; and to Adam de Bruis, 24*s.*; and to Reginald de

Luci, 56*s.*; and to the sheriff, 23*s.* 3*d.*; and to John Cumin, 2*s.* 9*d.* And in his surplus of his farm, 2*s.* . . . And he owes of his amercement 13 marks.

William son of Holdegar renders account of 100*l.* of the mine. He has paid it into the treasury and is quit.

[9 *Hen. II.* 1163—*Roll* 1, *m.* 1*d*]

Robert son of Troite renders account of the farm of CARLISLE. In the treasury, 53*s.* 4*d.* And in the appointed alms to the knights of the Temple, 1 mark. And in lands granted to Henry son of Suein, 10*l.* in Langwadebi and Edenhala. And in carriage of the King's venison, 13*s.* And to Geoffrey Monk (*Monaco*) and Ralf son of Stephen, 100*l.* for the King's corrody by his writ. And he owes 8*d.*

William son of Holdegar renders account of 100*l.* of the mine of CARLISLE and of 20*l.* of the mine of Yorkshire. He has paid it into the treasury in 2 tallies and is quit.

NEW PLEAS AND NEW AGREEMENTS

Warin priest (*presbiter*) of Chircheland renders account of 7 marks of the pleas of Richard de Luci.² He has paid it into the treasury and is quit.

Gospatric son of Orm renders account of 90 marks of the pleas of the same. In the treasury, 60 marks. And he owes 30 marks.

William son of Wulvric renders account of 40*s.* of the same pleas. He has paid it into the treasury and is quit.

Robert son of Bene renders account of 4*l.* 13*s.* 4*d.* of the pleas of the same. He has paid it into the treasury and is quit.

William de Essebi renders account of 8*l.* of the pleas of the same. He has paid it into the treasury and is quit.

Ulf de Appelbi renders account of 1 mark of the pleas of the same. He has paid it into the treasury and is quit.

Adam de Munbegun renders account of 1 mark of the pleas of the same. He has paid it into the treasury and is quit.

Vhtred son of Fergus renders account of 53*s.* 4*d.* of the pleas of the same. He has paid it into the treasury and is quit.

Isaac de Torpennoc renders account of 26*s.* 8*d.* of the pleas of the same. He has paid it into the treasury and is quit.

The same sheriff renders account of 1 mark of the assarts of Chircheland of the pleas of the same. He has paid it into the treasury and is quit.

¹ *i.e.* standing to his credit.

² *i.e.* the pleas held before him.

THE PIPE ROLLS

Ralf son of Bald[win] renders account of 26s. 8d. of the pleas of same. He has paid it into the treasury and is quit.

Reginald de Wiggeton renders account of 1 mark of the same pleas. He has paid it into the treasury and is quit.

Gospatric son of Beloc renders account of 20s. of the pleas of the same. He has paid it into the treasury and is quit.

The men of Great Crossebi render account of 20s. of the pleas of the same. They have paid it into the treasury and are quit.

The men of Brettebi render account of 26s. 8d. They have paid it into the treasury and are quit.

The men of Greneric render account of 1 mark of the pleas of the same. They have paid it into the treasury and are quit.

Ailward the son of Dolfin renders account of 1 mark of the pleas of the same. He has paid it into the treasury and is quit.

Chirchebrid [Kirkbride] renders account of 1 mark of the pleas of the same. It has paid it into the treasury and is quit.

The same sheriff renders account of the notegild. In the treasury 52l. And he owes 28l. 10s. 8d. And the same renders account of the same debt. In pardon by the King's writ to Hubert de Vall[ibus], 18l. 13s. 3½d. And he owes 9l. 17s. 5d.

[10 *Hen. II.* 1164—*Roll 1, m. 1*]

Robert son of Troite renders account of 8d. of the old farm of CARLISLE. He has paid it into the treasury and is quit. And the same of the new farm. In the treasury, 100l. 67s. by tale. And in the appointed alms to the knights of the Temple, 1 mark. And in lands granted to Henry son of Suein, 10l. in Langwadebi and in Edenhal. And he is quit.

William the moneyer renders account of 200l. of the mine of CARLISLE. He has paid it into the treasury and is quit.

The same sheriff renders account of 9l. 17s. 5d. of the old notegild. He has paid it into the treasury and is quit. The same sheriff renders account of the new notegild. In the treasury, 45l. 13s. 6d. And in pardon by the King's writ to Henry son of Suein, 30s. 3d. And he owes 33l. 6s. 4d. The same renders account of the same debt. In pardons by the King's writ: to Hubert de Vall[ibus], 18l. 13s. 3d.; and to the canons of CARLISLE, 74s. 8d. And in payments by the King's writ to William Cade, 4l. 4s. 3d. And also in pardon to John Cumin, 2s. 9d. And he owes 6l. 11s. 5d. The same sheriff renders account of the farm of lands escheated

—Olde Salehhild and Hobrihtebi,¹ 2 carucates of land and 1 tan mill (*molendini Tancret*). In the treasury, 4l. 13s. 4d.

Gospatric son of Orm owes 20l. of the pleas of Richard de Luci.

[11 *Hen. II.* 1165—*Roll 6, m. 1d*]

THE MINE OF CARLISLE

William son of Erembald renders account of 266l. 13s. 4d. of the mine. In the treasury, 265l. 8s. 7d. And for halberioles to the King's use, 24s. 9d. And he is quit.

CARLISLE

Robert son of Trote renders account of the farm of CARLISLE. In the treasury, 100l. 56s. 6d. And in the appointed alms to the knights of the Temple, 1 mark. And in lands granted to Henry son of Suein, 10l. in Langwadebi and in Edenhal. And in the work of the gates of CARLISLE, 10s. 6d. And he is quit. The same sheriff renders account of 6l. 11s. 5d. of the old notegild. In the treasury, 75s. 5d. And in pardon by the King's writ to Reinald de Luci, 4 marks 2s. 8d. And he is quit. And the same renders account of the new notegild. In the treasury, 53l. 6s. 8d. And in pardons by the King's writ: to William de Nevill, 106s. 8d.; and to the canons of CARLEOL, 37s. 4d.; and to Robert de Vals, 18l. 13s. 3d. by the King's charter. And he owes 26s. 9d. The same sheriff renders account of 4l. 13s. 4d. of the farm of Aldesalehhild and Hobrihtebi—2 carucates of land and 1 tan mill. He has paid it into the treasury and is quit.

Gospatric son of Orm renders account of 20l. of the pleas of Richard de Luci. In the treasury, 7l. And he owes 13l.

William de Fraisneto owes 5 marks for right of land.²

[12 *Hen. II.* 1166—*Roll 6, m. 2d*]

Robert Troite renders account of the farm of CARLISLE. In the treasury, 97l. 18s. 7d. And in the appointed alms to the knights of the Temple, 1 mark. And in lands granted to Henry son of Suein, 10l. in Langwadebi and Edenhal; and to Simon de Morevill, 18s. 4d. in Leisingebi³ by the King's writ while it pleased him. And paid to (*in liberatione*) the chancellor of the king of Ireland, 4l. 10s. 1d. by the King's writ. And he is

¹ Old Salkeld, now Little Salkeld, and Upperby.

² For establishing his right to land.

³ Now Lazonby.

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quit. The same sheriff renders account of 26*s.* 9*d.* of the old notegild. He has paid it into the treasury and is quit. The same sheriff renders account of the new notegild. In the treasury, 58*l.* 13*s.* And in pardons by charter of the King to Robert de Vals, 18*l.* 13*s.* 3*d.*; and to the canons of CARLISLE, 37*s.* 4*d.* And he owes 27*s.* 1*d.* The same sheriff renders account of 4*l.* 13*s.* 4*d.* of the farm of Aldesallehhild and of Hobrihtebe. He has paid it into the treasury and is quit.

Gospatric son of Orm renders account of 13*l.* of the pleas of Richard de Luci. In the treasury, 6*l.* 10*s.* And he owes 6*l.* 10*s.*

William de Fraisneto owes 5 marks for a right of land, but he is not in Cumberland.

. . . de Morevill renders account of the rent (*census*) of the forest of Cumberland. In the treasury, 5 marks.

THE MINE OF CARLISLE

William son of Holdegar renders account of 500 marks for 2 mines. He has paid it into the treasury and is quit.

[The same] sheriff renders account of 29*s.* 6*d.* of the chattels of 3 thieves. He has paid it into the treasury and is quit.

[William] de Berherge owes 1 mark for the King's highway ploughed.¹

[The men] of Stainton owe 1 mark for the same complaint (*loquela*).

[13 *Hen. II.* 1167—*Roll* 22, *m.* 2*d*]

Robert Troite renders account of the farm of CARLISLE. In the treasury, 98*l.* 10*s.* 2*d.* And in the appointed alms to the knights of the Temple, 1 mark. And in lands granted to Henry son of Suein, 10*l.* in Langwadebi and in Edenhal; and to Simon de Morevill, 13*s.* 9*d.* in Leisingebi by the King's writ while the same Simon lived. And in conducting prisoners to York from CARLISLE, 11*s.* 8*d.* by the King's writ. And he owes 4*s.* 11*d.* The same renders account of the same debt. He has paid it into the treasury and is quit. The same sheriff renders account of 27*s.* 1*d.* of the old notegild. He has paid it into the treasury and is quit. The same of the new notegild. In the treasury, 60*l.* 1*d.* And in pardons by the King's charter to Robert de Vals, 18*l.* 13*s.* 3*d.*; and to the canons of CARLISLE, 37*s.* 4*d.* And he is quit.

THE MINE OF CARLISLE

William son of Erembald renders account of 500 marks of the mine of CARLISLE. In

¹ *i.e.* encroaching on it.

the treasury, 308*l.* 10*s.* 8*d.* And for lead for the King's houses at Windsor, 10*l.* 3*s.* by the King's writ. And he owes 14*l.* 13*s.*

The same sheriff renders account of 4*l.* of the farm of Alde Salehhild, land escheated. He has paid it into the treasury and is quit. The same sheriff renders account of 20*s.* of Hobrihtebe. He has paid it into the treasury and is quit. The same sheriff renders account of 25*s.* for the tan mill in this year. He has paid it into the treasury and is quit.

Gospatric son of Orm renders account of 6*l.* 10*s.* of the pleas of Richard de Luci. He has paid it into the treasury and is quit.

William de Fraisneto owes 5 marks for a right of land, but he is nowhere found.

The same sheriff renders account of 1 mark for William de Berherge for the King's highway ploughed, of the pleas of earl Geoffrey and Richard [de Luci]. He has paid it into the treasury and is quit. The same sheriff renders account of 1 mark for the men of Stanton for the same complaint.

OF THE PLEAS OF ALAN DE NEVILL OF THE FOREST

The same sheriff renders account of half a mark for Creistoch² for a mill made in the forest. He has paid it into the treasury and is quit. The same sheriff renders account of 10*s.* for Penred Regis.³ He has paid it into the treasury and is quit. The same sheriff renders account of half a mark for Scottebi Regis. He has paid it into the treasury and is quit. The same sheriff renders account of half a mark for Corchebi,⁴ of William son of Odard. He has paid it into the treasury and is quit. The same sheriff renders account of half a mark for Kircoswall,⁵ . . . de Morevill. He has paid it into the treasury and is quit. The same sheriff renders account of 1 mark for Robert clerk of . . . of the forest. He has paid it into the treasury and is quit. The same sheriff renders account of 1 mark for Godel . . . He has paid it into the treasury and is quit. The same sheriff renders account of 1 mark for Roger . . . He has paid it into the treasury and is quit. The same sheriff renders account of half a mark for . . . He has paid it into the treasury and is quit. The same sheriff renders account of . . . marks for the rent (*census*) [of the forest of] Cumberland. He has paid it into the treasury and is quit.

² Greystoke.

⁴ Now Corby.

³ Penrith.

⁵ Kirkoswald.

THE PIPE ROLLS

[14 *Hen. II.* 1168—*Roll 7, m. 2d*]

Robert Troite renders account of the farm of CARLISLE. In the treasury, 100*l.* 27*s.* by tale. And in the appointed alms to the knights of the Temple, 1 mark. And in lands granted to Henry son of Suein, 10*l.* in Langwadebi and Edenhal. And for removing the gate of the castle (*castellum*) of CARLISLE [Cardel], 40*s.* by the King's writ. And he is quit. The same sheriff renders account of the notegild. In the treasury, 60*l.* 1*d.* And in pardons by the King's charter to Robert de Vals, 18*l.* 13*s.* 3*d.*; and to the canons of CARLISLE, 37*s.* 4*d.* And he is quit.

OF PURPRESTURES

The same sheriff renders account of 4*l.* of the farm of Alde Salechild, land escheated. He has paid it into the treasury and is quit. The same sheriff renders account of 20*s.* for Hobrichtebi. He has paid it into the treasury and is quit. The same sheriff renders account of 25*s.* for the tan mill. He has paid it into the treasury and is quit. The same sheriff renders account of 20*s.* for the tan mill of the farm of the third year. He has paid it into the treasury and is quit. The same sheriff renders account of 10 marks of the tax of the forest of Cumberland. He has paid it into the treasury and is quit. The same sheriff renders account of 7*l.* for the pannage of the forest of Cumberland. He has paid it into the treasury and is quit.

William de Frainsner owes 5 marks for a right of land, but he is nowhere found.

NEW PLEAS AND NEW AGREEMENTS OF THE PLEAS OF RICHARD DE LUCI

John de Erlea owes 1 mark, but he is not found.

Robert son of Bien renders account of 10 marks. In the treasury, 5 marks. And he owes 5 marks.

Walter the porter owes 40*s.*

Adam son of Edmund renders account of 20*s.* for his relief. He has paid it into the treasury and is quit.

THE MINE OF CARLISLE

William son of Erembald renders account of 14*l.* 13*s.* of the old farm of the mine. He has paid it into the treasury and is quit. The same of the new farm. In the treasury, 284*l.* 7*s.* And for 55 cartloads of lead delivered to the sheriff of Northumberland to be carried to Caen, 24*l.* 15*s.* by the King's writ. And he owes 24*l.* 4*s.* 8*d.*

[15 *Hen. II.* 1169—*Roll 8, m. 2d*]

Robert Troite renders account of the farm of CARLISLE. In the treasury, 80*l.* 6*s.* 10*d.* And in the appointed alms to the knights of the Temple, 1 mark. And in lands granted to Henry son of Suein, 10*l.* in Langwadebi and in Edenhal. And in the cost and conduct (*conductu*) of the son of Sunnulf and his companions, 40*s.* by the King's writ. And he owes 40*s.* 2*d.* The same sheriff renders account of the notegeld. In the treasury, 60*l.* 1*d.* And in pardons by the King's charter to Robert de Vals, 18*l.* 13*s.* 3*d.*; and to the canons of CARLISLE, 37*s.* 4*d.* And he is quit.

OF PURPRESTURES AND ESCHEATS

The same sheriff renders account of 4*l.* of the farm of Aldesalechild, land escheated. He has paid it into the treasury and is quit. The same sheriff renders account of 20*s.* for Hobrichtebi. He has paid it into the treasury and is quit. The same sheriff renders account of 25*s.* for the tan mill. He has paid it into the treasury and is quit. The same sheriff renders account of 10 marks for the rent of the forest of Cumberland. He has paid it into the treasury and is quit.

William de Frainsneto owes 5 marks for a right of land, but he is nowhere found. John de Erlea owes 1 mark, but he is not found.

Robert son of Bien renders account of 5 marks. He has paid it into the treasury and is quit.

Walter the potter (*pottarius*)¹ renders account of 40*s.* for his relief. He has paid it into the treasury and is quit.

NEW PLEAS AND NEW AGREEMENTS

The same sheriff renders account of 40*s.* for his amercement. He has paid it into the treasury and is quit.

OF THE AID TO MARRY THE KING'S DAUGHTER

The same sheriff renders account of 20 marks of the aid of four of the King's domain manors to marry the King's daughter. He has paid it into the treasury and is quit.

The burgesses of CARLISLE render account of 50 marks of the same aid. They have paid it into the treasury and are quit.

¹ This is the Walter 'portarius' of the preceding year. The latter entry is more likely to be right, as a man who held his land by a serjeanty connected with the city gate was sometimes styled 'portarius.'

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The same sheriff renders account of 50 marks of the debt of the county for defaults and amercements. In the treasury, 26*l.* 18*s.* 5*d.* And he owes 6*l.* 8*s.* 4*d.*

Robert de Vals renders account of 2 marks for the fee of 2 knights. He has paid it into the treasury and is quit.

THE MINE OF CARLISLE

William son of Erenbald renders account of 24*l.* 4*s.* 8*d.* of the old farm of the mine of CARLISLE. He has paid it into the treasury and is quit. And the same of the new farm. In the treasury, 270*l.* And he owes 63*l.* 6*s.* 8*d.*

[16 *Hen. II.* 1170—*Roll 2, m. 1a*]

Robert Troite renders account of 40*s.* 2*d.* of the old farm of CARLISLE. He has paid it into the treasury and is quit. And the same of the new farm. In the treasury, 100*l.* 67*s.* by tale. And in the appointed alms to the knights of the Temple, 1 mark. And in lands given to Henry son of Suein, 10*l.* in Langwadebi and in Edenhal. And he is quit. The same sheriff renders account of the notegild. In the treasury, 60*l.* 1*d.* And in pardons by liberty of the King's charter to Robert de Vals, 18*l.* 13*s.* 3*d.*; and to the canons of CARLISLE, 37*s.* 4*d.* And he is quit.

OF PURPRESTURES AND ESCHEATS

The same sheriff renders account of 4*l.* of the farm of Aldesalechild; and of 20*s.* for Hobrihtebi; and of 30*s.* for the tan mill. He has paid it into the treasury in 3 tallies and is quit. The same sheriff renders account of 11 marks of the rent of the forest of Cumberland. He has paid it into the treasury and is quit.

William de Fraisneto owes 5 marks for a right of land, but he is nowhere found. John de Erlea owes 1 mark, but he is not found.

OF THE AID TO MARRY THE KING'S DAUGHTER

The same sheriff owes 6*l.* 8*s.* 3*d.* of the debt of the county for defaults and amercements.

NEW PLEAS AND NEW AGREEMENTS OF THE PLEAS OF ALAN DE NEVILL THE YOUNGER

The men of Peter de Turb render account of 1 mark for an amercement. They have paid it into the treasury and are quit.

Godefrid de Karleton renders account of

1 mark for swine taken in the forest. He has paid it into the treasury and is quit.

Faremann renders account of half [a mark] for the same. He has paid it into the treasury and is quit.

William de Kersunera renders account of half a mark for his animals taken in the forest. He has paid it into the treasury and is quit.

Robert de Vals renders account of 20*s.* for the chattels of his man (*homo*). He has paid it into the treasury and is quit.

Hugh the smith renders account of 6*s.* for swine taken in the forest. He has paid it into the treasury and is quit.

Adam son of Richer renders account of 4*s.* for the same. He has paid it into the treasury and is quit.

The same sheriff renders account of 40*l.* 14*s.* 4*d.* for wastes, assarts and pleas of the forest of Cumberland. In the treasury, 35*l.* 18*s.* 4*d.* And in pardons by the King's writ to the monks of Holcotann (Holmcultram), 100*s.* And he is quit.

OF THE PLEAS OF WILLIAM BASSET AND ALAN DE NEVILL THE YOUNGER

The same sheriff renders account of 10 marks for the amercement of the county of Cumberland for a plea of concealment of burning (*de combustione*). He has paid it into the treasury and is quit.

Ralf Palmer renders account of 10 marks for a summons which he denied and whereof he was convicted. He has paid it into the treasury and is quit.

The same sheriff renders account of 10 marks of the amercement of the citizens of CARLISLE for a woman whom they presented. He has paid it into the treasury and is quit.

OF THE PLEAS OF ROBERT DE STUTEVILL AND HUGH DE MOREVILL

The men of William the moneyer owe 100*s.* for an affray. Wulmar Bradfot and Gerbodo owe 2 marks for an affray with the men of the canons. Thomas son of Robert son of Bene owes 20*s.* for the relief of 2 carucates of land.

THE MINE OF CARLISLE

William son of Erembald owes 63*s.* 6*s.* 8*d.* for the old farm of the mine of CARLISLE. The same owes 500 marks for the new farm.

[17 *Hen. II.* 1171—*Roll 5, m. 2d*]

Robert Troite renders account of the farm of CARLISLE. In the treasury, 35*l.* 68*s.* by

THE PIPE ROLLS

tale. And in the appointed alms to the knights of the Temple, 1 mark. And in lands given to Henry son of Suein, 10*l.* in Langwadebi and in Edenhal. And he is quit. The same sheriff renders account of 80*l.* 10*s.* 8*d.* of the notegeld. In the treasury, 60*l.* 1*d.* And in pardons by liberty of the King's charter to Robert de Vall[ibus], 18*l.* 13*s.* 3*d.*; and to the canons of CARLISLE, 37*s.* 4*d.* And he is quit.

OF PURPRESTURES AND ESCHEATS

The same sheriff renders account of 4*l.* for the farm of Haldeshalechild; and of 20*s.* for Hobrichtebi; and of 30*s.* for the tan mill. He has paid it into the treasury in 3 tallies and is quit.

The same sheriff renders account of 10 marks for the rent of the forest of Cumberland. He has paid it into the treasury and is quit.

William de Fraisneto owes 5 marks for the right of land, but he is nowhere found. John de Erela owes 1 mark, but he is not found.

The same sheriff renders account of 6*l.* 8*s.* 3*d.* of the debt of the county for defaults and amercements. He has paid it into the treasury and is quit.

OF THE PLEAS OF ROBERT DE STUTEVILL

The men of William the moneyer owe 100*s.* for 1 affray.

Wulmar Bradfot and Gerbodo render account of 2 marks for 1 affray with the men of the canons. They have paid it into the treasury in 2 tallies and are quit.

Thomas son of Robert renders account of 20*s.* for the relief of 2 carucates of land. He has paid it into the treasury and is quit.

THE MINE OF CARLISLE

William son of Erenbald renders account of 63*l.* 6*s.* 8*d.* for the old farm of the third year of the mine of CARLISLE. In the treasury, 33*l.* 6*s.* 8*d.* And in payments by the King's writ to Ædward Blundus, 30*l.* to the coronation of the King son of the King.¹ And he is quit. The same renders account of 500 marks for the farm of the past year. He has paid it into the treasury and is quit. The same renders account of 500 marks for the farm of this year. In the treasury, 100 marks. And he owes 400 marks.

[18 *Hen. II.* 1172—*Roll* 5, *m.* 2*a*]

Robert Troite renders account of the farm of CARLISLE. In the treasury, 35*l.* 17*s.* 8*d.*

¹ Henry son of Henry II. was crowned in 1170 during his father's lifetime. For this rash act, see Stubbs, *Constitutional History*, i. 512.

by tale. And in the appointed alms to the knights of the Temple, 1 mark. And in lands granted to Henry son of Suein, 10*l.* in Langwadebi and in Edenhal, of which account is rendered below. And for 200 loads of oats sent into Ireland, 100*s.* And for 200 hogs, 15*l.* 13*s.* 4*d.* And for 60 axes, 27*s.* 6*d.* And for 200 cheeses, 4*l.* 13*s.* 4*d.* by the King's writ. And in the convoy and payment of the ships which carried the King's victuals from Yorkshire and from Northumberland and from Cumberland into Ireland, 27*l.* 11*s.* 7*d.* And for sending 3 breteches and 700 planks into Ireland, 7*l.* 3*d.* by the King's writ. And in work at the gaol of CARLISLE, 53*s.* 4*d.* by the King's writ. And he owes 67*s.*

The same sheriff renders account of 80*l.* 10*s.* 8*d.* for the notegeld. In the treasury, 60*l.* 1*d.* And in pardons by liberty of the King's charter to Robert de Vall[ibus], 18*l.* 13*s.* 3*d.*; and to the canons of CARLISLE, 37*s.* 4*d.* And he is quit.

OF PURPRESTURES AND ESCHEATS

The same sheriff renders account of 4*l.* for the farm of Haldesalechild; and of 20*s.* for Hobrichtebi; and of 30*s.* for the tan mill. He has paid it into the treasury in 3 tallies and is quit. The same sheriff renders account of 10 marks for the rent of the forest of Cumberland. He has paid it into the treasury and is quit. The same sheriff renders account of 77*s.* 8*d.* for the issue of Langwadebi after it returned into the King's hand. He has paid it into the treasury and is quit.

William de Fraisneto owes 5 marks for a right of land, but he is nowhere found. John de Erlea owes 1 mark, but he is not found.

The men of William the moneyer render account of 100*s.* for 1 affray. In the treasury, 26*s.* 8*d.* And he owes 73*s.* 4*d.*

OF THE SCUTAGE OF KNIGHTS WHO NEITHER WENT INTO IRELAND NOR SENT KNIGHTS (MILITES) NOR MONEY (DENARIOS) THERE

Robert de Vall[ibus] renders account of 40*s.* for scutage. He has paid it into the treasury and is quit.

THE MINE OF CARLISLE

William son of Erenbald owes 400 marks for the old farm of the mine of CARLISLE. The same owes 500 marks of the new farm.

[19 *Hen. II.* 1173—*Roll* 7, *m.* 2*d*]

THE MINE OF CARLISLE

William son of Erenbald renders account

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of 400 marks for the old farm of the mine of CARLISLE of the third year.¹ And of 500 marks of the past year. And of 500 marks of this year. Sum, 1,400 marks. In the treasury, 200*l.* 66*s.* 8*d.* And to Robert de Vals, 20*l.* for keeping (*ad tenend*) knights in the castle of CARLISLE, by writ of Richard de Luci. And to Odinell de Umframvill, 20*l.* for keeping knights in the castle of Prudho, for the damage done to him by the Scots, by writ of Richard de Luci. And to Roger son of Richard, 20*l.* for keeping knights in Newcastle-upon-Tine, by writ of Richard de Luci. And to Walter de Boleb[ec], 66*s.* 8*d.* to sustain him in the King's service, by writ of Richard de Luci. And he owes 666*l.* 13*s.* 4*d.*

CARLISLE

Robert Troite (Adam his son for him) renders account of 67*s.* for the old farm of CARLISLE. In work at the castle of CARLISLE, 67*s.* by the King's writ and by view of Adam and Robert and Ralf the clerk and Wulfric the engineer. And he is quit. And the same of the new farm. In the treasury, 43*l.* 9*s.* 2*d.* And in the appointed alms to the knights of the Temple, 1 mark. And in work at the aforesaid castle, 8*l.* 3*s.* by the King's writ and by view of the aforesaid. And for 81 skeps of wheat, 13*l.* 19*s.* by the same writ, to store the aforesaid castle. And for iron, 7*l.* 7*s.* 4*d.* by the same writ. And for 500 cheeses, 6*l.* 10*s.* by the same writ. And for salt, 100*s.* by the same writ. And in work at the ditch (*fossatum*) of the same castle, 45*s.* 4*d.* by the same writ. And he owes 27*l.* 6*s.* 6*d.*, which remain for the waste of the county by reason of the war. The same sheriff renders account of 80*l.* 10*s.* 8*d.* for the notegeld. In the treasury, 13*l.* 11*s.* And in pardons by liberty of the King's charter to Robert de Vall[ibus], 18*l.* 13*s.* 3*d.*; and to the canons of CARLISLE, 37*s.* 4*d.* And he owes 46*l.* 9*s.* 1*d.*, which remain for the waste of the county by reason of the war.

OF PURPRESTURES AND ESCHEATS

The same sheriff owes 4*l.* for the farm of Haldeshalechild; and of 20*s.* for Hobrictebi; and of 30*s.* for the tan mill; all which were wasted by the war.

Robert de Vall[ibus] . . . 10 marks for the rent of the forest of Cumberland.

William de Fraisneto owes 5 marks for a right of land, but he is nowhere found. John de Erlea owes 1 mark, but he is not found.

The men of William the moneyer render

¹ *i.e.* two years back.

account of 73*s.* 4*d.* for 1 affray. In the treasury, 2*s.* And he owes 71*s.* 4*d.*

The same sheriff renders account of 42*s.* 6*d.* for the chattels of 3 fugitives, for the forest. He has paid it into the treasury and is quit.

[20 *Hen. II.* 1174—*Roll* 8, *m.* 1*d*]

THE MINE OF CARLISLE

William son of Eranbald . . . 666*l.* 13*s.* 4*d.* for the old farm of the mine. And . . . 500 marks for the new farm.

CARLISLE

Adam son of Robert Truite has not rendered account this year of the farm of the county or of the debts, because he has received nothing thence this year by reason of the war, as he says.

[21 *Hen. II.* 1175—*Roll* 11, *m.* 2*d*]

THE MINE OF CARLISLE

William son of Erenbald owes 1,000*l.* for the old farm of the mine for the past 3 years and 500 marks for this year.

CARLISLE

Robert de Vaus has not rendered account this year for the farm of the county or of the King's debts in this county, nor has he come that he might render. Nor Adam son of Truite for the past year, because he had received nothing thence in that year by reason of the war, as he says.

[22 *Hen. II.* 1176—*Roll* 9, *m.* 2*d*]

THE MINE OF CARLISLE

William son of Eranbald renders account of 2,000 marks for the past 4 years and of 500 marks for this year. In the treasury, 186*l.* 13*s.* 4*d.* And for lead for the use of *Domus Dei* at Grantmonte, 40*l.* by the King's writ. And he owes 1,440*l.*

[23 *Hen. II.* 1177—*Roll* 9, *m.* 2*a*]

Robert Troite (Adam his son for him) owes 27*l.* 6*s.* 6*d.* for the old farm of the county of the nineteenth year, which remained by reason of the war, as he says, and remain till the King shall declare his will. The same owes 46*l.* 9*s.* 1*d.* for the old notegild of the same year, which likewise remained by reason of the war, as he says.

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OF PURPRESTURES AND ESCHEATS

The same owes 4*l.* for the farm of Halde-shalechild; and 20*s.* for Hobrichtebi; and 20*s.* for the tan mill, which likewise remained (over) by reason of the war of the same year, as he says. Sum, 79*l.* 15*s.* 7*d.* by tale.

The account also of the twentieth year, which was wholly (spent) in the war, as well of the farm of the county as of the notegild, and of purprestures and escheats and other debts of the King, has been deferred until it may be inquired by the serjeants (*servientes*) of Adam and of Robert de Vallibus how much each of them received that year, because Robert acknowledges himself to have received a part that year, but he does not know how much; and as much as each shall have received, for so much let him answer.

Robert de Vallibus renders account of 342*l.* 12*d.* by tale for the farm of Cumberland for this year and for the 2 past years. In the treasury, 112*l.* 4*d.* by tale. And in the appointed alms to the knights of the Temple, 40*s.* for the same term. And in pardon by the King's writ to Robert himself, 98*l.* 8*d.* And he owes 130*l.* by tale, for which the same Robert shall render at Easter 65*l.*, and at the following feast of St. Michael 65*l.*, by the King's writ. The same sheriff renders account of 80*l.* 10*s.* 8*d.* for the notegild of this year; and of 161*l.* 16*d.* of the 2 past years. In the treasury, 57*l.* 15*s.* 8*d.* And in pardons by liberty of the King's charter to Robert de Vallibus, 55*l.* 19*s.* 3*d.* for this year and the 2 past years; and to the canons of CARLISLE, 112*s.* for the same term. And he owes 122*l.* 5*s.* 1*d.*, of which account is rendered below.

OF PURPRESTURES AND ESCHEATS

The same sheriff owes 4*l.* for the farm of Aldeshaschild for this year and 8*l.* for the 2 past years, of which account is rendered below. The same sheriff renders account of 20*s.* for Hobrichtebi and of 40*s.* for the 2 past years. In the treasury, 4*s.* And he owes 56*s.*, of which account is rendered below. The same sheriff owes 60*s.* for the tan mill for this year and the 2 past years, of which account is rendered below. The same sheriff owes 20 marks for the rent of the forest of Cumberland for the 2 past years, of which account is rendered below. The same sheriff renders account of 10 marks for the rent of the same forest for this year. He has paid it into the treasury and is quit. The same sheriff owes 10 marks for the rent of the same forest for the fourth year.

William de Fraisneto owes 5 marks for a right of land, but he is nowhere found. John de Erlega owes 1 mark, but he is not found.

The men of William the moneyer owe 71*s.* 4*d.* for 1 affray.

OF THE PLEAS OF RANDULF DE GLANVILL AND HUGH DE CRESSI

Simon brother of Ralf clerk of CARLISLE renders account of 20*l.* that he may be received into the borough (*burgus*) of CARLISLE. He has paid it into the treasury and is quit.

John son of Puncon renders account of 40 marks, because he had not him whom he had pledged before the justices. In the treasury, 15*l.* 11*s.* And he owes 11*l.* 2*s.* 4*d.*

Robert de Hodeuma renders account of 15 marks that he may have peace, because he was with the King's enemies. He has paid it into the treasury and is quit.

Robert Niger Parmentarius renders account of 100*s.* that he may be received into the borough of CARLISLE. He has paid it into the treasury and is quit.

Robert Prince renders account of and W. (*sic*) Ralf son of Helyas renders account of 10 marks for a default. In pardon by the King's writ to Nicholas de Stutevill, 10 marks. And they are quit.

Randulf Brunus owes 1 mark for an ox, which he detained upon surety and pledge.

OF THOSE WHO RENDERED THE WHOLE

The same sheriff renders account of 2 marks of Lambert son of Aultgrim, who was with the King's enemies; and of 1 mark of Suann the smith and Fulc and Waldeve his sons for the same; and of 1 mark of Baldwin nephew of Serlo for the same; and of 1 mark of Robert son of Buet for the same; and of 1 mark of Wibert for the same; and of 1 mark of Uchtred the Englishman; and of 2 marks of Henry the clerk, because he had not whom he pledged; and of half a mark of Reginald de Mora, because he failed in his suit (*loquela*); and of half a mark of Robert de Turp for an amercement; and of 5 marks of Gilbert de Levinton, because he communicated with the King's enemies; and of 3 marks of Ralf the clerk of CARLISLE, that he might have Terrebi his surety. Sum, 12*l.* He has paid it into the treasury in 11 tallies and is quit.

Adam son of Adam renders account of 10 marks that the King may accept his homage. He has paid it into the treasury and is quit.

Richard son of Truite owes 10 marks for the right of Gamelesbi and Glassanebi, which he has not had yet.

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Adam son of Adam owes 20 marks for having seizin of Westham, which he has not had yet.

Adam son of Robert Truite renders account of 20 marks of amercement to the King for the forest, which is required in Yorkshire. He has paid it into the treasury and is quit. The same sheriff renders account of 7*l.* 13*s.* 8*d.* for the pannage of the 2 past years of the forest of CARLISLE. He has paid it into the treasury and is quit. The same sheriff renders account of the aforesaid debts, viz. of 122*l.* 5*s.* 1*d.* of the old remaining notegeld for 3 years; and of 12*l.* for the farms of the purprestures for 3 years; and of 56*s.* for the farm of Hoctredebi for the same term; and of 60*s.* for the tan mill for the same term; and of 20 marks of the rent of the forest of Cumberland for 2 years. Sum, 153*l.* 7*s.* 9*d.* In payments by the King's writ to Benedict son of Sara, and Deodatus 'the bishop,' and Vivus and Moses, the Jews, 153*l.* 7*s.* 9*d.* And he is quit.

THE MINE OF CARLISLE

William son of Eranbald renders account of 1,441*l.* for several years past and of 500 marks for this year. In the treasury, 100*l.* And he owes 1,673*l.* 6*s.* 8*d.*

[24 *Hen. II.* 1178—*Roll* 9, *m.* 2]

Robert de Vallibus renders account of 130*l.* by tale for the old farm of Cumberland. In the treasury, 65*l.* And he owes 65*l.*, which are in respite by the King till Easter, by Randulf de Glanvill. And the same of the new farm. In the treasury, 110*l.* by tale. And in the appointed alms to the knights of the Temple, 1 mark. And he owes 67*s.* by tale. The same sheriff renders account of 80*l.* 10*s.* 8*d.* of noutegeld. In the treasury, 60*l.* 3*d.* And in pardons by liberty of the King's charter to Robert de Vallibus, 18*l.* 13*s.* 1*d.*; and to the canons of CARLISLE, 37*s.* 4*d.* And he is quit.

Adam son of Robert Truite renders account of 27*l.* 6*s.* 6*d.* of the old farm of Cumberland for the nineteenth year, which remained on account of the war; and of 46*l.* 9*s.* 1*d.* of the old notegild of the same year; and of 4*l.* for the farm of Haldeshalechild; and of 20*s.* for a tan mill; and of 20*s.* for Hobrichtebi for the same year. Sum, 79*l.* 15*s.* 7*d.* In pardon by the King's writ to the same Adam son of Robert, 79*l.* 15*s.* 7*d.* on account of the destruction of his domains by the war. And he is quit.

The same Adam and Robert de Vallibus render account of 114*l.* 4*d.* by tale for the

farm of Cumberland; and of 80*l.* 10*s.* 8*d.* for the notegeld of the twentieth year, which was wholly in the war; and of 6*l.* for the farm of the purprestures of that year. In the treasury, 6*l.* 15*s.* 4*d.* by the hand of Adam, which he received that year by his fidelity. And in pardon by the King's writ to Robert de Vallibus, 46*l.* 6*s.* 4*d.* which he received in that year for the farms of the county and which he expended in the King's castle. And in the appointed alms to the knights of the Temple, 1 mark; and in quittance of the land of Robert de Vall[ibus], on account of the liberty of his charter, of notegeld, 18*l.* 13*s.* 1*d.*; and to the canons of CARLISLE, 37*s.* 4*d.* And in pardon by the King's writ to Adam himself and to Robert, 126*l.* 5*s.* 7*d.* on account of the destruction of [their] land by the war. And they are quit.

The same Robert renders account of 10 marks for the old rent of the forest of Cumberland. In pardon by the King's writ to Robert himself, 10 marks. And he is quit. The same sheriff renders account of 17*s.* of the issue of Glessanebi, which Richard son of Truite claimed. He has paid it into the treasury and is quit.

OF PURPRESTURES AND ESCHEATS

The same sheriff renders account of 4*l.* for the farm of Ealdæssalchghilla; and of 20*s.* for the farm of Hobrichtebi; and of 20*s.* for 1 tan mill. He has paid it into the treasury in 3 tallies and is quit. The same sheriff owes 10 marks for the rent of the forest of Cumberland of the fifth year. The same sheriff renders account of 10 marks of the rent of the same forest for this year. He has paid it into the treasury and is quit.

William de Fraisneto owes 5 marks for a right of land, but he is not found. John de Erlega owes 1 mark, but he is not found.

The same sheriff renders account of 71*s.* 4*d.* for the amercement of the men of William the moneyer. He has paid it into the treasury and is quit.

OF THE PLEAS OF RANDULF DE GLANVILL AND HUGH DE CRESSI

John son of Puncun owes 11*l.* 2*s.* 4*d.* because he had not whom he pledged. Richard son of Truite owes 10 marks for a right which he has not yet had. Adam son of Adam owes 20 marks for having seizin of Westham, which he has not yet had.

Randulf Brunus renders account of one mark for an amercement. He has paid it into the treasury and is quit.

THE PIPE ROLLS

NEW PLEAS AND NEW AGREEMENTS BY WILLIAM BASSET AND ROBERT DE VALLIBUS AND MICHAEL BELET

The same sheriff renders account of half a mark of Walter Hasteng for an amercement; and of 20s. of Oulf de Ainstapelid [Ainstable] for an amercement; and of half a mark of Gilbert son of Serlo; and of half a mark of Adam de Ravenwich [Renwick] for an amercement; and of half a mark of the amercement of Geoffrey son of Osbert; and of half a mark of the amercement of Robert brother of Geoffrey; and of one mark of the amercement of Ralf de la Mora in the city of CARLISLE. He has paid it into the treasury in 7 tallies and is quit.

Philip de Valoignis renders account of 60 marks for a default. In pardon by the King's writ to Philip himself, 60 marks. And he is quit.

OF THE PLEAS OF THE SAME IN COUPLAND

The same sheriff renders account of 8*l.* 6*s.* 8*d.* of the small amercements of the men and vills, whereof the names and debts and causes are annotated in the roll which they delivered into the treasury. He has paid it into the treasury in 16 tallies and is quit.

[? William] son of Adam de Calder renders account of 2 marks for a default. In the treasury, one mark. And he owes one mark. The same sheriff renders account of 12*l.* 4*s.* 8*d.* of wastes and assarts by Thomas son of Bern[ard]. He has paid it into the treasury and is quit.

OF THE AMERCEMENTS OF THE KING FOR THE FOREST OF CUMBERLAND BY THOMAS SON OF BERNARD

The same sheriff renders account of 102*s.* of the small amercements of the knights and clerks for the forest of Cumberland. He has paid it into the treasury in 19 tallies and is quit.

THE MINE OF CARLISLE

William son of Erembald owes 1,673*l.* 6*s.* 8*d.* for the farm of the mine for several years past. And he owes 500 marks of the farm of this year.

[25 *Hen. II.* 1179—*Roll* 3, *m.* 2*d.*]

THE MINE OF CARLISLE

William son of Erenbald renders account of 2,340*l.* for the mine of CARLISLE, as well for the farm of this year as of several years past. In the treasury, nothing. And to

William Ruffus, 100*l.* by the King's writ; and in the chamber of the court (*camera curie*), 66*l.* 13*s.* 4*d.* by the King's writ; and for 100 cartloads of lead delivered to brother Simon to the work of the church of Clarevall, 66*l.* 13*s.* 4*d.* And he owes 2,106*l.* 13*s.* 4*d.*

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Robert de Vallibus renders account of 65*l.* for the old farm of the third year of CUMBERLAND. He has paid it into the treasury and is quit. The same renders account of 66*s.* by tale of the old farm of the past year. In repair of the mill of CARLISLE, 67*s.* by tale by the King's writ and by view of Adam son of Robert and Ralf the clerk. And he is quit. And the same of the new farm. In the treasury, 113*l.* 7*s.* by tale. And in the appointed alms to the knights of the Temple, one mark. And he is quit. The same sheriff renders account of 80*l.* 10*s.* 8*d.* of the noutegeld. In the treasury, 60*l.* 3*d.* And in pardons by liberty of the King's charter to Robert de Vallibus, 18*l.* 13*s.* 1*d.*; and to the canons of Carlisle, 37*s.* 4*d.* And he is quit. The same sheriff renders account of 8*l.* 2*s.* 6*d.* of the issue of Gamelesbi and of Glassanebi for this year, which were of Odard de Hodelma. He has paid it into the treasury and is quit.

OF PURPRESTURES AND ESCHEATS

The same sheriff renders account of 4*l.* for the farm of Ealhalechild; and of 20*s.* of the farm of Hobrictebi; and of 20*s.* for the tan mill. He has paid it into the treasury in 3 tallies and is quit. The same sheriff renders account of 10 marks of the rent of the forest of CUMBERLAND of this year. He has paid it into the treasury and is quit. The same sheriff owes 10 marks of the rent of the same forest of the sixth year,¹ which was wholly in the war.

William de Fraisneto owes 5 marks for a right of land, but he is not found. John de Erlega owes one mark, but he is not found.

OF THE PLEAS OF RANNULF DE GLANVILL AND HUGH DE CRESSI

John son of Punzun renders account of 11*l.* 2*s.* 4*d.* because he had not whom he pledged. In the treasury, 40*s.* And he owes 9*l.* 2*s.* 4*d.*

Richard son of Troite owes 10 marks for a right which he has not yet had.

Adam son of Adam son of Richer . . . 20 marks for having seizin of Westham.

¹ *i.e.* five years back.

A HISTORY OF CUMBERLAND

Adam son of Adam de Calder renders account of one mark for a default. He has paid it into the treasury and is quit.

William brother of Adam son of Adam son of Richer owes 40 marks that he may not be disseized of the land which his brother claims against him unless by judgment.

Michael de Furnell owes 5 marks that his son may be summoned to answer of ingress to the land of his father. He has paid it into the treasury and is quit.

Gillbert son of Fergus renders account of 1,000*l.* for having the King's benevolence. In the chamber of the court, 80*l.* 11*s.* by the hand of Robert de Vallibus. And he owes 919*l.* 9*s.*

[26 *Hen. II.* 1180—*Roll 4, m. 2d*]

CUMBERLAND

Robert de Vallibus (Roger de Leicester for him) renders account of the farm of CUMBERLAND. In the treasury, 113*l.* 7*s.* by tale. And in the appointed alms to the knights of the Temple, one mark. And he is quit. The same returns account of 80*l.* 10*s.* 8*d.* of the noutegeld. In the treasury, 60*l.* 3*d.* And in pardons by liberty of the King's charter to Robert de Vallibus, 18*l.* 13*s.* 1*d.*; and to the canons of Carlisle, 37*s.* 4*d.* And he is quit. The same renders account of 6*l.* 3*s.* 6*d.* of the issue of Gamalebi and Glassenebi of this year, which were of Odard de Hodelma. He has paid it into the treasury and is quit.

OF PURPRESTURES AND ESCHEATS

The same renders account of 4*l.* of the farm of Saleghill; and of 20*s.* for the farm of Hobrichtebi; and of 20*s.* for the tan mill. He has paid it into the treasury in 3 tallies and is quit. The same renders account of 10 marks of the rent of the forest of CUMBERLAND. He has paid it into the treasury and is quit. The same owes 10 marks of the rent of the forest of CUMBERLAND of the seventh year, which was wholly in the war.

William de Fraisneto owes 5 marks for the right of land, but he is not found. John de Erlega owes one mark, but he is not found.

OF THE PLEAS OF RANNULF DE GLANVILL AND HUGH DE CRESSI

John son of Punzun renders account of 9*l.* 2*s.* 4*d.* because he had not whom he pledged. In the treasury, 60*s.* And he owes 6*l.* 2*s.* 4*d.*

Richard son of Truite owes 10 marks for the right of Gamelebi and Glassenebi, but he has not had the right, because they are in the King's hand.

Adam son of Adam son of Richer renders account of 10 marks for having seizin of Westham. In the treasury, 5 marks. And he owes 5 marks.

William brother of Adam son of Adam son of Richer owes 40 marks that he may not be disseized of the land which his brother claims against him unless by judgment.

Gillbert son of Fergus owes 919*l.* 9*s.* for having the King's benevolence.

NEW PLEAS AND NEW AGREEMENTS OF PLEAS OF THE COURT

Adam nephew of the sheriff renders account of 10 marks for having confirmation of the burgage which was of David Truite in Carlisle. In the treasury, 5 marks. And he owes 5 marks.

The same sheriff renders account of 25*s.* of the chattels of Orm son of Leising, an outlaw; and of 3*s.* of the chattels of Ketell, an outlaw. He has paid it into the treasury in 2 tallies and is quit. The same sheriff owes 33*l.* 15*s.* 8*d.* of wastes and assarts and pleas of the forest by Thomas son of Bern[ard].

THE MINE OF CARLISLE

William son of Erenbald owes 2,106*l.* 13*s.* 4*d.* of the farm of the mine for several years past.

[27 *Hen. II.* 1181—*Roll 2, m. 1d*]

CUMBERLAND

Robert de Vallibus renders account of the farm of CUMBERLAND. In the treasury, 112*l.* 5*s.* 9*d.* by tale. And in the appointed alms to the knights of the Temple, one mark. And he owes 21*s.* 3*d.* The same renders account of the same debt. He has paid it into the treasury and is quit. The same sheriff renders account of 80*l.* 10*s.* 8*d.* for the noutegeld. In the treasury, 60*l.* 3*d.* And in pardons by the liberty of the King's charter to Robert de Vallibus, 18*l.* 13*s.* 1*d.*; and to the canons of Carlisle, 37*s.* 4*d.* And he is quit. The same sheriff renders account of 4*l.* 18*s.* 3*d.* of the issue of Gamelebi and Glassenebi for this year. He has paid it into the treasury and is quit.

OF PURPRESTURES AND ESCHEATS

The same sheriff renders account of 4*l.* for the farm of Saleghill; and of 20*s.* for the

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farm of Hobrichtebi; and of 20s. for the tan mill. He has paid it into the treasury in three tallies and is quit. The same sheriff renders account of 10 marks of the rent of the forest of CUMBERLAND. He has paid it into the treasury and is quit. The same sheriff owes 10 marks of the rent of the forest of CUMBERLAND of the eighth year, which was wholly in the war.

William de Freisnei owes 5 marks for the right of land, but he is not found. John de Erlega owes one mark, but he is not found.

