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FLORA
OF
COUNTY KERRY

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FLORA
OF
COUNTY KERRY

INCLUDING THE
FLOWERING PLANTS, FERNS, CHARACEÆ, &c.

BY
REGINALD W. SCULLY, F.L.S.

WITH SIX PLATES AND A MAP

DUBLIN
HODGES, FIGGIS & CO., LTD.

1916

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PREFACE.

LIKE the *Flora of Dublin*, the present work owes its inception to the late Alexander Goodman More, justly described as the foremost inspirer and guide of botanical research in Ireland for a generation. To his wide knowledge of the Irish flora and keen interest in its investigation he added a personal charm which attracted all with whom he came in contact, and it is almost solely due to his encouragement and his often expressed wish that the researches were begun which at length bear fruit in this volume.

The earliest botanical visit to Kerry of which there is record appears to have been made by Edward Lhwyd in 1699, and from this early date to the present time the county has continued to attract Irish and British botanists not alone by the exceptional interest of its flora but also by the beauty of the surroundings in which some of its most characteristic plants are found. Several of these visitors have given us more or less complete plant-lists of the districts they examined, but large areas remained unvisited, and it has been left to the writer to undertake the first botanical survey of this extensive county as a whole, an investigation that has engaged portions of fully twenty-five years. The results of these researches, both ancient and modern, are embodied in the present *Flora of Kerry*.

For assistance in the preparation of this work, my thanks are especially due to Mr. Nathaniel Colgan whose generous help includes not alone co-operation in the field, but also useful suggestions as to the form of the present flora and careful revision of its proofs. His *Flora of Dublin* has been selected by the writer as a model out of many similar works examined.

Others to whom my special thanks are due include Mrs. Jenner, Miss Delap, the Rev. E. S. Marshall and Mr. R. A. Phillips, all of whom have helped with much field work and local notes. The following too have contributed in different ways towards the completion of this flora, Lady Godfrey, the Misses Magill, Miss O'Connell, the Rev. W. E. Bentley, Mr. D. Cronin Coltsmann, Mr. H. Crookshank, Mr. St. John

Donovan, Capt. Creaghe-Haward, Dean Isaacs, Major Leeson Marshall, Sir Frederick Moore, Mr. R. Lloyd Praeger, Dr. W. A. Shoolbred, Mr. H. Synnott and Archdeacon Wynne.

For help in determining critical plants, I am indebted to Mr. Arthur Bennett, Major Wolley-Dod, Mr. Alfred Fryer, the Messrs. H. and J. Groves, Mr. F. J. Hanbury, the Revs. W. R. and E. F. Linton, the Rev. E. S. Marshall, Mr. H. W. Pugsley and the Rev. W. Moyle-Rogers.

Not only my own thanks but those of all botanists are also due to Prof. Dixon, of Trinity College, Dublin, who, by a series of troublesome experiments, carried on for a period of ten years, has fully demonstrated the hybrid origin of the much discussed *Saxifraga hirsuta* and its allied forms.

The writer is fully conscious of the imperfections of this flora and can only plead in excuse the complexity and large extent of the areas to be examined and the serious disadvantage of a residence nearly two hundred miles distant from the scene of his researches. This disadvantage, however, he gratefully acknowledges, has been largely counterbalanced by the hospitality and many kindnesses received from friends in different parts of the county.

REGINALD W. SCULLY.

Dundrum, Co. Dublin,
November, 1916.

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INTRODUCTION.

I. HISTORY OF THE FLORA.

THE present day visitor to Kerry can form but little idea of the difficulties attending a tour in the more remote portions of that county even in comparatively recent times. Two hundred years ago these difficulties were incomparably greater, for the wandering botanist had not only to explore large tracts almost devoid of both roads and inns but had also to risk the unkind attentions of the dispossessed natives of that time, the "Tories" as they were called, who appear to have been especially obstructive in this county. Thus Edward Lhwyd, one of the earliest of these botanical pilgrims, describing a visit he made to Ireland in 1699, after referring to several rare plants he found "on the mountains of Keri," complains bitterly that "the Tories frustrated our curiosity here though nowhere else in the Kingdom." Nowadays with comfortable hotels nearly everywhere, and railways penetrating to its farthest limits, the botanist may explore this delightful county with no greater hardships than those occasioned by uncertain weather.

When investigating the early history of a county flora, it is sometimes difficult to understand the principle on which certain plants have been selected for earliest records. Thus the lowly *Scilla verna* occupies this place of honour in the Dublin flora * and *Cochlearia danica* in the Plymouth flora.† So far as Kerry, however, is concerned, the earliest known reference to its vegetation includes two conspicuous and interesting members of its flora—namely, the *Arbutus* and the *Oak*. These references are to be found in an MS. inquisition of the estates of Rory O'Donohue, made in or about 1584. A translation of this report is given in *Vol. XXXVI.*, p. 433, of the Royal Soc. of Antiquaries (Dec. 1906), where it is stated that "a great part of these [Killarney] woods consists of *Oak* trees great and small, but there are other woods and underwoods in the island of Loughleane and elsewhere in the islands, where grow certain trees called *Crankany*, &c.," this latter word

* *Vide* Mr. Colgan's *Flora of Dullin*, p. xix.

† *Vide* Mr. Briggs' *Flora of Plymouth*, p. xxvii.

being a very fair phonetic rendering of the Irish name for the *Arbutus* (*Crown cakinye*) still in use about the Cloonee Lakes. Kerry is also, no doubt, the "part of Ireland" indicated in Parkinson's *Theatrum Botanicum* 1640, p. 1489, where he states that the *Arbutus* has been "of late dayes found in the West part of Ireland"; while it is probable that both *Saxifraga umbrosa* and *Euphorbia hiberna*, two common Kerry plants recorded without definite locality in How's *Phytologia Britannica*, 1650, as occurring in Ireland, should also be referred to this county.

The first printed reference, however, to a plant as undoubtedly occurring in Kerry is to be found in Ray's *Synopsis*, 2nd Ed. 1696. Here, dealing with the *Scotch Fir*, he refers to "Kerry (where the *Arbutus* grows)"; but we have to wait another year before the first record of a Kerry species with a definite locality becomes available. This we owe to Dr. THOMAS MOLYNEUX (b. 1660—d. 1733), later Sir Thomas Molyneux Bart., State Physician in Ireland, who in the *Philosophical Transactions*, Vol. XIX., p. 510, 1697, records *Saxifraga umbrosa* as occurring on Mangerton, Kerry, where the plant is still abundant. Dr. Molyneux here also records the finding by an apothecary on one of the islands in Lough Lane, Killarney, of *Juniperus Sabina*, a name applied by early writers to *J. nana*; this also is still to be found in its original station.

Two years later, in 1699, EDWARD LHWYD, or Lloyd (b. 1670—d. 1709), Keeper of the Ashmolean Museum at Oxford, made his tour in Ireland to find his botanical curiosity frustrated by the Kerry "Tories," as already noted. In spite of their embarrassing attentions he appears to have pushed his investigations as far as Brandon mountain at the extreme western end of the Dingle peninsula. The results of this tour were not published until 1712, three years after his early death, when his paper "Some further Observations relating to the Antiquities and Natural History of Ireland" appeared in the *Philosophical Transactions*, Vol. XXVII., p. 524. This contains the first county records for *Saxifraga stellaris*, *Alchemilla alpina*, *Saussurea alpina* and *Veronica montana*. For these plants no more definite locality is given than "on the mountains of Keri," but as the *Alchemilla* is found in the county only on Brandon, it may safely be assumed that this species at least was gathered there by Lhwyd. The next record appears fourteen years later in the *Appendix* to Threlkeld's *Synopsis*, 1726, where Dr. Molyneux, to whom we already owe *Saxifraga umbrosa* and *Juniperus nana* records *Pyrus* [*rupicola*] as occur-

ring in the county; he also here gives us the first definite published locality for the *Arbutus* "it grows in the Co. of Kerry on the borders of Loughlen," Lough Leane or the Lower Lake of Killarney.

Nothing more appears to have been recorded until 1756, when Dr. CHARLES SMITH published "*The Antient and Present State of the County of Kerry.*" Very little information is now available regarding Dr. Smith. He appears to have been born in the south of Ireland early in the 18th century, to have taken his M.D. degree in Dublin in 1738, and to have "flourished" between 1744 and 1774. He wrote County Histories of Waterford, 1746, Cork, 1750, and Kerry, 1756; all three works passed through two editions, and each contains a chapter on the plants growing in the county. The History of Kerry is an octavo volume of 424 pages, with a map and plates, published in Dublin "with the approbation of the Physico-Historical Society," a society founded in Dublin in 1744 to promote enquiries into the "Antient and Present State of the several Counties of Ireland." It is impossible to determine now whether Dr. Smith relied on his own botanical investigations or accepted the statements of others, but even allowing for the somewhat numerous errors into which he appears to have fallen, his work forms by far the most important contribution to early Kerry botany. In his Chap. XIV., "Of the rare and useful plants growing in Kerry," is found a list of 104 pre-Linnean formulæ which includes 97 Phanerogams and higher Cryptogams, with 2 Mosses and 3 Lichens, and duplicate descriptions or varieties of two of the Ferns. Of these 97 species, 20 may be regarded as almost certainly set down in error, another 15 have not been seen in the county since his time save as obvious escapes, while 4 more had been previously recorded. To make up for these deductions, 20 additional plants are elsewhere referred to in the text, giving Dr. Smith a total of 78 first records for plants which, with one exception, are still to be found in the county. As might be expected, the great majority of these records, 49 or 50 in number, are for plants as common in Kerry as elsewhere in Ireland; the others, however, include such interesting or rare Kerry species as the following, *Crambe maritima*, *Erodium moschatum*, *Rhamnus catharticus*, *Alchemilla vulgaris*, *Sambucus Ebulus*, *Rubia peregrina*, *Invula Helenium*, *I. crithmoides*, *Anthemis nobilis*, *Crepis paludosa*, *Statice rariflora*, *Pinguicula grandiflora*, *Mentha Pulegium*, *Atriplex portulacoides*, *Euphorbia hiberna*, *Juniperus communis*, *Taxus baccata*, *Asplenium viride*, *Cystopteris fragilis*, *Osmunda regalis*, *Ophioglossum vulgatum*,

Equisetum hyemale and *Lycopodium clavatum*. Another of Dr. Smith's Kerry plants, *Lathyrus maritimus*, appears to have retained its position for about a hundred years in the station he recorded, the only one in Ireland, and to have died out there subsequently. Amongst the fifteen species which have not been seen in Kerry since Dr. Smith recorded them, the following may be mentioned, *Mathiola sinuata*, *Lepidium latifolium*, *Erodium maritimum*, *Diotis maritima*, *Andromeda Polifolia*, *Mertensia maritima* and *Pinus sylvestris*. Five of these, it will be observed, are maritime species, and it is quite possible that they may have shared the fate of *Lathyrus maritimus*, of the occurrence of which in Dr. Smith's original locality there appears to be no reasonable doubt.

Two common plants, *Hedera Helix* and *Urtica dioica*, appear as first records in Arthur Young's "*Tour in Ireland*," a work published in London in 1780, but with this exception there is a lull in botanical activity in Kerry for 48 years, and the 18th century closes with the meagre total of 88 species on record for this extensive county.

Early in the following century Dr. WALTER WADE (b. circa 1760—d. 1825), published his "*Plantæ rariores in Hibernia inventæ*," which appeared in the Trans. of the Roy. Dub. Soc. in 1804. Excluding several undoubted errors, this work adds 20 species to the Kerry flora, amongst the more interesting being—*Thalictrum minus*, *Vicia sylvatica*, *Rubus saxatilis*, *Sedum Rhodiola*, *Lobelia Dortmanna*, *Stachys Betonica*, *Salix herbacea*, *Empetrum nigrum*, *Epipactis latifolia*, *Carex curta* and *Hymenophyllum tunbridgense*; all these plants still occur more or less plentifully in Dr. Wade's stations.

Two years later, the name of JAMES TOWNSEND MACKAY (b. 1775 ?—d. 1862), the designer and Curator of the Trinity College Botanic Garden, Ball's Bridge, Dublin, first appears in connection with Kerry botany. His "*Systematic Catalogue of Rare Plants found in Ireland*" was published in the Trans. of the Dub. Soc. in 1806, and adds 44 species to those already known to occur in the county. As will be seen from the following selection, they include many of the most interesting plants in the Kerry flora—*Draba incana*, *Subularia aquatica*, *Lavatera arborea*, *Saxifraga Geum*, *S. cæspitosa*, *Drosera anglica*, *Carum verticillatum*, *Pimpinella magna*, *Galium sylvestre*, *Asperula cynanchica*, *Verbascum virgatum* (as *V. pulverulentum*), *Sibthorpia europæa*, *Bartsia viscosa*, *Orobanche Hederæ* (as *O. minor*), *Oxyria digyna*, *Malaxis paludosa*, *Rhynchospora fusca*, *Carex Hudsonii*, *Poa alpina*, *Trichomanes radicans*, *Lastrea Thelypteris* and *L. Oreopteris*. Most of these plants are still

to be found growing in Mackay's exact localities. His record of *Poa alpina* is especially interesting, as furnishing a good illustration of how tenaciously a native plant will cling even to a most restricted station, in this case an exposed surface of rock a few square feet in extent, where it has now been known for well over one hundred years : it does not appear to occur anywhere else in the south of Ireland.

The second of Mackay's works, his "*Catalogue of the Indigenous Plants found in Ireland*," was published 19 years later in the Trans. of the Roy. Irish Acad. 1825, and adds 12 more to the Kerry total ; of these *Arabis ciliata* (found by James Drummond between 1810 and 1820), *Hypericum calycinum*, *Galium boreale*, and *Utricularia intermedia* are best worth mention.

Finally in his *Flora Hibernica*, an octavo vol. published in Dublin in 1836, Mackay contributes another five, including *Carex filiformis* (found by James Drummond), and *Lycopodium alpinum*, bringing his total additions to the county flora up to 61. Two or three of these records were for some common plants found by Dr. THOMAS TAYLOR (d. 1848), best known for his important contributions to cryptogamic botany.

About this time also, two visitors to Killarney put on record for the first time a few of the more common members of the Kerry flora ; four of these are found in "*Illustrations of the Scenery of Killarney, &c.*," a handsome quarto vol. published in London 1806, by Isaac Weld ; and two more in George N. Smith's "*Killarney and the surrounding Scenery*," published in London 1822. An isolated Kerry record appears in Hooker's *Brit. Flor. Ed. I. 1830*, where *Hymenophyllum Wilsoni* is described, while the *2nd Ed. 1831* contains the first description of the Killarney *Equisetum Wilsoni*, both being from plants gathered by William Wilson. Another record occurs in the *Supplement* to Smith's *English Botany* 1841, where Dr. Taylor is credited with the discovery of *Potamogeton praelongus*.

The *Irish Flora* which appeared in 1833, three years before Mackay published his *Flora Hibernica*, is chiefly remarkable as being the first descriptive list of the flowering plants in Ireland. The authorship of this book is usually attributed to Miss KATHERINE BAILEY (b. 1811—d. 1886); afterwards Lady Kane. The Kerry localities it contains are almost all taken from the earlier works of Wade and Mackay, the Lady Fern being the only plant which does not appear to have been elsewhere recorded.

Ten years later Mr. S. P. WOODWARD (b. 1821—d. 1865), an English botanist, paid a visit to Ireland, and his "*Notes of*

a *Botanical Excursion in Warwickshire, Worcestershire, Wales and Ireland* " appeared in the *Phytologist* the following year, 1844. His tour in Ireland included visits to Kenmare, Killarney and Brandon, the Kenmare portion at least being under the guidance of Dr. Taylor above referred to. Although his list includes 29 species not previously recorded for the county, they are all common plants with the exception of two ferns, *Aspidium Lonchitis* (found on Brandon), and *Lastrea spinulosa* (with Dr. Taylor), both very rare in Kerry. Two more records appear in Newman's *Brit. Ferns* published the same year, *Lastrea æmula* and *Polypodium Phegopteris*, the latter found by Dr. Taylor and David Moore; while four years later the Rev. T. O'Mahony recorded in the *London Journ. of Bot.* 1848 his discovery of *Simethis bicolor* at Darrynane.

The following decade furnished several additions to the Kerry list. In 1852, Prof. JOHN BALFOUR of Edinburgh (b. 1808—d. 1884) made a tour in Ireland with a party of his pupils, and among other places visited Killarney and ascended Mangerton, Macgillicuddy's Reeks, &c. An account of this expedition was published the following year in the *Phytologist*, 1853. Most of the plants he found had been already recorded, and his "*Botanical Trip to Ireland*" adds but five species to the Kerry total, of which only *Althæa officinalis* and *Drosera intermedia* are worthy of attention. The same year Daniel Oliver communicated two interesting Kerry records to the *Phytologist*, one for *Agrimonia odorata*, the other for *Carex punctata*, both found by him near Dingle; while two years later the same Journal published a letter to the editor from JOSEPH WOODS (b. 1776—d. 1864) entitled "*Some Botanical Notes made during a Tour through a part of Ireland, &c.*," in which are included nine additions to the flora, only two of these, however, *Lychnis diurna* and *Habenaria albida* being of any special interest. The year 1855 also saw the publication of Thomas Moore's handsome folio on the "*Ferns of Great Britain and Ireland*" which while it adds no new plant to the flora, gives definite localities for some of the more interesting species.

Two years later, in 1857, the *Phytologist* published two papers by the Rev. William Hind, one "*Three days at Killarney*," the other "*Dingle and its Flora*." These contain a number of first records, but nearly all of them are for common plants, and out of a total of 28, only *Cochlearia danica* and *Pinguicula vulgaris*, both rare species in Kerry, need be mentioned. In the same vol., ISAAC CARROLL (b. 1828—d. 1880), enumerates in a "*Notice of Scarce Irish Plants*" some of the rarer mountain

species found by him in Kerry ; with one exception, however, *Hieracium anglicum*, they have all been previously recorded. Seven years later, **DAVID MOORE** (b. 1807–d. 1879), whose name here first appears as a direct contributor to Kerry botany, records in the *Journ. of Bot.* 1864 the finding of *Potamogeton nitens* near Castlegregory.

The parting of the old ways from the new may be dated from the year 1866, when the *Cybele Hibernica* appeared, a work whose influence on subsequent Irish botanical investigation it is impossible to exaggerate. This octavo vol. of 402 pages, with a divisional and distributional map, and an introduction of 56 pages, was the joint work of David Moore, already mentioned, and **ALEXANDER GOODMAN MORE** (b. 1830–d. 1895). It was the first attempt to indicate the distribution of the Irish flora, and was an enormous advance on the topographical chaos of the *Irish Flora* and *Flora Hibernica*. As Mr. Colgan rightly observes in his *Introduction to the Flora of Dublin*, this work marked the beginning of the period when the distribution of the Irish flora rather than its contents was to engage the attention of botanists, a period which was to see these investigations attain almost to finality in the publication 35 years later of Robert Lloyd Praeger's *Irish Topographical Botany* in 1901.

Of the twelve botanical districts into which the authors of *Cybele Hibernica* divided Ireland, No. I, included south-west Cork in addition to the whole of Kerry, so that their record of a plant's occurrence in District I cannot be taken as conclusive evidence of its presence in Kerry unless a locality is added, which, unfortunately, is very rarely the case with the more common species. The *Cybele*, nevertheless, adds 34 plants to the county flora, of which David Moore contributes 16, including *Viola Curtisii*, *Sagina subulata*, *Leontodon hispidum* (with Prof. Babington) one of the rarest plants in the Kerry flora, *Centunculus minimus*, *Microcala filiformis* (with Messrs. L. Ogilby and T. Wright), *Allium Scorodoprasum*, *Carex limosa*, *Phleum arenarium*, *Festuca sylvatica* and *Isoetes echinospora*, while Prof. Charles Babington adds 15, among them being *Epipactis media*, *Potamogeton densus* and *Carex acuta*. Isaac Carroll is also here mentioned as having added to the county flora *Eriocaulon septangulare* (with T. Wright), and *Cladium Mariscus*. In the same work W. Andrews is credited with *Cerastium arvense* and Prof. Harvey with *Veronica Tournefortii*.

Six years later A. G. More published a list of additions to the *Cybele* in the Proc. Roy. Irish Acad., Science, 1872, under the title "*On Recent Additions to the Flora of Ireland.*" In this

paper he increases the Kerry records by 14, including *Callitriche autumnalis*, *Cephalanthera ensifolia* (with Dr. Battersby and A. Balfe), *Carex divulsa* and *Festuca Myuros*; here also **HENRY C. HART** (b. 1847—d. 1908), is first credited with *Nasturtium palustre*, W. Andrews with *Elantine hexandra*, David Moore with *Juncus obtusiflorus* and the Rev. S. Madden with *Asplenium lanceolatum*. A few additions were also made about this time in the *Journ. of Bot.*, as in 1876 when A. G. More records the occurrence of *Lycopodium inundatum*, while in the following year he puts on record *Naias flexilis* and *Nitella flexilis*. These and two more unimportant additions bring this decade to a close with only 310 plants definitely recorded for the county, a total barely two-fifths of its present known flora.

The next decade opened with the addition of four *Charæ* by D. Moore and another, *Nitella translucens*, by A. G. More in the *Journ. of Bot.*, while in the following year appeared the first of several subsequent systematic reports on the botany of various districts in the county. These investigations, made under the auspices of the Royal Irish Academy, were four in number. The first was by **RICHARD M. BARRINGTON** (b. 1849—d. 1915), "*Report on the Flora of the Blasket Islands Co. Kerry.*" This was published in the *Proc. Roy. Irish Acad., Science*, in 1881, and was a careful analysis of the vegetation of these remote islands. As might be expected, the great majority of the 174 species there set down are plants common throughout the county, nevertheless as many as 98 are here first definitely recorded as occurring in Kerry, the most interesting of them being *Lamium amplexicaule* and *Carex disticha*, two of the rarest plants in the county.

Two interesting papers by Henry C. Hart follow next. The first, "*Report upon the Botany of the Macgillycuddy's Reeks Co. Kerry*"—*Proc. Roy. Irish Acad., Science*, 1882, adds 51 to the flora, mostly common species; while two years later his "*Notes on the Plants of some of the Mountain Ranges of Ireland*"—*Proc. Roy. Irish Acad., Science*, 1884, which included an examination of the Dingle peninsula, added another 60 to the list, including such rare or interesting Kerry species as *Ranunculus Lingua*, *Trifolium medium*, *Silybum Marianum*, *Hieracium vulgatum*, *Rumex Hydrolapathum*, *Polygonum viviparum*, *Listera cordata*, *Habenaria conopsea*, *Eleocharis uniglumis*, *Scirpus rufus* and *Carex teretiuscula*.

The last of these papers published under the auspices of the Academy was **SAMUEL A. STEWART'S** (b. 1826—d. 1910), "*Report on the Botany of South Clare and the Shannon*"—*Proc. Roy. Irish Acad.* 1890. Mr. Stewart's investigations

included the portion of north Kerry bordering on the Shannon, and added 37 species, amongst them being *Hypericum perforatum* and *Chlora perfoliata*, two of the most local plants in the county.

In addition to those mentioned above, several other records were published about this time; thus Archdeacon Wynne, then Rector of Killarney, in his Phenological Observations published in the *Quarterly Journ. of the Meteorological Soc.* 1882, &c., adds 15 common Kerry plants to the flora; while in the same year A. G. More in the *Journ. of Bot.* records the discovery of *Sisyrinchium angustifolium* by Lady Godfrey and the Rev. A. Isaacs. Two years later Henry N. Ridley in the same Journal adds *Solanum Dulcamara*, in its typical state one of the rarest plants in Kerry, and *Ceratophyllum demersum*, while Mr. Hart increases his already long list by three species including *Neottia Nidus-avis*, vide *Journ. of Bot.* 1885, p. 233. Another interesting plant found about this time is *Thalictrum alpinum* discovered on Brandon mountain by the Rev. Augustin Ley and recorded in the same *Journ.* for 1887.

Early in the following decade George Claridge Druce in his "*Notes on the Flora of Cork, Kerry and Dublin*"—*Journ. of Bot.* 1891, places on record one or two of the more common species, while seven years later the publication of the 2nd Edition of the *Cybele Hibernica* adds 19 more, including the following scarce or local plants found by the present writer, *Rhamnus Frangula*, *Elodea canadensis*, *Allium vineale* and *Potamogeton obtusifolius*. This was followed in 1901 by the appearance of *Irish Topographical Botany* by Robert Lloyd Praeger, in which for the first time the Irish flora was shown in its county distribution, several of the larger counties being subdivided to make the areas dealt with more nearly equal. This work increases the Kerry flora by 45 mostly common plants now first definitely recorded; they include, however, *Cochlearia anglica*, *Potamogeton lucens* and *Poa nemoralis* found by the present writer, while Mr. Praeger here publishes his discovery of *Geranium columbinum*.

In addition to the above, the present writer has recorded in various papers in the *Journ. of Bot.* between 1888 and 1893, 94 species and subspecies, of which the following are either very rare or very local in Kerry, *Trifolium striatum*, *T. filiforme*, *Rosa micrantha*, *Pimpinella Saxifraga*, *Anthriscus vulgaris*, *Galium uliginosum*, *Dipsacus sylvestris*, *Artemisia Absinthium*, *Hieracium lepidostoides*, *Lactuca muralis*, *Wahlenbergia hederacea*, *Vaccinium Oxycoccus*, *Hypopithys multiflora*, *Statice occidentalis*, *Cuscuta Trifolii*, *Mimulus Langsdorffii*,

Lathræa Squamaria, *Chenopodium rubrum*, *Polygonum minus*, *P. sagittatum*, *Spiranthes autumnalis*, *Epipactis palustris*, *Potamogeton graminifolius*, *Ruppia spiralis*, *Zostera nana*, *Eleocharis acicularis*, *Scirpus parvulus*, *Eriophorum latifolium*, *Carex Boeninghausiana*, *C. aquatilis*, *C. hibernica*, *C. strigosa*, *Equisetum trachyodon*, *Pilularia globulifera* and *Chara contraria*, with *Utricularia neglecta*, *Juncus tenuis*, *Sparganium neglectum* and *Nitella confervacea* in their first Irish stations. Another 23 are recorded by him in papers or notes in the *Irish Naturalist* between 1895 and 1914, including *Ranunculus heterophyllus*, *Diplotaxis muralis*, *Teesdalia nudicaulis*, *Oenanthe Phellandrium*, *Galium erectum*, *Matricaria discoidea*, *Hieracium argenteum*, *H. orimeles*, *H. sciaphilum*, *H. sparsifolium*, *Pyrola minor* (with Dr. Wood), *Lithospermum officinale*, *Rumex maritimus* (with H. Crookshank), *Ophrys apifera*, *Potamogeton plantagineus* and *Chara polyacantha*, with *C. canescens* in its first Irish station.

A few additions still remain to be chronicled; thus in the *Irish Nat.* 1902, the present writer records the finding of *Spergularia rubra* by Alexander Somerville, and in the same publication for 1908, that of *Trifolium arvense* by Miss Wootton; while in 1907, Mr. Druce adds *Polygonum maculatum* to his previous Kerry records, and in the same *Journal* for 1910 increases the Kerry total by *Utricularia Bremii* and *Elisma natans*, both species apparently new to the Irish flora. Two years later in the *Irish Nat.* for 1912, R. Ll. Praeger records the finding by A. W. Stelfox and himself of *Cochlearia grœnlandica*, *Orobanche rubra* and *O. minor*, and finally in 1915, Mrs. Jenner adds *Ranunculus auricomus* to the Kerry list, *vide Irish Nat.*

In the foregoing historical summary the first records of the more interesting members of the Kerry flora have been indicated, from the earliest record in 1697 down to the close of 1915.

II. PHYSICAL FEATURES.

The maritime county of Kerry, with an area of 1,853 sq. miles, is situated between latitude 51° 42' and 52° 35' North, and between longitude 9° 13' and 10° 29' West, and with a portion of the adjoining county Cork forms the south-western corner of Ireland. Its extreme length is 68 miles from north to south, while in breadth it varies from 20 to 59 miles. According to the last census (1911), the total area of the county, 1,190,000 acres, is thus occupied, 179,000 acres in tillage, 772,000 in pasture, 191,000 in waste bog and mountain, 14,000 in plantations and 32,800 under water.

Dr. Joyce in his *Irish Names of Places*, derives the name of this county from the Gaelic "*Ciarraide*"—the race of Ciar. The title was originally applied only to the district lying between Tralee, Abbeyfeale and the Shannon then in their possession, but was afterwards extended to the whole county.

COAST LINE.—The coast is deeply indented by numerous bays, estuaries and inlets, the most important being Kenmare Bay or River, Ballinskelligs Bay, Valencia Harbour, Dingle Bay and its prolongation Castlemaine Harbour, Brandon and Tralee Bays, and the estuary of the Shannon. Some of these are of great extent, running a course of many miles into the heart of the county; Kenmare Bay, for instance, attains a length of 28 miles, while Dingle Bay, with its continuation Castlemaine Harbour, extends inland for fully 30 miles. These bays divide the county into several irregular promontories, the most pronounced of these being the Dingle peninsula to which especially Camden's quaint description of this county most aptly applies, "the county of Kerry shoots forth like a little tongue with the sea roaring on both sides of it." Owing to the number and depth of these bays and inlets, the coast line of Kerry reaches a length of fully 350 miles, a total not exceeded by any other county in Ireland.

The nature of the coast line is very varied, cliffs, sandy and boulder-strewn beaches, sand dunes and slob-land appearing in frequent alternation. The finest sea cliffs occur to the north-west of the Dingle peninsula where they rise almost sheer to 1,238 feet in Beenaman. Here, too, at little more than a mile and a half from the coast, the mountain mass of Brandon reaches to 3,127 feet, while at Masatiompan it attains to 2,509 feet at half a mile inland. To the south of Dingle Bay the coast rises to over 900 feet at Bolus Head and Doulus Head, and to about 600 feet in the fine cliffs at Bray Head, Valencia Island.

Sand dunes are found at intervals nearly all round the Kerry coast. Some of these are of great extent, the largest being those dividing Dingle Bay from Castlemaine Harbour, the Castlegregory sandhills on the north side of the Dingle peninsula, and the six mile stretch of dunes running from near Barrow Harbour to Ballyheige; all these attain an elevation of about 90 feet. Slob-lands and salt marshes are also fairly numerous although rarely of any great extent, the largest being found about Castlemaine Harbour, Tralee Bay and along the Shannon estuary.

ISLANDS.—Although the islands scattered round the Kerry coast are rather numerous, very few of them attain to any

considerable size. Much the largest is Valencia Island, 7 miles long by 2 broad, and rising to nearly 900 feet on its northern side and to 800 near its western extremity. This island, however, may be regarded rather as a fragment of the mainland since the intervening channel is very narrow, having at some points a breadth of barely 300 yards. More truly insular are the Blasket Isles lying off the western extremity of the Dingle peninsula, some 12 miles north-west of Valencia. This little archipelago consists of 6 islands with about a 100 islets and rocks. The largest of the islands, the Great Blasket, is a long narrow ridge nearly 4 miles in length and accessible only at its eastern extremity. Although its greatest width is little over half a mile, it rises to 961 feet and presents a fine range of cliffs along its northern face. Its area of 1,132 acres is mostly rough heathery pasture, and the population in 1911 was 160. Next in size to the Great Blasket come Inishtooskert and Inishvickillane each a mile long and Inishnabro with an area of 125 acres. All three are uninhabited and all approach 600 feet in height. Tearaght with its lighthouse, the most western of the group, is barely half the size of Inishnabro yet rises to 602 feet and forms a most imposing cone of rock.

In Kenmare Bay are several islands of which Rossmore, Rossdohan, Garinish and Sherky, ranging in area from 337 to 60 acres, may be mentioned, the last three are well known to visitors to Parknasilla. To the north-west of this Bay are Deenish and Scariff, the latter a finely shaped island of about 360 acres rising to 839 feet. Still farther north and remarkable for their form and antiquarian remains are the Skelligs, rather sea stacks than islands. They lie off Bolus Head and are from 6 to 8 miles from the mainland. The Great Skellig with an area of only 44 acres and little more than a quarter of a mile in its longest diameter attains to a height of 714 feet. Its striking outline has been compared to a spired cathedral or to a ship in full sail, while its bee-hive cells and other remains are amongst the most interesting in Ireland. Like the Tearaght, the Great Skellig has a lighthouse. The Little Skellig, 2 miles nearer the mainland, is also of bold outline. With an area of only 16 acres it rises to a height of 440 feet. North of these lie Puffin Island close to the mainland, and Beginish which helps to inclose Valencia Harbour, both are about a mile in longest diameter.

Last of the Kerry islands worthy of mention are the Seven Hogs or Magharee Islands lying north of the Castlegregory sandhills. They are small and low-lying, and only one, Illauntannig of 36 acres, is inhabited.

MOUNTAINS.—The extent and elevation of its mountain ranges forms one of the most characteristic features in Kerry topography. In the 1,853 sq. miles included in the county area, between 250 and 300 lie above the 1,000 feet level, Wicklow with rather more than 200 sq. miles having the nearest approach to this total among the other Irish counties. The two highest ranges in Ireland are included within the Kerry boundaries, the Macgillycuddy's Reeks rising to 3,414 feet at Carrantuohill and the Brandon range to 3,127 feet.

Much the greater portion of this elevated ground lies in the south and west of the county. In the Ordnance map of Kerry—scale one mile to an inch—there are 190 summits marked as exceeding 1,500 feet in height; of this total 150 occur south of a line drawn across the middle of the county from Rathmore through Killarney to the head of Dingle Bay, the remaining 40 being found in the Dingle peninsula, the rugged western extremity of the county. Of these 190 summits, 88 exceed 2,000 feet and 7 are given as over 3,000 feet. Excluding the Dingle peninsula, the mountains in the north of the county are gathered mainly towards its eastern boundary and are monotonous rounded moorlands, quite devoid of cliffs or broken surface, and nowhere rising higher than 1,441 feet.

Filling in the extreme south-east of Kerry and forming the county boundary for many miles, the Caha Mountains rise to 2,251 feet at Hungry Hill and to 2,169 at Knockowen. Farther east this wild and inaccessible range throws off a lofty spur towards the Cloonee valley reaching 2,116 feet at Coomnadiha, and in a course of fully sixteen miles is crossed only by the solitary footpass of Ballaghscart; it sinks to about 1,100 feet at Turner's Mountain where it is pierced by the well known tunnel on the Kenmare-Glengarriff road. Some six miles farther east this boundary range again rises to 2,321 feet at Knockboy and to 2,280 at Akinkeen, but in the remainder of its northward course of fully 30 miles it only once again rises above 2,000 feet.

A well marked mountain barrier forms the northern limit of these rugged valleys and ranges; this is clearly seen from the railway by visitors approaching Killarney from Mallow. First of the Kerry summits to catch the eye are the Paps, situated about two miles inside the county boundary, they rise to 2,284 and 2,273 feet respectively. Next to them, but separated by the low lying Glenflesk valley, is the finely shaped Crohane peak of 2,162 feet, while farther west rises the long rounded mass of Mangerton with the Horse's Glen and its crater-like

summit reaching to 2,756 feet. Scarcely a hundred years ago this mountain was held to be not only an extinct volcano but also the loftiest summit in Ireland. Still farther to the west between Mangerton and the gap through which the Killarney lakes communicate with each other, rises the beautifully wooded Torc Mountain 1,764 feet in height.

West and south-west of the Killarney Lakes rises a group of lofty peaks. Those first met with in a westerly direction are Shehy Mountain with Tomies' two summits and the Purple Mountain rising to 2,739 feet. Next to these, and only separated from them by the narrow Gap of Dunloe, rise the Macgillycuddy's Reeks. This imposing range of mountains, the loftiest in Ireland, stretches from the Gap in a more or less westerly direction to the Glencar valley, a distance of about eight miles. For more than half this distance the main axis of the Reeks is a narrow ridge, finely serrated in parts, often falling abruptly on either hand and maintaining an elevation of close on 3,000 feet which it exceeds above Lough Cummeenapeasta and again above Lough Cummeenmore. Farther west this ridge turns north to Carrantuohill, 3,414 feet, the highest point in Ireland, and then divides, the northern spur descending by Beenkeragh, 3,314 and Skregmore 2,790 feet, the southern spur by Caher 3,200 and Curraghmore 2,695 feet, to low level in the Glencar valley. This range presents many fine series of elevated cliffs facing nearly all points of the compass and enclosing some of the loftiest lakelets or tarns in Ireland.

South of the Reeks lie the Boughil ridge with Broaghna-binnia, a well-known truncated pyramid as seen from the Upper Killarney Lake, and an unnamed ridge between the two which reaches 2572 feet. Farther west, and separated from it by the Ballaghbeama Gap, rises the fine Mullaghanattin range, 2,539 feet at its highest point, breaking up still further west into a perfect jumble of peaks and precipices, a district still but little known botanically. Of the summits here, Finnavaragh and many others rise above the 2,000 feet level. Large areas in this range, especially to the south of Cloon Lough, Glencar, have been almost entirely denuded, leaving them a wilderness of bare sloping rocks and slabs which when seen in showery weather often glisten like a surface of glass. This little known mass of mountains continues at about the same elevation for many miles dividing Kenmare Bay from the Inny valley, until it sinks to meet the low lying Lough Currane at Waterville. To the north of these mountains and separated from them by the upper portion of the Inny valley, lie the

Glenbeigh range rising at Coomacarrea to 2,541 feet, and presenting a fine series of cooms and cliffs facing north-east. Their eastern spurs form one side of the broad Glencar valley which separates them from the Reeks, while towards the west they descend steeply at Drung Hill to Dingle Bay. Farther to the west the mountains again rise to 2,267 feet at Knocknadobar, a well-known Holy Mountain lying about four miles north-east of Cahersiveen.

The only remaining mountains of any importance in Kerry are found in the Dingle peninsula; these, however, at their western extremity almost rival the Reeks in height and quite exceed them in botanical interest. The Slieve Mish range which forms the back bone of this peninsula, begins in the low-lying Castleisland plain and rising slowly as a rounded peat-covered mass reaches 2,796 feet at Baurtregaum and 2,713 at Caherconree a little farther west. In two or three places only does this twelve mile stretch of mountain show any trace of cliffs. After sinking to about 700 feet at Glounagalt it again rises to 2,713 at Beenoskee a finely shaped mountain near Castlegregory. South-west of this the main axis dips to 1,350 feet at Connor Hill pass and to about the same height at Mullaghveal. Thence turning northward it rises to 3,127 feet in the imposing mass of Brandon which presents along its eastern flank a fine series of cooms and cliffs pre-eminent amongst the mountain groups of south Ireland for the richness of its alpine flora.

LAKES, &c.—The lakes of Kerry, like its mountains, are almost entirely restricted to the southern half of the county and the Dingle peninsula. Although very numerous, the majority are small and might be more correctly named tarns than lakes.

By far the largest is Lough Leane, well known as the Lower Lake of Killarney, which covers an area of 5,001 acres and has a shore line of about 18 miles. It contains many islands, mostly small; much the largest of them being Ross Island, with 164 acres; it is separated from the mainland, however, by little more than a ditch, nearly dry in the summer season. Next to this comes the well-known Island of Innisfallen with 21 acres, and Brown or Rabbit Island with about 12 acres. none of the others much exceed 2 acres in extent. The remaining Killarney lakes are much smaller, the Muckross or Middle Lake only covering 680 acres and the Upper Lake 430. They are connected by the Long Range, usually a narrow sluggish stream, three or four miles in length, with one or two rapids and lake-like expansions, it contains in all 120 acres. There

are only two other lakes in Kerry of any considerable area ; one is Lough Currane or Waterville Lake in the south-west, a large oval sheet of water measuring about two miles by three in its longest diameters ; the other is Caragh Lake about three or four miles south-west of Killorglin ; this although it rarely exceeds a half to three-quarters of a mile in breadth attains a length of nearly four miles north and south. Much smaller than these, but still worth mention, are Glanmore, the three Cloonee and Inchiquin Loughs in the extreme south, Derriana and Cloonaghlin north-east of Waterville, Coomasaharn and Coomaglaslaw in the Glenbeigh Mountains, Acoose and Cloon near the Reeks, Lough Yganavan north of Caragh, Lough Guitane south-east of Killarney and Lough Gill near Castlegregory in the Dingle peninsula.

The smaller lakes or mountain tarns include the most elevated sheets of water in Ireland. Some of the highest are, Cummeenoughter (the Devil's Looking-glass) at 2,338 feet, and Cummeenapeasta at 2,153 in the Reeks, the Devil's Punch Bowl, 2,206 feet on Mangerton, the Coumaknock Lakes on Brandon, a group of small tarns and pools ranging in height from about 2,000 to 2,300 feet, and Lough Acummeen at 2,021 feet on Beenoskee near Castlegregory, while many others lie between the 1,000 and 2,000 feet levels.

RIVERS.—The deeply indented coast line, the position of the mountain groups and the direction of the watershed in this county all combine to prevent the formation of long river-courses, and it is therefore not surprising to find that none of the Kerry rivers exceeds 25 miles in length.

The greatest volume of water is, no doubt, carried by the Laune which drains the Killarney Lakes, and after a course of about 12 miles falls into the sea at the head of Castlemaine Harbour. The chief feeder of these lakes is the Flesk which runs for about 20 miles from the boundary of County Cork to its entrance into Lough Leane, the Lower Lake, Killarney. Into Castlemaine Harbour, scarce a mile distant from the mouth of the Laune, flows another fairly important stream, the Maine, which drains the low-lying country west of Castleisland. Both these rivers are tidal and are artificially embanked for some miles from their mouths. The northern portion of the county is drained by the Feale, a river with a course of about 25 miles and forming the eastern county boundary for some 20 miles more. In the south, the chief rivers are the Roughty flowing into the head of Kenmare Bay, and the Inny into Ballinskelligs Bay. In the west is the Caragh river draining the lake of the same name and the extensive Glencar valley. Besides those

mentioned there are many other streams and rivers draining the complicated mountain systems of the southern half of the county and the Dingle peninsula, but they are quite considerable in length and volume.

Further details of the different physical features will be given when describing the nine botanical districts into which the county has been divided.

III. GEOLOGICAL SKETCH.

Large as is the area of Kerry its geological structure presents few apparent complications. The Dingle peninsula, however, forms an exception to this general statement as will be shown later on in this short sketch of the principal geological features of the county.

Taking the south of the county first, practically the whole of this extensive area consists of high mountain ranges of Old Red Sandstone running more or less parallel with one another and separated by low-lying valleys. These ridges and hollows when formed by the crumpling of the earth's crust were covered by the Carboniferous strata such as the limestone and coal-measure series. Long continued and severe denudation swept away these softer and more recent formations from the elevated ridges, leaving the harder Old Red Sandstone exposed as the present mountain ranges and projecting headlands. With the removal of the softer material from these elevated regions, the denudation became more concentrated on the valleys which were gradually hollowed out to what is now their present shape, leaving the Red Sandstone exposed where the denudation was complete, the Carboniferous rocks where it was incomplete, or a surface of Drift where, as is generally the case, the denuded surfaces now lie covered by the debris of the surrounding strata.

The only rocks of igneous origin occurring in this portion of the county are a few small areas of Felsite which lie scattered along a narrow strip about ten miles east and west between the Devil's Punch Bowl on Mangerton and the southern slopes of the Paps Mountain in the Clydagh valley, Glenflesk. A few more of these igneous outcrops occur about Valencia Harbour, one of them forming Beginish Island.

In the south of the county may also be seen many indications of the severe glaciation to which Kerry in common with a large portion of Ireland was subjected. To this agency Kerry owes not only its many mountain lakes, some of them still showing

well marked terminal moraines, but also the numerous rounded surfaces of ice-worn rock so frequently met with among the south Kerry mountains. They are well seen at Lough Fadde, a roadside lake a few miles east of Parknasilla, and again near Waterville, also about Loo Bridge in Glenflesk, the Windy or Moll's Gap on the Kenmare-Killarney road, about the Long Range and Upper Killarney Lake, &c. In one of these localities, the excavations made a few months previously for a new road near the south-east corner of Lough Currane had exposed the long-covered rounded surface of the adjacent rock showing the scratches and grooves impressed by the vanished glacier as clear and well defined as if they had been engraved but the previous winter. To this action is also due the presence of erratics or *blocs perchés*, of which two fine examples occur near Kenmare, one a mass of limestone about 400 tons in weight resting on Old Red Sandstone, the other a Sandstone erratic of 30 tons resting on Carboniferous Limestone; illustrations of these will be found in the *Irish Nat.* 1898, p. 228.

The Dingle peninsula while generally following the formation already described, the arch or anticlinal of Old Red Sandstone, the trough or synclinal of limestone, is more complicated by the presence of the Dingle Beds and Silurian strata, two formations not elsewhere found in Kerry. The former of these, often designated the Lower Old Red Sandstone, appears in most of the higher mountains in the west of this district and lies interposed between the Upper Old Red, so common in the south of the county, and the Silurian formation, which in several places near the coast opens out in a series of shales, grits, &c. With these are associated some small outcrops of igneous rocks which appear, however, to be almost confined to the western extremity of this peninsula. Among these may be mentioned the Foze Rocks, the extreme western islets of the Blasket group, with Inishvickillane and Beginish two of its larger islands, and Clogher Head on the adjacent mainland. Comparatively insignificant as these outcrops now are, they extend over an area roughly twelve miles by four, and represent one of the most extensive lava-fields known in the British Isles.

Once more, at Kerry Head, the Old Red Sandstone breaks through the surface of the county. Here at the south-western extremity of the Shannon estuary this formation rises through the Carboniferous series in a line of rough hills which attain a height of over 700 feet. With this exception the north of the county is in great measure covered by drift and peat formations, which, with a few exposed surfaces of limestone grits and

coal measures, extend from the north shore of the Muckcross Lake, Killarney, right across to Tarbert at the north-eastern extremity of the county.

Large areas of Blown Sand occur at several places on the Kerry coast. The principal accumulations are those at the head of Dingle Bay, where the Inch or Maghaglass sandhills on the north shore rise to 90 feet, a height also attained by the Castlegregory sandhills dividing Brandon from Tralee Bay, while the extensive Banna dunes north-west of Ardfert rise to 88 feet.

From the foregoing Topographical and Geological sketches it will be seen that Kerry is well adapted to maintain an abundant and varied flora. Limestone rocks and drifts, widely if irregularly distributed, afford a congenial soil for calcicole species, while the many fine ranges of elevated cliff in spite of the neutralising effect of southerly latitude combined with proximity to the ocean, give harbourage to an alpine flora of great interest. Numerous lakes, swamps and bogs, and a very varied coast line supply many suitable localities for aquatic and moisture loving plants as well as for coastal species.

IV. CLIMATE.

The climate of Kerry may be briefly summarised as moist, mild, and changeable. Owing both to its configuration and geographical position Kerry offers peculiar scope for pluvial conditions. It stands full in the way of the prevailing moisture-laden winds from the Atlantic, which, after sweeping across vast regions of heated ocean, here meet with their first land in the form of the most elevated ranges in Ireland. These, especially in their cool upper regions, form only too often an effective cause of precipitation.

It follows from these considerations that, unless some exceptional circumstance supervenes, the more elevated the region the larger will be the precipitation, and there can be but little doubt that there are localities in the south and west of Kerry which receive the largest rainfalls in Ireland. Reliable records of mountain rainfalls, however, are very rare in Ireland, only three such stations with an elevation exceeding 1,350 feet appearing in *Symons's British Rainfall*. Fortunately one of these three stations is situated in Kerry at 1,760 feet on Mangerton. Here observations were continued for many years, and as there is another carefully kept contemporaneous record at Woodlawn near Killarney, an opportunity is afforded of

comparing the rainfalls of two spots in Kerry less than five miles apart but differing in elevation by 1,664 feet. Between the years 1883 and 1906 inclusive, records for 15 years are available, and it appears from them that the fall on Mangerton varied between a minimum of 63 inches in 1887, and a maximum of 140.9 in 1903, while the falls at Woodlawn in the corresponding years were 45.43 and 64.64 inches respectively. For these fifteen years the annual average for Mangerton was 97.40 and for Woodlawn 56.23, both these stations lying on the same side of the mountain.

The wettest lowland localities in Kerry, however, for which reliable records are available are Gearhameen near the southern extremity of the Upper Lake, Killarney, 75 feet above sea level, where records for seventeen years give an average rainfall of 87.36 inches, and Lickeen near the southern extremity of Caragh Lake where Admiral Jeffry records an annual average of 77.39 inches for a period of seven years, the gauge here being 60 feet above sea-level; these two localities appear to be the wettest lowland spots known not only in Kerry but in the whole of Ireland. Next to these come Derreen on the southern shore of Kenmare Bay, nearly opposite Parknasilla, 74 feet above sea level, with an average for twenty-five years of 68.68, and Dingle, situated near the south-western corner of the Dingle peninsula, 20 feet above sea level, with 57.86 for nine years, closely followed by Valencia with 56.74, and Killarney with 54.90, both the latter records being for a period of twenty-five years.

Tralee, which lies about two miles inland, with 42.69 inches, and Ballyheige, situated on the bay of the same name, with 36.84 for periods of six years, appear to show that the low-lying north of the county is appreciably drier than the south; it is unfortunate, however, that these records should extend over so short a period and that further data from this portion of Kerry are not available, the large districts of Castleisland, Ardfert, Listowel, Tarbert, &c., being apparently without observers.

In the following comparative tables, average annual rainfalls are given, first from various localities in Kerry, next from the wettest known spots along the west coast, followed by five records from the east side of Ireland, three of them lowland and two mountain, for comparison with Mangerton in Kerry. All the figures are taken from *Symons's British Rainfall, 1882-1906* inclusive, except those for Lickeen for which the years are from 1907, when these records were begun, to 1913, both inclusive.

KERRY.

Locality	Average yearly rainfall Inches.	Years observed	Height above sea of gauge Feet	Observations
Mangerton, Killarney	97.40	15	1,760	South Kerry, inland, mountain.
Gearhameen, Upper Lake, Killarney	87.36	17	75	South Kerry, inland, lowland.
Lickeen, Glencar	77.39	7	60	South Kerry, inland, lowland.
Derreen, Kenmare Bay	68.68	25	74	South Kerry, coast.
Dingle	57.86	9	20	West Kerry, coast.
Valencia	56.74	25	12	South Kerry, coast.
Woodlawn, Killarney	54.90	25	96	Mid Kerry, inland.
Waterville	48.62	14	86	South Kerry, coast.
Darrynane	48.43	17	13	South Kerry, coast.
Tralee	42.69	6	25	North Kerry, near coast.
Ballyheige	36.84	6	60	North Kerry, coast.

WEST OF IRELAND.

Kylemore, Co. Galway	76.37	24	105	North Galway, 5 miles inland.
Achill, Mayo	53.42	5	39	Island off West Mayo.
Belmullet, Mayo	48.85	21	40	North Mayo, coast.
Killybegs, Donegal	58.36	19	30	South Donegal, coast.

EAST OF IRELAND.

Wexford town	36.32	20	50	Coast, south-east.
Glasnevin, Dublin	27.82	25	65	Near coast, centre east.
Bushmills, Antrim	37.28	25	33	Near coast, north-east.
Divis Mountain, near Belfast	36.25	6	1,350	Mountain, near coast.
Mourne Mountain (Windy Gap)	54.20	3	1,625	Mountain, near coast.

The tables given above show that parts of South Kerry receive, so far as at present known, the heaviest rainfall in Ireland, exceeding that of any other locality on the west coast and far exceeding any lowland locality on the east of Ireland; in fact the greater portion of lowland South Kerry appears to receive a rainfall in excess of that received at an elevation of 1,625 feet on the Mourne Mountains, a locality long regarded as exceptionally wet for the east side of Ireland. This excessive rainfall in Kerry is spread over a great portion of the year; thus an annual average of 244 wet days was registered at Valencia as the result of 25 years' observations, the same number at Darrynane for 17 years' observations, 224 at Killarney and 203 at Derreen for 24 and 25 years respectively, a "wet day" according to Symons being one on which at least .01 inch of rain was registered.

From some botanical points of view, however, the variations

in the temperature of a locality are of even greater importance than the amount of rain which it receives. A single excessive fall of the temperature for instance, even for a short period, may completely destroy an established alien which has flourished for many years with average winters. It is not so much the possession of a high or low mean annual temperature that determines or limits the vegetation in any district as the lowest actual temperature occurring there. In this respect Kerry owes a great deal to its geographical position. To what exact cause the mildness and equability of the winters on the west coast of Ireland is really due appears to be a question on which expert opinion is much divided. Many still pin their faith to the warming influence of the Gulf Stream. Others hold that this influence does not extend so far as the Irish shores, and that the warming is done by a great oceanic circulation which carries the cold polar waters southward underneath a northward flow of warm water from the equator.* While yet another and more recent authority, Mr. Dickeson in the *Quarterly Journ. Roy. Meteorol. Soc.* for Oct. 1899, contends that "the mild winters of our western coasts are not due to the heating of the air by contact with a surface of warm water brought by a current from warmer regions . . . but to the fact that the air has itself come from these warmer regions, and is charged with abundant moisture, which sets free vast quantities of heat through condensation."

While the exact cause appears to be in doubt, the fact remains that for each of the seven coldest months in the year, October to April inclusive, the temperature of the air at Valencia has a higher monthly mean than at any other spot in the British Isles, the Scilly and Channel Islands alone excepted. The result of thirty years' observations gives Valencia and other portions of west Kerry an average mean for January, the coldest month of the year, of 44.5° F., a January mean shared by Hyeres, Cannes, Mentone and other favourite winter resorts of the Mediterranean Riviera. The hottest month of the year at Valencia is August with a mean of 59.5° F., which gives for the west of the county an average annual range of only fifteen degrees. The annual mean for this locality is 51.1° F., a figure not equalled by any other record in Ireland, and only exceeded in the British Isles by Scilly with 52.1° and Jersey with 51.7° F. This comparative equability of the Kerry climate forms one of its most charac-

* *Vide* "Atlantic Ocean" by Dr. W. B. Carpenter, *Encyclop. Brit.*, 9th Ed., Vol. iii., p. 25.

teristic features ; in fact it would be difficult to find a better example than is given here of an *insular* as compared with a *continental* climate, which latter type may be epitomised as a cold winter, a hot summer and a small rainfall.

As already stated, however, it is not so much the average range of the temperature that influences vegetation as the exceptional falls of the mercury occurring perhaps only at intervals of many years. Here also the consistent mildness of west Kerry is very well marked. The lowest temperature recorded at Valencia during the thirty years 1871 to 1900, was 20° F. during the winter of 1893–1894 ; it sank to 22° during the exceptionally cold winter of 1894–1895, the longest and one of the severest spells of cold known to the British Isles in recent years ; only on four other occasions during these thirty years did the temperature sink as low as 25°, namely—

1873 to 25°		1886 to 24°
1881 „ 24°		1888 „ 25°

The protecting influence of the coast appears to diminish very considerably even a short distance inland. This is well seen when comparing the above minima with those registered by Archdeacon Wynn at Killarney, 35 miles east of Valencia, but less than 20 from the nearest sea at Dingle Bay ; here, between the years 1885 and 1900, the thermometer descended below 20° F. on several occasions, the lowest records being—

15.3° on 18 Dec. 1886		14.5° on 12 Jan. 1892
18.0° „ 19 Dec. 1887		13.5° „ 6 Jan. 1894
16.8° „ 6 Jan. 1891		15.0° „ 5 Feb. 1895*

No Kerry temperatures, however, at similar elevations, are known that can be compared with those recorded in the Phoenix Park, Dublin, where the mercury fell to 6.8° F. in 1882, to 9.0° in 1894, while it again descended to 9.0° in Jan. 1895 and to 8.0° in Feb. of the same year.

Considering the excessive number of wet days registered at Valencia, an annual average of 244, the amount of bright sunshine recorded there is somewhat surprising, the yearly average for 20 years amounting to 1485.5 hours, or 34 p.c.

* The winters of 1878–1879 and 1879–1880 were also exceptionally severe at Killarney. Skating took place on the Lower Lake for several days during both these winters, while woodcock and snipe were found dead in large numbers or were so weakened as to be easily killed by peasants with sticks. On the other hand plants and shrubs did not appear to suffer much, falls of snow effectually protecting them.

of the total possible ; this compares very favourably with the 1534.3 hours, or 35 p.c., registered in Dublin, where the wet days average 180 only. It is interesting, moreover, to note that from February to June, the growing period of the year, the monthly averages of sunshine in Valencia either equal or exceed the corresponding averages in the Phoenix Park, Dublin.

To sum up ; the chief peculiarities of the Kerry climate are, the excessive rainfall in the south and west, the mildness of its winters, the absence of excessive falls in the temperature, and finally the comparative equability of the winter and summer temperatures, the latter very rarely indeed exceeding a maximum of 80° F. The result of the winter mildness is seen in the number of species that flower throughout these months, as well as in the presence of such alien plants as the *Fuchsia* which in several parts of south and west Kerry is thoroughly established, forming permanent hedges along the roadsides and growing with great luxuriance.

V. CHARACTERISTICS OF THE FLORA.

The flora of Ireland may be taken as including about 1,150 species and subspecies of native or naturalized plants ; of this total 840, or less than three-quarters, are sufficiently established in Kerry to be included in its flora. These figures are arrived at by accepting Mr. Praeger's distributional list in full as given in his *Irish Topographical Botany*. If, however, for purposes of comparison with other counties, we follow the system suggested by him in the footnote to p. xliii in the *Introduction* to that work, by which a few very natural groups such as *Rubus*, the *Hypnoid Saxifrages*, &c., are treated as aggregates and certain subspecies included in the distribution of their allied species, the Irish total sinks to about 1,025 and that for Kerry to 762.

This total of 762 is somewhat less than might have been expected in a county possessing an area of 1,853 sq. miles, with a great extent of coast line, mountain-range and lake, and with lowlands of very varied conditions ; it contrasts indeed rather unfavourably with the totals enumerated for some of the Irish counties on the east coast. Thus Dublin, with an area of 354 sq. miles, has a total of 754,* and although less than a fifth the size of Kerry has a flora almost equalling it in species. Farther

* The figures here given are calculated on Mr. Praeger's system above referred to, and are revised to July 1916 inclusive.

north, Down with 957 sq. miles has 768, and Antrim with 1,191 sq. miles a total of 777. This comparison, however, is less unfavourable when some of the western maritime counties are selected. Thus Donegal with 1,870 sq. miles has 752, both its area and flora being almost the same as Kerry; Clare with 1,348 sq. miles has a total of 773, and Cork, much the largest county in Ireland with 2,890 sq. miles, has 797. It will be seen from these figures that in comparing equal areas the flora of the west of Ireland is less varied, or in other words, poorer in species than the east. The botany of all these counties has now been pretty well investigated and it is unlikely that any additions to their plant lists will materially alter the figures given above. The real element of uncertainty, however, in all these numerical comparisons lies in the number of aliens admitted by different observers to the various county lists. Each one decides according to his personal bent the precise amount of naturalization that entitles an alien plant to be definitely included in the flora of a county, and probably no two observers would quite agree as to the exact standing of many of the claimants.

An examination of the 762 species and subspecies included in the Kerry flora shows that while 652 of them may be regarded as native, 110, or just about one-seventh of the total, are classed as non-native, including in this latter group plants described as *Denizens*, *Colonists* or *Aliens*.* If these figures are compared with those given in the *Flora of Dublin*, a typical east coast county, it will be found that 162 out of 754, or rather more than a fifth of the whole, are included under these three heads. The comparative smallness of this introduced group in Kerry is a suggestive feature in its flora. No doubt the relative rarity of light soils and the smaller extent of cultivation in this county, amounting to about 15 p.c. of the total area as compared with 30 p.c. in Dublin, accounts for portion of this difference, more especially in the *Colonist* group, but probably as potent a cause is to be found in the excessive humidity of the Kerry climate which appears in some way to repel this non-native group as strongly as it attracts the northern forms among the native flora.

The profound influence exercised by humidity is clearly seen in the proportions which certain Orders, such as the *Cyperaceæ*, *Filices* and *Naiadaceæ*, bear to the Kerry flora when compared with the proportions borne by the same Orders to the floras of drier districts. In the following table the percentages for these

* For definitions of these terms see p. lxx of this Introduction.

Orders are given for Kerry, the wettest known county of western Ireland, for Dublin, probably the driest of its east coast districts, for Kent, a maritime county clearly showing the influence of its drier continental neighbour while still retaining insular characters, and finally for Europe. The figures are calculated for Kerry from this flora, for Dublin from Mr. Colgan's *Flora of Dublin* 1904, for Kent from Messrs. Hanbury and Marshall's *Flora of Kent* 1899, and for Europe from Nyman's *Conspectus*.

	Kerry	Dublin	Kent	Europe
Cyperaceæ	8.27	6.43	5.38	2.52
Filices	3.81	2.79	2.08	0.78
Naiadaceæ	3.28	2.39	1.82	0.52
Total	15.36	11.61	9.28	3.82

In addition to its poverty in introduced plants, Kerry, having regard to its extended sea coast, is unexpectedly deficient in its maritime group, only 60 species out of a total for Ireland of 80 being known to occur in the county. Of this 60 rather more than half are true *halophytes* or salt-lovers, a few more, like *Glaucium flavum*, *Apium graveolens*, *Scirpus maritimus*, *Carex arenaria*, &c., while almost exclusively maritime in Kerry are known in one or two inland stations either there or elsewhere in Ireland, and appear to be as much drawn to the neighbourhood of the sea by the nature of the habitats found there as by any need of salt. This deficiency in maritime species is certainly not due to any want of suitable localities; the cause is most probably to be found in the very exposed nature of the Kerry coast and in the strength of the Atlantic gales which exercise a most destructive influence especially on the sandhills and their flora. Dr. Smith in his *History of Kerry, 1756*, gives a quaint account of the violence to which these storms occasionally attain—"A few winters ago there happened a great storm in this place [Inch sandhills, Dingle Bay] whereby the sand was blown about so furiously, that a large herd of cows were driven off the peninsula, the poor animals chusing rather to betake themselves to the enraged ocean, where many of them were drowned, than to be overwhelmed on shore. Several of them swam across the bay, near two miles, through the highest waves imaginable, and saved their lives." Similar storms in more recent times have probably caused the destruction of two very interesting plants in Kerry as neither *Lathyrus maritimus* nor *Diotis maritima* has been recently seen in its recorded sandhill station.

If the Kerry flora be divided amongst Watson's well-known *Types of Distribution*, the following result is obtained—

482 belong to his British* Type	32 to the Scottish & Intermediate Types
135 " " English "	20 " Highland Type
31 " " Atlantic "	5 " Germanic "

These numbers give a total of 705, leaving 57 Kerry plants unclassified by Watson in his *Cybele Britannica* which was primarily written to show the distribution of species in Great Britain.

The *British* and *English Type* plants, which include those spread throughout Great Britain and those seen chiefly in South Britain respectively, form, as might be expected, the bulk or ground-work of the Kerry flora, no less than 617 out of the 705 classed by Watson coming under these two heads. Most of these plants are as abundant in Kerry as they are elsewhere in the British Isles. But even among the *British* or most ubiquitous type, several plants, widely distributed in Ireland, prove to be unexpectedly rare or altogether absent in Kerry. Amongst the members of this type not yet seen in the county may be mentioned—

Papaver Argemone	Lycopsis arvensis	Carex paludosa
Geranium sanguineum	Lamium album	Glyceria aquatica
Tragopogon pratensis	Scleranthus annuus	Agropyron caninum
Gentiana Amarella	Scirpus sylvaticus	

While amongst those which are very rare in Kerry are included—

Ranunculus auricomus	Trifolium medium	Lamium amplexicaule
Fumaria officinalis	T. arvense	Chenopodium Bonus-
Hypericum perforatum	Pimpinella Saxifraga	Henricus
Malva rotundifolium	Lithospermum officinale	Carex acuta
Ononis repens	Linaria vulgaris	Poa nemoralis

Even such a universally distributed species as *Anthriscus sylvestris* proves to be either rare or absent over the greater portion of the county.

Of Watson's *English Type* plants, the following although widely distributed in Ireland, are unexpectedly rare in Kerry, several of them, indeed, occurring in one station only—

Ranunculus Lingua	Leontodon hispidum	Allium vineale
Geranium columbinum	Carduus tenuiflorus	Lemna trisulca
Ceanothe Phellandrium	Chlora perfoliata	Potamogeton lucens
Dipsacus sylvestris	Rumex Hydrolapathum	Carex disticha

* In all cases where Watson has combined two of his types, the plant so described is included under the first named or predominant type.

Amongst the plants of this type not yet seen in Kerry, though occurring in one or more of the adjoining counties, are—

Thalictrum flavum	Myriophyllum verticillatum	Euphorbia exigua
Ranunculus circinatus	Carlina vulgaris	Orchis Morio
Nasturtium amphibium	Cynoglossum officinale	Butomus umbellatus
Viola hirta		Glyceria distans
		Hordeum (genus)

Of the 62 species which form Watson's *Atlantic Type*, or plants seen chiefly in West England, 35 are present in Ireland, and the great majority, or 28 * of these, occur in Kerry. This group, however, is not really *Atlantic* in its distribution as regards Ireland, no less than 27 out of the 35 reaching its east coast to which indeed one of the number, *Scilla verna*, is confined. As already stated, these terms were selected by Watson to illustrate the peculiarities in the distribution of plants in Great Britain, and, so far as Ireland is concerned, the term *Norman* proposed for this group by Prof. Edward Forbes is much more applicable. The following members of this type are present in Kerry—

Senebiera didyma	Carum verticillatum	Euphorbia portlandica
Raphanus maritimus	Crithmum maritimum	Scirpus Savii
Viola Curtisii	Rubia peregrina	Rhynchospora fusca
Hypericum	Inula crithmoides	Hymenophyllum
Androsæmum	Wahlenbergia	tunbridgense
H. elodes	hederacea	H. unilaterale
Lavatera arborea	Statice occidentalis	Trichomanes radicans
Linum angustifolium	Sibthorpia europæa	Asplenium lanceolatum
Erodium moschatum	Bartsia viscosa	Lastrea æmula
Cotyledon Umbilicus	Pinguicula lusitanica	
Sedum anglicum	Euphorbia Paralias	

Three other Kerry plants, *Euphorbia hiberna*, *Simethis bicolor* and *Elisma natans*, although classed by Watson as *Local Atlantic*, really belong to this group in Ireland; the *Simethis* is especially interesting as being one of the few plants in Ireland peculiar to Kerry. Another species, *Helianthemum guttatum* not yet found in Kerry may be expected to occur on one or more of its numerous headlands or islets, filling in the gap which exists between its known stations on Three Castle Head, Co. Cork, and on Inishbofin, Co. Galway.

The distribution in the county of its 31 *Atlantic Type* plants is very irregular. Some like *Hypericum elodes*, *Carum verticillatum*, *Bartsia viscosa*, *Euphorbia hiberna* and *Lastrea æmula*

* The seven absentees are—*Meconopsis cambrica*, *Matthiola sinuata*, *Erodium maritimum*, *Asparagus officinalis*, *Scilla verna*, *Bromus madritensis* *Adiantum Capillus-Veneris*

are among its most abundant and characteristic plants. Others like *Wahlenbergia hederacea*, *Sibthorpia europæa*, *Simethis bicolor*, *Rhynchospora fusca*, &c., although usually abundant where they occur, are more or less local, while some like *Inula crithmoides*, *Statice occidentalis*, *Elisma natans* and *Asplenium lanceolatum* are among its very rarest plants. Eight species, a quarter of the total, are strictly maritime in the county, while *Senebiera didyma* is certainly introduced, and *Erodium moschatum* probably so. It is interesting to note that, with the exception of *Rhynchospora fusca* and *Hymenophyllum unilaterale*, all the members of this group occur in Northern Spain, some of them like the *Wahlenbergia*, *Sibthorpia*, *Simethis*, &c., being abundant there over large areas.

Watson's *Germanic Type*, or plants found chiefly in East England, is very poorly represented in Kerry as indeed it is throughout Ireland. Out of a total of 102 for Great Britain, Ireland yields but 14, and of these only the following five are found in the county :—

<i>Galium erectum</i>	<i>Hippophæ rhamnoides</i>	<i>Carex Bœnninghausiana</i>
<i>Hypopithys multiflora</i>	<i>Orchis pyramidalis</i>	

Of this scanty list only *Orchis pyramidalis* forms a conspicuous feature in the Kerry flora with a wide though irregular calcicole distribution. It should be noted that if *Carex Bœnninghausiana* is really a hybrid, it should not be included in this list. Two other members of this group, *Crepis biennis* and *Bromus erectus* have been recorded for the county but have now become extinct.

Of Watson's *Scottish* and *Intermediate Types*, or plants found chiefly in North and Mid Britain, 62 species out of a total of about 100, occur in Ireland, and of these 32 have found their way to Kerry ; they are—

<i>Thalictrum minus</i> (rare)	<i>Empetrum nigrum</i> (common)
<i>Sagina subulata</i> (rare)	<i>Salix pentandra</i> (introduced & rare)
<i>Vicia sylvatica</i> (very rare)	<i>Listera cordata</i> (rare)
<i>Prunus Padus</i> (introduced)	<i>Habenaria albida</i> (rare)
<i>Rubus saxatilis</i> (very local)	<i>Allium Scorodoprasum</i> (rare)
<i>Saxifraga hypnoides</i> (local)	<i>Potamogeton nitens</i> (rare)
<i>Drosera anglica</i> (rather common)	<i>P. prælongus</i> (very rare)
<i>Callitriche autumnalis</i> (very local)	<i>Eriocaulon septangulare</i> (local)
<i>Galium sylvestre</i> (very rare)	<i>Scirpus rufus</i> (rare)
<i>Antennaria dioica</i> (rare)	<i>Carex dioica</i> (rather rare)
<i>Crepis paludosa</i> (very rare)	<i>C. limosa</i> (rather common)
<i>Lobelia Dortmanna</i> (common)	<i>C. filiformis</i> (rare)
<i>Pyrola minor</i> (very rare)	<i>Festuca sylvatica</i> (very rare)
<i>Orobanche rubra</i> (very rare)	<i>Polypodium Phegopteris</i> (rare)
<i>Utricularia intermedia</i> (rare)	<i>Equisetum hyemale</i> (very rare)
<i>Pinguicula vulgaris</i> (rare)	<i>E. variegatum</i> (very rare)

As will be seen from the distribution given in the foregoing list, few of the species enumerated form a conspicuous element in the Kerry flora. Fully a third of the number, indeed, are restricted to one or two localities in the county, while those that occur in any abundance are chiefly aquatic or moisture-loving plants, such as *Lobelia Dortmanna*, so characteristic of the Kerry lakes, *Eriocaulon septangulare*, *Drosera anglica*, *Scirpus rufus* and *Carex limosa*. This hydrophytic tendency in the *Scottish Type* in Kerry is very well marked, 14 out of the 32 species which occur being included under this heading.

Several other members of this group present in other parts of Ireland are not definitely known to occur in the county. Amongst these may be mentioned—*Saxifraga aizoides*, *Andromeda polifolia*, and *Polypodium Dryopteris*, all with old but unrefreshed records for Kerry, and *Parnassia palustris*, the last named is widely distributed and generally abundant throughout Ireland, but is still unrecorded for Cork, Kerry and Co. Down.

Watson's remaining group, his *Highland Type*, or plants found chiefly on or about mountains, is proportionately as well represented in Kerry as the preceding. Out of a total of 67 for Great Britain, 41 occur in Ireland, and of these 20 species and 2 subspecies are found in the county. That nearly a third of the plants representing the extreme boreal element in the British flora should reach so far south as 52° in this county is remarkable, and is only partly accounted for by the fact that Kerry possesses the highest mountain ranges in Ireland. As elsewhere * pointed out, these mountains are so placed that latitude and the moderating influence of the adjacent ocean have combined to bring about, so far at least as temperature is concerned, probably the minimum of alpine conditions which could be produced anywhere in Ireland by mountain masses of equal elevation.

That a moist equable climate in some way favours the existence of northern forms is clearly seen when the number of *Scottish* and *Highland Type* plants occurring on the humid west side of Ireland is compared with the number found on the dry east side, allowances being made for differences in the elevation or latitude of the areas compared. Thus Kerry possesses 54 plants belonging to these two types, whilst Wicklow has only 36, and although the mountain ranges are more numerous in Kerry and rise about 400 feet higher,

* *Introduction to Cyb. Hibernica Ed. II.*, p. xliii.

Wicklow lies a degree further north. Again, Clare on the west coast, lying practically in the same latitude as Wicklow, has a total of 47 to the latter's 36, although its elevated land is comparatively scanty and nowhere rises higher than 1,746 feet to Wicklow's maximum of 3,039 feet. Still further north, Galway in the west has a total of 65 to Down's 49 on the east coast, although the latter county lies about a degree further north and contains mountains rising to 2,796 feet compared to Galway's highest of 2,395 feet.

The following are the *Highland Type* plants present in Kerry :—

<i>Thalictrum alpinum</i>	<i>Hieracium anglicum</i>	<i>Carex aquatilis</i>
<i>Subularia aquatica</i>	<i>H. iricum</i>	<i>Deschampsia alpina</i>
<i>Draba incana</i>	<i>Polygonum viviparum</i>	<i>Poa alpina</i>
<i>Alchemilla alpina</i>	<i>Oxyria digyna</i>	<i>Aspidium Lonchitis</i>
<i>Saxifraga stellaris</i>	<i>Salix herbacea</i>	<i>Asplenium viride</i>
<i>Sedum Rhodiola</i>	<i>Juniperus nana</i>	<i>Lycopodium alpinum</i>
<i>Galium boreale</i>	<i>Carex rigida</i>	<i>Isoetes lacustris</i>
<i>Saussurea alpina</i>		

It is important to note that 8 out of these 22 plants, or rather more than a third of the group, lose their strictly alpine character in the county, as indeed they do elsewhere in west Ireland, and descend to sea level or nearly so ; thus—

<i>Subularia aquatica</i>	descends to	50 feet in Caragh Lake.
<i>Sedum Rhodiola</i>	"	actual sea-level in several places.
<i>Galium boreale</i>	"	65 feet by the Killarney Lakes.
<i>Hieracium anglicum</i>	"	70 feet on rocks by the Killarney Lakes.
<i>H. iricum</i>	"	ditto ditto
<i>Juniperus nana</i>	"	ditto ditto
<i>Carex aquatilis</i>	"	55 feet by Caragh Lake
<i>Isoetes lacustris</i>	"	sea-level in Waterville Lake, &c

Another member of this group, *Saxifraga stellaris*, finds its lowest level for Ireland in the county, descending to 450 feet in Cottoner's valley on the west side of the Reeks.

The chief characteristic, however, of the Kerry flora, and one that gives it an exceptional interest, is the presence in the county of several native species peculiar in the British Isles to Ireland. Six of these plants are found in the county, often in great abundance, and although they all spread beyond its boundaries, Kerry may be regarded as their headquarters in Ireland ; they are—

<i>Saxifraga Geum</i>	<i>Pinguicula grandiflora</i>
<i>S. umbrosa</i>	<i>Sisyrinchium angustifolium</i>
<i>Arbutus Unedo</i>	<i>Juncus tenuis</i>

These six species are very unequally distributed in Ireland, for while the *Arbutus*, *Saxifraga Geum* and *Juncus tenuis* are almost confined to the southern half of Kerry and the adjoining portion of west Cork, the *Pinguicula* is found over an area embracing the larger portion of both these counties, the *Sisyrinchium* has a range of fully 220 miles, occurring at intervals from Schull in Co. Cork to Killybegs in south Donegal, and *Saxifraga umbrosa* extends along the south and west from Waterford to Donegal, a range which would most probably be continuous were it not for the strongly calcifuge tendency of the plant which excludes it from the limestone regions of Clare and Galway.

On examination, these six plants are found to belong to two widely separated and almost antagonistic floras although they now grow actually side by side in Kerry. The first four mentioned in the above list have their nearest headquarters to Ireland in the highlands of northern Spain and Portugal; they are distinctly southern in character and belong to the *Lusitanian* or *Cantabrian* group of the *Irish Flora*. The two last named species in the list, however, have their headquarters across the Atlantic in Canada and the northern states of America, and are essentially northern in their distribution. If to the *Sisyrinchium* and *Juncus* we add *Naias flexilis* and *Eriocaulon septangulare*, both North American plants occurring locally in Kerry as well as elsewhere along the west coasts of Ireland and Scotland, another small group is formed whose presence in Kerry involves points of interest and difficulty fully equal to those presented by the *Lusitanian* group.

All authorities appear to be in agreement as to the great antiquity of both these groups, Prof. Forbes, indeed, considered that the *Lusitanian* was the oldest element in our present flora. It probably reached Kerry along a coast-line which was continuous from Spain to Ireland, a condition of things that a rise of about 600 feet in the present level of the land would be sufficient to restore. Such a continuous coast-line is supposed to have existed during a portion of the *Pliocene* and throughout the late *Pleistocene Age*, after which period, first Ireland then Britain was cut off from the Continent by the sinking of the land so as to effectually isolate these *Lusitanian* invaders. If this remote period be accepted as the time of their arrival in Ireland, it implies the survival of these plants throughout the prolonged *Glacial* epoch when the greater portion of the British Isles was covered by enormous glaciers the marks of which are still abundantly visible even as far south as Kerry. By most botanists this *Glacial* period has

been taken as implying a degree of Arctic cold that must have been fatal to all these *Lusitanian* plants; and even allowing that the *mean* annual temperature of this period as some have maintained may not have been so much lower than at present, it is hard to believe that such comparatively delicate forms as the *Arbutus* could have withstood such exceptional falls of the temperature as must have occurred during the winters of this *Great Ice Age*.

To account for their survival, several theories have been suggested. One, that while a large number of species perished, the plants mentioned above, largely marginal in their distribution, survived in some favoured spots along the western seaboard where a climate of less severity prevailed. Another suggested solution of the difficulty is that these plants may have survived in a milder climate on some land lying further to the west or south-west which has since been submerged. Finally, it is held by some recent authorities that the excessive severity usually attributed to this glacial period is quite unwarranted, and that the conditions then present were such as permitted the existence of a temperate flora and fauna in many localities in the south and west of the British Isles, the presence of the vast glaciers being accounted for by an increase in the general humidity of Europe with a slight lowering of the mean temperature. Whatever be the explanation, and all are beset with difficulties, it seems most probable that such a survival of the *Lusitanian* group has actually taken place.

Of the four *Lusitanian* species mentioned above as restricted to Ireland in the British Isles, one at least and probably two, appear to be dying out. The distribution of both *Saxifraga umbrosa* and *Pinguicula grandiflora* is too extensive for any one observer to make a definite statement as to their recent increase or decrease in Ireland; but of the *Arbutus*, limited as it is to a small area in Kerry and an adjoining county, it may be said with some confidence to be a decadent species. The cause of this decrease in a plant which almost certainly survived the *Glacial* period, can hardly be some increasing severity of the climate. That it suffered very seriously about 200 years ago from the destruction of trees for smelting purposes is well known and is more than once referred to in Dr. Smith's *History of Kerry* published in 1756. It is most probable that this decrease in the *Arbutus* furnishes an illustration of Mr. Moffat's interesting theory of the tendency of Island floras and faunas to diminish * through lack of immigrants to fill the gaps caused

* *Vide Irish Nat.* 1907, p. 137.

by exceptional destructive agencies. At present in some of the outlying stations of *Arbutus*, the trees may be counted almost on the fingers of one hand, and amongst these trees will probably be found one or two more or less moribund examples. The range of this species in Ireland would appear to have diminished very considerably even in comparatively recent times, for its Irish name is found as a component of place-names in Clare and even in Mayo, the latter more than 100 miles north of its present limit.

In addition to the *Arbutus*, *Saxifraga Geum* also appears to find present conditions in Kerry unfavourable to its increase. In this case it may be that the closely allied and more pushing *S. umbrosa* is crowding it out, or that its place is being gradually taken by forms produced by the hybrid union of these species and inheriting the more hardy qualities of *S. umbrosa*.

Before leaving this most interesting group, it may be well to repeat that the *Lusitanian* element in the Kerry flora is not confined to the four plants mentioned above. Nearly all the species included under Watson's *Atlantic Type* present in Kerry are also abundant in northern Spain and Portugal, and probably reached this county with their companions in pre-glacial times. Foremost amongst these may be mentioned *Simethis bicolor* which, indeed, would be included in the list of plants peculiar in the British Isles to Ireland were it not for its occurrence near Bournemouth, where, however, it maintains a most precarious existence owing to the spread of building operations. It is abundant on the coasts of northern Spain and occurs along the western seaboard of France as far north as Normandy. Others that may be named are *Sibthorpia europæa*, *Wahlenbergia hederacea*, *Trichomanes radicans*, &c. Like the *Lusitanian* group, these plants have a markedly *discontinuous* distribution, a form of distribution which is generally included among the signs of great antiquity.

Much that has been already said of the *Lusitanian* group may be repeated for the North American plants present in Kerry *Sisyrinchium angustifolium*, *Juncus tenuis*, *Naias flexilis* and *Eriocaulon septangulare*. They also show signs of great antiquity and of a pre-glacial arrival in Ireland. In this case, however, it is the survival of a hardy northern type, not of a rather delicate southern group that we have to deal with. The line of invasion of these northern plants must have been in a direction opposite to that followed by the *Lusitanian* group, and most probably was effected along a coast or chain of islands which united Ireland with America through Green-

land, Spitzbergen, Scandinavia and Scotland, or by a shorter route which joined Ireland and Greenland with Iceland and the Faroe Islands.*

Amongst the 762 plants included in the Kerry flora, only three native phanerogams and a *Nitella* appear to be unknown elsewhere in Ireland, they are *Sibthorpia europæa*, *Utricularia Bremii*, *Simethis bicolor* and *Nitella confervacea*. All four are local, but with the exception of the *Utricularia*, where they occur do so rather plentifully. An introduced plant *Polygonum sagittatum*, also is unknown elsewhere in Ireland, and, indeed, appears to be quite confined in Europe to one locality in Kerry outside its home in North America. A few plants like *Epipactis atroviridis*, *Carex hibernica* and several of the *Hieracia* and *Rubi* forms are also as yet unknown outside this county, but the range of these critical plants is still too imperfectly ascertained in Ireland to enable us to say with any confidence that they are really restricted to Kerry. *Lathyrus maritimus* also had its only Irish station in this county, unfortunately it appears to be now extinct there.

Kerry has its full share, over 26 per cent, of rare Irish plants taking Mr. Colgan's definition of a rare species for Ireland as one which occurs in less than 10 of the Vice Counties of *Irish Topog. Bot.* Passing over those included in the Lusitanian and American groups, the following are the most interesting of the rare Irish species found in Kerry :—*Carum verticillatum* and *Bartsia viscosa*, both abundant over the greater portion of the county ; more restricted in range are *Wahlenbergia hederacea*, *Microcala filiformis* and *Sibthorpia europæa* ; while still more restricted but usually plentiful in one or more stations, are *Draba incana*, *Alchemilla alpina*, *Galium sylvestre*, *Saussurea alpina*, several of the *Hieracia*, *Polygonum sagittatum*, *Simethis bicolor*, *Zostera nana*, *Scirpus parvulus*, *Carex Boëninghausiana*, *Aspidium Lonchitis*, *Pilularia globulifera*, *Chara canescens* and *Nitella confervacea*. Some of these rare species occur but very sparingly indeed, amongst them being *Thalictrum alpinum*, *Teesdalia nudicaulis*, *Hypopithys multiflora*, *Orobanche rubra*, *Pyrola minor*, *Utricularia Bremii*, *Polygonum viviparum*, *Rumex maritimus*, *Elisma natans*, *Asplenium lanceolatum* and *Lycopodium inundatum*.

* The only other North American plant peculiar in the British Isles to Ireland is *Spiranthes Romanzoffiana*. This Orchid has not yet been found in the county but most probably occurs there, one of its recorded stations lying less than five miles from the Kerry boundary.

The distribution of the 762 plants included in the Kerry flora amongst the nine botanical Districts into which the county has been divided, is as follows :—

360, or just over 47 p.c., are known to occur in all 9 Districts.			
48 occur in 8 Districts only.		43 occur in 4 Districts only.	
73	7	30	3
55	6	47	2
43	5	63	1

Amongst the plants known to occur in one division only, are such unexpectedly rare species in Kerry as *Ranunculus Lingua*, *Pimpinella Saxifraga*, *Oenanthe Phellandrium*, *Rumex Hydrolapathum*, *Allium vineale*, *Lemna trisulca* and *Potamogeton lucens*, the first four indeed being restricted to single localities.

VI. INFLUENCE OF SOILS ON PLANTS.

The influence of certain ingredients in the soil on the distribution of plants has been recognised in a general way for many years, and several references to this predilection of plants for particular soils appear in the *Cybele Hibernica* 1866. The elaborate researches of Ch. Contejean, which were finally embodied in his *Geographie Botanique* published in Paris in 1881, however, directed general attention to this interesting subject which was first seriously taken up in Ireland by Mr. N. Colgan, many of his results being published in *Cyb. Hib. Ed. II. 1898*.

M. Contejean's investigations showed clearly that salt and lime were by far the most important soil ingredients in regard to their influence on the distribution of plants, and that for all practical purposes it is the presence or absence of these in the soil which is the predominating and in some cases the sole influence deciding the presence or absence of certain plants in given area. The influence exerted by salt on the vegetation is much more pronounced than that shown by lime; and while both act much more powerfully by repulsion than by attraction, the repulsion exerted by salt is far more general, totally excluding a proportion of the flora estimated by Contejean as at least nine-tenths of the whole, whereas lime, at the most, repels a bare half, a large number of species being quite indifferent to its presence.

The influence exerted on the Kerry flora by salt soils has already been briefly referred to when treating of the maritime plants present in the county, and it now only remains to

examine the influence exerted by lime ; this, however, will be found to be very widespread as Calcareous formations occur at intervals nearly throughout Kerry.

The use of the terms Calcicole and Calcifuge as applied to plants is now so well understood that no explanation of their meaning need be given here. It is well, however, before enumerating the plants which show the predilection or aversion denoted by these terms, to repeat that the presence of an appreciable amount of lime in a soil exerts a repulsive influence on the Calcifuge group which is much stronger than the attraction which it exercises on the calcicole, and that in neither case is this aversion or attraction absolute. Thus *Saxifraga umbrosa* and *Erica cinerea*, two of the most pronounced calcifuge plants in Kerry may be seen occasionally growing among bare limestone rocks.

Calcicole plants may also be found in non-calcareous districts on walls, bridges, ruins, &c., the desired lime being furnished by the mortar employed in their construction. Thus in one large non-calcareous area, the only station at present known for *Ranunculus bulbosus*, a plant decidedly calcicole in Kerry, is on a river bridge where two or three plants have been noticed for several years. Owing chiefly to the presence of comminuted shells, sandhills also contain the lime necessary for this group, and in one or two of the nine districts into which the county has been divided for the purposes of this flora, they form the chief calcicole strongholds.

The following tables give the plants which show marked Calcicole or Calcifuge tendencies in Kerry :—

CALCICOLE PLANTS.

<i>Ranunculus bulbosus</i>	<i>Anthyllis Vulneraria</i>	<i>Origanum vulgare</i>
<i>Aquilegia vulgaris</i>	<i>Rubus saxatilis</i>	<i>Calamintha officinalis</i>
<i>Cheiranthus Cheiri</i>	<i>Pyrus rupicola</i>	<i>Parietaria officinalis</i>
<i>Barbarea vulgaris</i>	<i>Saxifraga tridactylites</i>	<i>Spiranthes autumnalis</i>
<i>Arabis hirsuta</i>	<i>Pimpinella magna</i>	<i>Epipactis latifolia</i>
<i>Erophila verna</i>	<i>P. Saxifraga</i>	<i>Orechis pyramidalis</i>
<i>Sisymbrium Alliaria</i>	<i>Rubia peregrina</i>	<i>Ophrys apifera</i>
<i>Reseda Luteola</i>	<i>Galium boreale</i>	<i>Juncus glaucus</i>
<i>Arenaria trinervia</i>	<i>G. sylvestre</i>	<i>Carex muricata</i>
<i>A. serpyllifolia</i>	<i>Asperula cynanchica</i>	<i>C. divulsa</i>
<i>Linum angustifolium</i>	<i>Tussilago Farfara</i>	<i>C. glauca</i>
<i>Hypericum perforatum</i>	<i>Primula officinalis</i>	<i>Trisetum flavescens</i>
<i>Geranium lucidum</i>	<i>Chlora perfoliata</i>	<i>Avena pubescens</i>
<i>Euonymus europæus</i>	<i>Lithospermum officinale</i>	<i>Briza media</i>
<i>Rhamnus catharticus</i>	<i>Verbascum Thapsus</i>	<i>Ceterach officinarum</i>
<i>Ononis repens</i>	<i>Linaria Cymbalaria</i>	<i>Asplenium Ruta-muraria</i>
<i>Trifolium striatum</i>	<i>Verbena officinalis</i>	

CALCIFUGE PLANTS.

Ranunculus Lenormandi	Carum verticillatum	Luzula maxima
R. hederaceus	Galium saxatile	L. erecta
Lepidium hirtum	Gnaphalium	Potamogeton
Viola palustris	uliginosum	polygonifolius
Polygala serpyllacea	Senecio sylvaticus	Eriocaulon septangulare
Stellaria uliginosa	Lobelia Dortmanna	Scirpus cæspitosus
Sagina subulata	Jasione montana	S. fluitans
Spergula arvensis	Wahlenbergia hederacea	Eriophorum vaginatum
Montia fontana	Vaccinium Myrtillus	E. angustifolium
Elatine hexandra	V. Oxycoccus	E. latifolium
Hypericum humifusum	Calluna vulgaris	Rhynchospora fusca
H. pulchrum	Erica Tetralix	R. alba
H. elodes	E. cinerea	Carex dioica
Radiola linoides	Centunculus minimus	C. pulicaris
Ulex Galii	Microcala filiformis	C. curta
Cytisus scoparius	Menyanthes trifoliata	C. pilulifera
Lathyrus macrorrhizus	Digitalis purpurea	C. limosa
Potentilla Tormentilla	Pedicularis palustris	C. binervis
P. palustris	P. sylvatica	Agrostis canina
Saxifraga stellaris	Utricularia minor	Deschampsia flexuosa
S. Geum	U. intermedia	Molinia cærulea
S. umbrosa	Pinguicula vulgaris	Nardus stricta
Chrysosplenium	P. grandiflora	Pteris aquilina
oppositifolium	P. lusitanica	Blechnum Spicant
Cotyledon umbilicus	Scutellaria minor	Athyrium Filix-
Sedum anglicum	Littorella lacustris	fœmina
Drosera rotundifolia	Polygonum	Lastrea Oreopteris
D. anglica	Hydropiper	L. dilatata
D. intermedia	Rumex Acetosella	Osmunda regalis
Myriophyllum	Myrica Gale	Equisetum sylvaticum
alterniflorum	Salix herbacea	Lycopodium Selago
Callitriche hamulata	Empetrum nigrum	Isoetes lacustris
Peplis Portula	Narthecium ossifragum	Pilularia globulifera
Epilobium palustre	Juncus squarrosus	
Hydrocotyle vulgaris	J. supinus	

As will be seen from the foregoing lists, Calcifuge plants number 97, or 12.73 p. c. of the county flora, and are nearly twice as numerous as those showing Calcicole tendencies. Not all these plants, however, show this repulsion or attraction in an equal degree, and an attempt has been made in the text of this flora to differentiate between those showing strongly marked proclivities and those showing them in a less pronounced degree, the former being described as Calcifuge A. or Calcicole A. the latter as Calcifuge B. or Calcicole B. While most of the tendencies shown hold true for Ireland as a whole, they all indicate primarily the habit of the plant in Kerry. A few other species such as *Geranium columbinum*, *Leontodon hispidum*, *Lycopodium inundatum*, &c., which show marked proclivities elsewhere, occur too sparingly in the county to justify any local deduction being made.

VII. THE VERTICAL RANGE OF THE SPECIES.

The vertical range of the species in a county possessing the highest mountains in Ireland is a subject of more than local interest, and it is one that has received attention from several observers for some years past. Chief amongst these must be mentioned Mr. H. C. Hart whose *Reports on the Macgillycuddy and Brandon Ranges, &c.*, form the foundation on which much subsequent work has been done. Fascinating as this investigation is to all who appreciate mountain work, a day among the Kerry cooms and cliffs but too often leaves a sense of surprise and disappointment that such tempting gullies and imposing rocks should be so poor in botanical interest. While this applies chiefly to Watson's *Scottish and Highland Type* plants, their poverty will be less surprising when it is remembered that the Kerry mountains although they include at least half a dozen separate summits exceeding 3,000 feet, owing to their latitude only reach the lowest of Watson's three Arctic zones; in fact as before stated in this *Introduction*, both by their latitude and proximity to the ocean, these mountains produce but a minimum of alpine conditions so far at least as temperature is concerned, and in spite of their great extent of elevated cliffs furnish, with but few exceptions, a meagre list of alpine plants.

Taking the Kerry flora as numbering 762 species, it will be seen from the following list that only 17 of them can be considered truly alpine in the county; to these, however, may be added the alpine forms of *Cochlearia officinalis* and *Deschampsia cespitosa* which have not been found below 1,550 feet.

VERTICAL RANGE OF ALPINE PLANTS IN KERRY.

Thalictrum alpinum	at about	2,000 feet.
Draba incana	from 2,380 to	2,550 "
Cochlearia alpina	" 1,550 "	3,100 "
Sagina subulata	" 75 "	2,300 "
Alchemilla alpina	" 2,050 "	2,800 "
Saxifraga stellaris	" 450 "	3,400 "
S. hypnoides (agg.)	" 1,500 "	3,150 "
Sedum Rhodiola	" 25 "	3,150 "
Saussurea alpina	" 1,250 "	2,800 "
Polygonum viviparum	at about	2,380 "
Oxyria digyna	from 550 "	3,150 "
Salix herbacea	" 1,800 "	3,050 "
Carex rigida	" 2,020 "	3,414 "
Deschampsia alpina	" 2,000 to	3,100 "
Poa alpina	at about	3,100 "
Asplenium viride	from 1,250 "	3,150 "
Cystopteris fragilis	" 50 "	3,150 "
Aspidium Lonchitis	" 1,400 "	2,800 "
Lycopodium alpinum	at about	2,650 "

It will be seen from an examination of the preceding list that only thirteen species and two alpine forms of lowland plants do not descend below the 500 feet level; while of those which so descend, it should be noted that *Saxifraga stellaris* finds its lowest level in Ireland at 450 feet on the west side of the Reeks, *Sagina subulata* descends to less than 100 feet near the Killarney lakes, and that *Cystopteris fragilis* is known in one or two stations at little above sea level. All three plants, however, as well as *Sedum Rhodiola*, are truly alpine in the county, for although the last named species is abundant in several places on maritime cliffs and headlands, sometimes but a few feet above actual sea level. there is a gap of 500–600 feet between these stations and its lowest mountain limit. A few more plants such as *Empetrum nigrum* and *Juniperus nana* which are alpine in parts of Ireland descend to sea level in several places in Kerry, while the following maritime species, *Silene maritima*, *Armeria maritima* and *Plantago maritima* reappear as alpine on the Kerry mountains at elevations from 1,000 feet upwards, the first and last of these, however, in but single stations.

Scanty as the Kerry alpine flora undoubtedly is, the great extent of the mountain ranges gives ample scope for testing the capabilities of the lowland flora to ascend. No other county in Ireland possesses so large an area of elevated ground; fully 600 of its 1,853 sq. miles lie above the 500 feet level, of these more than 150 exceed 1,000 feet and about 20 sq. miles the 2,000 feet level.

If the 3,414 feet of vertical height in Kerry be divided into six zones of 500 feet each with a seventh of 414, it will be found that after deducting the alpine species which do not descend in the county below 500 feet, the remaining 749 which form the lowland flora are distributed amongst these seven zones as follows:—

zones 1	2	3	4	5	6	7
0–500 ft.	501–1000	1001–1500	1501–2000	2001–2500	2501–3000	3001–3414
749	381	264	173	133	91	48

To put this list in another aspect, out of the 749 plants which form the lowland flora of Kerry, 368 as at present known fail to ascend above 500 feet; of the remaining 381, another 117 fail at or before 1,000, 91 at 1,500, 40 at 2,000, 42 at 2,500, and 43 at 3,000, leaving 48 lowland plants which are known to

VERTICAL RANGE OF THE LOWLAND FLORA.

ascend above an elevation of 3,000 feet in Kerry. The upward range of the Kerry lowland flora is shown graphically in the accompanying diagram.

The striking diminution in the flora that occurs between zones 1 and 2, amounting to a loss of nearly half the total, is not due to the climatic changes caused by a rise of 500 feet ; at this elevation such slight changes as occur exert no appreciable influence on the flora. As Mr. Colgan points out when dealing with this subject in his *Flora of Dublin*, the most important of the eliminating or diminishing causes are those connected with the physical aspects of the land. Thus within the lowest zone are included almost all of the varied sea coast habitats, most of the woods and hedgerows, the larger lakes and rivers, and all the calcareous tracts in the county. In this zone are also included the chief human influences on the flora, such as the great bulk of the agricultural operations in the county, with all the towns, mills, harbours and railways with one exception* ; these combined causes account for more than three-quarters of the lost 369. With zone 2, agriculture, which is rarely seen in Kerry much above 750 feet, almost ceases to affect the flora, most of the roads too disappear, while climatic influence now begins to assert itself. With zone 3 (1,001–1,500 feet), practically all the remaining roads are left behind, the two highest in the county being the Priestsleap road rising to 1,531 feet, and the Lackabaun road to 1,482 feet, both of them crossing the mountains on the Co. Cork boundary ; the well known Connor Hill road between Brandon Bay and Dingle reaches 1,352 feet, while several others exceed the 1,000 feet level. Even in zone 4 (1,501–2,000 feet), human influence on the flora is not quite eliminated as foot or pony tracks ascend both Brandon and Mangerton to over 2,000 feet ; the latter route is well known to Killarney tourists and reaches the level of the Punch Bowl, 2,206 feet, where ponies await the return of visitors to the summit. To this path no doubt, *Trifolium repens*, *Hieracium Pilosella* and *Urtica dioica* owe their unusual elevation, being introduced here most probably with pony fodder. Sheep, too, and a few half-wild goats, have been noticed grazing all over the Kerry mountains, even as high as the summit of Carrantuohill, 3,414 feet. With these exceptions, however, climatic influence is no doubt the dominant influence on the flora above 1,500 feet.

* The Dingle and Tralee Light Railway ascends to about 700 feet at Glounagalt where it crosses the main axis of this peninsula.

In the following list are given the 48 lowland plants which in one form or another have been found growing above the 3,000 feet level in Kerry, those printed in italics reaching to 3,414 feet, or near it, on the summit of Carrantuohill, the highest point in Ireland :—

Cardamine pratensis	Jasione montana	Carex pilulifera
Cochlearia officinalis	Campanula rotundifolia	Anthoxanthum odoratum
Viola palustris	<i>Vaccinium Myrtillus</i>	<i>Agrostis canina</i>
V. Riviana	<i>Calluna vulgaris</i>	<i>A. vulgaris</i>
Cerastium triviale	<i>Armeria maritima</i>	<i>Deschampsia cæspitosa</i>
Stellaria media	Euphrasia officinalis	<i>D. flexuosa</i>
Sagina procumbens	Melampyrum pratense	<i>Triodia decumbens</i>
Montia fontana	<i>Thymus Serpyllum</i>	Poa annua
<i>Potentilla Tormentilla</i>	<i>Rumex Acetosa</i>	<i>Festuca ovina</i>
<i>Saxifraga stellaris</i>	<i>R. Acetosella</i>	Nardus stricta
<i>S. umbrosa</i>	Empetrum nigrum	Hymenophyllum
Chrysosplenium	<i>Juncus squarrosus</i>	unilaterale
oppositifolium	<i>J. supinus</i>	Blechnum Spicant
Sedum Rhodiola	<i>Luzula maxima</i>	Cystopteris fragilis
<i>Galium saxatile</i>	<i>L. campestris</i>	Lastrea Filix-mas
Solidago Virg-aurea	<i>L. erecta</i>	<i>Lycopodium Selago</i>
Leontodon autumnalis	Carex echinata	

It will be seen on reference to the list of Kerry alpine plants that the following six species are also found above the 3,000 feet level :—

Saxifraga hypnoides (agg.)	Salix herbacea	Poa alpina
Oxyria digyna	Carex rigida	Asplenium viride

With this addition, the total number of plants known to grow in Kerry above 3,000 feet amounts to 54 or slightly over 7 p.c. of its total flora. No doubt several plants at present included in a lower zone will be found to ascend into a higher ; this applies especially to those included in the lowland zone (0–500 feet), but even in that comprised between 2,501 and 3,000 feet, the following 7 species are known to reach its limit and some of them will most probably be found to exceed it ; they are—

Alchemilla vulgaris	Scirpus cæspitosus	Poa pratensis
Saxifraga Geum	Carex pulicaris	Lastrea dilatata
Pedicularis sylvatica		

Before leaving this subject, it may be well to draw attention to the exceptional opportunities afforded by the great elevation of many of the Kerry lakes of ascertaining the capacity of aquatic plants to ascend. An examination of these high-level lakes soon impresses on the observer the fact that, within certain limits, the depth of the lake, the nature of its bed and

the form of the shore or margin have much greater influence on its vegetation than its actual height above sea level. Thus the shallow Lough Nageeha at the base of the Kerry Paps, about 1,000 feet above sea level, is, in a dry summer, a stagnant mass of *Characeæ*, with *Isoetes*, *Littorella* and one or two other plants; again, the shallow lough near the source of the Ferta river at about 1,450 feet on Teermoyle, Glenbeigh Mountains, is also filled with aquatics which include *Subularia*, *Elatine hexandra*, *Myriophyllum alterniflorum*, *Callitriche hamulata*, *Apium inundatum*, *Lobelia*, *Menyanthes*, *Utricularia minor*, *Littorella*, *Potamogeton natans*, *P. polygonifolius*, *Isoetes lacustris* and *Nitella opaca*. On the other hand, the deep Loughs Managh at 1,080 feet, and Erhagh at 1,414 feet, both in the Horse's Glen, Mangerton, are almost barren, although portions of their margins are suitable for plant life. The shallow Glas Lough at 1,550 feet on the Purple Mountain is also filled with vegetation, while the deep Lough Googh at 1,590 feet on the Reeks and little more than two miles distant, contains only *Littorella*, *Potamogeton polygonifolius*, *P. pusillus* and *Isoetes*, all very sparingly.

Above 2,000 feet aquatic vegetation in Kerry becomes very scanty and few of the species just mentioned ascend so high. The Punch Bowl on Mangerton at 2,206 feet appears to be quite barren, but two or three plants are known to occur in lakes as high or even higher both on Brandon and on the Reeks. Of the Kerry aquatics, *Isoetes lacustris* ascends the highest, being found in Lough Cummeenoughter at 2,338 feet on the Reeks (*Hart*) and also in the uppermost of the Coomac-knock Lakes on Brandon at about 2,300 feet; it is accompanied in this latter lake by *Myriophyllum alterniflorum*. Next to these two aquatics in climbing ability appears to come *Potamogeton polygonifolius* which occurred in the same group of lakes with ripe fruit at about 2,200 feet. The range of aquatic plants in Kerry, however, is still not fully ascertained and would, no doubt, repay further investigation.

VIII. DIVISION OF THE COUNTY FOR BOTANICAL PURPOSES.

As elsewhere pointed out in this *Introduction*, the deeply indented coast line of the county, the direction of its mountain ranges and the small size of many of its river-basins, combine to prohibit the adoption of a natural division of the surface for displaying the distribution of the Kerry flora. In selecting an artificial arrangement, it has been thought best to take advantage of the existing division of the county into nine Baronies.

These are all of large if unequal dimensions, varying in area from $115\frac{1}{2}$ sq. miles in Dunkerron North, to 306 in Trughanacmy. While the divisions are sufficiently numerous to display the distribution of the county flora, their boundary lines unfortunately too often disregard the chief physical features, so that they are extremely difficult to follow in the field. They will be found, however, accurately laid down in the Ordnance map of the county—scale three miles to the inch, as well as in the map accompanying this flora.

The following table gives the names and approximate areas of the Baronial Divisions with the number of species in the flora of each. In estimating these divisional floras, all sub-species and segregates as well as all *Rubi* forms have been omitted on the system suggested by Mr. Praeger and already referred to in this *Introduction*, p. xxxii.

District	Area in sq. m.	Flora
I. Glanarought	$190\frac{1}{2}$	527
II. Dunkerron South	$151\frac{3}{4}$	565
III. Iveragh	255	576
IV. Dunkerron North	$115\frac{1}{2}$	515
V. Corkaguiny	$217\frac{1}{4}$	608
VI. Magunihy	$268\frac{3}{4}$	622
VII. Trughanaemy	306	604
VIII. Clanmaurice	$188\frac{1}{2}$	552
IX. Iraghticonnor	$159\frac{1}{2}$	522

Of the nine Districts given above, the first five in the list together form the South Kerry, or Division 1, of *Irish Topographical Botany*, while the remaining Districts, VI., VII., VIII. and IX. form the North Kerry, or Division 2, of the same work. Brief sketches of the chief physical and botanical features of the Districts will now be given.

DISTRICT I.—GLANAROUGHT.

Maritime. *Approx. area*, $190\frac{1}{2}$ sq. m. *Flora*, 527.

Although this division is maritime, its coast line is confined to a portion of the narrow Kenmare Bay or River where sea cliffs are poorly represented and sandhills and sandy pastures are quite absent; salt marshes, however, occur about Derreen and near the head of the estuary.

Inland, this is a wild and well diversified division, with numerous mountains and much elevated ground rising in the south to 2,200 feet near Hungry Hill, to 2,321 at Knockboy, and to 2,280 at Akinkeen, while in the north it reaches 2,756 feet on Mangerton; several other summits rise above 2,000 feet. The Roughty, Slaheny and Sheen are the principal rivers in

this Barony, but they are merely mountain streams with short and rocky courses. Lakes and lakelets are fairly numerous, especially in the south, the largest being the Cloonee Lakes with Loughs Inchiquin and Glanmore, none of which exceeds a mile in its longest diameter. Swamps, bogs and woods occur in numerous localities, much of the wood in the remoter glens being undoubtedly native and the remnant of an ancient widespread forest. This division includes the two highest roads in the county, those crossing the Priestsleap and Lackabaun mountains reaching 1,531 and 1,482 feet respectively. The only town is Kenmare with a population of about 1,000 and a small tidal harbour lying about half a mile to the south. The branch railway from Headford Junction runs through this division for a distance of about 12 miles, and although only recently completed has already left its mark on the local flora, a colony of *Juncus glaucus* having established itself beside the track at Kilgarvan station. So far, however, neither *Senecio radiatus* nor *Linaria minor*, which occur in several places along the main line to Killarney, have succeeded in gaining a footing here.

Among the localities of greatest interest to the botanist are the neighbourhood of the Cloonee and Inchiquin Lakes, where *Elatine hexandra* and *Eriocaulon* are abundant, with *Arbutus*, *Microcala filiformis*, *Utricularia intermedia*, *Sisyrinchium angustifolium* and *Rynchospora fusca*; Derreen, with *Sisyrinchium* and abundant *Juncus tenuis*; and the Roughty valley about Morley's Bridge, with *Wahlenbergia* and several interesting *Hieracia*.

Most of the botanical groups are well represented, but only three plants native in the Kerry flora are peculiar to this division, *Geranium columbinum*, *Hieracium argenteum* and *H. Scullyi*. An introduced species, *Verbascum virgatum*, has held its ground here for more than one hundred years and appears to be almost deserving of a place in the Irish flora. Interesting plants, however, are numerous and often occur in great abundance, such as—

<i>Erodium moschatum</i>	<i>Carum verticillatum</i>	<i>Hieracium orimeles</i>
<i>Saxifraga Geum</i>	<i>Inula Helenium</i>	<i>Lobelia Dortmanna</i>
<i>S. umbrosa</i>	<i>Hieracium sparsifolium</i>	<i>Pinguicula grandiflora</i>
<i>Bartsia viscosa</i>	<i>Habenaria albida</i>	<i>Carex punctata</i>
<i>Euphorbia hiberna</i>	<i>Neottia Nidus-avis</i>	<i>Trichomanes radicans</i>
<i>Malaxis paludosa</i>	<i>Allium Scorodoprasum</i>	<i>Nitella translucens</i>

In spite of the large area of lofty mountains, alpine species are rare, and the sandhill and sandy pasture group of plants is almost completely absent.

DISTRICT II.—DUNKERRON SOUTH.

Maritime. *Approx. area*, 151½ sq. m. *Flora*, 565.

This division has a much bolder and more varied coast-line than the preceding and is accordingly richer in maritime species. Two fine rocky headlands project into the Atlantic, one Lamb's Head which forms the north-western extremity of the thirty mile long Kenmare Bay, the other Hog's Head forming the south-western extremity of Ballinskelligs Bay. Sandhills of limited extent are found on both sides of the Darrynane estuary with small patches elsewhere. Several islands occur in Kenmare Bay, the largest being Rossmore and Rosdohan near Parknasilla, while Deenish Island rising to 477 feet and Scariff to 839, are conspicuous objects a few miles west of Lamb's Head.

Inland, this Barony is wild and rugged with numerous mountain peaks rising above 2,000 feet ; they reach 2,576 feet north of Lough Brin, 2,539 at Mullaghanattin and 2,468 at Beewon north-east of Sneem. Like the Caha Mountains in the preceding division, the jumble of cliffs and mountains lying north of Sneem would probably repay more detailed examination than has yet been given to them. A portion of the large lake at Waterville falls within this Barony, otherwise the lakelets it contains, although fairly numerous, are all of small extent. Streams, too, are short and insignificant, the Finnihy, Blackwater and Sneem Rivers being the only ones worthy of mention. Limestone rocks occur about Kenmare and for a few miles west along Kenmare Bay, while most of the small islands thereabouts are of the same formation.

No railway enters this Barony, nor does it contain any place more populous than the village of Sneem with about 400 inhabitants. Some small harbours are found along this coast-line such as West Cove, Darrynane, &c., and give access to a few coasting vessels.

The most productive botanical localities in this division are Darrynane, where *Arabis ciliata*, *Microcala filiformis*, *Simethis bicolor*, *Allium Scorodoprasum* and *Carex punctata* occur, with *Empetrum nigrum* and *Juniperus nana* at sea-level ; and the vicinity of Sneem, with *Juncus tenuis*, *Rhynchospora fusca* and *Carex limosa*.

In addition to such characteristic Kerry plants as *Saxifraga Geum*, *S. umbrosa*, *Carum verticillatum*, *Pinguicula grandiflora*

and *Bartsia viscosa*, the following species more or less local in the county occur in this division :—

Subularia aquatica	Calystegia Soldanella	Eriocaulon septangulare
Sagina subulata	Solanum maritimum	Scirpus rufus
Saxifraga hypnoides	Utricularia intermedia	Carex filiformis
(agg.)	Chenopodium Bonus	Trichomanes radicans
Rubus saxatilis	Henricus	Isoetes echinospora
Arbutus Unedo	Oxyria digyna	Pilularia globulifera
Matricaria discoidea	Juniperus communis	Nitella flexilis
Inula Helenium	Habenaria albida	N. translucens
Wahlenbergia hederacea	Naias flexilis	

Two species, *Polygonum sagittatum* and *Simethis bicolor*, find in this division their only known stations in Ireland.

DISTRICT III.—IVERAGH.

Maritime. *Approx. area*, 255 sq. m. *Flora*, 576.

A maritime division with a very extensive coast line. Lofty headlands project into the Atlantic rising to 940 feet near Bolus Head, to 793 near Bray Head in Valencia Island, and to 921 near Doulus Head, a large part of the coast being cliff-bound and quite inaccessible from the sea. Extensive sandhills occur about the mouth of the Inny River and near Rossbehy, with a few smaller tracts elsewhere. Valencia, the largest island in Kerry, is included in this division, other islands along this coast being Puffin Island on the north side of St. Finan's Bay, and Beginish, of volcanic origin, in Valencia Harbour. The most remarkable, however, among the smaller islands are the two Skelligs. The larger of these, the Great Skellig, is a most imposing mass of rock rising to 714 feet in height and lying about eight miles from the nearest mainland.

Inland, are several rugged mountain ranges. The summits surrounding the head waters of the Cumberagh and Inny Rivers rise to over 2,000 feet in several places, while the Glenbeigh Mountains farther north reach 2,541 feet at Coomacarrea, 2,442 at Teermoyle, and 2,350 at Meenteog; Knocknadobar, a conspicuous summit north-east of Cahersiveen, rises to 2,274 feet. Although mountainous on the whole, two broad low-lying valleys, those of the Inny and Ferta Rivers, occupy large tracts in the west of this division, while its north-eastern corner between Caragh Lake and Castlemaine Harbour is covered by stretches of peat bog but little above sea-level. The lakes and

rivers of this Barony are numerous and fairly important, the greater portions of both the large Waterville and Caragh Lakes falling within its boundaries, while Derriana in the Cummeragh valley is nearly two miles in greatest length, and both Cloonaghlin in the same valley and Coomasaharn at the foot of the Glenbeigh Mountains exceed a mile in length. Of the rivers, the Caragh and the Inny are the most important.

The only town in this extensive division is Cahersiveen with about 2,000 inhabitants. It is situated on a tidal river with a quay available for small coasting vessels, and communicates with the extensive Valencia Harbour where ships of considerable size find anchorage. The railway from Valencia Harbour to Killorglin runs through this Barony for a distance of about 25 miles, and although of quite recent construction the track-loving *Linaria minor* and *Diplotaxis muralis* have already succeeded in establishing themselves on its ballast.

Owing to the absence of limestone formations, the calcicole group is poorly represented, only 24 species out of a Kerry total of 50 being known to occur here, and nearly all of these are confined to the sandhills around the coast. Woods, too, are few and insignificant except in the Glencar valley where several extensive tracts are found.

The most interesting botanical localities are the lower portion of the Glencar valley and the neighbourhood of Caragh Lake. The first named yields *Hieracium orimeles*, *Utricularia intermedia*, *Cephalanthera ensifolia*, *Juncus tenuis*, *Rhynchospora fusca* and *Carex limosa*, while in or about Caragh Lake occur *Subularia aquatica*, *Galium erectum*, *Sisyrinchium angustifolium*, *Eriocaulon septangulare*, *Carex aquatilis*, *Najas flexilis*, *Isoetes echinospora*, *Nitella confervacea*, *N. translucens* and *N. flexilis*.

Only two plants native in Kerry are peculiar to Iveragh, *Trifolium arvense* and *Chara contraria*; a third species, *Spergularia rubra*, unknown elsewhere in the county, is almost certainly introduced here. Other interesting species occurring in this division are—

<i>Glaucium flavum</i>	<i>Saussurea alpina</i>	<i>Juniperus nana</i>
<i>Arabis ciliata</i>	<i>Arbutus Unedo</i>	<i>Malaxis paludosa</i>
<i>Lavatera arborea</i>	<i>Microcala filiformis</i>	<i>Habenaria albida</i>
<i>Asperula cynanchica</i>	<i>Solanum maritimum</i>	<i>Carex punctata</i>
<i>Inula Helenium</i>	<i>Oxyria digyna</i>	<i>Trichomanes radicans</i>
<i>I. crithmoides</i>	<i>Salix ambigua</i>	<i>Asplenium viride</i>

With these are such characteristic Kerry species as *Saxifraga Geum*, *Pinguicula grandiflora* and *Bartsia viscosa*.

DISTRICT IV.—DUNKERRON NORTH.

Approx. area, 115½ sq. m. *Flora*, 515.

This division is wholly inland, and has for its dominant feature the Macgillicuddy's Reeks with their outlying spurs. This imposing range, with its continuation the Purple and Tomies Mountains, rising from low level at the Killarney Lakes, reaches 2,739 feet on the summit of the Purple Mountain and sinking thence to 795 feet at the Gap of Dunloe again rises steeply west of this to a narrow ridge which for six or seven miles rarely falls much below 3,000 feet and at several points exceeds it. At Carrantuohill, 3,414 feet, the highest point in Ireland, the ridge divides into two, one arm reaching 3,314 feet at Beenkeragh, while the other forms the fine range of cliffs above Coomloughra and reaches 3,200 feet at Caher. In addition to these lofty mountains, the summits about Broagh-nabinnia south of the Reeks, rising to 2,572 and 2,440 feet, as well as the northern slopes of the Mullaghanattin range, reaching 2,539 and 2,468 feet, fall within the limits of this Barony. Lakes and mountain tarns are numerous and include portions of Caragh Lake and of the Upper and Lower Killarney Lakes. Of the others, more than 50 in number, the highest is Cummeenoughter at an elevation of 2,338 feet in the Reeks, while the largest are the low-lying Cloon Lough and Lough Acoose each with a length of about a mile. The Laune and Caragh, two of the largest rivers in the county, with the Owenreagh, the Gearhameen and Cottoner's Brook belong to this division. Rather extensive native woods occur about the Killarney Lakes as well as in the lower portion of the Glencar valley, while a few small patches are to be found on the northern slopes of the Reeks.

Of the nine Kerry Baronies this is the least affected by human influences. No railway crosses its borders nor does it contain any town or even village. Much of its surface is above the limit of cultivation, and habitations are rare or quite absent over large areas. Its inland position, moreover, frees it from the influences connected with piers or harbours.

In spite of the large amount of elevated ground and the many fine ranges of suitable cliffs, the alpine flora of this division is very disappointing. No less than six out of the seventeen alpine species known to occur in Kerry are absent from the Reeks although they are found growing on Brandon.*

* This comparative richness of the Brandon range is most probably due to its more persistent moisture which appears to counterbalance the advantages possessed by the Reeks in their greater elevation and extent of cliffs; it furnishes a good instance of the influence exerted by humidity in attracting or protecting these northern plants.

These absentees are—*Thalictrum alpinum*, *Sagina subulata*, *Alchemilla alpina*, *Saussurea alpina*, *Polygonum viviparum* and *Poa alpina*.

Limestone formations are restricted to a small area in the valley of the Laune with the result that only 19 calcicole plants out of a Kerry total of 50 are known to occur. The small area of limestone and the inland position of the Barony fully account for the deficiencies of its flora which is the smallest of all the divisional floras of the county.

The most attractive botanical ground, apart from the Reeks, is to be found in the lower portion of the Glencar valley and the adjoining portion of Caragh Lake. In these localities are found the following rare Kerry plants :—*Hieracium orimeles*, *Pyrola minor*, *Malaxis paludosa*, *Juncus tenuis*, *Eriocaulon septangulare*, *Najas flexilis*, *Carex aquatilis*, *Isoetes echinospora*, *Asplenium acutum* and *Nitella confervacea*.