OF THE PLEAS OF RANNULF DE GLANVILL AND HUGH DE CRESSI

John son of Punzun renders account of 6*l.* 2*s.* 4*d.* because he had not whom he pledged. In the treasury, 20*s.* And he owes 102*s.* 4*d.*

Richard son of Truite owes 10 marks for the right of Gamelebi and Glassenebi, but he has not the right, because they are in the King's hand.

Adam son of Adam son of Richer renders account of 5 marks for having seizin of Westham. He has paid it into the treasury and is quit.

William brother of Adam son of Adam son of Richer owes 40 marks that he may not be disseized of the land which his brother claims against him unless by judgment.

Gillbert son of Fergus renders account of 919*l.* 9*s.* for having the King's benevolence. In the treasury, 40*s.* And he owes 917*l.* 9*s.*

OF PLEAS OF THE COURT

Adam nephew of the sheriff renders account of 5 marks for having confirmation of the burgage which was of David Troite in CARLISLE. In the treasury, 22*s.* And he owes 43*s.* 8*d.*

The same sheriff renders account of 33*l.* 15*s.* 8*d.* of the wastes and assarts and pleas of the forest of CUMBERLAND. In the treasury, 9*l.* 16*s.* 6*d.* And he owes 23*l.* 19*s.* 2*d.*

NEW PLEAS AND NEW AGREEMENTS BY RANDULF DE GLANVILL

Roger son of William renders account of 20*s.* for the monies¹ of Henry the clerk taken in spite of (*super*) prohibition. In the treasury, 10*s.* And he owes 10*s.*

Henry de Cnarresburc² renders account of

¹ *Pecuniis*. Perhaps it is here used in the Domesday sense for stock in cattle (Ellis's *Introduction to Domesday Book*, i. 170, 171).

² Knaresborough.

20*s.* for leave to make an agreement with the men of Reginald de Luci. In the treasury, 10*s.* And he owes 10*s.*

Adam son of Adam renders account of 40*s.* for a novel disseizin made in contravention of assize (*super assisam*). In the treasury, one mark. And he owes 2 marks.

Reiner the Fleming renders account of 10 marks for a default and for a false esoin. In the treasury, three and a half marks. And he owes six and a half marks.

Efward son of Ulf renders account of 20 marks for a false statement (*pro falso dicto*). In the treasury, 3*l.* and half a mark. And he owes 9*l.*

William son of Udard renders account of 3 marks for recognition of 3 carucates of land against Udard son of Adam. In the treasury, one mark. And he owes 2 marks.

Robert de Lanplo [Lamplugh] renders account of 40*s.* for recognition³ of 3 carucates of land in Hailekerd. In the treasury, one mark. And he owes 2 marks.

OF THOSE WHO RENDERED EVERYTHING⁴

The same sheriff renders account of 7*l.* of the minute amercements of certain men and vills, whereof the names and debts and causes of the debts are contained in a roll which Randulf de Glanvill has delivered into the treasury. He has paid it into the treasury in 18 tallies and is quit.

Alan the moneyer of Carlisle owes 1 mark because he sold wine in contravention of (*super*) the assize.

OF OFFERINGS OF COURT

Henry son of Robert son of Yvo renders account of 20*s.* for the right of a certain woodland⁵ against Randulf son of Walter. In the treasury, 10*s.* And he owes 10*s.*

Walter de Carleol owes 20*s.* for a right of 7 marks against John the dyer.

Robert son of Adam son of Yvo renders account of 5 marks for a recognition of Hoton and pertinences against William son of William son of Yvo, by pledge of Ralf son of Alan. In the treasury, 22*s.* 4*d.* And he owes 44*s.* 4*d.*

William clerk of Robert de Vallibus renders account of 5 marks, because he ordered the old money to circulate after the prohibition of the justices. In the treasury, 22*s.* 4*d.* And he owes 44*s.* 4*d.*

³ *i.e.* an inquiry as to his right to them.

⁴ *i.e.* who paid up in full.

⁵ *i.e.* for establishing his right to it.

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The same sheriff renders account of 118s. 5*d.* of the chattels of William son of Suein, a forger. He has paid it into the treasury and is quit.

[*Roll 4, m. 2*d**]

THE MINE OF CARLISLE OF THE TWENTY-SIXTH YEAR

William son of Eranbald ought to answer for 50*l.* of the fourth part of the past year. And Richard and Humfrey, brothers, of 50*l.* of the fourth part of the same year. And Richard de Edmodeshala and Adam nephew of Roulin of 100*l.* for the same farm of half a year. Of which account is rendered below.

OF THE TWENTY-SEVENTH YEAR

Richard de Edmodeshala and Adam nephew of Roulin ought to answer for 100*l.* of half a year. And Richard and Humfrey, brothers, of 75*l.* And Adam nephew of Rollin of 25*l.* Whereof account is rendered below.

Richard and Humfrey, brothers, render account of 50*l.* for the farm of the mine of CARLISLE for the fourth part of the past year; and of 75*l.* for the farm of this year. In the treasury, nothing. And for 25 cartloads of lead which the King gave to the church of Clarevall (66*l.* 13*s.* 4*d.* by same 25 marks, *interlined*) by the King's writ. And for 100 cartloads of lead which the King likewise gave to the church of Clarevall, 66*l.* 13*s.* 4*d.* by the King's writ. And they owe 41*l.* 13*s.* 3*d.* The same render account of the same debt for 60 cartloads of lead delivered to Reiner, 40*l.* by the King's writ. And they owe 33*s.* 4*d.*

Richard de Edmodeshala and Adam nephew of Rolland render account of 100*l.* for the past year; and of 100*l.* for this year; and of 25*l.* of this year, which remained upon Adam nephew of Roelin. In the treasury, nothing. And for 50 cartloads of lead delivered to Reiner to the use of the church of Claresvall, 33*l.* 6*s.* 8*d.* by the King's writ. And they owe 191*l.* 13*s.* 4*d.*, whereof 108*l.* 6*s.* 8*d.* are upon Adam and upon Henry Estresius his companion, and 80*l.* 66*s.* 8*d.* are upon Richard de Edmodeshal.

William son of Erenbald owes 50*l.* for the fourth part of the twenty-sixth year for the mine of CARLISLE, which is annotated above; and 2,106*l.* 23*s.* 4*d.* for several years past, while he alone had the Mine to farm.

[28 *Hen. II.* 1182—*Roll 1, m. 1*]

Here are annotated the debtors of whom we were able to have nothing this year or for

several years past, and whom we have excepted from the Roll of the twenty-seventh year, of whom the sheriffs of England have rescripts (*rescripta*).

CUMBERLAND

William de Freisney owes 5 marks for a right of land. John de Erlega owes 1 mark.

[*Roll 5, m. 2*d**]

THE MINE OF CARLISLE, BECAUSE THERE WAS NOT ROOM FOR IT IN CUMBERLAND

Humfrey brother of Richard owes 32*s.* 4*d.* for the farm of the third year of the mine of Carlisle.

Adam nephew of Roelin and Henry Estrensus owe 108*l.* 6*s.* 8*d.* of the farm of the mine for the past year.

Richard de Edmodeshala owes 80*l.* 66*d.* of the same farm for the past year.

The same Humfrey owes 44*l.* 16*s.* 8*d.* for the farm of the mine of this year.

Richard brother of Humfrey owes 30*l.* 3*s.* 4*d.* of the same farm of the mine for this year.

Adam nephew of Roelin and Henry Estrensus owe 75*l.* of the same farm of the mine for this year.

Richard de Edmodeshal owes 50*l.* of the same farm of the mine for this year.

Sum of the debt of this year, 200*l.*

[*Roll 10, m. 2*d**]

CUMBERLAND

Robert de Vallibus renders account of the farm of CUMBERLAND. In the treasury, 113*l.* 7*s.* by tale. And in the appointed alms to the knights of the Temple, 1 mark. And he is quit. The same sheriff renders account of 80*l.* 10*s.* 8*d.* for the notegeld. In the treasury, 60*l.* 3*d.* And in pardons by liberty of the King's charter to Robert de Vallibus, 18*l.* 13*s.* 1*d.*; and to the canons of Carlisle, 37*s.* 4*d.* And he is quit. The same sheriff renders account of 6*l.* 14*s.* 7*d.* of the issue of Gamelebi and Glassenebi for this year. He has paid it into the treasury and is quit.

OF PURPRESTURES AND ESCHEATS

The same sheriff renders account of 4*l.* for the farm of Salechhilla; and of 20*s.* for the farm of Hobrichtebi; and of 20*s.* for the tan mill. He has paid it into the treasury in three tallies and is quit. The same sheriff renders account of 10 marks for the rent of

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the forest of CUMBERLAND. He has paid it into the treasury and is quit. The same sheriff owes 10 marks of the rent of the forest of CUMBERLAND for the ninth year,¹ which was wholly in the war.

OF THE PLEAS OF RANNULF DE GLANVILL

John son of Punzun owes 102s. 4d. because he had not whom he pledged.

Richard son of Truite owes 10 marks for the right of Gamelebi and Glassenebi, but he has not the right, because they are in the hand of the King.

Adam son of Adam son of Richer owes 10 marks for having seizin of Westham, but he has rendered in accounts in two preceding Rolls and is quit.

William brother of Adam son of Adam son of Richer renders account of 40 marks that he may not be disseized of the land which Adam his brother claims against him unless by judgment. In the treasury, 40s. And he owes 24l. and 1 mark, whereof he shall render, at the feast of St. Michael yearly, 5 marks.

Gillbert son of Fergus renders account of 917l. 9s. for having the King's benevolence. In the treasury, 30l. And he owes 887l. 9s.

OF PLEAS OF COURT

Adam nephew of the sheriff renders account of 44s. 8d. for having confirmation of a burgage in Carlisle. In the treasury, 30s. And he owes 14s. 8d.

The same sheriff renders account of 23l. 19s. 2d. for the wastes and assarts and pleas of the forest of CUMBERLAND. He has paid it into the treasury and is quit.

OF THE PLEAS OF RANNULF DE GLANVILL

The same sheriff renders account of 10s. of Roger son of William for the *pecunia* of Henry the clerk unjustly taken; and of 10s. of Henry de Cnarreburch for leave to make an agreement; and of 2 marks of Adam son of Adam for disseizin made contrary to assize; and of 2 marks of William son of Odard for recognition of land against Udard son of Adam; and of 2 marks of Robert de Lamplo for recognition of land in Hailekerd. He has paid it into the treasury in 5 tallies and is quit.

Reiner the Fleming renders account of 4l. 6s. 8d. for a false essoin. In the treasury, 53s. 4d. And he owes 33s. 4d.

Efward son of Vlf renders account of 9l. for a false statement (*pro falso dicto*). In the treasury, 4l. And he owes 100s.

¹ *i.e.* eight years back.

Alan the moneyer of Carlisle renders account of 1 mark, because he sold contrary to assize. He has paid it into the treasury and is quit.

OF OFFERINGS OF COURT

The same sheriff renders account of 10s. of Henry son of Robert son of Yvo for the right of woodland; and of 20s. of Walter de Carleol for a right of 7 marks against John the dyer. He has paid it into the treasury in 2 tallies and is quit.

Robert son of Adam son of Yvo renders account of 44s. 4d. for recognition of Hotton. In the treasury, 30s. And he owes 14s. 4d.

William clerk of Robert de Vallibus renders account of 44s. 4d. because he allowed the old money to circulate after the prohibition of the justices. In the treasury, 2 marks. And he owes 17s. 8d.

Arthur son of Godard renders account of 100l. and 10 coursers (*fugatores*) for recognition of one knight's fee² against the countess (*comitissa*) of Coupland. In the treasury, 25l. And he owes 75l. and 10 coursers.

The same sheriff renders account of 1 little piece of gold certified of 2 pennyweights (*de j frustulo auri invento ponderis ij den.*). He has paid it into the treasury and is quit.

Juliana who was wife of Adam son of Richer renders account of 6s. 8d. of the service of land of 4 hogs (*hogis*) by Thomas son of Bernard. She has paid it into the treasury and is quit.

Uchtred and Walter de Ragton render account of 5s. of the service of the land of Unspac the horseman (*equarius*) by the aforesaid Thomas. They have paid it into the treasury and are quit.

Robert de Toresbi (Thursby) renders account of 2s. for the service of land in Waverton by the same Thomas. He has paid it into the treasury and he is quit.

[29 *Hen. II.* 1183—*Roll 1, m. 1*]

CUMBERLAND

Robert de Vallibus renders account of the farm of CUMBERLAND. In the treasury, 113l. 7s. by tale. And in the appointed alms to the knights of the Temple, 1 mark. And he is quit. The same sheriff renders account of 80l. 10s. 8d. for the notegeld. In the treasury, 60l. 3d. And in pardons by liberty of the King's charter to Robert de Vallibus, 18l. 13s. 1d.; and to the canons of Carlisle, 37s. 4d. And he is quit. The same sheriff renders account of 4l. 6s. 9d. for the issue of

² *i.e.* for his inquiry into the right to it.

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Gamelebi and Glassenebi for this year. He has paid it into the treasury and is quit.

OF PURPRESTURES AND ESCHEATS

The same sheriff renders account of 4*l.* for the farm of Salechilla; and of 20*s.* of the farm of Hobrichtebi; and of 20*s.* for the tan mill. He has paid it into the treasury in 3 tallies and is quit. The same sheriff renders account of 10 marks for the rent of the forest of CUMBERLAND. He has paid it into the treasury and is quit. The same sheriff owes 10 marks for the rent of the forest of CUMBERLAND of the tenth year,¹ which was wholly in the war.

OF PLEAS OF RANNULF DE GLANVILL

John son of Puncun renders account of 102*s.* 4*d.* because he had not whom he pledged. In the treasury, 2 marks. And he owes 75*s.* 8*d.*

Richard son of Truite renders account of 10 marks for the right of Gamelebi and Glesenebi. In the treasury, 2 marks. And he owes 53*s.* 4*d.*

William brother of Adam son of Adam son of Richer owes 40 marks that he may not be disseized of the land which his brother claims against him unless by judgment, of which he ought to render yearly 5 marks at the feast of St. Michael.

Gillbert son of Feregus renders account of 887*l.* 9*s.* for having the King's benevolence. In the treasury, 15*l.* And he owes 872*l.* 9*s.*

OF PLEAS OF THE COURT

Adam nephew of the sheriff renders account of 14*s.* 8*d.* for having confirmation of the burgage in Carlisle. He has paid it into the treasury and is quit.

Reiner the Fleming renders account of 33*s.* 4*d.* for a false essoin. He has paid it into the treasury and is quit.

Ælfward son of Ulf renders account of 100*s.* for a false statement. In the treasury, 60*s.* And he owes 40*s.*

Robert son of Adam son of Yvo renders account of 14*s.* 3*d.* for a recognition of Hotton. He has paid it into the treasury and is quit.

William clerk of Robert de Vallibus renders account of 17*s.* 8*d.* of the amercement for the old money. He has paid it into the treasury and is quit.

Arthur son of Godard renders account of 75*l.* and 10 coursers for recognition of 1

¹ *i.e.* nine years back.

knight's fee against the countess of Coupland. In the treasury, 34*l.* And he owes 41*l.* and 10 coursers.

NEW PLEAS AND NEW AGREEMENTS BY THOMAS SON OF BERNARD AND ALAN DE FURNELL[IS] AND ROBERT DE WITE- FELD

The same sheriff renders account of 10 marks of the amercement of the county for a concealment (*concelamento*). In the treasury, 111*s.* 10*d.* And he owes 21*s.* 6*d.*

The same sheriff renders account of half a mark of Helyas Brun for a false claim; and of half a mark of William son of Odard for an amercement; and of half a mark of Gillbert son of Godefrey for a disseizin; and of half a mark of Robert brother of Gillbert for the same; and of 2 marks of Regin[ald] son of John for having respite (*pro habendo resp*) and of half a mark of Boet Barn for a false claim; and of half a mark of Richard Troderai for making an agreement without leave; and of half a mark of Richard de Uluinton of an amercement for cattle (*pecuniis*) retained by surety and pledge. Sum, 5½ marks. He has paid it into the treasury in 8 tallies and is quit.

OF PLEAS OF THE SAME IN THE CITY OF CARLISLE

The same sheriff renders account of 20*s.* of Henry Bradfot for an exchange against the assize; and of 20*s.* of Ralf the clerk for the same; and of 9*l.* 6*s.* 8*d.* of the minute amercements of the men of the same city, whose names and debts and causes of the debts are annotated in the Roll of the justices, which he has delivered into the treasury. He has delivered it into the treasury in 14 tallies and is quit. The same sheriff renders account of 10 marks of the commune (*de Communi eiusdem Civitatis*) of the same city for an exchange contrary to the assize. He has paid it into the treasury and is quit.

The same sheriff renders account of 20*s.* of Adam son of Enisand for the same; and of 20*s.* of Ralf Palmer for the same. He has paid it into the treasury in 2 tallies and is quit.

OF THE OFFERINGS OF COURT

Richard brother of Adam de Nouton (Neuton) renders account of 10 marks for recognition of the death of Emma his niece. In the treasury, 4*l.* 8*s.* And he owes 45*s.* 4*d.*

Simon de Teillol renders account of 40 marks for a fine of the land of his father. In the treasury, 10 marks. And he owes 30 marks.

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OF PLEAS OF THE FOREST OF CUMBERLAND BY THOMAS SON OF BERN(ARD)

The same sheriff renders account of 109s. 8d. of the pleas of the forest of CUMBERLAND by Thomas son of Bern(ard). In the treasury, 4*l.* 19s. 5*d.* And he owes 10s. 3*d.* The same sheriff renders account of 6s. 8*d.* of the service of land of 4 hogs (*hogis*) which Juliana wife of Adam holds; and of 5s. of service of the land of Unspach, which Uchtred and Walter hold; and of 2s. of the service of land in Waverton by Robert de Toresbi. Sum, 13s. 8*d.* He has paid it into the treasury in 3 tallies and is quit. The same sheriff renders account of 13s. 4*d.* of corn of a certain land sold in the forest. He has paid it into the treasury and is quit.

[*Roll 8, m. 2d*]

THE MINE OF CARLISLE [CHARLEOLIUM]

Because¹ there was not room for it in Northumberland nor in CUMBERLAND.

Humfrey brother of Richard owes 33s. 4*d.* for the farm of the fourth year² of the mine of CARLISLE.

Adam nephew of Roelin and Henry Estreis owe 108*l.* 6s. 8*d.* for the farm of the mine of the third year.

Richard de Ædmodeshala owes 80*l.* 66s. 8*d.* for the same farm of the same year.

Sum, 193*l.* 6s. 8*d.*

The same Humfrey owes 44*l.* 16s. 8*d.* for the farm of the mine of the past year.

Richard brother of Humfrey owes 30*l.* 3s. 4*d.* for the same farm of the same year.

Adam nephew of Roelin and Henry Estreis owe 75*l.* for the same farm of the mine of the same year.

Richard de Edmodeshal owes 50*l.* for the same farm of the mine of the same year.

Sum of this, 200*l.*

William son of Erembald and his pledges render account of 220 marks for the farm of the mine of CARLISLE by Roger de Stutevill and Robert de Vallibus and Reiner the steward, who delivered to them the same mine at the aforesaid farm this year. In the treasury, 94*l.* 13s. 4*d.* And they owe 52*l.*, for which Roger de Stutevill is to be summoned, who received the pledges.

William son of Erenbald owes 50*l.* for the mine of CARLISLE for the fourth part of the twenty-sixth year; and 2,106*l.* 13s. 4*d.* for several years past while he alone had the mine.

¹ *i.e.* entered on this roll because, etc.

² *i.e.* three years back.

[30 *Hen. II.* 1184—*Roll 3, m. 2d*]

Robert de Vallibus renders account of the farm of CUMBERLAND. In the treasury, 113*l.* 3s. 6*d.* by tale. And in the appointed alms to the knights of the Temple, 1 mark. And he owes 3s. 6*d.* The same renders account of the same debt. He has paid it into the treasury and is quit. The same sheriff renders account of 80*l.* 10s. 8*d.* for the notegeld. In the treasury, 60*l.* 3*d.* And in pardons by liberty of the King's charter to Robert de Vallibus, 18*l.* 13s. 1*d.*; and to the canons of CARLISLE, 37s. 4*d.* And he is quit. The same sheriff renders account of 4*l.* 10s. 11*d.* of the issue of Gamelebi and Glassenebi this year. He has paid it into the treasury and is quit.

OF PURPRESTURES AND ESCHEATS

The same sheriff renders account of 4*l.* of the farm of Salechhilla; and of 20s. of the farm of Hobrichtebi; and of 20s. for the tan mill. He has paid it into the treasury in 3 tallies and is quit. The same sheriff renders account of 10 marks for the rent of the forest of CUMBERLAND. He has paid it into the treasury and is quit. The same sheriff owes 10 marks for the rent of the forest of CUMBERLAND of the eleventh year, which was wholly in the war. In pardon by the King's writ to Robert de Vallibus, 10 marks. And he is quit.

OF PLEAS OF RANNULF DE GLANVILL

John son of Puncun renders account of 75s. 8*d.* because he had not whom he pledged. In the treasury, 22s. And he owes 53s. 8*d.*

Richard son of Truite renders account of 53s. 4*d.* for right of Gamelebi and Glassenebi. In the treasury, 20s. And he owes 33s. 4*d.*

William brother of Adam son of Adam son of Richer owes 40 marks that he may not be disseized of the land which his brother claims against him unless by judgment, for which he ought to render yearly 5 marks at the feast of St. Michael.

Gillbert son of Feregus renders account of 872*l.* 9s. for having the King's benevolence. In the treasury, 33*l.* 16s. 4*d.* And he owes 838*l.* 12s. 8*d.*

OF PLEAS OF THE COURT

Ælfward son of Ulf renders account of 40s. for a false statement. He has paid it into the treasury and is quit.

Arthur son of Godard (Henry his son for him) renders account of 41*l.* and 10 coursers for recognition of one knight's fee against the

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countess of Coupland. In the treasury, 26*l*. And he owes 15*l*.

OF THE PLEAS OF THOMAS SON OF BERNARD
AND ALAN DE FURNELLIS AND ROBERT
DE WITEFELD

The same sheriff owes 21*s*. 6*d*. of the amercement of the county for a concealment.

OF THE OFFERINGS IN COURT

Richard brother of Adam de Nouton renders account of 45*s*. 4*d*. for recognition of the death of Emma his niece. In the treasury, 38*s*. 8*d*. And he owes 6*s*. 8*d*.

Simon del Teillol renders account of 30 marks for the fine of the land of his father. He has paid it into the treasury and is quit.

The same sheriff owes 10*s*. 3*d*. of the pleas of the forest of CUMBERLAND by Thomas son of Bernard.

The same sheriff renders account of 13*s*. 8*d*. of the service of land of 4 hogs (*hogis*) and of the service of the land of Unspach, which Uctred and Walter hold, and of the service of the land in Waverton by Robert de Torebi. He has paid it into the treasury and is quit. The same sheriff renders account of 6*l*. 6*d*. of the pannage of CUMBERLAND. He has paid it into the treasury and is quit.

THE MINE OF CARLISLE

Humfrey brother of Richard and Adan, nephew of Rohelin and Henry Estreis and Richard de Ædmodeshal and Richard brother of Humfrey owe 393*l*. 6*s*. 8*d*. of the old farm of the mine of CARLISLE, as it is entered in the Roll of the past year, for which the sheriff of Northumberland and the sheriff of CUMBERLAND have pledged.

William son of Erembald and his pledges owe 52*l*., for which Roger de Stutevill is to be summoned, who has received the pledges. The same owes 50*l*. of the mine of CARLISLE for the fourth part of the twenty-sixth year. The same William owes 2,106*l*. 13*s*. 4*d*. of several past years, while he alone had the mine.

Walter de Carleol and Richard de Logis and Humfrey his brother render account of 61*l*. 11*s*. for the issue of the mine of CARLISLE of this year, as keepers (*custodes*¹). They have paid it into the treasury and are quit.

[31 *Hen. II.* 1185—*Roll* 12, *m.* 1*d*]

Robert de Vallibus renders account of the farm of CUMBERLAND of half a year. In the treasury, 57*l*. 2*d*. by tale. And he is quit.

¹ A technical term contrasting with *firmarii*.

Hugh de Morewich renders account of the farm of CUMBERLAND of half a year. In the treasury, 51*l*. 19*s*. 9*d*. by tale. And in the appointed alms to the knights of the Temple, 1 mark. And in defective stocking of the manors of the domain of the county, 4*l*. 7*s*. 1*d*. by tale. And he is quit.

The same sheriff renders account of 80*l*. 10*s*. 8*d*. for the notegeld. In the treasury, 58*l*. 18*s*. 4*d*. And in pardons by liberty of the King's charter to Robert de Vallibus, 18*l*. 13*s*. 1*d*.; and to the canons of CARLISLE, 37*s*. 4*d*. The same sheriff renders account of 6*l*. 17*s*. by tale of the issue of Gamelebi and Glassenebi this year. He has paid it into the treasury and is quit.

OF PURPRESTURES AND ESCHEATS

The same sheriff renders account of 4*l*. of the farm of Salechilla; and of 20*s*. of the farm of Hobrichtebi; and of 20*s*. for the tan mill. He has paid it into the treasury in 3 tallies and is quit. The same sheriff renders account of 10 marks for the rent of the forest of CUMBERLAND. He has paid it into the treasury and is quit. The same sheriff renders account of 40*s*. for the issue of Sourebi after oath made by a judge (*post Juratam factam per Just'*). He has paid it into the treasury and is quit.

OF THE PLEAS OF RANNULF DE GLANVILL

John son of Puncun renders account of 53*s*. 8*d*. because he had not whom he pledged. He has paid it into the treasury and is quit.

Richard son of Truite renders account of 33*s*. 4*d*. for right of Gamelebi and Glassenebi. He has paid it into the treasury and is quit.

William brother of Adam son of Adam son of Richer owes 40 marks that he may not be disseized of the land which his brother claims against him unless by judgment, for which he ought to render yearly 5 marks at the feast of St. Michael.

Gillbert son of Feregus owes 838*l*. 12*s*. 8*d*. for having the King's benevolence.

Henry son of Arthur renders account of 15*l*. and 10 coursers for a recognition of 1 knight's fee against the countess of Coupland. In the treasury, 10*l*. And he owes 100*s*. and 10 coursers.

The same sheriff renders account of 21*s*. 6*d*. of the amercement of the county for a concealment. He has paid it into the treasury and is quit.

Richard brother of Adam renders account of 6*s*. 8*d*. for recognition of the death of Emma. He has paid it into the treasury and is quit.

THE PIPE ROLLS

The same sheriff renders account of 10s. 3d. for pleas of the forest of CUMBERLAND by Thomas son of Bernard. In the treasury, 3d. And he owes 10s. The same sheriff renders account of 13s. 8d. of the service of land of 4 hogs, and of the service of the land of Unspac, which Uchtred and Walter hold, and of the service of land in Waverton by Robert de Torebi. He has paid it into the treasury and is quit.

NEW PLEAS AND NEW AGREEMENTS BY GODEFREY DE LUCI AND THE SHERIFF HIMSELF AND HIS COMPANIONS

Robert de Turb renders account of 1 mark for a false claim. He has paid it into the treasury and is quit.

Orm de Yrebi renders account of 2 marks, because no pledge has prosecuted his complaint. He has paid it into the treasury and is quit.

Walter the Fleming renders account of 1 mark for the same. He has paid it into the treasury and is quit.

Reginald de Rodcliva (Roccliffe) renders account of 100s. for an unjust disseizin. He has paid it into the treasury and is quit.

Deremann de Burc renders account of 20s. for the transgression of placing nets before the King's fishery (*ante piscariam Regis*). He has paid it into the treasury and is quit.

Gospatric son of Olf renders account of 20s. for a transgression. He has paid it into the treasury and is quit.

Gillbert son of Gillbert renders account of 1 mark for a default. He has paid it into the treasury and is quit.

Adam son of Ædmund renders account of 1 mark for an unjust perambulation without warrant. He has paid it into the treasury and is quit.

Ralf de la Ferte¹ renders account of 1 mark because he unjustly contradicted the jurors. He has paid it into the treasury and is quit.

Richard son of Ansketil renders account of 1 mark because he detained the cattle² contrary to surety and pledge. He has paid it into the treasury and is quit.

William son of Ailward renders account of 1 mark for an unjust disseizin. He has paid it into the treasury and is quit.

The county of CUMBERLAND renders account of 100s. for concealment of pleas of the Crown. In the treasury, 4l. 9s. 6d. And there is due 10s. 6d.

¹ This is the name latinized as 'de Feritate.'

² *Averia*, *avers*, cattle used in husbandry.

OF PLEAS OF THE SAME IN THE CITY OF CARLISLE

Ralf de la Mora renders account of 3 marks for an unjust disseizin. He has paid it into the treasury and is quit.

Adam son of Enisand renders account of 40s. for detention of chattels contrary to surety and pledge. He has paid it into the treasury and is quit.

Robert Ruffus renders account of 5 marks for concealment of the chattels of a robber in his house. He has paid it into the treasury and is quit.

The citizens of CARLISLE render account of 10 marks for concealment of the escheats of our Lord the King. They have paid it into the treasury and are quit.

OF PLEAS OF THE SAME IN COUPLAND

Benedict de Penington renders account of 3 marks because no pledge has prosecuted his claim. He has paid it into the treasury and is quit.

The knights of the court (*curie*) of the countess of Coupland render account of 100s. because they gave judgment on a plea which did not pertain to them. They have paid it into the treasury and are quit.

Randulf the Fleming renders account of 1 mark because he had not taken security for the prosecution of a certain assize. In the treasury, half a mark. And he owes half a mark.

The same sheriff renders account of 40s. of the minute ameracements of the men in Coupland, whose names are annotated in the aforesaid Roll. He has paid it into the treasury in 5 tallies and is quit.

The same sheriff renders account of 9l. 13s. 4d. of the ameracements of the men of CUMBERLAND, whose names and debts and the causes of the debts are annotated in the Roll of the justices who have paid it into the treasury. He has paid it into the treasury in 26 tallies and is quit.

OF THE KING'S AMERCEMENT FOR THE FOREST BY ÆRNISIUS DE NEVILL AND NIGEL SON OF ALEXANDER AND THEIR COMPANIONS

Ralf de la Mora renders account of 5 marks for timber (*maisremum*) taken without leave. He has paid it into the treasury and is quit.

Philip de Valoignis renders account of 2 marks for a perambulation of his pasture. In the treasury, 1 mark. And he owes 1 mark.

Thomas the clerk of Yrebi renders account of 1 mark for the same. In the treasury, half a mark. And he owes half a mark.

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Waldevē son of Gospatric renders account of 40s. for the same. He has paid it into the treasury and is quit.

The knights of Yrlid [Ireleth] render account of 10 marks for having respite up to Easter of the amercement of the last visitation (*reguardum*). They have paid it into the treasury and are quit.

The vill of Penred owes two marks for a perambulation of pasture. The vill of Saleghil owes 9s. for the same. But they render account below.

The same sheriff renders account of 2 marks for perambulation of the pasture of Penred; and of 20s. of the vill of Saleghill for the same. He has paid it into the treasury in 2 tallies and is quit. The same sheriff renders account of 76s. 8d. of the amercements of the men and vills, for the forest, whose names are annotated in the Roll of the justices who paid it into the treasury. He has paid it into the treasury in 6 tallies and is quit. The same sheriff renders account of 7l. 6s. 8d. of the minute amercements of the men, for the forest, whose names are annotated in the preceding Roll. He has paid it into the treasury and is quit.

OF THE OFFERINGS OF THE COURT

Henry son of Robert renders account of 1 mark for (proving his) right to the advowson of the church of Wacra [Dacre] against Rannulf son of Walter. He has paid it into the treasury and is quit.

William de Lacell owes 5 marks for the right of 1 knight's fee in Niweton against William de Reigni.

Robert de Vallibus owes 100 marks for several disseizins, and because he connived at the King's prisoners escaping from his custody, and because, when he was sheriff, he sustained the circulation of the old money after the general prohibition.

OF GIFTS MADE TO THE KING THROUGH THE SAME JUSTICES FOR LEAVE TO MAKE AGREEMENTS IN PLEAS OF LAND

Adam de Kerkebi renders account of 1 mark for leave to make an agreement with Thomas son of Gospatric. He has paid it into the treasury and is quit.

Alexander son of Benedict renders account of one mark for leave to make an agreement with Christiana daughter of Copsi. He has paid it into the treasury and is quit.

Waldevē de Beresford renders account of 1 mark for leave to make an agreement with Robert son of Torfin. He has paid it into the treasury and is quit.

Walter de Bolekil renders account of 3 marks for recognition of the dower of his wife against Reginald de Roudecliva [Roccliffe]. He has paid it into the treasury and is quit.

The same sheriff renders account of 2 marks of minute engagements (*promissionibus*) for leave of making agreements by the same. He has paid it into the treasury in 3 tallies and is quit.

The same sheriff renders account of 10s. 8d. of the chattels of Gospatric and Brice, outlaws. And of 23s. 10d. of the chattels of Gospatric Brun, an outlaw. And of 25s. 7d. of the chattels of Brice, an outlaw. Sum, 60s. 1d. He has paid it into the treasury in 3 tallies and is quit.

THE MINE OF CARLISLE

Humfrey brother of Richard owes 46l. 10s. of the mine of CARLISLE, as it is annotated in the Roll of the third year.

Richard brother of Humfrey owes 30l. 3s. 4d. of the farm of the mine of the fourth year.

Robert de Vallibus renders account of 180l. 66s. 8d. of the debt of Adam nephew of Roelin and Henry le Estreis of the mine of CARLISLE, which is annotated in the Roll of the twenty-ninth year; and of 133l. 6s. 8d. of the debt of Richard de Ædmodeshala of the farm of the same mine, as it is annotated in the same Roll. In the treasury, 8l. 9s. 4d. of William son of Odard and Michael de Kerkeland and Adam son of Ædmund; and of 10l. of Simon de Teillol; and of 106s. 8d. of Richard son of Truite and Adam de Ravenewich; and also of 40s. of Richard son of Truite; and also of 2 marks of Adam de Ravenewich. And he owes 289l. 10s. 8d., which is so exacted from him because he knew it to be an order to him from the justices that he should take sure pledges thence. But he renders account above in CUMBERLAND.

The same Robert de Vallibus renders account of 289l. 10s. 8d. of the debt of Adam nephew of Roelin and Henry le Estreis and Richard de Ædmodeshal of the old farm of the mine of CARLISLE, for which he acknowledged himself to have received pledges. In the treasury, 9l. 10s. of Henry Lestreis for pledge of Adam; and 70s. of William brother of Roelin for pledge of the same Adam; and 40s. of Henry son of Haikin for pledge of the same Adam; and 24s. of Siward son of Susanna for pledge of the same; and 24s. of Herbert son of Fei for pledge of the same; and 10s. of William Carbon for pledge of the same. Sum, 17l. 18s. And he owes 271l. 12s. 8d.

THE PIPE ROLLS

Roger de Stutevill renders account of 52*l.* of the debt of William son of Erenbald and his pledges, whom he undertook to warrant secure by order of the justices. In the treasury, 26*l.* 13*s.* 4*d.* And he owes 25*l.* 6*s.* 8*d.*

William son of Erembald owes 50*l.* of the mine of CARLISLE of the fourth part of the twenty-sixth year; and 2,106*l.* 13*s.* 4*d.* of several years past, while he alone held the mine.

Walter de Carleol and the aforesaid Humfrey and Richard render account of 73*l.* 9*s.* of the mine of CARLISLE as keepers¹ in this year. They have paid it into the treasury and are quit.

[32 *Hen. II.* 1186—*Roll 7, m. 1d*]

CUMBERLAND

Hugh de Morewich renders account of the farm of CUMBERLAND. In the treasury, 37*l.* 18*s.* 7*d.* by tale. And in the appointed alms to the knights of the Temple, 1 mark. And in discharge of the expense of John the King's son at Carlisle, 20*l.* by the King's writ. And he owes 55*l.* 8*s.* 5*d.* by tale. The same renders account of the same debt. In work on the chamber (*operatione camere*) of CARLISLE, 26*l.* by the King's writ. And in repair of the bridge of the castle of CARLISLE, 62*s.* 7*d.* by the same writ. And for 1 horse bought for the use of Elyas Brun the forester, 20*s.* by the same writ. And to complete . . . the stocking of the escheats of CUMBERLAND, 14*l.* 9*s.* 7½*d.* by the same writ. And in defective stocking of the manors of the county, 10*l.* 14*s.* 2*d.* And he owes 2*s.* 1*d.* The same renders account of the same debt. He has paid it into the treasury and is quit. The same sheriff renders account of 21*s.* 11*d.* of the notegeld of the past year. He has paid it into the treasury and is quit. The same sheriff renders account of 80*l.* 10*s.* 8*d.* of the notegeld of this year. In the treasury, 60*l.* 3*d.* And in pardons by liberty of the King's charter to Robert de Vallibus, 18*l.* 13*s.* 1*d.*; and to the canons of CARLISLE, 37*s.* 4*d.* And he is quit.

OF PURPRESTURES AND ESCHETS BY THE ROLL OF THE JUSTICES

The same sheriff renders account of 42*l.* 13*s.* 4*d.* of the farm of the purprestures and eschets. In the treasury, nothing. And to complete the stocking of the aforesaid eschets, saving this that in the past year it was com-

puted to him for 62 oxen, and 5 yoke oxen, and 93 cows and bulls, and 22 pigs, and 330 sheep, 29*l.* 16*s.* 5*d.* by the King's writ. And in default of this stocking for the half-year, 6*l.* 11*s.* 6*d.* And in waste of Carlatus, 17*s.* 6*d.* this year. And in quittance of the rent (*redditus*) of the house which Nicholas the assayer has at Carlisle by the justices for his labour, 3*s.* And he owes 104*s.* 11*d.* The same sheriff renders account of 20*s.* for the tan mill. He has paid it into the treasury and is quit. The same sheriff renders account of 10 marks of the rent (*census*) of the forest of CUMBERLAND. He has paid it into the treasury and is quit.

William brother of Adam son of Adam son of Richer owes 40 marks that he may not be disseized of the land which his brother claims against him unless by judgment, for which he ought to render yearly 5 marks at the feast of St. Michael.

Gillbert son of Feregrus owes 838*l.* 12*s.* 8*d.* for having the King's benevolence.

Henry son of Arthur renders account of 100*s.* and 10 coursers for recognition of 1 knight's fee against the countess of Coupland. In the treasury, 100*s.* And he owes 10 coursers.

The same sheriff renders account of 10*s.* for the pleas of the forest of CUMBERLAND by Thomas son of Bernard. In the treasury, 10*d.* And he owes 9*s.* 2*d.* The same sheriff renders account of 10*s.* 6*d.* of the county of CUMBERLAND for concealment of pleas of the Crown. He has paid it into the treasury and is quit.

Randulf the Fleming renders account of half a mark because he did not take security to prosecute a certain assize. He has paid it into the treasury and is quit.

Philip de Valoignis renders account of 1 mark for a perambulation of pasture. He has paid it into the treasury and is quit.

Thomas the clerk of Yrebi renders account of half a mark for the same. He has paid it into the treasury and is quit.

Robert de Vallibus owes 100 marks for several disseizins, and because he connived at the King's prisoners escaping from his custody, and because, when he was sheriff, he sustained the circulation of the old money after the general prohibition.

NEW PLEAS AND NEW AGREEMENTS BY
[RANDULF DE GLANVILL], RICHARD
ARCHDEACON OF COVENTRY AND HUGH
BARD[ULF]

Waldeve son of Gospatric renders account of 40*s.* for a disseizin. He has paid it into the treasury and is quit.

¹ See note p. 356.

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Richard Truite renders account of half a mark for the same. He has paid it into the treasury and is quit.

OF PLEAS OF THE FOREST OF CUMBERLAND BY ALEXANDER SON OF NIGELL AND HIS COMPANIONS

The same sheriff renders account of 10 marks from the free tenants beyond the Eden [Ædenam] for respite of visitation. In the treasury, 5s. And he owes 6l. 8s. 4d.

Robert de Vallibus owes 50l. 3s. 4d. of the rent of the castle of Sourebi (Castelli de Sourebi)¹ for 10 years past.

The same sheriff renders account of 6s. of minute amercements of the men whose names are annotated in the Roll of the justices who have paid it into the treasury. He has paid it into the treasury and is quit.

Richard son of Ansketill renders account of 1 mark for the domain of the King ploughed and concealed; and of 20s. for his corn sowed there. He has paid it into the treasury in two tallies and is quit.

The same sheriff renders account of half a mark of Alexander de Windsor for dogs which he had contrary to the assize; and of half a mark of the prior of Wederhala (Wetheral) for a ward (*warda*) made in the forest; and of half a mark of Odard son of Adam, because he had not whom he pledged. He has paid it into the treasury in three tallies and is quit.

William de la Ferte renders account of 5 marks for the King's domain ploughed and concealed. In the treasury, 40s. And he owes 2 marks. The same William renders account of 1 mark for corn sowed in the aforesaid land. He has paid it into the treasury and is quit.

The same sheriff renders account of 6s. 8d. of the service of the land of Schelton; and of 5s. of the farm of Rachton; and of 2s. of the farm of Waverton. He has paid it into the treasury in three tallies and is quit. The same sheriff renders account of 26s. of the chattels of Ædred, an outlaw. He has paid it into the treasury and is quit.

William de Lacell owes 5 marks for (proving his) right to half a knight's fee in Niweton against William de Reigni.

THE MINE OF CARLISLE

Robert de Vallibus renders account of 271l. 12s. 8d. of the old farm of the mine, viz. of the debt of Adam nephew of Roelin and Henry Lestreis and Richard de Ædmodeshala, for which Robert himself acknowledged to

have received pledges. In the treasury, 33s. 4d. of Richard son of Truite; and 13s. 4d. of Henry son of Aichin; and 66s. 8d. of the said Richard de Ædmodeshal; and 9s. of William brother of Roelin; and 13s. 4d. of William son of Odard; and 13s. 4d. of Adam de Ravenwick; and 13s. 4d. of Michael de Kirkeland; and 13s. 4d. of Simon de Teillol; and 20s. of Walter Caperon; and 18s. 8d. of William son of Roelin. Sum, 10l. 14s. 4d. And he owes 260l. 18s. 3d.

Humfrey brother of Richard owes 46l. 10s. of the mine of CARLISLE, as it is annotated in the Roll of the fourth year.

Richard brother of Humfrey renders account of 30l. 3s. 4d. of the farm of the same mine of the fifth year.² In the treasury, 10l. And he owes 10l. 3s. 4d.

Roger de Stutevill owes 25l. 6s. 8d. of the debt of William son of Erembald and his pledges, whom he undertook to warrant secure by order of the justices. Look for the account below.

William son of Erembald [owes *interlined*] renders account of 50l. of the mine of CARLISLE for the fourth part of the twenty-seventh year; and of 2,106l. 13s. 4d. for several years past, while he alone held the mine. In the treasury, 1 mark. And he owes 50l. of the fourth part of the twenty-seventh year for the mine; and 2,106l. for several years past.

Roger de Stutevill renders account of 25l. 6s. 8d. of the debt of William son of Erembald and his pledges, whom he undertook to warrant secure by order of the justices. In the treasury, 40s. of Reginald Prat; and 40s. of Alured Nent; and 40s. of Alard de Mora; and 40s. of Peter Estresius; and 40s. of Robert Maresc'; and 4 marks of John and Geoffrey and Waldeve; and 40s. of Godwin Bene; and 40s. of Aldred de Shetelhoppe; and 4 marks of Peter Moreman; and of half a mark of Geoffrey Ardur; and of 2 marks of Osbert Ladman; and of 4 marks of Henry Lodcharl. Sum, 23l. 13s. 4d. in twelve tallies. And he owes 33s. 4d.

Alan the moneyer and Richard brother of Humfrey render account of 100l., each of 50l. for his part. They have paid it into the treasury in two tallies and are quit.

[33 *Hen. II.* 1187—*Roll 7, m. 2d*]

CUMBERLAND

Hugh de Morewich (Nicholas his brother for him) renders account of the farm of CUMBERLAND. In the treasury, 47l. 17d. by tale. And in the appointed alms to the knights of

¹ Now the parish of Castle Sowerby.

² *i.e.* four years back.

THE PIPE ROLLS

the Temple, 1 mark. And in repair of the King's chamber in the castle of CARLISLE and of one little tower (*parve turris*) in the same castle, 41*l.* 14*s.* 7*d.* by the King's writ and the view of Wibert son of Hacun and Richard son of Walter. And for felling material to renew the beams of the great tower, 10*s.* by the same writ. And in defective stocking of the manors of the county, 10*l.* 14*s.* 2*d.* And to complete the stocking of the escheats, for 150 sheep, 100*s.* by the King's writ. And for 26 sows and 2 boars, 28*s.* by the same writ. And he owes 6*l.* 18*s.* 10*d.* by tale. The same sheriff renders account of 80*l.* 10*s.* 8*d.* of the nouthtegeld. In the treasury, 60*l.* 3*d.* And in pardons by liberty of the King's charter to Robert de Vallibus, 18*l.* 13*s.* 1*d.*; and to the canons of CARLISLE, 37*s.* 4*d.* And he is quit.

OF PURPRESTURES AND ESCHEATS BY THE ROLL OF THE JUSTICES

The same sheriff renders account of 104*s.* 11*d.* of the old farm of purprestures. He has paid it into the treasury and is quit. And the same of 42*l.* 13*s.* 4*d.* of the new farm. In the treasury, 42*l.* 19*d.* And in quittance of the rent of the house at CARLISLE which the justices delivered to Nicholas the assayer for his labour, 3*s.* And in waste of Carlatus, 8*s.* 9*d.* for half a year. And he is quit. The same sheriff renders account of 20*s.* for the tan mill. He has paid it into the treasury and is quit. The same sheriff renders account of 10 marks of the rent of the forest of CUMBERLAND. He has paid it into the treasury and is quit. The same sheriff renders account of 6*s.* 8*d.* of the service of the land of Schelton; and of 5*s.* of the farm of Rachton; and of 2*s.* of the farm of Waverton. He has paid it into the treasury in three tallies and is quit.

William brother of Adam son of Adam son of Richer renders account of 40 marks that he may not be disseized of the land which his brother claims against him unless by judgment, for which he ought to render yearly 5 marks at the feast of St. Michael. In the treasury, 5 marks. And he owes 35 marks.

Gillbert son of Fergus owes 838*l.* 12*s.* 8*d.* for having the King's benevolence.

Henry son of Arthur owes 10 coursers for recognition of one knight's fee against the countess of Coupland.

The same sheriff owes 9*s.* 2*d.* of pleas of the forest of CUMBERLAND by Thomas son of Bernard.

Robert de Vallibus owes 100 marks for several disseizins, and because he connived at

the King's prisoners escaping from his custody, and because, when he was sheriff, he sustained the circulation of the old money after the general prohibition.

OF PLEAS OF THE FOREST OF CUMBERLAND BY NIGEL SON OF ALEXANDER AND HIS COMPANIONS

The same sheriff renders account of 6*l.* 7*s.* 4*d.* of the free tenants beyond Æden for respite of visitation (*respectus rewardi*¹). He has paid it into the treasury and is quit.

Robert de Vallibus renders account of 50*l.* 3*s.* 4*d.* of the rent (*redditus*) of the castle of Sourebi for ten years past. In the treasury, 13*l.* 6*s.* 8*d.* And he owes 36*l.* 16*s.* 8*d.*

William de la Ferte renders account of 1 mark for the King's domain ploughed and concealed. He has paid it into the treasury and is quit.

William de Lacell owes 5 marks for (proving his) right to half a knight's fee in Niweton against William de Regini.

NEW PLEAS AND NEW AGREEMENTS BY ROGER DE HOVEDEN² AND BY GEOFFREY DE HAIA AND ERNISIUS DE NEVILL AND NIGEL SON OF ALEXANDER

The same sheriff renders account of 4*l.* 12*s.* 11*d.* of the amercements of the men of CUMBERLAND and of visitation (*reguardum*) of the same forest. He has paid it into the treasury and is quit.

The same sheriff owes 6*s.* for 6 acres of wheat in Daleston, a domain of the King; and 2*s.* for 4 acres of oats in Salekil, a domain of the King. The same sheriff renders account of 13*s.* 3*d.* of the chattels of Unspac, an outlaw; and of 4*s.* 1*d.* of the chattels of Gospatric Belle, an outlaw; and of 7*s.* 10*d.* of the chattels of Jordan and Richard de Schelton, outlaws; and of 7*s.* 11*d.* of the chattels of Henry Collem and William Scherewind, outlaws. Sum, 33*s.* 1*d.* He has paid it into the treasury in four tallies and is quit.