The characteristic South Kerry plants, such as *Saxifraga Geum* and *S. umbrosa* with many of their hybrid forms, *Pinguicula grandiflora*, *Carum verticillatum*, *Bartsia viscosa*, *Euphorbia hibernia* and *Rhynchospora fusca* are still more or less abundant in this division. Other rare plants found here are—

Subularia aquatica	Hieracium iricum	Eleocharis acicularis
Elatine hexandra	Vaccinium Oxycoccus	Carex curta
Saxifraga hypnoides	Utricularia intermedia	C. acuta
(agg.)	Juniperus nana	Aspidium Lonchitis
Galium boreale	Potamogeton nitens	Equisetum trachyodon
Saussurea alpina	P. graminifolius	Lycopodium alpinum
Hieracium anglicum	P. prælongus	Pilularia globulifera

Only three species, all very rare in Ireland, are peculiar in Kerry to Dunkerron North, *Draba incana*, *Pyrola minor* and *Utricularia Bremii*.

DISTRICT V.—CORKAGUINY.

Maritime. *Approx. area*, 217½ sq. m. *Flora*, 608.

This barony possesses the longest coast-line and is the most fully subject to maritime conditions of all the Kerry divisions, no portion of its surface being more than five miles distant from the nearest sea. The coast-line is very varied and includes some extensive stretches of sandhills such as those at Inch on its south side and at Castlegregory on the north, with miles of low-lying, often tide-riven, shores, and some of the finest sea cliffs to be found in Ireland. These cliffs begin to the north of Smerwick Harbour where Ballydavid Head rises to

830 feet. Thence to beyond Brandon Point, a distance of over ten miles, this rock-bound coast is only accessible at Brandon Creek, a small inlet made use of by the local canvas canoes or curraghs, the type of boat found most useful in these stormy waters. Just north-east of this creek the cliffs reach their maximum height, 1,238 feet, at Beennaman, while at Mas-satiompan, 2,509 feet, little more than half a mile inland, the lofty Brandon range sinks in steep broken declivities to the sea.

Off the extreme western end of the peninsula lies the archipelago of the Blaskets, a group of fully 100 isles and islets which have been already fully described in an earlier section of this *Introduction*. The only other islands in this division are the insignificant Magharees or Seven Hogs lying off the sandy Castlegregory promontory which separates Brandon Bay from Tralee Bay.

The interior of the Barony is very mountainous. The eastern end is occupied by the Slieve Mish range rising to 2,796 feet at Baurtregaum. Westward from this, the land sinks to 691 feet at Glounagalt, to rise again in the great ridge which culminates some 12 miles westward in the imposing mass of Brandon, 3,127 feet, the second highest mountain group in Ireland. The eastern face of this range forms a grand cliff-wall some miles in length and one of the richest stations in Ireland for alpine plants. Last of these mountains may be mentioned the shapely peak of Beenoskee which rises from the shore of Brandon Bay to a height of 2,713 feet.

Lakes are numerous in this division, exceeding 50 in number, but nearly all of them are of small dimensions. The largest is Lough Gill near Castlegregory, a shallow sheet of water about one and a half mile long by half a mile in greatest width, separated from the sea by a narrow strip of sandhills. The swamps and slightly brackish waters of this lake provide a home for three plants found nowhere else in the county, *Ranunculus Lingua*, *Rumex Hydrolapathum* and *Chara canescens*. Most of the other lakes are merely mountain tarns; several of them, however, lie at great elevations, Lough Acumeen on Beenoskee being 2,021 feet above sea level, while the Coomaknock Lakes on Brandon, range between 2,100 and 2,350 feet. These latter lakes are very near the extreme limit of aquatic plant life in Ireland; two species, *Isoetes lacustris* and *Myriophyllum alterniflorum*, ascend in them to the highest level, while *Potamogeton polygonifolius* is found as high as 2,250 feet.

The streams in Corkaguiny are all small and rapid, while woods are of insignificant dimensions. The smallness of the

limestone area also adversely affects the flora, and calcicole plants have to rely almost solely on sandhills and their vicinity for suitable habitats. It is not surprising, therefore, to find the limestone-loving group reduced to little over half of those present in Kerry, only 28 out of a possible 50 being found in this division, one of them, however, *Ononis repens*, is practically confined to it.

Dingle, with about 1,750 inhabitants, is the only town of any importance ; it possesses a well sheltered harbour and has a small coasting trade. The only village of any size is Castlegregory with about 500 inhabitants ; it long boasted of being the largest thatched village in Ireland, but the advent of the light-railway with slates and sheets of corrugated iron has now removed its boast as well as most of its picturesqueness. This light-railway, which connects Tralee with Dingle and gives off a branch from Camp to Castlegregory, runs for fully 25 miles within this Barony, and is, no doubt, answerable for the presence there of *Matricaria discoidea* which occurs abundantly in many localities along the track.

In spite of its deficiency in calcicole plants, the flora of this division is a very rich and interesting one, its total of 608 being exceeded only by that of Magunihy with 622. As might be expected, the *Highland Type* is very well represented, only four out of the twenty-two species present in Kerry being absent ; these absentees are—*Draba incana*, *Galium boreale*, *Hieracium iricum* and *Carex aquatilis*. No less than 13 species and sub-species are peculiar in the county to this Barony ; they are—*Thalictrum alpinum*, *Ranunculus Lingua*, *Cochlearia grænlandica*, *Alchemilla alpina*, *Hieracium vulgatum*, *Orobanche rubra*, *Polygonum viviparum*, *Rumex Hydrolapathum*, *Poa alpina*, *Asplenium lanceolatum* and *Chara canescens*, with two introduced species *Orobanche minor* and *Hippophæ Rhamnoides*. One other species, *Sibthorpia europæa*, is almost confined to this division ; it is found, however, quite close to the extreme eastern limit of the peninsula in a locality which lies just inside the boundary of District VII. While the *Robertsonian Saxifrages*, *Pinguicula grandiflora* and *Bartsia viscosa* are especially abundant in this Barony, such characteristic Kerry species as *Carum verticillatum*, *Euphorbia hiberna* and *Rhynchospora fusca* prove to be unexpectedly rare although suitable localities occur in many places, and a few like *Microcala filiformis* and *Eriocaulon septangulare* are altogether absent. The latter species is known to occur in several localities on the south side of Castlemaine Harbour, the nearest station being less than five miles distant from the Dingle peninsula.

In addition to those already mentioned, the rarer or more interesting species found in Corkaguiny include—

<i>Arabis ciliata</i>	<i>Saussurea alpina</i>	<i>Juncus obtusiflorus</i>
<i>Subularia aquatica</i>	<i>Leontodon hispidum</i>	<i>J. tenuis</i>
<i>Cerastium arvense</i>	<i>Wahlenbergia hederacea</i>	<i>Potamogeton nitens</i>
<i>Sagina subulata</i>	<i>Chlora perfoliata</i>	<i>Zostera nana</i>
<i>Lavatera arborea</i>	<i>Cuscuta Trifolii</i>	<i>Scirpus rufus</i>
<i>Trifolium medium</i>	<i>Hyoscyamus niger</i>	<i>Carex disticha</i>
<i>Saxifraga hypnoides</i> (agg).	<i>Utricularia intermedia</i>	<i>C. teretiuscula</i>
<i>Asperula cynanchica</i>	<i>Atriplex portulacoides</i>	<i>C. punctata</i>
<i>Artemisia Absinthium</i>	<i>Juniperus nana</i>	<i>Phleum arenarium</i>
<i>Carduus tenuiflorus</i>	<i>Epipactis palustris</i>	<i>Trichomanes radicans</i>
<i>Silybum Marianum</i>	<i>Habenaria conopsea</i>	<i>Aspidium Lonchitis</i>
	<i>Sisyrinchium angustifolium</i>	<i>Lycopodium alpinum</i>

The most attractive botanical localities in this division are the neighbourhoods of Inch on Dingle Bay, and Castlegregory on Tralee Bay, while the precipitous cliffs which form the eastern face of the Brandon range deserve further investigation.

DISTRICT VI.—MAGUIHY.

Approx. area, 268½ sq. m. Flora, 622.

An inland division of great extent, the second largest in the county. It may be roughly divided into two very dissimilar districts by a line following the Rathmore-Killarney railway and the north shore of the Lower Killarney Lake. To the south of this the surface is varied with wood and water and mountain, the greater part of the famous Killarney Lakes lying within this area. North of the line, however, lakes and broken ground are almost non-existent, the surface being low and undulating, rising in only one place above 1,000 feet.

The greater portion of Mangerton, which reaches 2,756 feet, is included in this division, its fine range of cliffs in the Horse's Glen affording a home to several alpine plants, the rarest being *Saussurea alpina* and the *Holly Fern*. Amongst the other mountains included in the barony are the Kerry Paps, 2,273 and 2,284 feet respectively, and Crohane rising to 2,162 feet just south-east of Lough Guitane. West of Mangerton, the beautifully wooded Torc Mountain rises steeply from the Muckross Lake to 1,764 feet. Other well known points in this attractive region are the rocky Cromaglan, almost overhanging the Upper Lake, the Eagle's Nest beside the Long Range, and Shehy Mountain on the Lower Lake.

Some of the largest rivers in the county, such as the Flesk, the Maine and the Laune, are included within this barony or form part of its boundary. It possesses also the largest fresh-

water area of all the Kerry divisions ; fully four-fifths of the 5,000 acres included in the Lower Killarney Lake fall within its boundary, as well as the whole of the Muckcross Lake, the Long Range, with the greater portion of the Upper Lake and Lough Guitane. Numerous smaller lakes, about fifty in number, bring up its total area of fresh water to nearly 6,000 acres. Several of these small lakes lie at great elevations, the well known Devil's Punch Bowl on Mangerton being 2,206 feet above sea level, while Triangle Lake to the south-west of this is 1,959 feet, and the Devil's Ink Pot (Lough Erhagh) in the Horse's Glen is 1,414 feet in elevation.

Though entirely inland, maritime influence no doubt originating in a remote past, is clearly traceable in this district in the occurrence of such plants as *Silene maritima* and *Armeria maritima*, both of which grow quite plentifully at low-level in two or three spots on the shores of the Killarney Lakes associated with *Cerastium semidecandrum* and *C. tetrandrum*, plants elsewhere in Ireland almost exclusively maritime.

The only considerable centre of population in the barony is Killarney, the second largest town in Kerry, with about 5,800 inhabitants. Judged by the Kerry standard, railways are numerous and important, the total mileage within the barony being fully 40 miles. Several plants appear to have entered this division by the railway tracks, among them *Diplotaxis muralis*, *Senecio radiatus* so abundant about the railway, &c., in Cork city, and *Linaria minor*, a well known lover of such situations throughout Ireland. A quite recent arrival along this route is *Matricaria discoidea* which has only recently (1915) been noticed about the goods-yard at Killarney station. It is interesting to note that *Senecio squalidus*, which is even more abundant about Cork than *S. radiatus*, has not, so far, made its appearance within the Kerry borders.

Notwithstanding the purely inland situation of this barony, its flora is a very rich one, the richest indeed of the nine Kerry divisions. All the groups, except of course the maritime, are strongly represented. Out of 50 well marked members of the Calcicole group present in Kerry, only seven, *Arabis hirsuta*, *Hypericum perforatum*, *Ononis repens*, *Trifolium striatum*, *Asperula cynanchica*, *Chlora perfoliata* and *Spiranthes autumnalis* appear to be absent, and nearly all of these plants, it should be noted, have in this county a marked tendency to occupy coastal stations. Of the 97 species in the Calcifuge group present in Kerry, only one, *Eriocaulon septangulare*, is wanting in this barony.

It is pre-eminent also for the number of its peculiar species,

that is to say, species not known to occur in any other of the nine botanical divisions of Kerry. They are 26 in number, the nearest approach to this being shown by the preceding barony where they amount to 13. The following are the more interesting of these peculiar plants :—

Ranunculus auricomus	Galium sylvestre	Elisma natans
Teesdalia nudicaulis	Hieracium lepidoides	Carex hibernica
Rhamnus catharticus	Lactuca muralis	C. Bœnninghausiana
R. Frangula	Hypopithys multiflora	Lastrea Thelypteris
Vicia sylvatica	Lathræa Squamaria	Equisetum hyemale
Rosa micrantha	Polygonum minus	Lycopodium clavatum
Pyrus rupicola	Ceratophyllum demersum	L. inundatum

The most attractive botanical ground in Magunihy is to be found around the shores of the Killarney Lakes. Nearly all the species mentioned above as peculiar to this division, occur there sometimes in abundance, with such characteristic Kerry plants as *Saxifraga Geum*, *Pinguicula grandiflora* and *Arbutus Unedo*, while several moisture- or shade-loving species as *Osmunda regalis*, *Lastrea æmula* and *L. dilatata* attain a luxuriance unrivalled elsewhere in Ireland or perhaps in the British Isles. With these the following rare or local plants may be mentioned as being found in this lake region :—

Thalictrum collinum	Hieracium orimeles	Allium Scorodoprasum
Subularia aquatica	Wahlenbergia hederacea	Juncus tenuis
Cerastium arvense	Microcala filiformis	Potamogeton nitens
Elatine hexandra	Lithospermum officinale	P. graminifolius
Rubus saxatilis	Mimulus Langsdorffii	P. prælongus
Rosa rubiginosa	Bartsia viscosa	P. obtusifolius
Callitriche autumnalis	Euphorbia hiberna	Najas flexilis
Carum verticillatum	Juniperus communis	Festuca sylvatica
Rubia peregrina	J. nana	Asplenium acutum
Galium boreale	Neottia Nidus-avis	Equisetum Wilsoni
G. erectum	Cephalanthera ensifolia	Isoetes echinospora
G. uliginosum	Ophrys apifera	Pilularia globulifera
Hieracium iricum	Sisyrinchium angustifolm.	Nitella confervacea

In addition to the vicinity of these lakes, interesting localities are also to be found in the Horse's Glen cliffs on Mangerton, with one or two Hawkweeds and a few alpine plants ; the neighbourhood of Lough Guitane, with *Arbutus Unedo* sparingly in this its eastern limit, *Microcala filiformis*, abundant *Rynchospora fusca*, and the only Kerry station known for *Lycopodium inundatum* ; the upper Flesk valley about Loo Bridge is also attractive ground, it forms the headquarters in Kerry of *Hieracium sparsifolium* and *Wahlenbergia hederacea* with some other local plants.

DISTRICT VII.—TRUGHANACMY.

Maritime. *Approx. area*, 306 sq. m. *Flora*, 604.

This is the largest of the nine Kerry baronies with a coast-line which includes portions of two distinct bays, separated from each other by the Dingle peninsula. On the south it includes the greater portion of Castlemaine Harbour, and on the north side the eastern extremity of Tralee Bay. Both these estuaries are surrounded by swampy tide-riven shores, but west of Spa village on the northern shore of Tralee Bay, the coast-line changes to low cliffs and stony beaches. Near the north-western limit of this barony is Barrow Harbour, a small nearly land-locked inlet almost dry at low water, while just north of this are some sandhills and limestone rocks, the latter reaching 149 feet in height, the most elevated point on this coast.

Inland, it resembles the northern half of the preceding barony, the greater portion being filled with broad low-lying valleys and undulating heather-clad hills which rise to 1,441 feet near its eastern border; they are quite uninteresting both from a botanical and a scenic point of view. The western portion of this division, however, includes the southern slopes of the Slieve Mish Mountains rising to 2,796 feet at Baurtreagaum, as well as all the eastern half of this range. While most of the localities suitable for alpine plants fall within the boundaries of District V., the following plants, not elsewhere found in the barony, occur on these mountains:—*Cochlearia alpina*, *Saxifraga stellaris*, *S. Geum*, *S. umbrosa*, *S. hypnoides* (agg.), *Sedum Rhodiola*, *Antennaria dioica*, *Oxyria digyna*, *Salix herbacea*, *Empetrum nigrum*, *Carex rigida*, both the *Filmy Ferns* and *Lycopodium Selago*. To these should be added *Sibthorpia europæa*, which finds its eastern limit in Ireland on their northern slopes not far from Blennerville.

Most of this large division is drained by the River Maine and its tributary, the Brown Flesk, with the small River Lee and branches of the River Feale in its northern portion. A few insignificant lakes are to be found about Killorglin, but elsewhere it has to rely for its aquatic species on its rivers and on a small pond near Farranfore; this latter station, though less than an acre in extent, provides the only record of *Cenanthus Phellandrium* for Kerry and the second in the county for *Potamogeton obtusifolius*.

Tralee, the largest town in Kerry, with 10,300 inhabitants, is included in this barony. It is connected with the sea at Blennerville by a short canal, while a branch railway runs to

Fenit pier on the north side of Tralee Bay, eight miles distant, where there is a good modern harbour with facilities for unloading vessels of large size. Castleisland with about 1,500 inhabitants, and Killorglin with 1,000, are the only other towns of any size. Like the preceding District, Trughanacmy is well provided with railways, the total mileage being fully 30 miles. Several track-loving species such as *Diplotaxis muralis*, *Matricaria discoidea* and *Linaria minor* no doubt owe their presence in the barony to the railways.

Most of the characteristic Kerry species show a marked decrease in this division. Some like *Saxifraga Geum* and *S. umbrosa* find their further advance to the north checked by their strong calcifuge tendencies, as no doubt do *Carum verticillatum* and *Pinguicula grandiflora* in a lesser degree; others that may be mentioned are *Bartsia viscosa* and *Euphorbia hiberna* which are quite local here.

Nearly all the botanical groups are well represented, only the two preceding baronies exceeding its total of 604 species. Northern and aquatic plants, however, are rather limited by the rarity of suitable localities; the Calcicole group too is not as numerous as might be expected, only 35 being present out of a total for Kerry of 50. The Calcifuge group, on the other hand, is very strong, 88 out of 97 occurring within its limits, the nine absentees being almost all moisture-loving species or aquatics. Maritime plants are numerous and find suitable localities both about Castlemaine Harbour and along the more varied shores of Tralee Bay.

Probably the most interesting botanical locality in this barony is the vicinity of Castlemaine Harbour. Here *Sisyrinchium angustifolium* appears to have its headquarters in the south of Ireland, forming quite a considerable portion of the herbage in several peaty fields and ascending as high as 400 feet on poor heathery mountain slopes. Amongst other rare or local Kerry plants found hereabout are—*Malva rotundifolia*, *Carum verticillatum*, *Anthriscus vulgaris*, *Allium vineale* and *Atriplex portulacoides*. In or near the Laune at Killorglin are some interesting Pondweeds, *Eleocharis acicularis* and *Sambucus Ebulus*. Barrow Harbour, with its limestone rocks, is another good locality, here are *Arabis ciliata*, *Trifolium striatum*, *T. filiforme*, *Asperula cynanchica*, *Silybum Marianum*, *Statice occidentalis* and *Carex muricata*. About the Spa village on Tralee Bay occur *Glaucium flavum*, *Diplotaxis muralis*, *Galium uliginosum*, *Epipactis palustris*, *Zostera nana* and *Matricaria discoidea*, the last in great abundance all along this north side of the bay from Tralee to Fenit.

Inland, the more promising localities are, the valley of the Lee, with *Trifolium medium*, *Allium Scorodoprasum* and *Carex strigosa*; and the neighbourhood of Castleisland, with *Vaccinium Oxycoccus*, *Rhynchospora fusca*, and *Carex limosa*.

The following six species appear to be peculiar in Kerry to this division :—*Feniculum officinale*, *Enanthe Phellandrium*, *Hieracium sciaphilum*, *Statice occidentalis*, *Rumex maritimus*, and *Allium vineale*.

DISTRICT VIII.—CLANMAURICE.

Maritime. *Approx. area*, 188½ sq. m. *Flora*, 552.

This division has a varied coast. A line of sandhills fully five miles in length skirts the shore of Ballyheige Bay and shelters on its inland side a few small pools and marshes, with the tidal Akeragh Lough near the northern extremity. This fine stretch of sandhills lies fully exposed to the Atlantic storms and produces a rather disappointing flora. A few rare or local plants occur, however, such as *Papaver dubium*, *Arabis ciliata*, *Asperula cynanchica*, *Calystegia Soldanella* and *Cuscuta Trifolii*, with *Tolypella glomerata* in its only known Kerry station. Dr. Smith in his *Hist. of Kerry, 1756*, records *Diotis maritima* as also growing on these sandhills, but it does not appear to be there now, nor can any recent confirmation of this old record be obtained. The rayless form of *Senecio Jacobæa* is very abundant and luxuriant here and appears to almost completely take the place of the type on the Kerry sandhills.

At the north end of these sandhills lies the bold promontory of Kerry Head rising to 719 feet and forming cliffs 200 feet in height on its northern or Shannon side. Here *Empetrum nigrum* occurs in several places not far from sea level, while *Carex punctata* finds its northern limit in Ireland on damp rocks along the southern side of the Head near Ballyheige. East of this Head, the coast-line is continued along the Shannon estuary by low rocky cliffs rarely exceeding 100 feet in height and finally giving place to the sandy fields about the mouth of the Cashen River, one of the few localities in Kerry for *Chlora perfoliata*.

Inland this division consists of low-lying plains in the west and rounded featureless hills in the east, the latter rarely reaching the 1,000 feet level. Limestone formations occupy a considerable area, and, although often overlaid with peat,

furnish many suitable localities for the calcicole group. The Old Red Sandstone which forms so large a portion of South Kerry comes to the surface here where it forms the mass of Kerry Head, as well as the low cliffs along the southern shore of the Shannon estuary.

Only one small pond of fresh water, about two acres in extent, is found in the whole of this barony, yet, small as it is, it furnishes the only Kerry station for *Ranunculus heterophyllus*, and, in addition, provides an inland locality for *R. Baudotii*. Much the larger portion of this division is drained by the Smearlagh and the Brick, both of them tributaries of the Feale, a river which changes its name to the Cashen before entering the Shannon estuary about two miles south of Ballybunnion. Woods are rarely seen and are usually planted. One of the most extensive in this division, Ballinruddery Wood on the rocky banks of the Feale above Listowel, yields *Crepis paludosa* and *Festuca sylvatica*, plants known only for one other station in Kerry.

The only centres of population in the District are a few inconsiderable villages, such as Lixnaw, Ardfert and Ballyheige, the largest having less than 300 inhabitants. Some ten miles of the Tralee to Limerick railway lie within this barony, and on this track within the last few years two aggressive aliens, *Matricaria discoidea* and *Linaria minor* have made their appearance.

Both the Calcifuge and Calcicole groups are well represented, but aquatic plants are not numerous and few of the rarer maritime species occur. True alpine, as the unfavourable character of the mountains would lead one to expect, are altogether absent; so, too, are several of the most characteristic Kerry plants, such as *Saxifraga Geum* and *S. umbrosa*. Others like *Carum verticillatum*, *Pinguicula grandiflora* and *Rhynchospora fusca* are quite rare, and although *Bartsia viscosa* and *Euphorbia hiberna* are still rather plentiful in several localities, both are much less abundant here than in the south of the county.

Among the more productive botanical localities in Clannaurice are Ballyheige and the mouth of the Cashen River on the coast, with Sleveen and the neighbourhood of Lixnaw inland. These inland stations are low-lying swampy tracts, but little above present tidal influence, and although from four to eight miles distant from the nearest sea produce such salt-loving species as *Cenante Lachenalii* and *Scirpus maritimus*. The Sleveen locality adds *Potamogeton plantagineus* and *Chara polyacantha* to the county flora, while about Lixnaw are found

Lithospermum officinale in its second Kerry station, *Carex filiformis* and *Elodea canadensis*. The last named plant, although widely distributed in Ireland, does not appear to have yet spread in Kerry beyond the neighbourhood of the Feale and its tributary the Brick.

Other species, rare or local in Kerry, which occur in this division are *Ononis repens*, *Trifolium striatum*, *Utricularia neglecta*, *U. intermedia*, *Epipactis palustris*, *Carex curta* and *Scirpus parvulus* which is abundant in the Cashen River, one of the two Irish stations known for this rare plant. To these may be added the rare introduced species *Artemisia Absinthium*, *Inula Helenium*, *Cichorium Intybus*, *Cuscuta Trifolii*, and the recently arrived and rapidly spreading *Diplotaxis muralis*.

The following four species appear to be peculiar to this division :—*Ranunculus heterophyllus*, *Potamogeton plantagineus*, *Chara polyacantha* and *Tolypella glomerata*.

DISTRICT IX.—IRAGHTICONNOR.

Maritime. *Approx. area*, 159½ sq. m. *Flora*, 522.

Like the preceding division, this has a considerable and varied coast-line. Stretches of sandhills occur south of Ballybunnion and again near Beal Point, while cliffs sometimes rising to 100 feet extend in an almost unbroken line between these two places. Farther up the Shannon estuary, the shore-line becomes flat and sandy, with stony beaches nearer Tarbert and tidal sloblands.

Inland, the only elevated ground is Knockanore Mountain, about three miles east of Ballybunnion ; it is a rounded heather-clad hill rising to 880 feet, and is devoid of botanical interest. Elsewhere, this division consists of low undulations rarely exceeding 300 feet above sea level except in the extreme east where they reach 500.

Only two or three small ponds of fresh water are found here. One of these near Tarbert, reduced in summer to a half-dried swamp, adds *Epipactis palustris*, *Habenaria conopsea* and *Eriophorum latifolium* to the district flora, they are all rare plants in Kerry. The greater portion of this barony is drained by the Feale and its tributary the Gale. As in north Kerry generally, woods are few and small, and usually planted.

This division includes Listowel, the third largest town in the county, with a population of about 3,400. Several small villages also occur, such as Tarbert, Ballybunnion, and Ballylongford, with between 300 and 400 inhabitants each, the first

named possessing a small well-sheltered harbour and pier. The Tralee and Limerick railway runs along the southern margin of this barony for a distance of about eleven miles, while the quaint Lartigue Light Railway, the only one of its kind in Ireland, connects Listowel with Ballybunnion, a distance of about ten miles. The track-loving *Diplotaxis muralis*, *Matricaria discoidea* and *Linaria minor* have all made their appearance quite recently about the main line.

The flora of this division is a poor one both in number and rarity of species. Nearly all the characteristic Kerry plants, such as *Carum verticillatum* and *Bartsia viscosa* have disappeared; *Pinguicula grandiflora* and *Rhynchospora fusca* both occur, but are here very rare indeed; *Euphorbia hiberna* is still, however, locally abundant. The Calcicole flora is little more than half the total for the county, and the absence of such common Kerry plants as *Ranunculus Lenormandi*, *Arenaria trinervia*, *Bidens cernua*, *Schœnus nigricans* and *Festuca rigida* is remarkable.

Beal Point, on the Shannon estuary, is probably the most interesting coast locality in this division. In its neighbourhood grow *Glaucium flavum*, *Arabis ciliata*, *Asperula cynanchica* and *Ophrys apifera*, with the introduced species *Dipsacus sylvestris*, *Inula Helenium*, *Matricaria discoidea* and *Silybum Marianum*. The most interesting inland locality is the valley of the Feale above Listowel; here occur *Lychnis diurna*, *Pimpinella Saxifraga*, *Euphorbia hiberna*, *Elodea canadensis*, and *Carex strigosa*. Other rare or local species found in this barony are *Chlora perfoliata*, *Scirpus parvulus* and *Carex limosa*.

Five plants appear to be peculiar to this District, *Hypericum perforatum*, *Pimpinella Saxifraga*, *Valeriana Mikanii*, *Dipsacus sylvestris* and *Matricaria occidentalis*, a variety or sub-species of *M. discoidea*.

IX. PLAN OF THE FLORA AND GENERAL EXPLANATIONS.

In the text of this flora the Flowering Plants and Ferns found in Kerry are arranged in the sequence followed in *Cybele Hibernica Ed. II.*, and *Irish Topographical Botany* as likely to be the one most familiar to Irish botanists. For the same reason the nomenclature adopted is that employed in these two works. It is hoped that the synonymy given with the various species will enable the reader accustomed to the more recent efforts towards a final nomenclature, to recognise the different plants without difficulty.

Every plant, whether native or alien, sufficiently established

in the county to be entitled to a place in the flora, is treated as follows :—In the first line the scientific name of the plant is given followed by its synonyms if thought necessary, and an English name if in general use : mere translations of the Latin names have not as a rule been given. In the second line the distribution of the plant is shown throughout the nine baronial Districts. The method selected for displaying this distribution is that followed in the *Cybele Hibernica* Eds. I. and II. Although not usually employed in county floras this appears to the writer to be the only one that shows at a glance the presence or absence of a plant in any particular district. In the third line the standing of the plant is given, and it should be borne in mind that this statement refers to its Kerry status only, a plant may be a colonist in Kerry although a native elsewhere, and *vice versa* ; the terms used are those employed by H. C. Watson when dealing with this subject in his *Cybele Britannica*, and are there defined by him as follows :—

Native.—Apparently an aboriginal [Irish] species ; there being little or no reason for supposing it to have been first introduced into this island by human agency.

Denizen.—At present maintaining its habitats as if a native species without the direct aid of man, but liable to some suspicion of having been originally introduced by human agency, whether by design or accident.

Colonist.—A weed of cultivated land, by road sides or about houses and seldom found except in places where the ground has been adapted for its production and continuance by the operations of man.

Alien species are those certainly or very probably of foreign origin ; though several generally placed in this category are now well established amid the indigenous flora of this island ; others less perfectly so.

Casual species are chance stragglers from cultivation ; those occasionally imported and sown with agricultural seeds ; those introduced among wool, oil-seeds, or other merchandize ; foreign plants found on ballast heaps deposited from ships, &c.

After the status, follows a list of the situations in which the plant is usually found, that first given indicating as a rule its prevailing habitat. After this comes an estimate of its distribution in the county, six degrees of frequency being employed, namely—*Very common*, *Common*, *Rather common*, *Rather rare*, *Rare*, and *Very rare* ; these terms are sometimes amplified where more than a general statement is considered desirable. Then follows the duration of the plant, whether *Annual*, *Biennial*, *Perennial*, *Bush or Tree*, and the time of its flowering

in the county, with an indication of its soil preferences, whether *calcifuge* or *calcicole*, when this is sufficiently pronounced to merit attention.

In the case of the rarer or more interesting Kerry plants this paragraph is followed by a list of the localities in which it has been found, grouped under the Districts from I. to IX.

Should the plant be known to ascend over 500 feet above sea level, its vertical range in the county is given, each height being followed by the name of the observer. In the next paragraph is given the earliest known record of its occurrence as a Kerry plant, with date, name of finder and place where recorded. Finally, a note is added in the case of the more interesting plants drawing attention to any peculiarities in their distribution, growth, manner of introduction, use in the county, &c. Should the species have varieties, they follow here.

In dealing with the records, the method adopted in the *Cybele Hibernica Ed. II.*, has been followed. The principal books and papers containing references to Kerry botany are for the sake of brevity cited by a contraction. These contractions will be found printed on the right hand side of the page in the alphabetical *List of Principal Books, &c.*, on pp. lxxiii, &c., of this *Introduction*. Thus a record followed by a contracted reference and a date, implies that the authority indicated published in that year the record in question. If no other name appears, it signifies that the finder of the plant and the author of the paper are the same, where these differ, the name of the finder precedes that of the recorder. To give examples—*Subularia aquatica*—“IV. In Lough Acoose, Glencar: *Hart 1882*,” means that *H. C. Hart* in his paper “*Report upon the Botany of the Macgillicuddy’s Reeks, Co. Kerry*,” *Proc. Roy. Irish Academy*, 1882, pp. 573–593, records his discovery of the *Subularia* in the locality stated. Similarly—*Silene maritima*—“VI. Abundant on the shores of the Lakes of Killarney (*Isaac Carroll*): *Cyb. 1866*,” means that the authors of *Cybele Hibernica Ed. I.*, 1866, first published in that work, Mr. Carroll’s reference to the *Silene*.

In a record published for the first time in this flora, the name of the finder follows last in the sentence, as thus—*Lychnis Githago*—“III. Sparingly in a cornfield near Knightstown, Valencia, 1910: *Miss Delap*.” Where several records are followed by only one authority, such authority covers all the records back to the preceding authority; thus in some instances one authority covers several or even all the Districts in which the plant is known to occur in the county.

As a general rule, only the last year in which a plant has been seen in any station is given, in cases of interest, however, where a plant has been under observation in a locality for a number of years, the first and last of these years are usually given; this does not imply that these two were the only years in which it was observed, nor does it imply that the plant ceased to exist there on the date last given.

When referring to well known botanists, all prefixes and initials are as a rule omitted; in the case of the present writer the initials *R.W.S.* have alone been used.

The question whether non-established alien plants, casuals, errors, &c., should be included in the text or consigned to a separate appendix, has, after some doubt, been decided in favour of inclusion in the text. Whatever may be the defects of this method, it possesses the great advantage of exhibiting every plant in its proper sequence and of sparing the reader the inconvenience of consulting what is practically a double flora. These plants are distinguished from those considered fully established, by being inclosed in square brackets and not displayed in separate lines or paragraphs.

Records of Casuals noted for one year only have been omitted unless some special interest warrants their inclusion.

A LIST

OF THE

PRINCIPAL BOOKS, PAPERS, MSS., &c.

Which contain references to the Flora of Kerry.

References to the more frequently quoted papers, &c., are distinguished in the body of this work by the contractions printed in italics on the right hand margin of this list, which includes papers published up to July 1916 inclusive.

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On Madeiran forms of ferns at Killarney.—*Nat. Hist. Review*, 1856, p. 53; and *Phytol.* 1857, p. 24.

The ferns of Ireland (abstract).—*Nat. Hist. Review*, 1856, p. 56.

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Notes on Saxifraga umbrosa.—*Ann. and Mag. of Nat. Hist.* 1841, pp. 47-48.

On the Saxifrages of the Robertsonia, or London Pride group, which are found in Ireland.—*Ann. and Mag. of Nat. Hist.* 1842, pp. 321-323, and plate XI.

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Ley, Rev. Augustin, M.A., F.L.S. :

Thalictrum alpinum in Kerry.—Journ. of Bot. 1887, p. 374.

Lhwyd (or Lloyd), Edward :

Some further Observations relating to the Antiquities and Natural History of Ireland.—Phil. Trans. XXVII., 1712, pp. 524–526. Lhwyd here records several plants found by him in Kerry in 1699 ; amongst them are *Saxifraga stellaris*, *S. umbrosa* (the plant however appears to be *S. Geum*), *Alchemilla alpina*, *Saussurea alpina* and *Veronica montana* ; they are almost the earliest Kerry records known.

Linton, Rev. Edward Francis, M.A., F.L.S. :

Naias flexilis at Killarney.—Journ. of Bot. 1886, pp. 83–84.
Hieracia notes.—Journ. of Bot. 1886, pp. 84–85.
Hieracium cerinthiforme (Backh. in litt.), F. J. Hanbury, in Co. Kerry.—Irish Nat. 1894, p. 136.
Alchemilla vulgaris Linn., and its segregates.—Irish Nat. 1896, p. 296.
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Linton, Rev. William Richardson, M.A., F.L.S. :

The British Hieracia. London. 1905.

Linton, Rev. E. F., and Linton, Rev. W. R. :

Notes of a botanical tour in West Ireland.—Journ. of Bot. 1886, pp. 18–21.....Linton 1886.

London Bot. Exchange Club. Reports 1867–1878. Continued as the Botanical Exch. Club of the British Isles : see under **Botanical**.

Mackay, James Townsend, LL.D., A.L.S., M.R.I.A. :

A Systematic Catalogue of Rare Plants found in Ireland.—Trans. Dub. Soc. 1806, pp. 121–184.....Mackay *Rar.*
A Catalogue of the Indigenous Plants found in Ireland.—Trans. Roy. Irish Acad. 1825, pp. 103–198.....Mackay *Cat.*
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Marshall, Rev. Edward Shearburn, M.A., F.L.S. :

Helleborine atroviridis in Ireland, &c.—Journ. of Bot. 1910, p. 109, and Irish Nat. 1910, p. 87.
South Kerry Plants.—Journ. of Bot. 1912, pp. 197–199.

Meteorological Society, Royal, Journal of, Nos. 54, &c., 1882, &c. ; these contain a few first records of some of the more common Kerry plants from Killarney by the Very Rev. Archdeacon Wynne.

Molyneux, Sir Thomas, M.D., F.R.S. :

A Discourse concerning the Large Horns frequently found under ground in Ireland.—Phil. Trans. XIX., 1697, pp. 489–512. This contains notices of a few plants, including the earliest definite Kerry record—that for *Saxifraga umbrosa* on Mangerton.
 See also under **Threlkeld**.

Moore, David, Ph.D., F.L.S., M.R.I.A. :

Memoranda on Equisetum variegatum, E. Wilsoni, and other plants observed in Ireland.—Phytol. 1845, pp. 129–130.
Remarks on Equisetum variegatum, &c.—Phytol. 1846, pp. 576–578.
On Potamogeton nitens Weber, as an Irish plant.—Journ. of Bot. 1864, pp. 325–326.

Moore, David, and More, Alexander Goodman :

Contributions towards a Cybele Hibernica. Dublin. 1866....*Cyb.* 1866.
Do., 2nd Edition, founded on the papers of the late Alexander Goodman
More, by Nathaniel Colgan and Reginald W. Scully. Dublin. 1898.
Cyb. 1898.

Moore, Thomas :

The Ferns of Great Britain and Ireland [nature printed]. London. 1855.
Thos. Moore 1855.

More, Alexander Goodman, F.R.S.E., F.L.S., M.R.I.A. :

On recent Additions to the Flora of Ireland.—Proc. Roy. Irish Acad. 1872, pp. 256–293. Abridged, with additions, in Journ. of Bot. 1873, pp. 115–119; 142–148.....*Rec. Add.*
Lycopodium inundatum in Kerry.—Journ. of Bot. 1876, p. 373.
Najas flexilis in Kerry.—Journ. of Bot. 1877, p. 350.
Sisyrinchium bermudianum in Kerry.—Journ. of Bot. 1882, p. 8.
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Cuscuta Epithymum in Ireland.—Journ. of Bot. 1892, p. 14.
Silene maritima growing inland.—Journ. of Bot. 1892, p. 87.
 See also under **Guy & Co.**, and under **Moore and More**.

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Murphy, Prof. Edmund :

Contributions towards a Flora Hibernica.—Mag. of Nat. Hist. 1829, pp. 436–438.

Newman, Edward, F.L.S. :

Notes on Irish Nat. Hist. especially Ferns.—Charlesworth's Mag. of Nat. Hist. Vols. III. and IV., 1839–1840.
History of British Ferns. London. 1840.....*Newman* 1840.
History of British Ferns and Allied Plants. London. 1844. This may be regarded as a greatly enlarged edition of the previous work.
Newman 1844.
Contributions towards the History of an Irish Asplenium [A. acutum].—Phytol. 1853, p. 37.

Oliver, Daniel, LL.D., F.R.S., F.L.S. :

Carex punctata in Ireland.—Phytol. 1853, p. 1095.
Agrimonia odorata in Kerry.—Phytol. 1853, p. 1096.

O'Mahony, Rev. Thaddeus, D.D. :

Recorded the discovery of *Simethis bicolor* near Darrynane, Co. Kerry.—
London Journ. of Bot. 1848, p. 571.

Phillips, Robert Albert :

Some Irish Brambles.—Irish Nat. 1908, pp. 54–56. Contains one or
two Kerry localities.

See also under **Guy & Co.**

Praeger, Robert Lloyd, B.A., B.E., M.R.I.A. :

Bog-bursts, with special reference to the recent disaster in Co. Kerry.—
Irish Nat. 1897, pp. 141–162. A few Kerry plants are noted on
p. 145.

Botany of the Irish Field Club Union Conference, Kenmare.—Irish Nat.
1898, p. 227.

Irish Topographical Botany.—Proc. Roy. Irish Acad. Vol. VII. 1901.
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writer. *Topog. Bot.*

Gleanings in Irish Topog. Bot.—Proc. Roy. Irish Acad. 1902, pp. 61–94.
Contains a few Kerry localities for varieties, &c. *Praeger 1902.*

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A note on the Robertsonian Saxifrages.—Irish Nat. 1912, pp. 205–206.

Additions to Irish Topog. Bot.—Irish Nat. 1902, pp. 1–8; 1903, pp. 23–
40; 1904, pp. 1–15; 1905, pp. 21–29; 1906, pp. 47–61; 1908,
pp. 28–37; 1913, pp. 103–110.

These contain references to various additions to the Kerry flora
mostly recorded by the finders elsewhere.

Ray, Rev. John, M.A., F.L.S. :

Synopsis methodica Stirpium Britannicarum. London. 2nd Ed. 1696.
Contains first record of *Arbutus* in Kerry.

Ridley, Henry Nicholas, M.A., F.L.S. :

Kerry plants.—Journ. of Bot. 1884, pp. 91–92.

Rogers, Rev. William Moyle, M.A., F.L.S. :

Handbook of British Rubi. London. 1900.

Royal Irish Academy, Proceedings of *Proc. R.I.A.*

Scully, Reginald William, F.L.S. :

Notes on some Kerry plants.—Journ. of Bot. 1888, pp. 71–78.

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Further notes on the Kerry flora.—Journ. of Bot. 1889, pp. 85–92.

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Ancient and unverified Kerry records.—Journ. of Bot. 1891, pp. 324–329.

Asplenium lanceolatum in Kerry.—Journ. of Bot. 1893, pp. 20–21.

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Notes on the Kerry flora 1901.—Irish Nat. 1902, pp. 156–159.

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Some Kerry Rubi.—Irish Nat. 1904, pp. 128–130.R.W.S. 1904a.

Notes on the Kerry flora 1907.—Irish Nat. 1908, pp. 50–54. R.W.S. 1908.

Contributed "*Killarney Woods*" to A. G. Tansley's *Types of British Vegetation* 1911, pp. 138–141.

Arbutus Unedo.—Irish Nat. 1912, p. 64 ; a note on its Continental range.

Some Introduced Kerry Plants.—Irish Nat. 1912, pp. 214–217.

Rumex maritimus in North Kerry.—Irish Nat. 1914, p. 225.

Ranunculus auricomus in North Kerry.—Irish Nat. 1915, p. 106.

See also under **Colgan**, Nathaniel, and **Scully**, R. W., and under **Moore** David, and **More**, Alexander Goodman, and **Tansley**, A. G.

Smith, Charles, M.D. :

The Antient and Present State of the County of Kerry. 1st Ed. Dublin, 1756. (Chapter XIV. "Of the rare and useful plants growing in Kerry." Pp. 372–385). In addition to the list given in this chapter, the book contains numerous references to Kerry plants scattered through the text. Although not always reliable, it is much the most important work connected with early Kerry botany containing many first county records and much quaint information concerning these "rare and useful plants"*Hist. of Kerry, 1756*

Smith, George Nelson :

Killarney and the surrounding scenery. London, 1822. This contains a few first Kerry records.

Stewart, Samuel Alexander, F.B.S. Edinb. :

Report on the botany of South Clare and the Shannon.—Proc. Roy. Irish Acad. 1890, pp. 343–369. The district investigated included a portion of North Kerry.*Stewart 1890.*

Tansley, A. G. :

Types of British Vegetation. Cambridge 1911. Contains a description, &c., of the Killarney woods.

Threlkeld, Caleb, M.D. .

Synopsis Stirpium Hibernicarum, &c. Dublin, 1726. Contains the first Kerry record for *Pyrus [rupicola]* communicated by Dr. Thomas Molyneux.

Thompson, H. Stuart, and Elliott, Arnold :

Notes on South Kerry plants.—Journ. of Bot. 1910, pp. 227–228. Records several interesting plants, with a few new heights, &c.

Wade, Walter, M.D., A.L.S. .

Plantæ rariores in Hibernia inventæ.—Trans. Roy. Dub. Soc. Vol. IV. pp. 1–214, 1904.*Wade Rar.*

Watson Bot. Exch. Club., Annual Reports, 1884–1913 ; these contain various references to Kerry plants.

Watson, Hewett Cottrell, F.L.S. :

Discovery of Simethis bicolor in Ireland.—Phytol. 1849, p. 453.

Weld, Isaac, M.R.I.A. :

Illustrations of the Scenery of Killarney and the Surrounding Country. London 1806. This contains a few first Kerry records.

West, William, F.L.S. :

Mural Ecology.—Journ. of Bot. 1911, pp. 59–61. Gives a list of some of the more common Kerry plants.

Woods, Joseph, F.L.S. :

Some Botanical Notes made during a Tour through a part of Ireland in June and July 1855.—Phytol. 1855, pp. 121–127, &c. These notes contain a few first Kerry records.

Woodward, Samuel Pickworth, A.L.S. :

Notes of a Botanical Excursion in Warwickshire, Worcestershire, Wales and Ireland. A paper read before the Bot. Soc. of London, Nov. 1843.—Phytol. 1844, pp. 875–879. Contains several first Kerry records, &c.

Wynne, Ven. Archdeacon G. R., D.D. :

Phenological Observations made in 1882 and subsequent years (published in the Quarterly Journal of the Meteorological Soc. Vol. IX. No. 45, &c. Contain several first records for some of the more common Kerry plants.

Young, Arthur :

A Tour in Ireland in the years 1776–79. London 1780. This contains a few references to Kerry plants.

FLORA OF KERRY.

PHANEROGAMIA.

DICOTYLEDONES.

RANUNCULACEÆ.

CLEMATIS Linn.

C. Vitalba Linn. *Traveller's Joy.*

Districts [I.] [II.] — [IV.] — VI. [VII.] [VIII.] — Alien. Rocky and woody places, waysides and woods. Very rare in a naturalised state; thinly scattered throughout the county as an escape. A trailing shrub. July—September.

[I. On the roadside and in a garden hedge near Kenmare, 1889–1913.—II. In shrubberies on Garnish Island near Parknasilla, 1892–1913.—IV. Roadside between Beaufort and Dunloe, 1901–1904].—VI. In many places about the Killarney Lakes, as in the Cahernane shrubberies, in several places on Ross Island and frequent in Muckcross demesne, more especially amongst the bare limestone rocks, Kilbeg Bay in the Middle Lake, 1889–1914. [—VII. Roadside near Fenit, Tralee Bay, 1889–1914.—VIII. By the River Feale in Ballinruddery demesne, 1902]: *R.W.S.*

First record in *Cyb.* 1898: *R.W.S.*

The claim of this plant for admission to the Kerry flora rests solely on its Muckcross localities where it is known to have been established for many years, and although there appears to be no definite record of its occurrence there earlier than 1898, it is almost certainly the plant referred to by Dr. Smith in his *Hist. of Kerry*, 1756, p. 142, where, in speaking of the shores of Muckcross Lake, he states that “there have been planted a considerable number of vines,

which are now spreading their branches, and crawling up several sloping rocks of variegated marble." Amongst the limestone rocks of Kilbeg Bay on the north side of this lake, stems of this shrub were measured in 1902 over 5 inches in circumference. The most luxuriant *Clematis*, however, noted about the Killarney lakes occurred near the Bilrook bridge in the Muckcross demesne, this in 1907 measured 11 inches in circumference.

THALICTRUM Linn.

T. alpinum Linn.

District — — — — V. — — — —
Native. Wet ledges on mountain cliffs. Very rare and local. Peren. July—August.

V. At about 2,000 feet on Brandon Mountain (*Rev. A. Ley*) *Journ. of Bot.*, 1887, p. 374.

First record in 1887 : *Rev. Augustin Ley, loc. cit.*

This plant must occur very sparingly on the Brandon range as it has not been seen there since the date of Mr. Ley's record. The nearest Irish station known lies about 100 miles to the north in Co. Galway, while in Great Britain this species does not extend further south than the Carnarvonshire Mountains, nearly a degree north of the Kerry locality.

T. minus Linn.

Districts — — — — IV. — VI. — — — —
Native. Damp rocky places on mountains, and on lake margins. Rare. Peren. July—August.

IV. "On rocky mountains, Gap of Dunloe, and other places near Killarney : " *Mackay Rar.* 1806. At 2,080 feet on the south side of Cummeenmore Mountain ; at 1,500 feet on Mount Brassel above Lough Callee, and in several places from 980 to 1,400 feet on Bull's Mountain above the Gap of Dunloe : *Hart* 1882. From 900 to 1,500 feet on the Sugarloaf Mountain [Broaghnbinnia] in the Black Valley : *Hart* 1882 a. Sparingly by the bridge above Black Lake, Gap of Dunloe, at about 600 feet, and on the north shore of Lough Cummeenduff, Black Valley, at 220 feet, 1901-09 : *R.W.S.*—VI. "Rosswood near Killarney" : *Wade Rar.* 1804. Still in Ross woods and on several of the islands, and at intervals round the shores of the Lower Lake, as on Rough and Cow Islands, in the Home Park, about Castlough Bay,

West Meadow Bay, Glengla Bay, &c., 1888-1914 : *R.W.S.*
On the Middle Lake shore below Turc Mountain : *Linton*
1886—still there, and fine and abundant about the south-
east corner of the Muckross Lake, 1903-09 : *R.W.S.* On
Mangerton (*Carroll*) *Phytol.* 1857, p. 76. Still in several
places on Mangerton, as on the cliffs to the south of Lough
Erhagh at about 2,300 feet, and by the stream below Lough
Managh at 900 feet in the Horse's Glen, 1904 : *R.W.S.*

From about 60 feet above sea-level around the Killarney
Lakes, to 2,300 feet on Mangerton (*R.W.S.*).

First record in 1804 : *Wade Rar.*

Under *Thalictrum minus* Linn. have been included the
various early Kerry records for *T. flexuosum* Bernh., *T. col-
linum* Wallr., and *T. montanum* Wallr. Although very
dissimilar in appearance, plants from both the Mangerton
cliffs and the shores of the low-lying Killarney lakes have
been named *T. collinum* Wallr. by Mr. Ar. Bennett. No
form of *T. minus* Linn. has yet been found on any of the
numerous Kerry sandhills.

ANEMONE Linn.

A. nemorosa Linn. *Wood Anemone.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In woods, along stream-sides, &c. Rather common,
but local. Peren. March—May.

From sea-level, to 1,500 feet on the Reeks (*Druce*).

First record in 1882 : *Archdeacon Wynne, Journ. Roy.
Meteor. Soc.*, No. 45.

While common in some districts, the *Wood Anemone* is
very unevenly distributed in the county ; it is quite rare in
District V., local in VII., VIII. and IX., and is more
frequent about Kenmare and Killarney than elsewhere.

RANUNCULUS Linn.

R. trichophyllus Chaix.

Districts — II. III. — V. VI. VII. VIII. IX.
Native. In lakes, ponds and ditches. Rather rare. Peren.
May—July.

II. In ditches near Darrynane House and in small pools
on the adjoining island, 1889.—III. In a small pool near
Dooaghs, Rossbehy, 1892.—V. In a sluggish stream west
of Castlegregory, 1890.—VI. In several spots in the Lower

Lake and in Sheheree bog-pool, Killarney, and near Mola-hiffe, 1902.—VII. In a small pool near the Spa, Tralee Bay ; in a pond at Ballycarty east of Tralee, and near the village of Currans, 1890–1903.—VIII. In a pond near Banna and in a ditch south of Cashen Ferry bridge, 1904.—IX. Near Cashen River and sparingly near Beal Point, 1902 : *R.W.S.*

First record in 1888 : *R.W.S.*, *Journ. of Bot.*

The varieties with floating leaves—*R. Drouettii* (Godr.) and *R. Godronii* (Gren.)—have been found in the following stations—III. In some small ponds north of the Inny ferry near Waterville : *R.W.S.* 1889 —V. In several localities amongst the coast marshes about Fermoy, Brandon Bay (*Marshall & Shoolbred*) *R.W.S.* 1903.—VI. In boggy ditches between the old farm buildings and the Middle Lake, Muckross demesne : *R.W.S.* 1889.—VII. In heavy marshes near the canal between Tralee and Blennerville (*Marshall & Shoolbred*) *R.W.S.* 1903. In Ballycarty pond about three miles east of Tralee, 1889 : *R.W.S.*

These floating-leaved plants, no doubt, occur more frequently in the county than the above records would indicate.

R. heterophyllus Web. ex p.

District — — — — — VIII. —
Native. In still water. Very rare and local Peren.
May—June.

VIII. Abundant in a small lake near Lerrig north of Ardfert (*vide J. Groves*) *R.W.S.* 1903.

First record in 1903 : *R.W.S.*, *Irish Nat.*

This appears to be the rarest of the aquatic *Ranunculi* in Kerry ; although constantly looked for, no plant with similar leaves has been seen elsewhere in the county. At Lerrig, it occurred in great profusion, almost covering the shallow lake with its large flowers and nearly orbicular leaves.

R. peltatus Schrank.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In both slow and quick-flowing streams, and in still water. Common over the greater portion of the county, but local in the south. Peren. May—July.

Local in the following Districts—I. In the Roughty River near Morley's Bridge, 1903.—II. About Waterville Lake and River, and—III. About Waterville, 1904 ; in the

Glencar valley and in Caragh Lake, 1913.—V. In a small stream at the west end of Castlegregory Lake, 1890 : *R.W.S.*

From sea-level, to 525 feet in the Roughty valley (*R.W.S.*).

First record in *Cyb.* 1866 : *Babington*.

Var. PSEUDO-FLUITANS (Hiern).—VI. In the Bilrook stream, Muckcross, Killarney : *R.W.S.* 1889, and in 1902. In a small stream near Maine Bridge between Farranfore and Castlemaine, 1888 : *R.W.S.*

Of the large-flowered aquatic *Ranunculi* in Kerry, the most common form is a plant with almost semi-circular leaves, much broader than long, with the middle lobe small, obtuse and undivided ; the shape of this floating leaf, whether in still or running water, is very constant throughout the county ; it seems best referred to *R. floribundus* (Bab.). Plants which differ but little from the preceding except in having leaves $\frac{2}{3}$ circular, with all the lobes more or less notched, are included in the distribution given above.

R. Baudotii Godr.

Districts — — — — V. — VII. VIII. IX. Native. Pools, ditches and lakes near the sea, also, but very rarely, inland. Very rare in the south, locally abundant elsewhere. Peren. May—July.

V. Near Castlegregory (*Moore*) *Cyb.* 1866—still abundant in the Lake and frequent in brackish pools in this neighbourhood, 1907 : *R.W.S.* Pools east of Camp on the south side of Tralee Bay : *Hart* 1884. Ponds on Derrymore, Tralee Bay ; near Kilshanning and Fermoy, Brandon Bay : *R.W.S.* 1889.—VII. Ditches west of Castlemaine and in ponds, &c., about Blennerville, 1905 ; sparingly about Fenit, and—VIII. Abundant between Rahoneen and Banna : *R.W.S.* 1889, and in 1902. Plentiful in a small lake near Lerrig north of Ardfert, three miles from the nearest sea : *R.W.S.* 1903, and in 1914.—IX. Near Beal Point : *Stewart* 1890. By the coast west of Ballylongford and near the Cashen River south of Ballybunnion, 1894 : *R.W.S.* On Carrig Island, Shannon estuary, 1913 : *Phillips*.

First record in *Cyb.* 1866 : *Moore*.

No member of the aquatic group of *Ranunculi* shows a greater variety of leaf forms than *R. Baudotii*. This appears to be especially the case when the plant grows on mud, or in shallow, half-dried pools, where almost every gradation between capillary and tripartite wedge-shaped leaf segments may be found. Lerrig pond is the only inland station for this plant at present known in the county.

R. Lenormandi F. Schultz. *R. cœnosus* Godr.

Districts I. II. III. IV. V. VI. VII. VIII. —
Native. Wet ditches and roadsides, bog pools, &c. Rare in the extreme north and in the Dingle peninsula, common elsewhere. Peren. March (or earlier)—September. *Calcifuge A*.

Rare in the following Districts—V. Sparingly west of Camp, Tralee Bay, 1890.—VIII. On mud west of Abbeyfeale, and in a bog-hole near Rylane, 1904 : *R.W.S.*

From sea-level, to 925 feet in the Slaheny valley, to 950 feet in the Roughty valley and to 1,900 feet on Akinkeen Mountain, Slaheny valley, the latter quite an exceptional height (*R.W.S.*).

First record in *Cyb. 1866* : *Babington*.

This plant flowers in Kerry for the greater portion of the year ; healthy specimens in full bloom, gathered in Valencia Island, were sent to the writer in the last week of January 1904, while many plants were noticed in flower in September 1909.

R. hederaceus Linn. *Ivy-leaved Crowfoot*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Margins of muddy ditches, shallow pools, damp roadsides, &c. Common. Peren. March—August. *Calcifuge B*.

From sea-level, to 925 feet in the Slaheny valley (*R.W.S.*), but usually lowland.

First record in 1882 : *Hart, Proc. R.I.A.*

R. sceleratus Linn.

Districts — — — — V. — VII. VIII. IX.
Native. In brackish pools and ditches, and on mud near the sea. Very rare or absent over the greater portion of the county, rather common in the north. Ann. June—August.

V. Rather frequent about Castlegregory, 1888–1907 ; on the east side of Inch sandhills, 1894, and sparingly near Ventry, 1905.—VII. & VIII. Frequent here along the coast, and occurs inland by the River Brick near Sleveen in the latter District, 1904–14 : *R.W.S.*—IX. About the Ferry bridge (Cashen River) : *Stewart 1890*—still in several places about the Cashen River, &c., south of Ballybunnion, and sparingly by the Shannon shore about three miles west of Tarbert, 1890–1908 : *R.W.S.*

First record in 1890 : *Stewart, Proc. R.I.A.*

R. Flammula Linn. *Lesser Spearwort.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In watery and marshy places. Very common.
Peren. June—September.

From sea-level, to 2,200 feet on Brandon and to 2,225 feet on the Coomacarrea Mountains, Glenbeigh (*R.W.S.*).

First record in 1844 : *S. P. Woodward, Phytol.* p. 878.

Many curious forms of this most variable plant occur round the larger Kerry lakes. One of the forms, gathered in several places along the stony margin of the Lower Lake, Killarney, comes very near to the Ulleswater *R. reptans* Linn., from which it differs chiefly in the internodes of the Killarney plant being stouter and almost straight instead of arched, as well as in its producing more robust and numerous rootlets at the nodes ; these are differences, however, which might be expected from the milder and moister habitat of the Kerry plant ; it has been referred to the form *pseudo-reptans* of *Syme (var. radicans Nolte)*, and is not uncommon in similar stations in the south of the county. Among the upright forms of *R. Flammula*, nothing which could be referred to *R. petiolaris* Marshall, has yet been seen.

R. Lingua Linn. *Great Spearwort.*

District — — — — V. — — — —
Native. In a floating swamp. Very rare and local. Peren.
June—July.

V. Sparingly in a drain, or sluggish stream in a floating swamp, west of Lough Gill, Castlegregory : *Hart 1884.*

First record in 1884 : *Hart, Proc. R.I.A.*

The exact locality for this plant—one of the very rarest in Kerry—is most difficult to examine, and in wet seasons is practically unapproachable. It appears to occur there but very sparingly, and the swamp has not been thoroughly explored since the date of Mr. Hart's record. In the adjoining counties, *R. Lingua* is on record for two localities in Clare, for one in Limerick and one in Cork.

R. auricomus Linn. *Goldilocks. Wood Crowfoot.*

District — — — — VI. — — — —
Native. Shady places. Very rare and local. Peren. April—May.

VI. In several spots on Ross Island, Killarney, but very sparingly (*Mrs. Jenner Irish Nat. 1915*, p. 106).

A very interesting and welcome addition to the Kerry flora ; it is a very rare plant in the west of Ireland, and is not yet known to occur either in south Kerry or west Cork.

R. acris Linn. *Buttercup*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In meadows, pastures, marshes, &c. Very common.
Peren. May—September.

From sea-level, to 2,650 feet on Baurtregaum, Slieve Mish (*Hart*), to 2,900 feet on Brandon (*R.W.S.*), and to 2,950 feet on the Reeks (*Hart*).

First record in 1853 : *Prof. Balfour, Phytol.*, p. 1006.