OF THE TALLAGE OF THE KING'S DO- MAINS IN CUMBERLAND BY GODFREY DE LUCI AND JOSCELIN THE ARCH- DEACON AND WILLIAM LE VAVASSUR

The same sheriff renders account of 8*l.* 13*s.* 4*d.* of the 'donum' of Penred. In the treasury, 4*l.* 6*s.* 8*d.* And he owes 4*l.* 6*s.* 8*d.* The same sheriff renders account of 40*s.* of the 'donum' of Langwadebi. In the treasury,

¹ 'reguard' of the forest—a technical term.

² The historian.

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19s. And he owes 21s. The same sheriff renders account of 102s. of the 'donum' of Salekil. In the treasury, 51s. And he owes 51s. The same sheriff renders account of 44s. of the 'donum' of Stanwega [Stanwix]. In the treasury, 22s. And he owes 22s. The same sheriff renders account of 78s. 8d. of Old Salekil. In the treasury, 39s. 4d. And he owes 39s. 4d. The same sheriff renders account of 40s. of the 'donum' of Faremannebi. In the treasury, 20s. And he owes 20s. The same sheriff renders account of 52s. 8d. of the 'donum' of Glassenebi. In the treasury, 26s. 4d. And he owes 26s. 4d. The same sheriff renders account of 106s. 8d. of the 'donum' of Ulnebi [Ousby]. In the treasury, 53s. 4d. And he owes 53s. 4d. The same sheriff renders account of 66s. 8d. of the 'donum' of Scottebi. In the treasury, 33s. 4d. And he owes 33s. 4d. The same sheriff renders account of 18s. 8d. of the 'donum' of Gamelesbi. In the treasury, 9s. 4d. And he owes 9s. 4d. The same sheriff renders account of 10s. of the 'donum' of Brichtebi. In the treasury, 5s. And he owes 5s. The same sheriff renders account of 10l. 6s. 4d. of the 'donum' of Dalston. In the treasury, 103s. 2d. And he owes 103s. 2d. The same sheriff renders account of 109s. 8d. of the 'donum' of Sourebi. In the treasury, 54s. 10d. And he owes 54s. 10d. The same sheriff renders account of 21s. of the 'donum' of Karlatun. In the treasury, 10s. 6d. And he owes 10s. 6d.

The citizens of CARLISLE render account of 60 marks of their 'donum.' In the treasury, 20 marks. And they owe 40 marks.

THE MINE OF CARLISLE

Robert de Vallibus renders account of 260l. 18s. 4d. of the debt of Adam nephew of Roelin and Henry Leistreis and Richard de Ædmodeshala of the mine of CARLISLE, for which the same Robert acknowledged to have received pledges while he was sheriff. In the treasury, 23s. 4d. (of Richard son of Anisand) of Adam son of Ædmund; and 34s. 1d. of William son of Odard; and 13s. of Walter Caperun; and 4l. 6s. 8d. of Simon del Tellol; and 13s. 4d. of Michael de Kirkeland; and 25s. of Adam de Ravene-wich; and 25s. of Richard son of Truite. Sum, 111. 17d. And he owes 249l. 16s. 11d.

Humfrey brother of Richard renders account of 46l. 10s. of the old farm of the mine of CARLISLE. In the treasury, 19s. And he owes 45l. 11s.

Richard brother of Humfrey renders ac-

count of 20l. 3s. 4d. of the old farm of the same mine. In the treasury, 10l. And he owes 10l.

William son of Erembald renders account of 2,156l. of the mine of CARLISLE for several years past, while he alone held the mine. In the treasury, 13s. 4d. And he owes 2,155l. 6s. 8d.

Roger de Stutevill owes 33s. 4d. of the debt of William son of Erembald and his pledges, whom he undertook to warrant secure by order of the justices.

Alan the moneyer and Richard brother of Humfrey render account of 100l. of the farm of the mine of CARLISLE of this year, each of 50l. for his part. They have paid it into the treasury in two tallies and are quit.

[34 *Hen. II. 1188—Roll 1, m. 2*]

THE BISHOPRIC OF CARLISLE FOR TWO YEARS

Nicholas de Morewich (William Roges for him) renders account of 14l. 16s. 4d. of two synods of the past year of the same bishopric and archdeaconry, viz. from the feast of All Saints up to the feast of St. Michael; and of 47s. 2d. of oblations in the feast of Pentecost of that year; and of 44s. of the issue of the church of Carleton of the aforesaid term; and of 6l. 6s. 4d. of the issue of the church of Meleburn¹ of the same term; and of 50s. of the church of Daleston; and of 13s. 4d. of the school of Carlisle; and of 112s. 4d. of pleas and perquisites; and of 7l. 6s. 8d. of the Easter synod of this year, viz. from the feast of St. Michael to the Assumption of the Blessed Mary; and of 58s. of the church of Meleburn for the same term; and of 40s. of the church of Carlaton; and of 50s. of the church of Dalaston of the same term; and of 1 mark of the school of Carlisle; and of 32s. 8d. of oblations at Pentecost; and of 29s. 4d. of the pleas and perquisites of the same bishopric this year. Sum, 52l. 19s. 6d. In the treasury, 50s.

And for oil for the Easter sacrament for two terms and for the carrying of it from London to CARLISLE, 14s.; and in work of the great altar and pavement in the church of St. Mary, CARLISLE, 26s. 9d. by the King's writ and by view of William, dean of the canons (*Will Dē canonīc*²); and in work of the same church, 154. 17s. 9d. by the same writ and by view of the said William and Ralf Palmar; and in work of the dormitory of the canons, 22l. 19s. 2d. by the same writ and by view of

¹ In Derbyshire.

² Does it mean 'dean of the canons?'

THE PIPE ROLLS

the aforesaid canon and Robert Niger. And he owes 9*l.* 10*s.* 10*d.*, of which he says that he delivered to William son of Aldel[in] 8*l.* 18*s.* 1*d.* for the aforesaid work. And besides this he owes 12*s.* 9*d.*, which remains by reason of the poverty of the debtors.

[Roll 14, m. 2]

CUMBERLAND

Nicholas de Morewich renders account of 6*l.* 18*s.* 10*d.* by tale of the old farm of CUMBERLAND. He has paid it into the treasury and is quit. The same of the new farm. In the treasury, 86*l.* 19*s.* 9*d.* by tale. And in the appointed alms to the knights of the Temple, 1 mark. And in repair of the King's chamber in the castle of Carlisle and for planking the tower (*planchianda turri*) in the same castle, 13*l.* 6*s.* 8*d.* by the King's writ and by view of Richard son of Walter and Wibert son of Hacun. And also to complete the aforesaid chamber, 77*s.* 6*d.* by the same writ and by view of Onin. And in completing the stocking of the manors of the county, which was lost in time of the war, for 61 oxen, 9*l.* 3*s.* by the King's writ. And he is quit. The same sheriff renders account of 80*l.* 10*s.* 8*d.* of the nouthtegeld. In the treasury, 60*l.* 3*d.* And in pardons by liberty of the King's charter to Robert de Vallibus, 18*l.* 13*s.* 1*d.*; and to the canons of CARLISLE, 37*s.* 4*d.* And he is quit.

OF PURPRESTURES AND ESCHEATS

The same sheriff renders account of 42*l.* 13*s.* 4*d.* of the farm of the purprestures of CUMBERLAND. In the treasury (he has paid), 37*l.* 11*s.* 4*d.* And he owes 102*s.* The same sheriff renders account of 20*s.* for the tan mill. He has paid it into the treasury and is quit. The same sheriff renders account of 10 marks of the rent of the forest of CUMBERLAND. He has paid it into the treasury and is quit. The same sheriff renders account of 6*s.* 8*d.* of the service of the land of Schelton; and of 5*s.* of the farm of Rachton; and of 2*s.* of the farm of Waverton. He has paid it into the treasury in three tallies and is quit.

William brother of Adam son of Richer renders account of 35 marks that he may not be disseized of the land which his brother claims against him unless by judgment, of which he ought to render yearly 5 marks at the feast of St. Michael. In the treasury, 2½ marks. And he owes 32½ marks.

Gillbert son of Feregus owes 838*l.* 11*s.* 8*d.* for having the King's benevolence.

Henry son of Arthur renders account of 10 coursers for recognition of one knight's fee against the countess of Coupland. He has paid it to the King himself by his writ and is quit.

The same sheriff owes 9*s.* 2*d.* of pleas of the forest of CUMBERLAND by Thomas son of Bernard.

Robert de Vallibus (renders account) owes 100 marks for several disseizins, and because he connived at the King's prisoners escaping from his custody, and because, when he was sheriff, he sustained the circulation of the old money after the general prohibition. The same Robert renders account of 36*l.* 16*s.* 8*d.* of the rent of the castle of Sourebi for several years. In the treasury, 17*l.* 19*s.* 6*d.* And he owes 18*l.* 17*s.* 2*d.*

William de Lacell owes 5 marks for proving his right to half a knight's fee in Niweton against William de Reigni. But he has not had the right.

The same sheriff owes 6*s.* for 6 acres of wheat in Daleston, a domain of the King; and 2*s.* for 4 acres of oats in Salekil, a domain of the King.

OF THE TALLAGE OF THE KING'S DOMAINS IN CUMBERLAND BY GODEFREY DE LUCI AND JOSCELIN THE ARCHDEACON AND WILLIAM LE VAVASSUR

The same sheriff owes 4*l.* 6*s.* 8*d.* of the 'donum' of Penred. The men of Langwadebi owe 21*s.* of the 'donum.' The men of Salekil owe 51*s.* of the 'donum.' The men of Stanwega owe 22*s.* of the 'donum.' The men of Old Salekil owe 39*s.* 4*d.* of the 'donum.' The men of Faremannebi owe 20*s.* of the 'donum.' The men of Glassenebi owe 26*s.* 4*d.* of the 'donum.' The men of Ulnebi owe 53*s.* 4*d.* of the 'donum.' The men of Scottebi owe 33*s.* 4*d.* (of the 'donum'). The men of Gamelesbi owe 9*s.* 4*d.* of the 'donum.' The men of Brichtebi owe 5*s.* of the 'donum.' The men of Dalston owe 103*s.* 2*d.* of the 'donum.' The men of Sourebi owe 54*s.* 10*d.* of the 'donum.' The men of Karlatus owe 10*s.* 6*d.* of the 'donum.' The citizens of Carlisle owe 40 marks of the 'donum.'

NEW PLEAS AND NEW AGREEMENTS BY GODEFREY DE LUCI AND JOSCELIN THE ARCHDEACON OF CHICHESTER AND WILLIAM LE VAVASSUR

Ansketill le Tanur renders account of 5 marks because he was convicted of that which he denied. In the treasury, 22*s.* And he owes 44*s.* 8*d.*

A HISTORY OF CUMBERLAND

Adam son of Adam renders account of 40s. for replevin of his men. In the treasury, 20s. And he owes 20s.

The same sheriff renders account of 3 marks of the vill of Blennerheist because it did not make suit after outlawry (*quia non fecit sectam post Vtlaḡ*). He has paid it into the treasury and is quit.

Reginald de Roteclive (Roccliffe) renders account of 100s. for a distraint of land contrary to the assize. He has paid it into the treasury and is quit.

Walter Hasting renders account of 100s. for a false claim. In the treasury, 36s. 9d. And he owes 63s. 9d.

OF OFFERINGS OF COURT

William de Lindesia owes 40 marks for proving his (*habendo*) right in the King's court against Henry clerk of Appelbi and the countess of Albemarle and Nicholas de Stutevill of Uckemanebi¹ and Blendherset² and Wnering³ and Leventon and Laweswator and Bikyrmet and Stapelthein.

OF THOSE WHO RENDERED EVERYTHING,⁴ OF THE AFORESAID PLEAS OF GODEFREY DE LUCI AND HIS COMPANIONS, BELOW 40s.

The same sheriff renders account of 116s. 8d. of the amercements of the men of CUMBERLAND, whose names and debts and causes of the debts are annotated in the Roll of the aforesaid, who have paid it into the treasury. He has paid it into the treasury in 14 tallies and is quit.

William de Cumberland owes half a mark because he withdrew himself.

Adam nephew of Roelin owes half a mark for a false claim.

THE MINE OF CARLISLE

(Adam nephew) of Roelin and Henry Lestreis and Richard de Ædmodeshal and their pledges (owe or render account of) 249l. 16s. 11d. of the old farm of CARLISLE.

(William) son of Erembald owes 2,155l. 6s. 8d. of the mine of CARLISLE for several years past, while he alone held the mine.

(Richard) brother of Humfrey renders account of 10l. of the old farm of the same mine. He has paid it into the treasury and is quit.

¹ A vill in the parish of Allhallows, formerly in the parish of Aspatria.

² A vill in the parish of Torpenhow.

³ A vill in the parish of Dearham.

⁴ *i.e.* paid up in full.

[] 40l. 11s. of the old farm of the same mine.

[] 33s. 4d. of the debt of William son of Erembald and his pledges, whom he had undertaken to warrant by order of the justices.

[] render account of 100l. of the farm of the mine of CARLISLE this year, each of 50l. for his part. They have paid it into the treasury and are quit.

[1 Ric. I. 1189—Roll 8, m. 2]

CUMBERLAND

William son of Aldelin renders account of the farm of CUMBERLAND. In the treasury, 113l. 7s. by tale. And in the appointed alms to the knights of the Temple, 1 mark. And he is quit. The same sheriff renders account of 80l. 10s. 8d. of the nouthtegeld. In the treasury, 59l. 7s. 10d. And in pardons by liberty of the King's charter to Robert de Vallibus, 18l. 13s. 1d.; and to the canons of CARLISLE, 37s. 4d. And he owes 12s. 5d.

The same sheriff renders account of 17l. 3s. of the pannage of CUMBERLAND. He has paid it into the treasury and is quit.

OF PURPRESTURES AND ESCHEATS

The same sheriff renders account of 102s. of the old farm of the purprestures of CUMBERLAND. In the treasury, 35s. 6d. And he owes 66s. 6d., which ought to be sought for from Nicholas de Morewich. See the account below. The same sheriff renders account of 42l. 13s. 4d. of the new farm. He has paid it into the treasury and is quit. The same sheriff renders account of 20s. of the tan mill. He has paid it into the treasury and is quit. The same sheriff renders account of 10 marks of the rent (*census*) of the forest of CUMBERLAND. He has paid it into the treasury and is quit. The same sheriff owes 6s. 8d. of service of the land of Schelton. The same sheriff owes 5s. of the farm of Rachton. The same sheriff owes 2s. of the farm of Waverton.

Nicholas de Morewich renders account of 102s. of the old farm of the purprestures of CUMBERLAND. In the treasury, 18s. 3d. And he owes 4l. 3s. 9d.

William brother of Adam son of Adam son of Richer renders account of 32½ marks that he may not be disseized of the land which his brother claims against him unless by judgment, of which he ought to render yearly 5 marks at the feast of St. Michael. In the treasury, 37s. 4d. And he owes 19l. 16s.

THE PIPE ROLLS

Gillbert son of Feregus owes 938*l.* 12*s.* 8*d.* (*sic*) for having the King's benevolence.

The same sheriff renders account of 9*s.* 2*d.* of pleas of the forest of CUMBERLAND by Thomas son of Bernard. In the treasury, 3*d.* And he owes 8*s.* 9*d.*

Robert de Vallibus (renders account) owes 100 marks for several disseizins, and because he connived at prisoners escaping from his custody, and because, when he was sheriff, he sustained the circulation of the old money after the general prohibition.

The same Robert renders account of 18*l.* 17*s.* 2*d.* of the rent of the castle of Sourebi for several years. In the treasury, 11*s.* 4*d.* And he owes 18*l.* 5*s.* 10*d.*

William de Lacell owes 5 marks for (proving his) right to half a knight's fee in Niweton against William de Reigni.

The same sheriff owes 6*s.* for 6 acres of wheat in Daleston, a domain of the King; and 2*s.* for 4 acres of oats in Salekil, a domain of the King.

OF TALLAGE OF THE KING'S DOMAINS IN CUMBERLAND BY GODEFREY DE LUCI AND HIS COMPANIONS

The men of Penred owe 4*l.* 6*s.* 8*d.* of the 'donum.' The men of Langwadebi owe 21*s.* of the 'donum.' The men of Salekil owe 51*s.* of the 'donum.' The men of Stanwega owe 21*s.* of the 'donum.' The men of old Salekil owe 39*s.* 4*d.* of the 'donum.' The men of Faremannebi owe 20*s.* of the 'donum.' The men of Glassenebi owe 26*s.* 4*d.* of the 'donum.' The men of Ulnebi owe 53*s.* 4*d.* of the 'donum.' The men of Scottebi owe 33*s.* 4*d.* of the 'donum.' The men of Gamelesbi owe 9*s.* 4*d.* of the 'donum.' The men of Brichtebi owe 5*s.* of the 'donum.' The men of Dalston owe 103*s.* 2*d.* of the 'donum.' The men of Sourebi owe 54*s.* 10*d.* of the 'donum.' The men of Karlatus owe 10*s.* 6*d.* of the 'donum.' The citizens of CARLISLE owe 40 marks of the 'donum.'

The same sheriff [] 60*l.* of amercement for default of 12 days (*dierum*) for which he did not come to the exchequer as he was summoned.

OF THE PLEAS OF GODEFREY DE LUCI AND HIS COMPANIONS

Ansketil le Tanur renders account of 44*s.* 8*d.* because he was convicted of that which he denied. In the treasury, 33*s.* And he owes 11*s.* 8*d.*

The same sheriff renders account of 10*s.* of the farm of Langrug;¹ and of 3*s.* of the

¹ A vill in the parish of Bromfield.

farm of Kirkebride; and of 6*s.* 10*d.* of the farm of Niweton.² In the treasury he has paid it in 3 tallies and is quit. The same sheriff renders account of 6*s.* 8*d.* of the service of the land of Schelton; and of 5*s.* of the farm of Rachton; and of 2*s.* of the farm of Waverton. He has paid it into the treasury in 3 tallies and is quit. The same sheriff renders account of 2*s.* of Daleston, a domain of the King. He has paid it into the treasury and is quit.

Adam son of Adam renders account of 20*s.* for the replevin of his men. He has paid it into the treasury and is quit.

Walter Hasteng renders account of 63*s.* 9*d.* for a false claim. In the treasury, 14*s.* And he owes 49*s.* 9*d.*

OF THE OFFERINGS OF COURT

William de Lindesia owes 40 marks for having right in the King's court against Henry clerk of Appelbi and the countess of Albemarle and Nicholas de Stutevill of Uckemannebi and Blendherseta and Wnering and Leventon and Laweswater and Bekirnet and Stapelthein.

William de Cumberland owes half a mark because he withdrew himself.

Adam nephew of Roelin owes half a mark for a false claim.

NEW PLEAS AND NEW AGREEMENTS BY HUGH BISHOP OF DURHAM AND WILLIAM SON OF ALDELIN AND PETER DE ROSS AND WILLIAM LE VAVASSUR

Walter de Windlesores renders account of half a mark for a default. In the treasury, 4*s.* And he owes 2*s.* 8*d.*

The same sheriff renders account of 5 marks of the common amercement of the county of CUMBERLAND. He has paid it into the treasury and is quit.

OF THOSE WHO RENDERED THE WHOLE³

The same sheriff renders account of 5½ marks of the minute amercements of the men and vills, whose names and debts and causes of the debts are entered in the Roll of the aforesaid, who have paid it into the treasury. He has paid it into the treasury in 10 tallies and is quit.

Henry de Cnarreburc owes half a mark for auditing his chirograph (*pro audiendo cyrographo*). Peter the man of the same Henry owes half a mark because he has withdrawn himself.

² Newton Reigny, near Penrith.

³ *i.e.* paid up in full.

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[2 Ric. I. 1190—Roll 5, m. 2]

CUMBERLAND

Siward de Huchemannebi owes half a mark because his pledge has not been prosecuted.

Ketelbern son-in-law (*gener*) of the sheriff renders account of half a mark because he had not him whom he pledged. He has paid it into the treasury and is quit.

Stephen the mercer renders account of 30s. for the same. In the treasury, 15s. And he owes 15s.

Baldwin nephew of Serlo renders account of half a mark for the same. He has paid it into the treasury and is quit.

OF PLEAS OF THE FOREST BY ÆRNISIUS DE NEVILL AND ROGER DE HOVEDEN¹

The same sheriff renders account of 50s. of the amercements of the men of CUMBERLAND for the forest, whose names are entered in the Roll of the aforesaid, who have paid it into the treasury. He has paid it into the treasury in 12 tallies and is quit.

Gamel de Penred owes 12d. for a vert.²

William son of Eward de Crossebi owes 1 mark for re-erecting his mill where it was before (*pro molendino suo relevando ubi prius fuerat*).

THE MINE OF CARLISLE

Adam nephew of Roelin and Henry Les-treis and Richard de Ædmodeshala and their pledges render account of 249l. 16s. 11d. of the old farm of CARLISLE. In the treasury, 33s. 4d. of William son of Odard; and 3s. of Walter de Chaperun; and 15s. of Adam de Ravenewich; and 12s. 6d. of Richard son of Truite. Sum, 63s. 10d. And he owes 246l. 13s. 1d.

Humfrey brother of Richard owes 45l. 11s. of the old farm of the same mine.

Roger de Stutevill owes 33s. 4d. of the debt of William son of Erembald and his pledges, which he has acknowledged to have received by precept of the justices.

Alan the moneyer and Richard brother of Humfrey render account of 100l. of the farm of the mine of CARLISLE this year, each of 50l. for his part. They have paid it into the treasury and are quit.

William son of Erembald renders account of 2,155l. 6s. 8d. of the mine of CARLISLE for several years past, in which he held the mine. In the treasury, 13s. 4d. And he owes 2,154l. 13s. 4d.

¹ The pleas in Copland are entered in the Yorkshire Roll. See Hunter's reprint, pp. 88-9.

² *Viridis*, a technical term to express a trespass in the forest or forest offence.

William son of Aldelin renders account of the farm of CUMBERLAND. In the treasury, 113l. 7s. And in the appointed alms to the knights of the Temple, 1 mark. And he is quit. The same sheriff owes 12s. 5d. of nouthegeld of the old farm which remained upon the waste of Landwadebi and Carlaton. The same sheriff renders account of 80l. 10s. 8d. of the notegeld of this year. In the treasury, 60l. 3d. And in pardons by liberty of the King's charter to Robert de Vallibus, 18l. 13s. 1d.; and to the canons of Carlisle, 37s. 4d. And he is quit. The same sheriff renders account of 41s. 1d. of the pannage of CUMBERLAND. He has paid it into the treasury and is quit.

OF PURPRESTURES AND ESCHEATS

The same sheriff renders account of 42l. 13s. 4d. of the farm of the purprestures of CUMBERLAND. In the treasury, 33l. 18s. 11d. And to Ebrard the keeper of the hawks, 55s. for carrying the King's birds to the chancellor, by writ of the same. And in work of the 3 gates of the city of Carlisle and of 1 granary, 119s. 5d. by writ of the chancellor and by view of Guy the provost and Rannulf Brunus. And he is quit. The same sheriff renders account of 20s. of the tan mill. He has paid it into the treasury and is quit. The same sheriff renders account of 10 marks of the rent of the forest of CUMBERLAND. He has paid it into the treasury and is quit.

Nicholas de Morewic owes 4l. 3s. 9d. of the old farm of purprestures, but he renders account below—before *Tallage*.

William brother of Adam son of Adam son of Richer renders account of 19l. 16s. that he may not be disseized of the land which his brother claims against him unless by judgment. In the treasury, 3s. And he owes 19l. 13s.

Gillbert son of Fereagus owes 938l. 12s. 8d. for having the King's benevolence.

The same sheriff owes 8s. 11d. of pleas of the forest of CUMBERLAND by Thomas son of Bernard.

Robert de Vallibus owes 100 marks for several disseizins, and because he connived at prisoners escaping from his custody, and because, when he was sheriff, he sustained the circulation of the old money after the general prohibition. The same Robert renders account of 18l. 5s. 10d. of the rent of the castle

THE PIPE ROLLS

of Sourebi for several years. In the treasury, 4*l.* 6*s.* 8*d.* And he owes 13*l.* 19*s.* 2*d.*

William de Lacell owes 5 marks for proving his right to one half knight's fee in Niweton against William de Reigni.

The same sheriff owes 6*s.* for 6 acres of wheat in Dalleston, a domain of the King; and 2*s.* for 4 acres of oats in Salekil, a domain of the King.

Nicholas de Morewich renders account of 4*l.* 3*s.* 9*d.* of the old farm of the purprestures. In the treasury, 42*s.* And he owes 41*s.* 9*d.*

OF THE TALLAGE OF THE KING'S DOMAINS IN CUMBERLAND BY GODEFREY DE LUCI AND HIS COMPANIONS

The men of Penred render account of 4*l.* 6*s.* 8*d.* of the 'donum.' In the treasury, 35*s.* 5*d.* And they owe 51*s.* 5*d.* The men of Langwadebi render account of 21*s.* of the 'donum.' In the treasury, 11*s.* And they owe 10*s.* The men of Salekil render account of 51*s.* of the 'donum.' In the treasury, 24*s.* And they owe 27*s.* The men of Stanwega render account of 21*s.* of the 'donum.' In the treasury, 11*s.* And they owe 10*s.* The men of Old Salekil render account of 39*s.* 4*d.* of the 'donum.' In the treasury, 20*s.* And they owe 19*s.* 4*d.* The men of Faremannebi render account of 20*s.* of the 'donum.' In the treasury, 11*s.* And they owe 9*s.* The men of Glassenebi render account of 26*s.* 4*d.* of the 'donum.' In the treasury, 14*s.* And they owe 12*s.* 4*d.* The men of Ulmesbi render account of 53*s.* 4*d.* of the 'donum.' In the treasury, 25*s.* And they owe 28*s.* 4*d.* The men of Scotebi render account of 33*s.* 4*d.* of the 'donum.' In the treasury, 17*s.* And they owe 16*s.* 4*d.* The men of Gamelesbi render account of 9*s.* 4*d.* of the 'donum.' In the treasury, 5*s.* And they owe 4*s.* 4*d.* The men of Brictebi render account of 5*s.* of the 'donum.' In the treasury, 2*s.* And they owe 3*s.* The men of Dalestun render account of 103*s.* 2*d.* of the 'donum.' In the treasury, 61*s.* And they owe 42*s.* 2*d.* The men of Saurebi render account of 54*s.* 10*d.* of the 'donum.' In the treasury, 45*s.* 1*d.* And they owe 9*s.* 9*d.* The men of Carlatun render account of 10*s.* 6*d.* of the 'donum.' In the treasury, 9*s.* 6*d.* And they owe 12*d.* The citizens of Carlisle render account of 40 marks of the 'donum.' They have paid it into the treasury in 2 tallies and are quit.

OF PLEAS OF HUGH BARDULF AND NIGELL SON OF ALEXANDER AND THEIR COM- PANIONS

Ansketill the tanner renders account of 11*s.* 8*d.* because he was convicted of that which

he denied. He has paid it into the treasury and is quit.

Walter Hastinc renders account of 49*s.* 9*d.* for a false claim. In the treasury, 11*s.* And he owes 38*s.* 8*d.*

OF OFFERINGS OF COURT

William de Lindesia owes 40 marks for having right in the King's court against Henry clerk of Appelbi and the countess of Albemarle and Nicholas de Stutevill of Hukemannebi and Blenhersete and Oneric and Leventon and Laueswater and Bikermet and Stapleton.

William de Cumberland owes half a mark because he has withdrawn himself.

Adam nephew of Roelin owes half a mark for a false claim.

NEW PLEAS AND NEW AGREEMENTS BY HUGH BISHOP OF DURHAM AND WILLIAM SON OF ALDELIN AND THEIR COMPANIONS

The same sheriff renders account of 2*s.* 8*d.* of Walter de Windlesore for a default; and of half a mark of Henry de Cnarreburch for auditing his chirograph. He has paid it into the treasury in 2 tallies and is quit.

Peter the man of Henry owes half a mark because he has withdrawn himself.

Siward de Ukemannebi renders account of half a mark because his pledge has not been prosecuted. In the treasury, 3*s.* 1*d.* And he owes 3*s.* 7*d.*

Stephen the mercer renders account of 15*s.* for the same. He has paid it into the treasury and is quit.

OF PLEAS OF THE FOREST BY ÆRNISUS DE NEVILL AND HIS COMPANIONS

Gamel de Penrez owes 12*d.* for a vert.

William son of Ailward renders account of 1 mark for the discharge of his mill as it was before. He has paid it into the treasury and is quit.

THE MINE OF CARLISLE

Adam nephew of Roelin and Henry Les-treis and Richard Ædmodeshal and their pledges render account of 246*l.* 13*s.* 1*d.* of the old farm of the mine of CARLISLE. In the treasury, 6*s.* of William son of Udard; and 2*s.* of Walter Caperon; and 2*s.* 6*d.* of Adam de Raveneswich. Sum, 10*s.* 6*d.* And he owes 246*l.* 2*s.* 7*d.*

Humfrey brother of Richard owes 45*l.* 11*s.* of the old farm of the same mine.

Roger de Stutevill renders account of 33*s.* 4*d.* of the debt of William son of Erembald

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and his pledges, which he acknowledged that he had received by precept of the justices. He has paid it into the treasury and is quit.

Alan the moneyer and Richard son of Humfrey render account of 100*l.* of the farm of the mine of CARLISLE this year, each of 50*l.* for his part. In the treasury, 50*l.* And there are due 30*l.*, which remain upon Richard son of Humfrey.

William son of Erembald [] 2,154*l.* 13*s.* 4*d.* of the farm of the mine of CARLISLE for several years past, in which he held the mine.

OF NEW OFFERINGS TO THE KING

Adam son of Elysant owes 20 marks for having his due from earl David.

Reginald Bradfot renders account of 20 marks of the amercement of his father. In the treasury, 5*s.* 6*d.* And he owes 13*l.* 14*d.*, of which he owes 1*l.* []

ALSO OF PURPRESTURES AND ESCHEATS

The same sheriff renders account of 6*s.* 8*d.* of service of the land of Schelton ; and of 5*s.* of the farm of Racton ; and of 2*s.* of the farm of Waverton. He has paid it into the treasury in 3 tallies and is quit.

[3 *Ric. I.* 1191—*Roll 5, m. 1*]

CUMBERLAND

William son of Aldelin renders account of the farm of CUMBRELAND. In the treasury, 88*l.* 17*s.* 8*d.* by tale. And in the appointed alms to the knights of the Temple, 1 mark. And for conducting Philip the King's son (beyond the sea) to his land, 10*l.* 9*s.* 4*d.* by the King's writ, over and above 20 marks which he received from the treasury by the chancellor. And in work of the castle of CARLISLE, 14*l.* by the chancellor's writ and by view of Reginald Bradfot and Richard son of Akun. And he is quit. The same sheriff owes 12*s.* 5*d.* of the noutegeld of the old farm, which remained upon the waste of Landwadebi and of Carlaton. The same sheriff renders account of 80*l.* 10*s.* 8*d.* of the noutegeld. In the treasury, 40*l.* 3*d.* And in pardons by liberty of the King's charter to Robert de Vallibus, 18*l.* 13*s.* 1*d.* ; and to the canons of CARLISLE, 37*s.* 4*d.* And he owes 20*l.* The same renders account of the same debt. He has paid it into the treasury and is quit. The same sheriff renders account of 69*s.* 9*d.* of the pannage of CUMBERLAND this year. He has paid it into the treasury and is quit.

OF PURPRESTURES AND ESCHEATS

The same sheriff renders account of 42*l.* 13*s.* 4*d.* of the farm of the purprestures of CUMBERLAND. He has paid it into the treasury and is quit. The same sheriff renders account of 20*s.* of the tan mill. He has paid it into the treasury and is quit. The same sheriff renders account of 10 marks of the rent of the forest of CUMBERLAND. In the treasury, 7 marks ; and from Gillbert Pipard 3 marks, in custody of Alredale, which he has by the King, for which he ought to answer at the exchequer. And the account is rendered below. And he is quit. The same sheriff and Gillbert Pipard render account of 10 marks of the rent of the forest of CUMBERLAND. In the treasury, 7 marks by the hand of the sheriff, and 3 marks by the hand of Gillbert Pipard, of the forest of Alredale, which he has by the King. And they are quit.

William brother of Adam son of Richer owes 19*l.* 13*s.* that he may not be disseized of the land which his brother claims (against him) unless by judgment.

Gillbert son of Feregus owes 938*l.* 12*s.* 8*d.* for having the King's benevolence.

The same sheriff owes 8*s.* 11*d.* of the pleas of the forest of CUMBERLAND by Thomas son of Bernard.

Robert de Vallibus owes 100 marks for several disseizins, and because he connived at the escape of prisoners from his custody, and because, when he was sheriff, he sustained the circulation of the old money after the general prohibition. The same Robert renders account of 13*l.* 19*s.* 2*d.* of the rent of the castle of Sourebi for several years. In the treasury, 10 marks. And he owes 7*l.* 5*s.* 10*d.*

William de Lacell owes 5 marks for (proving his) right to half a knight's fee in Niweton against William de Reigni.

The same sheriff owes 6*s.* for 6 acres of wheat in Dalleston, a domain of the King ; and 2*s.* for 4 acres of oats in Salekil, a domain of the King.

Nicholas de Morewich owes 41*s.* 9*d.* of the old farm of purprestures, but he is to be looked for under (*in*) Northumberland.

OF TALLAGE OF THE KING'S DOMAINS IN CUMBERLAND BY GODEFREY DE LUCI AND HIS COMPANIONS

The same sheriff renders account of 51*s.* 5*d.* of the 'donum' of Penred ; and of 10*s.* of Langwadebi ; and of 27*s.* of Salekil ; and of 10*s.* of Stanwega ; and of 19*s.* 4*d.* of Old Salekil ; and of 9*s.* of Faremannebi ; and of 12*s.* 4*d.* of Glassenebi ; and of 28*s.* 4*d.* of

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Ulmesbi; and of 16s. 4d. of Scotebi; and of 4s. 4d. of Gamelesbi; and of 3s. of Brictebi; and of 42s. 2d. of Dalston; and of 9s. 9d. of Saurebi; and of 13d. of the 'donum' of the men of Carlatun. Sum of the tallage, 12l. 4s. In pardons by the King's writ to the above-said manors, 12l. 4s. And he is quit.

Walter Hasteng renders account of 38s. 8d. because he was convicted of that which he denied. In the treasury, 12s. And he owes 26s. 8d.

OF THE OFFERINGS OF COURT

William de Lindesia owes 40 marks for having right in the King's court against Henry clerk of Appelbi and the countess of Albermarle and Nicholas de Stutevill of Hukemannebi and Blenherseta and Oneric and Leventon and Laueswater and Bikermet and Stapelton.

William de Cumberland owes half a mark because he withdrew himself. Adam nephew of Roelin owes half a mark for a false claim. Peter the man of Henry owes half a mark because he withdrew himself.

Siward de Ukemannesbi renders account of 3s. 7d. because what he pledged he has not prosecuted. He has paid it into the treasury and is quit.

Gamel de Penrez renders account of 12d. for a vert. He has paid it into the treasury and is quit.

OF OFFERINGS TO THE KING

Adam son of Elysant owes 20 marks for having his due (*pro debito suo habendo*) from earl David.

Reginald Bradfot renders account of 13l. 14d. of the amercement of his father. In the treasury, 11s. And he owes 12l. 10s. 2d., of which he renders yearly 20s.

The county of Copland owes 2 marks for a concealment, except the land of Reginald de Luci.

Reginald de Luci owes 5s. 11d. for the same.

Thomas de Dene owes 20s. for the same.

William de Kelington owes half a mark for the same.

NEW PLEAS AND NEW AGREEMENTS BY PETER DE ROS AND MASTER ROGER ARUNDEL AND SIMON DE KIMES

Roger the clerk renders account of half a mark because he had not whom he pledged. In the treasury, 2s. And he owes 4s. 8d.

Osbert de Boschardebi renders account of half a mark for the same. In the treasury, 3s. 4d. And he owes 3s. 4d.

OF THOSE WHO RENDERED THE WHOLE,¹ WHOSE NAMES AND DEBTS AND CAUSES OF THE DEBTS ARE ENTERED IN THE ROLL OF THE JUSTICES, WHO HAVE PAID INTO THE TREASURY

The same sheriff renders account of half a mark of the amercement of David for a novel disseizin; and of 1 mark of the amercement of Roger de Lingiveton (Levington) for the same; and of half a mark of Rannulf de Ravenwic for the same; and of half a mark of Boidin the dyer because he had not whom he pledged; and of 10s. of William son of Goldsi for the same; and of 1 mark of Patrick Brun for the same; and of half a mark of Walter de Boschardebi for the same. Sum, 63s. 4d. He has paid it into the treasury in 7 tallies and is quit.

Geoffrey Ridel owes half a mark for a novel disseizin. John the clerk owes half a mark of an amercement. Henry son of Gerbod owes half a mark for a novel disseizin. Adam de Boschardebi owes half a mark because he had not whom he pledged. Thomas son of Odard owes half a mark for the same. Reginald de Turb owes half a mark for wine sold contrary to assize. Gamel owes half a mark for the same.

OF PLEAS OF THE FOREST BY ÆRNIUS DE NEVILL AND HIS COMPANIONS

Ælsi the carter (*caretarius*) renders account of 4s. for a bow and arrows found in his house. In the treasury, 4d. And he owes 3s. 8d.

The same sheriff renders account of one mark of Thomas son of Gospatric because he had not the harriers (*lepoř*) which he pledged; and of 12d. of the amercement of Meriholt de Glassenebi; and of one mark of the amercement of the prior of Carlisle; and of half a mark of the amercement of William de Karkeserebi;² and of 2s. of (Geoffrey) Sansoc Carbun for a default; and of 1 mark of the amercement of Orm de Yrebi; and of 3s. of the amercement of Richard son of Ansketill; and of 10s. of the amercement of the men of Langrugge; and of 7s. 6d. of the amercement of Richard de Neweton and his men; and of 3s. of the amercement of Adam son of Robert; and of 3s. of the amercement of the men of Ukemannebi; and of 2s. of the amercement of Geoffrey de Wigeton; and of 2s. of the amercement of Robert de Dunbredan and of Hervey de Walp []; and of 2s. of the amercement of Adam son of Guy; and of 3s. of the amercement of the men of William the clerk of Kyrkesaurebi; and of

¹ i.e. paid up in full.

² Church Sowerby, now Castle Sowerby.

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6*d.* of Uchtred son of Liece; and of 3*s.* of the amercement of Gillbert son of Brunif and Arkill; and of 12*s.* of the amercement of Richer de Mannebi. Sum, 100*s.* 8*d.* He has paid it into the treasury in 18 tallies and is quit.

Roger Goki renders account of 10*s.* for a waste and for a mill made where he ought not to make it. In the treasury, 17*d.* And in pardon by the King's writ to Roger himself, 8*s.* 7*d.* And he is quit.

Adam de Carduil owes 100*s.* of the old farm of Eiton¹ of half a year in which he held it to farm.

THE MINE OF CARLISLE

Adam nephew of Roelin and Henry Les-treis and Richard de Ædmodeshal and their pledges render account of 246*l.* 2*s.* 7*d.* of the old farm of the mine of CARLISLE. In the treasury, 17*s.*; one mark by the hand of William son of Odard; and 12*d.* by Walter Caperon; and 20*d.* by Richard son of Truite; and 12*d.* by Richard de Ranewich. Sum, 17*s.* And he owes 245*l.* 5*s.* 7*d.*

Hunfrey brother of Richard owes 45*l.* 11*s.* of the old farm of the same mine. Richard brother of Humfrey owes 50*l.* of the old farm of the mine of CARLISLE for the past year.

Alan the moneyer renders account of 10*l.* of the farm of the aforesaid mine for this year, which remained in the King's hand when he gave to H[ugh] bishop of Durham the county of Northumberland with pertinences. He has paid it into the treasury and is quit.

William son of Erembald owes 2,154*l.* 13*s.* 4*d.* of the farm of the mine of CARLISLE of the several years past in which he held the mine.

[OF PURPRESTURES]

The same sheriff renders account of 2*s.* 6*d.* of the vill of Racton for a purpresture; and of 12*d.* of the vill of Waverton for a purpresture. He has paid it into the treasury in two tallies and is quit.

OF THE DEBTS OF AARON THE JEW OF LINCOLN IN CUMBERLAND AND NORTH-UMBERLAND

Robert archdeacon of CARLISLE owes 100*s.* by charter and by the pledge of Henry chaplain of Langely and Richard the archdeacon. Odinell de Hunfranvill owes 23*l.* 6*s.* 8*d.* upon his land of Turnay. The same owes 8 marks, 3*s.* 4*d.* by another charter. Robert de Brus

owes 209*l.* by charter, and 41½ marks by another. Robert de Capella owes 10*l.* by charter, and 110*s.* by another. Adam de Carleol owes 24 [] of his fine by charter.

The same sheriff renders account of 20*s.* of one tan mill.

[4 Ric. I. 1192—Roll 3, m. 1]

CUMBRELAND

William son of Aldelin renders account of the farm of CUMBERLAND. In the treasury, 113*l.* 7*s.* by tale. And in the appointed alms to the knights of the Temple, one mark. And he is quit. The same sheriff owes 12*s.* 5*d.* of the noutegeld of the old farm which remained upon the waste of Landwadebi and of Carlatun. The same sheriff renders account of 80*l.* 10*s.* 8*d.* of the noutegeld. In the treasury, 3*d.* And in pardons by liberty of the King's charter to Robert de Vallibus, 18*l.* 13*s.* 1*d.*; and to the canons of CARLISLE, 37*s.* 4*d.* And to William son of Aldelin, the sheriff, 60*l.* for the custody of the castle of CARLISLE for three years past, by the King's writ. And he is quit. The same sheriff renders account of 6*l.* 14*s.* of the pannage of CUMBERLAND of this year. He has paid it into the treasury and is quit.

OF PURPRESTURES AND ESCHEATS

The same sheriff renders account of 42*l.* 13*s.* 4*d.* of the farm of the purprestures of CUMBERLAND. In the treasury, 40*l.* 13*s.* 4*d.* And in gift by the King's writ to Adam the cook, 40*s.* in Uchtredebi and Arphinebi this year. And he is quit.

The same sheriff and Gillbert Pipard render account of 10 marks of the rent of the forest of CUMBERLAND. In the treasury, 7 marks by the hand of the sheriff; and 3 marks by the hand of Gillbert Pipard of the forest of Alredale which he has by the King. And they are quit.

William brother of Adam son of Richer owes 19*l.* 13*s.* that he may not be disseized of the land which his brother claims unless by judgment.

The same sheriff owes 8*s.* 11*d.* of the pleas of the forest of CUMBERLAND by Thomas son of Bernard.

Gillbert son of Fereus owes 938*l.* 12*s.* 8*d.* for having the King's benevolence.

Robert de Vallibus renders account of 100 marks for several disseizins, and because he connived at the escape of prisoners from his custody, and because, when he was sheriff, he sustained the circulation of the old money

¹ Hayton.

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after the general prohibition. In the treasury, 10 marks. And he owes 90 marks, of which he renders yearly 10 marks, by the King's writ, which he pleaded at the exchequer. The same Robert owes 7*l.* 5*s.* 10*d.* of the rent of the castle of Sourebi for several years.

William de Lacell owes 5 marks for (proving his) right to half a knight's fee in Niweton against William de Reygni.

The same sheriff owes 6*s.* for 6 acres of wheat in Dalleston, a domain of the King; and of 2*s.* for 4 acres of oats in Salekil, a domain of the King. Nicholas de Morewich owes 4*l.* 9*d.* of the old farm of purprestures, but it ought to be looked for (*requiri*) in Northumberland.

Walter Hasteng owes 26*s.* 8*d.* because he was convicted of what he had before denied.

OF THE OFFERINGS OF COURT

William de Lindesia owes 40 marks for having right in the King's court against Henry clerk of Appelbi and the countess of Albemarle and Nicholas de Stutevill of Hukemannebi and Blenherseta and Oneric and Leventon and Laueswater and Bikermet and Stapelton.

William de Cumberland owes half a mark because he withdrew himself. Adam nephew of Roelin owes half a mark for a false claim. Peter, Henry's man, owes half a mark because he withdrew himself.

OF OFFERINGS TO THE KING

Adam son of Elysant owes 20 marks for having his due of earl David. Thomas de Dene owes 20*s.* for a concealment. William de Kelington owes half a mark for the same. But they ought to be looked for in Yorkshire.

Reginald Bradfot renders account of 12*l.* 10*s.* 2*d.* of the amercement of his father. In the treasury, 20*s.* And he owes 11*l.* 10*s.* 2*d.* of which he shall return yearly 20*s.*

The same sheriff renders account of 2 marks of the county of Copland for a concealment, except the land of Reginald de Luci; and of 5*s.* 11*d.* of Reginald de Luci for the same. He has paid it into the treasury in 2 tallies and is quit.

OF THE PLEAS OF PETER DE ROSS AND HIS COMPANIONS

Roger the clerk renders account of 4*s.* 8*d.* because he had not whom he pledged. In the treasury, 2*s.* And he owes 2*s.* 8*d.*

Osbert de Boschardebi renders account of 3*s.* 4*d.* for the same. He has paid it into the treasury and is quit.

Geoffrey Ridel owes half a mark for a novel disseizin. John the clerk owes half a mark

of an amercement. Henry son of Gerbod owes half a mark for a novel disseizin. Thomas son of Odard owes half a mark because he had not whom he pledged.

Reginald de Turb owes half a mark for selling wine contrary to assize. Gamel owes half a mark for the same.

Adam de Boschardebi renders account of half a mark because he had not whom he pledged. In the treasury, 12*d.* And he owes 5*s.* 8*d.*

Adam son of Robert de Carduil owes 100*s.* of the old farm of Hiton for the half-year in which he held it at farm.

Adam nephew of Roelin and Henry Lesreis and Richard de Ædmodeshal and their pledges render account of 245*l.* 5*s.* 7*d.* of the old farm of the mine of CARLISLE. In the treasury, half a mark by the hand of William son of Odard; and 2*s.* by Walter Caperun. And they owe 244*l.* 16*s.* 11*d.*

Humfrey brother of Richard owes 45*l.* 11*s.* of the old farm of the same mine. Richard brother of Humfrey owes 50*l.* of the old farm of the mine of CARLISLE.

Alan the moneyer renders account of 10*l.* of the farm of the aforesaid mine, which remained in the King's hand when he gave to the bishop of Durham the county of Northumberland with pertinences. He has paid it into the treasury and is quit.

William son of Erembald owes 2,154*l.* 13*s.* 4*d.* of the farm of the mine of CARLISLE of several years past in which he held the mine.

OF THE DEBTS OF AARON THE JEW OF LINCOLN IN CUMBERLAND AND NORTHUMBRELAND

Robert archdeacon of CARLISLE owes 100*s.* by charter and by the pledge of Henry chaplain of Langelega and Richard the archdeacon. Odinell de Vnfranville owes 23*l.* 6*s.* 8*d.* upon his land of Turnay. The same owes 8 marks, 3*s.* 4*d.* by another charter. Robert de Brus owes 209*l.* by charter. The same owes 41½ marks by another. Robert de Capella owes 10*l.* by charter. The same owes 110*s.* by another. Adam de Carlisle owes 24 marks of his fine by charter.

The same sheriff renders account of 5*s.* of the farm of the vill of Rachton; and half a mark of the farm of Scelton; and of 20*s.* of one tan mill. He has paid it into the treasury in three tallies and is quit.

[5 Ric. I. 1193—Roll 6, m. 1]

CUMBERLAND

William son of Aldelin renders account of the farm of CUMBERLAND. In the treasury,

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113*l.* 7*s.* by tale. And in the appointed alms to the knights of the Temple, one mark. And he is quit. The same sheriff renders account of 80*l.* 10*s.* 8*d.* of the noutegeld. In the treasury, 60*l.* 3*d.* And in pardons by liberty of the King's charter to Robert de Vallibus, 18*l.* 13*s.* 1*d.*; and to the canons of Carlisle, 37*s.* 4*d.* And he is quit. The same sheriff renders account of 118*s.* of the pannage of CUMBERLAND this year. In work of one granary and one horse mill and one *rogus*,¹ 118*s.* by the King's writ. And he is quit.

OF PURPRESTURES AND ESCHEATS

The same sheriff renders account of 42*l.* 13*s.* 4*d.* of the old farm of the purprestures of CUMBERLAND. In the treasury, 40*l.* 13*s.* 4*d.* And in gift by the King's writ to Adam the cook, 40*s.* in Uchtredebi and Arphenebi this year. And he is quit. The same sheriff renders account of 10 marks of the rent of the forest of CUMBERLAND. He has paid it into the treasury and is quit.

William brother of Adam son of Richer owes 19*l.* 13*s.* that he may not be disseized of the land which his brother claims against him unless by judgment.

The same sheriff owes 8*s.* 11*d.* of pleas of the forest of CUMBERLAND by Thomas son of Bernard.

Gillbert son of Feregus owes 938*l.* 12*s.* 8*d.* for having the King's benevolence.

Robert de Vallibus renders account of 90 marks, because he connived at the escape of prisoners from his custody, and because, when he was sheriff, he sustained the circulation of the old money after the general prohibition. In the treasury, 72*s.* 8*d.* And he owes 80 marks, 60*s.* 8*d.* The same Robert renders account of 7*l.* 5*s.* 10*d.* of the rent of the castle of Sourebi for several years past. He has paid it into the treasury and is quit.

William de Lacell owes 5 marks for (proving his) right to half a knight's fee in Niweton against William de Reigni.

The same sheriff owes 6*s.* for six acres of wheat in Dalleston, a domain of the King; and 2*s.* for four acres of oats in Salechil, a domain of the King.

Nicholas de Morewich owes 41*s.* 9*d.* of the old farm of the purprestures of CUMBERLAND, but it ought to be required in Northumberland.

Walter Hasteng owes 26*s.* 8*d.* because he was convicted of that which he before denied.

¹ A pile of wood in the forest.

OF THE OFFERINGS OF COURT

William de Lindesia owes 40 marks for having right in the King's court against Henry clerk of Appelbi and the countess of Albemarle and Nicholas de Stutevill of Hukemannebi and Blenherst and Oneric and Leventon and Laueswater and Bikermet and Stapelton.

William de Cumberland owes half a mark because he withdrew himself. Adam nephew of Roelin owes half a mark for a false claim. Peter, the man of Henry, owes half a mark because he withdrew himself. Thomas de Dene owes 20*s.* for a concealment. William de Kelington owes half a mark for the same.

Adam son of Elysand renders account of 20 marks for having his due of earl David. In the treasury, 7 marks. And he owes 13 marks.

Reginald Bradfot renders account of 11*l.* 10*s.* 1*d.* of the amercement of his father. In the treasury, 20*s.* And he owes 10*l.* 10*s.* 2*d.*, of which he renders yearly 20*s.*

The same sheriff renders account of 2*s.* 8*d.* of the amercement of Roger the clerk; and of half a mark of the amercement of John the clerk; and of half a mark of the amercement of Thomas son of Odard. He has paid it into the treasury in three tallies and is quit.

Geoffrey Ridel owes half a mark for a novel disseizin. Henry son of Gerbod owes half a mark for the same: he renders below. Reginald de Turb owes half a mark for selling wine contrary to assize.

Henry son of Gerbod renders account of half a mark for a novel disseizin. In the treasury, 20*d.* And he owes 5*s.*

The same sheriff renders account of half a mark from Gamell for selling wine against the assize; and of 5*s.* 8*d.* from Adam de Boscardebi because he had not whom he pledged. He has paid it into the treasury in two tallies and is quit.

Adam son of Robert de Carduil owes 100*s.* of the old farm of Eiton for half a year, in which he held it to farm.

Adam nephew of Roelin and Henry Les-treis and Richard de Ædmodeshal and their pledges render account of 244*l.* 16*s.* 11*d.* of the old farm of the mine of Carlisle. In the treasury, 11*s.* 9*d.* by the hand of William son of Odard; and 4*s.* by Walter Caperun; and 2*s.* by Walter son of Ædmund. And they owe 243*l.* 19*s.* 2*d.*

Humfrey brother of Richard owes 45*l.* 11*s.* of the old farm of the same mine. Richard brother of Humfrey owes 50*l.* of the old farm of the mine of Carlisle. Both of whom are

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to be looked for in Northumberland, but they render account below.

Alan the moneyer renders account of 10*l.* of the farm of the aforesaid mine, because it remained in the hand of the King when he gave to the bishop of Durham the county of Northumberland with pertinences. He has paid it into the treasury and is quit.

William son of Erembald owes 2,153*l.* 13*s.* 4*d.* of the farm of the mine of Carlisle for several years past, in which he held the mine.

OF THE DEBTS OF AARON THE JEW OF LINCOLN IN CUMBERLAND AND NORTH-UMBERLAND

Robert archdeacon of Carlisle owes 100*s.* by the pledge of Henry chaplain of Langelega and Richard the archdeacon. Odinell de Hunfranvill owes 23*l.* 6*s.* 8*d.* upon his land of Turnay. The same owes 8 marks, 3*s.* 4*d.* by another charter. Robert de Brus owes 209*l.* by charter. The same owes 41½ marks by another. Robert de Capella owes 10*l.* by charter. The same owes 110*s.* by another.

Adam de Carlisle renders account of 24 marks of his fine by charter. In the treasury, 3*s.* 8*d.* And he owes 15*l.* 16*s.* 4*d.*

NEW PLEAS AND NEW AGREEMENTS BY HENRY DEAN OF YORK AND RALF ARCHDEACON OF HEREFORD AND HUGH BARDULF AND WILLIAM DE STUTEVILL

The same sheriff renders account of 40*s.* of the prior of Carlisle for leave to make an agreement. He has paid it into the treasury and is quit.

The burgesses of Carlisle render account of 10 marks for having their liberties. They have paid it into the treasury and are quit.

The same sheriff renders account of 11*l.* of the minute amercements of the men, whose names and debts and causes of the debts are annotated in the Roll of the aforesaid, who have paid it into the treasury. He has paid it into the treasury in 27 tallies and is quit.

Adam son of Uchtred owes half a mark for leave to make an agreement. Richard son of Truite owes 40*s.* for having an agreement made in presence of the chancellor between him and Richard his son. William brother of Walter de Revigile owes half a mark because he withdrew himself from his appeal. Eva daughter of Thomas the clerk of Dene owes half a mark for a default. Richard son of William son of Richard son of Truite owes half a mark for the same. Andrew de Argun owes half a mark because he withdrew himself.

OF THE OFFERINGS OF COURT BY WALTER ARCHBISHOP OF ROUEN

Thomas son of Suein renders account of 40*s.* for having his land which was of William de Ravenewich. He has paid it into the treasury and is quit.

The same sheriff renders account of 5*s.* of the farm of the vill of Racton; and of half a mark of the farm of Schelton; and of 20*s.* of one tan mill. He has paid it into the treasury in three tallies and is quit.

Richard brother of Hunfrey renders account of 50*l.* of the old farm of the mine of Carlisle of the fourth year past. He has paid it to Hugh bishop of Durham by the King's writ and is quit.

[6 Ric. I. 1194—Roll 2, m. 1]

ROLL OF ESCHEATS AND WARDS OF WHICH HUGH BARDULF ANSWERS

CUMBERLAND

The same Hugh renders account of 21*l.* 6*s.* 8*d.* of the farms of the purprestures of CUMBERLAND for half a year. In the treasury, 16*l.* 8*s.* 8*d.* And in lands granted to Adam the cook of queen A(lienora), the King's mother, 48*s.* And he owes 50*s.* The same renders account of the same debt. He has paid it into the treasury and is quit. The same renders account of 8*s.* of the service of Michael de Kerkeland for one soar-hawk which he used to render to Roger de Munbegun. He has paid it into the treasury and is quit.

[Roll 9, m. 1]

CUMBERLAND

William son of Aldelin renders account of the farm of CUMBERLAND. In the treasury, 59*l.* 7*s.* by tale. And in the appointed alms to the knights of the Temple, one mark. And in repair of the gaol of the castle of Carlisle, 40*s.* by the King's writ. And in payments by the King's writ to the sheriff himself, 52*l.* for the 52*l.* which the burgesses of Carlisle had advanced to the King *ad facienda negotia sua* of the farm of the same city, which the burgesses themselves hold *in capite* at farm of the sheriff himself. And he is quit. The same sheriff renders account of 80*l.* 10*s.* 8*d.* of the noudtegeld. In the treasury, 55*l.* 7*s.* 1*d.* And in pardons by liberty of the King's charter to Robert de Vallibus, 18*l.* 13*s.* 1*d.*; and to the canons of Carlisle, 37*s.* 4*d.* And he owes 4*l.* 13*s.* 2*d.* The same sheriff renders account of the same debt. In the treasury, 4*l.* 7*s.* 5*d.* And he owes 5*s.* 9*d.* The same sheriff renders

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account of 8*l.* 13*s.* of the pannage of CUMBERLAND this year. He has paid it into the treasury and is quit.

OF PURPRESTURES AND ESCHEATS

The same sheriff renders account of 42*l.* 13*s.* 4*d.* of the farms of the purprestures of CUMBERLAND. In the treasury, 20*l.* and half a mark by the hand of the sheriff himself of half a year. And he owes 22*l.* 6*s.* 8*d.*, of which 21*l.* 6*s.* 8*d.* are upon Hugh Bardulf of half a year, because he has custody of the aforesaid escheats by the King, but he answers therefor in the Roll of escheats. And he owes 20*s.*

Hugh de Morvill renders account of 10 marks of the rent (*census*) of the forest of CUMBERLAND. In the treasury, 113*s.* 4*d.* And he owes 20*s.*

William brother of Adam son of Richer owes 19*l.* 13*s.* that he may not be disseized of the land which his brother claims unless by judgment.

The same sheriff owes 8*s.* 11*d.* of the pleas of the forest of CUMBERLAND by Thomas son of Bernard.

Gillbert son of Feregus owes 938*l.* 12*s.* 8*d.* for having the King's benevolence.

Robert de Vallibus (renders account *interlined*) owes 80 marks, 60*s.* 8*d.*, because he connived at the escape of prisoners from his custody, and because, when he was sheriff, he sustained the circulation of the old money after the general prohibition, but Rannulf his brother renders account below for him.

William de Lacell owes 5 marks for right of half a knight's fee in Niweton against William de Reigni.

The same sheriff owes 6*s.* for 6 acres of wheat in Dalleston, a domain of the King; and 2*s.* for 4 acres of oats in Salechil, a domain of the King.

Walter Hasteng owes 26*s.* 8*d.* because he was convicted of that which he before denied.

OF THE OFFERINGS OF COURT

William de Lindesia owes 40 marks for having right in the King's court against Henry clerk of Appelbi and the countess of Almarle and Nicholas de Stutevill of Hukemannesbi and Blenherset and Oneric and Leventon and Laeswater and Bikermet and Stapilton.

William de Cumberland owes half a mark because he withdrew himself. Adam nephew of Roelin owes half a mark for a false claim. Peter, the man of Henry, owes half a mark because he withdrew himself.

Thomas de Dene owes 20*s.* for a concealment. William de Kelinton owes half a mark for the same. Adam son of Elysand renders account of 13 marks for having his due of earl David. He has paid it into the treasury and is quit.

Reginald Bradfot renders account of 10*l.* 10*s.* 2*d.* of the amercement of his father. In the treasury, 20*s.* And he owes 9*l.* 10*s.* 2*d.*, of which he renders yearly 20*s.*

Geoffrey Ridel owes half a mark for a novel disseizin. Reginald de Turb owes half a mark for selling wine against the assize.

Henry son of Gerbod renders account of 5*s.* for a novel disseizin. In the treasury, 18*d.* And he owes 3*s.* 6*d.*

Adam son of Robert de Carduil [] 100*s.* of the old farm of Eiton for half a year in which he held it to farm.

Adam nephew of Roelin and Henry Lestreis and Richard de Ædmodeshal and their pledges render account of 243*l.* 19*s.* 2*d.* of the old farm of the mine of CARLISLE. In the treasury, 3*s.* 4*d.* by the hand of William son of Odard; and 4*s.* by Walter Caperun. And they owe 243*l.* 11*s.* 10*d.*

Humfrey brother of Richard owes 45*l.* 11*s.* of the old farm of the same mine. William son of Erembald owes 2,154*l.* 13*s.* 4*d.* of the farm of the mine of CARLISLE of several years past in which he held the mine.

OF THE DEBTS OF AARON THE JEW OF LINCOLN IN NORH (*sic*) CUMBERLAND

Robert archdeacon of CARLISLE owes 100*s.* by pledge of Henry chaplain of Langelega and Richard the archdeacon. Odinell de Hunfranvill owes 23*l.* 6*s.* 8*d.* upon his land of Turnay. The same owes 8 marks, 3*s.* 4*d.* by another charter. Robert de Brus owes 209*l.* by charter. The same owes 41½ marks by another. Robert de Capella owes 10*l.* by charter. The same owes 110*s.* by another.

Adam de Carleol renders account of 15*l.* 16*s.* 4*d.* of his fine by charter. In the treasury, 10*s.* 2*d.* And he owes 15*l.* 6*s.* 2*d.*

OF THE PLEAS OF HENRY DEAN OF YORK AND HIS COMPANIONS

Adam son of Uchtred owes half a mark for leave to make an agreement. Richard son of Truite owes 40*s.* for having his agreement made before the chancellor between him and Richard his son. William brother of Walter de Revegile owes half a mark because he withdrew himself from his appeal. Eva daughter of Thomas the clerk of Dene owes half a mark for a defeasance. Richard son of William son of Richard son of Truite owes

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half a mark for a defeasance. Andrew de Argun owes half a mark because he withdrew himself, but it ought to be looked for from the sheriff of Lancaster.

OF THE OFFERINGS OF COURT BY WALTER ARCHBISHOP OF ROUEN

Rannulf de Vallibus renders account of 100 marks of the debt of his brother Robert de Vallibus; and of 50 marks for having seizin of the land which was his brother's, until the coming of the King; and then the King shall notwithstanding do his will in the matter. But afterward it was recorded by H(ubert) archbishop of Canterbury and William Brierwere that the King after his coming is content with the aforesaid fine.¹ He has paid it into the treasury and so is quit.

OF THE NEW ENGAGEMENTS (PROMISSA) MADE TO THE KING AFTER HIS RETURN FROM GERMANY

Richard son of Richard Truite renders account of 100s. for having his complaint (heard) in presence of the justices at Westminster, of 20 shillings of rent. In the treasury, 53s. 4d. And he owes 46s. 8d.

OF THE SCUTAGE OF KNIGHTS, AFTER THE SECOND CORONATION OF THE KING, IN CUMBERLAND

Rannulf de Vallibus renders account of 40s. of the scutage. He has paid it into the treasury and is quit.

William de Brus renders account of 10s. of the scutage. He has paid it into the treasury and is quit.

The same sheriff renders account of 5s. of the farm of the vill of Racton; and of half a mark of the farm of Schelton; and of 20s. of 1 tan mill. He has paid it into the treasury in 3 tallies and is quit.

The same sheriff renders account of 35l. 12s. for the fine which he made with the justices for hydage in CUMBERLAND, which was exacted throughout England to the aid of the King's ransom. In the treasury, 15l. 12s. And he owes 20l.

Hugh de Morevill renders account of 100l. of his fine which he made with the King for having the forestership of CARLISLE [Carduil]. He has paid it into the treasury and is quit.

¹ The king had been in England the previous spring.

[7 Ric. I. 1195—Roll 3, m. 1]

ROLL OF THE ESCHEATS FOR WHICH HUGH BARDULF ANSWERS

CUMBERLAND

The same Hugh (the aforesaid Simon for him) renders account of 42l. 13s. 4d. of the farm of the purprestures of CUMBERLAND. In the treasury, 36l. 17s. 4d. And in lands granted to Adam the cook of the Queen, the King's mother, 4l. 16s. And he is quit.

The same Hugh renders account of 8s. of the service of Michael de Kerkeland for 1 soar-hawk, which he used to render to Roger de Muntbegun. He has paid it into the treasury and is quit.

[Roll 17, m. 1]

CUMBERLAND

William son of Aldelin renders account of the farm of CUMBERLAND. In the treasury, 113l. 7s. by tale. And in the appointed alms to the knights of the Temple, 1 mark. And he is quit. The same sheriff renders account of 5s. 9d. of the noutegeld of the past year. He has paid it into the treasury and is quit. And the same renders account of 80l. 10s. 8d. of the noutegeld of this year. In the treasury, 60l. 3d. And in pardon by the King's writ to the canons of CARLISLE, 37s. 4d. And he owes 18l. 13s. 1d. The same renders account of the same debt. In the treasury, nothing. And in pardons to Robert de Vallibus son of Hubert de Vallibus, 18l. 13s. 1d. by charter and by the King's writ. And he is quit. The same sheriff renders account of 66s. of the pannage of CUMBERLAND this year. He has paid it into the treasury and is quit.

OF PURPRESTURES AND ESCHEATS

The same sheriff renders account of 20s. of the old farm of the purprestures of CUMBERLAND of the past year. He has paid it into the treasury and is quit. The same sheriff renders account of [].

Hugh Bardulf owes 42l. 13s. 4d. of the farm of the purprestures of CUMBERLAND of this year, for which he ought to answer in the Roll of escheats.

Hugh de Morevill renders account of 20s. of the rent of the forest of CUMBERLAND for the past year. He has paid it into the treasury and is quit. The same Hugh renders account of 10 marks of the rent of the same forest for this year. He has paid it into the treasury and is quit.

William brother of Adam son of Richard owes 19l. 13s. that he may not be disseized of

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the land which his brother claims against him unless by judgment.

The same sheriff owes 8s. 11d. of the pleas of the forest of CUMBERLAND by Thomas son of Bernard.

Gillbert son of Feregus owes 938*l.* 12*s.* 8*d.* for having the King's benevolence.

William de Lacell owes 5 marks for (proving his) right to half a knight's fee in Niweton against William de Reigni.

The same sheriff owes 6*s.* for 6 acres of wheat in Dalleston, a domain of the King; and 2*s.* for 4 acres of oats in Salechil, a domain of the King.

Walter Hasteng owes 26*s.* 8*d.* because he was convicted of that which he before denied.

OF OFFERINGS OF THE COURT

William de Lindesia owes 40 marks for having right in the King's court against Henry clerk of Appelbi and the countess of Albemarle and Nicholas de Stutevill of Hukemannesbi and Blenherseta and Oneric and Leventon and Laueswater and Bikermet and Stapelton.

William de Cumberland owes half a mark because he withdrew himself. Adam nephew of Roelin owes half a mark for a false claim. Peter, the man of Henry, owes half a mark because he withdrew himself. Thomas de Dene owes 20*s.* for a concealment, but he has nothing. William de Kelinton owes half a mark for the same.

Reginald Bradfot renders account of 9*l.* 10*s.* 2*d.* of the amercement of his father. In the treasury, 20*s.* And he owes 8*l.* 10*s.* 2*d.*, of which he renders yearly 20*s.*

Geoffrey Ridel owes half a mark for a novel disseizin. Reginald de Turb owes half a mark for selling wine against the assize, but he has nothing.

Henry son of Gerbod renders account of 3*s.* 6*d.* for a disseizin. In the treasury, 12*d.* And he owes 3*s.* 6*d.*

Adam son of Robert de Carduil owes 100*s.* of the old farm of Eiton for half a year in which he held it to farm.

Adam nephew of Rohelin and Henry Lestreis and Richard de Edmodeshal and their pledges render account of 243*l.* 11*s.* 10*d.* of the old farm of the mine of CARLISLE. In the treasury, 4*s.* by the hand of Walter Caperun; and 20*d.* by the hand of Adam son of Edmund. And they owe 243*l.* 6*s.* 2*d.* Humfrey brother of Richard owes 45*l.* 11*s.* of the old farm of the same mine. William son of Erembald owes 2,154*l.* 13*s.* 4*d.* of the farm of the mine of CARLISLE for several years past in which he held the mine.

OF THE DEBTS OF AARON THE JEW OF LINCOLN IN CUMBERLAND

Robert archdeacon of Carlisle owes 100*s.* by pledge of Henry chaplain of Langelega and Richard the archdeacon. Odinell de Vnfravill owes 23*l.* 6*s.* 8*d.* upon his land of Turnay. The same owes 8 marks, 3*s.* 4*d.* by another charter.

William de Brus owes 209*l.* by the charter of Robert his father. The same owes 41½ marks by another. Robert de Capella owes 10*l.* by charter. The same owes 110*s.* by another.

Adam de Carlisle renders account of 15*l.* 6*s.* 2*d.* of his fine by charter. In the treasury, 6*s.* 6*d.* And he owes 14*l.* 19*s.* 8*d.*

Adam son of Uchtred owes half a mark for leave to make an agreement. Richard son of Truite owes 40*s.* for having his covenant made before the chancellor between him and Richard his son. William brother of Walter de Revegile owes half a mark because he withdrew himself from his appeal. Eva daughter of Thomas the clerk of Dene owes half a mark for a disseizin. Richard son of (William son of) Richard son of Truite owes half a mark for a defeasance. All these have nothing. Andrew de Argun owes half a mark because he withdrew himself, but he ought to be looked for in Lancaster and there to render account.

NEW ENGAGEMENTS (PROMISSA) AFTER THE RETURN OF THE KING FROM GERMANY

Richard son of Richard son of Truite renders account of 46*s.* 8*d.* for having his complaint concerning a 20-shilling rent heard before the justices at Westminster. In the treasury, 26*s.* 8*d.* And he owes 20*s.*

The same sheriff renders account of 5*s.* of the farm of Racton; and of half a mark of the farm of Schelton; and of 20*s.* of one tan mill. He has paid it into the treasury in 3 tallies and is quit.

The same sheriff (renders account) owes 20*l.* for the fine which he made with the justices for hydage in CUMBERLAND, which was exacted throughout England to the aid of the King's ransom.

OF NEW ASSARTS

The same sheriff renders account of 2*s.* of the assart of Waverton; and of 10*s.* of the assart of Langrig; and of 7*s.* 6*d.* of the assart of Niweton; and of 2*s.* 6*d.* of the assart of Haiton; and of 2*s.* of the assart of Robert de Unbradan; and of 2*s.* of the assart of Greneho; and of 3*s.* of the assart of the church of the

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castle of Sourebi ; and of 6*d.* of the assart of Uctred the son-in-law (*gener*) of Lecia. He has paid it into the treasury in 8 tallies and is quit.

NEW PLEAS AND NEW AGREEMENTS BY ROGER
DE BIGOT AND RALF ARCHDEACON OF
HEREFORD AND WILLIAM DE GLANVILL
AND WILLIAM SON OF HERVEY IN
CUMBERLAND

Thomas the official renders account of 20*s.* because he had not him whom he pledged. In the treasury, 12*s.* And he owes 8*s.*

Mathew son of Bele renders account of 31*s.* 8*d.* for leave to make an agreement for the appeals made by malice. In the treasury, 20*s.* And he owes 11*s.* 8*d.* He renders account below.

Argentina owes one mark because she withdrew herself. Robert de Ulvesbi owes half a mark for a defeasance. Odierna de Sourebi owes half a mark because she withdrew herself. Roger de Crogelin owes half a mark because he did not come. Ralf de Flammavill owes half a mark because he had not him whom he pledged. William Heved owes half a mark for the same. Richard son of Richard son of Truite owes 20*s.* for a novel disseizin. Ralf the clerk owes 1 mark for the same. Andrew the clerk of Ysala (Isell) owes 20*s.* for a false claim. Robert son of Hugh owes half a mark for the same. William de la Kersonera owes half a mark because he withdrew himself.

OF THOSE WHO RENDERED THE WHOLE,
BELOW 40*s.*

The same sheriff renders account of 20*s.* of Adam son of Odard because he withdrew himself ; and of half a mark of Willekin de Lanrecost for the same ; and of 1 mark of Robert de Ansketill because he had not him whom he pledged ; and of half a mark of Richard de Ulvesbi for the same ; and of half a mark of Henry de Ulvesbi for the same ; and of half a mark of Hugh son of Kandelan for the same ; and of half a mark of Ralf de Boulton for a defeasance ; and of half a mark of Ailsa de Yrebi because he withdrew himself ; and of 1 mark of Adam de Enisand that it may be inquired if the appeal of Richard against him, if there be malice, be affirmed ; and of half a mark of William Litebond because he had not him whom he pledged ; and of half a mark of Ulf Stodhyrda for the same ; and of half a mark of Robert de Boneghilla for a defeasance ; and of half a mark of Robert de Kargho for a defeasance ; and of half a mark of Adam de Plenecogo for a novel disseizin ; and of half a mark of Yvo

de Gulafre for the same ; and of 10*s.* of Har-
dulf son of Brunyod for a false claim ; and of 20*s.* of Rannulf de Vallibus that judgment between him and Robert son of Adam may be postponed by one day ; and of 1 mark of Robert son of Adam for having his judgment. Sum, 8*l.* 8*s.* He has paid it into the treasury in 18 tallies and is quit.

The barons of the county of CUMBERLAND render account of 10 marks that their verdict may be graciously heard. They have paid it into the treasury and are quit.

The same sheriff renders account of 6*s.* 6*d.* of the chattels of William son of Gillemichel, an outlaw. He has paid it into the treasury and is quit.

AMERCEMENTS [ADMERCIAMENTA] OF THE
CITY OF CARLISLE BY THE AFORESAID

Mathew son of Bele renders account of 31*s.* 8*d.* for having leave to make an agreement for the appeals made by malice (*per attiam*). In the treasury, 20*s.* And he owes 11*s.* 8*d.*

Robert son of Serlo renders account of 30*s.* 10*d.* for the same. In the treasury, 5*s.* 10*d.* And he owes 25*s.*

Adam de la Mora owes half a mark for selling wine against assize. Adam son of Brun owes half a mark for the same. Robert son of Geoffrey owes half a mark for the same.

OF THOSE WHO RENDERED THE WHOLE,
BELOW (HALF A MARK) 40*s.*

The same sheriff renders account of half a mark of William son of Derman for selling wine against assize ; and of half a mark of Roger Rumbald for the same ; and of half a mark of Walter the provost for having leave to make an agreement ; and of 30*s.* 10*d.* of Wibert son of Hakun for the same. Sum, 50*s.* 10*d.* He has paid it into the treasury in 4 tallies and is quit.

TALLAGE OF THE KING'S DOMAINS IN
CUMBERLAND MADE BY THE AFORESAID.
THEY HAVE PAID IT INTO THE TREA-
SURY AND ARE QUIT

The men of Scottebi render account of 30*s.* of their 'donum.' They have paid it into the treasury and are quit.

The men of Daliston render account of 40*s.* of the same. They have paid it into the treasury and are quit.

The men of Penred render account of 4 marks of the same. They have paid it into the treasury and are quit.

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The men of Salechil render account of 2 marks of the same. They have paid it into the treasury and are quit.

The men of Langwadebi render account of 20s. of the same. They have paid it into the treasury and are quit.

The men of Steinweges render account of 10s. of the same. They have paid it into the treasury and are quit.

The citizens of CARLISLE [] 50l. of the same.

AMERCEMENTS OF COUPLAND BY THE AFORESAID

The same sheriff renders account of half a mark of Michael de Kerkebi by the plea of Robert son of James ; and of half a mark of William his brother for the same ; and of half a mark of Geoffrey Henneheved because he withdrew himself ; and of half a mark of Helias de Godrichest by the plea of Geoffrey ; and of half a mark of Hukeman de Moricebi for the same ; and of half a mark of Richard son of John because he withdrew himself. Sum, 40s. He has paid it into the treasury in 6 tallies and is quit.

The knights of Copland render account of 100s. that their verdict may be graciously heard. They have paid it into the treasury and are quit.

The knights of the 5 vills of Copland of the land of Robert de Curtenay render account of 3 marks that their verdict may be graciously heard. They have paid it into the treasury and are quit.

Alizia daughter of Hugh Marshall (Marešc) renders account of half a mark because she withdrew herself. She has paid it into the treasury and is quit.

NEW PLEAS AND NEW AGREEMENTS BY H(UBERT) ARCHBISHOP OF CANTERBURY

Alicia de Romeilli [] 5 marks for having right in the King's court of her free tenement in Great Crossebi against Robert de Umbradan and that the same Robert may be summoned to answer therefor in the King's court.

OF THE SECOND SCUTAGE OF THE ARMY IN NORMANDY

William de Brus renders account of 10s. of the scutage of half a knight. He has paid it into the treasury and is quit.

Rannulf de Vallibus [] 40s. of the scutage of his knights (*militum suorum*). He has paid it into the treasury and is quit.

[8 Ric. I. 1196—Roll , m. 1]

ACCOUNT OF THE SHERIFFS OF ENGLAND MADE IN THE EASTER TERM OF THE EIGHTH YEAR OF KING RICHARD'S REIGN

CUMBERLAND

William son of Aldelin (renders account) of the farm of CUMBERLAND. In the treasury, 55l. 2d. by tale. And he is quit.

[Roll 2, m. 1]

CUMBERLAND

William son of Aldelin renders account of the farm of CUMBERLAND. In the treasury, 100l. 73s. 8d. by tale.

And in the appointed alms to the knights of the Temple, 1 mark ; and in repair of the gaol of the castle of Carlisle [Karleolum], 40s. by writ of H(ubert) archbishop of Canterbury ; and for conducting 2 prisoners from Carlisle to London, 4 marks by the King's writ ; and in work of the gate of the castle of Carlisle, 100s. by the King's writ. And he is quit.

The same sheriff renders account of 80l. 10s. 8d. of the noutegeld. In the treasury, 58l. 12s. 4d. And in pardons to the canons of Carlisle, 37s. 4d. ; and also in pardons to Robert de Vallibus son of Hubert de Vallibus, 18l. 13s. 1d. And he owes 27s. 11d.

The same renders account of the same debt. In the treasury, nothing. And in pardons to Adam the cook of queen A(lie)nora), the King's mother, 27s. 8d. by liberty of the King's charter and by the King's writ. And he is quit.

Hugh de Morevill renders account of 10 marks of the rent of the forest of CUMBERLAND. He has paid it into the treasury and is quit. The same renders account of 46s. of the pannage of CUMBERLAND. He has paid it into the treasury and is quit.

William son of Adam son of Richer owes 19l. 13s. that he may not be disseized of the land which his brother claims unless by judgment.

The same sheriff owes 8s. 11d. of the pleas of the forest of CUMBERLAND by Thomas son of Bernard.

Gillbert son of Feregus owes 938l. 12s. 8d. for having the King's benevolence.

OF THE OFFERINGS OF COURT

William de Lindesia owes 40 marks for having right in the King's court against Henry the clerk of Appelbi and others who are annotated in the preceding Roll. Sum : he has nothing in England, as the sheriff says.

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Reginald Bradfot renders account of 8*l.* 10*s.* 2*d.* of the amercement of his father. In the treasury, 20*s.* And he owes 7*l.* 10*s.* 2*d.*, of which he ought to render yearly 20*s.*

Henry son of Gerbold renders account of 2*s.* 6*d.* for a disseizin. He has paid it into the treasury and is quit.

Adam son of Robert de Carlisle [] 100*s.* of the old farm of Etton of half a year in which he held it to farm.

Adam nephew of Roelin and Henry Les-treis and Richard de Estmodeshal and their pledges render account of 243*l.* 6*s.* 2*d.* of the old farm of the mine of Carlisle. In the treasury, 4*s.* by the hand of Walter Chaperun. And they owe 243*l.* 2*s.* 2*d.*

Humfrey brother of Richard owes 45*l.* 11*s.* of the old farm of the same mine. William son of Erembald owes 2,154*l.* 13*s.* 4*d.* of the farm of the mine of Carlisle for several years in which he held the mine.

OF THE DEBTS OF AARON

Odinell de Hunfranvill owes 23*l.* 6*s.* 8*d.* upon his land of Turnay. Sum : the return is in Norhumberland. The same owes 8 marks, 3*s.* 4*d.* by charter.

William de Brus owes 209*l.* by charter of Robert his father, but the return is in Norhumberland. The same owes 41½ marks by another.

Adam de Carduil renders account of 14*l.* 19*s.* 11*d.* of his fine by charter. In the treasury, 10*s.* And he owes 14*l.* 9*s.* 11*d.*

Richard son of Richard son of Truite owes half a mark for a defeasance.

NEW ENGAGEMENTS (PROMISSA) AFTER THE KING'S RETURN FROM GERMANY

Richard son of Richard son of Truite renders account of 20*s.* for having his complaint of 20*s.* of rent in presence of the justices at Westminster. In the treasury, 5*s.* And he owes 15*s.*

The same sheriff owes 20*l.* for the fine he made with the justices for hidage in CUMBERLAND, which was exacted throughout England towards the aid of the King's ransom.

OF PLEAS AND AGREEMENTS BY ROGER LE BIGOT AND RALF ARCHDEACON OF HEREFORD AND THEIR COMPANIONS

Thomas the official owes 8*s.* because he had not him whom he pledged. Argentina owes one mark because she withdrew herself. Robert de Uluesbi owes half a mark for a defeasance. Hodierna de Sourebi owes half a mark because she withdrew herself. Roger de Crogelin owes half a mark because he did

not come. Ralf de Flamavill owes half a mark because he had not him whom he pledged. William Heved owes half a mark for the same. Richard son of Richard son of Truite owes 20*s.* for a novel disseizin. Robert son of Hugh owes half a mark for a false claim.

Ralf the clerk renders account of 1 mark for a disseizin. He has paid it into the treasury and is quit.

Andrew the clerk renders account of 20*s.* for a false claim. In the treasury, 1 mark. And he owes half a mark.

William de la Kersanere renders account of half a mark because he withdrew himself. He has paid it into the treasury and is quit.

AMERCEMENTS OF THE CITY OF CARLISLE BY THE AFORESAID

Mathew son of Bele renders account of 11*s.* 8*d.* for having leave to make an agreement of false appeals by malice. In the treasury, 8*s.* And he owes 3*s.* 8*d.*

Robert son of Serlo renders account of 25*s.* for the same. In the treasury, 10*s.* And he owes 15*s.*

Adam de la More renders account of half a mark for selling wine against assize. He has paid it into the treasury and is quit.

Adam son of Brun owes half a mark for the same. Robert son of Galfrid owes half a mark for the same.

The citizens of Carlisle render account of their donum. They have paid it into the treasury and are quit.

Alicia de Romeilli renders account of 5 marks for having right in the King's court of her free tenement in Great Crossebi against Robert de Umbradan, and that the same Robert may be summoned to answer therefor in the King's court. In the treasury, 1 mark. And she owes 4 marks.

Rannulf de Vallibus [] 40*s.* of the scutage of his knights of the second army in Normandy.

NEW ENGAGEMENTS (PROMISSA) BY H(UBERT) ARCHBISHOP OF CANTERBURY

Robert son of Michael renders (account) of 20*s.* for having seizin of the land of his father, viz. of 20 acres. He has paid it into the treasury and is quit.

The knights and free tenants of CUMBERLAND render account of 20 marks for having respite of the aid which is exacted from them for the King's use till the King's coming and for standing to right therefor in his presence. In the treasury, 12*l.* 3*s.* And they owe 23*s.* 8*d.*

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The same sheriff renders account of 5*s.* of the farm of Racton; and of half a mark of the farm of Schelton; and of 20*s.* of 1 tan mill; and of 2*s.* of the farm of Waverton. He has paid it into the treasury in 4 tallies and is quit.

The same sheriff renders account of 4*s.* of the chattels of Gillbert de Hotton, a fugitive. He has paid it into the treasury and is quit.

[*Roll* 21, *m.* 1]

ACCOUNT OF ESCHEATS OF WHICH HUGH
BARDULF OUGHT TO ANSWER

CUMBERLAND

The same renders account of 42*l.* 13*s.* 4*d.* of the farm of the purprestures of CUMBERLAND. In the treasury, 37*l.* 17*s.* 4*d.* And in lands given to Adam the cook of queen A(lienora), the King's mother, 4*l.* 16*s.* And he is quit.

The same renders account of 8*s.* of the service of Michael de Kerkeland for 1 soarhawk, which he used to render to Roger de Munbegun. He has paid it into the treasury and is quit.

The same renders account of 5*s.* of the land of the same Michael of the fourth part of the year. He has paid it into the treasury and is quit.

[9 *Ric. I.* 1197—*Roll* 8, *m.* 1]

ACCOUNT OF THE ESCHEATS OF WHICH HUGH
BARDULF ANSWERS

CUMBERLAND

The same renders account of 42*l.* 13*s.* 4*d.* of the farm of the purprestures of CUMBERLAND. In the treasury, 37*l.* 17*s.* 4*d.* And in lands given to Adam the cook of queen A(lienora), the King's mother, 4*l.* 16*s.* And he is quit.

The same renders account of 8*s.* of the service of Michael de Kerkeland for 1 soarhawk, which he used to render to Roger de Munbegun. He has paid it into the treasury and is quit.

The same renders account of 20*s.* of the land of the same Michael of a whole year. In the treasury, nothing. And in pardons to Robert son of Michael, 20*s.* by the King's writ, by fine which he made of 20*s.* And he is quit.

[*Roll* 13, *m.* 1]

CUMBERLAND

William son of Aldelin renders account of 114*l.* 4*d.* by tale of the farm of CUMBERLAND.

In the treasury, 107*l.* 14*s.* 6*d.* And in the appointed alms to the knights of the Temple, 1 mark. And in work of a certain chapel in the castle of Carlisle [Karduil] and of a certain bridge between the castle and the vill, 112*s.* 6*d.* And he is quit. The same sheriff renders account of 80*l.* 10*s.* 8*d.* of the noute-geld. In the treasury, 58*l.* 12*s.* 4*d.* And in pardons to the canons of Carlisle, 37*s.* 4*d.*; and to Robert de Vallibus, 18*l.* 13*s.* 1*d.*; and to Adam the cook of queen A(lienora), the King's mother, 27*s.* 11*d.* And he is quit.

Hugh de Morevill renders account of 10 marks of the rent of the forest of CUMBERLAND. He has paid it into the treasury and is quit.

The same sheriff renders account of 56*s.* 9*d.* of the pannage of CUMBERLAND this year. He has paid it into the treasury and is quit.

William brother of Adam son of Richer owes 19*l.* 13*s.* that he may not be disseized of the land which his brother claims (against him) except by judgment.

The same sheriff owes 8*s.* 11*d.* of pleas of the forest of CUMBERLAND by Thomas son of Bernard.

Gilebert son of Feregus owes 938*l.* 12*s.* 8*d.* for having the King's benevolence.

OF THE OFFERINGS OF COURT

William de Lindesia owes 40 marks for having right in the King's court against Henry clerk of Appelbi and the countess of Albemarle, as it is contained in the Roll of the seventh year, but he has nothing in England, as the sheriff says.

Reginald Bradfot renders account of 7*l.* 10*s.* 2*d.* of the amercement of his father. In the treasury, 20*s.* And he owes 6*l.* 10*s.* 2*d.*, of which he ought to render yearly 20*s.*

Adam son of Robert de Carduil owes 100*s.* of the old farm of Eton of half a year in which he held the bailiwick.

Adam nephew of Roelin and Henry Lestreis and Richard de Estmodeshal and their pledges render account of 243*l.* 2*s.* 2*d.* of the old farm of the mine of Carlisle. In the treasury, 4*s.* by the hand of Walter Caperun. And they owe 242*l.* 18*s.* 2*d.*

Humfrey brother of Richard owes 45*l.* 11*s.* of the old farm of the same mine. William son of Erembald owes 2,154*l.* 13*s.* 4*d.* of the farm of the same mine for several years in which he held the mine.

OF THE DEBTS OF AARON

Adam de Carduil renders account of 14*l.* 9*s.* 11*d.* of his fine by charter. In the treasury, 9*s.* 8*d.* And he owes 14*l.* 3*d.*

Richard son of Richard son of Truite owes half a mark for a defeasance.

THE PIPE ROLLS

OF THE ENGAGEMENTS (PROMISSA) AFTER THE KING'S RETURN FROM GERMANY

Richard son of Richard son of Truite owes 15s. for having his complaint of 20 shillings of rent in presence of the justices at Westminster.

The same sheriff owes 20*l.* for the fine which he made with the justices for the hydage in CUMBERLAND, which was exacted throughout England to the aid of the King's ransom.

OF PLEAS AND AGREEMENTS BY ROGER LE BIGOT AND RALF THE ARCHDEACON OF HEREFORD AND THEIR COMPANIONS

Thomas the official owes 8*s.* because he had not him whom he pledged. Argentina owes 1 mark because she withdrew herself. Robert de Ulvesbi owes half a mark for a defeasance. Odierna de Sourebi owes half a mark because she withdrew herself. Roger de Crogelin owes half a mark because he did not come. Ralf de Flammavill owes half a mark because he had not him whom he pledged. William Heved owes half a mark for the same. Richard son of Richard son of Truite owes 20*s.* for a disseizin. Robert son of Hugh owes half a mark for a false claim.

Andrew the clerk renders account of half a mark for a false claim. He has paid it into the treasury and is quit.

THE AMERCEMENTS OF THE CITY OF CARLISLE BY THE AFORESAID

Mathew son of Pele renders account of 3*s.* 8*d.* for having leave to make agreement of the appeals made by malice. He has paid it into the treasury and is quit.

Robert son of Serlo renders account of 15*s.* for the same. In the treasury, 5*s.* And he owes 10*s.*

Adam son of Brun owes half a mark for selling wine against the assize. Robert son of Geoffrey owes half a mark for the same.

Alicia de Romeilli renders account of 4 marks for having right in the King's court, as it is contained in the Roll of the seventh year. She has paid it into the treasury and is quit.

Rannulf de Vallibus owes 40*s.* of the scutage of his knights of the second army in Normandy. The same R(annulf) owes 40*s.* of the third scutage.

OF ENGAGEMENTS (PROMISSA) BY H(UBERT) ARCHBISHOP OF CANTERBURY

The knights and free tenants of CUMBERLAND render account of 23*s.* 8*d.* for having respite of the aid which was exacted from

them to the King's use till the King's coming and for standing to right therefor in his presence. In the treasury, 15*s.* 4*d.* And they owe 8*s.* 4*d.*

The same sheriff renders account of 5*s.* of the farm of Racton; and of half a mark of the farm of Schelton; and of 20*s.* of 1 tan mill; and of 2*s.* of the farm of Waverton. He has paid it into the treasury in 4 tallies and is quit.

TALLAGE MADE IN THE PAST YEAR UPON THE KING'S ESCHEATS AND WARDS AND DOMAINS BY WILLIAM SON OF ALDELIN AND PETER DE ROS AND HENRY SON OF HERVEY AND THEIR COMPANIONS

The same sheriff renders account of 64*s.* of the tallage of Penred; and of 12*s.* of the tallage of Salkil; and of 6*s.* of the tallage of Langwadebi; and of 14*s.* of the tallage of Scotebi; and of 4*s.* of the tallage of Stainwegges; and of 4*l.* of the tallage of Dalleston. Sum, 9*l.* He has paid it into the treasury in 6 tallies and is quit.

Hugh Bardulf renders account of 28*s.* of the tallage of Saurebi; and of 5*s.* of the tallage of Carleton; and of 12*s.* of the tallage of Gamelesbi; and of 10*s.* of the tallage of Classanebi. Sum, 55*s.* He has paid it into the treasury in 2 tallies and is quit.

ALSO THE TALLAGE MADE BY THE ELECT OF DURHAM AND HUGH BARDULF IN CUMBERLAND

The same sheriff renders account of 42*s.* of the tallage of Penreth; and of 6*s.* of the tallage of Languadebi; and of 14*s.* of the tallage of Scotebi; and of 4*s.* of the tallage of Stainweges; and of 7*s.* of the tallage of Salkil; and of 11*s.* of the tallage of Gamelesbi; and of 11*s.* of the tallage of Glasanebi; and of 12*s.* 6*d.* of the tallage of Sourebi. Sum, 107*s.* 6*d.* He has paid it into the treasury in 8 tallies and is quit. The same sheriff renders account of 28*s.* 4*d.* of the tallage of Daleston. In the treasury, 24*s.* 10*d.* And he owes 3*s.* 6*d.* The same sheriff renders account of 2½ marks of the 'donum' of Clement chaplain of Branton; and of 2 marks of the 'donum' of Robert de Cunquenetat. He has paid it into the treasury in 2 tallies and is quit.

NEW PLEAS BY THE [BISHOP] ELECT OF DURHAM AND HUGH BARDULF

The same sheriff renders account of half a mark of William the smith for a disseizin; and of half a mark of Yvo de Branton for

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the same ; and of 20s. of William de Rudeclive because he withdrew himself ; and of half a mark of Richard de Uluesbi for a false claim. He has paid it into the treasury in 4 tallies and he is quit.

Henry son of Adam renders account of 10s. for an amercement. In the treasury, 5s. And he owes 5s.

Yvo de Trellekell owes half a mark for a disseizin. Richard son of Werricus owes half a mark for a false claim.

ACCOUNT OF ALAN THE MONEYSER OF THE MINE OF CARLISLE

Alan the moneyer renders account of 50*l.* of the farm of the mine of Carlisle of the sixth year ; and of 50*l.* of the same farm of the seventh year ; and of 50*l.* of the same farm of the past year ; and of 50*l.* of the same farm of this year. In the treasury, 160*l.* And he owes 40*l.* The same renders account of the same debt. In the treasury, 15*l.* And he owes 25*l.*

[10 Ric. I. 1198—Roll 10, m. 1]

CUMBERLAND

Robert de Tateshale renders account of 114*l.* 4*d.* by tale of the farm of CUMBERLAND. In the treasury, 100*l.* 67*s.* And in the appointed alms to the knights of the Temple, one mark. And in work of the houses of the castle of Carlisle, 40*s.* by the King's writ. And he owes 8*l.* The same renders account of the same debt. He has paid it into the treasury and is quit. The same sheriff renders account of 80*l.* 10*s.* 8*d.* of the noutegeld. In the treasury, 58*l.* 12*s.* 4*d.* And in pardons to the canons of Carlisle, 37*s.* 4*d.* ; and to Robert de Vallibus, 18*l.* 13*s.* 1*d.* ; and to Adam the cook of queen A(lienora), the King's mother, 27*s.* 11*d.* And he is quit.

Hugh de Morevill renders account of 10 marks of the rent of the forest of CUMBERLAND. He has paid it into the treasury and is quit. The same sheriff [] of the pannage of CUMBERLAND this year.

William brother of Adam son of Richer owes 19*l.* 13*s.* that he may not be disseized of the land which his brother claims unless by judgment.

Gilebert son of Feregus owes 938*l.* 12*s.* 7*d.* for having the King's benevolence.

OF THE OFFERINGS OF COURT

William de Lindesia owes 40 marks for having right in the King's court against Henry clerk of Appelbi and the countess of

Albemarle, as it is contained in the Roll of the seventh year, but he has nothing in England, as the sheriff says.

Reginald de Bradfot renders account of 6*l.* 10*s.* 2*d.* of the amercement of his father. In the treasury, 20*s.* And he owes 110*s.* 2*d.*, of which he ought to render yearly 20*s.*

Adam son of Robert de Carduil [] 100*s.* of the old farm of Eton of half a year in which he held the bailiwick.

Adam nephew of Roelin and Henry Lesreis and Richard Estmodeshal and their pledges render account of 242*l.* 18*s.* 2*d.* of the old farm of the mine of Carlisle. In the treasury, 4*s.* by the hand of Walter Caperun. And they owe 242*l.* 14*s.* 2*d.* Humfrey brother of Richard owes 45*l.* 11*s.* of the old farm of the same mine. William son of Erembald owes 2,154*l.* 13*s.* 4*d.* of the farm of the same mine for several years in which he held the bailiwick.

Adam de Carduil renders account of 14*l.* 3*d.* of his fine by charter. In the treasury, 15*s.* And he owes 13*l.* 5*s.* 3*d.*

Richard son of Richard son of Truite renders account of half a mark for a defeasance. He has paid it into the treasury and is quit.

OF ENGAGEMENTS (PROMISSA) AFTER THE KING'S RETURN FROM GERMANY

Richard son of Richard son of Truite renders account of 15*s.* for having his complaint of 20 shillings of rent before the justices at Westminster. He has paid it into the treasury and is quit.

The same sheriff [] 20*l.* for the fine which he made with the justices for hidage in CUMBERLAND, which was exacted throughout England to the aid of the King's ransom, which are not so rendered because they were rendered to master John de Brideport and his companions. So the sheriff says.

OF PLEAS AND AGREEMENTS BY ROGER LE BIGOT AND RALF ARCHDEACON OF HEREFORD AND HIS COMPANIONS

Thomas the official renders account of 8*s.* because he had not whom he pledged. He has paid it into the treasury and is quit.

Argentina renders account of one mark because she withdrew herself. In the treasury, 2*s.* And she owes 11*s.* 4*d.*

Richard son of Richard son of Truite renders account of 20*s.* for a disseizin. In the treasury, 18*s.* 4*d.* And he owes 20*d.*

Ralf de Flammavill owes half a mark because he had not whom he pledged.