The prevailing form of this variable plant in Kerry appears to be *R. Borceanus* Jord. with its *var. tomophyllus* (*Jord.*). The latter *var.* with its dense tawny hairs occurs commonly on poor upland pastures and ascends to a considerable height on the mountains. Next to this, *R. vulgatus* Jord. appears to be most frequently met with. For an analysis of the various forms of *R. acris* by Mr. F. Townsend, *vide Journ. of Bot.*, 1900, p. 379.

R. repens Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In damp meadows, ditches, waste places, &c.
Very common. Peren. May—September.

From sea-level, to 2,550 feet on the Reeks (*Hart*), and to 2,700 feet on Brandon (*Druce*).

First record in 1881 : *Barrington, Proc. R.I.A.*

R. bulbosus Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Pastures, sandhills, dry banks, and occasionally on walls. Common on the limestone and on sandhills, rare elsewhere. Peren. May—July. *Calcicole B.*

Very rare in District IV., where it has been observed only on the upper of the two bridges at Meanus south-east of Killorglin, 1901 : *R.W.S.*

First record in 1889 : *R.W.S., Journ. of Bot.*

[*R. ARVENSIS* Linn.—VI. A garden weed at Lahard, Beaufort, 1911–1916 : *Mrs. Jenner*. An alien accidentally introduced. The record is of interest as being the first for this plant from the south of Ireland.]

R. Ficaria Linn. *Ficaria verna* Huds. *Lesser Celandine*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In damp shady places, ditches, &c. Common.
Peren. Latter end of February—May, extending into June in sheltered situations.

From sea-level, to 2,250 feet on Brandon (*R.W.S.*), and to 2,350 feet on the Reeks (*Hart*).

First record in 1882 : *Hart, Proc. R.I.A.*

The form *incumbens* F. Schultz has been noticed several times in the county.

CALTHA Linn.

C. palustris Linn. Marsh Marigold.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. In marshes, about river- and lake-sides, and other damp places. Common. Peren. March—June.

From sea-level, to 600 feet in the Gap of Dunloe (*R.W.S.*), and probably higher.

First record in 1882 : *Archdeacon Wynne, Journ. Roy. Meteor. Soc.*, No. 45.

Var. GUERANGERII (Boreau).—VI. In several places along the stony shores of the Lower Lake, Killarney, as on Ross Island, about Castletlough Bay, &c. : *R.W.S. 1888*, and in 1914. This form is not infrequent in similar situations around the larger lakes in the county.

Var. MINOR Syme.—V. Lower slopes of Brandon : *Linton 1886*.

AQUILEGIA Linn.

A. vulgaris Linn. Columbine.

Districts [I.] [II.] — — — VI. [VII.] — [IX.] Native or Denizen. In rocky and bushy places. Rare and local. Peren. June—July. *Calcicole B.*

[I. An escape in Ardtully woods, Kilgarvan, 1904.—II. Sparingly on rocks by the river at Blackwater bridge, Kenmare Bay : *R.W.S. 1890*].—VI. At Killarney (*Babington Cyb. 1866*. Sparingly in several localities on the limestone about the Killarney Lakes, as on Ross Island and about the shores of Castletlough bay ; about Muckross Abbey and the neighbouring rocky woods, &c. ; sparingly about the east end of the Middle Lake, 1888–1914.—[VII. An escape about Boolteens near Castlemaine Bay, 1890.—IX. In the old Pyrmont churchyard west of Tarbert, 1905] : *R.W.S.*

First record in *Cyb. 1866* : *Babington*.

The exact standing of the *Aquilegia* in Kerry is difficult to determine. It was thought by Prof. Babington to be doubtfully indigenous about the Killarney Lakes. It occurs, however, in many localities among the limestone rocks of the

neighbouring county Clare, as well as in several other counties along the west coast of Ireland where it is generally regarded as native, so its presence in similar situations at Killarney seems to warrant its inclusion among the native plants of Kerry. A great deal of planting has, no doubt, taken place around these lakes, so absolute certainty is unattainable. Elsewhere in the county the *Aquilegia* is seen only where planted, or as an escape from cultivation.

[*BERBERIS VULGARIS* Linn. *Barberry*.—This bush occurs but rarely in the county, and then only where planted or as an escape: it has been noticed—II. Near Castlecove, Kenmare Bay, 1904.—VI. Near the Meeting of the Waters at Dinis; on Ross Island and in the Home Park, &c., Killarney, 1904–12.—VII. Sparingly in the “Green,” Tralee, 1907: *R.W.S.*]

NYMPHÆACEÆ.

NUPHAR Smith.

N. luteum Smith. *Nymphæa lutea* Linn. *Yellow Water Lily*.
Districts I. II. III. IV. — VI. VII. — —
Native. In lakes and sluggish streams. Locally rather common, but a rare plant over the greater portion of the county. Peren. June—July.

I. Sparingly about the Cloonee Lakes, 1901.—II. Frequent in the Owenreagh valley and about Lough Brin, 1899–1909.—III. In the Glencar valley and Caragh Lake, 1906–13.—IV. & VI. Common and locally abundant.—VII. Sparingly in Cottoner’s River near its junction with the River Laune, 1904: *R.W.S.*

From sea-level, to 800 feet in Curraley Lough, Glencar valley (*Hart*), but usually lowland.

First record in 1853: *Prof. Balfour, Phytol.*, p. 1006.

This is much the rarer of the two Water Lilies in Kerry as it is generally in West Ireland; it is not infrequently accompanied by *Nymphæa alba*.

Var. INTERMEDIUM (*Ledeb.*).—IV. In some abundance about the south end of Lough Acoose, Glencar, 1911: *R.W.S.*

This curious dwarf form, previously recorded in Ireland only from Westmeath, has flowers little more than an inch in diameter with about eleven rays to the stigma; the lobes of the leaves, however, are nearly contiguous and not heart-shaped as in *N. pumilum*, which it otherwise resembles.

NYMPHÆA Linn.

N. alba Linn. *Castalia alba* Wood. *White Water Lily*.

Districts I. II. III. IV. V. VI. VII. VIII. —
Native. In lakes and sluggish streams. Common. Peren.
June—September.

From sea-level, to 800 feet in Lough Curraley, Glencar
(Hart), and to 870 feet in Lough Garagarry, Mangerton
(R.W.S.).

PAPAVERACEÆ.

PAPAVER Linn.

P. dubium Linn.

Districts [I.] — [III.] — V. [VI.] VII. VIII. —
Colonist. Sandy fields and sandhills, along railway tracks
and on waste ground, chiefly near the sea. Rare. Ann.
May—July.

[I. On railway bank near Morley's Bridge, 1894—but not
seen recently in this district.—III. Sparingly on railway
ballast west of Caragh Lake station, 1911—appears to be
spreading here, 1913].—V. In many places in the sandy
fields and along the shore to the north and east of Castle-
gregory and more sparingly on Illauntannig, the only
inhabited Magharee island, 1888–1907.—[VI. Sparingly in
a field beside the railway and on the ballast near the
Killarney railway station, 1901, about the railway station at
Ballybrack, 1903].—VII. [On railway ballast at Castle-
maine, 1913]: R.W.S. Roadside near Blennerville: Hart
1884. In poor sandy fields on the north side of Barrow
Harbour, rather plentiful in 1890, more sparingly in 1902.—
VIII. In many places about the Banna and Ballinprior
sandhills, 1902: R.W.S.

First record in 1884: Hart, *Proc. R.I.A.*

This is the only Poppy thoroughly established in Kerry.
In several of its sandhill stations it might quite pass for a
native plant. In Districts V. & VI. the *var. Lecoquii*
(Lamotte) was gathered.

[P. SOMNIFERUM Linn. *Opium Poppy*.—I. Sparingly in
waste ground near the Southern Hotel, Kenmare, 1908.—
II. In a potato field near Darrynane, 1889.—III. On the
sandy shore near Ballinskelligs cable-station, 1900.—V. A
weed in gardens about Tullaree east of Castlegregory, 1890.—
VI. Sparingly on the Castletough ruins, Lower Lake,

Killarney, 1909.—VII. In several places about Killorglin, and in waste ground east of the Spa, Tralee Bay, 1888–1901—VIII. In several places about Ardfert, more especially in the limestone quarries near the Abbey ruins, where it has been noticed at intervals from 1888 to 1907; it was not there, however, in 1914.—IX. In a potato field near Tarbert, 1890: *R.W.S.* Sparingly on a rubbish heap near Ballybunnion and in a field near Beal Point, 1913: *Phillips*. Although this Poppy is not infrequent in the county, and sometimes appears for many years in the same locality, as in the Ardfert quarries, &c., it does not appear to be really permanent anywhere, and like the following species, can be regarded only as a casual in Kerry.]

[*P. RHEAS* Linn. *Corn Poppy*.—IV. A garden weed at Glencar Hotel, 1890.—V. One or two plants on the railway ballast near Castlegregory Junction, Tralee Bay, 1894: *R.W.S.*—VI. Killarney, 1882 (*Archdeacon Wynne*) *Journ. Meteor. Soc.* Two or three plants near the Cathedral, 1888, and a plant or two in the South Hill gardens, Killarney, 1909.—IX. In a potato field near Tarbert with *P. somniferum*, 1890: *R.W.S.*—very sparingly in all these stations. This is a very rare casual in Kerry. It has not been noticed, so far, in any of the cornfields and even elsewhere has been seen only once in the last 20 years.]

GLAUCIUM Haller.

G. flavum Crantz. *Yellow Horned Poppy*.

Districts — — III. — — — VII. — IX.
Native. Stony and sandy beaches. Rare and local. Bien.
June—August.

III. Sparingly on the shore east of Dooaghs near Cromane, Castlemaine Bay, 1892–1903: *R.W.S.*—VII. At the Spa near Tralee, circa 1876; *Rev. W. Raymond*. In two localities on the shore of Tralee Bay near the Spa, one about half a mile east of the village, where it occurs very sparingly, the other about a mile to the west, where it is abundant over a limited area, 1887–1914.—IX. Sparingly along the Shannon shore near Letter Point east of Beal Castle; near Tarbert lighthouse, and again a little to the west of this: *R.W.S.* 1891, and in 1902. On Carrig Island near Ballylongford, 1913: *Phillips*.

First record in 1888: *R.W.S.*, *Journ. of Bot.*

CHELIDONIUM Linn.

C. majus Linn. *Celandine*.

Districts I. — — IV. — VI. VII. — —
 Alien. About roadside walls and banks, &c. Rare and
 local. Peren. May—July.

I. Along the roadside near Killowen and again near Cleady
 east of Kenmare : *R.W.S.* 1891, and in 1912.—IV. A garden
 weed at Dunloe Castle, 1901.—VI. Near Woodlawn and
 beside the road to Ross Castle, Killarney ; about Muckross
 Abbey ruins and by a garden wall near Aghadoe, 1888–
 1909.—VII. Sparingly on a wall at Ballycarty east of Tralee,
 and on roadside banks near the Kerries and the Spa, Tralee
 Bay, 1890–1902 : *R.W.S.*

First record in 1888 : *R.W.S.*, *Journ. of Bot.*

FUMARIACEÆ.

FUMARIA Linn.

F. capreolata Linn. *F. pallidiflora* Jord. *Fumitory* (genus)

Districts — II. III. — V. VI. VII. VIII. —
 Colonist. Cultivated fields and waste places. Rather rare.
 Ann. April—September.

II. Sparingly about Darrynane and by the River Finnihy
 near Kenmare, 1889.—III. Near the coast-guard station at
 Kells Bay and near Doulus Head west of Cahersiveen,
 1892.—V. Roadside east of Castlegregory, 1890 ; near Inch,
 Dingle Bay, 1894 : *R.W.S.* In cultivated land on the Great
 Blasket Island (*Praeger & Stelfox*) *Irish Nat.* 1912, p. 159.—
 VI. In fields near the Laune below Beaufort bridge and
 sparingly near Headford, 1892–94 : *R.W.S.* Near Killarney :
Druce 1907.—VII. In several localities about Killorglin and
 Cromane, Castlemaine Harbour, sparingly at Milltown and
 near Fenit, Tralee Bay, 1887–1892.—VIII. Roadside near
 Abbeydorney, 1892, and sparingly by roadside near Brown's
 Castle, Shannon estuary, 1908 : *R.W.S.*

First record in 1889 : *R.W.S.*, *Journ. of Bot.*

F. purpurea Pugsley.*

Districts — — — — V. VI. VII. VIII. IX.
 Colonist. Cultivated ground, roadsides and waste places.
 Rather rare. Ann. May—September.

* Plants from localities followed by the sign ! have been named by Mr.
 H. W. Pugsley.

V. On sandy banks near Castlegregory, 1888 !: *R.W.S.*, and in 1907.—VI. Waste ground near the Lake Hotel, Killarney, 1902 !: *Marshall, Shoolbred & R.W.S.*—VII. Near Ballymullen, Tralee, 1908.—VIII. Near Ardfert and near the coast-guard station west of Ballyheige !: *R.W.S. 1903.*—IX. Sparingly as a garden weed at Ballybunnion, 1908 : *R.W.S.*

First record in 1903 : *R.W.S., Irish Nat.*

F. Boræi Jord.

Districts — II. — — V. VI. — — IX.
Colonist. Cultivated ground, waste places, &c. Rare ?
Ann. May—September.

II. In the Hotel grounds, Parknasilla, 1907.—V. Sparingly in cultivated ground at Anascaul, 1914 : *R.W.S.*—VI. On the railway near Killarney : *Druce 1891.* By the River Laune near Ballymalis Castle, 1888 !: *R.W.S. 1903.* On hedge banks about two miles east of Headford Junction (*Marshall & R.W.S.*) *R.W.S. 1904.* A weed in gardens at Cloghereen, Muckcross, 1907 : *R.W.S.*—IX. On Tarbert Island, Shannon estuary, 1913 : *Phillips.*

First record in 1891 : *Druce, Journ. of Bot.*

F. confusa Jord. *F. Bastardi* Bor.

Districts I. — III. IV. V. VI. VII. VIII. IX.
Colonist. Cultivated ground and waste places. Rather common. Ann. May—September.

I. On waste ground near the Harbour, Kenmare, 1900–07.—III. Near Kells coast-guard station ; near Caragh Creek, Rossbehy ; near Doulus Head west of Cahersiveen, and near Knightstown, Valencia Island, 1892–1903.—IV. Sparingly in the Hotel grounds, Glencar, 1906 : *R.W.S.*—V. Rather frequent in this District, as, among crops on the Great Blasket Island : *Barrington 1881.* About the base of Brandon and near Stradbally ! (*Marshall & Shoolbred*) *R.W.S. 1903.* Near Castlegregory and Inch, Dingle Bay, &c., 1890–1907.—VI. Near Cloghereen, Muckcross, 1896 : *R.W.S.* By Castletlough Bay, Lower Lake, Killarney !: *Marshall, Shoolbred & R.W.S.*, and—VII. About the Spa and Fenit, Tralee Bay, 1888 !: *R.W.S. 1903*, and in 1905. Near Barrow Harbour, &c.—VIII. On sandy banks near Banna !: *R.W.S. 1903.* About Ardfert, Ballyheige and Lixnaw, 1888–1902.—IX. Rather frequent to the east of Ballybunnion and sparingly to the west of the lighthouse near Tarbert, 1890–1902 : *R.W.S.*

First record in 1881 : *Barrington, Proc. R.I.A.*

This appears to be the most common of the Kerry *Fumariæ*.

Var. HIBERNICA Pugsley.—III. By the sea near Ballinskelligs, 1889 !—V. Near Brandon village and near the sea, Castlegregory, 1902 !—VII. Kilfenora, Tralee Bay, 1889 ! (*R.W.S.*) *Praeger, Irish Nat.* 1905, p. 161.

F. officinalis Linn.

Districts — II. III. — V. VI. VII. — IX. Colonist. Cultivated ground and waste places. Rare and uncertain in appearance. Ann. May—September.

II. In a field near Templenoe, Kenmare Bay, and a garden weed at Darrynane, 1889.—III. Sparingly in a field near Ballinskelligs coast-guard station, 1892.—V. In fields near Ventry coast-guard station and about Castlegregory, 1890–1907.—VI. A garden weed at Cloghereen, Muckross, 1892.—VII. On waste ground about the Spa, Tralee Bay, 1888 : *R.W.S.*—sparingly in all these stations.—IX. About Tarbert, 1913 : *Phillips*.

First record in 1901 : *R.W.S., Tepog. Bot.*

Like many other weeds of cultivation *F. officinalis* proves to be quite a rare plant in the county and uncertain in its appearances. The distribution of all these Fumitories, however, is still imperfectly known, and all are probably more frequent than the above records would show.

CRUCIFERÆ.

CHEIRANTHUS Linn.

C. Cheiri Linn. Wallflower.

Districts — — — — V. VI. VII. VIII. — Alien. On ruins and old walls. Rare and local. Perenn. May—June. *Callicole A.*

V. Abundant on the old castle at Minard west of Anascaul, Dingle Bay, 1914.—VI. In several places about the Muckross Abbey ruins, 1888–1912.—VII. Sparingly on walls about Tralee, 1899–1914.—VIII. In some plenty on Ardfert Abbey ruins, 1888–1907 : *R.W.S.*

First record in 1889 : *R.W.S., Journ. of Bot.*

This escape from cultivation is quite established about the old Abbeys of Ardfert and Muckross as well as at Minard. It appears to have reverted in all these stations to the wild state with small pure yellow flowers.

[*MATTHIOLA SINUATA* R. Br. *Sea Stock*.—This conspicuous plant is recorded by Dr. Smith in his *Hist. of Kerry*, 1756, p. 378, No. 56, as growing “near Beal Castle, towards the Shannon mouth.” It is certainly not there now, nor is there any record of its having been seen there since his time. *M. sinuata* is recorded also by the late Rev. W. Raymond in a marginal note in his copy of *Bentham’s British Flora* as growing on the “Strand, Banna, July 4th, 1878”; unfortunately, no specimen was kept, and the plant has not been seen there since. It is difficult, therefore, to determine whether these records were merely errors or whether they may be taken as further proof of the undoubted decrease of this plant in Ireland. The following statement of Dr. Smith concerning this “Great sea stock gillyflower with the sinuate leaf” is worthy of mention, although its accuracy might be questioned by patriotic French botanists:—“M. Tournefort informs us in his travels, that except Pinks and Gillyflowers, they had no other beautiful flowers in France, but what originally came from the Levant. A virtuoso of Paris in 1615, brought from thence, the Indian Chestnut, and double Anemonies, Tubroses, Hyacinths, Narcissuses, and even the Flower de Luce came from the same country.”

NASTURTIIUM R. Br.

N. officinale R. Br. *Radicula Nasturtium-aquaticum*
Rendle & Britten. *Water Cress*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Ditches, streams and damp places. Common.
Peren. June—September.

From sea-level, to 750 feet in the Roughty valley (*R.W.S.*), and probably higher.

First record in 1883: *Archdeacon Wynne, Journ. Roy. Meteor. Soc.*, No. 49.

Both the small-leaved, slender form, of drier situations—*var. microphyllum Reichb.*, and the large-leaved luxuriant *var. siifolium Reichb.*, occur, but appear to be only states caused by situation. The Water Cress has given its Irish name *Biolar* or *Biller* to several small streams in Kerry, two at least in the neighbourhood of Killarney being known as Bilrook or Billerook.

N. palustre DC. *Radicula palustris* Moench.

Districts — — — — V. VI. VII. VIII. —
Native. Marshy spots, muddy pond-sides, &c. Rare.
Peren. June—August.

V. A plant found floating in the lake, Castlegregory, 1889 : *R.W.S.*—VI. Marshy ground on Ross Island, Killarney (*Hart*) *Rec. Add.* By the lake-side just north of Ross Castle and abundantly on the north shore of Ross bay, Killarney : *R.W.S.* 1888, and in 1914. On mud by Creasane Lough and about small pools between Milltown and Firies, 1902–04.—VII. Rather frequent on mud about two small ponds on the north side of the Tralee canal near Blenner-ville, 1889–1914. On mud about the north end of Parkmore pond and plentiful in several swamps and in the old river-bed about Ardcrone to the north-east of Farranfore ; by the river in Castleisland : *R.W.S.* 1904. In several localities about Milltown and Castlemaine, 1902 : *Capt. Creagh-Haward*. Rather plentiful in a small swamp near Fenit, Tralee Bay, 1914.—VIII. Pond-side near Lerrig north of Ardfert, 1905–14 : *R.W.S.*

First record in 1872 : *Hart, Rec. Add.*

The usual Kerry plant is the small prostrate state, a few inches long, growing on mud ; the tall upright form, a foot or more in height, has, however, been gathered about Killarney and in several of the swamps near Ardcrone.

BARBAREA R. Br.

B. vulgaris R. Br. *Winter Cress.* *Yellow Rocket.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Hedge banks, road-sides and stony places.
Common in the north, rare or local in the south. Peren.
or Bien. May—July. *Calcicole B.*

Localities in the south are—I. Frequent on the limestone from Kenmare to Kilgarvan, and—II. About Kenmare and Castlecove, 1889–1907 : *R.W.S.*—III. On a wall north of Waterville, 1904 (*W. West*) *Journ. of Bot.*, 1911, p. 60. Sparingly in waste places and about the railway at Cahersiveen, 1896–1911.—IV. On a wall at Churchtown west of Beaufort, 1901.—V. Near Cloghane and Fermoy, Brandon Bay, 1894–1908, and sparingly about Dingle, 1905 : *R.W.S.*

First record in 1890 : *Stewart, Proc. R.I.A.*

Var. ARCUATA (Reichb.)—III. Garden weed at Glenbeigh and by a cottage near Coomasaharn Lake, 1892 : *R.W.S.*—VI. Near the Railway Hotel, Killarney, and by the railway near the station “exactly agreeing with Reichenbach’s plant” : *Druce* 1891—still about the Killarney railway station, &c., 1908 : *R.W.S.*

[*B. PRÆCOX* R. Br. *B. verna* Aschers.—I. In some plenty on waste ground and, more sparingly, about the adjoining roadsides a little north of the Kenmare Suspension bridge: *R.W.S.* 1890—still there in 1907, but appears to be decreasing—II. Sparingly near the Kenmare wells just north of the Finnihy River, 1899: *R.W.S.* No doubt an introduction, but appears to be fairly well established in one at least of its Kenmare stations.]

ARABIS Linn.

A. hirsuta Scop. *A. sagittata* DC. *Hairy Rock Cress*.

Districts — II. III. — V. — VII. VIII. IX. Native. On sandhills and sandy pastures, on limestone rocks and on walls. Rare inland but locally abundant near the sea, usually as *A. ciliata* R. Br. Bien. May—August. *Calcicole A.*

II. In several localities about Darrynane and on sandy fields and banks east of Castlecove, Kenmare Bay, 1888–1906.—III. Abundant on sandhills at Ballinskelligs; on Beginish Island, Valencia Harbour, and on the mainland opposite, 1889–1914; sandhills in Kells Bay, 1896, and on a sandy bank by Caragh Creek, north of Glenbeigh, 1900.—V. Abundant in many places about Castlegregory, extending at intervals as far north as Kilshannig Point, and to Stradbally on the west, 1888–1907: *R.W.S.* Near Cloghane, Brandon Bay, 1913: *Praeger*.—VII. In many places about Tralee; on limestone rocks at Clogherbrien and Kilfenora, Tralee Bay; frequent around Barrow Harbour, especially on both sides of the entrance; on walls, &c., about Castleisland and in several places between it and Tralee, 1888–1904.—VIII. On limestone rocks at Rahoneen; abundant on sandhills at Banna, Ballinprior, &c.; about Ardfert and Abbeydorney, 1887–1905.—IX. On sandhills at Beal Point, Shannon estuary, 1889–1902: *R.W.S.*—still at Beal Point, 1913: *Phillips*.

Often sought for, but not yet seen, on the limestone rocks about Kenmare and Killarney.

First found by James Drummond between 1810 and 1820 at Darrynane; first recorded in 1825: *Mackay Cat.*

Typical *A. hirsuta* appears to be a rare plant in Kerry where it occurs usually on inland walls and on limestone rocks near the sea; even there, however, the Kerry plant seldom shows well marked auricles on the stem leaves.

Var. CILIATA (R. Br.).—II. On sandhills near Darrynane (Drummond) Mackay Cat. 1825.—V. Sandy banks at Trabeg, near Dingle: Hart 1884. Abundant on sandhills near Castlegregory with its *var. HISPIDA* Syme (Marshall & Shoolbred) R.W.S. 1903. Plants agreeing with the descriptions of *A. ciliata* R. Br. and its *var. HISPIDA* Syme, still (1914) occur in Drummond's original station on the Darrynane sandhills and on nearly all the sandhills and sandy pastures round the Kerry coast.

The great diversity of opinion among competent botanists as to what *Arabis ciliata* R. Br. really is, species, subspecies or variety, is very remarkable, and as the plant is an abundant and characteristic member of the Kerry flora, a somewhat lengthy investigation of its claims to specific rank would appear to be fully justified.

On most of the Kerry sandhills and sandy pastures, a plant fully agreeing with the text-book descriptions of *A. ciliata* R. Br. is found in greater or less abundance. This plant is glabrous both in its stem and leaves except for a ciliate rim to the latter; the stem leaves are sessile and not cordate or auricled as in *A. hirsuta*. Growing mixed with these, however, are other plants showing every gradation between this almost completely glabrous *A. ciliata* and a form so densely ciliate on both stem and leaves as to appear woolly or even white at some little distance. The degree of ciliation, moreover, is found to vary even on the same plant; thus a plant gathered on the Kells sandhills, Dingle Bay, with several stems growing from the same root, had some of these stems almost quite glabrous, while others showed well marked ciliation. The mode of insertion of the stem leaves, a character largely relied on in separating *A. ciliata* from *A. hirsuta*, varies also in plants otherwise similar. Reference to botanical text-books shows that this difficulty of limiting *A. ciliata*, or of separating it from *A. hirsuta*, has engaged the attention of several authorities. Among these may be mentioned Syme, who endeavoured to solve the difficulty by making the more hairy of the sessile stem-leaved forms, a *var. HISPIDA* of *A. ciliata*, and the less hairy of the cordate or auricled-leaved forms a *var. GLABRATA* of *A. hirsuta*.

For some years this difficulty was further complicated by the distribution by foreign botanists under the name *A. ciliata* R. Br. of a continental alpine plant,* which differs in several

* *Vide* Willkomm et Lange, *Prod. Flor. Hisp.*, Vol. iii., p. 817.

particulars from the Irish plant: this alpine plant is now known as *A. arcuata* Shuttleworth. The various notes which have appeared concerning *A. ciliata* in the *Annual Reports* of the Botanical Exchange Clubs, &c., while they afford interesting, if bewildering, reading, are too long for insertion here. A paper, however, by M. Georges Rouy contributed to the *Rev. de Bot. Systématique*, of which a translation was communicated by Mr. Frederick Townsend to the *Journ. of Bot.*, 1903, p. 278, may be referred to, as it gives the opinion of this well-known author on a gathering of *A. ciliata* made by the Rev. E. S. Marshall and W. A. Shoolbred on the sandhills and sandy pastures about Castlegregory on the 24th June, 1902. In this paper M. Rouy draws up a new and lengthened description* of *A. ciliata* from the material sent him, a description which would include most of the Kerry sandhill plants, and he finally infers that the real affinities of this plant are with *A. hirsuta* Scop. rather than with *A. arcuata* Shuttleworth, and that one might say it is a form of *A. hirsuta* Scop. (*sensu stricto*). As this is also the opinion of other competent botanists, and fully agrees with the present writer's conviction after many years observation of this plant in the field, it has seemed better to treat *A. ciliata* in this flora as an extreme sea-side variety of *A. hirsuta*, connected with the type by intermediate forms to some of which the names *Retziana* (Beurl.) and *curtisiliqua* Rouy & Fouc. have been given by continental botanists, and *hispida* and *A. hirsuta* var. *glabrata* by Syme. It is worthy of note that, so far as at present known, *A. ciliata* R. Br. appears to be confined to the west coasts of Ireland and England, and if really entitled to full specific rank is one of the few species endemic in the British Isles.

[*A. STRICTA* Huds. "On the islands of Lough-Lane" (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 374, No. 17. This plant does not occur in Ireland, and in the British Isles is confined to some limestone rocks near Bristol. Perhaps *Sisymbrium Thalianum*, not uncommon about Killarney, was meant.]

* Had a wider series of Kerry *A. ciliata* been submitted to M. Rouy, he would, probably, have modified his description of this plant in one or two particulars, amongst them his statement that the ripe raceme equals or exceeds the remaining portion of the stem. While this is usually the case plants of undoubted *A. ciliata* have been noted both at Castlegregory and elsewhere in which the ripe raceme was not only less than half, but even barely a third the total length of stem.

CARDAMINE Linn.

C. pratensis Linn. *Lady's Smock.* *Cuckoo Flower.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Moist pastures and meadows, stream-sides and other damp places. Common. Peren. April—June.

From sea-level, to 2,650 feet on the Slieve Mish Mountains, to 2,940 feet on the Reeks (*Hart*), and to 3,120 feet near the summit of Brandon (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

C. hirsuta Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Waste places, walls, banks, &c. Common. Ann. March—September.

From sea-level, to 2,550 feet on the Reeks (*Hart*), and to 2,600 feet on Brandon (*Colgan*).

First record in 1882 : *Hart, Proc. R.I.A.*

C. flexuosa With. *C. sylvatica* Link.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Damp shady places. Rather common. Ann. May—September.

From sea-level, to 2,150 feet on Brandon (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

Rather less common in the county than *C. hirsuta*, and owing to the situations it affects, inclined to be local, especially in the north.

[*C. AMARA* Linn.—III. Very sparingly in a moorland swamp in the Glencar valley, a mile or two west of Lickeen House, Blackstones bridge (*H. S. Thompson & A. Elliott Journ. of Bot., 1910, p. 227.* The above record gives a very wide and unexpected extension to the range of this rare plant, which has not hitherto been found in Ireland outside of Ulster, a gap of more than 150 miles separating the Kerry from the nearest known northern station. Unfortunately no specimen was gathered, Mr. Thompson at the time being unaware of the great interest to Irish botanists of his discovery. It is a plant, however, he knows well, and in reply to a request for further information, he stated that contrary to its usual habit of growing in masses, he only remembered seeing two plants. A search by the present writer in the rather indefinite locality given above, June

1911, was unsuccessful, and it is better, perhaps, to await specimens before admitting *C. amara* to the Kerry flora.]

DRABA Linn.

D. incana Linn.

District — — — IV. — — — —
Native. Mountain cliffs. Very rare and local. Peren.
June—July.

IV. On the cliffs near the summit of Magillicuddy's Reeks, 1805 : *Mackay Rar.* Not scarce over a limited space on the cliffs north of Lough Googh and in two distinct gullies on cliffs looking south between Cummeenmore and the Black Valley : seen only on the south side of the Reeks : *Hart 1882.*

From 2,380 to 2,470 feet above the Black Valley and at 2,550 feet above Lough Googh (*Hart*).

First record in 1806 : *Mackay Rar.*

The three localities mentioned above are all within a mile of each other on the southern slopes of the Reeks, and mark the southern limit to the range of *Draba incana* in the British Isles. They lie a full degree south of any station known for this plant in England and a degree and a half south of the nearest Irish locality in Co. Galway, where it occurs as a lowland plant along the south shore of Lough Mask.

[*D. MURALIS* Linn.—“On the sides of the mountains round the upper or southern part of Lough-Lane” (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 374, No. 16. It is impossible to determine now what plant was really intended by Dr. Smith, but there can be no doubt that some error of identification has taken place.]

EROPHILA DC.

E. vulgaris DC. *E. verna* E. Meyer. *Draba verna* Linn.
Whitlow Grass.

Districts — — — III. — V. VI. VII. VIII. IX.
Native. Sandy and gravelly places, walls and rocks.
Rather common near the sea, rare inland. Ann. January—
June. *Calcicole B.*

III. On the Ballinskelligs sandhills, 1914 : *Miss Delap.*
On sandhills near the Inny River, Waterville, 1896, and on

sandhills at Rossbehy, 1892.—V. In several places about Castlegregory; about Dingle and on Derrymore, Tralee Bay, 1888–1907.—VI. On walls about Killarney, as between Bellville and the Deer Park gate, and on the Sunday's Well road; wall at Ballyhar bridge about four miles north-west of Killarney; about the railway station at Ballybrack and near Molahiffe, 1901–03.—VII. Frequent about Tralee; the Spa; Fenit, &c.; on the old castle at Castleisland and elsewhere in that neighbourhood, 1888–1914.—VIII. About Ardfert; Banna; Ballyheige; Lerrig and Lixnaw, 1889–1914.—IX. On the wall of an old churchyard about a mile south of Ballybunnion, 1908: *R.W.S.*

First record in *Cyb.* 1898: *R.W.S.*

The Whitlow Grass varies much both in the size to which it grows and in the shape of its capsule. Most of the plants seen in the county appear to be referable to the *var.* BRACHYCARPA (*Jord.*), and although plants with narrower fruits have been gathered about Killarney and elsewhere, none have been seen which could be included under the same author's *var.* STENOCARPA. Further investigation during the early months of the year would probably show that *E. vulgaris* was more widely distributed over the county than the above records would indicate.

COCHLEARIA Linn.

C. officinalis Linn. *Scurvy Grass.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On rocks and muddy places by the sea, and on mountain cliffs. Common by the sea, rare on the mountains. Peren. March—July.

First record in 1756: *Dr. Smith, Hist. of Kerry*, p. 118.

Var. ALPINA (*Wats.*).—III. On Crowkeylane Mountain east of Lough Currane, 1892: *Colgan & R.W.S.*—IV. In gullies on the north side of Carrantuohill at 3,100 feet, lower limit on the Reeks at Coomloughra Lake level, 1,550 feet: *Hart 1882*, and in 1904: *R.W.S.*—V. On Caherconree Mountain at 2,650 feet: *Hart 1882 a.* On Brandon Mountain (*Moore*) *Cyb.* 1866—still there, *circa* 2,500 feet, 1907, and—VII. Sparingly on the Gormagh cliffs, *circa* 1,700 feet, Slieve Mish Mountains, 1892: *R.W.S.*

The *var.* ALPINA ranges from 1,550 to 3,100 feet (*Hart*).

C. græenlandica Linn.

District — — — — V. — — — —
Native. Sea cliffs. Very rare? Bien? June.

V. With *C. danica* up to 700 feet on Slievedonagh and at the west end of the Great Blasket Island (*Praeger & Stelfox*), *Irish Nat.*, 1912, p. 160.

Ascends to 700 feet on the Great Blasket (*Praeger & Stelfox*).

First record in 1912 : *Praeger & Stelfox*, *loc. cit.*

This critical plant will probably be found in other localities round the rocky coast of Kerry.

C. danica Linn.

Districts — — III. — V. — VII. — —
Native. In rocky places and on walls near the sea. Rare and local. Ann. or Bien. April—June.

III. Sparingly on the ruins of Ballycarberry Castle near Cahersiveen, 1892 (*R.W.S.*) *Cyb.* 1898—still there but very sparingly, 1911.—V. On headlands and along the coast near Dingle, very plentifully (*Rev. W. M. Hind*) *Phytol.* 1857, p. 97. In several localities on the Great Blasket Island, ascending to 700 feet on Slievedonagh (*Praeger & Stelfox*) *Irish Nat.*, 1912, p. 160.—VII. Sparingly by the shore near the Spa, Tralee Bay : *R.W.S.* 1903.

Chiefly about sea-level, but ascends to 700 feet on sea cliffs on the Great Blasket Island (*Praeger & Stelfox*).

First record in 1857 : *Rev. W. M. Hind*, *Phytol.*, p. 97.

C. anglica Linn.

Districts I. II. — — — VII. — IX.
Native. Muddy estuaries. Rare ? Peren. April—June.

I. Not infrequent about the estuary near Kenmare, and—II. River side below Sneem, 1892–1913.—VII. About the bridge and river at Castlemaine and in the estuary at Blennerville, 1900 : *R.W.S.*—IX. Estuary at Ballylongford, 1913 : *Phillips*.

First record in 1901 : *R.W.S.*, *Topog. Bot.*

Probably more frequent round the Kerry coast than would appear from the above scanty records. It occurs usually as the *var.* HORTII *Syme*.

[**C. ARMORACIA** Linn. *Horse Radish*.—This is quite a rare plant in the county either as an escape from, or relic of, cultivation. It has been noted—III. By the shore near Ballinskelligs cable-station, 1889 ; near Dooaghs sandhills, 1913.—V. On a ditch bank near Ventry coast-guard station, 1890–1905.—VI. Sparingly on the lake shore near Castlelough bay, Killarney, 1911–14.—VII. About the roadside between Tralee and Blennerville, 1890, and on waste ground

near the Spa, Tralee Bay, 1914.—VIII. On waste ground near Ardfert, 1914 : *R.W.S.*]

[*HESPERIS MATRONALIS* Linn. *Dame's Violet*.—V. About Killiney churchyard west of Castlegregory, 1894–1907.—VI. Sparingly in the Home Park, Killarney, near the mouth of the Deenagh River, 1903.—VIII. Riverside below Ballinruddery Castle ruins near Listowel, 1899 : *R.W.S.*—IX. An escape about Ballybunnion and Beal Point, Shannon estuary, 1913 : *Phillips*. Occurs only as an escape from cultivation, and is nowhere thoroughly established.]

SISYMBRIUM Linn.

S. Thalianum Gay. *Arabis Thaliana* Linn. *Thale Cress*.

Districts I. II. III. IV. V. VI. VII. — —
Native. Walls, dry banks, waste places, and especially as a weed about gardens. Locally abundant. Ann. April—September.

I. In many spots about the village of Kenmare and plentiful about the garden, walks, banks, &c., at “The Falls” on the south side of the estuary ; by the roadside near Cleady and in several places along the railway track near Morley’s Bridge, 1903–13.—II. A garden weed at Darrynane, 1904.—III. Abundant about the Caragh Lake railway station and sparingly in the grounds of the Southern Hotel, 1898–1913.—IV. Abundant in the garden, &c., at Churchtown, 1909.—V. Abundant on walls about Dingle and along the old road to Connor Hill, 1890–1905.—VI. In many places about Killarney, as about the station and railway track, along the Ross road, Sunday’s Well road, in the Home and Deer Parks, at South Hill, in Glenflesk Castle grounds, about the Castletlough ruins, Lower Lake, &c., 1887–1912 ; about Ballybrack railway station, 1902.—VII. Abundant about the railway at Killorglin, 1909 : *R.W.S.*

First record in 1888 : *R.W.S.*, *Journ. of Bot.*

While *S. Thalianum* occurs in Kerry chiefly as a weed of cultivated ground and waste places, it appears to be undoubtedly native in several of the stations given above.

S. officinale Scop. *Hedge Mustard*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Waste places, roadsides, banks, &c. Common.
Ann. May—September.

First record in 1890 : *Stewart, Proc. R.I.A.*

S. Alliaria Scop. *Alliaria officinalis* Andrz.

Districts I. — — — — VI. VII. — —
Native. Shady places, hedge-rows, walls and rocks. Rare and local. Bien. April—June. *Calcicole A.*

I. Sparingly by the roadside east of Cleady, Kenmare, 1890–1904 : *R.W.S.*—VI. About Fossa on the Killarney-Beaufort road, 1906 : *Mrs. Jenner*. In several places about Killarney, as in the rocky grounds of the Lake Hotel, near Cloghereen, Muckcross, and on Innisfallen Island, &c. : *R.W.S.* 1889, and in 1914. Near the ruins of Molahiffe Church north of Fries, 1903.—VII. About Ballyseedy and Ballycarty east of Tralee : *R.W.S.* 1889, and sparingly on limestone rocks on the south side of Barrow Harbour, 1902 : *R.W.S.*

First record in 1883 : *Archdeacon Wynne, Journ. Roy. Meteor. Soc.*, No. 49.

Quite a rare plant in Kerry, and seen only on the limestone.

SUBULARIA Linn.

S. aquatica Linn. *Awl-wort*.

Districts — II. ? III. IV. V. VI. — — —
Native. In lakes and ponds in shallow water. Rare but locally abundant. Peren. July—August.

II. Near Waterville, 1845 (*W. H. Harvey*) *Herb. T.C.D.* ; the locality on the label is rather illegible but looks like Coom Catha or Coom Castle, and may be an old building, the remains of which can be seen when the water is low, on the south side of Lough Currane about half a mile east of the Southern Hotel.—III. In some plenty on the west side of Caragh Lake in a small bay near Lough Beg, 1906 : *Hanbury & R.W.S.* Abundant in Lough Ferta on Teer-moyle Mountain, Glenbeigh, 1908 : *Miss Delap & R.W.S.*—IV. In small lakes at the Gap of Dunloe : *Mackay Rar.* In Lough Callee on Mount Brassel and in Lough Acoose, Glencar : *Hart* 1882—still in both these lakes, 1904, and in the south-eastern corner of Caragh Lake near the Sugarloaf, 1889.—V. In some plenty at the northern end of Lough Camlaun near Connor Hill : *R.W.S.* 1891—still there in 1913 : *Praeger*.—VI. In several localities about the Killarney Lakes, as in Castletlough bay, along the Cahernane shore, and about the mouth of the River Flesk ; near the Eagle's Nest in the Long Range ; in the Upper Lake near Arbutus Island, and in Derrycunihy bay ; abundant in Ardagh pond near

Cloghereen, Muckcross, and in Lough Lake about four miles north-east of Killarney, 1887–1901 : *R.W.S.*

Ranges from about 50 feet in Caragh Lake, to 770 feet in Lough Camclaun (*R.W.S.*), to 918 feet in Lough Callee (*Hart*), and to 1,450 feet in Lough Ferta, Teermoyle Mountain (*R.W.S.*).

First record in 1806 : *Mackay Rar.*

BRASSICA Linn.

B. campestris Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Colonist. Banks, waste places, field-sides, &c. Common.
Ann. or Bien. May—July.

First record in 1881 : *Barrington, Proc. R.I.A.*

Occurs usually in Kerry as an obvious relic of cultivation ; it appears, however, to be quite established on some of the almost bare limestone rocks and islets in the Lower Lake of Killarney, where it has been noticed growing abundantly for many years.

B. nigra Koch. *B. sinapioides* Roth. *Sinapis nigra* Linn. *Black Mustard.*

Districts — II. III. — V. VI. VII. VIII. IX.
Colonist or Denizen. About cottages, banks and waste ground, usually near the sea. Locally abundant, but rare in the south and inland. Ann. June—August.

II. About Darrynane estuary, and—III. By cottages north-west of Waterville, 1889–1900.—V. Sparingly near the coast-guard station, Ventry Harbour, 1890.—VI. Abundant, inland, about the villages of Furies and Molahiffe, 1901.—VII. About Castlemaine and Barrow Harbour and abundant about Kilfenora, Tralee Bay, 1887–1914 ; and inland, near Dysert, south of Castleisland, 1903.—VIII. In some plenty about Ardfert, Banna and Ballyheige : *R.W.S.* 1889, and in 1907. Inland, near Abbeydorney and abundant about Lixnaw, 1894–1907.—IX. Frequent here, as at Ballybunnion, Ballyconry, Ballylongford, Tarbert, &c., 1889–1903 : *R.W.S.*

First record in 1888 : *R.W.S., Journ. of Bot.*

B. sinapis Visiani. *B. arvensis* O. Kuntze. *Sinapis arvensis* Linn. *Charlock.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Colonist. Cultivated ground and waste places. Common.
Ann. March—September.

From sea-level, to 1,000 feet among crops in the upper Roughty valley (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

B. alba Boiss. *Sinapis alba* Linn. *White Mustard*.

Districts [I.] II. III. [IV.] [V.] [VI.] VII. VIII. — Colonist. Cultivated ground and waste places. Rare and chiefly in the north. Ann. June—August.

[I. Sparingly in the grounds of the Southern Hotel, Kenmare, 1913].—II. By the roadside north of West Cove, Kenmare Bay, 1907 ; a weed in Darrynane gardens, 1904.—III. Sparingly in waste ground about Portmagee and among crops near Ballycarbery, Valencia Harbour, 1911.—[IV. A weed in Churchtown gardens, Beaufort, 1904.—V. On railway ballast near Camp, Tralee Bay, 1894.—VI. A weed in Woodlawn and Southhill gardens, 1909].—VII. Frequent in crops about Kilfenora, &c., Tralee Bay, and about Barrow Harbour, especially on the south side : *R.W.S. 1891*, and in 1914.—VIII. In several localities to the west and north of Ardfert and about Banna, 1902 ; in two or three places by the roadside east of Abbeydorney, 1907 : *R.W.S.*

First record in 1891 : *R.W.S., Journ. of Bot.*

DIPLLOTAXIS DC.

D. muralis DC. *Wall Mustard*.

Districts — — III. — — VI. VII. VIII. IX. Colonist. On roadsides, railways and walls. Rare. Ann. and Peren. May—August.

III. Sparingly on the railway-track near Cahersiveen and near Reenard Point opposite Valencia Island ferry, 1910 : *Miss Delap*.—VI. Sparingly on the railway embankment near Killarney, 1909.—VII. Sparingly by a wall near Fenit pier, 1906 : *R.W.S. 1908*—now abundant in several places between Fenit and the Spa, Tralee Bay, especially fine on a sea wall near Kilfenora, 1914.—VIII. Sparingly at the foot of a roadside wall a little east of Ballyheige : *R.W.S. 1903*, appears to be increasing here, 1907 : *R.W.S.*—IX. On the railway at Listowel, 1913 : *Phillips*.

First record in 1903 : *R.W.S., Irish Nat.*

This plant appears to be spreading rapidly in the south of Ireland, chiefly along the railways. Although first noticed in Kerry so recently as 1902, it is already on record for five out of the nine county divisions. It has now thoroughly established itself along the north side of Tralee Bay and has, no doubt, come to stay.

CAPSELLA Medic.

C. Bursa-pastoris Medic. *Bursa pastoris* Weber.
Shepherd's Purse.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Cultivated and waste ground, roadsides, and about houses, &c. Very common. Ann. Flowers nearly throughout the year.

From sea-level, to 1,025 feet near the Morley's Bridge—Ballyvourney road (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

The *var. CUNEATA*, which appears to be the best marked of the forms described by Mr. F. T. Mott in the *Midland Naturalist* for Aug. 1885, is common in Kerry, especially in sandy places near the sea.

SENEBIERA DC.

S. didyma Pers. *Coronopus didymus* Smith.

Districts I. II. III. — V. VI. VII. VIII. IX.
Colonist. Roadsides and waste places, chiefly near the sea. Locally abundant. Ann. May—September.

I. About Bunaw north of Derreen and abundant about Kenmare pier, 1894–1913.—II. On the shore north of Darrynane Harbour, 1889.—III. In some plenty about Cahersiveen railway station and about the estuary there, 1911 : *R.W.S.*—V. At Dingle, 1872 (*More*) *Rec. Add.*—still abundant about Dingle, 1905 ; on the railway ballast near Camp, Tralee Bay, 1894 ; near Kilshannig north of Castlegregory, 1907.—VI. Abundant about the Killarney railway goods-yard and adjoining roads, &c., 1901–09 : *R.W.S.*—still abundant there, 1915 : *Mrs. Jenner.*—VII. Frequent here, as about Blennerville, &c. : *Hart 1884*—still abundant at Blennerville, also about Tralee, the Spa, Castlemaine, Killorglin, &c., 1888–1914.—VIII. Sparingly about Ardfert railway station, 1914.—IX. Abundant about Tarbert and Beal Point, 1890, &c. : *R.W.S.*, and in 1913 : *Phillips.*

First record in 1872 : *A. G. More, Rec. Add.*

S. coronopus Poiret. *Coronopus procumbens* Gilib. *C. Ruellii* All. *Swine's Cress.*

Districts I. — III. — V. VI. VII. VIII. IX.
Colonist. Roadsides and waste places, usually near the sea. Rare in the south, common in the north. Ann. May—September.

I. Sparingly on the shore near Kenmare Harbour, 1903-13.—III. Near the coast-guard station at Ballinskelligs and near Boolakeel, 1889; in some plenty about Knightstown, Valencia, and at Reenard Point opposite, 1892-1906: *R.W.S.*—V. Near Kilshannig north of Castlegregory: *Hart* 1884. On Illauntannig, the only inhabited Magharee island, 1888, and about the Inch sandhills, Dingle Bay, 1894: *R.W.S.* About the village on the Great Blasket Island (*Praeger & Stelfox*) *Irish Nat.*, 1912, p. 160.—VI. Abundant about the village of Firies (inland), 1902.—VII., VIII. & IX. Common, and occurring inland, as about Lixnaw and Listowel, 1890-1902: *R.W.S.*

First record in 1884: *Hart*, *Proc. R.I.A.*

LEPIDIDIUM Linn.

L. hirtum Smith. *L. Smithii* Hook. *L. canescens* Gren. & Godr.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Dry banks, roadsides and waste places. Rather common, but rare in the north and unequally distributed in the county. Peren. May—August. *Calcifuge* B.

Rare in the following Districts—III. Sparingly about Waterville and at Knightstown, Valencia Island, 1896.—V. Sparingly about Dingle, 1890.—VIII. Sparingly about Abbeydorney, and—IX. Listowel, 1902: *R.W.S.* About Tarbert, 1913: *Phillips*.

From sea-level, to 750 feet in the Clydagh valley (*R.W.S.*).

First record in *Cyb.* 1866: *Babington*.

[*L. LATIFOLIUM* Linn.—“Dittander or pepper-wort, near the head of Kenmare river and on other parts of the sea-shore” (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 378, No. 55. Not seen there recently. There is no reason, however, to suspect any error in Dr. Smith’s record, more especially as this conspicuous plant still grows abundantly in a locality recorded by him in the adjoining county Cork.]

TEESDALIA R. Br.

T. nudicaulis R. Br.

District — — — — — VI. — — —
Native. Sandy shore of lake. Very rare and local. Ann.
May—June.

VI. Sparingly in the West Park, Killarney—about a dozen plants on the sandy margin of the lake near Mahony's Point, growing among the Gorse with *Cerastium arvense*, &c., June 1901 : *R.W.S. 1902*.

First record in 1902 : *R.W.S., Irish Nat.*

When re-examining the above locality in the summer of 1903, it was found that the great storm in February of that year had caused sad havoc along the sandy shore of the lake, a strip, in places several feet wide, having been quite washed away. The destruction done appeared to involve all the *Teesdalia* and most of the *Cerastium arvense*. A careful search, however, revealed a plant or two of the *Cerastium* still left, and it is possible that the *Teesdalia* may also have survived either there or in the neighbourhood. In 1904 and again in 1908, there was still no sign of the plant, although the *Cerastium* appeared to be spreading again.

This plant was recognised as occurring in Ireland only in 1896, when Mrs. Leebody found it growing on the shores of Lough Neagh—*vide the Irish Nat., 1896*, p. 212; the Killarney station possessed, therefore, especial interest as extending its range from the north-east to the south-west of Ireland. When growing in small quantity among other plants, it is very easy to overlook; it appeared to be native in its Killarney locality.

[CRAMBE MARITIMA Linn. *Sea Kale*.—II. On an Island towards the head of Kenmare River [as "sea coleworts"] (*Dr. Smith*) *Hist. of Kerry, 1756*, p. 85—but not seen there recently.—VII. One plant noticed for several years before 1890, by the shore below Seafield, Spa, Tralee Bay, but not seen there since 1900. About a dozen fine plants scattered along the stony margin of the beach, a quarter of a mile west of the previous locality, 1905 : *R.W.S. 1908*, but no sign of them in 1914. Dr. Smith's record of "sea coleworts" is equivalent to *Crambe maritima* according both to Ray and to Threlkeld's *Synopsis*. With other maritime plants, like the *Sea Stock* and *Mertensia*, the *Sea Kale* is a decreasing species in Ireland, and is not now found where it certainly occurred in former years. Even in the few stations in which it still occurs, not more than one or two plants are usually seen. In its Tralee Bay localities it is open to great suspicion of being an outcast or escape from cultivation, garden waste being not infrequently thrown over the adjoining low cliffs.]

CAKILE Mill.

C. maritima Scop. *Sea Rocket*.

Districts — II. III. — V. — VII. VIII. IX. Native. Sandy and gravelly sea shores. Common in the north, but very local south of the Dingle peninsula. Ann. June—September.

Rare in the following Districts—II. On islands at head of Kenmare River (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 85— but not seen recently in this District, although suitable localities occur about Darrynane, &c.—III. Sparingly on the Rossbehy sandhills and about Dooaghs, 1892–1913 : *R.W.S.*

First record in 1756 : *Dr. Smith*, *Hist. of Kerry*, p. 85.

RAPHANUS Linn.

R. Raphanistrum Linn. *Wild Radish*.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Colonist. Cultivated ground and roadsides. Rather rare and uncertain in its appearance. Ann. June—September.

From sea-level, to 650 feet in a field near Loosecannagh Lake (*R.W.S.*).

First record in *Cyb.* 1898 : *R.W.S.*

Nowhere an abundant species, and in several of the Districts little better than a casual.

R. maritimus Smith. *Sea Radish*.

Districts I. II. III. — V. — VII. — IX. Native. Sandy shores and sea cliffs. Local and rather rare. Bien. June—September.

I. Sparingly by the shore to the north-east of the Kenmare Suspension bridge, 1899.—II. Sparingly on the shore south of Tubbrid House and sparingly on Rosdohan Island near Parknasilla, Kenmare Bay, 1889–1892 ; in some plenty in several localities about Darrynane, as on the east side of the sandhills and on the south side of the estuary, on the shore about a mile west of the Harbour, and abundant on sandhills near Lamb's Head : *R.W.S.* 1890, and in 1904.—III. Sparingly on sandy banks near Reenard Point opposite Valencia Island, 1911.—V. Abundant about the ruins of Kilshannig Tower, north of Castlegregory, 1889, and in 1907.—VII. Sparingly near the Spa, Tralee Bay : *R.W.S.* 1890.—IX. Sparingly on the sandy shore at Ballybunnion : *Stewart* 1890.

First record in 1890 : *Stewart*, *Proc. R.I.A.*

RESEDACEÆ.

RESEDA Linn.

R. Luteola Linn. *Weld.* *Yellow Weed.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native or Denizen. Dry banks, roadsides and waste places.
Rather common. Bien. June—September. *Calcicole B.*

First record in 1901: *R.W.S., Topog. Bot.*

The exact standing of this plant in the county is impossible to determine. Most of its stations are in the vicinity of villages or habitations, and it appears to have been formerly grown for dyeing purposes.

VIOLACEÆ.

VIOLA Linn.

V. palustris Linn. *Marsh Violet.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Mountain swamps, stream-sides and other wet places. Common. April—June. *Calcifuge A.*

From sea-level, to 2,550 feet on the Reeks (*Hart*), to 2,790 feet on the summit of Baurtregaum and to 3,120 feet on Brandon summit (*R.W.S.*).

First record in 1806: *Mackay Rar.*

Var. EPIPSILA (*Ledebour*)—IV. In the Black Valley, 1911: *Mrs. Jenner.*—VI. Near the Upper Lake, Killarney, 1911: (*Druce*) *New Phytologist*, Nov. 1911.

Whether *V. epipsila* is specifically distinct from *V. palustris* is very doubtful. Until a few years ago it appears to have been passed over in the British Isles as a large form of the latter plant; since, however, attention has been drawn to their points of difference, *V. epipsila* has been recognised in several localities in England, and in 1911 was found for the first time in Ireland in two localities in Kerry. The distribution of this plant as given by Nyman, includes the greater portion of northern Europe, so its occurrence in the British Isles is not unexpected; its exact range there is still quite uncertain.

V. odorata Linn. *Sweet Violet.*

Districts I. — III. IV. V. VI. VII. VIII. IX.
Alien. In woods and shady places, and by roadsides. Rare.
Peren. February—April.

I. Sparingly as an escape in Ardtully woods, Kilgarvan, 1904: *R.W.S.*—III. An escape or planted in Glanleam

woods, Valencia, 1911 : *Miss Delap & R.W.S.*—IV. An escape near Dunloe Castle, 1912 : *Mrs. Jenner*. By the River Laune in Beaufort woods, 1902.—V. By the roadside near Camp, Tralee Bay, and in the woods at Hillville, Fermoy, Brandon Bay (*R.W.S.*) *Cyb.* 1898.—VI. Killarney, 1883 : *Archdeacon Wynne*—in several places by walls and in shrubberies about Killarney, 1901–09.—VII. An escape in the “Green,” Tralee (*R.W.S.*) *Cyb.* 1898, and in 1907. Abundant about an old Church and other spots in Kilcolman demesne, Milltown, 1909.—VIII. By the roadside near Ardfert, 1914.—IX. Sparingly by the roadside between Tarbert and the pier, 1904 : *R.W.S.*

First record in 1883 : *Archdeacon Wynne, Journ. Roy. Meteor. Soc.*, No. 49.

Quite established in several places about Killarney, but rarely seen elsewhere in the county.

V. Riviniana Reichb. *V. sylvatica* Fries in part. Wood Violet.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Hedge banks, woods and rough mountain pastures, &c. Common. Peren. April—May.

From sea-level, to 2,550 feet on the Slieve Mish range (*Hart*), to 3,000 feet on Brandon (*R.W.S.*), and to 3,200 feet on the Reeks (*Hart*).

First record in 1881 : *Barrington, Proc. R.I.A.*

A beautiful form of this Violet with large white flowers grows sparingly on Innisfallen Island, Killarney, where it has been gathered for several years by *Mrs. Jenner*; it is referred by *Mrs. Gregory* in her *British Violets* to *V. canina* × *sylvatica* (*agg.*).

V. Reichenbachiana Boreau. *V. sylvestris* Kit.

Districts I. II. III. IV. V. VI. VII. VIII. — Native. In woods and shady places. Common. Peren. March—April.

First record in *Cyb.* 1898 : *R.W.S.*

This Violet occurs most probably throughout the county.

V. canina Linn. *V. ericetorum* Schrad. Dog Violet.

Districts — II. III. IV. V. VI. VII. VIII. IX. Native. Sandy places near the sea, lake margins, &c. Rather rare, but locally abundant. Peren. April—June.

Some inland localities are—III. Along the south end of

Caragh Lake, 1911.—IV. Along the Tomies shore of the Lower Lake and in the Gap of Dunloe, Killarney, and—VI. Abundant on many of the islands and round the shores of the Lower Lake, occurring less frequently about the Middle Lake, the Long Range and Upper Lake, Killarney, 1888–1914 : *R.W.S.*

From sea-level, to 700 feet on the Great Blasket Island (*Praeger & Stelfox*).

First record in 1825 : *Dr. Taylor, Mackay Cat.*

Var. LACTEA (*Smith*). *V. lancifolia* (*Thore.*).—V. On Brandon Mountain (*Dr. Taylor*) : *Mackay Cat.*—VI. On damp spots around the shores and on several of the islands in the Lower Lake, Killarney, 1904–14 : *R.W.S.*

[*V. STAGNINA* Kit.—IV. In the Gap of Dunloe (*Rev. W. M. Hind*) *Phytol.* 1857, p. 26. This plant has not been seen in the county by any recent observer, and in Ireland is known only from a few localities on the limestone, a formation which does not occur within some miles of the Gap. Unfortunately Mr. Hind's specimens are not available for examination, but it is probable that some form of the preceding species was really gathered.]

V. tricolor Linn. *Wild Pansy*.

Districts — — III. IV. — VI. VII. — —
Colonist. Cultivated ground, roadsides, &c. Very rare.
Ann. April—September.

III. In two or three spots by the roadside between Mountain Stage and Coomasaharn Lake near Ballynakilly bridge, 1906 : *Synnott & R.W.S.*—IV. In Cummeenacappul Glen west side of the Reeks : *Hart 1882*.—VI. A garden weed at Dromhall, Woodlawn, and Southhill, and on walls along the Muckcross road, Killarney, 1896–1909 : *R.W.S.* In a cabbage field near Gortnagane east of Headford, 1903 : *Marshall & R.W.S.* A garden weed at Lahard House, near Beaufort, 1909 (*var. LLOYDII Jord.*) *Mrs. Jenner*.—VII. Sparingly by roadside near Milltown railway station, 1909 : *R.W.S.*

From sea-level, to 700 feet near Headford (*Marshall & R.W.S.*).

First record in 1882 : *Hart, Proc. R.I.A.*

V. arvensis Murray.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Colonist. Cultivated ground and waste places. Rather common. Ann. April—October.

From sea-level, to 550 feet on the Reeks (*Hart*).

First record in 1882 : *Hart, Proc. R.I.A.*

Like most weeds of cultivation, this proves to be rarer in Kerry than in most Irish counties.

V. Curtisii Forster.

Districts — II. III. — V. — VII. VIII. IX.
Native. On sandhills and sandy pastures near the sea.
Common and locally abundant. Peren. April—September.

First record in *Cyb. 1866* : *Moore*.

This is a very characteristic and beautiful plant on the Kerry sandhills, and when in full flower often covers large areas of these sandy wastes with a sheet of colour. Both the yellow form and that with a combination of bluish violet and pale yellow occur in great abundance.

POLYGALÆÆ.

POLYGALA Linn.

P. vulgaris Linn. *Milkwort*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Stony places, banks, rocks and sandhills. Common.
Peren. May—September.

From sea-level, to 2,400 feet on the south side of Carran-tuohill, Reeks—"true *P. vulgaris*" (*Hart*).

First record in 1855 : *Joseph Woods, Phytol.*, p. 209.

This plant appears to attain its greatest perfection in Kerry on limestone. On the bare calcareous rocks about Ross Island and in the Muckcross demesne, Killarney, as well as in similar situations about Kenmare, it quite rivals *P. grandiflora* Bab. in the size and brilliant colouring of its flowers.

Var. OXYPTERA (*Reichb.*).—A common plant on most of the Kerry sandhills, but appears to be absent from, or overlooked in, District IX.

P. serpyllacea Weihe. *P. depressa* Wend.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Heaths, mountain pastures, bogs, &c. Common.
Peren. May—September. *Calcifuge A.*

From sea-level, to 2,800 feet on the Reeks (*Druce*).

First record in 1855 : *Joseph Woods, Phytol.*, p. 209.

Blue is the prevailing colour of the Milkworts in Kerry

as elsewhere in Ireland ; a pale purple state, however, is not infrequent, and, more rarely, pure white is also seen. In a few places the last-named is the predominant colour, as about the old mines on Ross Island, Killarney, where the ground is dotted about with many dense tufts of this plant.

CARYOPHYLLÆÆ.

SAPONARIA Linn.

S. officinalis Linn. *Soapwort.*

Districts I. II. III. — V. VI. — VIII. IX. Alien. Banks, roadsides and waste places. Rather rare and local. Peren. August—October.

I. In several localities between Kenmare and Kilgarvan, as about Cleady and Caher, &c., 1890–1913.—II. By the roadside west of Kenmare and again at Castle Cove and near Darrynane Hotel, 1889–1913.—III. About Knightstown, Valencia, 1906.—V. In one or two places about Castlegregory and Tullaree, and near a deserted coast-guard station at Minard west of Anascaul, 1890–1914.—VI. In several localities about Killarney, as on the shore of Castlough bay and on the north shore of Ross bay, Lower Lake; in the Home Park and on the roadside near Courteene Hall, &c., 1887–1914.—VIII. On a roadside bank near Lerrig; north of Abbeydorney; near Finnuge and by the roadside east of Moneycashen, 1892–1904.—IX. In one or two spots by the roadside between Ballybunnion and Cashen Ferry bridge, 1889–1908, by the roadside near Tarbert, 1904: *R.W.S.*, seen in the last-named station, 1913: *Phillips*.

First record in 1888: *R.W.S.*, *Journ. of Bot.*

This is a very persistent relic of former cultivation, and although no early record of its occurrence in Kerry is available, there can be but little doubt that it has been established very many years in several of the stations given above. About Castlough bay, Killarney, the flowers are usually double.

[*DIANTHUS PLUMARIUS* Linn. *Common Pink*.—VI. In considerable quantity on a rocky promontory in front of the Lake Hotel, Killarney, June 27, 1856 (*Rev. W. M. Hind*) *Phytol.* 1857, p. 28. Still in the above locality, where it has been noticed by the present writer for several years. The plant, however, can no longer be described as occurring “in considerable quantity”; in 1914, as well as for the past twelve years or more, only one fair sized patch has been

seen. The rocky eminence on which the *Dianthus* grows has been laid out with walks and view-points, and is much used by visitors to the adjacent Lake Hotel, who have no doubt helped to reduce the area formerly occupied by this Pink. While it is a surprise to find a member of this xerophytic family maintaining its position amid the humid surroundings of the Kerry climate for a period of probably well over sixty years, it affords a good illustration of how persistently an introduced plant will cling to a very restricted area when once established there.]

SILENE Linn.

S. Cucubalus Wibel. *S. inflata* Smith. *S. latifolia* Rendle & Britten. *Bladder Campion*.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Hedge banks, field-sides, waste places, &c., especially near the sea. Rather rare. Peren. June—August.

More frequent in Districts I., VI. & VII. than elsewhere, and quite rare in IX., where it has been noticed only along the railway near Listowel.

From sea-level, to 950 feet in the upper Roughty valley (*R.W.S.*).

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 28.

The var. *PUBERULA* (*Jord.*) has been noted in Districts IV. & VI., and no doubt occurs elsewhere in the county.

S. maritima With. *Sea Campion*.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Shingly and rocky sea shores. Common and locally abundant; very rarely inland on mountain cliffs, and at low level on lake shores. Peren. May—September.

Inland localities are—IV. At 1,400 feet above Auger Lake in the Gap of Dunloe : *Hart 1882*.—VI. Abundant on the shores of the Lakes of Killarney (*Isaac Carroll Cyb. 1866*). Still locally abundant about the Lower and Middle Lakes, as on the Castletlough ruins and adjacent shore, along nearly the whole of the south shore of Ross Island, especially about the old Mines, on rocks and old mine debris on the Middle Lake shore near the Colleen Bawn rock, 1914 : *R.W.S.*

At sea-level, and at 1,400 feet in the Gap of Dunloe (*Hart*).

First record in 1844 : *S. P. Woodward, Phytol.*, p. 878.

The Killarney localities for *S. maritima* are almost the

only ones known in Ireland where this plant occurs inland at low level and apart from tidal influence. It is associated on Ross Island with abundance of *Armeria maritima*.

S. anglica Linn.

Districts — — III. — V. VI. VII. — —
Colonist. Cultivated ground and roadsides. Rare. Ann.
June—October.

III. Rather frequent in fields and by roadsides about Glenbeigh and Dooaghs, and sparingly near Kells Bay : *R.W.S.* 1889, and in 1902.—V. In cornfields on the east side of the estuary at Trabeg, Dingle : *Hart* 1884. Sparingly by the roadside near Inch, Dingle Bay, 1892 : *R.W.S.*—VI. In an oatfield at Fossa west of Killarney, 1906 : *Mrs. Jenner*.—VII. Sparingly near Killorglin and by the roadside between Milltown and Callanafersy, 1888–1890 : *R.W.S.*

First record in 1884 : *Hart, Proc. R.I.A.*

[*S. ACAULIS* Linn.—“ On the rocky mountains in Dunkerron near Black-stones ” (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 379, No. 64. The rocky mountains referred to are most probably the Reeks which are not far from Blackstones, Glencar. These mountains, however, have been too well explored by Mr. Hart and others to allow much chance of the *Silene* having been overlooked. No doubt parts of the two very wild Baronies of Dunkerron North and South have not even yet been thoroughly searched, but it is more probable that the record is some error of Dr. Smith. In Ireland, *Silene acaulis* is not known to occur south of Clare Island off the coast of Mayo, fully 120 miles to the north.]

LYCHNIS Linn.

L. vespertina Sibth. *L. alba* Mill. *White Campion*.

Districts — — III. — V. VI. — VIII. IX.
Colonist. Sandy cultivated ground and waste places. Rare.
Peren. June—September.

III. Sparingly in waste ground about Caragh Lake railway station, 1900–05.—V. Rather plentiful in sandy fields by the sea near Fermoy, Brandon Bay, 1890–1905.—VI. Rather plentifully in one or two spots on the sandy shores of Castletlough Bay near the Lake Hotel, Killarney : *R.W.S.* 1889—still in much the same quantity in 1914.—VIII. Near Kilmoily north of Ardfert, 1877 : *Rev. W. Raymond*.—

IX. Abundant in sandy fields and on banks, &c., to the south and west of Ballybunnion, 1899–1908 : *R.W.S.*

First record in 1889 : *R.W.S., Journ. of Bot.*

Plants with reddish coloured flowers were gathered near Ballybunnion in 1902 and 1908.

L. diurna Sibth. *L. dioica* Linn. *Red Campion*.

Districts — II. III. IV. — VI. — VIII. IX. Native. Woods, thickets and damp gullies in sea cliffs. Rare and local. Peren. May—June.

II. Abundant in the woods at Darrynane and again, but sparingly, to the north of Darrynane Harbour, 1889–1904 : *R.W.S.*—III. Near the old Monastery at Kildreelig, Bolus Head, 1906, and—IV. On the east side of Caragh Lake below Oolagh, 1898 : *Miss Delap.*—VI. In Muckcross demesne (*Joseph Woods*) *Phytol.* 1855—still occurs in several places in Muckcross demesne, also about Castletlough Bay and on Ross Island, &c., Killarney, 1914.—VIII. In two or three places around Kerry Head : *R.W.S.* 1889.—IX. On the coast south of Ballybunnion : *Stewart* 1890. Sparingly in woods by the River Feale, a little east of Listowel, 1890 : *R.W.S.*

First record in 1855 : *Joseph Woods, Phytol.*, p. 125.

L. Flos-cuculi Linn. *Ragged Robin*.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Marshes, damp meadows, by streams, &c. Common. Peren. May—August.

From sea-level, to 1,425 feet on the Reeks (*Hart*).

First record in 1881 : *Barrington, Proc. R.I.A.*

L. Githago Scop. *Agrostemma Githago* Linn. *Corn Cockle*.

Districts I. II. III. IV. V. VI. VII. VIII. — Colonist. In cultivated ground, nearly always with corn or vetch crops. Rare. Ann. June—August.

I. Sparingly in a vetch crop near Morley's Bridge, 1894.—II. In a cornfield near Castlecove, Kenmare Bay, 1896 : *R.W.S.*—III. Sparingly in a cornfield near Knightstown Valencia, 1910 : *Miss Delap.* Sparingly in a field near Caragh bridge, 1913, and—IV. In a field near Kilgobnet west of Churchtown, 1899 : *R.W.S.*—V. Among corn on the Great Blasket Island : *Barrington* 1881. In cornfields near Dingle and near Emalough and Inch east of Anascaul, in an oat field near Castlegregory : *R.W.S.* 1891, and in 1914.—VI. In vetch crops near Ballymalis Castle and near Fahagh

Court, and—VII. In a cornfield near Reen north-west of Killorglin, 1903 : *R.W.S.*—VIII. In a field near Akeragh Lake, Ballyheige, 1887 : *Rev. W. Raymond*. With vetches near Moneycashen, 1902 : *R.W.S.*

First record in 1881 : *Barrington, Proc. R.I.A.*

CERASTIUM Linn.

C. tetrandrum Curt.

Districts I. II. III. — V. VI. VII. VIII. IX. Native. Sandy ground and on walls, chiefly near the sea. Locally abundant. Ann. March—June.

First record in 1881 : *Barrington, Proc. R.I.A.*

This is abundant on the Kerry sandhills. In District I., where there are no sandhills, it is rare, and has been noticed only about Kenmare and between Lehid and Bunaw. It occurs also, but very rarely, inland, as along the sandy north shore of the Lower Lake, Killarney : *R.W.S. 1902*, and in 1914 ; and in some abundance on Kilflyn bridge, east of Abbeydorney, 1907 ; these are the only inland localities at present known for this plant in the county. Kilflyn lies about eight miles from the nearest sea, and the Killarney station about twelve.

C. semidecandrum Linn.

Districts — II. III. — V. VI. VII. VIII. IX. Native. Sandhills and sandy places. Rather common near the sea, very rare inland. Ann. April—May.

It occurs inland—VI. In one or two spots along the sandy north shore of the Lower Lake, Killarney, about Mahony's Point : *R.W.S. 1902*, and in 1904.

First record in 1884 : *Hart, Proc. R.I.A.*

The Killarney station given above is, with the exception of Mr. Hart's Benevenagh, Co. Kerry locality, the only inland station for *C. semidecandrum* known in Ireland. With *Cerastium arvense*, *Silene maritima* and *Armeria maritima*, it forms an interesting little group of plants, usually maritime in Ireland, which still hold their ground about the Lower Lake, Killarney.

C. glomeratum Thuill. *C. viscosum* Linn. *Mouse-ear Chickweed.*

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Roadsides, banks and waste places. Common. Ann. April—September.

From sea-level, to 1,020 feet on the Kerry side of the tunnel

on the Glengarriff road and to 1,250 feet on the Connor Hill road (*R.W.S.*).

First record in 1901 : *R.W.S., Topog. Bot.*

The form *apetalum* (Dum.) has been noted in many localities, and appears to be as frequent in the county as the type.

C. triviale Link. *C. vulgatum* Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Pastures, banks, waste places, damp spots on mountains, &c. Very common. Peren. Flowers nearly all the year round.

From sea-level, to 2,756 feet on the summit of Mangerton (*R.W.S.*), to 3,000 feet on the Reeks and to 3,127 feet on the summit of Brandon (*Hart*).

First record in 1881 : *Barrington, Proc. R.I.A.*

C. arvense Linn.

Districts — — — — V. VI. — — —
Native. On rocky ground by the sea, and inland on sandy banks. Very rare and local. Peren. May—September.

V. On the Blasket Islands (*W. Andrews*) *Cyb. 1866*. Common on the larger Blasket Islands—Great Blasket, Inishvickillane and Inishnabro : *Barrington 1881*. In full bloom on the south side of Inishvickillane in September 1906 : *Miss Delap.*—VI. Sparingly along the shore of the Lower Lake, Killarney, near Mahony's Point : *R.W.S. 1902*—seen there in 1912 (*Mrs. Jenner*), but the *Cerastium* and its surroundings were almost completely washed away during the great storm of February 1903 (*vide note under Teesdalia nudicaulis*, p. 30).

First record in *Cyb. 1866* : *W. Andrews*.

The Blasket Island plant is the subglabrous state or *var. Andrewsii*, named after its finder on these islands, by Dr. Boswell Syme ; the Killarney plant appears to be the usual hairy form.

STELLARIA Linn.

S. media Vill. *Chickweed*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Waste places, cultivated ground, &c. Very common. Ann. Flowers nearly all the year.

From sea-level, to 2,550 feet on the Reeks, to 2,650 feet on the Slieve Mish range and to 3,127 feet on Brandon summit (*Hart*).

First record in 1881 : *Barrington, Proc. R.I.A.*

Var. BORCEANA (*Jord.*)—*Var. apetala* (*Ucria*)—*Alsine pal-lida* (*Dum.*)—II. On Darrynane sandhills, 1889.—V. In several localities about Castlegregory, 1907.—IX. Near Ballyheige, 1908 : *R.W.S.*

Var. NEGLECTA (*Weihe*).—VI. Near Cahernane boathouse, Castlelough Bay, Lower Lake, Killarney : *R.W.S.* 1888, and no doubt elsewhere in the county.

S. Holostea Linn. *Stitchwort.*

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Hedges, bushy places, &c. Rather common, but appears to be quite rare over large areas in the county. Peren. April—June.

Rare in the following Districts—II. Near Darrynane Harbour, 1904 : *Miss O'Connell*.—V. In several localities about Camp on Tralee Bay, 1892 : *R.W.S.*

From sea-level, to 750 feet in the Clydagh valley (*R.W.S.*).

First record in 1882 : *Archdeacon Wynne, Journ. Roy. Meteor. Soc., No. 45.*

S. graminea Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Heathy and bushy places, on banks and about fields. Common. Peren. June—August.

From sea-level, to 1,200 feet on the Castleisland-Mount Eagle road and to 1,300 feet on the north side of the Paps Mountain (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

S. uliginosa Murray.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. By mountain streams, in ditches and other damp places. Common. Peren. May—September. *Calcifuge B.*

From sea-level, to 2,550 feet on Mangerton (*R.W.S.*), and to 2,800 feet on the Reeks (*Druce*).

First record in 1882 : *Hart, Proc. R.I.A.*

ARENARIA Linn.

A. trinervia Linn. *Moehringia trinervia* Clairvaux.

Districts I. II. III. IV. — VI. VII. VIII. — Native. Shady banks, roadside walls and in woods. Locally abundant, but rare or absent over large areas. Ann. April—July. *Calcicole B.*

I. Frequent about Kenmare, and thence up the Roughty valley to Kilgarvan, a distance of six miles, 1904-13; sparingly near the Cloonee Lakes, 1900.—II. Near Tubbrid House west of Kenmare, and on Garinish Island near Parknasilla, 1892: *R.W.S.*—III. Rather sparingly in Glan-learn demesne, Valencia, 1911: *Miss Delap & R.W.S.*—IV. In Beaufort woods, about Dunloe Castle and along the roadsides in the vicinity, 1904-09.—VI. Plentiful in many stations about Killarney, as along the roadside to Muckcross, on Ross Island, &c., 1888-1914.—VII. In several places about Tralee; in Ballyseedy demesne; Currans; Kiltallagh near Castlemaine, and Killorglin, 1888-1905.—VIII. Sparingly on a roadside bank north of Lixnaw, 1902: *R.W.S.*

First record in *Cyb.* 1898: *R.W.S.*

A. serpyllifolia Linn.

Districts — II. III. — V. VI. VII. VIII. IX. Native. Sandy and gravelly places and on walls, &c. Rather common, but rare or local over large areas. Ann. May—September. *Calcicole B.*

First record in 1884: *Hart, Proc. R.I.A.*

Var. MACROCARPA Lloyd—*Var. LLOYDII* (Jord.).—V. On sandhills near Cloghane and Stradbally, &c., and—VII. On walls near Tralee (*Marshall & Shoolbred*) *R.W.S.* 1903. Probably a good deal of the Kerry *A. serpyllifolia* should be referred to this *var.*

Var. LEPTOCLADOS (Guss.).—III. On sandy banks near Dooaghs, Rossbehy, 1902: *Marshall & R.W.S.*—VI. Appears to be more common than the type in this District; it occurs in several spots along the railway from Headford to Killarney and on several walls about the latter place; very well marked on a gravelly road in the Home Park: *R.W.S.* 1890, and in 1912, in several places about Molahiffe, 1901.—VII. On walls and banks about Tralee and thence at intervals, along the valley of the Lee to Castleisland, a distance of nearly ten miles, 1903-08: *R.W.S.* No doubt widely distributed in the north of the county.

A. peploides Linn. *Honkeneya peploides* Ehrh. *Sea Purslane.*

Districts — II. III. — V. — VII. VIII. IX. Native. Sandy and stony shores. Common. Peren. May—July.

First record in 1855: *Joseph Woods, Phytol.*, p. 159.

SAGINA Linn.

S. maritima Don.

Districts I. II. III. — V. — VII. VIII. IX.
Native. On banks, rocks and on turfy, muddy or sandy places near the sea. Rather common and locally abundant.
Ann. April—August.

First record in 1881 : *Barrington, Proc. R.I.A.*

This plant occurs at intervals around the entire Kerry coast, and often forms a portion of the scanty sod on its most exposed and storm-swept headlands. In such places it grows with *Radiola* and dwarfed *Plantago Coronopus* well within reach of the spray.

Var. PROSTRATA Towns.—VII. By Barrow Harbour, 1902 : *R.W.S.*

Var. Densa (Jord.).—IX. Plentiful in large patches on dry sandy banks by the Church at Ballybunnion : *Stewart 1890*—still there, but not plentiful, in 1908 : *R.W.S.*

S. apetala Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On walls and dry gravelly places. Rather common, but local. Ann. May—September.

From sea-level, to 1,020 feet on the Kerry side of the Glengariff road tunnel (*R.W.S.*).

First record in 1891 : *Druce, Journ. of Bot.*

Appears to be more abundant about Kenmare, Killarney and Tralee than elsewhere ; it is local in Districts III., IV. & IX.

S. ciliata Fries.

Districts I. II. III. IV. — VI. VII. VIII. —
Native. On walls, banks and sandy places, usually near the sea. Rare ? Ann. May—August.

I. In several places about Kenmare and near Dawros on the south side of the bay, 1901.—II. Near Kenmare, Darrynane and south of Waterville, 1892.—III. Roadside wall north of Waterville, 1889.—IV. About Beaufort and Cullenagh, 1903.—VI. On banks near the Upper Lake and on walls about Killarney.—VII. Near Tralee, and—VIII. On walls, &c., about Ardfert and Banna, 1889–1914 : *R.W.S.*

First record in 1889 : *R.W.S., Journ. of Bot.*

Probably not so rare as the above records would indicate.

S. procumbens Linn. *Pearlwort.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On waste ground, walls, rocks and damp places.
Common. Peren. May—September.

From sea-level, to 2,300 feet on Mangerton and to 3,120 feet near the summit of Brandon (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

S. subulata Presl.

Districts I. II. — IV. V. VI. — — —
Native. Peat-filled cracks and hollows in mountain rocks.
Rare and local. Peren. July—August. *Calcifuge A.*

I. In several spots on the Kerry side of Hungry Hill from 1,450 to 2,100 feet, and sparingly on Knockowen Mountain at about 2,100 feet, 1894 : *R.W.S.*—II. Doum Mountain near Sneem 1877 : *Carroll*—locality not identified, but it occurs on some bare rocks on Faher Mountain north of Sneem at about 1,200 feet (*Colgan & R.W.S.*) *R.W.S.* 1902.—IV. Sparingly on bare rocks by the Owenreagh River near the Black Valley, 1907 : *R.W.S.*—V. Plentiful on Brandon Mountain (*Moore*) *Cyb.* 1866. From Lough Cruttia at 850 feet, to 1,650 feet above Lough Nalacken, Brandon : *Hart* 1884. Ascends to fully 2,300 feet near the Coumaknock Loughs on Brandon : *R.W.S.*—VI. Sparingly in cracks on the almost bare sandstone rocks beside the Upper Lake, Killarney, 1909–14 : *R.W.S.*

Ranges from about 80 feet above sea-level at the Upper Lake, Killarney, to 2,300 feet on Brandon (*R.W.S.*).

First record in *Cyb.* 1866 : *Moore*.

S. nodosa Fenzl.

Districts — — III. — V. — VII. VIII. IX.
Native. Moist sandy places, chiefly near the sea. Rather rare and local. Peren. July—August.

III. In several places about Cahersiveen, 1906 : *Miss Delap.* Near the Laharan stream to the south, and near Doulus Head to the west of Cahersiveen, 1892 ; on wet sandflats about Dooaghs, Rossbehy, 1903 : *R.W.S.*—V. On sandhills at Castlegregory : *Hart* 1884. Frequent about Castlegregory, and thence to Kilshannig on the north and Fermoy on the west ; frequent about Ventry ; near Dingle, &c., 1890–1907.—VII. Near the Spa, Tralee Bay, and about Barrow Harbour, 1890 : *R.W.S.*—VIII. Banna, 1878 : *Rev. W. Raymond.* Frequent in damp flats among the Banna and Ballinprior sandhills, 1888–1905 : *R.W.S.*—IX. In

damp grassy places in the sandhills at Beale Point : *Stewart 1890*—still there and sparingly near Ballybunnion and the Cashen River, 1902–08 : *R.W.S.* On Carrig Island, Ballylongford, 1913 : *Phillips*.

First record in 1884 : *Hart, Proc. R.I.A.*

SPERGULA Linn.

S. arvensis Linn. *Corn Spurrey.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Colonist. Cultivated ground, roadsides, waste places, &c.
Common. Ann. May—September. *Calcifuge B.*

From sea-level, to 925 feet in the Clydagh valley and to 1,025 feet by the Morley's Bridge—Ballyvourney road (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

The usual Kerry plant is *S. sativa* (Boenn.) ; the *var. vulgaris* (Boenn.), with club-shaped papillæ, has been noted—III. Along the roadside near the north end of Caragh Lake, 1906.—IV. On the Tomies shore of the Lower Lake, Killarney, 1902.—VI. Roadsides east of Killarney and by the Upper Lake, &c., 1904 : *R.W.S.*—IX. Near Ballylongford, 1913 : *Phillips*.

SPERGULARIA Presl.

S. rubra Presl. *Lepigonum rubrum* Wahlb. *Alsine rubra* Crantz.

District — — III. — — — — —
Alien. Roadsides and waste places. Very rare, but locally abundant. Ann. May—October.

III. By a roadside wall, Knightstown, Valencia (*Somerville*) *R.W.S. 1902*. Abundant in an old disused slate yard and on paths and roadsides in Knightstown, Valencia, 1905–06 : *Miss Delap & R.W.S.*

First found by *Mr. A. Somerville* in 1901, and recorded by *R.W.S.* in *Irish Nat.*, 1902, p. 156.

There can be but little doubt that *S. rubra* has been introduced in this its only Kerry station. Vessels from various English ports called formerly at Knightstown for cargoes of slates for which the neighbouring quarries, now unfortunately closed, were famous, and most probably introduced this plant along with their ballast. It appears to be thoroughly established about Knightstown.

S. media Presl. *S. marginata* Kittel. *Lepigonum marinum* Wahlb. *L. marginatum* Koch. *Sea Sandwort*.

Districts I. II. III. — V. — VII. — IX.
Native. Muddy salt marshes. Locally abundant. Peren.
May—August.

First record in 1884 : *Hart, Proc. R.I.A.*

No doubt overlooked in District VIII. Both the smooth and glandular forms occur and are frequently found growing together.

S. salina Presl. *Lepigonum salinum* Kindb. *Alsine salina* Groves.

Districts I. II. III. — V. — VII. VIII. IX.
Native. Salt marshes and waste places by the sea.
Common. Ann. or Peren. May—September.

First record in 1881 : *Barrington, Proc. R.I.A.*

This plant occurs in Kerry, as elsewhere in Ireland, chiefly as the glandular form *S. neglecta* Kindb.

S. rupestris Lebel. *Lepigonum rupicola* Kindb. *Alsine rupicola* Hiern.

Districts — II. III. — V. — VII. VIII. IX.
Native. On cliffs and rocky places by the sea, also on old towers and castles by the coast. Common and locally abundant. Peren. May—September.

First record in 1881 : *Barrington, Proc. R.I.A.*

Occurs also, but very rarely, inland, as on the old Castle at Ballymaquin between Abbeydorney and Causeway, about five miles from the nearest sea.

PORTULACÆ.

MONTIA Linn.

M. fontana Linn. *Water Blinks*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Mountain streams and other watery places, also on damp or mossy ground. Common. Ann. April—September. *Calcifuge* A.

From sea-level, to 3,100 feet near the summit of Brandon (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

Both forms, *M. minor* Gmel. and *M. rivularis* Gmel. occur, the latter being the rarer of the two.

M. lamprosperma Cham.

District — — — — VI. — — —

Native. Wet places. Rare ? May—August.

VI. Killarney (*Druce*) *New Phytol.*, Nov. 1911.First record in 1911 : *Druce*, *loc. cit.*

This plant will no doubt be found elsewhere in the county. It is best distinguished by its seeds being shining chestnut-brown instead of dull black.

[*TAMARIX GALLICA* Linn. *Tamarisk*.—This bush has been introduced by Lord Ventry on the shore at the west end of Dingle Harbour (*Rev. W. M. Hind*) *Phytol.* 1857, p. 97—still there in 1905, and appears to be spreading slightly : *R.W.S.*]

ELATINÆÆ.

ELATINE Linn.

E. hexandra DC.

Districts I. II. III. IV. V. VI. VII. — —
Native. In shallow water in lakes, ponds and streams, and on the muddy margins of lakes in dry summers. Rather common and locally abundant. Ann. July—September. *Calcifuge A.*

I. Plentiful in the Cloonee Lakes and River, 1889–1908.—II. Plentiful in Dromtine Lake north of Sneem, 1892 ; in Lough Barfinnihy near the summit of the Sneem-Killarney road, 1904 ; in the south-west corner of the Upper Killarney Lake, 1889 : *R.W.S.*—III. Lough Caragh (*W. Andrews*) *Rec. Add.* 1872. In several localities in Caragh Lake and in Lough Currane, 1889–1911 ; *R.W.S.* In Lough Namona west of Waterville, 1913 : *Miss Delap.* Sparingly in Lough Ferta, Teermoyle Mountain, Glenbeigh, 1908 : *Miss Delap & R.W.S.*—IV. On the northern margin of Lough Gouragh, Hag's Glen, Reeks : *Hart* 1882. In Cloon Lough and Lough Acoose, Glencar ; in Caragh Lake and in the river near Lickeen ; along the Tomies shore of the Lower Lake, Killarney, 1889–1902.—V. In Lough Slat south of Castle-gregory, 1888 : *R.W.S.* In Lough Camclaun on Connor Hill, 1913 : *Praeger*.—VI. Near Ross Island, Lower Lake, Killarney : *Linton* 1886. Abundant in many localities in the Lower Lake, Long Range and Upper Lake, Killarney, 1888–1906 ; abundant in Ardagh pond to the south-east, and in

Kilbrean and Lockagh Lakes to the north-east of Killarney, 1901.—VII. In two or three of the small lakes to the south-west of Killorglin, 1904–13 : *R.W.S.*

From sea-level, to 1,125 feet in Lough Gouragh, Reeks (*Hart*), and to 1,450 feet in Lough Fertá, Teermoyle Mountain (*R.W.S.*).

First record in 1872 : *W. Andrews, Rec. Add.*

Although usually growing quite submerged, this plant appears to thrive as well or even better on the muddy margins of lakes exposed during a dry summer. In such situations it may sometimes be seen forming extensive interlaced patches which as the summer advances turn a deep reddish tint sufficiently marked to catch the eye from some distance.

HYPERICINEÆ.

HYPERICUM Linn.

H. Androsæmum Linn. *Androsæmum officinale* All.
Tutsan.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Hedge- and ditch-banks, bushy and rocky places.
Rather common. Peren. June—August.

From sea-level, to 2,080 feet on the Reeks, “an unusual altitude” (*Hart*); very rarely seen much above 1,000 feet (*R.W.S.*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 377, No. 50.

Thinly scattered throughout the county and nowhere abundant. It is interesting to note that the name Tutsan is a corruption of the French “*Tout sain*” or “*cure-all*”; *Dr. Smith, loc. cit.*, alludes to the use of this plant in Kerry for medicinal purposes.

H. calycinum Linn. *Rose of Sharon*.

Districts — — — IV. — VI. — — —
Alien. Shady rocky places. Rare, but locally abundant.
Peren. July—September.

IV. Near the Lower Lake shore near Benson’s Point, Killarney, 1889 : *R.W.S.*—VI. Rocks in Muckcross woods, 1804 : *Mackay Cat.* Forming extensive underwood at Dinis, Killarney, 1831 (*Harvey*) *Herb. Trin. Coll. Dub. : Cyb.* 1898. Still abundant in many places about Killarney, as in

Muckcross demesne, on Dinis and Ross Islands, &c., 1914 : *R.W.S.*

First record in 1825 : *Mackay Cat.*

While this handsome perennial is frequently seen in demesnes and about houses in the county, it is included in the Kerry flora solely on the strength of its standing around the Killarney Lakes, where it is thoroughly established and has been known to occur for well over a century.

H. perforatum Linn. *St. John's Wort* (genus).

District — — — — — IX.
Native. Dry banks. Apparently very rare. Peren.
July—August. *Calcicole B.*

IX. Ballybunnion : *Stewart 1890.* Near Listowel, 1913 : *Phillips.*

First record in 1890 : *Stewart, Proc. R.I.A.*

The extreme rarity of this plant in Kerry and its seeming absence from the greater portion of the county is very difficult to account for. A large area in north Kerry and extensive tracts about Killarney and Kenmare, appear to be especially favourable to the growth of this calcicole species ; it is reported, moreover, from all the adjoining counties, and has been gathered by the writer in West Cork not far from the Kerry boundary on several occasions.

H. dubium Leers. *H. quadrangulum* Fries. *H. maculatum* Crantz.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In thickets and on banks and river-sides. Rather common, but rare over large areas, especially in the north. Peren. July—August.

Quite rare in the following Districts—III. In two or three spots about the Caragh Lake, 1901.—V. Sparingly between Dingle and Ventry, 1890 ; and but thinly scattered over—VII., VIII. & IX. : *R.W.S.*

From sea-level, to 700 feet in the Clydagh valley (*R.W.S.*).

First record in *Cyb. 1866* : *Babington.*

H. tetrapterum Fries. *H. quadrangulum* Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In wet and marshy places. Common. Peren.
July—September.

From sea-level, to 700 feet in the Roughty valley (*R.W.S.*).

First record in 1901 : *R.W.S., Topog. Bot.*

H. humifusum Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On dry or stony banks and on heaths. Rather
common, but nowhere an abundant plant. Peren. June—
September. *Calcifuge B.*

From sea-level, to 925 feet on Connor Hill, and to 975 feet
on Drung Hill, Glenbeigh (*R.W.S.*).

First record in 1882 : *Hart, Proc. R.I.A.*

H. pulchrum Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Heaths, dry banks, &c. Common. Peren. June—
August. *Calcifuge B.*

From sea-level, to 2,300 feet on Mangerton (*R.W.S.*),
and to 2,440 feet on the Reeks (*Hart*).

First record in 1844 : *S. P. Woodward, Phytol.*, p. 878.

H. elodes Linn. *Elodes palustris* Spach.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Wet spots about bogs, boggy ditches and streams.
Common and locally abundant. Peren. July—August.
Calcifuge A.

From sea-level, to 975 feet on the Reeks (*Hart*), and to
1,050 feet in the Slaheny valley (*R.W.S.*).

First record in 1844 : *S. P. Woodward, Phytol.*, p. 878.

This is a very characteristic plant of the Kerry bogs and
swamps.

[*H. HIRSUTUM* Linn.—III. Glanleam, Valencia (*Rev. S. Madden*) *Cyb.* 1866. This plant has not been seen there
since, and the record was no doubt an error. As at present
known it is confined in Ireland to a few of the eastern
counties, the nearest locality known being nearly two
hundred miles distant from Valencia Island.]

MALVACEÆ.**ALTHÆA** Linn.**A. officinalis** Linn. *Marsh Mallow.*

Districts [I.] II. III. — V. [VI.] VII. VIII. IX.
Alien. Banks and damp places near the sea, usually in the
neighbourhood of houses. Thinly scattered round the coast,
very rare inland. Peren. July—September.

[I. Sparingly by a house west of Dawros bridge, Kenmare Bay, 1904-08].—II. By the harbour at Darrynane and in cottage gardens close by, 1903.—III. Rather frequent here, as about Boolakeel near Bolus Head; St. Finan's Bay; Portmagee; Cahersiveen; near Doulus Head; Rossbehy, &c., 1888-1911: *R.W.S.*—V. Near the shore below Brandon (*Balfour*) *Phytol.* 1853, p. 1006—still there in several places, as about Cloghane, Brandon village, Fermoy, &c., 1908; in several spots about Dingle and frequent about Inch, Dingle Bay; in a cottage garden near Camp, Tralee Bay, 1890-1908.—[VI. Beside a cottage between Furies and Castlemaine, 1904].—VII. About Clogherbrien near Tralee, 1905; near Church Hill and Barrow Harbour, &c., 1902.—VIII. In several places near the coast north of Causeway and near the Cashen Ferry bridge, 1902-08: *R.W.S.*—IX. Sparingly by roadsides south of Ballybunnion and abundant by damp ditches close to Beal Castle: *Stewart* 1890. Still in several places in these localities, 1908: *R.W.S.*, and in 1913: *Phillips*.

First record in 1853: *Prof. Balfour, Phytol.*, p. 1006.

This handsome species does not appear to be spreading in Kerry to any appreciable extent, so its wide distribution in the county points to a very remote introduction. The opinion of a cottager at Beal where this plant grows, as quoted by Mr. Stewart, was that the *Althæa* was not cultivated but "always grew there." The frequency with which this plant is found about houses is no doubt due to its former medicinal use.

LAVATERA Linn.

L. arborea Linn. *Tree Mallow.*

Districts [I.] [II.] III. [IV.] V. [VI.] [VII.] [VIII.] [IX.] Native. On sea cliffs and about houses. Very rare on sea cliffs, rather frequent in gardens and about houses, especially near the sea. Peren. June—August.

[I. & II. In gardens and about houses in Kenmare, &c., 1904-1908].—III. [About Waterville, Ballinskelligs, Cahersiveen, Rossbehy, Dooaghs, &c., but generally beside cottages, 1888-1911: *R.W.S.*]. Some large bushes on the Little Skellig Rock about six miles from the nearest mainland (*Rev. A. Delap*) *Irish Nat.*, 1893, p. 112 [—IV. By some cottages near the Ownagarry bridge, Meanus, 1903: *R.W.S.*]—V. Plentiful on the coast near Dingle, 1804: *Mackay Rar.*

One or two bushes on Inishnabro and several on the Tearaght, Blasket Islands : *Barrington 1881* : it occurs here also on Inishvickillane, 1906 : *Miss M. Delap*. In several places near houses about Castlegregory, about Inch and Castlemaine Bay, &c., 1890-1914 [—VI. Sparingly about houses in several places, as Killarney, Farranfore, Molahiffe, near Lisroe bridge, Rockfield, between Lough Guitane and Killaha Castle, roadside north of Loo Bridge, Glenflesk, &c., 1890-1908—VII. Sparingly about the Spa and Fenit, Tralee Bay, 1889-1914 ; near Barrow Harbour, 1902, and inland near cottages about Currans, 1903.—VIII. In many spots about Banna, Ardfert, Ballyheige, and inland about Abbeydorney, 1888-1914.—IX. In several places about Ballybunnion, Beal and Tarbert, &c., 1889-1908] *R.W.S.*

First record in 1806 : *Mackay Rar.*

There can be but little doubt that the *Lavatera* is truly native on some of the islands off the Kerry coast. The Little Skellig on which it occurs, is a rugged mass of rock rising abruptly to 440 feet in height ; it lies fully six miles from the nearest mainland, and is, and has been so far as is known, uninhabited. The plant grows also on three of the most remote Blasket Islands : Inishnabro—uninhabited, Inishvickillane—now deserted, but formerly supported one family, and Tearaght, which contains the lighthouse-keepers only ; these islands are also from six to eight miles from the mainland. While almost certainly native on these islands, the *Lavatera* is very rarely seen on the mainland except in stations where it is obviously open to the suspicion of introduction, and it is only on its standing in the few island localities given above that its claim to be considered a native of Kerry can be based with any confidence.

MALVA Linn.

M. moschata Linn. *Musk Mallow.*

Districts I. II. III. — — VI. — — —
 Alien or Denizen. Waysides, banks and field borders.
 Rare and local. Peren. July--August.

I. Sparingly by the River Finnihy north of Kenmare and in several places along the Roughty near Cleady : *R.W.S. 1890*, and in 1904.—II. In two or three spots on roadside banks about a mile north of Kenmare, 1889-1908 : *R.W.S.*—III. A few plants by the roadside east of Caragh Lake schoolhouse, 1902-04 : *Capt. Creagh-Haward.*—VI.

Sparingly near Deenagh bridge in the Home Park, Killarney, 1901 ; two or three plants in a pasture field near Southhill, and sparingly beside the Sheheree road east of Danesfort, Killarney, 1909 ; by the roadside near Gweestin bridge on the Killorglin-Killarney road : *R.W.S.* 1889—still there in 1903.

First record in 1889 : *R.W.S.*, *Journ. of Bot.*

This handsome plant appears to be a favourite in Kerry gardens, from whence, no doubt, most of the stations given above have originated.

M. sylvestris Linn. *Common Mallow.*

Districts I. II. III. IV. V. VI. VII. VIII. IX. Denizen. Roadsides and about houses, field borders, &c. Rather common. Peren. May—August.

First record in 1882 : *Archdeacon Wynne, Journ. Roy. Meteor. Soc.*, No. 45.

More frequent near the coast than inland, but nowhere a common plant. Like most of this order in the county it usually affects very suspicious stations, sunny spots about houses, or the foot of a roadside wall being very favourite ones.

M. rotundifolia Linn. *M. vulgaris* Fries *Dwarf Mallow.*

Districts — — — — V. VI. VII. VIII. — Colonist. Roadsides and waste places. Rare and local Peren. June—September.

V. Sparingly in two spots by the roadside west of Aughils, Castlemaine Harbour, 1894.—VI. Sparingly on a cottage waste-heap near the ruins of Ballymalis Castle, 1896-98 ; plentiful about the village of Molahiffe, 1901-03.—VII. Plentiful by roadsides, walls and waste places at Tincally Point west of Milltown, 1901 ; sparingly by the roadside north of the railway station, Tralee, and—VIII. Sparingly by the roadside at Lerrig pond north of Ardfert 1905 : *R.W.S.*

First record in *Cyb.* 1898 : *R.W.S.*

In most of the stations given above, only a few scattered plants were noticed ; in the two localities where it occurred plentifully, an old mill and a disused granary indicated the probable source of its introduction. While usually maritime in Ireland, it occurs in Kerry more often inland, and like all the Malvaceæ is rarely seen remote from dwellings, past or present.

LINEÆ.

RADIOLA Hill.

R. linoides Roth. *R. millegrana* Smith. *All-seed.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On damp peaty and sandy places where water occasionally lies, and on roadsides. Common and locally very abundant near the sea, rather rare inland. Ann. June—September. *Calcifuge* A.

Some inland localities are—I. On roadsides in the Sheen valley east of Dromanassig bridge, 1904.—II. Plentiful by roadsides in many places between Sneem and Lough Barfinnihy west of Moll's or Windy Gap, 1902.—IV. Abundant by roadsides in the Owenreagh valley, 1900, and in several localities about Caragh Lake, 1913.—V. In Arraglen south of Castlegregory.—VI. On the lake shore between Ross Island and the mouth of the River Flesk, Killarney, and about Dromin pond south of Milltown, 1890–1902.—VII. About some small lakes south-west of Killorglin, 1904 ; on a damp heath near the Spa railway station, 1905 : *R.W.S.*

From sea-level, to 825 feet near Lough Barfinnihy (*R.W.S.*)
First record in 1881 : *Barrington, Proc. R.I.A.*

This is one of the most characteristic plants of peaty wastes near the sea. On some of these otherwise barren tracts, many hundreds of these diminutive plants may be seen growing together, almost concealing the ground with their tufts of pale green flowers. Fragile as the plant appears to be, it is found on some of the most exposed headlands round the Kerry coast, holding its ground with other stunted vegetation well within reach of the salt spray.

LINUM Linn.

L. catharticum Linn. *Purging Flax.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Dry pastures, heaths and banks, &c. Very common. Ann. May—September.

From sea-level, to 850 feet in the Slaheny valley (*R.W.S.*), and probably higher.

First record in 1881 : *Barrington, Proc. R.I.A.*

L. augustifolium Huds. *Pale Flax.*

Districts I. — III. IV. — VI. — — —
Native. Rocky places, dry roadsides and pastures, &c.
Rare and local. Ann. June—September. *Calcicole* B.

I. Sparingly on limestone rocks and roadsides east of Cleady, Kenmare, 1904, and by the road on the south side of the Kenmare estuary east of Iron Rock, 1907; very sparingly on roadside near Inchiquin Lough south of the Cloonee Lakes, 1908.—III. Sparingly by roadside near Caragh bridge, 1892: *R.W.S.*—IV. Sparingly by roadside near Cooleenig west of Churchtown, 1904: *Maurice Magill.*—VI. Near Kilbonane Church on the north side of the River Laune, 1912: *Mrs. Jenner.* Sparingly on banks near the Laune west of Gweestin bridge, 1892; sparingly by the roadside south of the Tunnel, Upper Lake, Killarney, 1907, and on stony ground beside Lough Guitane, 1912; rather frequent in limestone quarries and fields about Furies, 1903; sparingly by the railway track at Headford Junction, 1910: *R.W.S.*
First record in *Cyb.* 1898: *R.W.S.*

[*L. USITATISSIMUM* Linn. *Flax.*—This plant is still seen in Kerry as a casual about roads and field-sides and on railway tracks, but its cultivation in the county as a crop has practically died out within the last twenty years. About 1890, narrow strips of flax were not infrequently noticed growing alongside other cottage crops, but are now (1914) very rarely, if ever, seen; the increased comfort of the cottagers, and cheapness of linen no doubt fully account for the abandonment of this rather troublesome crop.]

GERANIACEÆ.

GERANIUM Linn.

G. molle Linn. *Dove's-foot Crane's-bill.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On dry banks, waste places, pastures, &c.
Common. Ann. April—October.

From sea-level, to 700 feet by the Roughty-Ballyvourney road (*R.W.S.*), and no doubt higher.

First record in 1756: *Dr. Smith, Hist. of Kerry*, p. 376, No. 38, "Near the bridge of Lixnaw on the road side."

G. dissectum Linn. *Crane's-bill.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On waste ground, field-sides, dry banks, &c.
Common. Ann. May—September.

From sea-level, to 1,000 feet on the Roughty-Ballyvourney road (*R.W.S.*).

First record in 1890 : *Stewart, Proc. R.I.A.*

G. columbinum Linn.

District I. — — — — —

Native. Dry banks. Very rare. Ann. July—August.

I. Near the Roughty River east of Kenmare, 1898 (*Praeger*) *Topog. Bot.*

First record in 1901 : *Praeger, loc. cit.*

This plant proves to be unexpectedly rare in the county.

G. lucidum Linn.

Districts I. II. — — — VI. VII. VIII. IX.

Native. Rocky places, walls and banks. Locally abundant. Ann. April—August. *Calcicole A.*

Common on the limestone in Districts I., II., VI. & VII., but local in the north, where it occurs in—VIII. About the limestone rocks and walls at Ardfert and Abbeydorney, and on roadside walls east of Ballyheige, 1888–1914.—IX. About Tarbert, 1890 : *R.W.S.*

From sea-level, to 700 feet on the Roughty-Lackabaun road (*R.W.S.*).

First record in 1804 : *Wade Rar*—"in argillaceous rubbish in a shady situation to the west of Ross island, Killarney, abundantly."

Quite a characteristic plant of the Killarney limestone, where it is unusually luxuriant.

G. Robertianum Linn. *Herb Robert.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.

Native. Hedgebanks, walls and in waste and stony places. Very common. Ann. or Bien. April—October.

From sea-level, to 1,700 feet on Brandon (*Druce*), and to 1,800 feet above Lough Googh, Reeks (*R.W.S.*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 376, No. 41, "Very plentifully in the hedges of Sir Thomas Denny's improvements near Tralee and other places."

Var. PURPUREUM Vill.—On most of the stony beaches round the coast, as—III. Near Rossbehy, 1907 : *R.W.S.*—VII. At Cromane, Castlemaine Harbour, &c. (*Marshall & R.W.S.*) *R.W.S.* 1904. Also occasionally inland, as—VI. In one or two localities by the Lower Lake, Killarney (*Druce*) *Praeger* 1902.

[*G. STRIATUM* Linn.—VI. Sparingly in a shrubbery near the Sunk Walk, Glenflesk Castle, Killarney; noticed there for several years about 1890, but not seen recently.—VII. Sparingly about walls and the edges of lawns at Kilcolman Abbey, Milltown, 1909: *R.W.S.*

G. PRATENSE Linn.—VII. Two or three large tufts about a low wall at Kilcolman Abbey, Milltown, with the preceding species, 1909: *R.W.S.* Neither of these plants has so far shown any tendency to spread.]

ERODIUM L'Héritier.

E. cicutarium L'Héritier. *Stork's-bill.*

Districts I. — III. — V. — VII. VIII. IX. Native. Sandy ground and banks near the sea, also, but very rarely, inland. Very rare in the south, locally abundant in the north. Ann. and Bien. May—September.

Rare in the following Districts—I. Sparingly on banks by the sea between Lehid and Bunaw, 1907: *R.W.S.*—III. Sparingly on the Rossbehy sandhills, 1906: *F. J. Hanbury*. Inland localities are—VIII. On roadside banks north-east and east of Ardfert, 1905–14.—IX. About Ballyconry south-east of Ballybunnion, 1894, about four and three miles inland respectively.

First record in 1890: *Stewart, Proc. R.I.A.*

E. moschatum L'Héritier.

Districts I. — — — V. — VII. VIII. [IX.] Denizen or Native. On banks, roadsides and waste places near the sea. Rare and local. Ann. April—September.

I. Rather plentiful about Bunaw north of Derreen, 1894: *R.W.S.*—V. Near Dingle (*Rev. W. M. Hind*) *Phytol.* 1857, p. 97. Between Dingle and Milltown and near the mouth of Dingle Harbour: *Hart* 1884. On sandy warrens near Cloghane, Brandon Bay (*Moore*) *Cyb.* 1866. Abundant in several places about Dingle and Ventry and more sparingly about Castlegregory: *R.W.S.* 1889, and in 1907.—VII. Near Cromane, Castlemaine Harbour, 1912: *Mrs. Jenner*. On banks about two miles south of Ardfert on the Tralee road and about Chapelstown near Barrow Harbour, 1902.—VIII. Near Ardfert in several places, especially on roadsides to the west: *R.W.S.* 1889, and in 1905. [—IX. On Lislaughtin Abbey near Ballylongford (*Dr. Smith*) *Hist. of Kerry*, p. 376, No. 39, but not seen there recently, and perhaps extinct.]

First record in 1756 : *Dr. Smith, loc. cit.*, "on the Abbey walls of Lislactin, barony of Iraghticonnor."

[*E. MARITIMUM* L'Héritier.—VII. "On the strand of Tralee near the spaw, and other places" (*Dr. Smith Hist. of Kerry, 1756*, p. 376, No. 40. This plant does not appear to have been found in Kerry since Dr. Smith's time, although often sought for in his rather precise locality. It is, however, likely enough to occur in the county, as it is not only found to be frequent by Mr. R. A. Phillips along the south-west coast of the adjoining county Cork, but is also on record both for Clare and Waterford.]

OXALIS Linn.

O. Acetosella Linn. *Wood Sorrel.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Woods, thickets, shady banks, moist places about rocks, &c. Common. Peren. April—May.

From sea-level, to 2,550 feet on Caherconree (*Hart*), to 2,800 feet on Brandon (*R.W.S.*), and to the same height on the Reeks (*Druce*).

First record in 1882 : *Hart, Proc. R.I.A.*

ILICINEÆ.

ILEX Linn.

I. Aquifolium Linn. *Holly.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Woods, thickets and rocky places. Common. A bush or small tree. May—June.

From sea-level, to 1,350 feet on the Reeks (*Hart*), to 1,560 feet near Glas Lough on the Purple Mountain and to 1,800 feet on Mangerton (*R.W.S.*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 373, No. 7, where the form with yellow berries is noted as growing "on the mountains round Lough-Lane."

Even so comparatively recent as Dr. Smith's time, 1756, the Holly appears to have been much more thickly distributed in Kerry than it is at present. The smelting works, of which several were situated in the neighbourhood of Killarney, no doubt caused widespread destruction of this and other trees, and in more than one place in his *History*

Dr. Smith complains of the waste of timber then going on. In some of the remoter valleys, a straggling storm-tossed growth of Holly, stunted Oak and Birch may still be seen, the scanty survival* of what was probably an extensive forest. Very fine Hollies, however, are still to be found in various parts of the county, as in the lower portion of the Hag's Glen on the ascent to Carrantuohill, on Innisfallen and elsewhere about the Killarney Lakes. A tree on Dinis Island measured in 1904, was 7 feet 3 inches in girth at three feet above the ground; another tree near Torc waterfall was over $9\frac{1}{2}$ feet in girth; another on Innisfallen measured the same year was $11\frac{1}{2}$ feet in girth at two feet from the ground, it there divided into three branches of 5 feet 6 inches, 5 feet 5 inches, and 4 feet 4 inches respectively; while a second tree on the same island, nearly dead from old age, measured 14 feet in girth at three feet above the ground.

CELASTRINEÆ.

EUONYMUS Linn.

E. europæus Linn. *Spindle Tree.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Thickets on rocky ground, woods, hedges, &c.
Rather rare. Bush or small tree. May—June. *Callicole B.*

I. Sparingly on the limestone about Kenmare, as in the Park, along the Finnihy River and along the north side of the estuary, 1889–1913; in the wood below Mucksna and in the Ardtully woods west of Kilgarvan, 1904.—II. On the limestone rocks near the mouth of the Finnihy and thence at intervals to Clashganniv, 1899; on the Dunkerron and Greenane Islands, Kenmare Bay, 1904; near the road about two miles west of Castlecove and sparingly in Darrynane wood, 1894: *R.W.S.*—III. Sparingly in Glanleam wood, Valencia, 1911: *Miss Delap & R.W.S.* In a wood by the Caragh River near Blackstones bridge, 1903.—IV. By the Caragh River, Glencar, in several places, 1913, and sparingly in Beaufort wood, 1902: *R.W.S.*—V. Near Gallerus east of Smerwick Harbour: *Hart 1884.*—VI. On the lake shore near

* Although the smelting works have long since ceased their work, this destruction, unfortunately, is still going on. Within the writer's memory one at least of these old forest survivals, in the Clydagh valley, Glenflesk, has been almost completely destroyed.

Castlelough Bay, Killarney (*Rev. W. M. Hind*) *Phytol.* 1857, p. 28. Frequent about Killarney, especially on the limestone about the Lower and Middle Lakes, 1888–1914; sparingly near the Laune and on the banks of the River Maine east of Castlemaine, 1890.—VII. In the Ballyseedy and Ballycarty woods and sparingly along the Laune near Killorglin, 1890–92.—VIII. Sparingly in Ballinruddery wood near Listowel, 1899.—IX. Sparingly in woods by the River Feale east of Listowel, 1894; sparingly near Beal Castle and near Carrigfoyle Castle, Ballylongford, 1902, and in a wood at Tarbert House, 1890: *R.W.S.*

First record in 1857: *Rev. W. M. Hind*, *Phytol.*, p. 28.

Among our native bushes there are none with more beautiful fruit than the *Euonymus* and *Arbutus*.

RHAMNEÆ.

RHAMNUS Linn.

R. catharticus Linn. *Purging Buckthorn.*

District — — — — — VI. — — —
Native. Thickets on limestone. Very local and rare. Small tree or bush. May—June. *Callicole A.*

VI. “In the islands of Killarney lake” (*Dr. Smith*), *Hist. of Kerry*, 1857, p. 381. In hedges and woods about Killarney sparingly: *Wade Rar.* 1804. On Rough Island, Lower Lake (*More*) *Cyb.* 1898. On most of the limestone islands and in thickets on the limestone rocks about the Lower and Middle Lakes, extending from the Home Park to the Muckcross shore opposite Ash Island on the Lower Lake, and more sparingly along the north side of the Middle Lake, 1888–1912; one bush on Oak Island in the Upper Lake, 1906, the only bush so far seen by *R.W.S.* off the limestone.

First record in 1756: *Dr. Smith*, *Hist. of Kerry*, p. 381, No. 81.

The range of *Rhamnus catharticus* in Kerry is very limited, and excluding the outlying bush beside the Upper Lake, an area of two miles square would include all the localities known for it about the Killarney Lakes. *Dr. Smith* in his *History* states that the *Rhamnus* also grew “in the barony of Dunkerron among the rocks in many places.” There are rough limestone areas along the north side of Kenmare Bay in this Barony very similar in character to the Killarney stations, but the bush is not there now, nor is there any other

record of its occurrence in the county outside the Killarney district. The *Rhamnus* may very likely have been exterminated at the same time as the *Arbutus* in Dunkerron, as both were stated to occur there in Dr. Smith's time.

R. Frangula Linn. *Alder Buckthorn.*

District — — — — — VI. — — —
Native. Rocky lake shores. Very rare and local. Bush.
June—July.

VI. Sparingly in one or two spots along the north shore of the Middle Lake, Killarney (R.W.S.) *Cyb.* 1898, and in 1904; sparingly on the shore of Ross Island near the Mines on the Lower Lake, 1902: *Marshall & R.W.S.*, and in 1913: *R.W.S.*

First record in *Cyb.* 1898; *R.W.S.*

This occurs in even less quantity and over a more restricted area than the preceding, and may be considered one of the rarest native species growing in Kerry.

SAPINDACEÆ.

ACER Linn.

A. Pseudo-platanus Linn. *Sycamore.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Alien. Hedges, woods, plantations and about houses.
Rather common. Tree. April—May.

From sea-level, to 900 feet by cottages in the upper Roughty valley and to 925 feet in the Slaheny valley (R.W.S.).

First record in 1756: *Dr. Smith, Hist. of Kerry*, p. 210.

The Sycamore is thoroughly established in the county, and appears to sow itself there not infrequently. Dr. Smith in his *History*, 1756, strongly urges all his readers living near the sea to plant this tree: "of all timber trees none thrive so well near that turbulent element as the Sycamore, which will flourish where scarce any other tree will grow. It bears the spray of the sea very well itself, and by its breadth of leaf excellently defends any other trees from it in the summer, and is of so quick a growth that its body and arms soon become qualified to do the same in winter."

LEGUMINOSÆ.

ULEX Linn.

U. europæus Linn. *Furze.* *Gorse.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Heaths, hedge banks, waste places, &c. Very common. Bush. February—May, and again in the autumn, and sparingly during the rest of the year.

From sea-level, to 1,470 feet on the Reeks (*Hart*).

First record in 1756 : *Dr. Smith., Hist. of Kerry.*

U. Gallii Planch.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Dry heaths, hilly places, roadsides, &c. Common, but less so in the north. Bush. July—October. *Calcifuge A or B.*

From sea-level, to 1,500 feet on Beenoskee near Castle-gregory (*Hart*), to 1,500 or 1,600 feet on Mangerton (*More*), and to 2,200 feet on the Reeks (*Hart*).

First record in 1872 : *More, Rec. Add.*

The *var.* or *state* HUMILIS *Planch.* is well marked and common on the headlands and more exposed positions round the Kerry coast.

CYTISUS Linn.

C. scoparius Link. *Sarothamnus scoparius* Koch. *Broom.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Dry bushy places, banks, about roadsides, &c. Rather common. Bush. April—June. *Calcifuge B.*

From sea-level, to 800 feet by roadsides in the upper Roughty valley, and to 900 feet by the Brosna-Mount Eagle road (*R.W.S.*).

First record in 1901 : *R.W.S., Topog. Bot.*

The Broom is nowhere an abundant species in Kerry, and although showing decided calcifuge tendencies in the county, it occurs sparingly on the limestone at Ross Island, Killarney, and elsewhere. The curious prostrate form recorded below, appears to differ from the type in its habit only, an opinion shared by Mr. Colgan in his *Flora of the County Dublin*, *vide* p. 53.

Var. PROSTRATUS (Bailey).—III. Abundantly on cliffs at Clynacartan near the west end of Valencia Island, 1905 : *Miss Delap & R.W.S.*, forming dense mats on the extreme edge of these exposed cliffs.

ONONIS Linn.