THE PIPE ROLLS

Robert son of Serlo renders account of 10s. for having licence to make agreement of appeals made by malice. He has paid it into the treasury and is quit.

Rannulf de Vallibus owes 40s. of the scutage of his knights of the second army in Normandy; and 40s. of the third; but he has quittance of the second scutage by writ of H(ubert) archbishop of Canterbury.

(They have paid it into the treasury and are quit.)

The knights and free tenants of CUMBERLAND render account of 8s. 4d. for having respite, as it is contained in the preceding Roll. They have paid it into the treasury and are quit.

The same sheriff renders account of 5s. of the farm of Rocton; and of half a mark of the farm of Schelton; and of 20s. of one tan mill; and of 1 shilling of the farm of Waverton. He has paid it into the treasury in 4 tallies and is quit.

The same sheriff renders account of 3s. 6d. of the tallage of Daleston. He has paid it into the treasury and is quit.

Michael chaplain of Lorton renders account of 5 marks of the donum. In the treasury, 40s. And he owes 2 marks.

The same sheriff renders account of 5s. of Henry son of Adam for an amercement; and of half a mark of Richard son of Werricus for a false claim. He has paid it into the treasury in 2 tallies and is quit.

Alan the moneyer renders account of 25l. of arrears of the farm of the mine of Carlisle for several years past. He has paid it into the treasury and is quit. The same Alan renders account of 50l. of the farm of the same mine for this year. In the treasury, 40l. And he owes 10l.

(Tallage is looked for (*requiritur*) on the back after the account of Bristou and the account of the escheats.)

NEW OFFERINGS

Richard son of Richard son of Truite renders account of 100 marks for having seizin of the land of Gamelesbi and Glassenebi, which were taken into the King's hand. In the treasury, 42l. And he owes 24l. 13s. 4d. The same renders account of the same debt. In the treasury, 7l. 6s. 8d. And he owes 17l. 6s. 8d.

The same sheriff renders account of 63s. 4d. for the purchase of 18 cows and one bull for the stocking of Gamelesbi; and of 4l. for the purchase of 120 sheep; and of 18s. for the purchase of 27 sows; and of 36s. for the purchase of 8 oxen. Sum, 9l. 17s. 4d. He

has paid it into the treasury in one tally and is quit.

[Roll 10, m. 1d]

TALLAGE OF CUMBERLAND MADE FOR THE PAST YEAR BY HUGH BARDULF AND HIS COMPANIONS

The burgesses of Carlisle render account of 100 marks of the tallage. In the treasury, 17l. 6s. 3d. And they owe 49l. 7s. 1d. The same render account of the same debt. They have paid it into the treasury and are quit.

The same sheriff renders account of 11l. of the tallage of the vills whose names and debts are annotated in the Roll by which the aforesaid have paid it into the treasury. He has paid it into the treasury in 10 tallies and is quit.

¹ William de Warenne [] 14l. 10s. of the remainder farm of Bristou of the seventh year, which remain upon the tithe of the vill of Bristou which the monks of Tiokesberia ought to have, as the same William says; and of 25l. 9s. 1d. of the eighth year, of which 7l. 5s. remain upon the said tithe for the half of the eighth year.

OF THE ESCHEATS AND PURPRESTURES OF CUMBERLAND

Hugh Bardulf renders account of 42l. 13s. 4d. of the farm of the purprestures of CUMBERLAND. In the treasury, 30l. 3s. 2d. And in lands given to Adam the cook of queen A(lienora), the King's mother, 4l. 16s. And he owes 7l. 14s. 2d. The same renders account of the same debt. In the treasury, nothing. And Richard son of Truite, 7l. 14s. 10½d. And he has of surplus 8d.

[1 John, 1199—Roll 15, m. 1d]

CUMBERLAND

William de Stutevill (John Laleman for him) renders account of 57l. 2d. for half a year of the farm of CUMBERLAND. In the treasury, 18l. 10s. 7d. by the hand of H. Bardulf; and 42l. 3s. 10d. by the hand of William de Stutevill. And in the appointed alms to the knights of the Temple, one mark. And in operations which the aforesaid H. effected in the castle of Carlisle, 34s. 7d. by the King's writ. And he owes 14l. 3s. But he answers below.

Hugh Bardulf renders account of 57l. 2d. of the farm of CUMBERLAND for half a year. In the treasury, 18l. 10s. 7d. And in opera-

¹ This entry refers to Bristol and has nothing to do with Cumberland.

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tions at the castle of Carlisle, 34*s.* 7*d.* by the King's writ. And in stores (*guarnistura*) which he put in the castles of Appelbi, and of Carlisle, Pontefract and Bamborough [Baenburc], 80*l.* by writ of G. fitz Peter. And he has of surplus 43*l.* 5*s.*, which are accounted to him below in the county of Westmorland (Westmerieland).

The same sheriff renders account of 80*l.* 10*s.* 8*d.* of the noutegeld. In the treasury, 57*l.* 12*s.* 4*d.* And in pardons to the canons of Carlisle, 37*s.* 4*d.* And in pardons by liberty of charter to Robert de Vallibus, 18*l.* 13*s.* 1*d.*; and to Adam cook of queen Eleanor, the King's mother, 27*s.* 11*d.* And he is quit.

William de Stutevill renders account of 14*l.* 3*s.* of the remainder farm of CUMBERLAND. In the treasury, 7*l.* 9*s.* 8*d.* And he owes 6*l.* 13*s.* 4*d.*

Hugh de Morevill renders account of 10 marks of the rent (*census*) of the forest of CUMBERLAND. He has paid it into the treasury and is quit.

The same sheriff renders account of 35*s.* 8*d.* of the pannage of CUMBERLAND for the past year. He has paid it into the treasury and is quit. The same sheriff renders account of 107*s.* 6*d.* of the pannage of this year. He has paid it into the treasury and is quit.

William brother of Adam son of Richer owes 19*l.* 13*s.* that he may not be disseized of the land which his brother claims unless by judgment. Gilebert Fereagus owes 938*l.* 12*s.* 7*d.* for having the King's benevolence.

OF THE OFFERINGS OF COURT

William de Lindesey owes 40 marks for having right in the King's court, as it is contained in Roll 7.

Reginald Bradfot renders account of 20*s.* of the amercement of his father. He has paid it into the treasury and is quit.

Adam son of Robert de Carduil owes 100*s.* of the old farm of Eaton for half a year in which he held the bailiwick. But he has rendered account therefor in the Roll of the thirty-first year, in the sum 50*l.* 3*s.* 2*d.*, to which he answers in the account of the land of Thomas de Muschans and there remains in debt of 63*s.* 11*d.* For which he answers below.

Adam nephew of Roelin and Henry Les-treis and Richard de Estmodeshal and their pledges render account (owe) 242*l.* 14*s.* 2*d.* of the old farm of the mine of Carlisle. In the treasury, 2*s.* by the hand of Walter Caperun; and 2*s.* by the hand of Adam son of Edmund. And they owe 242*l.* 10*s.* 2*d.*

Humfrey son of Richard owes 45*l.* 11*s.* of the old farm of the same mine. William son of Erembald owes 2,154*l.* 13*s.* 4*d.* of the farm of the same mine of Carlisle for several years in which he held the bailiwick. But he answers below.

Adam de Carduil owes 13*l.* 5*s.* 3*d.* of his fine by charter. But he answers below.

The same sheriff [] 20*l.* for a fine which he made, as it is contained in the preceding Roll.

Adam de Carduil [] 63*s.* 11*d.* of the aforesaid farm of Eaton. And of 13*l.* 5*s.* 3*d.* of his fine by charter. For which he ought to render yearly 4*l.*

OF THE PLEAS OF ROGER LE BIGOT AND HIS COMPANIONS

Argentina owes 11*s.* 4*d.* because she withdrew herself. Ralf de Flammavill owes half a mark because he had not him whom he pledged.

Richard son of Richard son of Truite renders account of 20*d.* for a disseizin. He has paid it into the treasury and is quit.

Rannulf de Vallibus renders account of 40*s.* of the third scutage of king Richard. He has paid it into the treasury and is quit.

Michael chaplain of Lorton owes 2 marks of the donum.

Alan the moneyer renders account of 10*l.* of the arrears of the farm of Carlisle for the past year. In the treasury, 100*s.* And he owes 100*s.* The same renders account of the same debt. He has paid it into the treasury and is quit.

Richard son of Richard son of Truite renders account of 17*l.* 6*s.* 8*d.* for having seizin of the land of Gamelesbi and of Glassenebi, which were taken into the hand of king Richard. In the treasury, 15*l.* 6*s.* 8*d.* And he owes 40*s.*

OF PLEAS OF THE FOREST BY HUGH DE NEVILL AND HIS COMPANIONS

Henry de Rachton and Thomas and Reginald his nephews owe 1 mark for having in peace the mill of Rachton, and they shall render therefrom annually 2*s.* of rent in the Michaelmas term.

Richard son of Truite owes 2 marks for having dogs for the hare and fox.

The same sheriff renders account of 2,154*l.* 13*s.* 4*d.* for William son of Erembald of the farm of the mine of Carlisle, as it is contained above. In the treasury, 8*s.* And he owes 2,154*l.* 5*s.* 8*d.*

THE PIPE ROLLS

OF THE FIRST SCUTAGE FOR THE FIRST CORONATION OF KING JOHN

Rannulf de Vallibus owes 4 marks for the scutage of two knights. But H(ubert) archbishop of Canterbury, who has ward (*custodia*) of his land and heir, is quit by the King's writ.

William de Brus renders account of 1 mark for the scutage of 1 knight. He has paid it into the treasury and is quit.

The same sheriff renders account of 5s. for the farm of Racton; and of half a mark of the farm of Scelton; and of 20s. of 1 tan mill; and of 2s. of the farm of Waverton. He has paid it into the treasury in 4 tallies and is quit.

Hugh Bardulf renders account of 21*l.* 6*s.* 8*d.* of the farm of the purprestures of CUMBERLAND for half a year. In the treasury, 11*l.* 4*s.* 6*d.*

And in lands given to Adam cook of queen A(lienor), the King's mother, 48*s.* for half a year. And he owes 7*l.* 14*s.* 2*d.*

William de Stutevill renders account of 21*l.* 6*s.* 8*d.* of the farm of the purprestures of CUMBERLAND for another half-year. In the treasury, 7*l.* 9*s.* 4*d.* And in lands given to Adam cook of queen A(lienor), the King's mother, 48*s.* for another half-year. And he owes 11*l.* 9*s.* 4*d.*, of which Richard de Charterai, who answers for Hugh Bardulf, acknowledged that he received 10*s.* And he owes 10*l.* 19*s.* 4*d.* Hugh Bardulf [] 25*l.* of the farm of the mine of Carlisle for half a year.

William de Stutevill renders account of 25*l.* of the farm of the mine of Carlisle for half a year. He has paid it into the treasury and is quit.

THE TALLAGE MADE BY RICHARD MALE- BISSE AND HIS COMPANIONS

The same sheriff renders account of 28*l.* 20*d.* of the tallage of the vills and men whose names are contained in the Roll which the aforesaid have delivered into the treasury. He has paid it into the treasury in 9 tallies and he is quit.

[2 *John*, 1200—*Roll* 17, *m.* 2]

CUMBERLAND

William de Stutevill (John le Aleman for him) renders account of 114*l.* 4*d.* of the farm of CUMBERLAND. In the treasury, 63*l.* 7*s.* And in the appointed alms to the knights of the Temple, 1 mark. And he owes 50*l.* The

same renders account of the same debt. In the treasury, nothing. And in stores (*warnistura*) of the castle of Carlisle for 200 sums of grain, 40*l.*; and for 120 pigs, 10*l.* by the King's writ and by valuation (*per visum*) of Amis Bradfot and Robert de Neuton and Alexander son of Ralf. And he is quit.

The same William renders account of 6*l.* 13*s.* 4*d.* of the remainder farm of CUMBERLAND for the past year. He has paid it into the treasury and is quit.

The same William renders account of 80*l.* 10*s.* 8*d.* of the noutegeld. In the treasury, 23*l.* 5*s.* 8*d.* And to the canons of Carlisle, 37*s.* 4*d.* And in pardons by liberty of charter to Robert de Vallibus, 18*l.* 13*s.* 1*d.*; and to Adam cook of queen A(lienor) the King's mother, 27*s.* 11*d.* And he owes 35*l.* 6*s.* 8*d.* The same renders account of the same debt. In the treasury, nothing. And for 13 tuns of wine for the said stores, of which 5 were brought to Carlisle from Lenna [Lynn] for the aforesaid stores, 27*l.* 17*s.* 1*d.* by the aforesaid writ and by view of the aforesaid. And for 50 cheeses and 120 *buratis*, 9*l.* 10*s.* by the same writ and by the same viewers. And for 20 quarters of salt, 40*s.* by the same writ and by the same viewers. And he has of surplus 6*l.* 5*d.*, which are accounted to him below on the back in the farm of purprestures.

Hugh de Morevill renders account of 10 marks of the rent of the forest of CUMBERLAND. He has paid it into the treasury and he is quit.

William brother of Adam son of Richer [] 19*l.* 13*s.* that he may not be disseized, as it is contained in the preceding Roll.

Gilebert Fereagus owes 938*l.* 12*s.* 7*d.* for having the King's benevolence.

Adam nephew of Roelin and Henry Lestreis and Richard de Estmodeshal and their pledges render account of 242*l.* 10*s.* 2*d.* of the old farm of the mine of Carlisle. In the treasury, 27*s.* 10*d.* by the hand of Richard de Estmodeshal. And they owe 241*l.* 5*s.* 4*d.*

Humfrey son of Richard owes 45*l.* 11*s.* of the old farm of the mine. William son of Erembald owes 2,154*l.* 5*s.* 4*d.* of the farm of the same mine for several years.

Adam de Carduil renders account of 63*s.* 11*d.* of the old farm of Eaton. And of 13*l.* 5*s.* 3*d.* of his fine by charter. In the treasury, 4*l.* And he owes 12*l.* 9*s.* 2*d.*, of which he ought to render yearly 4*l.*

The same sheriff [] 20*l.* for the fine which he made, as it is contained in the tenth Roll.

Michael chaplain of Lorton renders account

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of 2 marks of the 'donum.' In the treasury, 10s. And he owes 16s. 8d.

Richard son of Richard son of Truite renders account of 40s. for having seizin as it is contained in the preceding Roll. In the treasury, 16s. And he owes 24s. The same renders account of the same debt. He has paid it into the treasury and is quit.

Henry de Racton and Thomas and Reginald his nephews render account of 1 mark for having in peace the mill of Racton, and they shall render henceforth yearly 2s. of rent in the Michaelmas term. In the treasury, half a mark and 2 shillings of rent. And they owe half a mark.

Richard son of Richard son of Truite renders account of 2 marks for having dogs for the hare and fox. In the treasury, 1 mark. And he owes 1 mark.

Hugh Bardulf renders account of 7*l.* 14*s.* 2*d.* of the farm of the purprestures of CUMBERLAND for half a year past; and of 10*s.* for another half-year, as it is contained in the preceding Roll; and of 25*l.* of the farm of the mine of Carlisle for half a year past. In the treasury, nothing. And in his surplus which he had in the tenth year in the account of purprestures, 8*d.* And Richard son of Truite, 7*l.* 14*s.* 10*d.* in Gamelesbi and Classenebi. And he owes 25*l.* 8*s.* 8*d.*

William de Stutevill renders account of 10*l.* 19*s.* 4*d.* of the farm of the aforesaid purprestures for another half-year past. In the treasury, nothing. And Richard son of Truite, 7*l.* 14*s.* 10*d.* in Gamelesbi and Classenebi. And he owes 64*s.* 6*d.*

The same W(illiam) renders account of 50*l.* of the farm of the mine of Carlisle. He has paid it into the treasury and he is quit.

The same sheriff renders account of 5*s.* of the farm of Racton; and of half a mark of the farm of Schelton; and of 20*s.* of 1 tan mill; and of 2*s.* of the farm of Waverton. He has paid it into the treasury in 4 tallies and he is quit.

The same sheriff renders account of 80*l.* of the farm of the purprestures of CUMBERLAND, vouched for by G. fitz Peter on account of the stock which he caused to be placed there. In the treasury, 55*l.* 17*s.* 4*d.* And in lands given to Adam cook of queen A., the King's mother, 4*l.* 16*s.* And he owes 19*l.* 6*s.* 8*d.* The same renders account of the same debt. In the treasury, nothing. And in his surplus which he had above in notegeld, 6*l.* 5*d.* And Richard son of Truite, 15*l.* 9*s.* 8*d.* in Gamelesbi and Glassenebi. And he has of surplus 43*s.* 5*d.* But he answers therefor below after Sussex.

NEW OFFERINGS

Dunecan de Lasceles and Christiana his wife render account of 10*l.* for having their land of Boulton, which is of the inheritance of the said Christiana, since he (Dunecan) is not able to have his reasonable share of his inheritance in Scotland. In the treasury, 8 marks. And they owe 7 marks.

Hugh de Morevill owes 2 destriers (*dextrarios*) for permitting a marriage between his daughter and Richard de Egremont. William de Stutevill owes 10 mares (*equas*) for the same, and 2 palfreys of his fine because he did not perform the King's precept, and 3 palfreys for having 2 fairs and 1 market. Matilda wife of Adam son of Enisant owes 200 marks which she acknowledged that she had received of the tallies of the same Adam, her husband. Robert son of Adam owes 350 marks for having his father's debts, so that the King shall make distraint and he himself shall follow suit (*placitum*); and if he should continue by himself, he shall none the less give an undertaking.

Richard de Luci son of Reginald de Luci renders account of 300 marks for having his land in Copland and in Cambridge (Caŋbġ), and for marrying himself where he pleased, and for having his reasonable share which belonged to him of the land which he claims against the earl of Albemarle and his wife and against Robert de Curtenai and Alicia his wife, and by this fine he shall be quit of his relief by the plea which is entered in the Roll of fines made in the King's presence, in the first year of the same, before G. fitz Peter. In the treasury, 111*l.* 2*s.* 4*d.* And he owes 88*l.* 17*s.* 8*d.* But he answers below.

Robert de Haudeham owes 20*s.* for having right in the King's court at Westminster for 2 carucates of land in Gamelbi against Richard son of Truite.

Richard de Luci renders account of 88*l.* 17*s.* 8*d.* for having his land, as it is contained above. In the treasury, 44*l.* 9*s.* And he owes 44*l.* 8*s.* 8*d.* The same renders account of the same debt. In the treasury, 20*l.* And he owes 24*l.* 8*s.* 8*d.* The same sheriff renders account of the same debt. In the treasury, 18*l.* And he owes 6*l.* 8*s.* 8*d.* The same renders account of the same debt. He has paid it into the treasury and is quit.

[Roll 17, m. 2d]

William de Stutevill renders account of 42*l.* 13*s.* 4*d.* of the farm of the purprestures of CUMBERLAND; and of 58*l.* of the increased value (*crementum*) of Sourebi and Carlatton made by G. fitz Peter by the stock which he placed

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there. In the treasury, 55*l.* 17*s.* 4*d.* And in lands given to Adam cook of queen A., the King's mother, 4*l.* 16*s.* And in his surplus which he has above in the notegeld, 6*l.* 5*d.* And Richard son of Truite, 15*l.* 9*s.* 8*d.* in Gamelesbi and Glassenebi. And he owes 18*l.* 9*s.* 11*d.*

[3 *John*, 1201—*Roll* 18, *m.* 2]

CUMBERLAND

William de Stutevill (Philip Escrop for him) renders account of 114*l.* 4*d.* of the farm of CUMBERLAND. In the treasury, 107*l.* 23*d.* And in the appointed alms to the knights of the Temple, 1 mark. And he owes 6*l.* 5*s.* 1*d.* The same renders account of the same debt. In the treasury, nothing. And for irons for the prisoners, 5*s.* And in (default) his surplus which he has below in the farm of purprestures, 100*s.* 6*d.* And he owes 19*s.* 7*d.*, of which G. fitz Peter ought to answer for 10*s.* 10*d.*, but he answers below (in the next line). And the aforesaid sheriff owes 8*s.* 9*d.* The same renders account of the same debt. He has paid it into the treasury and is quit.

The same sheriff renders account of 80*l.* 10*s.* 8*d.* of the noutegeld. In the treasury, 58*l.* 12*s.* 4*d.* And to the canons of Carlisle, 37*s.* 4*d.* And in pardons by liberty of charter to Robert de Vallibus, 18*l.* 13*s.* 1*d.* And to Adam cook of the Queen, the King's mother, 27*s.* 11*d.* And he is quit.

(G.) fitz Peter renders account of 10*s.* 10*d.*, of which he ought to answer for the sheriff. In the treasury, nothing. And in his surplus which he has in the account of Westmerieland for the past year, 10*s.* 10*d.* And he is quit. Hugh de Morevill [] 10 marks of the rent of the forest of CUMBERLAND. (William) brother of Adam son of Richer renders account of 19*l.* 13*s.* that he may not be disseized, as it is contained in the first Roll. In the treasury, 44*s.* And he owes 17*l.* 9*s.* Gilebert Fergus owes 938*l.* 12*s.* 7*d.* for having the King's benevolence. Humfrey son of Richard owes 45*l.* 11*s.* of the old farm of the mine. William son of Erembald owes 2,154*l.* 5*s.* 4*d.*, as it is contained in the preceding Roll. (Adam) nephew of Roelin and his companions who are entered in the preceding Roll render account of 241*l.* 5*s.* 4*d.* of the old farm of the mine of Carlisle. In the treasury, 2*s.* by the hand of Walter Caperun. And he owes 241*l.* 3*s.* 4*d.* (Adam) de Carduil renders account of 12*l.* 9*s.* 2*d.* of the old farm of Eaton and of his fine by charter. In the treasury, 4*l.* And he owes 8*l.* 9*s.* 2*d.*, of which he ought to render yearly 4*l.*

The same sheriff owes 20*l.* for the fine which he made, as it is contained in the tenth Roll, which are not rendered for this reason, because they had been rendered at the exchequer by composition (*redemptione*), as the sheriff says. (Michael) chaplain of Lorton owes 16*s.* 8*d.* of the 'donum.' (Henry de) Racton and his companions who are noted in the preceding Roll render account of half a mark for having in peace the mill of Racton, and they shall render therefrom annually 2*s.* in the Michaelmas term. They have paid it into the treasury and are quit. [] and others who are noted in the preceding Roll render account of 2*s.* of the rent of the mill of Racton. They have paid it into the treasury and are quit. Richard son of Truite renders account of 1 mark for having dogs for the hare and the fox. He has paid it into the treasury and is quit. (Hugh) Bardulf [] 25*s.* 8*s.* 8*d.* of the remainder farm of the purprestures and mine of Carlisle for the King's first year, as it is contained in the preceding Roll. (William) de Stutevill [] 64*s.* 6*d.* of the remainder farm of the purprestures of half a year in the King's first year. [] renders account of 50*l.* of the farm of the mine of Carlisle. He has paid it into the treasury and is quit.

(The same sheriff renders) account of 5*s.* of the farm of Racton; and of half a mark of the farm of Schelton; and of 20*s.* of one tan mill; and of 2*s.* of the farm of Waverton. He has paid it into the treasury in 4 tallies and he is quit.

OF THE OFFERINGS

(Dunecan de Lasceles and Christiana his wife) render account of 7 marks for having their land of Boulton, as it is contained in the preceding Roll. They have paid it into the treasury and are quit. (Hugh de Morevill owes) 2 destriers (*dextrarios*) for permitting a marriage between his daughter and Richard de Egremunt.¹ (William de Stutevill [

]) of his amercement and three palfreys for having two fairs and one market. (Matilda wife of Adam son of Enisant []) which she acknowledged that she had received of the tallies of the same Adam, her husband. [] of his father, as it is contained in the preceding Roll. In the treasury, 34*l.* 10*s.* 2*d.* And he owes 198*l.* 6*s.* 6*d.* But he answered in the King's [] in the preceding Roll. (William de Stutevill renders account of the purprestures) of CUMBERLAND; and of 58*l.*

¹ This seems to have been Richard de Luci of Egremont.

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of the increase (*crementum*) of Sourebi and Carleton made by G. fitz Peter for the stock which he placed there. In the treasury, 45*l.* 11*s.* 1*d.* [] Richard son of Truite, 7*l.* 14*s.* 10*d.* for half a year. And he owes 42*l.* 15*s.* 8*d.* The same renders account of the same debt. [] *fassatis pabi virgis et aliis Reparationibus attractibus*, 27*l.* 4*s.* by the King's writ and by view of Walter the provost of Carlisle and Alan [] Gamelesbi and Glassenebi, 109*s.* 6*d.* for the half-year. And he has of surplus 100*s.* 6*d.*, which are accounted for above in the farm of the county.

NEW OFFERINGS

Alan de Caudebech renders account of 5 marks for cultivating a certain land which is called Grenewra in the common pasture of Robert de Curtenay, of the gift of the same Robert, between the water of Caldewe and the land of the church of the same vill, by rendering therefor 2*s.* yearly, and that it may be free of forest visitation (*extra reguardum*). He has paid it into the treasury and is quit. The same Alan renders account of 2*s.* of the aforesaid 2*s.* of the rent (*census*) of the same land. He has paid it into the treasury and is quit.

David the dyer renders account of 1 mark that his messuage, which he has in Carlisle, may be a burgage, and that he may have the liberties which other burghers have in Carlisle. He has paid it into the treasury and is quit.

Bartholomew de Stutevill renders account of 1 mark for having a writ of summons in the King's presence for 1 carucate of land with pertinences in Greshope against Amabile daughter of William the medical man. He has paid it into the treasury and is quit.

William de la Kersunier owes 5 marks for having a writ of *mort d'auncestor* for a fee of 1 knight with pertinences in Katerlen against William de Vallibus and Robert son of the said William.

The abbot of Holcoltram owes 50 marks and 2 palfreys for the confirmation of king Richard's charter which he has. But Hugh de Nevill acknowledged by his writ that he has received the same debt, and so he ought to answer therefor.

Adam son of Robert de Carduil renders account of 5 marks for having and holding of the King one place (*placea*) in Carlisle which extends from the house he has near the wall of the cemetery of St. Alban as far as the angle of the same wall, so that he may be able to make a road and an entrance into the aforesaid cemetery. He has paid it into the treasury and is quit.

The abbot of Holcoltram renders account of 10 marks for 2 palfreys for having 2 protections of quittance of toll, pontage, passage and every custom on all things which they (the abbot and convent) buy or sell for their own proper uses in England and Ireland. He has paid it into the treasury and is quit.

Adam Salsarius renders account of 100*s.* for having seizin of Old Salkil with pertinences, which had been seized into the King's hand on the occasion that it had been deposed in the King's presence that the said land had been of the King's demesne, and whereof the same Adam showed the King's charters which he has from king Richard and the King himself. He has paid it into the treasury and is quit.

Robert son of Adam renders account of 10 marks that he may have plenary seizin of all lands with chattels whence seizin was made to Matilda his mother, by the King's precept, for having her reasonable dower. He has paid it into the treasury and is quit.

The same Robert renders account of 20 marks for licence of staying that he may not cross the sea (*ne transfretet*), and for having seizin of half a carucate of land in Carlisle, which was seized into the hand of the King because it was deposed in the King's presence that the said land was of his demesne, whereof he has the charter of king Henry, the King's father, who gave that land to the father of the said Robert. He has paid it into the treasury and he is quit.

The men of Penred owe 5 marks that they may be able to hold the vill of Penred in their own hand by rendering therefor the ancient farm and the cornage pertaining to that vill and 100*s.* in addition (*de cremento*) yearly. The men of Languadebi owe 1 *chascur* that they may be able to have their vill in their own hand at the ancient farm and the cornage pertaining to it and in addition 60*s.* The men of Salkil owe 1 *chascur* that they may be able to hold their vill in their own hand by rendering the ancient farm and in addition 60*s.* The men of Scotebi owe 1 *chascur* that they may be able to hold their vill in their own hand by rendering therefor the ancient farm. But afterwards the King committed the aforesaid 4 villis to William de Stutevill for returning therefor the ancient farm and besides 20*l.* yearly increased rent; and the aforesaid men ought to be quit of the aforesaid money, which they had offered, as it is contained in the Roll of offerings which Peter Morin has paid into the treasury.

The same sheriff renders account of 10*l.* for the increased rent of the said villis for half

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a year. He has paid it into the treasury and is quit.

The men of Carlisle owe 40 marks for having their vill to farm by rendering therefor the ancient farm and 60s. of increase. But the King delivered that vill to William de Stutevill to be held at the ancient farm and by the aforesaid increase of 60s. And the said William will give the aforesaid 40 marks, which the same men had offered. Nor ought the men to be summoned therefor.

William de Stutevill owes 40 marks for having the vill of Carlisle to farm, as the men of Carlisle wished to have it by the fine which they offered. The same owes 60s. for the increased rent of the same vill.

The monks of Holkoltram render account of 3 marks for 3 acres to be occupied (*hospitand'*) with their granges in their common pasture. And they shall render therefor yearly 2s. They have paid it into the treasury and are quit.

The same render account of 2s. for the aforesaid 3 acres. They have paid it into the treasury and are quit.

Gilebert son of Gilebert renders account of 20s. for the removal of his mill in Crofton. He has paid it into the treasury and is quit.

Reginald Bradfot renders account of 3 marks for a certain purpresture of brushwood (*brueria*). In the treasury, 20s. And he owes 20s.

John de Reinni owes 2 marks and holds 2 carucates of land in Newinton by suit of the county, and of hendemot, whereof scutage ought not to be given (*per sectam comitatus et de hendemot unde scutagium dari non debet*).

OF THE FINES OF KNIGHTS THAT THEY MAY NOT CROSS THE SEA (NE TRANSFRETENT)

The same sheriff renders account of 100s. from Odard son of Adam for the land which he holds by cornage; and of 100s. from Simon de Tiwil for the same; and of 100s. from Adam son of Adam for the same; and of 20s. from Odo de Bozzardeby for the same; and of 20s. from Richard son of Truite for the same; and of 100s. from Nicolas de Stutevill for the same; and of 10*l.* from Richard de Luci for the same; and of 20s. from Adam Salsarius for the same. He has paid it into the treasury in 8 tallies and he is quit.

William de Brus renders account of 1 mark for a fee of 1 knight. He has paid it into the treasury and is quit.

H(ubert) archbishop of Canterbury has quittance of the scutage of Robert de Vallibus, whom he has in ward by writ of G. fitz Peter.

Richard de Luci owes 40 marks and 1 palfrey for having his reasonable share which belongs to him of the portion of Amabil his mother against Robert de Curtenai and Alice his wife and the earl of Albemarle and Hawisia his wife.

The same sheriff renders account of 4s. of the issues of Holweri (from) Simon de Tilli for half a year. He has paid it into the treasury and is quit.

Alice de Tilli and Ralf her husband (*vir*) owe 1 mark that their suit (*loquela*) for the apportionment of the dower of the said Alice, against William son of Odard, which was in the county, may be (heard) before the justices itinerant.

Robert de Curtenay owes 50 marks and 1 palfrey that the inquisition may remain which Alexander de Caudebec arraigned against the same Robert for 9 carucates of land with pertinences in Caudebec, so that the same Robert may stand in his right therefor in the King's court if any one wished to make a suit against him.

Matilda who was wife of Adam son of Enisant renders account of 60 marks and 1 palfrey for having her reasonable dower, and for having her reasonable portion of the chattels which belonged to her husband (*vir*), and of all things which were her husband's, and of all things which pertain to her. In the treasury, 40 marks, 6s. 8*d.* And she owes 19 marks and a half and 1 palfrey.

The abbot of Holcoltram owes 50 marks and 2 palfreys for the confirmation of the charter of king Richard, which he has, because above.

[4 *John*, 1202—*Roll* 18, m. 1]

CUMBERLAND

William de Stutevill (Philip Escrop for him) renders account of 114*l.* 4*d.* of the farm of CUMBERLAND. In the treasury, nothing. And in the constituted alms to the knights of the Temple, 1 mark.

And to Alan Wastehouse with his 10 greyhounds and 4 dog-walkers (*vealtrariis*), and to William the fowler and his dogs, 109*l.* 15s. 8*d.* for their expenses of one year and a half by the King's writ. And for salt purchased to salt the venison and for salting it, and in costs of sending the dogs beyond sea to the King, 8*l.* 12s. 2*d.* by the same writ. And he has of surplus 100s. 10*d.*, which are accounted to him below in the farm of purprestures.

The same sheriff renders account of 80*l.* 10s. 8*d.* of the noutegeld. In the treasury, 58*l.* 12s. 4*d.* And to the canons of Carlisle,

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37s. 4d. And in pardons by liberty of charter to Robert de Vallibus, 18l. 13s. 1d. And to Adam cook of the Queen, the King's mother, 27s. 11d. And he is quit.

Hugh de Morevill renders account of 10 marks of the rent of the forest of CUMBERLAND for the past year; and of 10 marks for this year. In the treasury, 5 marks by the hand of William Briewere. And he owes 15 marks.

William brother of Adam son of Richer renders account of 17l. 9s. that he may not be disseized, as it is contained in the first year of the King. In the treasury, 12s. And he owes 16l. 17s.

Gilebert Feregus owes 938l. 12s. 7d. for having the King's benevolence.

Humfrey son of Richard owes 45l. 11s. of the old farm of the mine.

William son of Erembald owes 2,154l. 5s. 4d.

Adam nephew of Roelin and his companions, who are noted in the second Roll, render account of 241l. 3s. 4d. of the old farm of the mine. In the treasury, 2s. And he owes 241l. 16d.

Adam de Carduil renders account of 8l. 9s. 2d. of the old farm of Eaton. In the treasury, 4l. And he owes 4l. 9s. 2d.

The same sheriff owes 20l., as it is contained in the tenth Roll, which for that reason are not rendered because they were rendered at the exchequer by composition (*redemptione*), as the sheriff says.

Michael chaplain of Lorton owes 16s. 8d. of the 'donum.'

Henry de Racton and others, who are noted in the second Roll, render account of 2s. for the farm of the mill of Racton. They have paid it into the treasury and are quit.

Hugh Bardulf [] 25l. 8s. 8d. of the remainder farm of the purprestures and of the mine of Carlisle, as it is contained in the second Roll. He has paid it into the treasury and is quit.

William de Stutevill renders account of 64s. 6d. of the remainder farm of the purprestures for half a year in the first of the King. He has paid it into the treasury and is quit.

The same sheriff renders account of 50l. of the farm of the mine of Carduil. In the treasury, 60s. And he owes 47l.

The same renders account of the same debt. In the treasury, nothing. And in work (*operatione*) of the castle of Carlisle, 47l. by the King's writ and by view of Rannulf son of Arkil and Andrew son of William. And he is quit.

The same sheriff renders account of 5s. of the farm of Racton; and of half a mark of

the farm of Schelton; and of 20s. of the tan mill; and of 2s. of the farm of Waverton. He has paid it into the treasury in 4 tallies and he is quit.

OF OFFERINGS

Hugh de Morevill [] 2 destriers for permitting a marriage, as it is contained in the preceding Roll.

William de Stutevill [] 10 mares and 2 palfreys of his amercement; and 3 palfreys for having 2 fairs and 1 market.

Matilda wife of Adam son of Enisant owes 200 marks which she acknowledged that she had received of the tallies of the same Adam her husband.

Robert son of Adam renders account of 40 marks of his fine for the debts which were debited to his father, as it is contained in the preceding Roll. In the treasury, 10 marks. And he owes 30 marks.

The same renders account of the same debt. In the treasury, 10 marks. And he owes 20 marks, of which Philip Escrop ought to answer for 10 marks which he received from the same Robert, as it was recorded by J. bishop of Norwich. And he owes 10 marks.

Odard de Audeham owes 20s. for having right, as it is there contained.

The same sheriff renders account of 3s. 1d. of the remainder farm of the purprestures for the second half-year. He has paid it into the treasury and is quit.

The same sheriff renders account of 42l. 13s. 4d. for the farm of the purprestures of CUMBERLAND; and of 58l. for the increase (*crementum*) of Sourebi and Carleton made by G. fitz Peter by the stock which he placed there. In the treasury, 28l. 16s. 9d. And in lands given to Adam cook of the Queen, the King's mother, 4l. 16s. And he owes 67l. 7d.

The same renders account of the same debt. In the treasury, nothing. And in his surplus which he has above in the farm of the county, 100s. 10d. And he owes 61l. 19s. 9d.

The same renders account of the same debt. In the treasury, 20 marks. And in default of Gamelesbi and Classanebi, 10l. 19s. And he owes 37l. 13s. 1d.

Alan de Caudebec renders account of 2s. of the farm of the land (*landa*) which is called Grenewra. He has paid it into the treasury and is quit.

William de la Kersumere owes 5 marks for having a writ, as it is contained in the preceding Roll.

Hugh de Nevill owes 50 marks and 2 palfreys which he acknowledged that he received

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from the abbot of Holcoltram. But he answers therefor in Dorsetshire in the following year.

The same sheriff [] 20*l.* of the increased rent of the manors, viz. of Penred and Languadebi and Salkil and Scotebi.

William de Stutevill owes 40 marks for having the vill of Carlisle, as it is contained in the preceding Roll. The same sheriff renders account of 60*s.* of the increase of the same vill of Carlisle; and of 2*s.* for the 3 acres of the monks of Holcoltram. He has paid it into the treasury in 2 tallies and he is quit.

Reginald Bradfot renders account of 20*s.* for a certain purpresture of brushwood. He has paid it into the treasury and is quit.

John de Reinni renders account of 2 marks and holds 2 carucates of land, as it is contained in the preceding Roll. He has paid it into the treasury and is quit.

Richard de Luci [] 40 marks and 1 palfrey for having his reasonable share, as it is contained there.

The same sheriff renders account of 20*s.* for the farm of Holweri (from) Simon de Tilli for a whole year. He has paid it into the treasury and is quit.

Alice de Tilli and Radulf her husband (*vir*) render account of 1 mark that their suit (*loquela*) may be (heard) in the presence of the justices, as it is contained in the preceding Roll. They have paid it into the treasury and are quit.

Robert de Curtenai [] 50 marks and 1 palfrey that the inquisition may remain, as it is there contained.

Matilda who was wife of Adam son of Enisant renders account of 19 marks and a half and one palfrey for having her reasonable dower, as it is contained there. In the treasury, 19 marks and a half and 5 marks for the palfrey. And she is quit.

NEW OFFERINGS

William Briewere renders account of 500 marks for having the daughter of Hugh de Morevill with all her inheritance, which the said Hugh held on the day in which he was living and dead, and for the marriage of the said daughter for the benefit of Richard his son, or if the kinsfolk (*parentes*) of the said girl shall have assented to this, for the benefit of Richard Gernon his nephew, if it shall please the same William; and for having the issues of the same land and the chattels of the said Hugh, which are not in the King's hand, or which he has not bequeathed in his will; and for having the office of the forest which the same Hugh had, and for answering therefor to the King's chief forester, as the oft-

repeated Hugh has done and as he ought to do.¹ So that then if the said daughter of the said Hugh should die (*moretur*) before she was married and before the said William had received 500 marks of the issues of the said land, that is, what he had rendered of the aforesaid fine, there shall be placed to his credit whatever he should have received of the issues of that land, and for having the mediety of the land which was Walter Brito's, which is in the King's hand,² whereof Richard de Hasecumb, heir of the said Walter, came into the King's court and yielded to the King and the aforesaid William his right which he had in the mediety of the aforesaid land to the use of Richard Briewere, son of the said William. In the treasury, 100 marks. And he owes 400 marks. The same renders account of the same debt. In the treasury, 100 marks. And he owes 300 marks. The same renders account of the same debt. In the treasury, 8*l.* and half a mark. And in pardons to the said William, 25*l.* by the King's writ, for 25*l.* of sterlings with which he accommodated the King in Normandy. And he owes 250 marks.

OF AMERCEMENTS BY H. DE NEVILL AND HUGH WAAC

The vill of Neweton owes 2 marks for a quittance. Walter son of Roger owes 1 mark for a transgression. The vill of Schelton owes 3 marks for the same. Walter and Gocelin owe 100*s.* for the same. Hugh de Morevill owes 16*s.* for the chattels of Noel, a fugitive. Robert de Ulvesbi owes 5 marks for an amercement. The vill of Penret owes 10*s.* for a transgression. The vill of Uckemannebi owes 3 marks for an amercement. William, parson, and the vill of Kirkesoresbi owe 1 mark for a quittance. Gilbert de Dolphinerbi owes 1 mark for the same. Adam son of Robert de Eaton owes 1 mark for the same. Waldef de Seurebi owes 20*s.* for the same. Orm de Yrebi owes 1 mark for the removal of the mill in Waverton. The vill of Schortebi owes 1 mark for a recent transgression. The county of CUMBERLAND owes 60 marks, for this reason that it went with Osbert de Longchamp into the forest (*pro eo quod iverit cum Osberto de Longo*

¹ Higher up on this roll William Briewere is found answering for the rent due from Hugh de Morville as forester.

² This should be carefully distinguished from Hugh de Morville's land. Walter Brito's fief (see *Liber Rubens*, p. 232) was a Somerset barony of fifteen knights' fees, and had nothing to do with Cumberland.

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*campo in forest*¹). The county owes 30*l.* 13*s.* 3½*d.* of small sums and items of half a mark and under.

ALSO NEW OFFERINGS

Helewisa de Stutevill renders account of 60 marks that she may not be compelled to marry, and if she wishes to marry herself that it may be done by consent of the King or his chief justices, and for having right of her dower. In the treasury, 20 marks. And she owes 40 marks.

AMERCEMENTS BY JOHN BISHOP OF NORWICH AND HUGH BARDULF AND HIS COMPANIONS

The same sheriff renders account of 125*l.* 17*s.* 8*d.* of the amercements of the men and vills whose names and debts and causes of the debts are noted in the Roll in which the aforesaid paid into the treasury. He has paid it into the treasury in 148 tallies and is quit.

The county of CUMBERLAND, except Copland and the 5 vills, renders account of 62 marks and a half that it may be quit of the common amercement. In the treasury, 41*l.* 7*s.* 11*d.* And in pardons to Alexander de Luci, 5*s.* 5*d.* by liberty of delaying at the exchequer (*sedendi ad Scaccarium*¹) and by the King's writ. And he is quit.

William de Stutevill renders account of 15*s.* for the chattels of Henry de Denton, a fugitive. In the treasury, 12*s.* And he owes 3*s.* The same renders account of 14*s.* for the chattels of Robert de Burton and Robert de Rademan, fugitives. In the treasury, 11*s.* 6*d.* And he owes 2*s.* 6*d.*

The same sheriff renders account of 20*l.* of the tallage of the city of Carlisle. In the treasury, 16*l.* and 1 mark. And he owes 5 marks.

The heir of William son of Aldelin owes 2*s.* for the chattels of William Pirlebain, a fugitive; and 12*d.* for the chattels of malefactors; and 6*d.* for the chattels of Adam Funde; and 7*d.* for the chattels of Thomas de Kele; and 22*s.* 5*d.* for the chattels of Orm and Gillecrist; and 12*d.* for the chattels of the malefactors who robbed Walter de Niewlier; and 2*s.* for the chattels of Archier who was drowned; and 2*d.* for a certain man who was drowned; and 2*s.* for the chattels of outlaws; and 3*s.* for the chattels of Gamel and Richard Long. Robert de Bereford owes half a mark for default of his respite. Alice wife of Reginald Carpenter owes half a mark because she has not been

¹ This means that he was acting as an officer of the exchequer, and was therefore exempt.

prosecuted. Richard de Sands (Sabluns) owes half a mark because he had not him whom he pledged.

OF THE THIRD SCUTAGE

William de Brus renders account of 1 mark for the fee of half a knight. He has paid it into the treasury and is quit. H(ubert) archbishop of Canterbury has quittance of the scutage of Robert de Vallibus, as it is noted in Bukingham and Bedefordscire.

The same sheriff renders account of 4*l.* 3*s.* 9*d.* for the issues of the lands of Simon de Tilloel for half a year. He has paid it into the treasury and he is quit. The same sheriff renders account of 60*s.* for the farm of Croge-lin and Niewebigginge. In the treasury, 30*s.* And he owes 30*s.* Allan Sellar renders account of 40*s.* for the debt which he owed to Adam son of Elinant. In the treasury, 4*s.* And he owes 36*s.*

[5 *John*, 1203—*Roll* 20, *m.* 2]

CUMBERLAND

William de Stutevill (Philip Escrop for him) renders account of 57*l.* 2*d.* of the farm of CUMBERLAND for half a year. In the treasury, 43*l.* 17*s.* 5*d.* And in the maintenance of the knights which were in the castle of Carlisle, 12*l.* by the King's writ. And he owes 22*s.* 9*d.*

Robert de Curtenai (Alan de Caudebec for him) renders account of 57*l.* 2*d.* of the farm of CUMBERLAND for half a year. In the treasury, 14*l.* 6*s.* 8*d.* And in the appointed alms to the knights of the Temple, 1 mark. And in repair of the gates and houses in the King's castle of Carlisle, 61*l.* 10*s.* 9*d.* by the King's writ. And he has of surplus 19*l.* 10*s.* 7*d.*, of which there are allowed to him below in the farm of purprestures 13*l.* 9*s.* 2*d.* And there remain to be allowed to him 6*l.* 17*d.*

The same sheriff renders account of 80*l.* 10*s.* 8*d.* of the noutegeld. In the treasury, 58*l.* 12*s.* 4*d.* And to the canons of Carlisle, 37*s.* 4*d.* And in pardons by liberty of charter to Robert de Vallibus, 18*l.* 13*s.* 1*d.* And to Adam cook of the Queen, the King's mother, 27*s.* 11*d.* And he is quit.

Hugh de Morevill [] 15 marks of the rent of the forest of CUMBERLAND for the third year and for the fourth year. William Briewere renders account of 10 marks for the rent of the said forest for this year. In the treasury, 5 marks. And he owes 5 marks.² William the brother of Adam owes 16*l.* 17*s.*

² See note p. 391 above.

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that he may not be disseized, as it is contained in the first Roll. Gilebert son of Feregus owes 93*l.* 12*s.* 7*d.* for having the King's benevolence. William son of Erembald [] 2,154*l.* 5*s.* 4*d.* Adam nephew of Roelin and his companions, who are noted in the second Roll, owe 241*l.* 16*d.* of the old farm of the mine. Humfrey son of Richard owes 45*l.* 11*s.* for the same. Adam de Carduil renders account of 4*l.* 9*s.* 2*d.* of the old farm of Eaton. In the treasury, 4*l.* And he owes 9*s.* 2*d.*

The same sheriff owes 20*l.*, as it is contained in the tenth Roll, which are not so rendered because they had been rendered at the exchequer, as the sheriff says.

Henry de Racton and others, who are noted in the second Roll, render account of 2*s.* for the farm of the mill of Racton. They have paid it into the treasury and are quit.

Hugh Bardulf [] 25*l.* 8*s.* 8*d.* for the remainder farm of the purprestures and the mine of Carlisle, as it is contained in the second Roll.

The same sheriff renders account of 50*l.* of the farm of the mine of Carlisle. In the treasury, 25*l.* by the hand of Robert de Curtenai. And he owes 25*l.*

The same sheriff renders account of 5*s.* for the farm of Racton; and of half a mark for the farm of Schelton; and of 20*s.* for the tan mill; and of 2*s.* for the farm of Waver-ton. He has paid it into the treasury in 4 tallies and is quit.

OF THE OFFERINGS

Hugh de Morevill [] 2 destriers (*dextrarios*) for permitting the marriage, as it is contained in the third Roll.

William de Stutevill [] 10 mares and 2 palfreys for his amercements, and 3 palfreys for having two fairs and 1 market.

Matilda wife of Adam son of Enisant owes 200 marks which she acknowledges that she received of the tallies of the same Adam her husband.

Robert son of Adam renders account of 20 marks for his fine, as it is contained in the third Roll. In the treasury, 4 marks. And he owes 16 marks.

William de Stutevill [] 37*l.* 14*s.* 1*d.* for the remainder of the purprestures for the past year. The same William renders account of 21*l.* 6*s.* 8*d.* for the farm of the purprestures for half a year; and of 29*l.* for the increase of Sourebi and Carlaton made by G. fitz Peter by the stock which he placed there. In the treasury, 12*l.* 16*s.* 3*d.* And in lands given to Adam cook of the Queen, the King's

mother, 48*s.* for the same term. And in default of Gamelesbi and Classanebi, 109*s.* 6*d.* And he owes 12*s.* 11*d.* and 29*l.* of the increase (*crementum*).

The same sheriff renders account of 21*l.* 6*s.* 8*d.* for the farm of the purprestures for half a year; and of 29*l.* for the increase of Sourebi and Carlaton, as it is contained above. In the treasury, nothing. And in lands given to Adam cook of the Queen, the King's mother, 48*s.* for the same term. And in default of Gamelesbi and Classanebi, 109*s.* 6*d.* And in his surplus which he has above, 13*l.* 9*s.* 2*d.* And he owes 29*l.* of the aforesaid increase.

Alan de Caudebec renders account of 2*s.* for the farm of the land (*landa*) which is called Grenewra. He has paid it into the treasury and is quit.

William de Stutevill [] 20*l.* of the increased rent of the manors, viz. of Penred, Languadebi, Salkil, Scotebi, for the past year. And [] 40 marks for having the vill of Carlisle, as it is contained in the third Roll.

The same sheriff [] 20*l.* for the aforesaid increase of the manors for this year; and [] 60*s.* for the increase of the vill of Carlisle. Of which William de Stutevill ought to answer for 10*l.* and for 30*s.* for the increase of half a year. The same sheriff renders account of 2*s.* for 3 acres of the monks of Holcoltram; and of 20*s.* of the farm of Holweri (which belongs to) Simon de Tilli. He has paid it into the treasury in 2 tallies and is quit. Richard de Luci [] 40 marks and 1 palfrey for having his reasonable share, as it is contained in the third Roll. Robert de Curtenai renders account of 50 marks and 1 palfrey that the inquisition may remain, as it is contained there. In the treasury, 25 marks. And he owes 25 marks and 1 palfrey.

OF THE OFFERINGS

William Briewere [] 250 marks for having the daughter of Hugh de Morvill, as it is contained in the preceding Roll.

Helewisa de Stutevill renders account of 40 marks that she may not be compelled to marry, as it is there contained. She has paid it into the treasury and is quit.

AMERCEMENTS BY H. DE NEVILL AND HUGH WAC

The same sheriff renders account of 2 marks for the vill of Neweton for a quittance; and of 3 marks for the vill of Schelton for a transgression; and of 10*s.* for the vill of

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Penred for a transgression ; and of 1 mark for William, parson, and the vill of Kierkesorebi for a quittance ; and of 1 mark for Orm de Yrebi for removal of the mill in Waverton ; and of 1 mark for the vill of Schortebi for a forest (*viridis*) transgression. He has paid it into the treasury in 6 tallies and is quit.

Walter son of Roger renders account of 1 mark for a transgression. In the treasury, 11s. 8d. And he owes 20d.

Walter and Gocelin render account of 100s. for the same. In the treasury, 50s. And they owe 50s.

Gilebert de Dolphinerbi renders account of 1 mark for a quittance. In the treasury, 8s. 8d. And he owes 4s. 4d.

Adam son of Robert de Eaton renders account of 1 mark for the same. In the treasury, half a mark. And he owes half a mark.

Waldef de Sourebi renders account of 20s. for the same. In the treasury, half a mark. And he owes 1 mark.

The county renders account of 60 marks because it went with Osbert de Longchamp into the forest.¹ In the treasury, 40 marks. And it owes 20 marks. The county owes 30*l.* 13*s.* 4*d.* of small sums and in items of half a mark and below.

Hugh de Morevill owes 16*s.* of the chattels of Noel, a fugitive. The vill of Uckemannebi owes 3 marks for a transgression.

William de Stutevill owes 3*s.* for the chattels of Henry de Denton, a fugitive ; and 2*s.* 6*d.* of the chattels of Robert de Burton and Robert de Radoman, fugitives.

The same sheriff renders account of 5 marks of the tallage of the city of Carlisle. He has paid it into the treasury and is quit.

The heir of William son of Aldelin owes 37*s.* 8*d.* of the chattels of very many fugitives, as it is contained in the preceding Roll.

William de Stutevill renders account of 30*s.* for the farm of Crogelin for the past year ; and of 30*s.* for this year. He has paid it into the treasury in 2 tallies and is quit.

Alan Sellar owes 36*s.* of the debt which he owed to Adam son of Enisant.

OF THE FINES AND SCUTAGES OF KNIGHTS FOR THE FOURTH SCUTAGE

Richard de Luci renders account of 30 marks for a fee of 1 knight. He has paid it into the treasury and is quit. Robert de Stutevill [] 100*s.* for a fee of 1

¹ See previous Roll, p. 391.

knight. William de Brus renders account of 3 marks for half a knight's fee. In the treasury, 1 mark. And he owes 2 marks.

The same sheriff renders account of 100*s.* from Adam son of Adam for cornage ; and of 5 marks from Odard son of Adam for the same ; and of 20*s.* from Odo de Bochardeby for the same ; and of 20 marks from Nicholas de Stutevill for the same ; and of 3 marks from Adam le Salsier for the same ; and of half a mark from Richard son of Richard for the same ; and of 100*s.* from William son of Rannulf for the same ; and of 20*s.* from Roger de Munbegun for a mediety of Culchet (Culgaith) ; and of 2 marks from Adam de Staveleia for cornage ; and of 2 marks from John de Reigni for serjeanty. He has paid it into the treasury in 10 tallies and is quit.

Robert de Curtenai [] 20 marks for the barony which was Gilebert Pipard's. These have quittance by writs—William Briewere, Geoffrey de Luci, William de Nevill, the archbishop of Canterbury.

NEW OFFERINGS

Robert son of Alexander renders account of 4 marks for having to wife Eda daughter of John with 30 acres of land with pertinences in CARLISLE, which are the inheritance of the said Eda, who is in the King's gift. He has paid it into the treasury and is quit.

Richard de Luci renders account of 15 marks and 1 palfrey that an inquiry may be held by the oath of 12 legal men well qualified to declare truly what customs and services his men are accustomed to do to him and what they owe, and what they have done and ought to do to his antecessors for the free tenements which they hold of him in Copland, and that he may have them if they be acknowledged to him, and if the men fall into amercement by that inquisition that the King may have his share. In the treasury, 15 marks. And he owes 1 palfrey.

William de Carleol renders account of 2 marks for having by replevin 1 carucate of land in Rodeclive, which he held to farm for a term of 15 years from William de Rodeclive and which was taken in the King's hand for the default of the said William de Rodeclive against Reginald Berfot. In the treasury, 1 mark. And he owes 1 mark.

The same sheriff [] 27*l.* 12*s.* of the chattels of William de Stutevill. The same sheriff renders account of 2*s.* for rent of a certain place (*placia*) in CARLISLE for 2 years. He has paid it into the treasury in 2 tallies and he is quit. The prior of CARLISLE [] 10 marks of the 'donum.'

THE PIPE ROLLS

[6 *John*, 1204—*Roll* 11, m. 1d]

CUMBERLAND

Robert de Curtenai (Alan de Caudebec for him) renders account of 114*l.* 4*d.* for the farm of CUMBERLAND. In the treasury, 23*l.* 13*s.* 6*d.* And in the appointed alms to the knights of the Temple, 1 mark. And in his surplus for the past year, 6*l.* 17*d.* And in repair of the castle of CARLISLE, 116*l.* 4*s.* 1*d.* by the King's writ and by the view of Alan son of Onin and William de Ripun. And in stores for the aforesaid castle for grain and pigs and other necessities, 50 marks by the King's writ. And he has of surplus 65*l.* 18*s.* 8*d.*, of which 58*l.* 12*s.* 4*d.* are allowed to him below in the noutegeld and 7*l.* 6*s.* 4*d.* in the farm of purprestures, and so the whole.

The same sheriff renders account of 80*l.* 10*s.* 8*d.* of the noutegeld. In the treasury, nothing. And in his surplus which he has above, 58*l.* 12*s.* 4*d.* And to the canons of CARLISLE, 37*s.* 4*d.* And in pardons by liberty of charter to Robert de Vallibus, 18*l.* 13*s.* 1*d.* And to Adam the cook of queen A(lienor), 27*s.* 11*d.* And he is quit.

Hugh de Morevill [] 15 marks of the rent of the forest of CUMBERLAND for the third year and the fourth. William de Briwere renders account of 5 marks of the rent of the said forest for the past year; and of 100*s.* for this year for three parts of the year. In the treasury, 5 marks for this half-year. And he owes 5 marks for the past year and 2½ marks for the fourth part of this year. Richard de Luci renders account of 2½ marks for the rent of the said forest for the fourth part of the year.¹ He has paid it into the treasury and is quit.

William son of Erembald [] 2,154*l.* 5*s.* 4*d.* Adam de Carduil renders account of 9*s.* 2*d.* of the old farm of Eaton. He has paid it into the treasury and is quit.

Henry de Racton and others, who are named in the second Roll, render account of 2*s.* for the farm of the mill of Racton. They have paid it into the treasury and are quit. William de Stutevill [] 25*l.* for the farm of the mine of CARLISLE for the past year. The same sheriff [] 50*l.* for the farm of the mine of CARLISLE for this year. The same sheriff renders account of 5*s.* for the farm of Racton; and of half a mark for the farm of Schelton; and of 20*s.* for the tan

mill; and of 2*s.* for the farm of Waverton. He has paid it into the treasury in 4 tallies and is quit.

Hugh Bardulf owes 25*l.* 8*s.* 8*d.* of the remainder farm of the purprestures and mine of CARLISLE, as it is contained in the second Roll. But R. de Cornhull answers therefor after Notinghamsire.

[*Roll* 13, m. 2d, after *Notinghamsire*]

ACCOUNT OF HUGH BARDULF BY REGINALD DE CORNHULL OF SEVERAL DEBTS WHICH ARE NOTED IN THE ROLL OF THE PAST YEAR AND IN THE ROLL OF THIS YEAR.

The same Reginald renders account (*amongst many other debts concerning various counties*) of 25*l.* 8*s.* 8*d.* for the remainder of the purprestures and the mine.

OF THE OFFERINGS

Hugh de Morevill [] 2 destriers for permitting a marriage, as it is contained in the third Roll.

William de Stutevill [] 10 mares and 2 palfreys for his amercement, and 3 palfreys for having 2 fairs and 1 market.

Matilda wife of Adam son of Enisant owes 200 marks which she acknowledged that she had received by the tallies of Adam her man.

Robert son of Adam renders account of 16 marks for his fine, as it is contained in the third Roll. In the treasury, 1 mark. And he owes 15 marks, of which the heir of Philip Escrop ought to answer for 10 marks by the record of John bishop of Norwich.

William de Stutevill [] 37*l.* 14*s.* 1*d.* of the remainder of the purprestures for the fourth year; and 12*s.* 11*d.* for the half-year past; and 29*l.* for the increase (*crementum*) of the half-year past; and 20*l.* of the increase of the manors of Penred (and) Languadebi, as it is contained in the preceding Roll; and 40 marks for having the vill of CARLISLE, as it is contained in the third Roll; and 10*l.* of the increase of the aforesaid manors for half a year past; and 30*s.* of the increase of CARLISLE for half a year past; and 5*s.* 6*d.* for the chattels of a fugitive, as it is contained in the preceding Roll.

The same sheriff [] 29*l.* of the increase of Sourebi and Carlaton for half a year past; and 30*s.* of the increase of the vill of CARLISLE; and 10*l.* of the increase of the manors of Penred, Languadebi and other manors, as it is contained in the preceding Roll. The same sheriff [] 20*l.* of the increase of the manors for this year; and 60*s.* of the increase of the vill of CARLISLE for

¹ See note above, p. 391. This entry is important as proving that the hereditary forestership passed from William Briwere (who had held it since Hugh de Morville's death) to Richard de Lucy (see below) at Midsummer, 1204.

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this year. The same sheriff renders account of 42*l.* 13*s.* 4*d.* for the farm of the purpresures; and of 58*l.* of the increase of Sourebi and Carlaton made by G. fitz Peter for the stock he placed there. In the treasury, 7*l.* 4*s.* 10*d.* And in lands given to Adam cook of queen A(lienor) 4*l.* 16*s.* And in default of Gamelesbi and Classanebi, 10*l.* 19*s.* And he owes 77*l.* 13*s.* 6*d.* The same renders account of the same debt. In the treasury, nothing. And in his surplus which he has above, 7*l.* 6*s.* 4*d.* And he owes 70*l.* 7*s.* 2*d.* But he answers below.

Alan de Caudebec renders account of 2*s.* for the farm of the land (*landa*) which is called Grenewra. He has paid it into the treasury and is quit.

The same sheriff renders account of 2*s.* for the 3 acres of the monks of Holcoltram; and of 20*s.* for the farm of Holweri (belonging to) Simon de Tilli. He has paid it into the treasury in 2 tallies and is quit.

Richard de Luci [] 40 marks and 1 palfrey for having his reasonable share, as it is contained in the third Roll.

Robert de Curtenai [] 25 marks and 1 palfrey that the inquisition may remain, as it is there contained. The same sheriff [] 30*s.* of the farm of Crogelin.

AMERCEMENTS BY HUGH DE NEVILL

The same sheriff renders account of 4*s.* 4*d.* from Gilebert de Dolphinerbi; and of half a mark from Adam son of Robert; and of 20 marks from the county for the amercement, as it is contained in the preceding Roll. He has paid it into the treasury in 3 tallies and is quit.

Waldief de Sourebi renders account of 1 mark for a transgression. In the treasury, half a mark. And he owes half a mark.

The county owes 30*l.* and 1 mark of small sums, as it is contained in the preceding Roll. The vill of Uckemannebi owes 3 marks for a transgression. Hugh de Morevill [] 16*s.* of the chattels of Noel, a fugitive. The heir of William son of Aldelin [] 37*s.* 8*d.* of the chattels of fugitives, as it is contained in the fourth Roll. Alan Sellar [] 36*s.* for the debt which was of Adam son of Enisant. William Briewere [] 250 marks for having the daughter of Hugh de Morevill, as it is contained in the fourth Roll.

OF THE FOURTH SCUTAGE

Robert de Stutevill [] 100*s.* for the same. William de Brus [] 2 marks for the same. Robert de Curtenai

[] 20 marks for the barony which was Gilebert Pipard's.

OF THE OFFERINGS

Richard de Luci renders account of 1 palfrey that inquiry be made, as it is contained in the preceding Roll. In the treasury, 5 marks for the palfrey. And he is quit. The same sheriff [] 27*l.* 12*s.* of the chattels of William de Stutevill. The same sheriff renders account of 12*d.* for the rent (*reditus*) of a certain (*placia*) in CARLISLE. He has paid it into the treasury and is quit. The prior of CARLISLE renders account of 10 marks of the donum. He has paid it into the treasury and is quit.

NEW OFFERINGS

Alexander de Caudebec owes 100*l.* for having recognizance by 12 legal men in the King's presence if Waldief son of Roger, father of the said Alexander, whose heir he is, discharged himself (*se dimisit*) of 9 acres of land with pertinences in Caudebec and put them with the said Alexander in ward, and if Reginald de Luci disseized the said Alexander while he was in ward and under age unjustly and without judgment.

Richard de Luci renders account of 900 marks and 5 palfreys for having the reasonable share of Alda his wife with the 'aisnesce' (portion of the eldest co-heiress) falling to her of all the land which belonged to Hugh de Morevill her father, with pertinences; and for having the forestry of the whole forest of CUMBERLAND,¹ as entire as Hugh de Morevill her father ever held it, without any partition made thereof—to be held by him and his heirs coming of the said Alda, from the King and his heirs for ever; and for having the King's charter. Terms at the Easter exchequer of the sixth year, 112½ marks; at Michaelmas, 112½ marks; and so from exchequer to exchequer until the said 900 marks are paid. And it is to be noted that for this fine the same Richard shall be quit of the entire fine of 1,000*l.* and 15 palfreys which he had previously made with the King for having the said Alda's reasonable share and the forest and the marriage of the younger daughter of the said Hugh with the ward of her land. In the treasury, 112½ marks. And he owes 525*l.*

Richard Gernun renders account of 600 marks for having Johanna, younger daughter of Hugh de Morevill, with the reasonable share falling to her of her father's land; saving to Richard de Luci and Alda his wife the

¹ See note p. 395 above.

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reasonable share falling to her of the land of the same Hugh with the 'aisnesce' and the forestry of the forest of CUMBERLAND, without partition made thereof; and that the same Richard made security to the King for the aforesaid sum by the following pledges:—W. Briewere, 100 marks; Reginald de Clifton, 10 marks in Wiltshire; Ralf Gernun, 100 marks in Essex; Henry de la Pomerai, 60 marks in Devon; Peter de Scidemor, 40 marks in Wiltshire; Robert de Bikele, 10 marks in Devon; William de Lumen, 10 marks in Devon; Robert de Secheville, 10 marks there; Richard the Fleming, 10 marks there; John the son of Richard, 10 marks there; Ralf de Bray, 60 marks there; Walkelin de Bosco, 20 marks in Norfolk; William the Dane, 10 marks in Somerset; Adam de New Market, 20 marks in Suffolk; William de Feritate, 60 marks in Southamptonshire; William de Biskelei, 10 marks in Essex; William Musard, 20 marks in Southamptonshire; Mathew fitz Herbert, 20 marks; William de Hastings de Lidgate, 20 marks in Suffolk. In the treasury, 50 marks by the hand of William Briewere. And he owes 550 marks.

Richard de Luci renders account of 1 palfrey that inquiry may be made by the oath of 12 legal men what customs and services his men used and ought to make to him. In the treasury, 5 marks for the palfrey. And he is quit.

William de Carleol renders account of 1 mark for having by replevin 1 carucate of land in Radeclive. He has paid it into the treasury and is quit. Geoffrey de Lucie [] 20 marks and 1 palfrey for having the marriage of Simon de Tilloel's widow, so that he may marry her with her assent and by counsel of her friends.

OF THE FINES AND SCUTAGES OF KNIGHTS FOR THE FIFTH SCUTAGE, ASSESSED AT TWO AND A HALF MARKS

The same sheriff renders account of 10 marks from Adam de Levinton, who holds by cornage; and of 100s. from Adam de Stafleg for serjeanty; and of 2 marks from Odo de Bucardeb, who holds by cornage; and of half a mark from Richard son of Truite for 3 bovates of land; and of 3 marks from John de Reini for serjeanty; and of 2 marks from Adam le Sausier for the same; and of 20s. from Richard de Uluesbi for drengage; and of 20s. from Henry de Uluesbi for the same. He has paid it into the treasury in 9 tallies and is quit.

Ralf son of Adam renders account of

20s. for half a carucate of land. In the treasury, 7s. And he owes 13s.

William de Brus renders account of 10 marks for the fee of half a knight. In the treasury, 8s. 4d. And he owes 6l. 5s.

Richard de Luci owes 120 marks and 1 palfrey for the cost which William Briewere put upon that land which was Hugh de Morevill's, before the said Richard should compound for that land what debt he had entered in the Roll (*antequam idem Ricardus finiret pro terra illa quod debitum intravit in Rotulo*) by the King's writ.

The same sheriff renders account of 70l. 7s. 2d. for the farm of the purprestures, as it is contained above. In the treasury, nothing. And for carriage of 5 tuns of wine brought from the water of the Humber to CARLISLE, 5 marks by the King's writ. And he owes 9l. 6d. of the old farm of purprestures; and 58l. of the aforesaid increase of Sourebi and Carlatun. The same renders account of the same debt. [] In the treasury, 9l. 6d. of the old farm of purprestures. And he owes 58l. of the aforesaid increase of Sourebi and of Carlatun.

[7 *John*, 1205—*Roll* 22, m. 2]

CUMBERLAND

Roger de Lasci constable of Chester (Walter Marescall for him) renders account of 114l. 4d. by tale of the farm of CUMBERLAND. In the treasury, 113l. 7s. And in the appointed alms to the knights of the Temple, 1 mark. And he is quit.

The same sheriff renders account of 80l. 10s. 8d. of the noutegeld. In the treasury, 57l. 19s. And to the canons of CARLISLE, 37s. 4d. And in pardons by liberty of charter to Robert de Vallibus, 18l. 13s. 1d. And to Adam cook of queen A(lienor), 27s. 11d. And he owes 1 mark. The same renders account of the same debt. He has paid it into the treasury and is quit.

Hugh de Morevill [] 15 marks of the rent of the forest of CUMBERLAND for the third year and the fourth, of which H. de Nevill acknowledged that he received 10 marks by his writ in the case (*in for[ulo]*) of the marshal.

William de Briewere [] 5 marks of the rent of the aforesaid forest for half of the fifth year, which are upon Richard de Curtenai, as William Briewere says; and 2½ marks for the fourth part of the past year, which are upon Richard de Luci, as the said William says.

William son of Erembald []

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2,154*l.* 5*s.* 4*d.* Henry de Racton and others, named in the second Roll, render account of 2*s.* for the farm of the mill of Racton. They have paid it into the treasury and are quit. William de Stutevill [] 25*l.* 8*s.* 8*d.* for the farm of the mine of Carlisle for the fifth year. Robert de Curtenai [] 50*l.* of the farm of the mine for the past year. The same sheriff renders account of 50*l.* for the aforesaid farm of this year. In the treasury, 4*l.* 9*s.* 5*d.* And he owes 45*l.* 10*s.* 7*d.* The same sheriff renders account of 5*s.* for the farm of Racton; and of half a mark for Schelton; and of 20*s.* for the tan mill; and of 2*s.* for Waverton. He has paid it into the treasury in 4 tallies and is quit.

Hugh de Morevill [] 2 destriers for permitting a marriage, as it is contained in the third Roll.

William de Stutevill [] 10 mares and 2 palfreys for his amercement; and 3 palfreys for having 2 fairs and 1 market.

Matilda wife of Adam son of Enisant owes 200 marks which she acknowledged that she received of the tallies of Adam her husband.

Robert son of Adam renders account of 15 marks for his fine, as it is contained in the third Roll. In the treasury, 2 marks. And he owes 13 marks, of which the heir of Philip Escrop ought to answer for 10 marks, as it is contained in the preceding Roll.

William de Stutevill owes 125*l.* 16*s.* 10*d.* for several debts, as it is contained in the preceding Roll.

The same sheriff owes 29*l.* of the increase of Sourebi and Carlaton for half of the fifth year; and 30*s.* for the increase of the vill of Carlisle; and 10*l.* for the increase of the manors of Penred, Languadebi and the other manors, as it is contained in the fifth Roll; and 20*l.* of the increase of the manors for the past year; and 60*s.* of the increase of the vill of Carlisle, as it is there contained.

Alan de Caudebec renders account of 2*s.* for the farm of the land (*landa*) of Grenewra. He has paid it into the treasury and is quit.

The same sheriff renders account of 2*s.* for the three acres of the monks of Holcoltram; and of 20*s.* for the farm of Holweri (which belongs to) Simon de Tilli. He has paid it into the treasury in 2 tallies and is quit.

Richard de Luci owes 40 marks and 1 palfrey that the inquisition may remain, as it is contained in the third Roll. Robert de Curtenai owes 25 marks and 1 palfrey that the inquisition may remain, as it is there contained.

Robert de Curtenai [] 30*s.* for the farm of Crogelin for the past year. The same sheriff renders account of 30*s.* for the farm of Crogelin for this year. He has paid it into the treasury and is quit.

Waldief de Sourebi renders account of half a mark for a transgression. He has paid it into the treasury and is quit. The county owes 30*l.* and 1 mark in small sums, as it is contained in the fifth Roll. The vill of Uckemannebi renders account of 3 marks for a transgression. In the treasury, 4*s.* And it owes 36*s.*

Hugh de Morevill owes 16*s.* for the chattels of Noel, a fugitive. The heirs of William son of Aldelin owe 37*s.* 8*d.* of the chattels of a fugitive, as it is contained in the fourth Roll. Alan Sellar owes 36*s.* of the debt which was of Adam son of Enisant.

William Briewere owes 250 marks for having Hugh de Morevill's daughter, as it is contained in the fourth Roll. But it is on record by G. fitz Peter and other barons that he had not that agreement for which he compounded (*finivit*) and so he ought not to be summoned.¹

OF THE FOURTH SCUTAGE

Robert de Stutevill renders account of 100*s.* for the same. In the treasury, 2 marks. And he owes 5½ marks. William de Brus owes 2 marks for the same. Robert de Curtenai owes 20 marks for the barony which was Gilebert Pipard's; and 27*l.* 12*s.* of the chattels of William de Stutevill. The same sheriff renders account of 12*d.* for the assize rent of a certain place (*placia*) in Carlisle. He has paid it into the treasury and is quit.

OF THE OFFERINGS

Alexander de Caudebec owes 100*l.* for having a recognizance, as it is contained in a preceding Roll. Richard de Luci renders account of 525*l.* for having reasonable share, i.e. his wife's share of her father's inheritance, as it is contained there. In the treasury, 21*l.* 13*s.* 6*d.* And he owes 500*l.* 66*s.* 6*d.* and 5 palfreys. Adam de Carlisle owes 20*l.* which he received from Gilebert son of Reinfer, as it is contained in the account of Hugh de Nevill who was sought for (*qui requirebatur*) in Lancaster. Richard Gernun renders account of 550 marks for having Johanna,² as it is there contained. In the treasury, 37*l.* And he owes 329*l.* 13*s.* 4*d.*

¹ The original agreement will be found on p. 391, and the subsequent one on p. 396 above.

² Daughter of Hugh de Morville.

THE PIPE ROLLS

Geoffrey de Luci renders account of 20 marks and 1 palfrey for having marriage,¹ as it is there contained. In the treasury, 20 marks and 5 marks for the palfrey. And he is quit.

OF THE FIFTH SCUTAGE

Ralf son of Adam owes 13s. for half a carucate of land. William de Brus owes 6l. 5s. for the scutage.

Richard de Luci [] 120 marks and 1 palfrey for cost, as it is contained in the preceding Roll. The same sheriff renders account of 42l. 13s. 4d. for the farm of the purprestures. In the treasury, 20l. 18s. 4d. And in lands given to Adam cook of queen A(lienor), 4l. 16s. [] for Gamelesbi and Classanebi, 10l. 19s. And he owes 6l. The same sheriff renders account of the same debt. He has paid it into the treasury and (is quit). Robert de Curtenai owes 58l. of the increase of Sourebi and Carlaton for the past year. The same sheriff owes 58l. of the same increase for this year.

NEW OFFERINGS

Dunecan de Laceles renders account of 2 marks that the recognizance which he arraigned for the last presentation of the church of Boulton may be taken before the King's constable of Chester at Carlisle. [] In the treasury, 1 mark. And he owes 1 mark. Adam son of John owes 1 mark of his fine by pledge of Reginald son of Adam.

OF THE SIXTH SCUTAGE

William de Brus renders account of 1 mark for half a fee. He has paid it into the treasury and (is quit). Robert de Vallibus owes 4 marks for 2 fees, but he has quittance by record of William Briewere and J. archdeacon of Worcester.

[8 *John*, 1206—*Roll* 4, *m.* 1d]

CUMBERLAND

Roger de Lasci constable of Chester (Walter Marescal for him) renders account of 114l. 4d. by tale of the farm of CUMBERLAND. In the treasury, 113l. 7s. And in the appointed alms to the knights of the Temple, 1 mark. And he is quit.

The same sheriff renders account of 80l. 10s. 8d. for the noutegeld. In the treasury, 58l. 12s. 4d. And to the canons of Carlisle, 37s. 4d. And in pardons by liberty of charter to Robert de Vallibus, 18l. 13s. 1d.

¹ The marriage of a widow.

And to Adam cook of queen A(lienor), 27s. 11d. And he is quit.

Hugh de Nevill [] 10 marks which he has received of the rent of the forest, as it is contained in the preceding Roll. Hugh de Morevill owes 5 marks of the rent of the forest of CUMBERLAND for the third year and the fourth, as it is there contained. Robert de Curtenai owes 5 marks for the same, as it is there contained. Richard de Luci owes 2½ marks for the same, as it is there contained.

William son of Erembald owes 2,154l. 5s. 4d. for the farm of the mine of CUMBERLAND. Henry de Racton and others, who are noted in the second Roll, render account of 2s. for the farm of the mill of Racton. They have paid it into the treasury and are quit. William de Stutevill owes 25l. 8s. 8d. for the farm of the mine of Carlisle for the fifth year; and 10 mares and 2 palfreys for amercement; and 3 palfreys for having 2 fairs and 1 market. Robert de Curtenai [] 50l. for the farm of the mine of Carlisle for the sixth year. The same sheriff owes 45l. 10s. 7d. for the aforesaid farm for the past year.

Hugh de Morevill owes 2 destriers for permitting a marriage, as it is contained in the third Roll.

The same sheriff renders account of 5s. for the farm of Racton; and of half a mark for Schelton; and of 20s. for a tan mill; and of 2s. for Waverton. He has paid it into the treasury in 4 tallies and is quit. William de Stutevill owes 125l. 16s. 10d. for several debts, as it is contained in the sixth Roll. The same sheriff owes 63l. 10s. for several farms, as it is contained in the preceding Roll.

Alan de Caudebec renders account of 2s. for the farm of the land (*landa*) of Grenewra. He has paid it into the treasury and is quit. The same sheriff renders account of 2s. for the 3 acres of the monks of Holcoltram; and of 20s. of the farm of Holweri (which belongs to) Simon de Tilli. He has paid it into the treasury in 2 tallies and is quit.

Nicol de Kenet [] 30s. for the farm of Crogelin and Niewebigging. Richard de Luci owes 40 marks and 1 palfrey for having reasonable share, as it is contained in the third Roll. Robert de Curtenai owes 25 marks and 1 palfrey that inquisition, as it is there contained; and 30s. for the farm of Crogelin, as it is contained in the preceding Roll.

The county owes 30l. and 1 mark for small sums, as it is contained in the fifth Roll. The vill of Uckemannebi owes 36s. for a transgression. Hugh de Morevill owes

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16s. for the chattels of Noel, a fugitive. The heirs of William son of Aldelin owe 37s. 8d. for the chattels of fugitives, as it is contained in the fourth Roll.

Robert de Stutevill renders account of 5½ marks for the fourth scutage. In the treasury, 2½ marks. And he owes 3 marks. William de Brus owes 2 marks for the same. Robert de Curtenai owes 20 marks for the barony which was Gilebert Pipard's; and 27l. 12s. for the chattels of William de Stutevill. The same sheriff renders account of 12d. for the rent of a certain place (*placia*) in Carlisle. He has paid it into the treasury and is quit.

OF THE OFFERINGS

Alexander de Caudebec owes 100l. for having a recognizance, as it is contained in the sixth Roll; by the record of the justices he ought not to be summoned, because Robert de Curtenai has that land by the underwritten fine of 300 marks and 2 palfreys.¹

Richard de Luci renders account of 500l. 66s. 6d. and 5 palfreys for having his reasonable share, as it is there contained. In the treasury, 46l. And he owes 457l. 6s. 6d. and 5 palfreys.

Richard Gernun renders account of 329l. 13s. 4d. for having Johanna, as it is there contained.

Adam de Carduil owes 20l. which he received from Gilebert son of Reinfer, as it is contained in the preceding Roll; of which Hugh de Nevill acknowledged by his writ which is in the marshal's case (*in forulo maresc'*) that Richard his clerk received it at Nottingham.

OF THE FIFTH SCUTAGE

Ralf son of Adam owes 13s. for half a carucate of land. William de Brus owes 6l. 5s. for the scutage.

Richard de Luci owes 120 marks and 1 palfrey for cost, as it is contained in the sixth Roll. The same sheriff renders account of 42l. 13s. 4d. for the farm of the purprestures. In the treasury, 26l. 18s. 4d. And in lands given to Adam cook of queen A(lienor), 4l. 16s. And in default of Gamelesbi and Clasanebi, 10l. 19s. And he is quit.

Robert de Curtenai owes 58l. for the increase (*crementum*) of Sourebi, as it is contained in the sixth Roll. The same sheriff owes 116l. for the same increase for the past year and this year. Dunecan de Lasceles owes one mark for a recognizance, as it is contained

in the preceding Roll. Adam son of John owes one mark for his fine by pledge of Reginald son of Adam.

NEW OFFERINGS

Walter de Erlingham owes one palfrey for Richard de Luci for having a writ *de pace* for half a carucate of land with pertinences in Culterston, which Richard de Betvill, plaintiff, claims against the same Richard, because Richard de Luci, who is plaintiff, puts himself on a great assize. Robert de Curtenai and Alice his wife owe 300 marks and 2 palfreys for having seizin of a mediety of the vill of Caudebec whereof Alexander de Caudebec had seizin by the King's precept, so that they may be afterwards invested with the whole vill (*deducantur de tota villa*) of Caudebec according to the custom and assize of the kingdom.

Richard de Luci [] 40 marks for one knight's fee and for his serjeanty and for the land which he holds by cornage.

Robert de Stutevill renders account of 20s. for two carucates of land. He has paid it into the treasury and is quit. Reginald le Turnur owes 43s. for the King's wines by masters Serlo and Ralf the miller. Geoffrey de Bocland owes 45s. for the same. William de Boclande owes 24s. for the same. William son of Richard owes 44s. for the same. They are to be sought for after Buckingham.

[9 *John*, 1207—*Roll* 12, m. 1]

CUMBERLAND

Roger de Laschi constable of Chester (Walter Marescall for him) renders account of 114l. 4d. (*sic*) by tale for the farm of CUMBERLAND. In the treasury, 114l. 6d. And in the appointed alms to the knights of the Temple, one mark. And he has of surplus one mark and 2d.

The same sheriff renders account of 80l. 10s. 8d. of the noutegeld. In the treasury, 58l. 12s. 4d. And to the canons of Carlisle, 37s. 4d. And in pardon by liberty of charter to Robert de Vallibus, 18l. 13s. 1d. And to Adam cook of queen A(lienor), 27s. 11d. And he is quit.

Hugh de Nevill owes 10 marks which he received of the rent of the forest, as it is contained in the seventh Roll, but he answers therefor after Roteland. Hugh de Morevill owes 5 marks of the rent of the forest of CUMBERLAND for the third year and the fourth, as it is there contained. Robert de Curtenai owes 5 marks for the same, as it is there contained. Richard de Luci owes 2½ marks for the same, as it is there contained.

¹ See under 'New Offerings' below.

THE PIPE ROLLS

William son of Erembald owes 2,154*l.* 5*s.* 4*d.* of the farm of the mines of CUMBERLAND. Henry de Racton and others, who are noted in the second Roll, render account of 2*s.* for the farm of the mill of Racton. They have paid it into the treasury and are quit. William de Stutevill owes 25*l.* 8*s.* 8*d.* for the farm of the mine of Carlisle for the fifth year; and 10 mares and 2 palfreys for his amercement; and 3 palfreys for having 2 fairs and one market.

Robert de Curtenai renders account of 50*l.* for the farm of the mine of Carlisle for the sixth year. In the treasury, 15*l.* And he owes 35*l.* The same renders account of the same debt. He has paid it into the treasury and he is quit. The same sheriff owes 45*l.* 10*s.* 8*d.* for the aforesaid farm for the seventh year; and 50*l.* for the past year; and 50*l.* for this year. Hugh de Morevill owes 2 destriers, as it is contained in the third Roll.

The same sheriff renders account of 5*s.* for the farm of Racton; and of half a mark for Schelton; and of 20*s.* for a tan mill; and of 2*s.* for Waverton. He has paid it into the treasury in 4 tallies and is quit.

William de Stutevill owes 125*l.* 16*s.* 10*d.* for several debts, as it is contained in the sixth Roll. The same sheriff owes 63*l.* 10*s.* for several farms, as it is contained in the seventh Roll; and 63*l.* 10*s.* for the past year; and 63*l.* 10*s.* for this year.

The same sheriff renders account of 2*s.* for the farm of the land (*landa*) of Grenewra; and of 2*s.* for the three acres of the monks of Holcoltram; and of 20*s.* of the farm of Holweri. He has paid it into the treasury in 3 tallies and he is quit.

Nicol de Kenet [] 30*s.* for the farm of Crogelin and Niewebigging. Richard de Luci owes 40 marks and one palfrey for having reasonable share, as it is contained in the third Roll. Robert de Curtenai owes 25 marks and one palfrey that inquisition, as it is contained there; and 30*s.* for the farm of Crogelin, as it is contained in the seventh Roll.

The county owes 30*l.* and one mark for small sums, as it is contained in the fifth Roll. The vill of Uckemannebi owes 36*s.* for a transgression. Hugh de Morevill owes 16*s.* for the chattels of Noel, a fugitive. The heirs of William son of Aldelin owe 37*s.* for the chattels of fugitives, as it is contained in the fourth Roll. Robert de Stutevill renders account of 3 marks for the fourth scutage. In the treasury, one mark. And he owes 2 marks. William de Brus owes 2 marks for the same.

Robert de Curtenai owes 20 marks for the barony which was Gilebert Pipard's, but he is quit thereof by the King's writ; and 27*l.* 12*s.* for the chattels of William de Stutevill. The same sheriff renders account of 12*d.* for the rent of a certain place (*placia*) in Carlisle. He has paid it into the treasury and is quit.

OF THE OFFERINGS

Richard de Luci renders account of 457*l.* 6*s.* 6*d.* and 5 palfreys for having reasonable share, as it is contained in the sixth Roll. In the treasury, 70*l.* 6*s.* 8*d.* And he owes 386*l.* 19*s.* 10*d.* and 5 palfreys. Richard Gernun renders account of 329*l.* 13*s.* 4*d.* for having Johanna, as it is contained there. In the treasury, 46*l.* and one mark. And he owes 283*l.*, of which he ought to render yearly 50 marks. Hugh de Nevill owes 20*l.* for Adam de Carduil, as it is contained in the preceding Roll, but he answers after Roteland.

OF THE FIFTH SCUTAGE

Robert son of Adam owes 13*s.* for half a carucate of land. William de Brus owes 6*l.* 5*s.* for scutage.

Richard de Luci owes 120 marks and one palfrey for cost, as it is contained in the sixth Roll.

The same sheriff renders account of 42*l.* 13*s.* 4*d.* for the farm of the purprestures. In the treasury, 26*l.* 18*s.* 4*d.* And in lands given to Adam cook of queen A(lienor), 4*l.* 16*s.* And in default of Gamelesbi and Clasanebi, 10*l.* 19*s.* And he is quit.

Robert de Curtenai owes 58*l.* for the increase of Sourebi, as it is contained in the sixth Roll. The same sheriff owes 116*l.* for the same increase for the seventh and eighth years; and 58*l.* for this year. Dunecan de Lasceles owes one mark for a recognizance, as it is contained in the seventh year. Adam son of John owes one mark for his fine by pledge of Reginald son of Adam.

OF THE OFFERINGS

Walter de Erlengham owes one palfrey for Richard de Luci, as it is contained in the preceding Roll.

Robert de Curtenai and Alice his wife owe 300 marks and 2 palfreys for having seizin, as it is there contained. In the treasury, 40*l.* And they owe 240 marks and 2 palfreys. The same render account of the same debt. In the treasury, 40 marks. And they owe 200

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marks and 2 palfreys, but they answer in the next line. Robert de Curtenai and Alice his wife render account of 200 marks and 2 palfreys, as it is contained above. In the treasury, 100 marks. And they owe 100 marks and 2 palfreys.

Richard de Luci renders account of 40 marks for a knight's fee of the fifth scutage for a fine. In the treasury, 25 marks. And he owes 15 marks.

NEW OFFERINGS

Richard son of Truite owes 20 marks for having his land in the bailiwick of the sheriff of CUMBERLAND, whereof he was lately dis-seized by the King's precept because he went into Ireland with John de Curci. The same sheriff renders account of 10 marks for the rent of the forest of Carlisle. He has paid it into the treasury and is quit.

[10 *John*, 1208—*Roll* 10, *m.* 1]

CUMBERLAND

Roger de Lasci constable of Chester (Walter Marescall for him) renders account of 114*l.* 4*d.* by tale for the farm of CUMBERLAND. In the treasury, 113*l.* 7*s.* And in the appointed alms to the knights of the Temple, one mark. And in his surplus for the past year, 13*s.* 6*d.* And he has of surplus 13*s.* 6*d.*, which are allowed to him below in the debts of Roger de Belchamp.

The same sheriff renders account of 80*l.* 10*s.* 8*d.* of the noutegeld. In the treasury, 58*l.* 12*s.* 4*d.* And to the canons of Carlisle, 37*s.* 4*d.* And in pardons by liberty of charter to Robert de Wallibus, 18*l.* 13*s.* 1*d.* And to Adam cook of queen A(lienor), 27*s.* 11*d.* And he is quit.

Hugh de Nevill owes 10 marks which he received of the rent of the forest of CUMBERLAND, as it is contained in the seventh Roll, but he answers therefor after Wiltshire. Hugh de Morevill owes 5 marks, as it is there contained. Robert de Curtenai owes 5 marks, as it is there contained.

Richard de Luci owes 2½ marks, as it is there contained. William son of Erenbald owes 2,154*l.* 5*s.* 4*d.* for the farm of the mine of CUMBERLAND.

Henry de Racton and others, who are noted in the second Roll, render account of 2*s.* for the farm of the mill of Racton. They have paid it into the treasury and are quit. William de Stutevill owes 25*l.* 8*s.* 8*d.* of the farm of the mine of Carlisle for the fifth year ; and 10 mares and 2 palfreys for an amerce-

ment ; and 3 palfreys for having 2 fairs and one market.

The same sheriff owes 45*l.* 10*s.* 8*d.* of the aforesaid farm for the seventh year ; and 50*l.* for the eighth year ; and 50*l.* for the past year ; and 50*l.* for this year.

The same sheriff renders account of 5*s.* for Racton ; and of half a mark for Schelton ; and of 20*s.* for a tan mill ; and of 2*s.* for Waverton ; and of 2*s.* for the farm of the land (*landa*) of Grenewra ; and of 2*s.* for 3 acres of the monks of Holcoltram ; and of 20*s.* for the farm of Holweri ; and of 12*d.* for the rent of a certain house in Carlisle [*Kardoil*]. He has paid it into the treasury in 8 tallies and is quit.

William de Stutevill owes 125*l.* 16*s.* 10*d.* for several debts, as it is contained in the seventh Roll. The same sheriff owes 63*l.* 10*s.* for several farms, as it is contained in the seventh Roll ; and 63*l.* 10*s.* for the eighth year ; and 63*l.* 10*s.* for the past year ; and 63*l.* 10*s.* for this year. Nicholas de Kenet owes 30*s.* for the farm of Crogelin and Niwebigging. Richard de Luci owes 40 marks and one palfrey for having reasonable share, as it is contained in the third Roll. Robert de Curtenai owes 25 marks and one palfrey that inquisition, as it is contained there ; and 30*s.* for the farm of Crogelin, as it is contained in the seventh Roll. The county owes 30*l.* and one mark for small sums, as it is contained in the fifth Roll. Hugh de Morevill owes 16*s.* for the chattels of Noel, a fugitive. The heirs of William son of Aldelin owe 37*s.* of the chattels of fugitives, as it is contained in the fourth Roll. Hugh de Morevill owes 2 destriers, as it is contained in the third Roll.

Robert de Stutevill renders account of 2 marks of the fourth scutage. In the treasury, one mark. And he owes 2 marks. The same renders account of the same debt. He has paid it into the treasury and is quit. William de Brus owes 2 marks for the same, but he answers in Yorkshire. Robert de Curtenai owes 27*l.* 12*s.* of the chattels of William de Stutevill, but the same answers in Berkshire.

OF THE OFFERINGS

Richard de Luci renders account of 386*l.* 19*s.* 10*d.* and 5 palfreys for having reasonable share, as it is contained in the sixth Roll. In the treasury, 77*l.* and one mark. And he owes 309*l.* 6*s.* 6*d.* and 5 palfreys. The same renders account of the same debt. In the treasury, 10 marks for 2 palfreys. And he owes 309*l.* 6*s.* 6*d.* and 3 palfreys.

Richard Gernun renders account of 283*l.* for having Johanna, as it is contained there.

THE PIPE ROLLS

In the treasury, 25 marks. And he owes 266*l.* and half a mark, of which he ought to render yearly 50 marks. Hugh de Nevill owes 20*l.* for Adam de Cardoil, as it is contained in the eighth Roll, but he answers therefor after Wiltshire.

OF THE FIFTH SCUTAGE

Robert son of Adam owes 13*s.* for half a carucate of land. William de Brus owes 6*l.* 5*s.* of the scutage, but he answers in Yorkshire.

Richard de Luci owes 120 marks and one palfrey for cost, as it is contained in the third Roll.

The same sheriff renders account of 42*l.* 13*s.* 4*d.* for the farm of purprestures. In the treasury, 26*l.* 18*s.* 4*d.* And in lands given to Adam cook of queen A(lienor), 4*l.* 16*s.* And in default of Gamelesbi and Classanebi, 10*l.* 19*s.* And he is quit.

Robert de Curtenai owes 58*l.* of the increase (*crementum*) of Sourebi, as it is contained in the sixth Roll. The same sheriff owes 116*l.* of the same increase for the seventh and eighth years; and 58*l.* for the past year; and 58*l.* for this year.

Dunekan de Lasceles owes one mark for a recognizance, as it is contained in the seventh Roll, but he answers below. Walter de Erlingeham owes one palfrey for Richard de Luci, as it is contained in the eighth Roll.

Adam son of John renders account of one mark for his fine. He has paid it into the treasury and is quit.

Robert de Curtenai and Alice his wife render account of 100*l.* and 2 palfreys for having seizin, as it is contained in the eighth Roll. In the treasury, 46*l.* And he owes 54*l.* and 2 palfreys. The same renders account of the same debt. In the treasury, 54*l.* And he owes 2 palfreys.

Dunekan de Lasceles renders account of one mark, as it is contained above. He has paid it into the treasury and is quit.

Richard son of Truite renders account of 20 marks for having the land, as it is contained in the preceding Roll. In the treasury, 30*s.* And he owes 17 marks and 10*s.*

Richard de Luci [] 15 marks of his fine for the seventh scutage.

The same sheriff renders account of 10 marks for the rent of the forest of Carlisle [Cardoil]. He has paid it into the treasury and is quit.

NEW OFFERINGS

William de Egremunt and William son of Gocel' and Robert son of Uctred, accused of

violence (*retati de forcia*) causing the death of Walter Belle, render account of 5 marks, so that, if they were not guilty of the death of the same Walter, then they may be discharged under warrant (*sub cōtōā*) of legal men. In the treasury, 3 marks. And they owe 2 marks.

Adam son of Odard renders account of 80 marks for having the land with pertinences which his father Odard had, and which ought to descend to him by inheritance. In the treasury, 20 marks. And he owes 60 marks, of which he ought to render yearly 20 marks.

Alexander son of Hugh owes the third part of 7*l.* for the upright dealing (*pro justicia*) of William son of Hugh that he may render his 7*l.*

Richard de Luci [] 1 good palfrey for having every year a fair at his manor of Renglas [Ravenglass] to last for 1 day at the feast of St. James, and for a market there every Saturday (*qualibet die Sabbati*), so that they may not be to the hurt of neighbouring fairs and markets.

Alexander de Luci owes 1 mark for having seizin¹ (*pro habenda p'cipe*) of 1 carucate of land in Rademan against Orm de Yrebi.

OF PLEAS OF THE FOREST BY HUGH DE NEVILL

Alan de Caudebec renders account of 5 marks for cultivating 10 acres of land in Brunrig near Caudebec of the gift of Robert de Curtenai and Alice his wife. In the treasury, 2½ marks. And he owes 2½ marks. The same renders account of 2*s.* for the farm of Brunrig and for quittance of regard. He has paid it into the treasury and is quit.

Gilebert son of Brunine renders account of 18*d.* He has paid it into the treasury and is quit.

The county of CUMBERLAND owes 14*l.* of the arrearage of its fine. Gillemichel Castepic owes half a mark. Richard de Haya owes 20*s.* Robert de Beauchamp owes 10*l.* The same sheriff [] 7*s.* 10*d.* of small sums.

Roger de Beauchamp renders account of 10 marks for having ward of the land and the forestry of William son of Adam de Hotton² entirely with all pertinences of the same forestry as much as belonged (*per quantum*) to the said William from Michaelmas in the eighth year of the King's reign for 10 years; so that throughout that whole term he shall find necessities for the said William,

¹ Not strictly 'seizin,' but a precept or warrant for it. A 'presep' is still known in Scots law.

² Hutton-in-the-Forest.

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and in the meantime he shall answer sufficiently for the aforesaid forestry. Pledges—Richard son of William de Stapelford and William son of Geoffrey de Roinges, who are of Essex. In the treasury, 2½ marks. And he owes 100s. The same render account to the sheriff for him of the same debt. In the treasury, nothing. And in his surplus which he has above, 13s. 6d. And he owes 4l. 6s. 6d.

Robert son of Simon de Salkil renders account of 100s. that his son may be quit of a certain fawn (*founo*) which he took in the forest. He has paid it into the treasury and is quit.