O. repens Linn. *Rest Harrow.*

Districts — — — — V. — — VIII. —
 Denizen. Dry banks and sandy places, and on rough
 pastures near the sea. Very rare and local. Peren. June—
 August. *Calcicole A.*

V. Near Castlegregory : *Hart 1884*. Abundant in several
 places about Castlegregory, especially on sandy banks and
 roadsides, &c., to the north and east of the village : *R.W.S.*
1889, and in 1907. Sparingly in a rough field by an old
 castle about a mile north-west of Ventry : *R.W.S. 1890*.—
 VIII. Very sparingly in a rough field by the sea north of
 Barrow school-house, 1892 : *R.W.S.*

First record in 1884 : *Hart, Proc. R.I.A.*

Apart from its Castlegregory station, where the *Ononis*
 is locally abundant, there are only two outlying localities at
 present known for this plant in the county, in both of which
 it occurs very sparingly indeed. In all its stations the
Ononis is open to the suspicion of introduction, and it can
 be regarded as only doubtfully native in Kerry. The plant
 occurs usually as the spinous form—*var. HORRIDA Lange*.

MEDICAGO Linn.

M. lupulina Linn. *Black Medick.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
 Native. Roadsides, banks, pastures, waste places, &c.
 Rather rare in the south, common elsewhere, but unevenly
 distributed. Peren. May—October.

Rather rare in the following Districts—I. In several
 places about Kenmare, and—II. Darrynane, 1904.—
 III. Frequent about Ballinskelligs, &c., and Cahersiveen,
 1900 : *R.W.S.*—IV. At about 500 feet on the Reeks : *Hart*
1882. In fields about Churchtown, Beaufort, 1901.—
 VI. Sparingly about the Lower Lake, along the railway,
 and in other spots near Killarney, 1901–1914 : *R.W.S.*

From sea-level, to 500 feet on the Reeks (*Hart*), and
 probably higher.

First record in 1882 : *Hart, Proc. R.I.A.*

Less common in Kerry than might have been expected,
 a peculiarity shared with Co. Donegal where the *Medicago*
 appears to be quite a local plant. Several other unexpected
 plant distributions appear to be common to these two
 counties, widely separated as they are.

[*M. MACULATA* Sibth. *M. arabica* Huds.—VI. Sparingly as a weed in the garden at Lahard House, Beaufort, 1911–12 : *Mrs. Jenner*. One of the numerous alien plants accidentally introduced into these gardens with imported dove's food.]

[*M. SATIVA* Linn. *Lucerne*.—VII. Frequent in a sandy pasture on the north side of Barrow Harbour, 1890–94 : *R.W.S.* A survival of cultivation, but not seen there recently. This is one of the plants mentioned in Arthur Young's *Tour in Ireland, 1780*, as introduced by Mr. Herbert in his "reclamations" at Muckross, Killarney, but soon choked off by the natural grasses : *vide* note under *Poterium polygamum*, p. 88.]

[*MELILOTUS ALTISSIMA* Thuill.—VI. Sparingly as a garden weed at Lahard House, Beaufort, 1910–11 : *Mrs. Jenner*. *M. ARVENSIS* Wallr.—I. Sparingly on the shore of Kenmare estuary between the Suspension bridge and the Hotel, 1899, noticed there for two or three years, but not seen recently.—III. Sparingly with *M. alba* below Glanleam, Valencia, 1892, but not seen there since : *R.W.S.*—VI. Sparingly as a garden weed at Lahard House, Beaufort, 1907–11 : *Mrs. Jenner*. Casuals accidentally introduced.]

TRIFOLIUM Linn.

T. pratense Linn. *Red Clover*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Pastures, meadows, banks and waste places. Very common. Peren. May—September.

From sea-level, to 1,050 feet on the Roughty-Lackabaun road, to 1,150 feet on the Slaheny valley road and to 1350, feet on the Connor Hill road (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

Common both as a cultivated and as a native plant.

T. medium Linn. *Zig-zag Clover*

Districts — — — — V. — VII. — —
Native. Rocky places. Very rare and local. Peren. June—August.

V. Abundant on the west side of the entrance to Dingle Harbour : *Hart 1884*.—VII. Sparingly near the Tralee-Castle-island road about a mile east of Ballycarty : *R.W.S. 1889*.

First record in 1884 : *Hart, Proc. R.I.A.*

One of the rarest plants in Kerry, and not yet seen in the adjoining portion of West Cork

T. arvense Linn. *Hare's-foot Trefoil.*

District — — III. — — — — —
Native. On rocky ground near the sea. Very rare and local. Ann. July—September.

III. In some plenty on the rocks around Foilhomurrun Bay below the Cable house near the west end of Valencia Island, 1907 (*Miss Wooton*) *R.W.S.* 1908—still abundant there 1913: *Miss Delap.*

First found by *Miss Wooton* in 1907, and recorded by *R.W.S.* in *Irish Nat.* 1908, p. 51.

This is a welcome and rather unexpected extension to the Irish range of *T. arvense*. While not uncommon along portions of the south and east coasts, it appears to be very rare on the west, the nearest recorded localities to its Kerry station being Inisheer, one of the Aran Islands off the coast of Clare, and Inishturk off Mayo. There are, however, several stations recorded for it on the south coast of Cork, but most of these are old and need refreshing.

T. striatum Linn.

Districts — — — — — VII. VIII. —
Native. On limestone rocks near the sea. Very rare and local. Ann. May—June. *Calcicole A.*

VII. In some plenty on the rocks at Kilfenora, Tralee Bay: *R.W.S.* 1890, and in 1905. At intervals on the limestone rocks on both sides of Barrow Harbour and on the ridges overlooking Carrahane strand to the north, 1902.—

VIII. Plentiful on a limestone ridge north-east of Rahoneen about a mile west of Ardfert: *R.W.S.* 1891, and in 1902.

First record in 1890: *R.W.S.*, *Journ. of Bot.*

While locally abundant and occurring in two out of the nine Districts, the actual area over which this clover really extends is very limited indeed; a space three miles square would include all the known Kerry localities.

T. hybridum Linn. *Alsike Clover.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Colonist. In meadows, field- and roadsides. Rather common. Peren. June—September.

First record in *Cyb.* 1898: *R.W.S.*

This clover is frequently grown as a crop in Kerry, and is found thinly scattered over the county as a survival of, or escape from, cultivation.

T. repens Linn. *Shamrock.* *White Clover.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Meadows, pastures, roadsides, &c. Very common.
Peren. May—September.

From sea-level, to 1,650 feet on Beenoskee near Castlegregory (*Hart*), and to 2,300 feet on Mangerton near a ruined hut on the north side of the Punch Bowl (*R.W.S.*), the latter an exceptional height.

First record in 1881 : *Barrington, Proc. R.I.A.*

Immature plants of *T. repens* are worn as the Shamrock* in Kerry as elsewhere in Ireland on St. Patrick's Day ; only those plants, however, which have not developed the usual white or grey spot on the leaflets are regarded as the "true" Shamrock. Whether *T. repens* or *T. dubium* is the prevailing Shamrock in Kerry cannot at present be decided. About Cahersiveen and on Valencia Island, *T. repens* appears to be almost exclusively used, while about Killarney and Tralee, *T. dubium* is the favourite with *T. repens*, a poor second. In the absence of the two preceding plants, *T. procumbens* is occasionally used, but is not regarded as good Shamrock even by its wearers.

T. fragiferum Linn. *Strawberry-headed Trefoil.*

Districts — — — — V. — VII. VIII. IX.
Native. In damp pastures among tufts of *Iris*, on marshy ground and stream sides, near the sea. Very rare along the south coast, locally abundant on the north. Peren. July—September.

V. Abundant, forming the sward on both sides, at the mouth of a stream close to Feohanagh near Ballydavid Head : *Hart 1884*. About Smerwick Harbour west of Dingle ; near Fermoy on Brandon Bay, and in several localities about Castlegregory and Kilshannig, 1890–1907.—VII. In several places on damp flats about Barrow Harbour, and—VIII. Abundant on wet sandy flats nearly all along the coast from Rahoneen to Ballyheige : *R.W.S. 1888*, and in 1905. Abundant to the north of Tralee Bay, and—IX. On muddy salt flats at Beal Point and Ballybunnion :

* Mrs. Jenner and Miss Delap have kindly communicated local notes on the Kerry Shamrocks. See also *Irish Nat.* 1892, p. 95, and 1893, p. 207, for Mr. Colgan's researches on this subject, and a note by Mr. R. A. Phillips on p. 251 of the last indicated vol.

Stewart 1890—still in these localities and abundant in salt marshes along the Cashen River, 1899–1908 : *R.W.S.*

First record in 1884 : *Hart, Proc. R.I.A.*

This clover has not yet been seen in the county south of Dingle Bay, although many quite suitable localities occur.

T. procumbens Linn. *Hop Trefoil.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On dry banks, sandy pastures and waste places. Rather common over the greater portion of the county, especially near the sea. Ann. June—August.

First record in 1901 : *R.W.S., Topog. Bot.*

Sometimes, although very rarely, used in Kerry as the Shamrock—*vide* note under *T. repens*.

T. dubium Sibth. *T. minus* Smith. *Shamrock.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Dry pastures, banks, waste places, &c. Very common. Ann. May—September.

From sea-level, to 1,170 feet on the summit of the Slaheny valley road and to 1,350 feet on the Connor Hill road (*R.W.S.*).

First record in 1882 : *Hart, Proc. R.I.A.*

So far as the writer's experience goes, immature plants of this clover are the prevailing Shamrocks worn in Kerry on St. Patrick's Day. In the neighbourhood both of Killarney and Tralee at least, they much outnumber plants of *T. repens* ; see note under the latter species.

T. filiforme Linn.

Districts I. — — — — VI VII — IX
Native. In dry or sandy pastures and on lawns. Very rare ? Ann. June—August.

1. Sparingly near Kenmare : *R.W.S. 1891*.—VI. Sparingly at Lahard, Beaufort, 1911–12 ; *Mrs. Jenner*. Sparingly on the Killarney golf links in the Deer Park, 1912.—VII. On dry banks at Seafeld, Tralee Bay : *R.W.S. 1889*, and in a sandy field near Carrahane strand north of Barrow, 1902.—IX. Sparingly in a sandy field near Kilelton, Ballylongford : *R.W.S. 1891*.

First record in 1889 : *R.W.S., Journ. of Bot.*

Very easily overlooked, and probably not so rare in the county as the scanty records given above would indicate.

ANTHYLLIS Linn.

A. Vulneraria Linn. *Kidney Vetch.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Sandy banks, rocks and pastures chiefly near the sea. Common along the coast, rare inland off the limestone Peren. June—August. *Calcicole B.*

First record in 1855 : *Joseph Woods, Phytol.*, p. 158.

Var. COCCINEA Linn.—A plant gathered by Mr. Joseph Woods on Valencia Island, and described in *Phytol.* 1855, p. 158, as having flowers “altogether of a bright rose colour and very beautiful,” should probably be referred here.

The *var. BICOLOR* (*Rouy & Fouc.*), yellow flowers tipped with red, is very rarely seen in Kerry. A pretty plant with pale lemon-coloured flowers was gathered on the Greenane Islands, Kenmare Bay.

LOTUS Linn.

L. corniculatus Linn. *Bird's-foot Trefoil.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On dry banks, pastures, sandhills, cliffs, &c. Common. Peren. May—August.

From sea-level, to 1,200 feet on the Castleisland—Mount Eagle road, to 1,300 feet in the upper Roughty valley, and to 1,325 feet on the Connor Hill road (*R.W.S.*).

First record in 1844 : *S. P. Woodward, Phytol.*, p. 878.

L. uliginosus Schkuhr. *L. major* Smith. *L. pilosus* Beeke.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In damp pastures, ditches, stream-sides, swamps and moist bushy places. Common. Peren. June—August.

From sea-level, to 1,100 feet in the Slaheny valley and to 1,300 feet in the upper Roughty valley (*R.W.S.*).

First record in 1884 : *Hart, Proc. R.I.A.*

[*ASTRAGULUS HYPOGLOTTIS* Linn. *A. danicus* Retz.—“On the mountains round Killarney lough” (*Dr. Smith Hist. of Kerry, 1756*, p. 373, No. 10. No doubt some error. In Ireland this plant is known to occur only on the Aran Islands, South Galway.)]

VICIA Linn.

V. hirsuta Koch. *Ervum hirsutum* Linn. *Hairy Tare*,
Districts I. II. — — V. VI. VII. VIII. IX.
Denizen. About ruins, on banks, field-sides and rocky
places. Rare and nowhere abundant. Ann. May—August.

I. On rocky ground near the Suspension bridge, Kenmare,
1907; roadside north of Bunaw, Derreen, 1894.—II. In
several places about the small lakes between Tahilla and
Rosdohan near Parknasilla, 1892.—V. Sparingly in fields
near Anascaul, 1914; in an old graveyard at Killiney west
of Castlegregory, 1894.—VI. About the ruins of Aghadoe,
Ballymalis Castle and Kilbonane Church: *R.W.S.* 1889—
still about Ballymalis and in a field near Kilbonane west of
Beaufort bridge, 1910–12: *Mrs. Jenner*.—VII. In one or
two places about Killorglin, 1892; rather plentifully on the
rocky shore below Fenit House, Tralee Bay, 1890, and on
the west side of Barrow Harbour, 1892.—VIII. In a lime-
stone quarry at Ardfert: *R.W.S.* 1889. Sparingly about the
Abbeystorney ruins, 1894.—IX. About the ruins of Lis-
laughtin Abbey north of Ballylongford, 1890: *R.W.S.*

From sea-level, to 500 feet in "Kerry" (*Cyb.* 1866).

First record in *Cyb.* 1866: *Moore & More*.

A favourite haunt for this Vetch in Kerry is about the
old grave-yards so frequently found surrounding Abbey and
Church ruins.

V. Cracca Linn. *Tufted Vetch*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Hedges, bushy places, fields, &c. Common.
Peren. June—August.

From sea-level, to 850 feet in the upper Roughty valley
(*R.W.S.*).

First record in 1881: *Barrington, Proc. R.I.A.*

The most common and certainly the most beautiful of the
Kerry Vetches.

V. sylvatica Linn. *Wood Vetch*.

District — — — — VI. — — —
Native. Bushy and rocky places. Very rare and local.
Peren. June—August.

VI. "In a great state of luxuriance, and abundantly in the
woods to the south of Ross Island, Killarney": *Wade Rar.*
1804. Plentiful by the side of the lake at Muckcross,

Killarney, among loose stones: *Mackay Cat.* 1825. Not now abundant at Killarney, but it still occurs rather sparingly in three or four spots on Ross Island and on Rough Island in the Lower Lake: *R.W.S.* 1889, and in 1912.

First record in 1804: *Wade Rar.*

One of the rarest plants in Kerry, and apparently quite confined to the shores of the Killarney lakes.

V. sepium Linn. *Bush Vetch.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Hedges, woods and shady places. Common. Peren.
April—July.

From sea-level, to 2,050 feet in the Horse's Glen, Manger-ton, and to 2,100 feet on Brandon (*R.W.S.*).

First record in 1881: *Barrington, Proc. R.I.A.*

V. angustifolia Roth.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Sandy banks and pastures, field-sides and waste places. Rather common, but unevenly distributed, and quite rare over wide areas. Ann. May—July.

First record in 1901: *R.W.S., Topog. Bot.*

Var. BOBARTII Koch.—I. Banks by the sea between Lehid and Bunaw, Kenmare Bay, 1907: *R.W.S.*—III. On the sandhills at Rossbehy (*F. Bouskill*) *Irish Nat.* 1903, p. 58. On the sandhills at Dooaghs, 1905: *Miss Godfrey.*

LATHYRUS Linn.

L. pratensis Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In meadows, hedges, waste places, &c. Very common. Peren. June—August.

First record in 1881: *Barrington, Proc. R.I.A.*

L. maritimus Bigel. *Pisum maritimum* Linn. *Sea Pea.*

Native. Sea shores. Most probably extinct.

Dr. Smith in his *Hist. of Kerry*, 1756, p. 380, No. 78, makes the following reference to this plant—"English sea-peas. They grow annually on the S. point of Inch-Island in the bay of Castlemain in considerable quantities; they are also found on the English sea coasts in like manner, in barren naked cliffs of rocks, and among pebbles where no earth is seen to give them nourishment, for the roots run to a great depth, to find the earth. In times of scarcity of provision they have afforded great relief to the people of England, who lived near the sea coast, and who having never observed it, till

necessity sent them to its stores, they then thought it was sent by miracle for their support." On p. 174 of the same work, he again refers to these Peas—"towards the southern point of the island (Inch-Island as it is called, although properly an isthmus) considerable quantities of white peas grow spontaneously, the seed of which was probably scattered here by some ship-wreck."

The next notice of this plant occurs about fifty years later: "I found this on the sand hills, bay of Castlemain, in August 1804": *Mackay Rar.*, and there is a specimen of the plant from this locality labelled in Mackay's handwriting "Sandhills, Bay of Castlemain, 1804" preserved in the *Herbarium* of Admiral Jones in the Science and Art Museum, Dublin. Another specimen in the *Herbarium* of Mr. Arthur Bennett is labelled "*Ex herbario Guglielmi Andrews* . . . Rosbegh, Kerry, July 1841"; while a third, and the latest specimen known, was found in a collection of plants of the district made by a coast-guard named John Reilly, and labelled, "Sandhills, Killorglin Bay, July 1845"; this collection was purchased by the late Mr. R. M. Barrington, *vide Journ. of Bot.*, 1877, p. 179.

Great interest attaches to these Castlemaine Bay records for *Lathyrus maritimus*, as on them alone rests the claim of this plant to a place in the Irish flora. Mackay in his *Introduction to the Flora Hibernica*, 1836, p. vii, states that the *Histories of Cork and Kerry* by Dr. Smith "possess very considerable merit and accuracy with regard to the localities of plants, as I found during my botanical excursions through that part of the country." Unfortunately this high opinion of his accuracy is not altogether shared by recent observers. Dr. Smith's list of "rare and useful" plants growing in the county Kerry, contains the names of 97 of the Phanerogamia and higher Cryptogams; of this number no less than 38 do not appear to have been seen in the county since the publication of his book in 1756, except in one or two instances, where they occurred as obvious escapes from cultivation. To add to our doubt regarding his record of the *Lathyrus*, there is the puzzling statement as to the colour, "white peas" as he calls them, whereas the flowers of this plant are purple. Dr. Smith's record, however, is very much strengthened if not completely confirmed by the fact of specimens gathered in his locality appearing in the *Herbaria* of Admiral Jones, W. Andrews, and John Reilly, although Mr. Andrews' record "Rosbegh," would point to the south side of Castlemaine Bay instead of the north side.

It seems better on the whole, to assume that the *Lathyrus* did actually occur as recorded by Dr. Smith, and that it held its ground there from before 1756 to at least 1845, but has now been lost through some change in the surface of these very exposed sandhills. It is well known that the Sea Pea in its British stations sometimes disappears for lengthened periods after a severe storm to reappear when a favourable shift in the surface takes place. Perhaps it is not too much to hope that this may still occur in its only known Irish station ; so far the plant has escaped all recent observation.

L. macrorrhizus Wimm. *L. montanus* Bernh. *Orobis tuberosus* Linn. *Heath Pea*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Heathy and bushy places and river-sides.
Common, especially in mountain districts. Peren. May—July. *Calcifuge B*.

From sea-level, to 1,350 feet on the Reeks (*Hart*), to 1,450 feet on Teermoyle Mountain, and to 1,600 feet on mountains east of Waterville (*R.W.S.*).

First record in 1882 : *Hart, Proc. R.I.A.*

[*L. APHACA* Linn.—VI. Seven or eight plants in garden beds at Lahard House, Beaufort, 1910–12, “always in freshly manured ground” : *Mrs. Jenner*.]

[*L. INCONSPICUUS* Linn.—VI. Two or three plants in the garden at Lahard House, Beaufort, 1910 : *Mrs. Jenner*. Like the preceding plant most probably introduced in bird seed. This latter alien, which was identified by Miss M. C. Knowles, does not appear to have been previously recorded as occurring in the British Isles.]

ROSACEÆ.

PRUNUS Linn.

P. spinosa Linn. *P. communis* Huds. *Blackthorn*. *Sloe*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Hedges, thickets and rocky places. Common.
Bush. March—May.

From sea-level, to 850 feet by the Roughty-Ballyvourney road (*R.W.S.*).

First record in 1877 : *More, Journ. of Bot.*, p. 351.

Var. INSITITIA (Linn.). *Bullace*.—The Kerry stations for this bush are usually very suspicious, generally in woods, about houses, or in plantations. It nearly always occurs very sparingly, and although widely scattered over the county is probably not native there.

P. avium Linn. *Wild Cherry*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Denizen. In hedges, woods and about houses. Rather rare.
A small tree. April—May.

First record in *Cyb.* 1866 : *Moore*.

The Wild Cherry is thinly scattered over the county, usually about houses or in other suspicious stations. Several trees occur, however, about Killarney and Muckcross, notably on Brown Island in the Lower Lake, which have all the appearance of being native. Even there they may have been bird-sown, or even intentionally introduced, as several Conifers growing on this island certainly have been. While probably native in the north of Ireland, this Cherry is very doubtfully so anywhere in the south.

P. Padus Linn. *Bird Cherry*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Alien. About houses, in hedges and thickets. Rather common. Bush or small tree. May—June

First record in 1901 : *R.W.S., Topog. Bot.*

This Cherry is quite frequent in the county, nearly always about houses or in other obviously suspicious stations.

[*P. CERASUS* Linn.—*I. Kenmare* (*Praeger*), *Topog. Bot.*—occurs but very sparingly in the county, and then only where planted or bird-sown.]

SPIRÆA Linn.

S. Ulmaria Linn. *Meadow-sweet*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. By streams and ditches, in wet meadows and other damp spots. Very common. Peren. June—August.

From sea-level, to 2,200 feet on the Reeks (*Hart*), and to 2,800 feet on Brandon (*Colgan*)

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 85.

RUBUS Linn.

R. Idæus Linn. *Raspberry*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Woods, thickets, rocky places, roadsides, &c.
Rather common. Peren. May—July.

From sea-level, to 600 feet on the Roughty-Ballyvourney road and to 650 feet by roadside north of Rathmore (*R.W.S.*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 381, No. 84, "Plentifully near Lough-lane"—still plentiful about the Killarney Lakes, 1909 : *R.W.S.*

R. fruticosus Linn. (Aggregate.) *Blackberry. Bramble. Brier*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Hedges, thickets, heaths and waste places. Very common. Peren. July—September.

From sea-level, to 1,100 feet on the Reeks, to the same height by the old Glengarriff road, to 1,200 feet by the Castleisland-Mount Eagle road and to 1,300 feet on the north side of the Paps Mountain (*R.W.S.*).

First record in 1806 : *Mackay Rar. (R. cæsius)*.

Kerry appears to be very rich in *Rubi* forms, and when the distribution of these puzzling plants is better known it will be found to possess a high percentage of the total present in Ireland. No doubt several other interesting forms still await identification there.

R. suberectus Anders.*

I. Rocky bank by the River Sheen near Ashgrove, 1904.—
III. On the rocky shore of Caragh Lake below the Southern Hotel !, and on rocky islets in the Caragh River just below Blackstones bridge ! : *R.W.S. 1904 a.*

R. sulcatus Vest.

I. Rather sparingly in a damp rocky wood by the River Sheen south of Kenmare, 1905 ! : *R.W.S. 1908.*

R. plicatus Weihe & Nees.

III. Wet thickets by the Caragh River about Lickeen !, and—IV. On the east side of the river, Glencar ! : *R.W.S. 1904 a.*—V. Near Lough Adoon east of Clohane, 1902 :

* Specimens from localities followed by the sign ! have been named by the Rev. W. Moyle Rogers.

Marshall & R.W.S.—VI. Near Ross Island, Killarney ! (*Druce*) *Irish Nat.*, 1901, p. 229. Abundant in many places around the Killarney Lakes, as in the Deenagh swamp !, about Ross Bay !, &c. : *R.W.S.* 1904 a.—IX. Damp roadside east of Gunsboro, north of Listowel, 1905 ! : *R.W.S.* 1908. This appears to be a common bramble in Kerry on wet ground.

Var. HEMISTEMON (*P. J. Muell.*).—III. By the Caragh River near Lickeen, 1903 : *R.W.S.*—VI. Muckcross demesne, Killarney ! (*Druce*) *Irish Nat.* 1901, p. 229.

R. nitidus Weihe & Nees.

I. On a stony island in the River Sheen near Dromanassig bridge south of Kenmare (*R. opacus* Focke) ! : *R.W.S.* 1904 a.

R. affinis Weihe & Nees.

VI. Killarney (*Babington*) *Cyb.* 1866.

Var. BRIGGSIANUS *Rogers.*—I. Roadside ditch on the south side of Kenmare estuary east of the Sheen falls !, and—VI. In wet thickets on Ross Island, Killarney, and along the north bank of the River Laune west of Ballymalis Castle ! : *R.W.S.* 1904 a.

R. cariensis Genev.

VI. In thickets near Glena Cottage, Lower Lake, Killarney ! (*Marshall & R.W.S.*) *R.W.S.* 1904 a.

R. carpinifolius Weihe & Nees.

II. Darrynane, and—VI. Tore Mountain (*Babington*) *Cyb.* 1866.

R. incurvatus Bab.

IV. River side near Blackstones bridge, Glencar ! : *R.W.S.* 1908.

R. pulcherrimus Neum.

I. Near Kenmare !, and—III. About Dooaghs, Rossbehy ! (*Marshall & R.W.S.*) *R.W.S.* 1904 a. Dohilla, Valencia Island, 1909 ! : *Miss Delap.* About Lickeen, Glencar valley !, and—IV. Near the Caragh River, Glencar ! : *R.W.S.* 1904 a.—V. In several places about Brandon village, Cloghane, &c. (*Marshall & Shoolbred*) *R.W.S.* 1903. The only bramble on the Great Blasket Island (*Praeger & Stelfox*) *Irish Nat.*, 1912, p. 160.—VI. Near Killarney ! (*Druce*)

Irish Nat., 1901, p. 229. Common about Killarney, as on Ross Island!, in the Home Park!, about Mahony's Point on the Lower Lake, between Aghadoe and Faha, in a hedge near Farranfore!: *R.W.S.* 1904 a. This appears to be quite a common bramble in the county.

R. villicaulis Koehl.

VI. Killarney (*Babington*) *Cyb.* 1866.

R. Selmeri Lindeb.

I. About Kenmare! (*Marshall & R.W.S.*) *R.W.S.* 1904 a.—
III. In several localities in Valencia Island!, 1909: *Miss Delap.* Frequent about Dooaghs, Rossbehy, and—VI. Near Ardagh pond south of Killarney! (*Marshall & R.W.S.*), and in several other localities about Killarney, as in the Home Park!, and Mahony's Point! &c.: *R.W.S.* 1902 & .04 a.—
VII. About Tullig and Knockaunaglashy west of Killorglin, 1902: *Marshall & R.W.S.*

R. rhombifolius Weihe.

IV. By the Caragh River, Glencar!, and—VI. On Ross Island! and in the Glen, Deerpark!, &c., Killarney: *R.W.S.* 1904 a.

R. gratus Focke.

VI. Clydagh valley, Glenflesk (circa 1,000 feet), a small form, 1909: *R.W.S.*

R. ramosus Briggs.

VI. In the Home Park, Killarney!, and in the Clydagh valley, Glenflesk (circa 500 feet), 1909!: *R.W.S.*

R. thyrsoideus Wimm.

II. Darrynane!: *Druce* 1907.—III. In several localities on Valencia Island, 1909!: *Miss Delap.*

R. argentatus P. J. Muell.

I. Near Kenmare (*var. ROBUSTUS* P. J. Muell.)! (*Marshall & R.W.S.*) *R.W.S.* 1904 a.—III. In several localities in Valencia Island, 1909!: *Miss Delap.*—VI. In hedges in Woodlawn lane near Killarney! (*Marshall & R.W.S.*) *R.W.S.* 1904 a. In Muckcross demesne, Killarney!, 1888: *R.W.S.* 1903.

R. rusticanus Merc. *R. discolor* Weihe & Nees.
Common in Kerry, especially about Killarney.

R. sylvaticus Weihe & Nees.

VI. Muckcross demesne, Killarney, 1888 !: *R.W.S.*

R. macrophyllus Weihe & Nees.

I. Kenmare (*fide Focke*) Druce 1891. Thickets near Kenmare (*Marshall & R.W.S.*) *R.W.S.* 1904 a.—VI. Killarney (*Babington*) *Cyb.* 1866. On Ross Island, Killarney, 1888 !: *R.W.S.*

R. Schlechtendalii Weihe.

VI. Killarney (*Babington*) *Cyb.* 1866. In several localities about Killarney, as in Woodlawn lane ! (*Marshall & R.W.S.*), in the Deerpark glen !, in the Home Park ! and by Castlelough Bay !: *R.W.S.* 1904 a.—IX. Near Tarbert, 1913 !: *Phillips*.

Var. MACROPHYILLOIDES (*Genev.*).—VI. Near Glena Cottage, Killarney ! (*Marshall & R.W.S.*) *R.W.S.* 1904 a.

R. Colemanii Bab.

VI. Near Glena Bay, Lower Lake, Killarney (*Marshall & R.W.S.*) *R.W.S.* 1904 a.

R. hypoleucus Lefv. & Muell. *R. micans* Gren. & Godr.

III. Wood at the north-east end of Caragh Lake !, and—VI. On Ross Island, Killarney !: *R.W.S.* 1904 a.

R. hirtifolius Muell. & Wirt.

Var. DANICUS (*Focke*).—I. Roadside, Cloonee valley, Kenmare Bay, 1909 !, and—VI. Rather common about Killarney and between Aghadoe and Faha : *R.W.S.*

R. iricus Rogers.

I. About Kenmare ! (*Marshall & R.W.S.*), and—III. Near Lickeen, Glencar valley !: *R.W.S.* 1904 a.—V. Near Castlegregory and Cloghane, Brandon Bay (*Marshall & Shoolbred*) *R.W.S.* 1903.—VI. At Glena ! and in Woodlawn lane ! (*Marshall & R.W.S.*), and in the West Park, Killarney ! *R.W.S.* 1904 a.—IX. In several localities about Tarbert and on Carrig Island, Shannon estuary, 1913 !: *Phillips*. This appears to be a common bramble in Kerry.

R. pyramidalis Kalt.

I. Near Kenmare ! (*Marshall & R.W.S.*) *R.W.S.* 1904 a.—
 V. Near Lough Adoon, Connor Hill, and Fermoy, &c.,
 east of Cloghane, Brandon Bay (*Marshall & Shoolbred*)
R.W.S. 1903.—VI. On Ronayne's Island in the Upper Lake ! ;
 and at Glenna ! Lower Lake, Killarney (*Marshall & R.W.S.*) ;
 on Ross Island ! and Mahony's Point ! on the Lower Lake
 and in the Deerpark glen ! near Killarney : *R.W.S.* 1904 a.

R. leucostachys Schleich.

III. In two or three localities on Valencia Island, 1909 ! :
Miss Delap.—VI. Near Killarney (*Babington*) *Cyb.* 1866.

R. adenanthus Boul. & Gill.

I. In the stony bed of the River Sheen near Dromanassig
 Bridge ! (*R.W.S.*) ; in an open wood near Kenmare ! and—
 VI. About Woodlawn, Killarney ! (*Marshall & R.W.S.*)
R.W.S. 1908.

R. mucronatus Blox.

I. Near Kenmare ! (*Marshall & R.W.S.*) *R.W.S.* 1904 a.

R. anglosaxonicus Gelert.

VI. Rocky roadside near the Upper Lake, Killarney ! :
R.W.S. 1904 a.

Var. RADULOIDES Rogers.—I. Near the estuary at Kenmare
 (*Marshall & R.W.S.*) *R.W.S.* 1904 a.

R. Borreri Bell-Salt.

IX. On Carrig Island, Shannon estuary, 1913 ! : *Phillips*.

R. radula Weihe.

Var. ECHINATOIDES Rogers.—VI. Muckcross demesne,
 Killarney ! (*Rev. A. Ley*) *Cyb.* 1898.

R. rudis Weihe & Nees.

VI. Near Glenna, Lower Lake, Killarney ! (*Marshall &*
R.W.S.) *R.W.S.* 1908.

R. regillus Ley.

III. Wood at the north-east corner of Caragh Lake !
 (*R.W.S.*), and—VI. On Ronayne's Island, Upper Lake,
 Killarney ! (*Marshall & R.W.S.*) *R.W.S.* 1904 a.

R. podophyllus P. J. Muell.

VI. Shores of Castletlough Bay, Lower Lake, Killarney !:
R.W.S. 1904 a.

R. Babingtonii Bell-Salt.

I. Near Kenmare ! (*Marshall & R.W.S.*) *R.W.S. 1904 a.*

R. mutabilis Genev.

VI. About Muckcross and near Killarney ! (*Druce*) *Irish Nat., 1901*, p. 229. In Muckcross demesne, 1888 !: *R.W.S. 1903*. Hedgerow near Killarney ! (*Phillips*) *Irish Nat., 1908*, p. 56.

R. fuscus Weihe & Nees.

I. Uragh wood, Cloonee valley, Kenmare Bay, 1909 !:
R.W.S.—VI. Near Glenna Cottage, Lower Lake, Killarney
(*Marshall & R.W.S.*) *R.W.S. 1904 a.*

R. rosaceus Weihe & Nees.

VI. Killarney, and—
Var. HYSTRIX Weihe & Nees.—VI. Killarney (*Babington*)
Cyb. 1866.

R. Koehleri Weihe & Nees.

VI. Killarney (*Babington*) *Cyb. 1866.*

R. dasyphyllus Rogers.

III. Wood at the north-east corner of Caragh Lake !:
R.W.S. 1908.—VI. Killarney (*var. PALLIDUS* Bab.) *Babington,*
Cyb. 1866.

R. Bellardii Weihe & Nees.

VI. Killarney (*Babington*) *Cyb. 1866.* In Glenflesk Castle
wood near Killarney !: *R.W.S. 1904 a.*

R. serpens Weihe.

VI. Woodlawn near Killarney ! (*Marshall & R.W.S.*)
R.W.S. 1904 a.

R. corylifolius Smith.

II. On the Greenane Islands and Lamb's Head, Kenmare
Bay, 1904.—VI. In thickets below the Victoria Hotel ! and
on sandy shore of Castletlough Bay ! Lower Lake, Killarney
(all *var. SUBLUSTRIS* Lees) *R.W.S. 1904 a.*

R. Balfourianus Blox.

VI. Killarney (*Babington*) *Cyb.* 1866. In a damp thicket on limestone near the Lake Hotel, Killarney, 1905!: *R.W.S.* 1908.

R. cæsius Linn. *Dewberry*.

"On many of the sandhills on the Kerry coast, particularly near the mouth of the Shannon": *Mackay Rar.* 1806. Still abundant on the Ballybunnion and Beal sandhills in the Shannon estuary and common elsewhere round the coast, 1914, &c.: *R.W.S.*

R. saxatilis Linn. *Stone Bramble*.

Districts — II. — — — VI. — — —
Native. Bare rocky places and thickets on the limestone. Very rare and local. Peren. May—July. *Calcicole A.*

II. Very sparingly on one of the Greenane Islands, Kenmare Bay, 1904: *R.W.S.* 1908.—VI. "Between the rocks, Ross Island, Killarney": *Wade Rar.* 1804. "Frequent in the woods of Muckruss": *Mackay Rar.* 1806. "Among loose stones by the side of the lake at Muckruss, ripening its fruit in July": *Mackay Cat.* 1825. Still plentiful in many places on Ross Island and in Muckcross demesne as well as along the north shore of Muckcross Lake; it occurs also in many spots in the Home Park, and, more sparingly, along the shore of Castlelough Bay on the Lower Lake, 1904–12: *R.W.S.*

First record in 1804: *Wade Rar.*

This plant is quite confined to the limestone in Kerry and, outside the neighbourhood of the Killarney Lakes, is one of the rarest species in the county. It appears to be on the verge of extinction in its Kenmare Bay station.

[*DRYAS OCTOPETALA* Linn. *Mountain Avens*.—"On the hills near the passage into the upper lake of Killarney. Mr. Heaton informed the celebrated botanist Mr. Ray that he also found it on the mountains between Gort and Gallaway in this kingdom" (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 374, No. 18. Mr. Heaton, no doubt, knew the *Dryas*, and found it in the adjoining county Clare; the plant, moreover, is mentioned by Lhwyd as common on mountains and heathy ground in Munster (*Phil. Trans.*, 1712, Vol. 27). Neither Wade nor Mackay, however, appear to have seen this plant in Kerry, nor is there any modern record of its

occurrence in the county. The rough limestone rocks about the Killarney Lakes certainly offer a most suitable habitat for this calcicole species, very similar, indeed, to many of its Clare stations, where it is abundant; the limestone at Killarney, however, ceases on the north shore of the Muckross Lake, which is some distance from "the passage into the upper lake." Whether this record should be included among Dr. Smith's errors, or whether the plant really occurred in his Killarney station and has died out within the last 150 years, is now impossible to determine. The *Dryas* is at present unknown in Ireland south of Clare.]

GEUM Linn.

G. urbanum Linn. *Wood Avens.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Hedgerows, woods and other shady places.
Common. Peren. June—July.

First record in 1901: *R.W.S., Topog. Bot.*

G. rivale Linn. *Water Avens.*

Districts I. II. III. IV. V. VI. — — —
Native. Banks of streams and moist shady places, especially in mountain districts. Rather common but unevenly distributed in the south, very rare in the north. Peren. May—July.

I. & II. Rather common.—III. On the mountains east of Waterville, 1892.—IV. Frequent by the river in the Owenreagh valley, 1899: *R.W.S.*—V. Plentiful on the west side of Brandon about half way up: *Mackay Rar. 1806*. On Brandon ridge at 2,650 feet, and not infrequent lower down: *Hart 1884*—still frequent there, 1908; also on the Slieve Mish Mountains, 1888, and about Connor Hill, 1908: *R.W.S.*—VI. Aghadoe near Killarney, 1912: *Mrs. Jenner*. Rather common in this District, as in a wet grassy spot in Muckcross demesne with *Lastrea Thelypteris* and in other places about the Lakes, 1912; by the side of a small stream near Summer Hill north of Killarney, 1904; in the Horse's Glen, Mangerton, 1902; on the Paps Mountain, 1908; by the riverside at Loo Bridge, 1904, &c.: *R.W.S.*

From near sea-level, to 2,800 feet on Brandon (*Colgan*).

First record in 1756: *Dr. Smith, Hist. of Kerry*, p. 374, No. 19, "On the hills near the passage into the upper lake of Killarney, [with *Dryas octopetala*."]

FRAGARIA Linn.

F. vesca Linn. *Wild Strawberry.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On dry banks, in woods and shady places, &c.
Common. Peren. April—July.

From sea-level, to 1,100 feet near the old Glengarriff road
(*R.W.S.*).

First record in 1882 : *Hart, Proc. R.I.A.*

POTENTILLA Linn.

P. Fragariastrum Ehrh. *P. sterilis* Garcke. *Fragaria sterilis* Linn. *Barren Strawberry.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On hedge banks, walls and in wooded places.
Common. Peren. February—June.

From sea-level, to 1,000 feet on the Kerry side of the old
Glengarriff road (*R.W.S.*).

First record in 1882 : *Archdeacon Wynne, Journ. Roy.
Meteor. Soc., No. 45.*

P. Tormentilla Scop. *P. erecta* Hampe. *P. sylvestris* Neck.

Tormentilla officinalis Linn. *Tormentil.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On moors, heaths, banks, &c. Very common.
Peren. June—October. *Calcifuge B.*

From sea-level, to the summits of the highest mountains
in the county, as on Mangerton (2,756 feet), Baurtregaum
(2,796 feet), Brandon (3,127 feet), and Carrantuohill (3,414
feet) : *R.W.S.*

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 85.

P. SUBERECTA Zimm.—*P. Tormentilla* × *P. procumbens*.—
III. In several places about Caragh Bridge and Dooaghs,
Rossbehy.—VI. In many places about the Killarney Lakes,
as near the shore at Cahirnane, frequent on Ross Island, in
the Home Park, on Dinis Island and near Glenna Cottage ;
near Loo Bridge in Glenflesk, and—VII. Near Tullig west
of Killorglin (*Marshall & R.W.S.*) *R.W.S. 1903 & 1904.*

P. procumbens Sibth.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On banks, roadsides and waste places. Common.
Peren. June—October.

First record in 1902 : *R.W.S., Irish Nat.*, p. 156.

P. reptans Linn. *Creeping Cinquefoil.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On banks, roadsides, in pastures and on sandhills,
&c. Common. Peren. May—October.

From sea-level, to 1,020 feet on the Kerry side of the
Glengariff tunnel and to the same height on the Roughty-
Ballyvourney road (*R.W.S.*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 185,
as “cinquefoil.”

P. Anserina Linn. *Silver Weed.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Damp roadsides, moist sandy ground, about fields,
on banks, &c. Very common. Peren. May—September.

From sea-level, to 950 feet by the Loo Bridge-Bally-
vourney road (*R.W.S.*), and probably higher.

First record in 1881 : *Barrington, Proc. R.I.A.*

P. palustris Scop. *P. Comarum* Nestl. *Comarum palustre*
Linn. *Marsh Cinquefoil.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In boggy and marshy places, wet ditches, shallow
pools and sluggish streams. Common and locally abundant.
Peren. June—August. *Calcifuge B.*

From sea-level, to 800 feet on the Reeks (*Hart*), and
probably higher.

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 380,
No. 75, “it is common in all our bogs, though more rare
in England.”

ALCHEMILLA Linn

A. arvensis Scop. *Parsley Piert.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Banks, roadsides, waste or rocky places, and as a
weed in cultivated land. Very common. Ann. April—
November.

From sea-level, to 1,350 feet by the Connor Hill road
(*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

A. vulgaris Linn. *Lady's Mantle.*

Districts I. II. III. IV. V. VI. VII. — —
Native. Damp grassy spots on mountains, river- and road-
sides, &c. Very rare as a lowland plant, rather rare in the
uplands. Peren. May—August

I. Sparingly by the Priestsleap road in two or three places, *circa* 1,000 feet; sparingly by the Roughty River near Drohidnagower Bridge, and in several other spots in the upper Roughty valley, 1904-09; on Akinkeen Mountain, Slaheny valley, 1894: *R.W.S.*—II. On islands near the head of Kenmare River, 1756 (*Dr. Smith*) *Hist. of Kerry*, p. 85. Sparingly near Ballaghbeama Gap, 1890: *R.W.S.* Rather frequent on Beeown Mountain north of Sneem, from 1,350 to 1,900 feet (*Colgan & R.W.S.*) *R.W.S.* 1902.—III. On the west slopes of the Glenbeigh Mountains, 1892: *G. L. Bruce*. In several places about Drung Hill and frequent about Lough Ferta under Teermoyle Mountain, 1908: *Miss Delap & R.W.S.*—IV. In the cliffs north of Lough Googh, scarce, and on Beenbane, Reeks: *Hart* 1882. At 2,400 feet on Carrantuohill: *Druce* 1891. On the north side of Beeown Mountain (*vide* Dist. II., *supra*). Near the source of the Caragh River beside the foot track to the Black Valley, 1899: *Phillips & R.W.S.*—V. On Brandon cliffs at 3,000 feet, and on poor upland slopes east of Mount Eagle near Ventry: *Hart* 1884. Abundant about Lough Anascaul: *Lady Godfrey*—plentiful about this lake and in the valley above it, 1914: *R.W.S.*—VI. Near the River Flesk, Killarney, 1912: *Mrs. Jenner*. At about 220 feet by the riverside at Loo Bridge and frequent on the Paps Mountain, both on the north and east sides, 1889-1910: *R.W.S.*—VII. Sparingly at about 160 feet near Ballyplimoth Castle east of Castle-island: *R.W.S.* 1889.

From about 100 feet near Killarney (*Mrs. Jenner*), to 2,400 feet on the Reeks (*Druce*), and to 3,000 feet on Brandon (*Hart*).

First record in 1756: *Dr. Smith, Hist. of Kerry*, p. 85.

The prevailing plant in Kerry appears to be a small silky form, with the leaves rarely more than two inches in diameter, best referred to *var. MINOR* Huds.; Mr. Hart, however, gathered plants near Ventry with leaves fully six inches across. The nearly glabrous form, *var. GLABRA* DC. (*A. alpestris* Schmidt) occurs plentifully about Teermoyle Mountain and elsewhere in the county.

A. alpina Linn.

District — — — — V. — — — —
Native. Rough mountain slopes and cliffs. Very rare and local. Peren. June—July.

V. "On the mountains of Keri" (*Lhwyd*) *Phil. Trans.*, Vol. XXVII., 1712, p. 524. "On the cliffs near the summit

of Brandon mountains, Sep. 1804": *Mackay Rar.* On cliffs looking north-east at 2,800 feet on Brandon Mountain at the head of the Feany valley, also at 2,250 feet below Brandon Peak, with its lower limit at 2,200 feet above Lough Nalacken, frequent: *Hart 1884.* Still rather frequent on the Brandon range descending to 2,050 feet in the Coumaknock glen, 1905: *R.W.S.*

Ranges on Brandon from 2,050 feet (*R.W.S.*), to 2,900 feet (*Praeger & Stelfox*).

First found in Ireland on Brandon by *Lhwyd* in 1699.

First record in 1712: *Lhwyd, Phil. Trans., Vol. XXVII.,* p. 524.

This is one of the rarest plants in Ireland, where it appears to be quite confined to the Brandon localities given above, and to one other locality (in Co. Wicklow), a distance of nearly two hundred miles separating its two stations.

AGRIMONIA Linn.

A. *Eupatoria* Linn. *Common Agrimony.*

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Roadsides, banks, bushy places, &c. Rather common, but unevenly distributed. Peren. June—August.

Appears to be rare in the following Districts—III. Near the river at Waterville and at Boalakeel near Ballinskelligs, 1889, sparingly in both stations.—IV. On roadsides about Kilgobnet west of Beaufort, 1890: *R.W.S.*

First record in 1884: *Hart, Proc. R.I.A.*

A. odorata Miller.

Districts I. II. III. — V. VI. — VIII. IX. Native. Roadsides, rocky and bushy places. Rare. Peren. June—August.

I. On rocky ground by the Suspension bridge, Kenmare, 1903: *Marshall & R.W.S.*—II. Sparingly on Dunkerron Island, Kenmare Bay, 1904: *R.W.S.* Darrynane: *Druce 1907*—III. In some quantity by the side of an old road near Valencia (*J. Woods*) *Phytol. 1855*, p. 158—still by the old road from Knightstown to the Lighthouse, 1890: *R.W.S.*—V. By the roadside on the north of Dingle Bay near Dingle (*D. Oliver*) *Phytol. 1853*, p. 1096. On roadsides west of Killiney near Castlegregory, 1890, and near Cloghane, Brandon Bay, 1905: *R.W.S.*—VI. On Ross Island, Killarney: *Linton 1886*, and in 1904: *R.W.S.* In several places near

Lahard House, Beaufort, 1909 : *Mrs. Jenner*.—VIII. About Ballyduff and near Cashen Ferry bridge, 1902 ; not infrequent by roadsides north of Causeway, 1908.—IX. Roadside east of Cashen Ferry bridge, 1908 ; about Inch bridge north-west of Listowel, near Gortagarrane west of Lisselton and in one or two places by the roadside between Listowel and Tarbert, 1904 : *R.W.S.*

First record in 1853 : *D. Oliver, Phytol.*, p. 1096.

[*POTERIUM POLYGAMUM* Waldst. & Kit.—*P. muricatum* Spach.—*Burnet*.—IV. Abundant over portion of a large field near Churchtown House west of Beaufort, 1908 : *Miss L. Magill*—plentiful there over several acres in 1909 : *R.W.S.*—still abundant and extending over several fields in 1912 : *Miss Magill*.—VI. A few plants on a wall and meadow-side adjoining the Muckcross road about half a mile from Killarney, 1887–89, but not seen there recently : *R.W.S.* As the *Poterium* was first noticed in the Churchtown locality only so recently as 1908, it is still impossible to say whether it will succeed in establishing itself there. While the *Burnet* was no doubt accidentally introduced in both the localities given above, it is interesting to learn that attempts were made to introduce this plant into Kerry as a crop nearly 150 years ago. In Arthur Young's *Tour in Ireland*, published in 1780 (the tour was made in 1776–78), he alludes on p. 116, Vol. II., to the efforts of Mr. Herbert of Muckcross, to introduce *Burnet*, *Lucerne*, *Sainfoin*, &c., in his "reclamations" at Muckcross, Killarney ; the effort, however, failed as the plants were soon choked off by the natural grasses ; most probably a similar fate will overtake the *Burnet* in its Churchtown station.]

ROSA Linn.*

R. spinosissima Linn. *Burnet Rose*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Sandhills and sandy fields, rocky places and mountain cliffs. Common near the sea, more rarely inland on lake shores and mountains. Bush. May—June.

Inland stations are—I. On the north side of Hungry Hill at about 1,400 feet, 1894, and from 1,100 to 1,200 feet on Turner's Rock between the old and new Glengarriff roads,

* Gatherings from localities followed by the sign ! have been named by Major Wolley-Dod.

1904.—II. On Coomcalee Mountain at 1,700 feet, 1892, and on Beeown Mountain at 1,400 feet, 1900, both these stations are north of Sneem.—IV. Sparingly on the south bank of the River Laune below Beaufort, 1888 : *R.W.S.*—VI. On Innisfallen, Killarney (*Rev. W. M. Hind*) *Phytol.* 1857, p. 25. Frequent about the Lower Lake and on most of its islands, also in two or three spots by the Muckross Lake shore and at Newfoundland Bay on the Upper Lake, Killarney, 1888–1914.—VII. Sparingly in a hedge south of Cloghers, Tralee, 1899.—VIII. Roadside hedges and banks east of Lerrig about three miles north of Ardfert, 1914 : *R.W.S.*

From sea-level, to 1,700 feet on mountains north of Sneem (*R.W.S.*).

First record in 1857 : *Rev. W. M. Hind*, *Phytol.*, p. 25.

This rose occurs with pink flowers about the entrance to Barrow Harbour, on the Dooaghs sandhills and elsewhere round the coast, while a very pretty form with double pink flowers was gathered by the River Laune below Beaufort. Plants with fruit red when ripe have been noticed in several places. Both *R. spinosissima* and *R. pimpinellifolia* appear to be frequent in the county ; Major Wolley-Dod has referred gatherings from near the Laune, Sneem and Killarney to the former, and from Barrow Harbour and several localities about the Killarney Lakes to the latter.

[*R. MOLLIS* Smith—*R. villosa* Linn.—VI. Castletlough Bay shore, Lower Lake, Killarney (*Rev. W. M. Hind*) *Phytol.* 1857, p. 28. Not seen there recently, but this locality produces several very puzzling Roses, one of which may very possibly have been gathered by Mr. Hind ; they are referred to various forms of *R. tomentosa* by Major Wolley-Dod.—IX. Rather plentiful in a roadside hedge east of Kilmorna House between Listowel and Abbeyfeale, 1890 (*R.W.S.*) *Topog. Bot.* Recorded in error instead of *R. lucida* Ehrh. ; the Kilmorna plant exactly matches named specimens of the latter Rose in the writer's *Herbarium*.]

R. tomentosa Smith. *R. molissima* Willd. *Downy-leaved Rose.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Hedges, bushy and rocky places. Common. Bush.
June—July.

From sea-level, to 750 feet in the upper Roughty valley (*R.W.S.*), and probably higher.

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 25.

With the exception of *R. canina*, this is the most widely distributed of the Kerry roses. Among the many rather dissimilar forms included under *R. tomentosa*, the following have been recognised by Major Wolley-Dod as occurring in Kerry—

R. suberecta Ley—III. North shore of Caragh Lake, 1888 !—VI. Shore of Castlelough Bay, Lower Lake, Killarney 1909 ! : *R.W.S.*, and in 1914.

R. Sherardi Davies—VI. Side of River Flesk, Killarney, 1888 ! : *R.W.S.*

R. scabriuscula Smith—III. Shore of Caragh Lake, 1888 !—VI. In several localities about Killarney ! : *R.W.S.*

R. foetida Bast.—II. Near Lough Fadda east of Parknasilla, 1904 !—III. Near Rossbehy, 1888 !—VI. Near Farranfore, 1888 ! : *R.W.S.* Clydagh valley, upper Glenflesk, 1903 ! : *Marshall & R.W.S.*

R. rubiginosa Linn. *R. Eglanteria* Huds. *Sweet Briar*.

Districts I. II. III. IV. — VI. VII. — IX. Native. Bushy places, roadside hedges, &c. Rare and seldom in any quantity. Bush. June—July.

I. Sparingly by the roadside near Sheen bridge, Kenmare, 1901.—II. In one or two spots by the roadside near Clashnacree, Parknasilla, 1892.—III. Sparingly by a roadside about two miles north-east of Cahersiveen, 1896 ; in thickets on the east side of Caragh Lake, 1888, and again on the north shore of this lake, 1903 ! (*var. COMOSA Rip.*)—IV. Sparingly by roadside near Cullenagh, Beaufort, 1911.—VI. Frequent and, no doubt, native in stony and bushy places by the lake at Mahony's Point and on Ross Island, Killarney ; it occurs also along the Cahernane shore about the mouth of the Deenagh stream and in several other places in the Home Park, 1888–1909 ; sparingly in one or two spots on the north shore of the Muckross Lake, 1888–1908 ; sparingly by the roadside east of Killarney, 1888–1914 ! (*var. APRICORUM Rip.*) : *R.W.S.* Several bushes near Lahard House, Beaufort, 1909 ! (*vars. COMOSA Rip. and ROTUNDIFOLIA Reichb.*) : *Mrs. Jenner*.—VII. Sparingly about the gardens, Seafield, Spa, Tralee Bay ! (*var. COMOSA Rip.*), and in hedges near Castleisland, 1888 ! (*var. APRICORUM Rip.*)—IX. Sparingly about Lislaughtin Abbey near Ballylongford and by an old churchyard near Tarbert, 1905 : *R.W.S.* In three places in hedgerows between Sallow Glen and Tarbert, 1913 : *Phillips*.

First record in 1889 : *R.W.S., Journ. of Bot.*

The Sweet Briar is frequently seen in Kerry as a garden or shrubby bush, and is probably only an escape, or bird sown, in most of the stations given above. Along the northern shore of the Lower Lake, Killarney, however, it has all the appearance of a native, and in several localities here is almost certainly indigenous. So much planting has undoubtedly taken place around these lakes in the past as to cause several native growths, like the *Arbutus* and this Rose, to be regarded with undeserved suspicion.

R. micrantha Smith.

District — — — — — VI. — — —
Native ? In hedges and about ruins. Very rare and local ?
Bush. June—July.

VI. Sparingly about the ruins of Ballymalis Castle west of Beaufort, 1888–1902 : *R.W.S.* Three or four bushes in hedges near Lahard House, Beaufort, 1909 ! : *Mrs. Jenner.*

First record in 1891 : *R.W.S., Journ. of Bot.*

The proper standing of this Rose in Kerry is at present impossible to determine. Unlike the Sweet Briar, there is little probability of *R. micrantha* having been intentionally introduced since it lacks both the strong perfume and the attractive flowers of its better known relation. It has most probably, been overlooked elsewhere in the county, and when its actual distribution is known, it may perhaps be found entitled to full native rank. There appears to be little or no reason to question its native standing in the neighbouring county of Cork where it occurs in places quite remote from habitations.

R. canina Linn. *Dog Rose.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In hedges and thickets. Common. Bush. June—July.

From sea-level, to 1,000 feet in the Clydagh valley :
R.W.S.

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 381, No. 82, "This is very common in all the hedges, its fruit is used as a conserve."

This is much the most common of the Kerry roses, and occurs in many forms. Among the varieties already recognised by Major Wolley-Dod are the following—

R. lutetiana Léman—VI. Near Lahard House, Beaufort, 1909 ! : *Mrs. Jenner.*—VII. Kilfenora, Tralee Bay, 1889 ! nearest *R. mucronulata* Déségl.) : *R.W.S.*

R. dumalis Bechst.—Common, and under various forms—V. Near Castlegregory, 1902! : *Marshall*.—VI. Lahard, Beaufort, 1909 (*adscita* Déségl. ! and *eladoleia* Rip. !) : *Mrs. Jenner*. Muckross, Killarney ! and Ballymalis by the River Laune, 1888 (*rubelliflora* Rip. !), on Ross Island, Killarney, 1909 (*leiostyla* Rip. !)—IX. Side of the River Feale near Listowel, 1890! : *R.W.S.*

R. sphaerica Gren.—VI. Cahernane and Castlough shores, Lower Lake, Killarney, 1909! : *R.W.S.*

R. dumetorum Thuill.—VII. Castleisland, 1888! : *R.W.S.*

R. insignis Déségl.—VI. Shore of Muckross Lake, Killarney, 1887!—VIII. South side of River Feale near Listowel, 1890! : *R.W.S.*

R. arvensis Huds. *Trailing Rose*.

Districts I. II. — IV. — VI. — VIII. — Native. Hedges and bushy or rocky places. Rare and local. Bush. June—August.

I. In several places by the roadside to the east of the Middle Cloonee Lake, 1908 (*var. SCABRA* Bab. !); in several roadside localities south of Kenmare Suspension bridge; 1889–1912. Sparingly about Kilgarvan and in the Slaheny valley, 1903; by the River Roughty at Ardtully, 1904.—II. In two or three spots about Blackwater bridge, Kenmare Bay, 1889–1909 : *R.W.S.*—IV. In some plenty among rocks near the south-east corner of Caragh Lake, 1913 : *H. Crookshank & R.W.S.*—VI. On Ross Island, Killarney, 1912 : *Mrs. Jenner*. About Muckross Lake and near the village of Cloghereen, 1888–1912; by the river east of Flesk Castle wood, Killarney, 1903; sparingly by the roadside near Brewsterfield bridge and near Lough Guitane, 1889–1914; sparingly near Loo bridge, Glenflesk, 1901.—VIII. Sparingly by the roadside east of Listowel bridge, 1905 : *R.W.S.*

First record in 1890 : *R.W.S.*, *Journ. of Bot.*

This rose proves to be quite local, and is very rare or absent over large tracts of the county. Of the Blackwater bridge plant recorded above, Major Wolley-Dod writes “an *arvensis* form with the peduncles so nearly eglandular that it might be labelled *R. erronea* Rip.”

[*R. LUCIDA* Ehrh.—IX. Rather plentiful in a roadside hedge east of Kilmorna House between Listowel and Abbeyfeale, 1890–1905 : *R.W.S.* This alien appears to be spreading; when last seen, in 1905, it extended for fully sixty or seventy feet along the roadside hedge; no doubt accidentally introduced, perhaps bird-sown.]

PYRUS Linn.

P. rupicola Syme. *White Beam Tree.*

District — — — — — VI. — — —
Native. Rocky lake shores and bushy places. Very rare and local. Bush or small tree. May—June. *Calcicole A.*

VI. In the county of Kerry plentifully (*Dr. Molyneux*) *Appendix to Threlkeld 1726*. "The true service or sorb, this grows wild upon several rocks round Killarney lake" (*Dr. Smith*) *Hist. of Kerry, 1756*, p. 382, No. 96. About Killarney: *Wade Rar. 1804*. On Ross Island, Killarney: *Linton 1886*. Still fairly plentiful on the limestone rocks around the Lower and Middle Lakes of Killarney as well as on several of the islands in the Lower Lake, with a few small trees on the north-west spurs of Torc Mountain and by the roadside adjoining, 1888–1914: *R.W.S.*

First record in 1726: *Dr. Molyneux, Appendix to Threlkeld*.

With the exception of a few small trees about the lower slopes of Torc Mountain, *P. rupicola* is quite confined to the limestone about the Killarney Lakes. It very rarely attains there the size of a small tree, growing usually as a straggling bush, but where it occurs in some plenty, as along the rocky shore of Ross Island and along the Muckcross side of the Lower Lake, it forms a striking feature among the surrounding vegetation, especially when a breeze turns its silvery-backed leaves to the sun. Babington's *Manual of Brit. Botany*, 9th Ed., has been followed in separating *P. rupicola* Syme from *P. Aria* Ehrh.

[*P. ARIA* Ehrh.—IV. A few trees in Beaufort demesne, 1902.—VI. A line of trees along the Deer Park wall near the railway north of Killarney; one or two trees in the Home Park, Killarney, 1914: *R.W.S.* Occurs but very rarely in Kerry, and then only where planted.]

P. Aucuparia Ehrh. *Sorbus Aucuparia* Linn. *Mountain Ash.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Rocky and heathy places and along mountain streams, also in woods and hedges. Rather common in the south, but rare and most probably planted in the extreme north. A small tree. May—June.

From sea-level, to 1,560 feet on the Purple Mountain (a bush), and to 1,900 feet on Mangerton (a seedling) *R.W.S.*,

to 1,900 feet on Beenoskee and to 2,300 feet on the Reeks (*Hart*).

First record in 1804 : *Wade Rar.*—"This very pleasing tree is to be met with pretty commonly about Killarney in the woods and some of the mountains."

The form *flava* with orange-yellow fruit has been noticed about Killarney : *vide* Druce in *New Phytol.*, Nov., 1911.

According to early writers like Drs. Smith and Wade, the berries of the Mountain Ash and the allied *Sorbus* were formerly held in great repute for various useful purposes. Thus, if dried and ground, the berries made a wholesome bread, they could also be made to afford a "not unpleasant jelly," while last, though probably not least, an ardent spirit of a "fine flavour" might be distilled from them. It is somewhat surprising that with all these qualifications the Mountain Ash is not now one of the most abundant trees in Kerry.

P. Malus Linn. *Crab Apple.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Hedges, woods and bushy or rocky places. Rather common. A small tree. May.

From sea-level, to 700 feet in the Roughty valley (*R.W.S.*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 154, &c.

Both the true Crab—*P. sylvestris* Linn. (*P. acerba* DC) and *P. mitis* Wallr. occur pretty freely, usually in suspicious stations. While the latter form is generally regarded as always derived from cultivation, trees of *P. sylvestris* have been noticed in Kerry growing remote from habitations and looking quite native. A fine tree of the true Crab near Muckross Abbey measured in 1904, was seven feet three inches in girth at two feet above the ground ; several other large trees occur near Ballyhorgan between Listowel and Lixnaw and elsewhere in the county.

Although orchards are still to be seen scattered throughout the county, it is clear from early writers that the Apple was formerly much more extensively grown in Kerry than it is at present. In his *History*, Dr. Smith refers on several occasions to orchards which no longer exist, and speaks of the neighbourhood of Tralee as producing "as good cyder as any in Ireland." He especially extols the soil of the lower Maine valley as remarkably good for fruit trees ; an apple tree thereabouts, at Ballygamboone, "as the owner assured me" produced three hogsheads of cyder, and a tree here, measured by Dr. Smith himself, covered with its branches

an area of 218 square yards, "and if we suppose an horse when standing takes up a space of ground equal to 3 square yards, then there may stand no less than 72 horses under the drip of this single tree."

CRATÆGUS Linn.

C. Oxyacantha Linn. *Whitethorn. May bush. Hawthorn.*
Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Hedges, thickets and rocky places. Very common.
A bush or small tree. May—June.

From sea-level, to 1,025 feet by the Roughty-Ballyvourney road (*R.W.S.*).

First record in 1806 : *Weld's Killarney*, p. 98.

The prevailing plant in Kerry appears to be *C. monogyna* Jacq., although *C. oxyacanthoides* Thuill, with glabrous calyx and peduncles is not infrequent.

[COTONEASTER sp.—I. One small bush in the stony bed of the River Roughty about half a mile below Inchee bridge, 1909.—II. Very fine on the ruins of old Kilcrohane Church north of Westcove, 1889–1907.—VI. In great luxuriance creeping over the bare limestone rocks at Kilbeg Bay on the north side of the Muckross Lake, Killarney : *R.W.S.* One stem measured here in 1902, was about four inches in girth ; it grew amidst a bewildering mixture of alien and native vegetation.]

SAXIFRAGÆ.

SAXIFRAGA Linn.

S. stellaris Linn. *Starry Saxifrage.*

Districts I. II. III. IV. V. VI. VII. — —
Native. In marshy spots by mountain streams, and on wet rocks. Common. Peren. June—August. *Calcifuge A.*

Descends, in some plenty, to between 400 and 450 feet, by the Killorglin-Lough Acoose road on the west slopes of the Reeks (*R.W.S.*), and to 700 feet on the north side of Knocknadobar Mountain near Cahersiveen (*Colgan*) ; it ascends to 3,100 feet on Brandon (*R.W.S.*), and to 3,400 feet on the Reeks (*Hart*).

First found in 1699 by *Lhwyd*.

First record in 1712 : *Lhwyd, Phil. Trans., Vol. XXVII., p. 524.*

This Saxifrage is the most common alpine plant in Kerry, and descends on the mountains there to a lower level than elsewhere in the British Isles. The large viviparous form found by Isaac Carroll in 1875 on the Cork side of Hungry Hill, was still growing there in 1894, and was seen on the Kerry side of this mountain as well.

S. *Geum* Linn.

Districts I. II. III. IV. V. VI. VII. — —
Native. Damp rocky and shady places especially in mountain districts. Rather common and locally abundant in the south and west of the county, absent from the north and, generally, from the limestone. Peren. May—early July. *Calcifuge A.*

I. II. III. IV. & V. Rather common and usually abundant where it occurs.—VI. Rather common in the south of this District, its northern limit here being roughly defined by the northern slopes of the Paps Mountain, the Horses' Glen on Mangerton, Torc Waterfall, and the southern shore of the Muckross Lake.—VII. Rather sparingly in the Gormagh cliffs, Slieve Mish range, south-west of Blennerville: *R.W.S.*

From sea-level, to 2,000 feet in the Horses' Glen, Mangerton, to 2,100 feet on the Reeks (*R.W.S.*), to 2,650 feet on Caherconree, Slieve Mish (*Hart*), and to 3,000 feet on Brandon (*R.W.S.*).

First found in 1699 by *Lhwyd*—there is a specimen in *Buddle's Herb.* (*Herb. Sloane CXXIV*, 17) in the British Museum labelled "*A. D. Lhwyd in Hibernia collect.*"

First record in 1806 by *Mackay*, "Sparingly on Connor Hill near Dingle and on Turc Mountain near the waterfall, 1804": *Mackay Rar.*

As the Robertsonian Saxifrages in Kerry form one of the most characteristic and puzzling groups in its flora, a somewhat lengthy investigation of the many forms met with in the county is necessary.

It has long been the present writer's conviction after many years close examination of these Saxifrages in their natural surroundings, that not only do *S. Geum* and *S. umbrosa* hybridise freely with one another, but that the resulting hybrids freely cross-fertilise with each other and with the parents, so that there is now growing naturally in Kerry an almost unbroken series of hybrid forms connecting-typical *S. Geum* with *S. umbrosa*. This opinion has been quite recently confirmed by the results of the elaborate experiments undertaken by Prof. H. Dixon, F.R.S. of Trin.

Coll. Dublin, of which a short account is given under *S. hirsuta* on p. 101, &c. On Plates I. II. III. & VI. photographic reproductions of a series of these natural leaf-forms are given, each leaf having been taken from a plant growing in Kerry, with one or two exceptions which are duly indicated.

Unfortunately the material preserved in Linné's own *Herbarium* is both scanty and unsatisfactory, and gives no help in determining the form or forms included in his *S. Geum*.* The description, however, of this plant in his *Species Plantarum*, 2nd Ed. (1762), p. 575, "foliis reniformibus dentatis," limits the type to plants with kidney-shaped leaves. Of *S. Geum* so limited, hereinafter referred to as *S. Geum (sensu stricto)*, two forms are met with in Kerry, one with rather large leaves and blunt, sometimes almost flat, crenations rather than serrations; the other with leaves usually smaller, and with teeth more or less acute. In both forms the petioles are slender and nearly cylindrical, and like the leaves are more or less hairy. Some leaf outlines of the crenate form are given on Pl. I.,† figs. 1-6; it is most probably the *Robertsonia crenata* of Haworth; while figs. 11-18 give leaf outlines of the serrate form, probably *Robertsonia dentata* of the same author. While both these crenate and serrate forms fully comply with the Linnean definition of *S. Geum*, and in their extreme states are easily separable from each other, plants of *S. Geum (sensu stricto)* may be found with teeth quite intermediate in character; a few examples of these are given on Pl. I., figs. 7-10.

These reniform types, which are quite local in the county occur in the following localities—I. Uragh Wood by Lough Inchiquin, Cloonee valley, 1908; sparingly by the roadside in the upper Slaheny valley, 1904.—II. Sparingly on Beeown Mountain north of Sneem, 1903; rather sparingly in damp gullies near Coomakesta on the Waterville-Darry-

* Mr. B. Daydon Jackson has kindly sent to the writer an exact outline tracing of a leaf from a specimen labelled *S. Geum* in Linné's own *Herbarium*, preserved in the rooms of the Linnean Soc., Burlington House. The leaf sketched is longer than broad, not cordate, and would be better referred to *S. hirsuta (sensu lato)*. Another leaf-tracing, from the same source, of a specimen of Linné's *S. hirsuta* shows an ovate leaf tapering into a broad footstalk and appears to be nearly related to *S. umbrosa* var. *punctata*.

† PLATE I. ($\frac{3}{4}$ life-size)—*S. Geum* Linn. (*Sensu stricto*, i.e., Reniform).—

Crenate forms, figs. 1-6.

Intermediate forms, figs. 7-10.

Serrate forms, figs. 11-18.

nane road : *R.W.S.* 1890, and in 1905 ; on the east side of Ballaghbeama Gap, 1906.—III. Abundant on damp roadside rocks and in the adjoining wood at Glanleam, Valencia, 1892–1911.—IV. In a gully above Lough Reagh, 1889, and above Lough Eskabehy, Glencar, 1911.—V. Near Kiltenebawn south of Camp, Tralee Bay, 1890 ; in several places about the north side of Connor Hill and Brandon Mountain, 1890–1908 : *R.W.S.*—VI. In a sheltered place below Torc Waterfall, Killarney : *Mackay Cat.* 1825—still in two or three places about the waterfall and Torc Mountain, 1888–1914 : *R.W.S.*

While Linné himself restricted *S. Geum* to plants with kidney-shaped leaves, later writers have included under his name forms with orbicular leaves. These latter, which can only be included under *S. Geum* (*sensu lato*), are much more common in Kerry than those with pronounced reniform leaves and include a greater variety in their shape. Thus they may have bases either cordate, entirely devoid of sinus or even tapering slightly into their footstalk, and while nearly all these may be found with acute or with blunt teeth, forms with the latter are much the rarer of the two in *S. Geum* (*sensu lato*). Examples of many of these forms are shown on Pl. II.*

Several of these round-leaved forms have been given names and described as distinct varieties or species, such as *S. elegans* and *S. gracilis* by Mackay, and *S. polita* by Haworth. They differ from each other chiefly in the colour or hairiness of their leaves and in the spots on their petals. The best known of these, and the only one that need be referred to here, is *S. elegans*. This plant was found by Mackay on Torc Mountain, where it still exists, and is described in his "*Catalogue of the Plants found in Ireland*," 1825. Two leaves of *S. elegans* are shown on Pl. II., figs. 23 & 24, taken from specimens gathered and named by Mackay himself. The plant figured is seen to have a small orbicular leaf which passes rather abruptly into a short petiole. While often regarded as a distinct species, *S. elegans* is really but one of the many hybrid forms which are found only where *S. Geum* and *S. umbrosa* grow together, as about Torc

* PLATE II. ($\frac{3}{4}$ life-size)—*S. Geum* Auct. (*Sensu lato*—i.e. With round or roundish leaves)—

Cordate base, crenate teeth. figs. 1–4.

Cordate base, serrate teeth, figs. 5–13.

Forms with non-cordate base, merging into *S. elegans* and *S. hirsuta* (*sensu lato*). figs. 14–34.

Mountain, Connor Hill, Brandon Mountain, &c., and which are unknown in those parts of Ireland where *S. umbrosa* grows alone, as on the mountains of Waterford, Tipperary, Galway, &c. This fact by itself would raise doubts as to its claim to specific rank, but when it is found moreover that *S. elegans* as well as many other of these various forms combine in different degrees the respective characters of *S. Geum* and *S. umbrosa*,* a strong presumption of their hybrid origin is established, independently of the results obtained by Prof. Dixon in the experiments which are referred to under *S. hirsuta* on p. 101, &c.

Of all the Robertsonian forms, however, the one which has given rise to the most discussion is the *Saxifraga hirsuta* of Linné. In separating this oval-leaved plant from his *S. Geum*, Linné himself appears to have felt misgivings, as he states in his *Species Plantarum*, that it is only too close ("affinis nimium") to *S. Geum*. His selection of the name, too, was rather unfortunate, as the degree of hairiness is quite a subordinate and variable character in all these forms. Smith, in *Eng. Bot.*, Vol. II., p. 263, speaking of *S. hirsuta*

* As showing the influence of *S. umbrosa*, the following characters of *S. elegans* may be noted—the absence of a cordate base to its leaves, the slight flattening of the petiole, and the presence of a few red spots on its petals.

Although the flowers of the Robertsonian Saxifrages in Kerry examined by the writer do not vary very perceptibly with the different leaf forms, the number of the spots on the petals follows fairly general rules which may be summarised as follows—In reniform-leaved *S. Geum* there are rarely more than 1 or 2 coloured spots to be found on each petal in addition to the irregular yellow blotches common to the lower half of the petals of all the Robertsonian Saxifrages in Kerry. In forms where the leaves tend to become orbicular or ovate, and the cordate base to disappear, a few red or orange spots are usually present; this is seen in forms like *S. elegans* and *S. hirsuta*, &c. The more the base of the leaf tends to merge into the petiole, as in several of the forms connecting *S. hirsuta* with *S. umbrosa*, the more do these spots appear to increase in number, reaching their maximum in typical *S. umbrosa*, where they occasionally amount to 11 or 12 in addition to the yellow basal spots. There appear, however, to be many exceptions to this colour scheme; in about 10 p.c. for example, of the *S. umbrosa* plants examined, usually the most spotted member of this Robertsonian group, the red or orange spots were only one or two on each petal, and in a few instances were completely absent.

It appears to be impossible to discover any definite distinction between the two species either in the form or arrangement of their petals or in the shape of their capsules. Nevertheless this general statement appears to be justified, that the petals of *S. umbrosa* are usually broader than those of *S. Geum* and its allied forms, and that hairy leaves and those netted with purple underneath are very rarely seen in *S. umbrosa* or its forms though commonly present in *S. Geum*. The capsules of all the various forms examined were filled with apparently fertile seeds.

Linn., says "both surfaces almost perfectly smooth in all my specimens"; and certainly no form of this plant yet seen in Kerry by the present writer equalled in hairiness an almost bristly state of typical *S. Geum* gathered beside a rocky stream near the base of Brandon.

Linné's own description of the leaves of his *S. hirsuta* is "foliis cordato-ovalibus." Plants with leaves fulfilling these conditions are rare in Kerry, and like all these intermediate forms are found only where *S. Geum* and *S. umbrosa* grow together. Examples are given on Pl. III.,* figs. 1-8. They have been found in—I. Uragh Wood by Inchiquin Lake, Cloonee valley: *Hart 1885*, and in 1908: *R.W.S.* Near the tunnel on the Kenmare-Glengarriff road and in several places in the Slaheny valley, 1904: *R.W.S.*—II. On Beeown Mountain north of Sneem, 1900.—III. On the Coomasaharn Mountains, Glenbeigh, and on Valencia Island, 1892: *Colgan & R.W.S.*—IV. On rocks at the Gap of Dunloe near Killarney, 1805: *Mackay Cat.*, and in 1904: *R.W.S.* In the Hag's Glen and by the Devil's Ladder, Carrantuohill (*J. Carroll*) *Phytol.* 1854, p. 77. Near Coomloughra, Reeks, and in a gully above Lough Reagh, Glencar: *Hart 1882*. On the Glencar side of Beeown Mountain, 1900: *Colgan & R.W.S.*—V. On Brandon plentifully (*Moore*) *Cyb.* 1866; on Connor Hill, 1841: *Babington in Herb.*—seen in both these stations and on the Slieve Mish Mountains, 1888-1908: *R.W.S.*—VI. On the east side of Mangerton and on several other mountains in Kerry, 1804-05: *Mackay. Rar.* On the Paps Mountain and in several spots about Tore Mountain, 1888-1914: *R.W.S.*

The above localities, so far as the writer's own records are concerned, are for plants with the cordate oval leaves of Linné, but later authors like Hooker and Babington have extended his *hirsuta* to include forms with oval leaves rounded at the base or even narrowing into the petiole, Neither of the *S. hirsuta* forms, for instance, illustrated in Babington's paper on these Saxifrages (*Ann. & Mag. of Nat. Hist.* 1842, p. 321), nor any of the three figured in another of his papers in the *Trans. Bot. Soc. Edin.*, Vol. II., 1846, p. 113, are cordate, one of the latter figures being drawn from a Spanish specimen. As thus extended, *S. hirsuta* is not uncommon in Kerry, and would include a

* PLATE III. ($\frac{3}{4}$ life-size)—

S. hirsuta Linn. (Sensu stricto—i.e., Oval-cordate)—figs. 1-8.

S. hirsuta Auct. (Sensu lato—i.e., Oval)—figs. 9-23, some merging into *S. umbrosa* forms.

large series of forms, some of them being near to *S. Geum* (*sensu lato*), others merging into *S. umbrosa*—*vide* Pl. III., figs. 9–23, & Pl. VI., figs. 1–6.

Many botanists have long regarded *S. hirsuta* as a hybrid form. As far back as 1831, Hooker wrote in his *Brit. Flora*, 2nd Ed., p. 192, “my friend the Rev. W. T. Bree who has cultivated and studied the Saxifrages very assiduously, says that it [*S. hirsuta*] is certainly a hybrid between the preceding and the following [*S. Geum* and *S. umbrosa*].” This opinion is supported both by the known distribution of *S. hirsuta* and by the fact already referred to under *S. elegans*, that so many of its peculiarities are intermediate in character.

To definitely decide whether this plant was really a hybrid of *S. Geum* and *S. umbrosa*, experiments along two distinct lines were undertaken by Prof. H. Dixon, F.R.S. of Trin. Coll. Dublin, at the suggestion of the author of the present *Flora*, and continued for many years to their completion in 1914. Firstly, an endeavour was made to produce by the crossing of *S. Geum* with *S. umbrosa*, the intermediates which occur so frequently in a state of nature; secondly, it was sought by the analysis of a natural intermediate (*S. hirsuta*) by self-pollination, to produce forms approximating on the one hand to *S. Geum*, and on the other to *S. umbrosa*. Since each plant requires two years to reach maturity from germination, it is evident that no conclusive result could be obtained for several years.

1. ARTIFICIAL PRODUCTION OF INTERMEDIATES.

Representatives of both *S. Geum* and *S. umbrosa* were gathered in natural situations in Kerry. Photographic leaf outlines of the *S. Geum* parent selected are given on Pl. IV.,* figs. 1, 2. As will be seen, they fully comply with the Linnean definition of this plant “*foliis reniformibus dentatis*.” Leaf outlines of the *S. umbrosa* parent are shown on the same plate, figs. 3, 4.

These plants were taken into cultivation at Trin. Coll. Botanic Garden, Dublin, and with due precautions were self-pollinated in order to ascertain their purity as types. The seeds thus produced were collected and sown, and 45

* PLATE IV. Hybridising Experiments. Synthesis of Intermediates. *Geum* parent—figs. 1–2; *umbrosa* parent, figs. 3–4; leaves from resulting plants, figs 5–16; figs 17–18 are derived from fig. 6, self-fertilised; figs. 19–21 are derived from fig. 7, self-fertilised,

seedlings of each plant were raised. The 45 seedlings of *S. Geum* matured into plants with rounded petioles like their parent. A few of them differed either by the absence of the leaf sinus or by a slight flattening of the marginal teeth. Both these divergences appear to indicate that the plant selected as parent was not itself quite pure. Of the self-pollinated *S. umbrosa* seedlings, 43 had leaves and petioles like their parent, the remaining 2 had nearly circular leaves tapering into rather rounded petioles; here again traces of mixed origin in the parent were shown.

For the hybridisation experiments, individuals of the selfed-generation of both *S. Geum* and *S. umbrosa* were selected identical in leaf-form with the original parents; cross-pollination of these was effected and seeds were produced. These seeds grew into plants of which some leaf-outlines are shown on Pl. IV., figs. 5-16. Continuing the experiments, the hybrid plant represented by fig. 5 on this plate was then self-fertilised, some of the resulting forms being shown in figs. 17, 18. A similar treatment of the hybrid plant fig. 7, gave the forms 19-21. As will be seen, these experiments resulted in the production, amongst other forms, of plants which fully comply with the Linnean definition of *S. hirsuta* "foliis cordato-ovalibus," and thus demonstrate that this Linnean species has its origin in the hybridising of *S. Geum* with *S. umbrosa*. Some of the forms so produced along with *S. hirsuta* may be matched with leaves gathered from natural plants and shown on Plates I. II. III. & VI.

In these experiments the hermaphrodite *S. Geum* and *S. umbrosa* were used indifferently as the pollen- or seed-parent.

2. ANALYSIS OF *S. HIRSUTA*.

Having thus proved that *S. hirsuta* can be produced by the union of *S. Geum* with *S. umbrosa*, it remains to be shown that the parents can be produced by the analysis of *S. hirsuta*—a reversal of the synthetic process already described. Two plants of Linné's *S. hirsuta*, gathered near the base of Torc Mountain, Killarney, were received into cultivation at the College Botanic garden and self-pollinated there. Leaf-outlines of the selected plants are shown on Pl. V.,* figs. 22 & 23. Thirty seedlings of each plant were

* PLATE V. (½ life-size)—Hybridising Experiments. Analysis of *S. hirsuta* Linn.

Leaves from plants selected for experiment, figs. 22, 23.

Leaves from resulting plants, figs. 24-36.

thus raised. Unfortunately the plant represented by fig. 22 and its box of seedlings, died the following winter; the thirty seedlings, however, of plant 23 developed into forms some leaves of which are shown on Pl. V., figs. 24–36. Among these will be found plants very similar to their parent, as well as forms of *S. Geum* and *S. umbrosa*, with several remarkable variants.

The present writer's opinion that *S. Geum* (*sensu stricto*) is a decreasing species in Kerry has been already referred to in the Introduction. Whether this decrease is due to changed climatic conditions, the natural tendency of an Island flora to diminish, or to the aggressive action of its more hardy ally *S. umbrosa* and their hybrid forms, it is impossible to say.

Outside of Kerry and Cork, Linné's *S. Geum* appears to have a very restricted range,* being confined, according to Willkomm and Lange, to the Pyrenees and to northern Spain and Portugal, with outlying stations amongst the Alps and Carpathians. It is stated in Britton and Brown's *Flora of the Northern States and Canada* to occur in Newfoundland, where it appears to be the sole representative of the Robertsonian group present. It would be of great interest to learn if it there exhibits the same range of leaf-forms that it does in south-west Ireland and the Pyrenees. In Kerry this interesting member of the Cantabrian group attains its extreme northern limit in Europe, about $8\frac{1}{2}$ degrees of latitude separating the Irish from the nearest Pyrenean localities.

In the Appendix is given a suggested arrangement of the various forms of *S. Geum* and its hybrids met with in Kerry.

S. umbrosa Linn. *Fox's Cabbage.* *London Pride.*

Districts I. II. III. IV. V. VI. VII. — —
Native. On mountains and in rocky or shady places, &c.
Common and locally abundant, but absent from the north

* The recent discovery by Mr. Praeger of a form of this plant on Clare Island off the coast of Mayo, is very interesting. It is a plant with roundish, non-cordate leaves with acute serrations, and can be referred to *S. Geum sensu lato* only. It suggests to the writer a much wider distribution of the typical plant in former times, a distribution indicated by this survival in Clare Island, and in perhaps a few other favourably situated spots along the west coast, of one of its more hardy hybrid forms.

of the county and, generally, from the limestone. Peren. May—July. *Calcifuge A.*

From sea-level, to the summits of the highest mountains in the county, attaining 3,120 feet on Brandon (*R.W.S.*), and 3,414 feet on Carrantuohill (*Mackay*).

First definitely recorded from Kerry by *Dr. T. Molyneux* in 1697, "grows plentifully here with us in Ireland on a mountain called the Mangerton in Kerry": *Phil. Trans.*, Vol. XIX., p. 510, and perhaps observed in the county nearly fifty years earlier, as the plant is entered, although without any locality, in *How's Phytologia*, 1650. Other early records for this plant are—"On the mountains of Kerry in abundance": *Lhwyd, Phil. Trans.*, Vol. XXVII., 1712, p. 524. While *Dr. Smith* in confirming the record of *Molyneux* adds "it grows plentifully on Mangerton Mountain as it doth also on most of our mountains not only in this county, but also in those of Cork and Waterford": *Hist. of Kerry*, 1756, p. 382, No. 99. "This alpine beauty covers almost every spot about the Lakes of Killarney, 1796": *Wade Rar.* 1804. "On the bare summits of the highest of Magillicuddy's reeks,": *Mackay Rar.* 1806.

Although *S. umbrosa* is a much more common and widely distributed plant in Kerry than *S. Geum*, it appears to preserve its specific characters with greater tenacity, the range of its varieties being much less striking. Most, indeed, of the plants met with may be referred without difficulty to one or other of its three recognised forms; a compact fleshy plant with a rosette of spreading obovate leaves and short but broad footstalks, being regarded as type. Examples are given on Pl. VI.,* figs. 14-16, &c. This is one of the most hardy plants in the Irish flora and ascends to the summits of the most exposed mountains not only in Kerry, but in several other counties of the south and west.

An equally common form of *S. umbrosa* in Kerry is the *var. PUNCTATA* (*Haworth*). This includes plants with

* PLATE VI. ($\frac{3}{4}$ life-size).—

Forms connecting *S. hirsuta* (sensu lato) with *S. umbrosa*—note narrow petioles, figs. 1-6.

Various forms of *S. umbrosa*, figs. 7-29.

The compact spreading form, taken as type, figs. 14-16, &c.

Var. punctata (*Haworth*), figs. 10-12, &c.

Var. serratifolia (*Mackay*), figs. 19-23, &c.

All the figs. are taken from Kerry plants, except figs. 25-27, which are from the Pyrenees, and 28, 29, from Derbyshire where the plant is well established in wild localities.

roundish or slightly oblong leaves more or less erect, with almost flat tapering footstalks (Pl. VI., figs. 10-12, &c.). It occurs abundantly in many places, sometimes to the exclusion of almost every other form, and unlike the type shows a marked preference for lowland localities and the more sheltered situations among the mountains. All of these plants are most probably due to the hybridising of the type with *S. Geum*.

The third form is the *var. SERRATIFOLIA* (*Mackay*), with long and rather narrow erect leaves and deep serrations. While not infrequent in sheltered rocky situations, well marked plants of this variety are decidedly less common than are either of the preceding forms. Some leaf examples are shown on Pl. VI., figs. 19-24.

While the Pyrenean and Kerry forms of *S. Geum* do not appear to differ much from each other, a form of *S. umbrosa* was gathered by the writer in the Pyrenees unlike any hitherto noticed by him in Kerry. This *umbrosa* form (*vide* Pl. VI., fig. 27), has an oblong leaf with blunt crenations and a pronounced cartilaginous margin; in all Kerry forms of this plant, however, the serrations are acute and the cartilaginous margin but poorly developed. Really blunt crenations if they occur at all in Kerry *S. umbrosa* must be very rare; in fact, no native Kerry specimen has yet been seen by the writer, nor indeed any from Ireland, that fully answers the Linnean definition of this plant "*foliis cartilagineo-crenatis*," a description most probably drawn from a Pyrenean or Spanish specimen.

Although *S. umbrosa* and *S. Geum* are strongly calcifuge, both these plants may occasionally be found growing on the limestone. They have been noticed, for instance, on rocks of this formation beside the Roughty River below Ardtully east of Kenmare and in Muckross demesne, &c.

The distribution of *S. umbrosa* in Ireland is much wider than that of *S. Geum*, and there can be no doubt that it is a much hardier and more aggressive plant. Indeed *S. Geum* in all its forms, appears to be practically confined to south Kerry and west Cork, whereas *S. umbrosa* is found on the mountains of Waterford, Tipperary and Cork in the south, and in Kerry, Galway, Mayo and Donegal on the west, in fact, along the entire western margin of Ireland except where the presence of limestone formations fully accounts for its absence. On the continent also it appears to have a wider range than *S. Geum*. It is found in the Pyrenees, northern Spain and Portugal, and according to Willkomm

and Lange also in Corsica and the Alps ; it appears, however, to be absent from Newfoundland where *S. Geum* is said to occur.

The nearly allied *S. cuneifolia* Linn., which ranges on the continent from the Pyrenees to the Carpathians, occurs not infrequently in Kerry as a garden or rockery plant ; it has not yet, however, spread to any wild or native-looking locality.

[S. ANDREWSII Harvey—*S. Guthriana* Hort.—The history of this reputed Kerry Saxifrage appears to be as follows. Amongst an extensive gathering of Robertsonian Saxifrage forms made by Mr. W. Andrews in various parts of Kerry during September, 1845, a very remarkable form was stated by him to have been gathered on damp cliffs in a gully near the head of Glen Caragh. He removed roots of this then flowerless plant to his garden, where after a lapse of nearly three years it produced flowers in June, 1848. It was then sent to W. H. Harvey who described it in the *London Journal of Botany*, Vol. VII., 1848, p. 571, as a new British Saxifrage, and named it after the reputed finder. The plant described by Mr. Harvey is now known to be a garden hybrid of *S. umbrosa* with one of the Aizoon group of Saxifrages, a group unknown as native in the British Isles. The rocky head of Glencar has been visited by several botanists, all of whom have failed to find any plant which could confirm or account for Mr. Andrew's alleged discovery. A possible explanation of this unfortunate mistake appears to be that during the three years the Saxifrage remained in Mr. Andrew's garden either his plants or his labels became disarranged.]

S. tridactylites Linn. *Rue-leaved Saxifrage.*

Districts — — — — V. VI. VII. VIII. IX.
Native. On walls, limestone rocks and sandhills. Very rare or absent in the south, rather common elsewhere except in the Dingle peninsula and in the extreme north where it appears to be very local. Ann. April—June. *Callicole A.*

Very local in the following Districts—V. In several spots about Castlegregory, 1894 : *R.W.S.*—IX. On walls, &c., about Listowel : *Stewart 1890*, and in 1904 : *R.W.S.*

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 380, No. 74, "On the Abbey walls of Ardfert"—still there in 1905 : *R.W.S.*

S. decipiens Ehrh. *S. rosacea* Moench. *Mossy Saxifrage.*

Districts — II. III. IV. V. [VI.] VII. — —
Native. On damp cliffs, about rills and other wet spots on mountains. Rather local, but usually abundant where it occurs. Peren. June—August.

II. On Beeowen Mountain north of Sneem, rather sparingly at 1,700 feet, 1901 : *Colgan & R.W.S.*—III. In several places about Crowkeylaun Mountain east of Waterville, 1892 : *R.W.S.*—IV. On Mullaghanattin Mountain, Glencar, 1885 : *Colgan*, and on the Glencar side of Beeowen Mountain, 1901 : *Colgan & R.W.S.* Plentiful in Coomloughra and other places on the Reeks, 1889–1905 : *R.W.S.*—V. On Brandon cliffs from 2,450 to 3,000 feet : *Hart 1884*. Plentiful on the Brandon range, 1907, and on the Baurtregaum and Cahirconree cliffs, Slieve Mish range, 1888 : *R.W.S.* [—VI. At Killarney (*Moore*) *Cyb. 1866*—as *S. hypnoides* Linn., but no form of this plant has been recently seen about Killarney]—VII. On the Gormagh cliffs, Slieve Mish range, 1890 : *R.W.S.*

Ascends to 2,650 feet on the Slieve Mish Mountains (*Hart*), to 3,120 feet on Brandon (*Mackay*), and to 3,150 feet on the Reeks (*Hart*) ; its lowest level in the county is about 1,500 feet in the Coomloughra glen, Reeks (*Hart*).

The prevailing Hypnoid Saxifrage on the Kerry mountains appears to be *S. decipiens* Ehrh., its headquarters in the county being the Reeks and the Dingle peninsula, where it occurs often in great abundance. It varies considerably both in its size and appearance, being sometimes almost glabrous, often densely hairy ; the lobes of the leaves, even on plants from the same tuft, vary both in their width and degree of divergence. Gatherings from the Reeks, Brandon, and the Slieve Mish range, have been named as above by Dr. Engler, whose arrangement of these closely allied plants in his *Monogr. Saxif.* is here followed.

Var. GRÆNLANDICA (Linn.)—II. Sparingly on Beeowen Mountain north of Sneem (*Colgan & R.W.S.*) *R.W.S. 1903*.—V. On a dry rock on the summit of Brandon Mountain, Sept. 1804 (as *S. cæspitosa* Linn. and *S. incurvifolia* Don) : *Mackay Cat.*—again found on this mountain by *Messrs. Linton* in 1885, by *Marshall & Shoolbred* in 1902, and by *R.W.S.* in 1905, &c.

Mackay's original station for *S. cæspitosa* and *S. incurvifolia* is a very exposed rock of no great size situated close to the Holy Well on Brandon summit. Plants indistinguishable from *S. grænlantica* and dwarfed *S. decipiens* still maintain a precarious existence in the cracks and hollows of this rock.

Var. STERNBERGII (Willd.)—*S. hirta* Smith.—IV. On Magillicuddy's Reeks : *Mackay Rar.* 1806. Sides of rivulets near the summit of Magillicuddy's reeks, county of Kerry, 1805 : *Mackay Cat.* The commonest form among the upper cliffs on the Reeks, ranging there from 1,500 to 3,150 feet : *Hart* 1882.—V. On Brandon (*Carroll*) *Phytol.* 1857, p. 76.

Var. SPONHEMICA (Gmel.)—*S. quinquefida* Haworth.—IV. Near the lake in the Hag's Glen, Macgillicuddy's Reeks (*fide* J. G. Baker) : *Druce* 1891.—V. On Brandon : *Mackay Rar.* 1806. On a rock on the top of Brandon Mountain, 1805 : *Mackay Cat.* From 1,950 feet above Lough Nalacken to 2,650 feet on Brandon : *Hart* 1884, and on cliffs looking east on Caherconree, Slieve Mish range (as *S. affinis* Don, (*fide* J. G. Baker) : *Hart* 1882 a.

First record in 1806 : *Mackay Rar.*

What value the above varieties really possess, is impossible at present to decide. In such strongholds of these plants as Brandon and the Reeks, where dense tufts of different forms flower close together, it is almost certain that some, at least, are hybrids, and until this point has been experimentally investigated, it seems premature to assign specific or even varietal rank to them. Elevation and exposure also exercise a very marked influence on the growth of these plants.

The distribution of the Hypnoid Saxifrages in Kerry appears to be very capricious. While they are abundant on the Reeks, they are absent in all their forms from the adjoining Purple and Tomies Mountains, although the latter are only separated from the Reeks by the narrow Gap of Dunloe and offer many suitable localities for their growth. Neither have they been found on the fine range of cliffs in the Horse's Glen, Mangerton, nor on the Paps Mountain still further east. They occur on the long line of mountains between Waterville and Ballaghbeama Gap, but are absent from the Glenbeigh (Coomacarrea) Mountains with their numerous fine cooms and cliffs. They also appear to be quite absent from the wild range separating Kerry from Cork to the south of Kenmare Bay, although further investigation there is desirable.

The gemmiferous form of *S. hypnoides* has not, so far, been seen in the county.

[*S. OPPOSITIFOLIA* Linn. *Purple Saxifrage*. "Among the rocks near Black-stones" (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 381, No. 89. The mountains and rocks in the neighbour-

hood of Blackstones, Glencar, have been too well examined for this plant to have escaped observation for more than 150 years. The nearest locality known for *S. oppositifolia* is in west Galway, more than one hundred miles to the north of its reputed Kerry station. The record is far more likely to be some error of Dr. Smith.]

[*S. AIZOIDES* Linn. *Yellow Mountain Saxifrage*. "On Connor cliffs near Dingle," 1804: *Mackay Rar.* This record is repeated in *Mackay Cat.* 1825, and in his *Flor. Hib.* 1836. No one has seen this plant on Connor Hill, or elsewhere in Kerry, since Mackay's time, although the neighbourhood has been well examined by many botanists. The nearest Irish locality known for *S. aizoides* lies about 150 miles to the north, where it is abundant on the Sligo and Leitrim mountains. Mackay certainly knew the plant well, and it is quite possible that it still exists near Connor Hill in some secluded spot in this wild district, or perhaps has died out in this locality since the date of his record, now over 100 years old. It is more probable, however, that the record owed its origin to some accidental mixing or confusion of specimens, and it is better to await modern confirmation before admitting this interesting species among the native plants of Kerry.]

CHRYOSPLENIUM Linn.

C. oppositifolium Linn. *Golden Saxifrage*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Damp shady places, about streams and mountain
rills, &c. Common. March—May. *Calcifuge B.*

From sea-level, to 2,480 feet on the Reeks, to 2,550 feet
on Baurtregaum (*Hart*), and to 3,120 feet beside the Holy
Well on Brandon (*R.W.S.*).

First record in 1882: *Hart, Proc. R.I.A.*

[*C. ALTERNIFOLIUM* Linn.—VI. Killarney (*J. Barbour*)
Science Gossip, 1897, p. 109. No doubt an error; the plant
has not been seen in the county by anyone else, nor is it
known to occur in Ireland as a native.]

[*RIBES GROSSULARIA* Linn. *Gooseberry*.—III. Roadside
bank near Mountain Stage, 1892.—VI. In Muckcross demesne
and in several spots about the shore of the Lower Lake,

Killarney, 1904 : *R.W.S.* This plant occurs but very sparingly in the above localities, and is most probably bird-sown.]

[*R. NIGRUM* Linn. *Black Currant*.—VI. Abundant and quite established in a swamp in the Home Park on the north side of Ross Bay, and sparingly on the shore of Tan-hole Bay, &c., Lower Lake, Killarney, 1904-14.—VIII. Along an old road south of Cashen River bridge, 1905 : *R.W.S.* No doubt planted or bird-sown in the localities given above. It appears to be spreading in the Killarney Ross Bay station.]

CRASSULACEÆ.

COTYLEDON Linn.

C. Umbilicus Linn. *Umbilicus pendulinus* DC. *Pennywort*.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. On rocks, walls, tree trunks, &c. Common and often abundant. Peren. June—July. *Calcifuge B.*

From sea-level, to 940 feet on the Reeks (*Hart*), to 950 feet on Mangerton, to 1,000 feet in the Clydagh valley and to 1,025 feet on the Roughty-Ballyvourney road (*R.W.S.*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 85.

This plant is a very conspicuous feature in the vegetation of many localities in the south of the county.

SEDUM Linn.

S. Rhodiola DC. *S. roseum* Scop. *Rhodiola roseum* Linn. *Roseroot*.

Districts I. II. III. IV. V. VI. VII. — — Native. On mountain rocks and sea cliffs. Common on the mountains, rare on sea cliffs, Peren. May—August.

Sea cliff localities are—II. Lamb's Head near Darrynane, one big tuft at 325 feet, 1904 : *R.W.S.*—III. On Beginish Island, Valencia Harbour, at little above sea-level, 1892 : *G. L. Bruce*. On Doulus Head west of Cahersiveen, and on the coast west of Kells, Dingle Bay, 1892 : *R.W.S.*—V. On coast cliffs near Brandon Point ; abundantly to sea-level on the low coast west of Tiduff between Brandon Head and Ballydavid Head : *Hart 1884*, and in 1905 : *R.W.S.*

Inland, it descends to about 750 feet near Lough Eskabehy, Glencar (*R.W.S.*), to about 1,000 feet on Mount Eagle

near Ventry (*Hart*), and on Connor Hill (*R.W.S.*), to 1,100 feet on the Glenbeigh Mountains (*Colgan & R.W.S.*), and in cliffs above Eagle's Lough north of Sneem (*R.W.S.*), while it ascends to 2,550 feet on the Slieve Mish range (*Hart*), to 3,100 feet on Brandon (*R.W.S.*), and to 3,150 feet on the Reeks (*Hart*).

First record in 1804, "On Mangerton mountain . . . on the rocky steep sides of the horse-pool or Poul-na-Coppel": *Wade Rar.* "Plentiful on the cliffs of Magilly-cuddy's reeks, and on Brandon mountain": *Mackay Rar.* 1806.

The occurrence of this alpine plant at sea-level so far south as Kerry is very remarkable. Not only there, however, but along the entire west coast of Ireland it almost completely loses its alpine character descending to within reach of the spray in many places. Next to *Saxifraga stellaris*, it is the most common *Highland Type* plant found on the Kerry mountains, almost any range of cliffs which attain an elevation of 1,500 feet or so, furnishing it in more or less abundance.

S. anglicum Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On rocks, banks and stony places. Common and often abundant. Peren. June—July. *Calcifuge A.*

From sea-level, to 2,500 feet on Tomies Mountain (*R.W.S.*), and to 2,650 feet on Caherconree, Slieve Mish range (*Hart*).

First record in 1881: *Barrington, Proc. R.I.A.*

Although this plant occurs in many inland stations, it is more commonly met with in the neighbourhood of the sea and in the south of the county than elsewhere. In many places it forms quite a feature in the vegetation, growing in profusion among the almost bare rocks.

S. acre Linn. *Wall Pepper.*

Districts — II. III. IV. V. VI. VII. VIII. IX.
Native. On sandhills, walls, banks, &c. Rather common round the coast, rare inland. Peren. June—July.

Some inland stations are—IV. Sparingly on banks near the River Laune at Meanus, 1892.—VI. On roofs in Killarney and on walls, &c., about Cloghereen, Muckcross, 1908.—VIII. On banks, &c., north of Abbeydorney, 1899: *R.W.S.*

First record in 1890: *Stewart, Proc. R.I.A.*

This plant has, perhaps, been accidentally introduced with sea sand in District VI. where it has been noticed only on roofs and walls.

[*S. TELEPHIUM* Linn. *Orpine*.—I. Frequent in the Ard-tully shrubberies west of Kilgarvan, 1904.—VI. In shrubberies near the caretaker's cottage at Glena, Killarney, 1904.—IX. On waste ground and by a roadside hedge at Bolton's Cross east of Listowel, 1894–1904: *R.W.S.* A large patch on Carrig Island near Ballylongford, 1913: *Phillips*. Occurs in the county only as an escape, or where planted.]

[*S. ALBUM* Linn.—V. Established on walls at Stradbally west of Castlegregory, 1910: *Stelfox & Welch*.—VII. On old walls in one or two places in Tralee; in some abundance on banks and sea walls about the Spa, and sparingly about Fenit, Tralee Bay, 1905–14: *R.W.S.*—IX. On walls at Ballybunnion, 1913: *Phillips*. This plant appears to be quite established and spreading about the Spa, Tralee Bay, and will probably become entitled to rank as a permanent addition to the Kerry flora before long. It is already fully established in the adjoining county Cork.]

[*S. RUPESTRE* Linn.—I. On an old garden wall at Greenlane east of Kenmare, 1903.—VI. On roofs in Killarney and on walls near Headford, 1904.—IX. Abundant on walls, &c., about Tarbert, 1890–1904: *R.W.S.*, and in 1913: *Phillips*. No doubt an escape, but appears to be well established about Tarbert.]

[*SEMPERVIVUM TECTORUM* Linn. *Houseleek*. This plant has been noticed on roofs in all the nine county Districts, but it occurs only where planted, and appears to die out unless constantly renewed. It is quite rare in the county and is nowhere seen in any quantity.]

DROSERACEÆ.

DROSERA Linn.

D. rotundifolia Linn. *Sundew*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Bogs and boggy ditches, and on moist heathy ground. Common. Peren. July–August. *Calcifuge* A.

From sea-level, to 1,560 feet on the Purple Mountain, to 1,600 feet on the Coomcarrea Mountains, Glenbeigh (*R.W.S.*),

and to 2,050 feet on Beeown north of Sneem (*Colgan & R.W.S.*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 381, No. 82, "in moist ground near Lixnaw."

D. anglica Huds. *D. longifolia* Koch, Fries, &c.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. In wet bogs. Rather common, but rare in the Dingle peninsula and the extreme north and south of the county. Peren. July—August. *Calcifuge A.*

Rare in the following Districts—I. In a bog between Derreen and Glanmore Lake, 1894 : *R.W.S.*—V. In several of the bogs near Cloghane, Brandon Bay, 1908 : *Miss Delap & R.W.S.*—VIII. In the large bog between the Rivers Feale and Brick north of Lixnaw, 1902.—IX. In several bogs between Cashen bridge and Listowel, 1894 ; in Shronowen bog south of Ballylongford, and in bogs about Knockanure north of Kilmorna, &c., 1904 : *R.W.S.*

From sea-level, to 850 feet on the Reeks (*Hart*).

First record in 1806 : *Mackay Rar.*

This is the rarest of the Kerry *Droseræ*, and occurs chiefly in the larger wet bogs. The better draining of these bogs and the consequent hardening of their surface, appears to be diminishing the range of this fine Sundew.

Var. OBOVATA Mert. & Koch—D. anglica × rotundifolia.—II. Sparingly in a bog east of Isknagahiny Lough, Waterville, 1892 : *Colgan & R.W.S.* In a bog near the south end of the Upper Lake, Killarney, 1904.—III. Sparingly in Kealboy bog, Glencar : *R.W.S. 1890*, and in a bog north of Lough Currane, 1892.—IX. Sparingly in Knockanure bog north of Kilmorna and in bogs between Cashen bridge and Listowel, 1894 : *R.W.S.*

Probably more frequent in Kerry than the above records would show ; it is liable to be overlooked as *D. intermedia* which it much resembles.

D. intermedia Hayne. *D. longifolia* Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Wet bogs, bog ditches and margins of bog pools. Common and locally abundant. Peren. July—August. *Calcifuge A.*

From sea-level, to nearly 800 feet in the Gap of Dunloe (*Hind*).

First record in 1853 : *Dr. Balfour, Phytol.*, p. 1006.

Although less widely spread than *D. rotundifolia*, this plant is more gregarious and abundant where it occurs than

are either of the preceding species. Like *D. anglica* it loves the larger spongy bogs, and is seen at its best when growing beside wet bog ditches or in small hollows in floating bogs where the surface has given way to a few inches of water resting on unknown depths of liquid mud: in such spots as these it sometimes occurs so abundantly as to give a perfect glow of purple to their treacherous margins.

HALORAGÆ.

HIPPURIS Linn.

H. vulgaris Linn. *Mare's-tail*.

Districts — — III. IV. V. — — VIII. —
Native. In sluggish streams, and about lake margins and ditches. Rather rare but locally abundant. Peren. June—July.

III. In ditches east of Waterville and on the south side of the Inny River near its mouth, 1892: *R.W.S.*—IV. About Lough Acoose, Glencar: *Hart* 1882. Near the River Laune west of Bauncune, 1888.—V. Frequent about Castlegregory, &c., as far west as Fermoy on Brandon Bay, 1888–1907; near Ventry, 1890, and sparingly near Tiduff, Brandon Creek, 1905.—VIII. Frequent near the coast from Rahoneen to near Ballyheige and in several places about Lixnaw, Sleveen and the Cashen River, 1904–08: *R.W.S.*

From sea-level, to 510 feet about Lough Acoose (*Hart*).

First record in 1882: *Hart, Proc. R.I.A.*

MYRIOPHYLLUM Linn.

M. spicatum Linn. *Water Milfoil*.

Districts — II. III. IV. V. VI. VII. VIII. IX.
Native. Ditches, lakes and ponds. Rather rare, but locally abundant. Peren. June—August.

II. In ditches near Darrynane House, 1896.—III. In pools, Dooaghs sandhills, Rossbehy, and—IV. Near the south-east corner of Caragh Lake, 1913: *R.W.S.* Near the junction of the River Gaddagh with the Laune, 1911: *Mrs. Jenner*.—V. Frequent about Castlegregory, about Fermoy on Brandon Bay and near Ventry, 1890–1907.—VI. Abundant in the Lower Lake, Killarney, in several places, and in the old mine holes on Ross Island, 1888–1909.—VII. About Killorglin, 1892.—VIII. In several places about Banna west

of Ardfert, and about Lixnaw ; frequent near Cashen bridge and Sleveen, 1888–1908 : *R.W.S.*—IX. Near Beale Point, Shannon estuary, 1913 : *Phillips*.

First record in 1884 : *Hart, Proc. R.I.A.*

M. alterniflorum DC.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In streams, lakes and ponds. Common. Peren.
June—August. *Calcifuge B.*

From sea-level, to 1,450 feet in Lough Ferta, Glenbeigh Mountains, to 1,550 feet in Glas Lough, Purple Mountain (*R.W.S.*), to 1,780 feet on the Reeks (*Hart*), and to 2,300 feet on Brandon in the Coumknock Lakes (*R.W.S.*).

First record in 1882 : *Hart, Proc. R.I.A.*

This plant appears to be one of the hardiest climbers among the Kerry water plants. Only one other aquatic appears to ascend higher than this in Kerry, Mr. Hart recording *Isoetes lacustris* as occurring at 2,338 feet in Lough Cummeenoughter on the Reeks.

CALLITRICHE Linn.

C. stagnalis Scop. *Water Starwort.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On wet mud, in ditches, shallow pools, &c.
Common. Peren. April—September.

From sea-level, to 1,250 feet on Connor Hill and to 1,500 feet on the Reeks (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

Var. SERPYLLIFOLIA Lönn.—This form has been gathered in numerous localities in Kerry by the *Rev. E. S. Marshall & R.W.S.*, and most probably occurs throughout the county.

C. hamulata Kuetz. *C. intermedia* Hoffm.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In streams, lakes and pools. Common and locally abundant. Peren. June—September. *Calcifuge B.*

From sea-level, to 1,450 feet in Lough Ferta, Glenbeigh Mountains, to 1,500 feet on the Slieve Mish range and to 1,800 feet in a small pool on mountains east of Waterville (*R.W.S.*).

First record in *Cyb. 1866* : *Babington*.

In the south of the county this is quite a characteristic plant in the mountain streams. It produces fruit in abundance, but, so far, the *var. PEDUNCULATA* (DC) has not been noticed.

C. obtusangula Le Gall.

Districts I. — — IV. V. VI. VII. VIII. IX.
Native. Ditches, streams and ponds. Probably rather common. Peren. May—September.

I. In ditches near Kenmare, 1908.—IV. In the stream near Gortnaskarry bridge, Gaddagh River, 1909 : *R.W.S.*—V. Frequent about Cloghane, Fermoy and Stradbally on Brandon Bay, and about Castlegregory, &c. (*Marshall & Shoolbred*) *R.W.S.* 1903, and in 1907. In ditches east of Dingle, 1905.—VI. Abundant in Glanooragh stream between Killarney and Ballybrack : *R.W.S.* 1891, and in 1908. In the Bilrook stream east of Muckcross Abbey, 1906.—VII. In a ditch beside the Tralee canal : *R.W.S.* 1891, and in a ditch by the shore east of the Spa, Tralee Bay, 1899–1905.—VIII. Abundant in Lerrig pond north of Ardfert : *R.W.S.* 1903.—IX. In ditches, &c., south of Ballybunnion, 1908 : *R.W.S.*

First record in 1891 : *R.W.S.*, *Journ. of Bot.*

Most probably occurs throughout the county.

C. autumnalis Linn.

Districts — — — — VI. VII. — —
Native. In lakes and sluggish stream. Very rare and local. Peren. June—August.

VI. By the shore of Ross Island, Lower Lake of Killarney, 1866 (*More*) *Rec. Add.* In Ross Bay, Lower Lake : *Linton* 1886. Still abundant in Ross Bay, especially towards its east end, 1888–1907, also, but sparingly, in the Long Range beyond the Eagle's Nest, Killarney, and—VII. Sparingly in Ballycarty pond east of Tralee : *R.W.S.* 1888, but not seen recently in the last named locality.

First record in 1872 : *More*, *Rec. Add.*

This plant is chiefly northern in its Irish distribution, and everywhere local. Wexford is the only other county in the south of Ireland from which it has been recorded.

[*C. VERNALIS* Koch.—Plants doubtfully referred to this, have been gathered—IV. In Cottoner's River about two or three miles north of Lough Acoose, and—V. On mud in a disused mill-pond east of Dingle, 1890 : *R.W.S.* Unfortunately fruit is but poorly developed on both these gatherings, and they may be nothing more than starved forms of *C. hamulata*.

A number of other curious forms have been gathered in the county ; for several of these the Messrs. Groves have suggested a hybrid origin.]

LYTHRARIÆ.

PEPLIS Linn.

P. Portula Linn. *Water Purslane.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In pools, ditches, wet roadsides and other watery places. Common. Peren. June—August. *Calcifuge B.*

From sea-level, to 1,100 feet in Lough Nogeega, Paps Mountain (*R.W.S.*), and probably higher.

First record in 1881 : *Barrington, Proc. R.I.A.*

A form of this plant was gathered by Mr. Druce at Killarney approaching the *var. LONGIDENTATA J. Gay* : *vide New Phytol., Nov. 1911.*

LYTHRUM Linn,

L. Salicaria Linn. *Purple Loosestrife.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In ditches and wet fields, about riversides and other marshy places. Very common Peren. July—September.

From sea-level, to 1,025 feet near Drung Hill and to 1,450 feet by Lough Ferta, Teermoyle Mountain, Glenbeigh (*R.W.S.*).

First record in 1884 : *S. P. Woodward, Phytol., p. 878.*

This richly coloured plant is especially abundant in the west of the county, where it may sometimes be seen almost covering the poor peaty fields with a sheet of purple.

[*ESCALLONIA MACRANTHA* Wedd.—This ornamental bush thrives very well in the moist Kerry climate, and is becoming established in several parts of the county, as on Valencia Island, about Darrynane, &c. Self-sown seedlings have been noted in several places, as on the damp rocks below Blackwater bridge between Kenmare and Parknasilla, where they grow in company with numerous seedling *Rhododendrons*. The *Escallonia*, however, has not yet spread to wild looking places, nor to anything like the same extent as has *Fuchsia Ricartoni*, with which handsome bush it not infrequently associates.

ONAGRARIÆ.

EPILOBIUM Linn.

E. hirsutum Linn. *Hairy Willow-herb.*

Districts — — III. — — — VII. VIII. IX.
Native. Wet ditches, stream-sides and marshy ground.
Very rare over the greater portion of the county, rather
common in the north. Peren. July—September.

III. Sparingly near Cahersiveen, 1894.—VII. About Tralee
in several places, and near Clogherbrien and the Spa, Tralee
Bay, 1890–1914.—VIII. & IX. Occurs here in many
localities, sometimes in abundance, as about Rattoo near
Ballyduff and about the Cashen River, &c. : *R.W.S.*

First record in 1890 : *Stewart, Proc. R.I.A.*

This proves to be unexpectedly rare in Kerry ; most of
the localities known are in the neighbourhood of the sea.

E. parviflorum Schreb.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In wet places and waste ground. Common.
Peren. July—September.

Appears to be rare in District IV., where it has been noted
only by the River Laune near Beaufort bridge, 1901 :
R.W.S.

First record in 1890 : *Stewart, Proc. R.I.A.*

E. montanum Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On banks, roadsides and walls, in bushy places and
in gardens. Common. Peren. June—September.

From sea-level, to 550 feet in the Roughty valley (*R.W.S.*).

First record in 1882 : *Archdeacon Wynne, Journ. Roy.
Met. Soc., No. 45.*

Although this plant is usually lowland in Kerry, it will,
no doubt, be found to ascend higher than the elevation
recorded above. In this county at least its name ‘*mon-*
tanum’ is quite unwarranted.

A form with white flowers was noticed by Mr. Phillips in
1913, growing abundantly along the roadside between
Ballylongford and Tarbert for a distance of fully two miles.

E. obscurum Schreb.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. By streams and mountain rills and in damp or
marshy places. Common. Peren. June—September.

From sea-level, to 2,550 feet by rills near the summit of Mangerton Mountain (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

E. palustre Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In bogs and swamps, and by sluggish streams. Rather common, but less so in the north. Peren. July—September. *Calcifuge B.*

From sea-level, to 1,425 feet on the Reeks (*Hart*).

First record in 1882 : *Hart, Proc. R.I.A.*

FUCHSIA Plumier.

F. Ricartoni Hort.

Districts I. II. III. IV. V. VI. — — —
Alien. Roadsides, hedges, about houses, &c. Locally abundant in the south of the county. Bush. July-September.

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 97.

This beautiful hybrid bush is quite established in many parts of the county, and must be considered a permanent member of the Kerry flora. It occurs usually about roadsides or dwellings, but plants may be found in situations quite remote from the usual sources of introduction. It is undoubtedly spreading in the county, but appears to increase very rarely by seeding ; any fragment of the plant, however, will grow if inserted in the ground. This *Fuchsia* is abundant in many places along the north side of Kenmare Bay, on Valencia Island, and about Cahersiveen, as well as in the Dingle peninsula, especially on its southern side. The famous *Fuchsia* bush at Glanleam, Valencia, had in 1905 a circumference of 98 yards (*Miss Delap*) : this represents the growth of one original bush, although its branches have now rooted all round, forming one dense mass.

[*CENOTHERA BIENNIS* Linn. *Evening Primrose*.—This appears to be rather a favourite in cottage gardens in Kerry, and is seen occasionally as a straggler on walls and waste places, or still persisting about deserted cottage sites ; it is, however, nowhere established in the county.]

CIRCÆA Linn.

C. lutetiana Linn. *Enchanter's Nightshade.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Woods, shady places, gardens, &c. Common. Peren. June—September.

First record in 1844 : *S. P. Woodward, Phytol.*, p. 878.

UMBELLIFERÆ.

HYDROCOTYLE Linn.

H. vulgaris Linn. *Marsh Pennywort.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
 Native. In marshy and peaty places, pool margins, &c.
 Very common. Peren. May—August. *Calcifuge B.*

From sea-level, to 1,300 feet on Mangerton (*R.W.S.*), and
 probably higher.

First record in 1881 : *Barrington, Proc. R.I.A.*

ERYNGIUM Linn.

E. maritimum Linn. *Sea Holly.*

Districts — II. III. — V. — VII. VIII. IX.
 Native. Sandy seashores. Rather common, but rare in
 the extreme north. Peren. July—August.

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 375,
 No. 32, “on most of the sandy shores of this county.”

SANICULA Linn.

S. europæa Linn. *Wood Sanicle.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
 Native. Woods, hedge banks and bushy places. Common.
 Peren. May—July.

From sea-level, to 1,000 feet on Brandon (*Hart*), and
 to 1,100 feet on the Paps Mountain (*R.W.S.*).

First record in 1882 : *Hart, Proc. R.I.A.*

CONIUM Linn.

C. maculatum Linn. *Hemlock.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
 Denizen. On roadsides, banks, waste places, &c. Common.
 Bien. June—July.

From sea-level, to 650 feet by the Roughy-Ballyvourney
 road (*R.W.S.*).

First record in 1890 : *Stewart, Proc. R.I.A.*

Scattered throughout the county chiefly about villages
 or dwellings ; it is more frequent near the sea than inland.

SMYRNIUM Linn.