The abbot of Holcoltram renders account of 4s. for the farm of Hothweit for the past year; and of 4s. for this year. He has paid it into the treasury in 1 tally and is quit.

Robert de Veteri Ponte renders account of 4,000 (marks), and he discharges to the King Les Winefelz and ward of the land Doun Bardulf, that he and his bailiffs may have the King's favour; and the same Robert shall render his account for his bailiffs and wards (*custodiis*) faithfully by his oath and that of his bailiffs on every occasion, that he may be quit of 100 marks which he owed for the son of Gilebert de Lega. In the treasury, nothing. And to the King himself in his chamber, 1,000 marks. And in pardons to the said Robert, 3,000 marks by the King's writ. And he is quit.¹

[11 *John*, 1209—*Roll* 8, m. 2d]

CUMBERLAND

Roger de Lasci constable of Chester (Walter Marescal for him) renders account of 114l. 4d. by tale of the farm of CUMBERLAND. In the treasury, 113l. 7s. And in the appointed alms to the knights of the Temple, 1 mark. And he is quit.

The same sheriff renders account of 80l. 10s. 8d. of the noutegeld. In the treasury, 58l. 12s. 4d. And to the canons of CARLISLE, 37s. 4d. And in pardons by liberty of charter to Robert de Vallibus, 18l. 13s. 1d. And to Adam cook of queen A(lienor), 27s. 11d. And he is quit.

Hugh de Morevill owes 5 marks, as it is contained in the seventh Roll. Robert de Curtenai owes 5 marks, as it is there contained. Richard de Luci owes 2½ marks, as there contained. William son of Erembald owes 2,154l. 5s. 4d. for the farm of the mine of CUMBERLAND.

¹ This entry appears to relate to Westmorland.

Henry de Racton and others, who are noted in the second Roll, render account of 2s. for the farm of the mill of Racton. They have paid it into the treasury and are quit. William de Stutevill owes 25l. 8s. 8d. for the farm of the mine of the fifth year; and 10 mares and 2 palfreys for an amercement; and 3 palfreys for having 2 fairs and a market; and 125l. 16s. 10d. for several debts, as it is contained in the sixth Roll.

The same sheriff renders account of 5s. for the farm of Racton; and of half a mark for Schelton; and of 20s. for a tan mill; and of 2s. for Waverton; and of 2s. for the farm of the land (*landa*) of Grenewra; and of 2s. for 3 acres of the monks of Holcoltram; and of 20s. of the farm of Holweri; and of 12d. of the rent of a certain place (*placia*) in CARLISLE [*Kardoil*]. He has paid it into the treasury in 8 tallies and is quit.

The same sheriff owes 195l. 10s. of the farm of the mine, as it is contained in the preceding Roll; and 50l. for this year; and 254l. for several farms, as it is contained in the seventh Roll; and 63l. 10s. for this year. Richard de Luci owes 40 marks and 1 palfrey, as it is contained in the third Roll. Robert de Curtentai owes 25 marks and 1 palfrey that inquisition, as it is there contained. The county owes 30l. and 1 mark, as it is contained in the fifth Roll.

Richard de Luci owes 309l. 6s. 6d. and 3 palfreys for having reasonable share, as it is contained in the sixth Roll, but he answers below; and 120 marks and 1 palfrey for cost, as it is contained there; and 15 marks of fine for the seventh scutage.

Richard Gernun renders account of 266l. and half a mark for having Johanna, as it is there contained. In the treasury, 25 marks. And he owes 249l. and 1 mark.

The same sheriff renders account of 42l. 13s. 4d. for the farm of the purprestures. In the treasury, 26l. 18s. 4d. And in lands given to Adam cook of queen A(lienor), 4l. 16s. And in default of Gamelesbi and Classanebi, 10l. 19s. And he is quit.

Robert de Curtenai owes 58l. and 2 palfreys of the increase of Sourebi, as it is contained in the sixth Roll. The same sheriff owes 232l. of the same increase for several years; and 58l. for this year.

Richard son of Truite owes 17 marks and 10s. for having the land, as it is contained in the ninth Roll. The same sheriff renders account of 10 marks of the rent of the forest of CARLISLE [*Carduil*]. In the treasury, 6 marks. And he owes 4 marks.

THE PIPE ROLLS

OF THE OFFERINGS

William de Egremunt and his companions render account of 2 marks, as it is contained in the preceding Roll. He has paid it into the treasury and is quit. Adam son of Odard renders account of 60 marks for having the land, as it is contained there. In the treasury, 20 marks. And he owes 40 marks, of which he ought to render yearly 20 marks.

Richard de Luci owes 1 good palfrey for having a fair, as it is there contained. Alexander de Luci owes 1 mark for having seizin (*precipe*). The same R(ichard de Luci) renders account of 309*l.* 6*s.* 6*d.* and 3 palfreys, as it is contained above. In the treasury, 45*l.* And he owes 263*l.* 6*s.* 6*d.* and 3 palfreys; and 120 marks and 1 palfrey, as it is there contained; and 15 marks of the seventh scutage.

OF PLEAS OF THE FOREST

Alan de Caudebec renders account of 2½ marks for cultivating 10 acres. In the treasury, 1 mark. And he owes 20*s.* The same sheriff renders account of 2*s.* for the farm of Brunrigg. The commune (*communa*) of CUMBERLAND owes 14*l.* of the arrearage of its fine. Robert de Beauchamp owes 10*l.* Roger de Beauchamp renders account of 4*l.* 6*s.* 6*d.* for having ward, as it is contained in the preceding Roll. In the treasury, 4 marks. And he owes 2 marks and 6*s.* 6*d.* Alice who was wife of Robert de Curtenai renders account of 250 marks and 10 mares, as it is contained below. In the treasury, 250 marks. And she owes 10 mares.

NEW OFFERINGS

Reginald son of Adam de Carduil owes 40 marks for having to wife Milisent who was the wife of Odard son of Adam. Alan son of Ketell owes 30 marks and 1 palfrey that inquiry be made whether the aforesaid Alan removed the serjeants (*servientes*) who had charge of the pleas of the King's crown in Copland or not.

Alice who was wife of Robert de Curtenai renders account of 500*l.* and 10 palfreys and 10 fillies (*iumentis*) for having her land which belongs to her by inheritance, as she had it on the day on which the aforesaid Robert led her to wife, and for having her reasonable dower which belongs to her, as well of the land of the said Robert her husband (*vir*) as of the land of Gilebert Pipard previously her husband, and that the said Alice may not be compelled to marry. In the treasury, 250 marks. And she owes 333*l.* and half a mark and 10 palfreys and 10

mares. Terms—at Michaelmas of the eleventh year, the third part, with palfreys and mares; at the Purification, a third part; at the feast of St. John, a third part. The same renders account of the same debt. In the treasury, 50 marks for 10 palfreys. And she owes 333*l.* 6*s.* 8*d.* and 10 mares. The same renders account of the same debt. In the treasury, 250 marks. And she owes 250 marks and 10 mares, but she answers above.

William de Joenebi (Johnby) owes 100 marks, of which he answers below, and 1 palfrey, that the King may cause him to be delivered from prison. William son of Peter owes half a mark for licence to make an agreement. Richard de Luci owes 100*l.* for having the King's benevolence for his negligent custody of the forest and for having his lands and chattels. Simon the butler owes 20*s.* for having peace because he was not with the King in the army of Scotland.

The same sheriff renders account of 6*d.* from Alan de Caudebec for 2 acres of shrubbery (*de frussato*); and of 6*d.* from Gilebert the miller for the same; and of 12*d.* from Yvo de Janebi for the same. He has paid it into the treasury and is quit.

Henry de Racton renders account of half a mark for a farm of 20 acres for two years. He has paid it into the treasury and is quit. William de Joenebi renders account of 100 marks and 1 palfrey, as it is contained above. In the treasury, 60*l.* and 5 marks for the palfrey. And he owes 10 marks.

OF PLEAS OF THE FOREST BY HUGH DE NEVILL AND P. DE LIUNS

The same sheriff renders account of 98 marks and 5*s.* 4*d.* for the fines and pannage of the men whose names are noted in the Roll by which the aforesaid paid into the treasury. He has paid it into the treasury in 2 tallies and he is quit.

Thomas de Brunfeld renders account of 100*s.* for a dene of pannage (*pro dena de pasnagio*). In the treasury, 4 marks. And he owes 3½ marks.

Robert de Dunbredan renders account of 20*s.* for the same. In the treasury, 1 mark. And he owes half a mark.

The vill of Lauradebi renders account of 3 marks for the same. In the treasury, 20*s.* And it owes 20*s.*

Robert de Castelkairoc renders account of 30 marks for the same. In the treasury, 12 marks. And he owes 18 marks.

Robert son of Richard renders account of 3 marks for an amercement. In the treasury, 20*s.* And he owes 20*s.*

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John de Uctredesor renders account of 2 marks for the same. In the treasury, 20s. And he owes half a mark.

William de Vallibus renders account of 1 mark for the same. In the treasury, half a mark. And he owes half a mark.

Adam de Carduil renders account of 10 marks for a waste. In the treasury, 40s. And he owes 7 marks.

Dunecan de Lasceles renders account of 3 marks for the same. In the treasury, 20s. And he owes 20s.

Helewisa de Stutevill renders account of 5 marks. In the treasury, 3 marks. And she owes 2 marks.

Alexander de Bonekeskull renders account of 5 marks for the same. In the treasury, 40s. And he owes 2 marks.

The vill of Sourebi renders account of 4 marks for the same. In the treasury, 40s. And it owes 1 mark.

The vill of Leisingebi renders account of 3 marks for the same. In the treasury, 20s. And it owes 20s.

Milisent de Blakehall renders account of 5 marks. In the treasury, 2½ marks. And she owes 2½ marks.

Thomas de Brunfeld and his companions render account of 19s. 3d.; and of 16s. 5d.; and of 22s. 3d.; and of 111s. 8d. In the treasury, 4 marks. And they owe 116s. 3d.

Robert de Veteri Ponte [] 500 marks and 5 palfreys for having ward of the land and heirs of William son of Ranulf until the said heirs came of age, and for the marriage of the said heirs, and for having the marriage of Helewisa de Stutevill who was wife of the said William. Terms—at Easter of the eleventh year, 125 marks and 1 palfrey; at Michaelmas, 125 marks and 1 palfrey; also at Easter, 125 marks and 2 palfreys; at Michaelmas, 125 marks and 1 palfrey. Pledges—S(aer) earl of Winchester, 100 marks; William de Briewere, 100 marks; earl of Clare, 50 marks; William de Cahaignes, 50 marks; William de Cantelu, 50 marks; Ralf de Parmentarius, 20 marks; Robert Peverel, 20 marks; Adam de Stawell, 10 marks; Ingelram de Pratell[is], 40 marks; Ralf Gernun, 40 marks; Richard de Muccgros, 10 marks; Thomas Esturmi, 10 marks.

[12 *John*, 1210—*Roll* 13, m. 1]

CUMBERLAND

Hugh de Nevill renders account of 114*l.* 4*d.* by tale of the farm of CUMBERLAND. In the treasury, 113*l.* 6*s.* And in the appointed

alms to the knights of the Temple, 1 mark. And he is quit.

The same sheriff renders account of 80*l.* 10*s.* 8*d.* of the noutegeld. In the treasury, 58*l.* 12*s.* 4*d.* And to the canons of Carlisle, 37*s.* 4*d.*; and to Robert de Vallibus, 18*l.* 13*s.* 1*d.*; and to Adam the Queen's cook, 27*s.* 11*d.* And he is quit.

Richard de Luci renders account of 5 marks of the rent of the forest of CUMBERLAND, as it is contained in the seventh Roll; and of 2½ marks for the same; and of 40 marks and 1 palfrey for having a reasonable share of the land of Amabil his mother; and of 263*l.* 6*s.* 6*d.* and 3 palfreys for having a reasonable share, as it is contained in the sixth Roll; and of 120 marks and 1 palfrey for the cost which William Briewere put on the land of Hugh de Morevill; and of 15 marks of a fine for the seventh scutage; and of 1 good palfrey for having a fair at Ravenglass [Renglas]; and of 100*l.* for having the King's benevolence for mismanaging the forest. Sum, 506*l.* 13*s.* 2*d.* In the treasury, 13 marks. And he owes 497*l.* 19*s.* 10*d.*

Henry de Racton renders account of 2*s.* for the farm of the mill of Racton. He has paid it into the treasury and is quit. The same sheriff renders account of 5*s.* for the farm of Racton; and of half a mark for Schelton; and of 20*s.* for a tan mill; and of 2*s.* for Waverton; and of 2*s.* for the farm of the land (*landa*) of Grenewra; and of 2*s.* for 3 acres of the monks of Holcoltram; and of 20*s.* for the farm of Holweri; and of 12*d.* for the rent of a certain place (*placia*) in CARLISLE. He has paid it into the treasury in 8 tallies and is quit.

The same sheriff renders account of 42*l.* 13*s.* 4*d.* for the farm of the purprestures. In the treasury, 17*l.* 14*s.* 2*d.* And in lands given to Adam the Queen's cook, 4*l.* 16*s.* And in default of the stock of Gamelesbi and Classanebi, 109*s.* 6*d.* for half a year when the land was in the King's hand. And to Odard de Hodelme, 7*l.* 14*s.* 7½*d.* for another half-year by the King's writ. And he owes 6*l.* 19*s.*, but he answers below.

The same sheriff renders account of 10 marks for the rent of the forest of CARLISLE; and of 4 marks for the past year of the same farm.

The same sheriff renders account of 2*s.* for the farm of Brunrigge; and of 2*s.* for the past year. He has paid it into the treasury in 2 tallies and he is quit.

The same sheriff renders account of 6*d.* from Alan de Caudebec for 2 acres; and of

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6*d.* from Gilebert the miller for the same ; and of 12*d.* from Ivo de Joenebi ; and of 40*d.* from Henry de Racton for 20 acres. He has paid it into the treasury and is quit.

Robert de Curtenai owes 5 marks, as it is contained in the seventh Roll. William son of Erembald owes 2,154*l.* for the farm of the mine of CUMBERLAND. William de Stutevill owes 151*l.* 5*s.* 6*d.* and 5 palfreys and 10 mares for several debts, as it is contained in the preceding Roll.

The same sheriff renders account of 6*d.* for the farm of a certain house in CARLISLE [Karduil] near the gate of Bochar [Botcher-gate] ; and of 6*d.* of Gilebert the miller for an assart. He has paid it into the treasury in 2 tallies and he is quit.

The same sheriff owes 245*l.* 10*s.* for the farm of the mine of Carlisle for several years past ; and 50*l.* for this year ; and 317*l.* 10*s.* for the farm of Sourebi and Carlatun and other farms for several years past ; and 63*l.* 10*s.* for this year. Robert de Curtenai owes 25 marks and 1 palfrey that inquisition, as it is contained in the third Roll ; and 58*l.* and 2 palfreys for the increase of Sourebi, as it is contained in the sixth Roll.

The county renders account of 30*l.* and 1 mark, as it is contained in the fifth Roll. It has paid it into the treasury and is quit.

Richard Gernun renders account of 249*l.* and 1 mark for having Johanna, as it is contained in the sixth Roll. In the treasury, 36 marks. And he owes 225*l.* and 1 mark, of which Robert Blundus of London owes 10 marks and answers in the following Roll in London.

The same sheriff owes 290*l.* of the increase of Sourebi for several years ; and 58*l.* for this year. Richard son of Truite renders account of 17 marks and 10*s.* for having the land, as it is contained in the ninth Roll. In the treasury, 3 marks. And he owes 14 marks and 10*s.*

OF THE OFFERINGS

Adam son of Odard renders account of 40 marks for having the land, as it is contained in the tenth Roll. In the treasury, 10 marks. And he owes 30 marks. The same renders account of the same debt. In the treasury, 10 marks. And he owes 20 marks.

Emma who was wife of Walter son of Gilebert owes 80*l.* 11*s.* and 2 palfreys that she may not be distrained. Peter de Vallibus owes 5 palfreys for having the same Emma to wife ; and 20 marks for having terms, of which Robert de Vallibus ought to answer, as it is contained in Northumberland, where he was required.

OF PLEAS OF THE FOREST

Alan de Kaudebec renders account of 20*s.* for cultivating 10 acres. He has paid it into the treasury and is quit. The commune (*communa*) of CUMBERLAND owes 14*l.* for the arrearage of its fine, but it answers below. Robert de Beauchamp owes 10*l.*

Roger de Beauchamp renders account of 2 marks, 6*s.* 6*d.* for having ward, as it is contained in the tenth Roll. In the treasury, half a mark. And he owes 26*s.* 6*d.* The same renders account of the same debt. He has paid it into the treasury and is quit. Alice who was wife of Robert de Curtenai [] 10 mares, as it is contained in the preceding Roll.

The commune of CUMBERLAND renders account of 14*l.*, as it is contained above. It has paid it into the treasury and is quit.

OF THE OFFERINGS

Reginald son of Adam de Carduil renders account of 40 marks for having to wife Milisent, as it is contained in the preceding Roll. In the treasury, 8*l.* 17*s.* 9*d.* And he owes 17*l.* 15*s.* 7*d.* William son of Peter owes half a mark for licence to make an agreement. Simon the butler (*pincerna*) owes 20*s.* for having peace, as it is contained in the preceding Roll. William de Joenebi owes 10 marks that he may be delivered out of prison. Alan son of Ketell renders account of 30 marks and 1 palfrey that it may be inquired, as it is there contained. In the treasury, 30 marks and 5 marks for the palfrey. And he is quit.

OF PLEAS OF THE FOREST

The same sheriff renders account of half a mark from Robert de Dunbredan ; and of half a mark from John Uctredesor'. He has paid it into the treasury in 2 tallies and is quit.

Thomas de Brunfeld renders account of 3½ marks. In the treasury, 40*s.* And he owes half a mark, but he answers below. The vill of Sourebi renders account of 1 mark. In the treasury, half a mark. And it owes half a mark.

The vill of Lauradebi renders account of 20*s.* In the treasury, half a mark. And he owes 1 mark. The vill of Leisingebi renders account of 20*s.* In the treasury, half a mark. And it owes 1 mark, but answers below.

Robert son of Richard renders account of 20*s.* In the treasury, half a mark. And he owes a mark. Milisent de Blakehall renders account of 2½ marks. In the treasury, half a mark. And she owes 2 marks.

Adam de Carduil renders account of 7

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marks. In the treasury, 5 marks. And he owes 2 marks, but he answers below. Thomas de Brunfeld owes 116s. 3d., as it is contained in the preceding Roll.

Helewisa de Stutevill renders account of 2 marks. In the treasury, half a mark. And she owes 20s., but she answers below. Robert de Castelkairoc owes 17 marks. Robert son of Richard owes 20s. Dunecan de Lasceles owes 20s.

Alexander de Bonekeshall renders account of 2 marks. In the treasury, half a mark. And he owes 20s.

The same sheriff renders account of half a mark from Thomas de Brunfeld; and of 2 marks from Adam de Carduil; and of half a mark from Helewisa de Stutevill; and of 1 mark from the vill of Leisingebi. He has paid it into the treasury and is quit.

Robert de Veteri Ponte renders account of 500 marks and 5 palfreys for having ward of the land, as it is contained in the preceding Roll. In the treasury, 100 marks. And he owes 400 marks and 5 palfreys. The same sheriff renders account of 6l. 19s. of the farm of purprestures, as it is contained above. He has paid it into the treasury and is quit.

OF FINES AND SCUTAGES FOR THE SCUTAGE OF IRELAND

Alice de Romeilli renders account of 100l. for a fine. She has paid it into the treasury and is quit.

Adam son of Odard renders account of 40l. and 2 good palfreys. In the treasury, 40l. And he owes 2 good palfreys.

Adam de Levinton renders account of 100 marks for the same. In the treasury, 80 marks. And he owes 20 marks. Odo de Pachardebi [Botcherby] renders account of 1 mark. He has paid it into the treasury and is quit.

The same sheriff renders account of 15 marks from Adam Salsarius; and of 3 marks from Henry de Racton; and of 40 marks from Penred; and of 5 marks from Salkil; and of 3 marks from Languadebi; and of 5 marks from Scotebi; and of 100s. from Daleston; and of 5 marks from Gamelesbi and Classanebi; and of 10 marks from Carleton. He has paid it into the treasury and is quit.

The free tenants of the priory of Carlisle render account of 60 marks. In the treasury, 10 marks. And they owe 50 marks.

Sourebi renders account of 10l. In the treasury, 100s. And it owes 100s.

Walter dean of Briggeham renders account of 200 marks and 2 palfreys because he had not come to do his homage to the King. In the treasury, nothing. And in pardon to the

said Waldeve (*sic*), 100 marks and 2 palfreys. And he owes 100 marks.

William son of Adam owes 1 mark for the same. Robert son of Alexander owes 1 mark for the same. Alured son of Gernan owes 1 mark for the same.

The men of Carlisle render account of 542½ marks of tallies. They have paid it into the treasury and are quit. Alan son of Alan de Carduil owes 30 marks of the exchange (*Camb*) of Carlisle which was sought for in London.

NEW OFFERINGS

Robert de Vallibus owes 5 of his best palfreys that the King may be silent about the wife of Henry Pinel.

Robert de Castellcairun owes 100l. and 4 palfreys that he may be delivered from the King's prison, for which Brian de Insula ought to answer, but Brian de Insula answers therefor in his account in the following Roll.

Odard de Hodieme owes 200 marks and 4 palfreys for having the vill of Ganelesbi and Classanebi with pertinences, for which the same B(rian) ought to answer, as the sheriff says. He does not answer here because he answers at Notingham by the King's precept.

Robert de Vallibus renders account of 750 marks for having the King's benevolence. Terms—at Easter of the eleventh year, 40 marks; at the feast of St. John, 200 marks; at the feast of Michaelmas, 100l. In the treasury, 400 marks. And he owes 350 marks.

[13 *John*, 1211—*Roll* 12, m. 1]

CUMBERLAND

Hugh de Nevill renders account of 114l. 4d. by tale for the farm of CUMBERLAND. In the treasury, 113l. 7s. And in the appointed alms to the knights of the Temple, 1 mark. And he is quit.

The same sheriff renders account of 80l. 10s. 8d. of the noutegeld. In the treasury, 58l. 12s. 4d. And to the canons of Carlisle, 37s. 4d.; and to Robert de Vallibus, 18l. 13s. 1d.; and to Adam cook of queen A(lienor), 27s. 11d. And he is quit.

Henry de Racton renders account of 2s. for the farm of the mill of Racton. He has paid it into the treasury and is quit.

The same sheriff renders account of 5s. of the farm of Racton; and of half a mark for Schelton; and of 20s. for the tan mill; and of 2s. for Waverton; and of 2s. for the farm of the land (*landa*) of Grenewra; and of 2s. for 3 acres of the monks of Holcoltram; and

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of 20s. for the farm of Holweri ; and of 12*d.* for the rent of a certain place in Carlisle. And he is quit.

The same sheriff renders account of 42*l.* 13*s.* 4*d.* for the farm of the purprestures. In the treasury, 13*l.* 9*s.* 2*d.* And in lands given to Adam cook of queen A(lienor), 4*l.* 16*s.* And (in default of stock of) in Gamelesbi and Glassanebi, 15*l.* 9*s.* 3*d.*, for which he answers below. And he owes 6*l.* 18*s.* 11*d.* The same renders account of the same debt. In the treasury, 8*l.* 8*s.* 11*d.* And in surplus which he has below, 10*s.* And he is quit.

The same sheriff renders account of 10 marks for the rent of the forest of Cardoil ; and of 2*s.* of the farm of Brunrig ; and of 6*d.* from Alan de Caldebec for 2 acres ; and of 6*d.* from Gilebert the miller for the mill ; and of 12*d.* from William (Yvo *cancelled*) de Johanebi ; and of 40*d.* from Henry de Ractone ; and of 6*d.* for the farm of a certain house (of William son of Colci) in Carlisle [Cardoil] near the gate ; and of 6*d.* from Gilebert the miller for an assart. He has paid it into the treasury in 8 tallies and is quit.

Richard de Luci renders account of 497*l.* 19*s.* 10*d.* for several debts, as it is contained in the preceding Roll. In the treasury, 50 marks. And he owes 464*l.* 13*s.* 2*d.*, of which Robert de Nevill, clerk, ought to acquit him of 10 marks. And the aforesaid Richard owes 458*l.*

Robert de Curtenai owes 5 marks, as it is contained in the seventh Roll. William son of Erembald owes 2,154*l.* for the farm of the mine of Carlisle. William de Stutevill owes 151*l.* 5*s.* 6*d.* and 5 palfreys and 10 mares for several pleas, as it is contained in the tenth Roll.

The same sheriff owes 245*l.* 10*s.* of the farm of the mine of Carlisle for several years past ; and 50*l.* for the past year ; and 50*l.* for this year ; and 317*l.* 10*s.* of the farm of Sourebi and Carlaton and other farms for several years past ; and 63*l.* 10*s.* for the past year ; and 63*l.* 10*s.* for this year. Robert de Curtenai owes 25 marks and 1 palfrey that inquisition, as it is contained in the third Roll ; and 58*l.* and 2 palfreys of the increase of Sourebi, as it is contained in the sixth Roll.

Richard Gernun renders account of 219*l.* and 1 mark for having Johanna, as it is contained there. In the treasury, 46 marks. And he owes 188*l.* and half a mark.

The same sheriff owes 290*l.* of the increase (*crementum*) of Sourebi for several years ; and 58*l.* for the past year ; and 58*l.* for this year.

Richard son of Troite []

14 marks and 10*s.* for having land, as it is contained in the ninth Roll. Adam son of Odard renders account of 20 marks for having land, as it is contained in the tenth Roll. He has paid it into the treasury and is quit.

Emma who was wife of Walter son of Gilebert renders account of 80*l.* 11*l.* 1*s.* and 2 palfreys that she may not be distrained, but she answers below in the next line. Peter de Vallibus owes 5 palfreys for having the same Emma to wife ; and 20 marks for having terms ; and 80*l.* 11*l.* 1*s.* and 2 palfreys that Emma may not be distrained. In the treasury, 2½ marks by William de Windlesore ; and 1 mark by Walter Beivin ; and 46*s.* 8*d.* by Walter de Windl(esore) ; and 4 marks by Alan de Cumreu ; and 3½ marks by Robert de Denton ; and 18*s.* 8*d.* by Henry de Heiton ; and 5 marks by Richard de Neubi ; and 23*s.* 4*d.* by Ralf Ruffus ; and 2 marks by William de Vallibus ; and 40*s.* by Heromer de Hamesbi ; and 2 marks by Alured the serjeant (*servientem*) ; and 19*s.* 4*d.* by Adam son of Hoiz ; and 20*s.* by Yvor ; and 40*s.* by John de Heiton ; and 20*s.* by Robert son of Segwin ; and 40*s.* by Robert Niger ; and 2 marks by Gilandras ; and 40*s.* by Adam son of Hereiner ; and 12*s.* 9*d.* by Serlo de Fenton ; and also 15*s.* 4*d.* by Robert son of Segwin. And he owes 90*l.* 14*s.* 11*d.* because below in the debt of Robert de Vallibus.

Alice who was wife of Robert de Curtenai [] 10 mares, as it is contained in the eleventh Roll. Reginald son of Adam de Cardoil renders account of 17*l.* 15*s.* 7*d.* for having Milesent, as it is there contained. In the treasury, 11*l.* 11*s.* 1*d.* And he owes 6*l.* 4*s.* 6*d.* The same renders account of the same debt. He has paid it into the treasury and is quit.

William de Jonebi owes 10 marks that he may be delivered from prison.

The prior of CARLISLE [Karleoleo] owes 20*l.* which he owed to H(ugh) bishop of Durham.

OF PLEAS OF THE FOREST

The same sheriff renders account of 1 mark from the vill of Lauradebi ; and of 1 mark from Robert son of Richard ; and of half a mark from the vill of Sourebi ; and of 20*s.* from Dunekan de Lasceles. He has paid it into the treasury and is quit.

Milisent de Blakehall renders account of 2 marks. In the treasury, 20*s.* And she owes half a mark. The same renders account of the same debt. She has paid it into the treasury and is quit.

Thomas de Brunfeld renders account of

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116*l.* 4*d.* In the treasury, 42*s.* And he owes 74*s.* 4*d.* The same renders account of the same debt. He has paid it into the treasury and is quit.

Alexander de Bonekehull renders account of 20*s.* He has paid it into the treasury and is quit. Robert de Castell Kairun owes 16 marks. Robert son of Richard renders account of (owes *cancelled*) 20*s.* He has paid it into the treasury and is quit. Robert de Veteri Ponte [] 400 marks and 5 palfreys for having ward of the land, as it is contained in the eleventh Roll.

OF THE SCUTAGE OF IRELAND

Adam de Levinton [] 20 marks of the same. Adam son of Odard renders account of 2 good palfreys for the same. In the treasury, 10*l.* for the palfreys. And he is quit.

The free tenants of the priory of CARLISLE [Cardoil] render account of 50 marks. In the treasury, 24*l.* 10*s.* 6*d.* And they owe 7*l.* 16*s.* 2*d.* The same render account of the same debt. They have paid it into the treasury and are quit. Sourebi renders account of 100*s.* It has paid it into the treasury and is quit. Walter dean of Brigham renders account of 100 marks because he has not done his homage. In the treasury, 45*l.* and 1 mark. And he owes 21*l.* The same renders account of the same debt. He has paid it into the treasury and is quit.

The same sheriff renders account of 1 mark from Robert son of Alexander ; and of 1 mark from Alured son of Gernan. He has paid it into the treasury and is quit.

Thomas son of Alan de Cardoil owes 30 marks of the exchange (*de Camb*) of CARLISLE, of which the constable of Chester ought to answer, who received them.

Robert de Vallibus owes 350 marks and 5 good palfreys, as it is contained in the preceding Roll, but he is quit thereof by the underwritten fine.

AMERCEMENTS BY SIMON DE PATISHULL AND HIS COMPANIONS

The same sheriff renders account of half a mark from Richard Croc ; and of half a mark from Rannulf de Rotington ; and of 1 mark from Benedict son of Ketel ; and of 6 marks from Thomas de Brunfeld ; and of 1 mark from Roger son of Edward. He has paid it into the treasury in 5 tallies and is quit.

Walter de Dene renders account of 10 marks for his fine. In the treasury, 20*s.* And he owes 113*s.* 4*d.*

Adam de Lamplou renders account of 30*s.*

In the treasury, 20*s.* And he owes 10*s.* The same renders account of the same debt. He has paid it into the treasury and is quit.

Thomas de Yrebi renders account of 50*s.* 2*d.* In the treasury, 32*s.* 10*d.* And he owes 17*s.* 4*d.* The same renders account of the same debt. He has paid it into the treasury and is quit.

John de Hotton renders account of 7*l.* 16*s.* for dogs had against the assize. In the treasury, 70*s.* And he owes 4*l.* 6*s.* The same renders account of the same debt. He has paid it into the treasury and is quit.

The abbot of Holcoltram renders account of 100*s.* for having respite. He has paid it into the treasury and is quit.

Walter de Stirkaland (*Sirkewud cancelled*) renders account of 1 mark for his beasts that have been found. He has paid it into the treasury and is quit.

The same sheriff renders account of 7*l.* 6*s.* 3½*d.* for small sums of the forest. He has paid it into the treasury and he is quit.

AMERCEMENTS BY SIMON DE PATISHILL

The same sheriff renders account of 20*s.* from Stephen de Selecroft ; and of 1 mark from Gospatriz ; and of 10*s.* from Robert son of Adam ; and of 10*s.* from Roger de Dene ; and of half a mark from Albert son of Yernan ; and of 1 mark from Osbert de Rucroft ; and of 3 marks from Adam le Sauser ; and of half a mark from Godwin son of Ace ; and of half a mark from Gilebert the miller ; and of half a mark from Paulin son of Aki. He has paid it into the treasury in 11 tallies and is quit.

Hugh de Salkil owes 2½ marks for an amercement. Alan son of Benedict renders account of half a mark. He has paid it into the treasury and is quit.

Richard de Levinton renders account of 300 marks and 3 palfreys for having the land, as it is contained in the preceding Roll. In the treasury, 71*l.* 16*s.* 3*d.* And he owes 127*l.* 13*s.* 8*d.* and 3 palfreys. The same renders account of the same debt. In the treasury, 20 marks. And he owes 114*l.* 7*s.* and 3 palfreys.

Alan de Caudebec and his fellows, who are noted in the preceding Roll, owe 20 marks for leave to make an assart and cultivate a wood, as it is contained in a preceding Roll. The same [] 2 marks for the farm of the said wood until it could be assarted and measured ; and afterwards for each acre, 4*d.*

AMERCEMENTS OF THE AUTUMNAL JUSTICES

Adam de Cardoil renders account of 60 marks. In the treasury, 16 marks. And in

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pardons to the same Adam, 20 marks by the King's writ. And he owes 24 marks. The same renders account of the same debt. He has paid it into the treasury and is quit.

Robert son of Adam renders account of 100 marks. In the treasury, 6*l.* and half a mark. And he owes 90½ marks.

Ralf de Feritate renders account of 60 marks. He has paid it into the treasury and is quit.

Rannulf de Dacre renders account of 20 marks. He has paid it into the treasury and is quit.

Robert de Wilton renders account of 20 marks. In the treasury, 20*s.* And he owes 12*l.* and half a mark.

The same sheriff renders account of 10 marks for the farm of the mine; and of half a mark for the farm of Hotweit; and of 2*d.* for the farm of 4 feet of land in CARLISLE. He has paid it into the treasury in 3 tallies and is quit.

AMERCEMENTS BY R. DE MARISCO AND HIS COMPANIONS

The same sheriff renders account of 1 mark from William de Perci for a defeasance; and of 1 mark from Robert son of Hawisia. He has paid it into the treasury in 2 tallies and is quit.

Robert de Dunbredan renders account of 5 marks. In the treasury, 23*s.* 4*d.* And he owes 43*s.* 4*d.* The same renders account of the same debt. He has paid it into the treasury and is quit.

Heremer de Hamesbi renders account of 1 mark. In the treasury, half a mark. And he owes half a mark.

Henry son of Fulcher renders account of 20*s.* In the treasury, half a mark. And he owes 1 mark. The same renders account of the same debt. He has paid it into the treasury and is quit.

Alexander de Talentir renders account of 20*s.* In the treasury, half a mark. And he owes 1 mark.

The same sheriff renders account of half a mark from Robert de Dunbredan; and of 1 mark from Hamel the serjeant (*serviens*). He has paid it into the treasury in 2 tallies and is quit.

Ralf de Ulvinton renders account of 1 mark. In the treasury, half a mark. And he owes half a mark. The same renders account of the same debt. He has paid it into the treasury and is quit.

Reginald the clerk renders account of Cokermere. He owes 2 marks. He has paid it into the treasury and is quit.

OF THE WELSH SCUTAGE

Robert de Vallibus owes 4 marks, but he had afterwards quittance by the record of William de Briewere.

The same sheriff renders account of 1 mark for the scutage of Edenhal of the fee of Robert de Brus, which Adam de Carleol holds. He has paid it into the treasury and is quit.

The same sheriff renders account of 15*l.* 3*s.* 11*d.* for the assize rent of the lands of Robert de Vallibus from the term of Michaelmas of last year; and of 30*l.* 7*s.* 9*d.* for the assize rent of the same lands for this year; and of 71*s.* 8*d.* of perquisites; and of 6*l.* 11*s.* 5*d.* of pannage; and of 18*s.* 4*d.* for hogs sold; and of 14*s.* 8*d.* for young hogs sold; and of 35*s.* 5*d.* for chickens sold; and of 6*l.* 3*s.* 6*d.* for an aid; and of 34*s.* for the farm of provosts and serjeants. Sum, 67*l.* 8*d.* In the treasury, 45*l.* 4*s.* 3*d.* And he owes 21*l.* 16*s.* 5*d.* The same renders account of the same debt. He has paid it into the treasury and is quit.

The same sheriff owes 20*l.* 3*s.* 5*d.* for 10½ skeps of grain, viz. for each skeep, 4*s.* 2*d.*; of rye 18½ skeps, viz. by skeep, 3*s.*; of barley 20 skeps, viz. a skeep, 16*d.*; of malt 4 skeps, at 20*d.* a skeep; of oats 325 skeps, at 10*d.* a skeep—of the corn of Robert de Vallibus, but they are placed below in his fine.

The same sheriff renders account of 37*s.* 7*d.* for the issues of the lands of Richard son of Troite. He has paid it into the treasury and is quit.

The same sheriff as *custos* renders account of 22*l.* 10*s.* for Gamelesbi and Glassanebi. In the treasury, 7*l.* 14*s.* And Matilda who was wife of Odard de Hodelme, 7*l.* 10*s.* by the King's writ for her dower. And in default of the stocking of the lands which are in the King's hand with the heir, 10 marks, 12*s.* 8*d.* And he has of surplus 10*s.*, which are placed to him above.

Robert de Vallibus renders account of 2,000 marks for having the King's favour that he may be quit of all the debts which he owed the King, as well of the debts of Jews as of others. In the treasury, 330*l.* And he owes 1,000*l.* and 5 marks, of which William Briewere owes 5 marks, but he answers below, and of which he ought to render 500 marks before he may go out from prison, and afterwards of 1,000 marks he shall make security to the King (by safe pledges and *cancelled*) by charter and hostages (*obsides*) before he may go out, that at the terms which shall be appointed to him he shall pay the aforesaid 1,000 marks to the King, but if he does not

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keep these terms all his land which was delivered to Alice his mother shall fall into the King's hand.

The same renders account of the aforesaid debt. In the treasury, nothing. And in pardon to the same Robert, 18 marks by the King's writ, of which Richard de Marisco owes 10 marks, but he answers below. And William de Harecurt, 5 marks, but he answers in Warwickshire. And Ralf Gernun, 3 marks, but he answers in Essex. And the aforesaid Robert owes 979*l.* and half a mark, but he answers below.

The same sheriff renders account of 109*s.* 1*d.* for the pannage of the land of Robert de Vallibus because below in the debts of the said Robert. (He has paid it into the treasury and is quit *cancelled*.)

Robert de Vallibus renders account of 979*l.* and half a mark for having the King's favour. In the treasury, 5 marks by William Briwere. And he owes 976*l.* The same renders account of the same debt. In the treasury, 68*l.* And he owes 908*l.* The same renders account of the same debt. In the treasury, 109*s.* 1*d.* And he owes 900*l.* 50*s.* 11*d.* The same sheriff renders account of the same debt. In the treasury, 22*l.* 6*s.* 11*d.* And besides 31*l.* 9*s.* 5*d.* by the hands of the pledges of Peter de Vallibus, who are cancelled above. And he owes 848*l.* 14*s.* 7*d.* The same renders account of the same debt. In the treasury, 53*l.* 6*s.* 8*d.* And he owes 795*l.* 7*s.* 11*d.* The same renders account of the same debt. In the treasury, 39*l.* 5*s.* And he owes 756*l.* 2*s.* 11*d.* The same renders account of the same debt. In the treasury, 20*l.* 3*s.* 5*d.* And he owes 735*l.* 19*s.* 6*d.*

Richard de Marisco owes 10 marks for the above-named Robert. Walter son of Bernard owes 1 good palfrey for having ward of the land and heirs of Richard son of Truite, who are his nephews, with the marriage of the same heirs. Henry de Dene [] 10 marks for the saving of 1 day (*pro salvacione unius diei*). Simon de Rosf¹ and Waldef son of Waldef owe 100*s.* for having a suit (*loquela*) in the King's presence against Alice de Rumeili.

[14 *John*, 1212—*Roll* 16, m. 1*d.*]

CUMBERLAND

Hugh de Nevill renders account of 114*l.* 4*d.* by tale of the farm of CUMBERLAND. In the treasury, 58*l.* 2*d.* And in the appointed alms to the knights of the Temple, 1 mark. And he owes 56*l.* 6*s.* 10*d.* The same renders

¹ 'Rouecestre' below.

account of the same debt. In the treasury, nothing. And in payments to 1,000 Galwegians (*Gawelevis*) from Carlisle to Chester, 58*l.* and half a mark by the King's writ. And he has of surplus 39*s.* 10*d.*, which are placed to him below in the debts of Robert son of William.

The same sheriff renders account of 80*l.* 10*s.* of the noutegeld. In the treasury, 58*l.* 12*s.* 4*d.* And to the canons of Carlisle, 37*s.* 4*d.*; and to Robert de Vallibus, 18*l.* 13*s.* 1*d.*; and to Adam the Queen's cook, 27*s.* 11*d.* And he is quit.

Henry de Racton renders account of 2*s.* for the farm of the mill of Racton. He has paid it into the treasury and is quit.

The same sheriff renders account of 5*s.* for the farm of Racton; and of half a mark of Schelton; and of 20*s.* of the tan mill; and of 2*s.* of Waverton; and of 2*s.* for the farm of the land (*landa*) of Grenewra; and of 6*s.* of the monks of Holcoltram; and of 20*s.* for the farm of Holweri; and of 12*d.* for the rent of a certain place (*placia*) in Carlisle. He has paid it into the treasury in 8 tallies and is quit.

The same sheriff renders account of 42*l.* 13*s.* 4*d.* for the farm of the purprestures. In the treasury, 23*l.* 6*s.* 1*d.* And in lands given to Adam cook of queen A(lie)nor, 4*l.* 16*s.* And he owes 14*l.* 11*s.* 3*d.* The same renders account of the same debt. In the treasury, nothing. And to Wilekin de Yrebi, 14*l.* 11*s.* 3*d.* in Gamelesbi and Glassanebi by the King's writ. And he is quit.

The same sheriff renders account of 10 marks for the rent of the forest of CARLISLE; and of 2*s.* of the farm of Brunrigg; and of 6*d.* from Alan de Caudebec; and of 6*d.* from Gilebert the miller; and of 12*d.* from William de Joenebi; and of 40*d.* from Henry de Racton; and of 6*d.* for the farm of a certain house in CARLISLE; and of 6*d.* from Gilebert the miller for an assart; and of 10 marks for the farm of the mine; and of half a mark for the farm of Hotweit; and of 2*d.* for the farm of 4 feet of land in CARLISLE; and of 2*s.* from Arnald for the farm of 8 acres. In the treasury, 7*l.* 10*s.* 6*d.* And he owes 10 marks for the rent of the forest.

Richard de Luci renders account of 458*l.* for several debts, as it is contained in the twelfth Roll. In the treasury, 90*l.* And he owes 368*l.*

Robert de Nevill, clerk, owes 10 marks for the aforesaid Richard. William son of Erembald owes 2,154*l.* for the farm of the mine of CARLISLE. William de Stutevill owes 151*l.* 5*s.* 6*d.* and 5 palfreys and 10

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mares for several debts, as it is contained in the eleventh Roll. The same sheriff owes 790*l.*, as it is contained in the preceding Roll; and 58*l.* 10*s.* for this year. Robert de Curtenai owes 25 marks and one palfrey that inquisition, as it is contained in the third Roll; and 58*l.* and 2 palfreys for the increase of Sourebi, as it is contained in the sixth Roll.

Richard Gernun renders account of 188*l.* and half a mark for having Johanna, as it is there contained. In the treasury, 10*l.* and 1 mark. And he owes 167*l.* and 1 mark.

The same sheriff owes 406*l.* for the increase of Sourebi for several years; and 58*l.* for this year. Richard son of Truite [] 14 marks and 10*s.* for having land, as it is contained in the ninth Roll.

Peter de Vallibus owes 5 palfreys for having Emma; and 20 marks for having terms; and 85*l.* 11*s.* and 2 palfreys that Emma may not be distrained, as it is contained in the preceding Roll. Alice de Curtenai owes 10 mares, as it is contained in the eleventh Roll. William de Joenebi owes 10 marks that he may be delivered from prison, but he ought not to be summoned, because Robert de Vallibus, who is quit thereof by the underwritten fine, has received them. The prior of CARLISLE owes 20*l.* which he owed to H(ugh) bishop of Durham.

Robert de Castelcairun renders account of (owes *interlined*) 17 marks. The constable of Chester owes 30 marks of the exchange (*de Camb*) of Carlisle which he received from Thomas son of Alan. Robert de Veteri Ponte [] 400 marks and 5 palfreys for having ward of the land, as it is contained in the eleventh Roll.

OF THE SCUTAGE OF IRELAND

Adam de Lavinton [] 20 marks for the same.

AMERCEMENTS BY SIMON DE PATISHULL

Walter de Dene renders account of 113*s.* 4*d.* for a fine. In the treasury, 3 marks. And he owes 5½ marks. Richard de Levinton renders account of 114*l.* 7*s.* and 3 palfreys for having the land, as it is contained in the twelfth Roll. In the treasury, 83*l.* 12*s.* 1*d.* And he owes 30*l.* 14*s.* 11*d.* Alan de Caudebec and his companions, who are noted in the twelfth Roll, owe 20 marks, as it is there contained. The same owes 2 marks for the farm of the same wood, as it is there contained.

AMERCEMENTS OF THE AUTUMNAL JUSTICES

Robert son of Adam renders account of 90½ marks for a transgression. In the treasury, 7*l.* 16*s.* 8*d.* And he owes 52*l.* 10*s.* Robert de Wilton renders account of 12*l.* 6*s.* 8*d.* In the treasury, 4*l.* 6*s.* 8*d.* And he owes 8*l.*

Alexander de Tarentir renders account of half a mark. He has paid it into the treasury and is quit. Henry de Dene renders account of 10 marks for the saving of 1 day. He has paid it into the treasury and is quit. Richard de Marisco owes 10 marks for Robert de Vallibus. Walter son of Bernard owes 1 good palfrey for having ward, as it is contained in the preceding Roll, of which Walter Marescall ought to acquit him of 3 marks as he has acknowledged.

OF PLEAS OF THE FOREST BY HUGH DE NEVILL AND HIS COMPANIONS

The same sheriff renders account of 358*l.* 17*s.* 6*d.* of the amercements of the men and villis whose names are noted in the Roll which the aforesaid paid into the treasury. In the treasury, 357*l.* 4*s.* 3*d.* And in pardons to Walter Baillonet, 33*s.* 3½*d.* by the writ which he brought for accounting for 40*s.* And he is quit.

Robert son of William de Corkebi renders account of 30 marks for a transgression. In the treasury, 14*l.* 13*s.* 3*d.* And he owes 106*s.* 8*d.* The same renders account of the same debt. In the treasury, 13*s.* 6*d.* And in surplus which the sheriff has above, 39*s.* 10*d.* And he owes 4 marks, for which Nicolas de Nevill ought to answer as he has acknowledged.

Adam son of Odard renders account of 40 marks for the same. In the treasury, 19*l.* And he owes 7*l.* and 1 mark.

The county of CUMBERLAND renders account of 12 marks (and 2*s.* 6*d.*) for small sums of the forest. In the treasury, 6*l.* 12*s.* And he owes 30*s.* 6*d.* The same renders account of the same debt. It has paid it into the treasury and is quit.

The vill of Scottebi owes 30*s.* for the price of 15 beasts. Robert de Vallibus owes 15*l.* 4*s.* 6*d.* for pannage which he received in the eleventh year; and 101*s.* 3½*d.* for the same pannage.

Robert de Vallibus renders account of 735*l.* 19*s.* 6*d.* for having the King's favour. In the treasury, 69*l.* 6*s.* 1*d.* in 4 tallies. And of 666*l.* 13*s.* 4*d.*

Simon de Rosf¹ and Waldeve son of Waldeve owe 100*s.* for having suit (*loquela*), as it is contained in the preceding Roll.

¹ 'Rouecestre' below.

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[15 *John*, 1213—*Roll* 13, m. 1]

CUMBERLAND

Hugh de Nevill renders account of 114*l.* 4*d.* by tale for the farm of CUMBERLAND. In the treasury, 113*l.* 7*s.* And in the appointed alms to the knights of the Temple, 1 mark. And he is quit.

The same sheriff renders account of 80*l.* 10*s.* 8*d.* of the noutegeld. In the treasury, 58*l.* 12*s.* 4*d.* And to the canons of CARLISLE, 37*s.* 4*d.*; and to Robert de Vallibus, 18*l.* 13*s.* 1*d.*; and to Adam the Queen's cook, 27*s.* 11*d.* And he is quit.

Henry de Racton renders account of 2*s.* for the farm of the mill of Racton. He has paid it into the treasury and is quit.

The same sheriff renders account of 5*s.* for the farm of Racton; and of half a mark for Schelton; and of 20*s.* for the tan mill; and of 2*s.* for Waverton; and of 2*s.* for the farm of the land (*landa*) of Grenewra; and of 2*s.* for 3 acres of the monks of Holcoltram; and of 20*s.* for the farm of Holweri; and of 12*d.* for the rent of a certain place (*placia*) in CARLISLE. He has paid it into the treasury in 8 tallies and is quit.

The same sheriff renders account of 42*l.* 13*s.* 4*d.* for the farm of the purprestures. In the treasury, 13*l.* 9*s.* 2*d.* And in lands given to Adam, queen Alienor's cook, 4*l.* 16*s.* And in default of stocking of Gamelesbi and Classanebi, 15*l.* 9*s.* 3*d.* which Odard held, for which the sheriff answers below. And he owes 8*l.* 18*s.* 11*d.* The same renders account of the same debt. In the treasury, 8*l.* 8*s.* 11*d.* And in surplus which he has below, 10*s.* And he is quit.

The same sheriff renders account of 10 marks for the rent of the forest of CARLISLE; and of 2*s.* for the farm of Brunrigge; and of 6*d.* from Alan de Caudebec for 2 acres; and of 6*d.* from Gilebert the miller for the mill; and of 12*d.* from William (Yvo *cancelled*) de Joenebi; and of 40*d.* from Henry de Racton; and of 6*d.* from the farm of a certain house in CARLISLE near the gate; and of 6*d.* from Gilebert the miller for an assart. He has paid it into the treasury in 8 tallies and he is quit.

Richard de Luci renders account of 497*l.* 19*s.* 10*d.* for several debts, as it is contained in the preceding Roll. In the treasury, 50 marks. And he owes 464*l.* 13*s.* 2*d.*, of which Robert de Nevill, clerk, ought to acquit him of 10 marks. And the aforesaid Richard owes 458*l.*

Robert de Curtenai owes 5 marks, as it is contained in the seventh Roll. William son

of Erembald owes 2,154*l.* for the farm of the mine of CARLISLE. William de Stutevill owes 151*l.* 5*s.* 6*d.* and 5 palfreys and 10 mares for several debts, as it is contained in the eleventh Roll.

The same sheriff owes 245*l.* 10*s.* for the farm of the mine of CARLISLE for several years past; and 50*l.* for the past year; and 50*l.* for this year; and 317*l.* 10*s.* for the farm of Sourebi and Carlatun and other farms for several years past; and 63*l.* 10*s.* for the past year; and 63*l.* 10*s.* for this year. Robert de Curtenai owes 25 marks and 1 palfrey that inquisition, as it is contained in the third Roll; and 58*l.* and 2 palfreys of the increase of Sourebi, as it is contained in the sixth Roll.

Richard Gernun renders account of 219*l.* for having Johanna, as it is there contained. In the treasury, 46 marks. And he owes 188*l.* and half a mark.

The same sheriff owes 290*l.* of the increase of Sourebi for several years; and 58*l.* for the past year; and 58*l.* for this year.

Richard son of Truite [] 14 marks, 10*s.* for having the land, as it is contained in the ninth Roll.

Adam son of Odard renders account of 20 marks for having the land, as it is contained in the tenth Roll. He has paid it into the treasury and is quit.

Peter de Vallibus renders account of 5 palfreys for having Emma to wife; and of 20 marks for having terms; and of 80*l.* 111*s.* 11*d.* and 2 palfreys that Emma may not be distrained. (In the treasury, 2½ marks by William de Windlesores); and 1 mark by Walter Beivin; and 46*s.* 8*d.* by Walter de Windlesores; and 4 marks by Alan de Cimrei [Cumrew]; and 3½ marks by Robert de Denton; and 18*s.* 8*d.* by Henry de Hetton; and 5 marks by Richard de Niewebi; and 23*s.* 4*d.* by Ralf Ruffus; and 2 marks by William de Vallibus; and 40*s.* by Heremer de Hamesbi; and 2 marks by Alured the serjeant; and 19*s.* 4*d.* by Adam son of Hoiz; and 20*s.* by Yvor; and 40*s.* by John de Hetton; and 20*s.* by Robert son of Segwin; and 40*s.* by Robert Niger; and 2 marks by Gilandras; and 40*s.* by Adam son of Heremer; and 12*s.* 9*d.* by Serlo de Fenton; and also 15*s.* 4*d.* by Robert son of Seguin. And he owes 90*l.* 14*s.* 11*d.* because below in the debt of Robert de Vallibus.

Alice who was wife of Robert de Curtenai [] 10 mares, as it is contained in the eleventh Roll.

Reginald son of Adam de Carduil renders account of 17*l.* 15*s.* 7*d.* for having Milesent, as it is contained there. In the treasury, 11*l.*

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11s. 1d. And he owes 6l. 4s. 6d. The same renders account of the same debt. He has paid it into the treasury and is quit.

William de Joenebi owes 10 marks that he may be delivered out of prison.

The prior of CARLISLE owes 20l. which he owed to Hugh bishop of Durham.

OF PLEAS OF THE FOREST

The same sheriff renders account of 1 mark from the vill of Lauradebi; and of 1 mark from Robert son of Richard; and of half a mark from the vill of Sourebi; and of 20s. from Dunecan de Lasceles. He has paid it into the treasury and is quit.

Milesent de Blakehall renders account of 2 marks. In the treasury, 20s. And she owes half a mark. The same renders account of the same debt. She has paid it into the treasury and is quit.

Thomas de Brunfeld renders account of 116s. 2d., as it is contained in the eleventh Roll. In the treasury, 42s. And he owes 74s. 3d. The same sheriff renders account of the same debt. He has paid it into the treasury and is quit.

Alexander de Bonekehull renders account of 20s. He has paid it into the treasury and is quit.

Robert de Castekairun owes 17 marks.

Robert son of Richard renders account of 20s. He has paid it into the treasury and is quit.

Robert de Veteri Ponte [] 400 marks and 5 palfreys for having ward of the land, as it is contained in the eleventh Roll.

OF THE SCUTAGE OF IRELAND

Adam de Levinton [] 20 marks for the same.

Adam son of Odard renders account of 2 good palfreys for the same. In the treasury, 10l. And he is quit.

The free tenants of the priory of CARLISLE render account of 50 marks. In the treasury, 24l. 10s. 6d. And they owe 8l. 16s. 2d. The same render account of the same debt. They have paid it into the treasury and are quit. Sourebi renders account of 100s. It has paid it into the treasury and is quit.

Walter dean of Brigham renders account of 100 marks because he did not make his homage. In the treasury, 45l. and 1 mark. And he owes 21l. The same renders account of the same debt. He has paid it into the treasury and is quit.

The same sheriff renders account of 1 mark from Robert son of Alexander; and of 1 mark from Alured son of Gernan. He has paid it into the treasury and is quit.

Thomas son of Alan de Carduil owes 30 marks of the exchange (*de Camb*) of CARLISLE, of which the constable of Chester ought to answer, who received them. Robert de Vallibus owes 350l. and 5 good palfreys, as it is contained in the preceding Roll, but he is quit thereof by the underwritten fine.

AMERCEMENTS BY SIMON DE PATESHULL AND HIS COMPANIONS

The same sheriff renders account of half a mark from Richard Croc; and of half a mark from Rannulf de Rotinton; and of 1 mark from Benedict son of Ketell; and of 6 marks from Thomas de Brunfeld; and of 1 mark from Roger son of Edward. He has paid it into the treasury in 5 tallies and is quit.

Walter de Dene renders account of 10 marks for his fine. In the treasury, 20s. And he owes 113s. 4d.

Adam de Lamplo renders account of 30s. In the treasury, 20s. And he owes 10s. The same renders account of the same debt. He has paid it into the treasury and is quit.

Thomas de Yrebi renders account of 50s. 2d. In the treasury, 32s. 10d. And he owes 17s. 4d. The same renders account of the same debt. He has paid it into the treasury and is quit.

John de Hotton renders account of 7l. 16s. for having dogs contrary to assize. In the treasury, 70s. And he owes 4l. 6s. The same renders account of the same debt. He has paid it into the treasury and is quit.

The abbot of Holcoltram renders account of 100s. for having respite. He has paid it into the treasury and is quit.

Walter de Sirkelande [Strickland] renders account of 1 mark for his beasts that have been found. He has paid it into the treasury and is quit. The same sheriff renders account of 7l. 6s. 3½d. for small sums of the forest. He has paid it into the treasury and is quit.

AMERCEMENTS BY SIMON DE PATESHULL

The same sheriff renders account of 20s. from Stephen de Selecroft; and of 1 mark from Gospatriz; and of 10s. from Robert son of Adam; and of 10s. from Roger de Dene; and of half a mark from Albert son of Yernan; and of 1 mark from Osbert de Rucroft; and of 3 marks from Adam le Salsier; and of half a mark from Godwin son of Ace; and of half a mark from Gilebert the monk; and of half a mark from Paulin son of Augustine. He has paid it into the treasury in 11 tallies and is quit.

Hugh de Salkil owes 2½ marks for an amercement.

A HISTORY OF CUMBERLAND

Alan son of Benedict renders account of half a mark. He has paid it into the treasury and is quit.

Richard de Leinton [Levinton] renders account of 300 marks and 3 palfreys for having the land, as it is contained in the preceding Roll. In the treasury, 71*l.* 16*s.* 3*d.* And he owes 127*l.* 13*s.* 8*d.* and 3 palfreys. The same renders account of the same debt. In the treasury, 20 marks. And he owes 114*l.* 7*s.* and 3 palfreys.

Alan de Caudebec and his companions, who are noted in the preceding Roll, owe 20 marks for leave to assart the wood of Sourebilith, as it is contained in the preceding Roll. The same [] 2 marks for the farm of the same wood until it be assarted and measured, and afterwards for each acre 4*d.* yearly.

AMERCEMENTS OF THE AUTUMNAL JUSTICES

Adam de Carduil renders account of 60 marks for a transgression. In the treasury, 16 marks. And in pardon to the said Adam, 20 marks by the King's writ. And he owes 24 marks. The same renders account of the same debt. He has paid it into the treasury and is quit.

Robert son of Adam renders account of 100 marks for the same. In the treasury, 6*l.* 6*s.* 8*d.* And he owes 90½ marks.

Ralf de Feritate renders account of 60 marks for the same. He has paid it into the treasury and is quit.

Rannulf de Dacre renders account of 20 marks for the same. He has paid it into the treasury and is quit.

Robert de Wilton renders account of 20 marks for the same. In the treasury, 20*s.* And he owes 18½ marks.

The same sheriff renders account of 10 marks for the farm of the mine; and of half a mark for the farm of Hotweit; and of 2*d.* for the farm of 4 feet of land in Carlisle. He has paid it into the treasury in 3 tallies and he is quit.

AMERCEMENTS BY R. DE MARISCO AND HIS COMPANIONS

The same sheriff renders account of 1 mark from William de Perci for a default; and of 1 mark from Robert son of Hawisia. He has paid it into the treasury in 2 tallies and is quit.

Robert de Dumbredan renders account of 5 marks. In the treasury, 23*s.* 4*d.* And he owes 43*s.* 4*d.* The same renders account of the same debt. He has paid it into the treasury and is quit.

Heremer de Hammesbi renders account of 1 mark. In the treasury, half a mark. And he owes half a mark.

Henry son of Fulcher renders account of 20*s.* In the treasury, half a mark. And he owes 1 mark. The same renders account of the same debt. He has paid it into the treasury and is quit.

Alexander de Tarantir renders account of 20*s.* In the treasury, half a mark. And he owes half a mark.

The same sheriff renders account of half a mark from Robert Dumbredan; and of 1 mark from Hamel the serjeant (*serviens*). He has paid it into the treasury and is quit.

Ralf de Ulvinton renders account of 1 mark. In the treasury, half a mark. And he owes half a mark. The same renders account of the same debt. He has paid it into the treasury and is quit.

Reginald the clerk of Cokermare renders account of 2 marks. He has paid it into the treasury and is quit.

OF THE WELSH SCUTAGE

Robert de Vallibus owes 4 marks for a fee of 2 knights, but he afterwards had quittance by record of William Briwere.

The same sheriff renders account of 1 mark of the scutage of Edenhall for the fee of Robert de Brus which Adam de Carduil holds. He has paid it into the treasury and is quit.

The same sheriff renders account of 15*l.* 3*s.* 11*d.* for the assize rent of the lands of Robert de Vallibus from the Michaelmas term of the past year; and of 30*l.* 7*s.* 9*d.* for the assize rent of this year; and of 71*s.* 8*d.* for perquisites; and of 6*l.* 11*s.* 5*d.* for pannage; and of 18*s.* 4*d.* for hogs sold; and of 14*s.* 8*d.* for small hogs sold; and of 35*s.* 5*d.* for chickens sold; and of 6*l.* 3*s.* 6*d.* for the aid of his men; and of 34*s.* for the farm of provosts and serjeants. Sum, 67*l.* 8*d.* In the treasury, 45*l.* 4*s.* 3*d.* And he owes 21*l.* 16*s.* 5*d.* The same renders account of the same debt. He has paid it into the treasury and is quit.

The same sheriff owes 20*l.* 3*s.* 5*d.* for 10½ skeps of grain, viz. 4*s.* 2*d.* for each skeep; for 18½ skeps of rye, viz. 3*s.* a skeep; for 20 skeps of barley, viz. 16*d.* a skeep; for 4 skeps of malt, viz. 20*d.* a skeep; for 325 skeps of oats, viz. 10*d.* a skeep—for the corn of Robert de Vallibus, but they are allowed below in his fine.

The same sheriff renders account of 37*s.* 7*d.* for the issues of the lands of Richard son of Truite. He has paid it into the treasury and is quit.

THE PIPE ROLLS

The same sheriff as *custos* renders account of 22*l.* 10*s.* from Gamelesbi and Classanebi. In the treasury, 7*l.* 14*s.* And Matilda who was wife of Odard de Odielm, 7*l.* 10*s.* of her dower by the King's writ. And in default of the stocking of the lands which are in the King's hands with the heir, 10 marks, 12*s.* 8*d.* And he has of surplus, 10*s.*, which are placed to him above.

Robert de Vallibus renders account of 2,000 marks for having the King's favour, that he may be quit of all the debts which he owed to the King, as well of the debts of Jews as of others. In the treasury, 330*l.* And he owes 1,000*l.* and 5 marks, of which William de Briwere owes 5 marks (and he answers below) and of which he ought to render 500 marks before he may go out from prison; and afterwards for 1,000 marks he shall make security to the King by safe pledges by his charter and by hostages (*obsides*) before he may go out, that at the terms appointed to him he shall pay the aforesaid to the King; but if he will not keep the terms, all his land, which was delivered to Alice his mother, shall fall into the King's hand. The same renders account of the same debt. In the treasury, nothing. And in pardon to Robert himself, 18 marks by the King's writ, of which R. de Marisco owes 10 marks, for which he answers below; and William de Harecurt, 5 marks, for which he answers in Warewick; and Ralf Gernun, 3 marks, for which he answers in Essex. And he owes 979*l.* and half a mark, but he answers below.

The same sheriff renders account of 109*s.* 1*d.* of the pannage of the land of Robert de Vallibus. He has paid it into the treasury and is quit.

Robert de Vallibus renders account of 979*l.* and half a mark for having the King's favour. In the treasury, 5 marks by William Briwere. And he owes 976*l.* The same renders account of the same debt. In the treasury, 68*l.* And he owes 908*l.* The same renders account of the same debt. In the treasury, 109*s.* 1*d.* And he owes 900*l.* 50*s.* 11*d.* The same renders account of the same debt. In the treasury, 22*l.* 6*s.* 11*d.* And afterwards 31*l.* 9*s.* 5*d.* by the hands of the pledges of Peter de Vallibus, who are cancelled above. And he owes 848*l.* 14*s.* 7*d.* The same renders account of the same debt. In the treasury, 53*l.* 6*s.* 8*d.* And he owes 795*l.* 7*s.* 11*d.* The same renders account of the same debt. In the treasury, 39*l.* 5*s.* And he owes 756*l.* 2*s.* 11*d.* The same sheriff renders account of the same debt. In the treasury, 20*l.* 3*s.* 5*d.*, which were taken of the corn of the same Robert, as contained above. And he owes 735*l.* 19*s.* 6*d.*

Richard de Marisco [] 10 marks for the aforesaid Robert.

Walter son of Bernard owes 1 good palfrey for having ward of the land and heirs of Richard son of Truite.

Henry de Dene owes 10 marks for the saving of a day.

Simon de Rouecestre and Waldeve son of Waldeve owe 100*s.* for having a suit (*loquela*) before the King against Alice de Rumeilli.

[16 *John*, 1214—*Roll* 13, m. 2]

CUMBERLAND

Robert de Ros (Alan de Caudebec for him) renders account of 114*l.* 4*d.* by tale of the farm of CUMBERLAND. In the treasury, 113*l.* 7*s.* And in the appointed alms to the knights of the Temple, 1 mark. And he is quit.

The same sheriff renders account of 80*l.* 10*s.* 8*d.* for the noutegeld. In the treasury, 58*l.* 12*s.* 4*d.* And to the canons of Carlisle, 37*s.* 4*d.*; and to Robert de Vallibus, 18*l.* 13*s.* 1*d.*; and to Adam the Queen's cook, 27*s.* 11*d.* And he is quit.

Henry de Racton renders account of 2*s.* for the farm of the mill of Racton; and of 5*s.* for the farm of Racton; and of half a mark for Scelton; and of 20*s.* for the tan mill; and of 2*s.* for the farm of the land (*landa*) of Grenewra; and of 6*s.* from the monks of Holcoltram; and of 20*s.* for the farm of Holweri; and of 12*d.* for the rent of a certain place (*placia*) in Carlisle. He has paid it into the treasury and is quit.

The same sheriff renders account of 42*l.* 13*s.* 4*d.* for the farm of the purprestures. In the treasury, 23*l.* 6*s.* 1*d.* And in lands given to Adam cook of queen A(lienor), 4*l.* 16*s.*; and to Wilekin de Yrebi, 14*l.* 11*s.* 3*d.* in Gamelesbi and Glassanebi. And he is quit.

The same sheriff renders account of 10 marks for the rent of the forest of Carlisle; and of 2*s.* for the farm of Brunrigge; and of 6*d.* from Alan de Caudebec; and of 6*d.* from Gilebert the miller for the fulling-mill; and of 12*d.* from William de Joenebi; and of 40*d.* from Henry de Racton; and of 60*d.* for the farm of a certain house in Carduil; and of 6*d.* from Gilebert the miller for an assart; and of 6*d.* from the same Gilebert for the tan mill; and of 10 marks for the farm of the mine; and of 2*d.* for the farm of 4 feet of land in Carlisle; and of 2*s.* from Arnald for the farm of 8 acres. He has paid it into the treasury and is quit.

Thomas de Racton renders account of 12*d.* for an assart. He has paid it into the treasury and is quit.

A HISTORY OF CUMBERLAND

Richard de Luci owes 368*l.* for several debts, as it is contained in the twelfth Roll.

Robert de Nevill, clerk, owes 10 marks for the aforesaid Richard.

William son of Erenbald owes 2,154*l.* for the farm of the mine of Carlisle.

The prior of Carlisle owes 20*l.* which he owed to Hugh bishop of Durham.

Alice de Curtenai owes 10 mares, as it is contained in the tenth Roll.

Richard son of Truite owes 14 marks, 10*s.* for having the land, as it is contained in the ninth Roll.

Walter de Dene renders account of 4½ marks for a fine. In the treasury, 40*s.* And he owes 20*s.*

Robert de Veteri Ponte owes 400 marks and 5 palfreys for having ward, as it is contained in the eleventh Roll.

Alan de Caudebec and his companions render account of 2 marks for an assart. He has paid it into the treasury and is quit. The same Alan renders account of 12 marks for having an assart. He has paid it into the treasury and is quit.

Adam Salsarius renders account of 1 pound of pepper for the farm of his land.

Richard de Marisco owes 10 marks for Robert de Vallibus.

Walter son of Bernard owes 2 marks for a palfrey.

Simon de Rosf¹ and Waldief Belle owe 100*s.* for having a suit, as it is contained in the thirteenth Roll.

Robert de Wilton renders account of 7*l.* 2*s.* for a transgression. In the treasury, 40*s.* And he owes 102*s.*, of which yearly 40*s.*

Walter Marshall renders account of 2 marks for Walter son of Bernard. In the treasury, 20*s.* And he owes half a mark.

Nicolas de Nevill owes 4 marks for Robert son of William.

Robert de Vallibus owes 666*l.* 13*s.* 4*d.* for having the King's favour; but he is quit thereof by a fine which he made with the King of finding for his service 2 knights and 20 serjeants (*servientes*) well armed for one year, and for the following year he shall find at his own cost 1 knight and 20 serjeants wherever the King may wish. But he answers for the service in the first Roll of king Henry III. in Norfolk.

Robert son of Adam owes 116*s.* 8*d.* for a transgression, and 100 marks for having seizin of his lands; but he is quit thereof by service of 2 knights in the King's service for one year.

¹ 'Rouecestre' above.

Alda who was wife of Richard de Luci renders account of 265*l.* 4*s.* 11*d.* for having her inheritance, as it is contained in the preceding Roll. In the treasury, 35*l.* by herself; and 65*l.* 17*s.* 10*d.* by the hands of her pledges. And she owes 164*l.* 7*s.* 1*d.*

Ralf de Brai renders account of 20*s.* 2½*d.* for the remainder of his account for the past year. He has paid it into the treasury and is quit.

NEW OFFERINGS

Roger de Beauchamp owes the third part of 25 marks for the right (*justicia*) of William son of Adam de Hoton.

Richard son of Haldewin renders account of 4 marks for having the land of his mother. He has paid it into the treasury and is quit.

Elizabeth who was wife of Yvo Taillebois owes 30 marks and 2 palfreys for marrying herself and for having the marriage of her son; and of the aforesaid 30 marks and 2 palfreys and 69*l.* 10*s.* 11*d.* which she owes at the exchequer she shall render yearly 20 marks until the whole debt is paid; and by this fine she ought to have her reasonable dower of the lands which were of the aforesaid Yvo her man; and if anything has been taken of her chattels which the King had, the same shall be allowed her in her fine. But she answers in Northumberland.

Robert de Castelkairoc renders account of 4*l.* of the Poitou payment (*prestium*). He has paid it into the treasury and is quit.

Robert de Vallibus owes 10 marks for the same.

The same sheriff renders account of 40*l.* for tallage of the vill of Carlisle; and of 5 marks for the tallage of Penred; and of 20*s.* for the tallage of Salkil; and of 1 mark for the tallage of Languadebi; and of 20*s.* for the tallage of Sourebi; and of 20*s.* for the tallage of Scotebi; and of 30*s.* for the tallage of Daleston; and of 1 mark for the tallage of Caldecot; and of 5 marks for the tallage of Steinweges; and of 1 mark for the tallage of Carlatun; and of 1 mark for the tallage of Ulvesbi. He has paid it into the treasury and is quit.

Robert de Vallibus renders account of 4*l.* for 2 fees for the Poitou scutage; and of 20*s.* from Robert de Turp [Tup] of Edenhall for half a fee. He has paid it into the treasury and is quit.

Richard de Brunford knight of Richard Gernun [] 5 marks for the Poitou payment (*de p'st'ito p'ict'*).

Robert de Crofton renders account of 3*s.* for 1 carucate of land in Morton. He has paid it into the treasury and is quit.

NOTE ON THE TESTA DE NEVILL

For the sake of convenience the familiar name of 'Testa de Nevill' is retained for the following collection of documents, though only a few have been transcribed from that compilation. The origin of each document will be recognized by its official description at the Public Record Office. The recent discovery of the original certificates, officially known as *Knights' Fees* $\frac{1}{9}$, m. 1, m. 2, is of the greatest interest. The first membrane contains the roll of King's wards, and the second is the return of the sheriff's inquest of 1212. Had there been any disposition to doubt the historical value of the inquests embodied in the 'Testa de Nevill,' any attempt of this sort has been for ever foiled by the discovery of the original certificates handed into the exchequer. Their authenticity is unassailable. These certificates are printed here for the first time. The last document is taken from the Red Book of the Exchequer, an edition of which has been printed by the Master of the Rolls. Special transcripts of all the documents included in this collection have been made for the purpose of this history. The text of the 'Testa de Nevill' edited for the Record Commission has not been used for this translation.

A HISTORY OF CUMBERLAND

I. [*Exchequer Q.R. Miscellaneous Books, No. 6*]
vol. i. p. 693

COUNTY OF CUMBERLAND

WILLIAM DE LANCASTRE AND THOMAS SON
OF JOHN, COLLECTORS, TO COLLECT AN
AID IN THE SAME COUNTY.

The same render account of 4 marks of 1 fee of Lambert de Multon of the old feoffment, and of 1 fee of the same of the new feoffment. In the treasury, nothing; and in surplus which they have below, 2 marks. And they owe 2 marks.

The same render account of half a fee of Robert de Turp in Edenhal. In the treasury, 3 marks; and they have of surplus 2 marks; all which is allotted to them above.

The heir of Robert de Vallibus owes 4 marks of 2 knights' fees of the old feoffment, and 6*l.* 9*s.* 4*d.* of 4 fees and three parts of 1 fee and a tenth part of 1 fee.

Thomas son of Adam holds the manor of Hoton by serjeanty of keeping the King's hay (*baya*) of Plumton; he has alienated the whole, and several hold (portions of) it.

Alexander de Fauton [Rauton] holds the third part of Fauton [Rauton] by the custody of a hawk's eyry (*ærie hosturcii*) of the lord the King in the forest of CUMBERLAND.

II. [*Exchequer Q.R. Knights' Fees 1/3, m. 1*]

COUNTY OF CUMBERLAND

Robert de Veteri Ponte has Thomas son of William son of Randulf and his land in ward (*custodia*) by king John; and to the same Thomas he married his daughter; and his land is worth 5*l.* a year.

Geoffrey de Lucy has Peter son of Simon de Tyllol in ward by king John; and his land is worth 15*l.* a year.

Walter son of Bernard, clerk, has Adam son of Richard son of Truite [T'te] in ward by king John; and the land is worth 20*s.* a year.

Thomas de Muleton has the two daughters of Richard de Lucy in ward by king John; and he has married them to his two sons; and the land is worth 40*l.* a year.

William de Yreby has one daughter of Odard de Hodhame of king John's gift, as he says; and the land is worth 10*l.* a year; and the other daughter of Odard is in the land of the king of Scotland.

Dame Helewis de Stutevill is of the King's gift and is not married; and her land

is worth 30*l.* a year, but she has made fine with king John that she may be in her own gift.

Ada de Morevill was in the gift of king John and made fine with him that she might be able to marry herself where she pleased, and for having her inheritance (*hereditas*) and her dower, by 500*l.*; Thomas de Muleton has her now; and her land is worth 21*l.* a year.

Alice who was the wife of Odo de Bochardeby is of the King's gift and holds by serjeanty; and her land is worth 1 mark a year.

Alice who was the wife of Adam de Hoton was of the King's gift. Robert de Neubiging has espoused her; and her land is worth 2*s.* a year; and she holds by serjeanty.

Eda who was the wife of Robert de Boelton is of the King's gift and holds by serjeanty; and her land is worth half a mark a year.

THESE ARE THE CHURCHES WHICH ARE OF THE KING'S GIFT IN CUMBERLAND

The church of Penred, which Ralf de Nevell holds of king John's gift.

The church of Soureby, which Lodovicus the clerk holds by the same.

The church of Sallachil, which master Macy the medical man (*medicus*) holds by the same.

The church of Karlatone, which Thomas de Aldefeld holds by the same.

The church of Dalaston, which John de Kirkeby holds by the (Papal) legate, as it is said.

THESE ARE THE ESCHEATS IN THE SAME COUNTY

The vills (*villate*) of Soureby, Karlaton, Hubbricteby, Arfineby are escheats of the lord the King. Lord (*dominus*) Robert de Ros holds them by king John. And they are worth 30*l.* a year.

The forestership (*forestaria*) of CUMBERLAND used to render 10 marks a year at the King's exchequer. And it is the right of Ada daughter of Hugh de Morvill, whom Thomas de Muleton has to wife. Robert de Veteri Ponte holds that forestership now.

Robert de Hamton holds the forestership of the hay of Plumton, which is worth 40*s.* a year. And that serjeanty is the right of the heirs of Adam de Hoton.

The vill of Ratton is a serjeanty to keep the hawks' eyries (*erias ancipitrum*) of the lord the King and is worth 100*s.* a year.

TESTA DE NEVILL

Henry de Ratton and Reginald and Alan sons of Thomas hold it. And William de Yreby has the aforesaid Alan in ward by Hugh de Nevill.

Albert son of Yarnan holds 1 carucate of land, which is worth 1 mark a year, by serjeanty of making the gates of the city of Carlisle.

[*Endorsed.*] Roll of the wards of dames, girls, valets, who are of the King's ward, in the counties of Westmeriland, Cumberland, Loncaster; and of escheats and serjeanties likewise; and of churches which are in the King's gift and ought to be.

III. [*Exchequer Q.R. Knights' Fees $\frac{1}{8}$, m. 2*]

[1212]

To his well-beloved lords, the King's barons of the exchequer, the sheriff of CUMBERLAND sendeth greeting and submitteth himself wholly with devoted obedience. Know ye that I have caused diligent inquiry to be made of the fees and tenements which are held in chief of the King in CUMBERLAND according to the tenor of the King's letters; and I transmit to you the names of the tenants and their tenements and service.

Robert de Vallibus holds his land of the King by the service of 2 knights, which king Henry, the King's father, gave to Hubert de Vallibus, his predecessor, by the aforesaid service.

Richard de Lucy holds Coupland of the King by the service of 1 knight; and he shall go at the King's precept in the army of Wales and Scotland. King Henry, grandfather of king Henry, the King's father, gave this land to William Messchin, predecessor of the aforesaid Richard, by the aforesaid service.

Robert de Brus holds Edenthal of the King by service of half a knight. Henry the King gave the aforesaid land to Peter de Brus, his predecessor, by the aforesaid service.

John de Reigny holds Neuton by serjeanty of the King; and he shall go at the King's precept in the army of Scotland, with 1 hauberk. King Henry, grandfather of the King's father, gave the aforesaid land to Turstan de Reigny, predecessor of the aforesaid John, by the aforesaid service.

Henry and Thomas and Reginald hold Racton of the King by serjeanty, and keep the hawks' eyries of the lord the King in the forest of Carlisle. Henry king of England, grandfather of Henry, the King's father, gave that land to Edwin, predecessor of the aforesaid, by the aforesaid service.

William son of Adam holds Hoton of the King by serjeanty of keeping the King's hay of Plumton. Henry king of England, grandfather of king Henry, the King's father, gave the aforesaid land to Edmund, predecessor of the aforesaid William, by the aforesaid service.

Robert son of Alexander holds 20 acres (of land) near Carlisle of the King by serjeanty; and he ought to find bark (*librum*) for the King's pannage and to keep the swine until they are valued.

Richard de Lucy and Richard Gernun hold the land which was Hugh de Morvill's, with the said Hugh's two daughters, from the King, by rendering yearly for cornage 10*l.* 2*s.* 10½*d.* Earl (*comes*) Ranulf, formerly lord (*dominus*) of CUMBERLAND, gave the aforesaid land to Robert de Trivers, predecessor of the aforesaid Hugh de Morvill, by the aforesaid service. The aforesaid earl gave to the aforesaid Robert custody of the forest of CUMBERLAND, by rendering thence annually 10 marks. The King has the custody of the aforesaid forest in his hand.

Alice de Rumilly holds her land in Alredale of the King by cornage, by rendering annually of cornage 15*l.* 13*s.* 4*d.* King Henry, grandfather of king Henry, the King's father, gave the aforesaid land to Waldeve son of Gospatric, predecessor of the aforesaid Alice, by the aforesaid service.

Nicholas de Stutevill holds his land of the King by cornage, by rendering annually for cornage 56*s.* Earl Ranulf of Chester, formerly lord of CUMBERLAND, gave the aforesaid land to Turgis Brundas [Brundos], predecessor of the aforesaid Nicholas, by the aforesaid service.

Robert de Veteri Ponte holds in custody from the King the land which was of William son of Ranulf, together with the heir of the aforesaid William, and renders annually of cornage 4*l.* King Henry, grandfather of the King's father, gave that land to Forne son of Siolf, predecessor of the aforesaid William, by the aforesaid service.

Adam son of Odard holds his land of the King by cornage, by rendering annually of cornage 26*s.* 4*d.* King Henry, grandfather of the King's father, gave to Odard the sheriff, predecessor of the aforesaid Adam, the aforesaid land by the aforesaid service.

Richard de Leventon holds his land of the King by cornage, by rendering annually of cornage 4*l.* 8*s.* 2½*d.* King Henry, grandfather of king Henry, the King's father, gave the aforesaid land to Richard de Boivill, predecessor of the aforesaid Richard, by the aforesaid service.

Robert de Stutevill holds the vill of

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Thorpennou of the King by cornage, by rendering thence of cornage 24s. The aforesaid land was of the barony of Alice de Rumill. And because Reginald de Lucy, who formerly held that land with the sisters of the aforesaid Alice, refused the homage of Philip de Valoines, predecessor of the aforesaid Robert and his wife, king Henry, the King's father, took his homage, and so the service of the aforesaid land is in the King's hand.

William son of Bernard holds the land which was of Richard son of Truite of the King in ward with the heir of the aforesaid Richard, by rendering thence annually of cornage 12s. 1d. King Henry, grandfather of the King's father, gave the aforesaid land to Hildred, predecessor of the aforesaid Richard, by the aforesaid service.

Geoffrey de Lucy holds the land which was Simon de Tillol's in ward of the King with the heir of the aforesaid Simon, by rendering thence annually of cornage 11s. 11½d. King Henry, grandfather of Henry, the King's father, gave the aforesaid land to Richard Ridere, predecessor of the aforesaid Simon, by the aforesaid service.

King Henry, grandfather of Henry, the King's father, gave to Walter, formerly his chaplain, Linstoc and Karleton, by rendering annually of cornage 37s. 4d. The aforesaid Walter, by the desire and permission of the King, took the religious habit in the priory of St. Mary of Carlisle, and by the desire and assent of the aforesaid king Henry he gave all the aforesaid land to the aforesaid religious house in pure and perpetual alms by the aforesaid service. The aforesaid service was pardoned to the religious men of the aforesaid house by the charters of the King's predecessors.

Roger de Mont Begon, Simon son of Walter, and Alexander de Nevill hold the land which was William de Nevill's in CUMBERLAND by cornage, by rendering annually of cornage 112s. 8d. King Henry, grandfather of king Henry, the King's father, gave the aforesaid land to Adam son of Swein, predecessor of the aforesaid, by the aforesaid service.

William son of Odo de Bochardeby holds his land of Bochardeby by cornage, by rendering thence annually 6s. 2d. of cornage. King Henry, grandfather of king Henry, the King's father, gave the aforesaid land to Guy the hunter, predecessor of the aforesaid William, by the aforesaid service.

Adam de Staveley holds Ravenewyc of the King by cornage, by rendering annually 2s.

8d. King Henry, grandfather of king Henry, the King's father, gave the aforesaid land to Adam son of Alan, predecessor of the aforesaid Adam, by the aforesaid service.

Adam the Queen's cook holds Saulhill of the King, of the gift of king Richard, by rendering annually one pound of pepper.

William de Ireby holds Gamelesby and Glassaneby of the gift of king John, with the daughter and heir of Odard de Hodalm, whose predecessors had the aforesaid land of the gift of king Henry, grandfather of king Henry, the King's father, who gave that land to Hildred, predecessor of the aforesaid Odard, by rendering annually 2 marks of cornage.

I know of no tenements which were anciently held of the King's predecessors nor which ought to be held of the King, nor services alienated by marriage nor in any other way, except the aforesaid land of Walter, chaplain of king Henry, and except the service of Adam Salsarius, whose land used to yield of cornage annually 27s. 11d., and it was pardoned to him for his service by the King's charter.

All the abovesaid tenants by cornage shall go at the King's precept in the army of Scotland: in going, in the vanguard; in returning, in the rearguard.

[*Endorsed.*] The treasurer received this Roll on the morrow of St. John the Baptist by the hand of the sheriff of CUMBERLAND in presence of the barons of the exchequer, in the fourteenth year of king John.

[*Also endorsed.*] To the barons of the exchequer on the part of the sheriff of CUMBERLAND.

[*Also endorsed.*] Of those who hold in chief of the King in CUMBERLAND.

IV. [*Exchequer Q.R. Miscellaneous Books, No. 6*]

vol. ii. p. 700

COUNTY OF CUMBERLAND

OF SERJEANTIES ARRENTED BY ROBERT PASSELEWE IN THE TIME OF KING HENRY, SON OF KING JOHN

Adam de Levinton holds by cornage.

Odard son of Adam, in the same manner.

Odo de Burcardeby, by serjeanty; it is worth one mark.

Richard de Ulveby, by drengage.

Henry de Ulveby, by drengage.

Geoffrey de Lucy holds the land which was Simon de Tyllly's, by cornage.

TESTA DE NEVILL

John de Reigny, by serjeanty of going in the army of Scotland with one hauberk.

Henry, Roger, Thomas, by serjeanty of the King's ery of hawks in the forest of Carlisle.

William son of Adam, by serjeanty of keeping the hay of Plumpton.

Robert son of Alexander, by serjeanty of finding bark (*librum*) for the King's pannage and of keeping the swine till they are valued.

Alice de Rumilly holds by cornage.

Robert de Veteri Ponte, the land of William by cornage.

Richard de Leveton holds by cornage.

Walter Bernard, in the same manner.

Roger de Mont Begon, and Simon son of Walter, and Alexander de Nevill hold by cornage.

William son of Odo de Bocardeby holds by cornage.

Adam de Stavel holds Ravenewyc in the same manner by cornage.

Adam the Queen's cook holds Suahull [Salkeld] by one pound of pepper.

William de Ireby holds Gamelby by cornage.

And it is to be noted that all the abovesaid tenants by cornage shall go at the King's precept in the army of Scotland: viz. in going, in the vanguard; and in returning, in the rearguard.

William de Ratton, by serjeanty of keeping the King's eryies of hawks; it is worth yearly 100s.

Albert son of Bernard holds one carucate of land by serjeanty of making the gates of the city; it is worth one mark [yearly].

The heir of Adam de Hoton holds by serjeanty; it is worth yearly 2s.

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The heir of Robert de Boelton holds by serjeanty; it is worth yearly half a mark.

PENRED

The serjeanty of Baldewin de Penred, for which he ought to carry the King's writs in the said county at the mandate of the sheriff: it has been alienated in part.

Brice de Penred holds thence 10 acres of land which are worth yearly 5s.

William son of Agnes holds 10 acres which are worth yearly 5s.

The church of Penred holds 15 acres of land which are worth yearly 7s. 6d.

And the sum of the said alienation is 17s. 6d. And Richard son and heir of the said Baldwin made thence a fine for himself and

the said tenants with consent of the same, viz. 9s. yearly. So that the said tenants may answer to the same Baldewin for the portion thence touching them. And those three shall do service of the twentieth part of one knight's fee.

CARLETON

The serjeanty of Ralf de Carleton in Carleton, for which he ought to carry the King's writs as above, has been alienated in part.

Gilbert de Bricham holds thence 7 acres of land which are worth yearly 3s. 6d.

Henry son of Odard holds 13 acres and a half of land which are worth yearly 6s. 9d.

Robert de Hampton holds 6 acres of land which are worth yearly 3s.

Peter son of Robert holds one acre of land which is worth yearly 6d.

Gerard de Carleton holds one acre of land which is worth yearly 6d.

Adam Blund holds 9 acres which are worth yearly 4s. 6d.

And the sum of the said alienation is 18s. 9d. And the said Ralf made thence a fine for the said tenants with consent of the same, viz. 6s. 3d. yearly. So that each of the said tenants may answer to the same G. of the third part of the value of his tene-ment. And the said Gilbert shall do service of the tenth part of one knight's fee for his own part which has not been alienated.

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The serjeanty of Nicholas Gerbad and Alice his wife, Richard Carpenter and Matill(da) his wife, in the suburb of CARLISLE, for which it ought to find for the King irons for the gates of CARLISLE, has been alienated in part.

John de Croft holds thence 2 acres of land which are worth yearly 2s.

Stephen son of John holds 4 acres which are worth yearly 4s.

William son of Emma holds 1 rood of land which is worth yearly 3d.

And the sum of the said alienation is 6s. 3d. And the said Nicholas and Richard made thence a fine for the said tenants with consent of the same, viz. yearly 5s.

Likewise Alan Gereboud holds of the same serjeanty 20 acres which are worth yearly 20s. He has made thence yearly a fine of half a mark and service of the thirtieth part of 1 knight's fee.

Likewise Adam son of Roger holds of the same serjeanty 6 acres of land which are worth yearly 6s. And the said Adam made thence a fine, viz. yearly 3s.

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Likewise Richard son of Owyn holds thence of the prior of CARLISLE (Cardule) 1 acre which is worth yearly 12*d*.

Roger de Bochelton holds thence 2 acres of the same prior which are worth yearly 2*s*. And the said prior has made thence a fine for the said tenants with consent of the same, viz. yearly 18*d*. So that the said tenants may answer to the same prior for the aforesaid 18*d*., and the said prior to the King.

p. 703

The serjeanty of Thomas le Venor and Alice his wife in Salehchild, for which he ought to purchase the King's stores in Yorkshire (*warnesturam in partibus Ebor.*), has been alienated in part.

Nicholas son of Robert holds thence 4 acres of land which are worth yearly 2*s*.

And the said Thomas le Venor has made fine for the said tenant with his consent, and for himself, viz. yearly half a mark. So that the said tenant may answer to the same Thomas of the third part of the value of his tenement. And the said Thomas may answer for the residue of the said fine that he may be quit of the service of the said serjeanty and the service of the twentieth part of 1 knight's fee.

The serjeanty of John de Reigny in Neuton, for which he ought to find for the King 1 serjeant, mounted and armed, in his army for 40 days at his own proper costs, has been alienated in part.

Adam son of Richard holds thence 4 bovates of land which are worth yearly 8*s*. ; he has thence made fine, viz. 2*s*. yearly.

AID OF PRELATES CONCEDED TO THE KING AGAINST HIS EXPEDITION TO GASCONY, IN THE TWENTY-SIXTH YEAR OF HIS REIGN

The abbot of Holcultram [] of 3 palfreys.

SERJEANTIES CHANGED TO MILITARY SERVICE

Brice de Penred, the twentieth part.
Gilbert de Brikam, the tenth part.
Alan Gerbod, the thirtieth part.
Thomas Venator, the twentieth part.

V. [Exchequer Q.R. Miscellaneous Books, No. 6]

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COUNTY OF CUMBERLAND

Adam de Levinton holds by cornage.
Odard son of Adam, in the same manner.
Odo de Burcardeby, by serjeanty ; it is worth 1 mark.

Richard de Wolenby, by drengage.

Henry de Woletby, by drengage.

Robert de Stutevill, by cornage.

Geoffrey de Luscy holds the land which was John de Reyni's by serjeanty of going in the army of Scotland with one hauberk.

Simon de Tyllly, by cornage.

Henry, Roger [Reginald], Thomas, by serjeanty of keeping the King's eyries of hawks in the forest of Carlisle.

William son of Adam, by serjeanty of keeping the hay of Plumton.

Robert son of Alexander, by serjeanty of finding bark for the King's pannage and of keeping the swine till they are valued.

Alice de Rumili (Runeby) holds by cornage.

Robert de Veteri Ponte, the land of William by cornage.

Richard de Loveton holds by cornage.

Walter Bernard, in the same manner.

Roger de Monte Begon, and Simon son of Walter, and Alexander de Nevill, by cornage.

William son of Odo de Bocardeby holds by cornage.

Adam de Stavel holds Ravenewyk in the same manner by cornage.

Adam the Queen's cook holds Swahull by one pound of pepper.

William de Yreby holds Kameleby by cornage.

And it is to be noted that all the abovesaid tenants by cornage shall go at the King's precept in the army of Scotland : viz. in going, in the vanguard ; and in returning, in the rearguard.

William de Ratton, by serjeanty of keeping the King's eyries of hawks ; it is worth yearly 100*s*.

Albert son of Bernard holds one carucate of land by serjeanty of making the gates of the city ; it is worth 1 mark.

The heir of Adam de Oton holds by serjeanty ; it is worth yearly 2*s*.

The heir of Robert de Boelton holds by serjeanty ; it is worth half a mark yearly.

COUNTY OF CARLISLE, CUMBER- LAND

p. 705

OF THE SERJEANTIES ARRENTED BY ROBERT PASSELEU IN THE TIME OF KING HENRY, SON OF KING JOHN

HOUTON

The serjeanty of Edemund de Houton, for which he ought to keep the hay of Plumton, has been alienated in part.

TESTA DE NEVILL

Alexander de Capella holds thence half a carucate and 2 bovates of land in Houton which are worth yearly 20s. And he made thence a fine yearly, 7s.

John de la Chersonere holds of the same serjeanty half a carucate of land which is worth 1 mark yearly. He has made thence a fine yearly of 5s.

Also Patrick Gluton holds of the same serjeanty 1 acre of land which is worth yearly 12d. And he has made thence a fine, viz. yearly 4d.

Nicholas son of Thomas, who ought to be the heir of the aforesaid serjeanty, holds half a carucate and 2 bovates of land which are worth yearly 22s.; because his antecessors retained them in their hand when they alienated the *caput* of the aforesaid serjeanty to the antecessors of Alexander de Capella, whereof the same Alexander has the King's confirmation. And because the aforesaid Nicholas did no service for the said land which he holds he has come and made thence a fine, viz. yearly 7s. 4d.; and by doing service of the twelfth part of 1 knight's fee.

VI. [*Red Book of the Exchequer*]

fo. 132a

INQUISITIONS MADE IN THE TIME OF KING JOHN THROUGH ALL ENGLAND, VIZ. IN THE TWELFTH AND THIRTEENTH YEARS OF HIS REIGN, IN EVERY COUNTY, OF THE SERVICES OF KNIGHTS AND OTHERS WHO HOLD OF HIM IN CHIEF, ACCORDING TO THE ROLLS DELIVERED TO THE TREASURER BY THE HANDS OF THE SHERIFFS OF ENGLAND IN THE AFORESAID TIME

fo. 134d

CUMBERLANDE

THE NAMES OF THOSE WHO HOLD BY MILITARY SERVICE AND BY SERVICE OF CORNAGE IN THIS COUNTY, ACCORDING TO THE INQUISITION

Robert de Vallibus, 2 fees of 6 vills which he holds in demesne and of 10 others which are held of him.

Richard de Lucy, 1 knight for the whole land of Coplande.

Adam de Carlun, half a fee in Edinhale of the fee of Peter de Brus.

Nicholas de Stuteville, 56s. of cornage for 2 vills in demesne and 3 in homages.

Aliz de Romely, 15l. and 1 mark of cornage for 5 vills in demesne and 19 in homages.

William son of Ranulf, 4l. of cornage for 2 vills in demesne and 2 in homages.

Adam son of Odard, 26s. 4d. of cornage for 2 vills and a half in demesne and 1 in homages.

Richard de Levinton, 4l. 8s. 2½d. of cornage for 3 vills in demesne and a half in homages.

Robert de Stuteville, 24s. of cornage for 1 vill.

Roger de Mont Begon, Simon son of Walter, Alexander de Neville, 112s. 8d. for the land which was William de Neville's, viz. for 2 vills in demesne and 2 in homages.

Adam de Stavele, 2s. 8d. of the cornage for 1 vill.

Geoffrey de Lucy, 20s. 11½d. of cornage for 1 vill.

The tenants of the fee of the constable of Chester, 2s. 8d. of cornage for half a vill.

Walter son of Bernard, 12s. 1d. of cornage for 1 vill which was Richard son of Troyte's.

Odo de Boschardeby, 6s. 2d. of cornage of the same vill.

Odard de Hodalme [] of cornage for Gamelesby and Glassaleby.

Richard de Lucy and Richard Gernun, 10l. 2s. 10½d. of cornage for 4 vills in demesne and 15 in homages of the barony which was Hugh de Morville's.

All the abovenamed tenants by cornage shall go at the King's precept in the army of Scotland: in going, in the vanguard; and in returning, in the rearguard.

OF THOSE WHO HOLD BY SERJEANTY IN THIS COUNTY

John de Reygni, 1 vill by serjeanty of 1 serjeant, with a hauberk, in the army of Scotland.

Adam Salsarius, 1 vill by 1 pound of pepper.

Henry de Raufone, his land there by serjeanty of keeping a hawk's eyry in the forest.

Robert son of Alexander, Averencheholm, by custody of the King's swine, in time of pannage, till they are valued.

William son of Adam, Hotune, by custody of the hay (*haia*) of Plumton.