S. Olusatrum Linn. *Alexanders.*

Districts I. II. III. — V. VI. VII. VIII. — Denizen. On hedge banks, waste places and about ruins. Rather rare and local. Bienn. April—June.

I. About "the head of the river of Kenmare" (*Dr. Smith*) *Hist. of Kerry, 1756*—still there in several places, as about the Suspension bridge and between Kenmare and Roughty Lodge, &c., 1889–1908 : *R.W.S.*—II. About the shore near Dunkerron (*Dr. Smith*) *Hist. of Kerry, 1756*. Near Darrynane House, 1905.—III. About the Abbey ruins at Ballinskelligs, 1900.—V. About an old castle north-west of Ventry, 1890, and about an old church at Stradbally west of Castlegregory, 1907 ; sparingly near the old road south of Derrymore, 1904.—VI. In several places between Killarney and Muckross, as about Flesk road, Cloghereen, &c., and on the Castletlough ruins, 1908 ; about the ruins of Ballymalis Castle, 1903.—VII. About the ruins of Kilcolman Abbey, 1909 ; rather common about Tralee and near the Spa and Kilfenora, Tralee Bay, 1914 ; about Ballyseedy and Ballycarty east of Tralee, 1907.—VIII. About the old Abbey of Abbeydorney and Lixnaw Castle ruins, 1905 : *R.W.S.* In the shrubberies at Ballyheigue Castle : *Rev. W. Raymond*.

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 382, No. 95.

This plant has nowhere the appearance of a native in the county, and is most probably only a survival of, or escape from past cultivation. Both Threlkeld in 1727, and Rutty 45 years later, refer to the use of *Smyrnium* as a vegetable in their times, although Dr. Rutty adds "but of late has given way to Cellery." The frequency with which this plant is found about the ruins of castles and abbeys leaves little doubt that it was grown for similar use in Kerry.

APIUM Linn.

A. graveolens Linn. *Wild Celery.*

Districts I. II. III. — V. VI. VII. VIII. IX. Native. Muddy estuaries, brackish ditches, &c. Common by the sea, very rare inland. Peren. June—August.

Inland localities are—VI. In some plenty by the roadside near Farranfore about half a mile from Maine bridge, 1901–06 —probably an escape from a neighbouring kitchen garden.—

VIII. In marshes by the River Brick near Sleveen, 1904, about five miles from the nearest sea ; the land about here, however, is very low-lying and before the embanking of the Brick and Cashen Rivers was, no doubt, subject to tidal influence as the presence here of *Ænanthe Lachenalii* and *Scirpus maritimus* indicates.

First record in 1884 : *Hart, Proc. R.I.A.*

A. nodiflorum Reichb. fil. *Helosciadium nodiflorum* Koch
Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In ditches, streams and watery places. Very common. Peren. June—September.

First record in 1884 : *Hart, Proc. R.I.A.*

A. inundatum Reichb. fil. *Helosciadium inundatum* Koch.
Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In shallow water in lakes and ponds and on their muddy margins, in bog-holes, ditches and sluggish streams. Common. Peren. June—July.

From sea-level, to 1,450 feet in Lough Ferta, Teermoyle Mountain, Glenbeigh (*R.W.S.*).

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 28.

Few plants vary more in appearance than this species. When growing in deep water, it is a slender straggling, usually barren, plant, several feet in length, with all its leaves capillary, while on the muddy margins of ponds, &c., it forms a compact little growth, one or two inches in length, flowering and fruiting profusely.

CARUM Linn.

C. verticillatum Koch.

Districts I. II. III. IV. V. VI. VII. VIII. —
Native. Moist meadows and poor boggy pastures. Common and locally abundant in the south, becoming rarer towards the centre, and absent or very rare in the extreme north. Peren. July—August. *Calcifuge B.*

The most northerly stations at present known in the county are—V. Sparingly near the summit of the Aughils-Camp road on its north side, 1894.—VII. Sparingly by the roadside near Foley's Glen (Finglas stream) about two miles south of Tralee, 1890.—VIII. Rather sparingly in wet fields east of Abbeydorney, 1904-08 : *R.W.S.*

From sea-level, to 700 feet on the Reeks (*Hart*), to 750 feet by the old Kenmare road south of Galway's bridge, to 800 feet by the Aughils-Camp road, and to 1,450 feet near

the summit of the Priestsleap road (*R.W.S.*), but not often seen above 600 feet.

First found in 1804 near the Laune Bridge, Beaufort, and in 1805 between Kenmare and Priestsleap Mountain by *Mackay*; it still occurs in both these localities, 1909 : *R.W.S.*

First record in 1806 : *Mackay Rar.*

This is one of the most characteristic plants of South Kerry, where its delicate leaves and umbels sometimes form quite a feature of the damper pastures. It is one of the *Atlantic* or *Norman Type* plants, and most probably reached Ireland from the Spanish peninsula with other Lusitanian companions, of which, perhaps, the *Arbutus* and the London Pride *Saxifrages* are the best known. In Ireland, the distribution of this *Carum* is very irregular; it extends from West Cork over the greater portion of Kerry, and after a gap of about 170 miles reappears in the north where it occurs in one locality in Donegal, one in Derry, and two in Antrim. In Great Britain it is found at intervals along nearly the whole west coast from Devon to Argyle, while on the Continent it extends over West Europe from Holland southwards.

C. Petroselinum Benth. & Hook. fil. *Petroselinum sativum* Hofm. Parsley.

Districts — — — IV. — — VII. VIII. IX. Alien. On ruins and walls. Very rare and local. Bien. June—August.

IV. Sparingly on a wall south of Beaufort, 1900–04.—VII. Abundant on the ruins of Killorglin Castle, 1904–13.—VIII. Abundant on Ardfert Abbey walls : *R.W.S.* 1889, and in 1907; on Abbeydorney ruins, 1899.—IX. On old Killelton Church near Ballylongford, 1890 : *R.W.S.*

First record in 1889 : *R.W.S.*, *Journ. of Bot.*

This is, no doubt, only a relic of former cultivation in Kerry where it is practically confined to ruins, chiefly in the north. It appears to be thoroughly established in some of the stations given above.

[C. CARVI Linn. *Caraway*—I. Sparingly beside the Roughty bridge at the east end of the Kenmare estuary, 1907 : *R.W.S.* 1908.—VI. Sparingly on the Ross roadside, Killarney, 1902.—VII. Sparingly by the roadside near Killorglin bridge, 1911 : *R.W.S.* Near Cromane, Castle-maine Harbour, 1912 : *Mrs. Jenner*. A casual, uncertain in its appearance and very rare in the county.]

SIUM Linn.

S. angustifolium Linn. *S. erectum* Huds.

Districts — II. III. IV. V. VI. VII. VIII. —
Native. Ditches, swampy places, &c. Rather rare. Peren.
July—August.

II. In several localities about Darrynane, 1903.—III. In several places about the mouth of the Inny north of Waterville, 1900.—IV. By the Tomies shore, Lower Lake, Killarney, 1890 : *R.W.S.*—V. In marshes at the south-west end of Lough Gill, Castlegregory, and in a swamp at Castle Gallerus near Smerwick : *Hart 1884*—still in several places about Castlegregory, 1907 : *R.W.S.*—VI. Killarney (*Babington*) *Cyb. 1866*. In a stream east of Killarney, 1904.—VII. In several places around Barrow Harbour, 1899.—VIII. Near Ardfert and about Banna ; in several places about Lixnaw and frequent about Causeway, &c., 1888–1907 : *R.W.S.*

First record in *Cyb. 1866* : *Babington*.

Although not common in Kerry, this plant probably occurs in all the Districts ; it appears to be more abundant in the low marshy ground between Ballyheige and Lixnaw than elsewhere.

ÆGOPODIUM Linn.

Æ. Podagraria Linn. *Goutweed*.

Districts I. II. III. IV. — VI. VII. — IX.
Denizen. In woods and waste places, and as a weed about gardens and houses. Rather rare, but locally abundant
Peren. June—July.

I. In one or two spots about Kenmare, as along the Finnihy River and in the Southern Hotel grounds, 1904–13.—II. In one or two localities about Darrynane, 1905.—III. Sparingly in gardens at Glenbeigh and Caragh Lake, and about Caragh Lake railway station, 1906–13.—IV. In Beaufort demesne, 1902, and about Churchtown House, 1904.—VI. Rather frequent about Killarney usually near houses, &c., and about Rathmore railway station, 1888–1914.—VII. Near Milltown, 1906 ; in several places about Tralee, and at Seafield and Kilfenora on Tralee Bay, 1905–14 ; roadside near Clogher Chapel between Tralee and Castleisland, 1906.—IX. About Listowel and Kilmorna, 1902 ; about Ballybunnion and in Pyrmont churchyard west of Tarbert, 1905 : *R.W.S.*

First record in 1901 : *R.W.S.*, *Topog. Bot.*

The Goutweed rarely occurs far from houses or demesnes, where it is a most persistent weed.

PIMPINELLA Linn.

P. Saxifraga Linn.

Districts — — — — — [VI.] — — IX.
Native? In a dry pasture and by a wayside. Very rare
indeed. Peren. July—August. *Calcicole A*.

[VI. Very sparingly by a roadside in the Lake Hotel grounds, Killarney: *R.W.S.* 1904—about five or six plants still there in 1914, but showing no signs of spreading.]—IX. Sparingly on the banks of the River Feale about three miles east of Listowel: *R.W.S.* 1891.

First record in 1891: *R.W.S.*, *Journ. of Bot.*

This proves to be one of the rarest plants in Kerry and in its Killarney station has been, most probably, accidentally introduced. The few plants seen there, grow beside a carriage drive, in, or near, a dwarf hedge of Laurels which the proprietor of the adjoining Hotel informed the writer were obtained some years previously from the north-east of Ireland, where this *Pimpinella* is common. The great rarity of this plant is all the more surprising as a considerable portion of the north of the county, and several large tracts in the south, appear to be eminently suited for the growth of this calcicole species. The persistent moisture of Kerry may account for this rarity, for although common over the greater portion of Ireland, *P. Saxifraga* is rare or local along the west coast, and is still unrecorded for west Mayo and Leitrim.

P. magna Linn. *P. major* Huds.

Districts — — — IV. V. VI. VII. VIII. IX.
Native. Banks, roadsides and bushy places. Rare in the south, rather common and locally abundant in the north. Peren. July—September. *Calcicole B*.

IV. By the roadside south-west of Mount Rivers near Killorglin, 1904: *R.W.S.*—V. On banks by the road near Ballyferriter south of Smerwick: *Hart* 1884—still there in several places, 1905, and sparingly at Caheratrant south of Ventry; abundant by the lime-kiln road east of Castlegregory and frequent about Camp, Tralee Bay, 1890–1907: *R.W.S.*—VI. “Very plentiful in Muckruss woods near the Abbey”: *Mackay Rar.* 1806—still there in 1914, and in several other places about Muckross and Cloghereen; abundant by roadsides east of Beaufort bridge, 1911; sparingly near the River Maine east of Farranfore, 1903.—VII. In several places to the north and west of Tralee and abundant about Ballyseedy and Ballycarty to the east of Tralee,

1888–1914 ; abundant also about Castleisland : *R.W.S.* 1888, &c.—VIII. On roadside banks a little west of Lixnaw, 1907.—IX. Abundant about Lislaughtin Abbey and adjoining roadside, and along the roadside west of Tarbert, 1904 : *R.W.S.* Near Ballylongford, 1913 : *Phillips*.

First record in 1806 : *Mackay Rar.*

Although this plant shows decided calcicole tendencies in Kerry, it has not yet been seen on the extensive limestone tracts about Kenmare and the lower Roughty valley.

CONOPODIUM Koch.

C. denudatum Koch. *C. majus* Loret. *Bunium flexuosum*
With. *Carum flexuosum* Fries. *Pig-nut*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Woods, heaths, pastures, &c. Very common.
Peren. May—June.

From sea-level, to 1,450 feet on the north side of the Paps Mountain (*R.W.S.*).

First record in 1901 : *R.W.S.*, *Topog. Bot.*

SCANDIX Linn.

S. Pecten-Veneris Linn. *Venus' Comb.* *Shepherd's Needle*.

Districts — — — — V. — VII. VIII. IX.
Colonist. In cultivated fields and on banks. Rare and local. Ann. June—August.

V. In cornfields on the east side of Trabeg estuary near Dingle : *Hart* 1884. On banks to the east of Castlegregory (*Marshall & Shoolbred*) *R.W.S.* 1903.—VII. In cornfields on the south side of Barrow Harbour : *R.W.S.* 1888—still beside this field, 1902, then in pasture.—VIII. Near Kilflyn east of Abbeydorney, “among the rye,” circa 1876 : *Rev. W. Raymond*. In a cornfield a little south of Abbeydorney, 1894, and abundant on the roadside and banks in Lixnaw village, 1902–04.—IX. Frequent in cornfields west of Tarbert, 1890 : *R.W.S.*

First record in 1884 : *Hart*, *Proc. R.I.A.*

ANTHRISCUS Bernh.

A. vulgaris Bernh. *Chærophyllum Anthriscus* Lam.
Beaked Parsley.

Districts — — III. — — — VII. — —
Colonist. On roadside banks and waste places. Very rare but locally abundant. Ann. April—July.

III. Sparingly in a cultivated field near Caragh bridge, 1913: *H. Crookshank & R.W.S.*—VII. Abundant about Tullig three miles west of Killorglin: *R.W.S. 1889*. Occurs in abundance from near Tullig to Cromane, a distance of about three miles (*Marshall & R.W.S.*) *R.W.S. 1904*.

First record in 1889: *R.W.S., Journ. of Bot.*

This plant is thoroughly established in its Tullig-Cromane locality. The road along which it chiefly occurs, runs close to the shallow Castlemaine Bay and is lined on both sides with numerous poor cabins; the plant does not appear to stray any distance from the road, but has certainly increased both in quantity and area covered since first seen. The stations recorded above for Districts III. & VII. are only two or three miles apart.

A. sylvestris Hoffm. *Chærophyllum sylvestre* Linn. Cow Parsley.

Districts I. II. — IV. V. VI. VII. — —
Native. Hedge banks, shady places, river-sides and mountain cliffs. Rather rare and local. Peren. March—June.

I. Sparingly about Kenmare and at intervals along the Roughty valley, as about Ardtully, Kilgarvan, &c., and more abundantly above Morley's Bridge towards the county boundary, 1889–1908.—II. About Blackwater bridge and along the river: *R.W.S. 1890*, and in 1904; near the roadside about two miles south of Lough Brin, 1900: *R.W.S.*—IV. Above Lough Cummeenmore, Reeks: *Hart 1882*.—V. On Brandon cliffs at 2,200–2,500 feet, 1913: *Praeger*.—VI. Rather common about Killarney and along the valley of the Maine: *R.W.S. 1891*, and in 1914; roadside near Gortnagane north of the Paps Mountain, 1903: *Marshall & R.W.S.*—VII. Frequent about Castlemaine, 1906: *R.W.S.*

From sea-level, to 1,380 feet on the Reeks (*Hart*), and to 2,500 feet on Brandon (*Praeger*).

First record in 1882: *Hart, Proc. R.I.A.*

Although this plant most probably occurs in more localities than those given above, it proves to be unexpectedly rare in the county.

[*SESELI LIBANOTIS* Koch—"On rocky hills in the barony of Dunkerron": *Dr. Smith, Hist. of Kerry, 1756*, p. 372, No. 8. No doubt some error or confusion of names or plants by Dr. Smith. *Seseli Libanotis* is known to occur in Ireland only as a casual.]

FœNICULUM Hill.

F. officinale All. *F. vulgare* Mill. *Fennel*.

Districts — [II.] [III.] — [V.] [VI.] VII. [VIII.] — Alien. Dry banks and waste places, usually near houses and the sea. Rare and local. Peren. July—August.

[II. Sparingly on banks about Castlecove, Kenmare Bay, 1889–1907.—III. An escape about Knightstown, Valencia, 1906, and—V. Near the Dingle railway terminus, 1905.—VI. A garden escape about the railway near Killarney and by the lake-shore at Castletlough Bay on the Lower Lake, 1888–1914, it appears to be spreading in the latter station.]—VII. On banks, &c., about Barrow Harbour, 1894; [an escape at Seafeld, Tralee Bay, 1906: *R.W.S.*—VIII. “On a bridge in the improvements at Lixnaw growing wild plentifully” (*Dr. Smith*) *Hist. of Kerry*, 1756], but not seen there recently: *R.W.S.*

First record in 1756: *Dr. Smith, Hist. of Kerry*, p. 376, No. 36.

Usually an obvious garden escape in Kerry, and hardly deserving of a place in its flora.

CRITHMUM Linn.

C. maritimum Linn. *Samphire*.

Districts — II. III. — V. — VII. VIII. — Native. On rocks and cliffs by the sea, and on shingly beaches. Rather common and locally abundant. Peren. July—September.

First record in 1857: *Rev. W. M. Hind, Phytol.*, p. 97.

CENANTHE Linn.

C. Lachenalii C. Gmelin.

Districts — II. III. — V. — VII. VIII. IX. Native. Salt marshes and damp spots by the sea. Common. Peren. July—September.

First record in 1806: *Mackay Rar.* “in salt marshes near Calnafersy, bay of Castlemain, in great abundance.”

This plant appears to be absent from the salt marshes about the head of Kenmare Bay, but it occurs in nearly every other suitable locality round the coast from the west extremity of Kenmare Bay to the county boundary near Tarbert on the Shannon estuary. It is also found inland in the marshes about the River Brick near Sleaveen about

four miles from the nearest sea ; no doubt this low-lying tract was subject to tidal influence previous to the embanking of the Brick and Cashen Rivers.

Æ. crocata Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In and about streams and rivers, lakesides, ditches, &c. Common. Peren. June—July.

From sea-level, to 825 feet near Lough Barfinnihy on the Sneem-Windy Gap road and to 1,050 feet in the stream on the north side of the Paps Mountain (*R.W.S.*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 380, No. 71, “in several marshy places in this county.”

Æ. Phellandrium Lamk. *Æ. aquatica* Poir. *Phellandrium aquaticum*. Linn.

District — — — — — VII. — —
Native or Denizen. On the shallow margin of a pond. Very rare and local. Peren. June—August.

VII. Fairly plentiful round the southern portion of Parkmore pond two or three miles east of Farranfore : *R.W.S.* 1904, and in 1910.

First record in 1904 : *R.W.S., Irish Nat.*

The above station, a small pond barely an acre in extent, is the only locality at present known for this long-sought plant not alone in Kerry, but also in West Cork, an area of almost exactly 3,000 sq. miles. It appears to be quite absent from Donegal, a county which shares several other botanical peculiarities with Kerry. As the portion of the pond to which this plant is restricted has been artificially made, an element of uncertainty must attach as to its exact standing in the county.

ÆTHUSA Linn.

Æ. Cynapium Linn. *Fool's Parsley*.

Districts I. II. — IV. V. VI. VII. VIII. IX.
Colonist. In cultivated ground and waste places, also as a weed in gardens. Rather common in the north, but rare over large areas in the south. Ann. July—August.

I. Sparingly in waste spots and gardens about Kenmare and Kilgarvan.—II. Sparingly near Templenoe east of Dromore.—IV. In gardens at Beaufort, Dunloe and Churchtown. Rather common elsewhere in the county, and no doubt overlooked in District III.

First record in 1901 : *R.W.S., Topog. Bot.*

ANGELICA Linn.

A. sylvestris Linn. *Wild Angelica*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. By ditches and streams, in damp woods and meadows, on moist cliffs on mountains and by the sea. Common. Peren. July—August.

From sea-level, to 2,610 feet on the Reeks (*Hart*), and to 2,800 feet on Brandon (*Colgan*).

First record in 1844: *S. P. Woodward, Phytol.*, p. 878.

PEUCEDANUM Linn.

P. sativum Benth. & Hook. *Pastinaca sativa* Linn.
Wild Parsnip.

Districts [I.] [II.] [III.] — [V.] — VII. — IX.
Alien. By roadsides and in waste places. Rare. Bien. July—August.

[I. Near the Kenmare Suspension bridge, 1903, and in a field beside the Glengarriff road, 1913.—II. By the river below the bridge at Sneem, 1904.—III. On railway banks near Cahersiveen, 1911, and near Dooaghs sandhills, 1913.—V. An escape near the railway station at Dingle, 1905.]—VII. Well established on banks and by roadsides about Knockaunnaglashy on the south side of Castlemaine Harbour, 1888–1903; in fields near the railway bridge at Killorglin, 1903–06; roadside near the Spa, Tralee Bay, 1894: *R.W.S.*—IX. About Ballybunnion, Beale Point and Carrig Island near Ballylongford, 1913: *Phillips*.

First record in *Cyb. 1898*: *R.W.S.*

This is a rare plant in Kerry where it usually occurs as an obvious survival of or escape from cultivation; it is hardly deserving of a place in the flora.

[*P. OFFICINALE* Linn.—VIII. “Common on the shores of Ballyheigue Bay”: *Dr. Smith, Hist. of Kerry, 1756*, p. 380, No. 76. No doubt some error of Dr. Smith. In the British Isles this plant is confined to the east coast of England. Possibly *Fœniculum* was the plant meant.]

HERACLEUM Linn.

H. Sphondylium Linn. *Hogweed. Cow Parsnip*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Hedges, meadows, woods, field-sides, waste places, &c. Very common. Peren. June—September.

From sea-level, to 825 feet by the Kenmare-Killarney road (*R.W.S.*), and probably higher.

First record in 1881 : *Barrington, Proc. R.I.A.*

DAUCUS Linn.

D. Carota Linn. *Wild Carrot.*

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Dry banks, pastures and waste places. Common, especially near the sea. *Bien.* July—August.

From sea-level, to 1,025 feet by the Roughty-Ballyvourney road and to 1,325 feet on Connor Hill (*R.W.S.*), but not often seen above 500 feet.

First record in 1881 : *Barrington, Proc. R.I.A.*

CAUCALIS Linn.

C. Anthriscus Huds. *Torilis Anthriscus* Gaert. *Hedge Parsley.*

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Hedges, roadsides and waste places. Common. *Ann.* July—September.

From sea-level, to 525 feet near Headford (*R.W.S.*), and no doubt higher.

First record in 1890 : *Stewart, Proc. R.I.A.*

C. nodosa Scop. *Torilis nodosa* Gaert.

Districts I. — — — V. — VII. VIII. IX. Native. On dry banks, at foot of walls and waste places near the sea. Rare in the south, rather common in the north, and very rare inland. *Ann.* May—September.

I. Rather sparingly about Kenmare Harbour, 1889–1913. —V. In several places about Castlegregory, Kilshannig and Aughacashla, 1888–1907.—VII. Rather frequent along the north side of Tralee Bay and about Barrow Harbour : *R.W.S.* 1888, and in 1914.—VIII. Ardfert : *Stewart 1890.* Rather common about Ardfert and thence to the coast; near Ballyheige and inland on roadsides at Lerrig, 1888–1914.—IX. Sparingly in two or three spots to the south of Ballybunnion; by the shore about Ballylongford and about Tarbert, 1890–1908 : *R.W.S.*

First record in 1888 : *R.W.S., Journ. of Bot.*

ARALIACEÆ.

HEDERA Linn.

H. Helix Linn. *Ivy*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On rocks, walls, trees and banks, in woods and shady places. Very common. Peren. October—November.

From sea-level, to 1,300 feet on Brandon (*Hart*), to 1,350 feet on rocks by the Priestsleap road (*R.W.S.*), and to 1,380 feet on the Reeks (*Hart*).

First record in 1780 : *Arthur Young, Tour in Ireland*—as growing on Muckcross Abbey.

The Ivy sometimes grows to very large dimensions in Kerry. One of the finest specimens noticed in the county, a veritable tree, formerly grew amid the picturesque ruins of Ardfert Abbey. It was cut down on the restoration of the Abbey Tower about 1904, and the stem was preserved as a curiosity. Although quite dry and withered, it still measured 40 inches in circumference in 1907.

The so-called Irish Ivy, stated in *Flor. Hib. 1836*, p. 135, to have been gathered by Mr. W. Andrews on the rocks at Ballybunnion, has not been found in Kerry since or elsewhere in Ireland where it could be considered native. Several of Mr. Andrews' Kerry plants unfortunately lie under the suspicion of having been derived from gardens, the Irish Ivy, *Saxifraga Guthriana* and *Herniaria ciliata* being among them.

CAPRIFOLIACEÆ.

SAMBUCUS Linn.

S. nigra Linn. *Elder*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In hedges, woods, thickets and especially about houses. Common. A small tree. June—July.

From sea-level, to 900 feet by houses in the Slaheny valley and to 1,025 feet by the Roughty-Ballyvourney road (*R.W.S.*).

First record in 1890 : *Stewart, Proc. R.I.A.*

In Kerry, as elsewhere, the Elder is seldom found at a distance from dwellings. It appears to stand the sea winds well, and frequently forms the only shelter that the poorer cabins near the coast possess.

S. Ebulus Linn. *Dane-wort. Dwarf Elder.*

Districts I. II. III. — — — VII. VIII. IX.
 Alien. On banks, roadsides and about ruins. Rare and local.
 Peren. July—August.

I. In a churchyard below Kenmare : *Mackay Cat. 1825*—but not seen there recently.—II. By the roadside between Caherdaniel and Lamb's Head south of Darrynane : *R.W.S. 1890*, and in 1904.—III. Sparingly by the roadside west of Glenbeigh, 1892.—VII. In some plenty on the east side of the River Laune a little above Killorglin bridge : *R.W.S. 1889*, and in 1913.—VIII. "Near the Abbey of Odorney plentifully" (*Dr. Smith Hist. of Kerry, 1756*, p. 375—but not seen there recently. In Ardferd demesne by a small copse near the main entrance, 1900–07 ; by the roadside near the village of Drommartin north-east of Causeway, 1908, and near Ballyduff west of the Cashen River, and—IX. By the roadside about one mile south of Beale, 1902 ; in two spots by the roadside south of Ballylongford and again nearer Gunsboro, 1890, and in 1904 : *R.W.S.* On Carrig Island, Shannon estuary, 1913 : *Phillips*

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 37b, No. 26.

VIBURNUM Linn.**V. Opulus** Linn. *Guelder Rose.*

Districts I. II. III. — V. VI. VII. VIII. —
 Native. In moist woods and thickets, mountain glens, hedges and rocky places. Rather common over most of the southern half of the county, much rarer in the north Bush. June—July.

Rare in the following Districts—VII. About Ballyseedy and Ballycarty east of Tralee, 1906 ; near the River Maine about a mile east of Castleisland, 1888.—VIII. In Ballinruddery demesne near Listowel, 1890—perhaps planted here ; beside the River Brick about two miles south of Lixnaw, 1907 : *R.W.S.*

From sea-level, to 750 feet near Coomasaharn, Glenbeigh (*R.W.S.*).

First record in 1885 : *Hart, Journ. of Bot.*

The Guelder Rose is more abundant about Killarney than elsewhere in the county, and may be seen at its best in some of the low-lying swamps towards the west end of Ross Island. There, and in other spots around the lake, the bushes with their scarlet berries form a most beautiful sight in autumn.

LONICERA Linn.

L. Periclymenum Linn. *Woodbine.* *Honeysuckle.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In woods, hedges and rocky places. Common.
July—August.

From sea-level, to 1,470 feet on the Reeks (*Hart*).

First record in 1882 : *Hart, Proc. R.I.A.*

RUBIACEÆ.

RUBIA Linn.

R. peregrina Linn. *Wild Madder.*

Districts I. II. III. — V. VI. VII. — —
Native. Bushy banks and rocky places, usually near the
sea. Rather rare and local. Peren. June—August.
Calcicole B.

I. Sparingly on limestone rocks about the mouth of the
River Finnihy, Kenmare, 1901, locality extending into—
II., also on the Dunkerron and Greenane Islands, Kenmare
Bay, 1904 ; about Darrynane in several places, as near the
Island and on the east end of the sandhills, &c. : *R.W.S.*
1890, and in 1905.—III. Sparingly on the east side of Caragh
Lake near Ripley House, 1906 : *Capt. Creagh-Haward &*
R.W.S.—V. Sparingly on the cliffs east of Ventry and to the
west of Inch, Dingle Bay, 1890 : *R.W.S.*—VI. “ In the
island of Inisfallen near Lough Lane ” (*Dr. Smith*) *Hist. of*
Kerry, 1756. “ In abundance growing among the bushes
at Ross, Muckruss, and Ennisfallon near Killarney ” : *Wade*
Rar. 1804—still in all these localities and frequent on the
limestone shores and islands of the Lower and Middle Lakes,
Killarney, 1888–1914.—VII. Sparingly on both the east and
west sides of Barrow Harbour : *R.W.S. 1888*, and in 1900.

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 381,
No. 85.

GALIUM Linn.

G. boreale Linn. *Bedstraw (genus).*

Districts — — — IV. — VI. — — —
Native. Lake margins. Very rare and local. Peren.
June—August. *Calcicole A.*

IV. On the shore of the Lower Lake near the mouth of the

Laune, 1892 : *R.W.S.*—VI. " Mangerton mountain, county of Kerry " : *Mackay Cat.* 1825. " On Mangerton mountain in a marshy spot about half way up " : *Flor. Hib.* (*Mackay* 1836). On Mangerton Mountain, Killarney (*Herb. J. Reilly*) *Barrington in Journ. of Bot.* 1877, p. 178—but not seen recently on this mountain. Abundant on most of the limestone islands and in many places round the shores of the Lower Lake from Mahony's Point on the north side to the Muckcross shore on the south ; it occurs also on the north-east and east sides of the Muckcross Lake, Killarney, 1888–1914 : *R.W.S.*

First record in 1825 : *Mackay Cat.*

This plant appears to be confined in Kerry to the limestone shores and islands of the Lower and Middle Lakes, Killarney. The Mangerton record, in spite of Mackay's rather precise location, is most probably an error ; as an upland plant this species is restricted in Ireland to the extreme north. There is very little doubt that Mackay's record really refers to the Killarney Lake localities, some lapse of memory or accidental mixing of labels probably led him into error as to the precise spot in which the plant was gathered.

G. verum Linn. *Yellow Bedstraw.* *Lady's Bedstraw.*

Districts — II. III. — V. VI. VII. VIII. IX.
Native. On dry banks, sandhills and sandy pastures
Rather common by the sea, local inland. Peren. July—August.

Rare inland, though it occurs rather frequently about Killarney and Castleisland.

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 376. No. 37, " The island of Inch in Castlemain Bay hath scarce any other vegetable on it besides this plant."

G. erectum Huds.

Districts — — III. — — VI. — — —
Native or Denizen. Rough bushy slopes and pastures.
Very rare and local. Peren. June—July.

III. Fairly plentiful over a limited area of rough ground sloping towards the north shore of Caragh Lake amongst *Ulex* and *Rubi*, &c. : *R.W.S.* 1904, and in 1906.—VI. Two patches in the West Park, Killarney : *R.W.S.* 1902 (as *G. Mollugo*), and in 1914 ; two or three patches in the Home Park, Killarney (*Marshall & R.W.S.*) *R.W.S.* 1904.

First record in 1902 : *R.W.S., Irish Nat.* (as *G. Mollugo*).

In both its Caragh Lake locality and in the somewhat similar station at Roche's Point near Queenstown Harbour recorded by Mr. R. A. Phillips in *Cyb.* 1898, this plant has all the appearance of a native.

[*G. MOLLUGO* Linn.—VI. Seen for several years in the Workhouse grounds, Killarney, by Archdeacon Wynne, but appears to have died out there recently. In some abundance on the lawn and in the shrubberies on the south side of Carriglea House near Killarney, 1904 : *R.W.S.* 1908, and sparingly in the grounds of Muckcross Church, 1914 : *R.W.S.* An alien probably introduced in grass or flower seed.]

G. saxatile Linn. *Heath Bedstraw*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On rocks, heaths, moors, &c. Very common.
Peren. June—August. *Calcifuge A.*

From sea-level, to 3,414 feet on Carrantuohill (*Hart*), one of the plants most persistently found on the summits of the highest mountains in Kerry.

First record in 1881 : *Barrington, Proc. R.I.A.*

G. sylvestre Poll. *G. asperum* Schreb. *G. umbellatum* Lam.

District — — — — — VI. — — —
Native. Rocky and bushy places on the limestone. Very rare and local. Peren. June—July. *Calcicole A.*

VI. "Plentiful on the limestone rocks near Muckcross House, 1804-05" : *Mackay Rar.* On most of the limestone islands in the Lower Lake, Killarney, as on Ash, Cow and Rough Islands, &c., and on the limestone rocks around the Lower Lake from Ross Bay to West Meadow Bay ; in Muckross demesne in several spots and around the north and east shores of the Middle Lake, occurring usually in small quantity : *R.W.S.* 1889, &c., and in 1912.

First record in 1806 : *Mackay Rar.*

This plant is also recorded in *Topog. Bot.*, p. 161, as found by *R.W.S.* at Abbeydorney, probably through some error of transcription ; the plant in Kerry appears to be quite confined to the limestone about the Killarney Lakes.

G. palustre Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Ditches, riversides and marshy places. Common
Peren. June—September.

From sea-level, to 1,550 feet on the Reeks (*Hart*).

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 28.

The usual Kerry plant is the *var. WITHERINGII* (*Smith*), although many of the more luxuriant specimens, straggling sometimes for several feet, simulate the *var. ELONGATUM* (*Presl.*).

G. uliginosum Linn.

Districts — — — — VI. VII. — —
Native. In swampy ground. Rare and local. Peren.
July—August.

VI. Abundant in a small swamp by the side of the Lower Lake in the Home Park, Killarney : *R.W.S. 1904*, and in 1914. Rather sparingly in a swamp near the Glanooragh stream about a mile east of Ballyhar cross between Killarney and Farranfore : *R.W.S. 1891*.—VII. Abundant in a swamp on the north side of the railway at Clogherbrian, Tralee Bay, and again about a mile north of this, and sparingly in a swamp a little south of Ballycarty about four miles east of Tralee : *R.W.S. 1888*, and in 1892.

First record in 1888 : *R.W.S., Journ. of Bot.*

G. Aparine Linn. *Robin-run-the-hedge. Goose Grass.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Hedges, thickets, stony seashores, cultivated land and waste places. Very common. Ann. May—September.

From sea-level, to 950 feet by the Connor Hill road (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

ASPERULA Linn.

A. odorata Linn. *Woodruff.*

Districts I. II. — — — VI. [VII.] — —
Native. In woods and shady places. Rare. Peren. May—June.

I. Sparingly in a wood near the golf course at Kenmare, 1903.—II. Sparingly near the shore of the Bay west of Kenmare, 1890.—VI. Rather frequent about Killarney, as on Ross Island, in several localities in Muckross demesne and in other places by the Middle and Lower Lakes, &c., Killarney, 1888–1911. [—VII. In Kilcolman Abbey grounds, 1901–09 : *R.W.S.*—planted there, *fide Lady Godfrey.*]

First record in 1901 : *R.W.S., Topog. Bot.*

In addition to the localities given above, the Woodruff is

not infrequently seen growing in and about cottage gardens, but outside the neighbourhood of Killarney, it proves to be a very rare plant in Kerry.

A. cynanchica Linn. *Squinancy-wort.*

Districts — — III. — V. — VII. VIII. IX. Native. On sandhills and dry sandy pastures near the sea. Common in the north of the county, local elsewhere, and absent from many apparently suitable sandhills. Peren. June—July. *Calicole A.*

III. Rather sparingly on the sandhills at Ballinskelligs, 1900: *R.W.S.*—V. At intervals along the south shore of Tralee Bay from near Camp to Castlegregory; very abundant and whitening the ground in many places for a considerable area on the sandhills to the north and west of Castlegregory as far as Kilshannig and Fermoy; in several stations round Smerwick Harbour and Ferriter's Cove west of Dingle: *Hart 1884*. Still abundant about Castlegregory, Fermoy and other stations named above, and on sandhills at Caher, Brandon Bay, and on Derrymore, Tralee Bay, 1890–1907.—VII. On the limestone rocks about Kilfenora and Fenit, Tralee Bay, and abundant at Barrow Harbour, especially on the north side and adjoining sandhills, 1890–1914.—VIII. Abundant on the sandhills from Rahoneen to Ballyheige, 1888–1905: *R.W.S.*—IX. Abundant on sandhills at Beal Point and Ballybunnion: *Stewart 1890*, and in 1889–1908: *R.W.S.*

First record in 1806: *Mackay Rar.*—"Plentiful on the sandhills along the coast of Kerry." Thirty-four years earlier than this, however, Dr. John Rutty in his *Nat. Hist. of County Dublin*, states that it was sent from the south of Ireland to Dr. Abraham Jenkins, then engaged in the preparation of an Irish flora, which, however, was never published. As the only southern localities on record are Youghal, which is certainly an error, and Tramore, Waterford, which is most probably another, it would seem that the plant referred to was sent from Kerry.

This is quite a characteristic plant of the sandhills in north Kerry and the Dingle peninsula, where it occurs often in great abundance. It is very rare elsewhere in the county, and appears to be quite absent from the extensive sandhills at the head of Dingle Bay and from those at Darrynane and at the mouth of the Inny River. It is most probably confined in Ireland to the southern half of its west side, from Galway to Kerry, finding its southern limit at Ballinskelligs.

[A. ARVENSIS Linn.—VI. Sparingly as a weed in the garden at Lahard House, Beaufort, 1911–12: *Mrs. Jenner*. One of the numerous alien plants accidentally introduced into these gardens with imported dove's food.]

SHERARDIA Linn.

S. arvensis Linn. *Field Madder*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Dry banks, waste places, and as a weed in cultivated lands. Common. Ann. May—September.

From sea-level, to 600 feet in the Gap of Dunloe (*R.W.S.*), and no doubt higher.

First record in 1890: *Stewart, Proc. R.I.A.*

VALERIANEÆ.

VALERIANA Linn.

V. officinalis Linn. *Wild Valerian*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Ditches, riversides, moist shady places, &c.
Common. Peren. June—August.

From sea-level, to 2,300 feet on Caherconree, Slieve Mish range, and to 2,650 feet on Brandon (*Hart*).

First record in 1881: *Barrington, Proc. R.I.A.*

Although the extreme forms of *V. officinalis* might readily enough pass as distinct species, the Rev. W. H. Purchas, who has made a special study of *V. sambucifolia* Micken, and *V. Mikanii* Syme, considers them to be inseparably connected by intermediates. The prevailing form in Kerry, as elsewhere in Ireland, is *V. sambucifolia*. Plants with numerous broad leaflets, toothed almost solely on the posterior margin, are not uncommon in the county and were referred to *V. Mikanii* by *R.W.S.* in *Topog. Bot.* They differ, however, greatly both in appearance and growth from the extreme chalk-hill plant of the south of England, and should no doubt be included under *V. sambucifolia*. As a Kerry plant *V. Mikanii* has, so far, been seen only near Inch bridge to the north-west of Listowel, where specimens were gathered in 1904 which are quite indistinguishable

from the chalk-hill plant. Most probably this extreme form will be found to occur sparingly elsewhere in the county : *vide Irish Nat. 1908*, p. 50.

[*CENTRANTHUS RUBER* DC. *Kentranthus ruber* Druce. *Red Valerian*.—This plant occurs in the county in several places but only as an obvious garden escape, as on walls a little south of the east entrance to Ballyseedy demesne, near Tralee, &c. It has nowhere established itself in Kerry as it has in various parts of the adjoining county Cork.]

VALERIANELLA Hill.

V. olitoria Pollich. *Corn Salad.* *Lamb's Lettuce.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Dry banks and sandhills, on walls and waste places, and as a weed of cultivation. Rather common and sometimes abundant. Ann. April—July.

Very rare in District IV., where it has been seen only as a garden weed at Dunloe Castle (*Mrs. Jenner*), and local in—IX. where, however, it occurs about Ballybunnion and near Ballylongford : *R.W.S.*

First record in 1901 : *R.W.S., Topog. Bot.*

A densely tufted dwarf form of this plant occurs sometimes in great abundance on sandhills and on sandy banks near the sea, as about Castlegregory, Banna, &c.

Var. LASIOCARPA Reichb.—III. Rossbehy (*F. Bouskell*) *Irish Nat. 1903*, p. 58.

V. dentata Pollich.

Districts — — — — — VI. VII. — —
Colonist. Cultivated ground. Very rare ? Ann. June—August.

VI. Killarney (*Babington*) *Cyb. 1866*.—VII. Sparingly in cornfields near Barrow Harbour, 1896 (*R.W.S.*) *Topog. Bot*

First record in *Cyb. 1866* : *Babington*.

Most probably overlooked elsewhere in the county, and not so rare as the above scanty records would indicate.

[V. *CARINATA* Lois.—VIII. In abundance on roadside walls and banks less than a mile north-east of Ballyheige : *R.W.S. 1903*. No doubt only a causal in this station from which it had quite disappeared by 1907.]

DIPSACEÆ.

DIPSACUS Linn.

D. sylvestris Huds. *Teasel*.

District — — — — — IX.
 Denizen. On banks, sandy waste places and field-sides.
 Very rare and local. Bien. July—August.

IX. Frequent for about a mile along the Shannon shore at Letter Point : *R.W.S.* 1891. Along the roadside about one mile east of Astee 1902 : *R.W.S.*—this latter locality is between two and three miles from the Letter station.

First record in 1891 : *R.W.S., Journ. of Bot.*

This is one of the most local plants in Kerry, and appears to be confined to the neighbourhood of the Shannon estuary.

SCABIOSA Linn.

S. Succisa Linn. *Succisa pratensis* Mœnch. *Devil's Bit*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
 Native. Damp peaty pastures, meadows, mountain moors, &c. Very common. Peren. July—October.

From sea-level, to 2,300 feet on Brandon and to 2,650 feet on Caherconree, Slieve Mish range (*Hart*).

First record in 1844 : *S. P. Woodward, Phytol.*, p. 878.

This plant occurs not infrequently with pure white flowers, especially in poor peaty pastures near the sea in the west of the county.

S. arvensis Linn. *Knautia arvensis* Coult. *Field Scabious*.

Districts I. — III. IV. V. VI. — — —
 Native. Cultivated ground, rough pastures, on banks and waste places. Rather rare. Peren. June—September.

I. Sparingly in two or three spots about Morley's Bridge, 1903 ; rather frequent about Kilgarvan and sparingly in the Slaheny and Sheen valleys, 1894–1913 ; in a field near Dromoghty Lake, Dawros, 1890.—III. Sparingly in fields near Portmagee and Doulus Head, 1896 : *R.W.S.* Sparingly in a field near Ballycarbery west of Cahersiveen, 1907 : *Miss Delap*.—IV. Sparingly in the Glencar valley south of the Hotel, 1899.—V. In two or three localities about Ballyferrier and Gallerus north of Ventry, and again near Brandon Creek, 1905.—VI. Rather frequent here, as along the railway near Killarney and Loo Bridge ; in fields and rough pastures about Headford and Rathmore ; abundant

in a field near Cloghereen, Muckcross ; sparingly in Glenflesk ; frequent about Firies and Molahiffe, &c., 1888-1914 : *R.W.S.*

From sea-level, to 725 feet south of Rathmore (*R.W.S.*).

First record in 1889 : *R.W.S.*, *Journ. of Bot.*

In most of the localities given above, this plant is only a colonist showing a marked preference for potato fields. In several of its stations, however, as in rough pasture lands, &c., it has all the appearance of a native.

COMPOSITÆ.

EUPATORIUM Linn.

E. cannabinum Linn. *Hemp Agrimony.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. By streams and ditches, and in moist rocky places especially near the sea. Rather common but unevenly distributed and rare over large areas. Peren. July—September.

In District I.—Seen only beside the River Loo between Aghnanus bridge and the railway crossing, 1904-09 : *R.W.S.*

First record in 1884 : *Hart, Proc. R.I.A.*

SOLIDAGO Linn.

S. Virgaurea Linn. *Golden Rod.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On heaths and in rocky and bushy places, &c. Common. Peren. June—October.

From sea-level, to 2,756 feet on the summit of Mangerton, to 2,796 feet on the summit of Baurtregaum, Slieve Mish range (*R.W.S.*), and to 3,300 feet on the Reeks (*More*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 383, No. 103, "Near the Devil's punch bowl, on the west side of Mangerton."

The *var.* *AUGUSTIFOLIA* (*Koch*) is common about Killarney and elsewhere in the county, while the *var.* *CAMBRICA* (*Hudson*), occurs on all the higher mountains ; both appear to be states due to situation rather than true varieties.

BELLIS Linn.

B. perennis Linn. *Daisy.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Pastures, meadows, roadsides, &c. Very common.
Peren. February—October, but flowers may be found all
the year round.

From sea-level, to 2,380 feet on Brandon (*Hart*).

First record in 1881 : *Barrington, Proc. R.I.A.*

The curious rayless form of this plant, in some ways
simulating the flowering heads of *Eriocaulon*, was gathered
at Carriglea near Killarney in 1904 : *R.W.S.*

ASTER Linn.

A. Tripolium Linn. *Sea Starwort.*

Districts I. II. III. — V. — VII. VIII. IX.
Native. Salt marshes and rocky or stony places by the sea.
Common, locally abundant. Peren. August—September.

First record in 1884 : *Hart, Proc. R.I.A.*

A. [lævis Linn ?].

Districts — — III. — — VI. — — —
Alien. Swampy places. Very rare and local. Peren.
August—September.

III. Two or three tufts along the northern shore of Caragh
Lake, 1911–13.—VI. Rather sparingly by the river, just
above Owneykeagh bridge, between Headford and Glen-
flesk, 1894–97, but not seen there in 1901 ; abundant in a
swampy thicket by the Lower Lake, Killarney, a little north
of Ross Castle, 1903—still plentiful in 1914 : *R.W.S.*

First record in *Cyb. 1898* : *R.W.S.*

The Owneykeagh colony of this *Aster* retained its position
for several years before it disappeared. It has since been
ascertained that this plant had, some years previously, been
cast out of the Headford House gardens which adjoin the
river about a mile and a half above the spot in which the
plant was found. In its Killarney station the *Aster* appears
to be thoroughly established.

FILAGO Linn.

F. germanica Linn. *Common Cudweed.*

Districts I. II. III. IV. V. VI. VII. VIII. —
Native. Roadsides, dry banks, stony pastures and sand-
hills. Rather common and locally abundant, but very
unevenly distributed. Ann. July—September.

First record in 1901 : *R.W.S.*, *Topog. Bot.*

This plant is sometimes very abundant about roadsides and on sandhills, but is rare over large areas in the county.

F. minima Fries.

Districts I. — III. IV. V. VI. VII. — —
Native. In stony and sandy places, on walls and dry banks. Rare. Ann. June—September.

I. On a bridge over a small stream flowing into the Slaheny River and on the adjoining bank, about two and a half miles south of Kilgarvan, 1894–1907 ; abundant on the roadside near Glanmore Lake south of Derreen, 1894 : *R.W.S.*—III. On railway ballast about a mile west of Caragh Lake station, 1913 : *H. Crookshank & R.W.S.*—IV. On stony ground near the base of Drishana Mountain to the west of the Gap of Dunloe : *Hart* 1882—still there in 1904 : *R.W.S.* Stream side below Gaddagh bridge south of Churchtown, and on old Meanus bridge, 1901.—V. Abundant on a stony slope near the coast between Anascaul and Inch, Dingle Bay, 1892, and 1914.—VI. On the sandy shore of the Lower Lake, Killarney near Mahony's Point, in abundance, 1904–14 ; sparingly on the railway track near Killarney, 1890 ; abundant on Flesk bridge near Brewsterfield, 1890–1914 ; in a stony waste by the river a little north of the Loo Bridge railway station and on the stone bridge near by, 1906.—VII. On the stony bed of a stream about a mile and a half west of Boolteens, Castlemaine Bay : *R.W.S.* 1891. On the bridge over the River Dogue where it flows into the Brown Flesk near Scartaglin, 1901 : *R.W.S.*

First record in 1882 : *Hart*, *Proc. R.I.A.*

GNAPHALIUM Linn.

G. uliginosum Linn. *Marsh Cudweed.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In damp and waste spots especially by roadsides where water occasionally settles. Common, often abundant. Ann. July—September. *Calcifuge B.*

From sea-level, to 1,000 feet in the Clydagh valley (*R.W.S.*), and probably higher.

First record in 1881 : *Barrington*, *Proc. R.I.A.*

G. sylvaticum Linn.

Districts I. II. III. — — VI. — — —
Native. Stony fields and roadsides, &c. Rare and generally in small quantity. Peren. July—September.

I. In a fallow-field near Cleady east of Kenmare, 1889, sparingly on a rough knoll by the river about a mile north of Cleady, 1908, sparingly near Morley's Bridge, 1894.—II. Sparingly on an old road near Lough Fadda east of Tahilla, Kenmare Bay, 1892.—III. In a stony field on the west side of Caragh Lake near Lough Beg, 1906 : *R.W.S.*—VI. Killarney (*Babington*) *Cyb.* 1866. In several localities about Killarney, as near the Woodford stream below Teernaboul ; near Sherehee and in a stony field on the west side of Lough Guitane : *R.W.S.* 1889. Sparingly about Headford and Loo Bridge, and in fields between Brewsterfield bridge and Glenflesk, 1896 : *R.W.S.*

First record in *Cyb.* 1866 : *Babington*.

ANTENNARIA Gaertn.

A. dioica R. Br. *Gnaphalium dioicum* Linn.

Districts I. II. — IV. V. VI. VII. — —
Native. Stony places on mountains, about rocky streams and on heaths. Rare and local. Peren. June—August.

I. Plentiful on the Kerry side of Hungry Hill and sparingly on Knockowen at about 2,100 feet, 1894 ; sparingly on a heathy mound between the road and the sea, a little east of the Cloonee Lakes : *R.W.S.* 1890 ; in several places on the rocks in the Roughty River above Morley's Bridge and again, more sparingly, about two miles lower down the river, 1894–1909.—II. One large patch on a rock in the river below Sneem bridge, 1904 : *R.W.S.*—IV. On the cliffs between Caher and Coomloughra, Reeks, a few plants only : *Hart* 1882.—V. Sparingly on Beenoskee near Castlegregory at 2,500 feet : *Hart* 1884. Sparingly on the ridge between Baurtregaum and Glanbrack Mountains, Slieve Mish range : *R.W.S.* 1889.—VI. At Killarney (*Babington*) *Cyb.* 1866. One large patch in the Home Park, Killarney, near the north side of Ross Bay, 1904–09, perhaps Babington's station.—VII. Sparingly on the Slieve Mish Mountains east of Glanbrack, 1892 : *R.W.S.*

From sea-level near Sneem (*R.W.S.*), to 2,500 feet on Beenoskee and to 2,900 feet on the Reeks (*Hart*).

First record in *Cyb.* 1866 : *Babington*.

This is almost an alpine plant in Kerry where it is not infrequently found with *Salix herbacea* filling the cracks in exposed rocks on the higher mountain summits.

[A. MARGARITACEA R. Br.—*Anaphalis margaritacea* Benth. & Hook. fil.—VI. “Completely in a wild state, on the banks of old ditches and old mud walls at Cloghereen, Killarney”: *Wade Rar. 1804*.—VII. On ditch banks near Milltown, “but scarcely wild”: *Mackay Rar. 1806*. Both these localities are repeated in *Mackay Cat. 1825*, and the latter again in *Flor. Hib. 1836*, but the plant has not been noticed in either place recently. It is often planted in Kerry gardens, and is occasionally seen as an escape, as about Garnish ferry below Sneem, 1892, on a wall near Glenbeigh in 1896, &c., but appears to be nowhere permanent.]

INULA Linn.

I. *Helenium* Linn. *Elecampane*.

Districts I. II. III. IV. V. — VII. VIII. IX. Alien. On roadside and field banks, and in waste places, usually near houses or ruins. Rather rare. Peren. July—August.

I. One large patch in a roadside field about half a mile east of Dawros, Kenmare Bay, 1907–08.—II. Sparingly near Clashganniv west of Kenmare, and again near the roadside east of Blackwater bridge, 1889–1913; by the shore on the west side of Cove Harbour, Kenmare Bay, 1904, and again a little to the north of West Cove, 1907; near Darrynane House, 1894; in some plenty by the roadside near the old watch-tower on Hog’s Head, 1889: *R.W.S.*—III. Near the ruins on Church Island, Lough Currane (*More Rec. Add. 1872*; about a mile west of Knightstown, Valencia (*Miss S. Grubb Cyb. 1866*—seen in both these stations in 1889, and sparingly near Ballinskelligs, 1900, and on a roadside bank between Mountain Stage and Rossbehy, 1908: *R.W.S.*—IV. One or two plants on a roadside bank near a house a little north of Gaddagh bridge, Churchtown, 1909: *Miss L. Magill & R.W.S.*—V. On a ditch bank near Minard west of Anascaul, 1914: *R.W.S.*—VII. At Calnafersy and on high ground between Milltown and Tralee (*G. Clarke’s Mackay Rar. 1806*. On a bank near Dick’s Grove east of Farranfore, 1901; near Edenburn north of Gortatlea, 1888, and sparingly a little west of Clogherbrian, Tralee Bay, 1905: *R.W.S.*—VIII. “Not far from the Abbey of Odorney (*Dr. Smith’s Hist. of Kerry, 1756*. Rather frequent in this District, as about Ardfert, Banna, Lerrig, south of Causeway, near Ballyduff and Ardoughter; rather sparingly near Lixnaw; on banks near the River Feale at Finuge and Ballyhorgan;

near the Smearlagh River ; in the village of Duagh between Listowel and Abbeyfeale, &c., 1888-1914 : *R.W.S.*—IX. Plentiful in two places by the shore at Beal Point : *Stewart 1890*—still there in 1913 : *Phillips*. In several places along the road between Ballybunnion and Beal, 1902 ; sparingly north of Lisselton and north of Cashen Ferry bridge, and on a bank near Tarbert on the Ballylongford road, 1904 : *R.W.S.*

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 377, No. 47.

This fine plant is more frequent in the north of the county than in the south ; it seldom occurs in quantity, and rarely far away from houses or ruins. It was formerly in use for medicinal purposes, and although it appears to be native in both western France and Spain, it is no doubt only a survival of cultivation in the stations given above.

I. crithmoides Linn. *Golden Samphire.*

Districts — — III. — V. — — —
Native. On rocks by the sea. Very rare. Peren. July—August.

III. " It grows on the rocks near Bolus-head in Iveragh, and on other parts of the sea cliffs " (*Dr. Smith*) *Hist. of Kerry, 1756*.—V. On the rocky coast near Dingle (*Moore*) *Cyb. 1866*.

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 375.

This plant has not been seen in the county subsequent to the date of Dr. Moore's record. It has been found, however, on the coast of the adjoining county, Cork, and no doubt still occurs in one or both of the rather vague localities given above.

PULICARIA Gaertn.

P. dysenterica Gray. *Inula dysenterica* Linn. *Fleabane.*

Districts I. II. III. — V. VI. VII. VIII. IX.
Native. Moist fields and roadsides, and other damp places. Rare over the greater portion of the south, rather common in the north. Peren. August—September.

Rare in the following Districts—I. Sparingly near the Workhouse north of Kenmare, 1908.—II. Sparingly by some small lakes at Clashnacree and Tahilla east of Parknasilla, 1904.—III. Sparingly near Boalakeel west of Ballinskelligs, 1889 : *R.W.S.*

First record in 1890 : *Stewart, Proc. R.I.A.*

[*P. VULGARIS* Gaertn.—VII. Cromane, Kerry (*Herb. J. Reilly*) *Barrington in Journ. of Bot.* 1877, p. 178. A correctly named specimen of the above plant appeared in a collection of plants purchased by the late Mr. R. M. Barrington. It was gathered by Mr. John Reilly, a coastguards-man who was stationed at Cromane for some years, and who appears to have made a collection of plants at various stations round the coast. It has not been seen there since, nor elsewhere in Ireland, and must be regarded as a casual only.]

[*XANTHIUM STRUMARIUM* Linn. “*Xanthium, seu Lappa minor* J. B. The lesser burdock, said to be rare in England, but common in the barony of Iraghticonnor, near Listowel, and other places” (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 383. No doubt some species of *Arctium* was really intended.]

BIDENS Linn.

B. cernua Linn. *Bur Marigold.*

Districts — II. III. IV. V. VI. VII. VIII. — Native. Swampy ditches, bog holes and other marshy places. Rather common, but unevenly distributed. Ann. August—September.

Rare or local in the following Districts—II. By the road on the south side of Lough Currane, 1904; near Sneem, 1901.—III. In several places about Glenbeigh, 1906; abundant in bog holes, &c., by the roadside between Caragh bridge and Killorglin, 1903: *R.W.S.*—V. Between Gallerus and Smerwick Harbour: *Hart* 1884. Sparingly near Dingle, in several places about Castlegregory and to the west of Camp, Tralee Bay, in a swamp near Minard west of Anascaul, 1890–1914.—VIII. In swamps near Rahoneen west of Ardfer, about Lerrig pond, in ditches near Lixnaw, about Sleeven and Cashen Ferry bridge, 1889–1914: *R.W.S.*

First record in 1884: *Hart, Proc. R.I.A.*

B. tripartita Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Marshy places, ditches, pond-sides, &c. Common. Ann. August—September.

First record in 1890: *Stewart, Proc. R.I.A.*

This is decidedly more common in Kerry than the preceding, although, taking Ireland generally, it appears to be the rarer species of the two.

ACHILLEA Linn.

A. Millefolium Linn. *Yarrow.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Pastures, banks, roadsides and waste places, &c.
Very common. Peren. June—September.

From sea-level, to 2,380 feet on Brandon (*Hart*).

First record in 1881 : *Barrington, Proc. R.I.A.*

A. Ptarmica Linn. *Ptarmica vulgaris* DC. *Sneezewort.*

Districts — II. III. IV. V. VI. VII. VIII. IX.
Native. In damp and marshy places, by lake- and roadsides, in cultivated fields, &c. Rather common and locally abundant, except in the extreme south where it is quite rare. Peren. July—September.

First record in 1844 : *S. P. Woodward, Phytol.*, p. 878.

[DIOTIS CANDIDISSIMA Desf.—*D. maritima* Cass.—VIII.
“On the shores of the strand at Ballyheigh” (*Dr. Smith*) *Hist. of Kerry, 1756*, p. 376, No. 42. There has been no subsequent confirmation of this interesting record, nor does the plant appear to be there now. It is quite possible, however, that the *Diotis* really grew at Ballyheige and has been exterminated since Dr. Smith’s time by the severe Atlantic storms to which this locality is much exposed ; it is a very rare and decreasing species in Ireland generally.]

ANTHEMIS Linn.

A. Cotula Linn. *Stinking Chamomile.*

Districts — — III. IV. — VI. — VIII. IX.
Colonist. Cultivated fields, roadsides and waste places.
Probably rather common. Ann. June—September.

III. By the roadside north-east of Waterville, 1911 : *Mrs. Jenner*.—IV. In fields about the River Laune, as near Churchtown, &c., 1896.—VI. Frequent in fields and cottage gardens about Ballymalis Castle, 1902 ; near Rockfield bridge north of Killarney, 1901.—VIII. In some plenty by the roadside in two or three spots between Cashen Ferry bridge and Sheepwalk, 1908 : *R.W.S.*—IX. Plentiful at Ballybunnion and Beal Castle (as *Matricaria Chamomilla* Linn.) : *Stewart 1890*.

First record in 1890 : *Stewart, Proc. R.I.A.*

Appears to be local in Kerry and uncertain in its appearance, but is, no doubt, more widely distributed than the above scanty records would show.

A. nobilis Linn. *Common Chamomile.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Grassy roadsides, gravelly places, pastures, &c.
Common and locally abundant except in the extreme north
where it is rare. Peren. July—September.

Rare in the following Districts—VIII. "In several fields near Ardfert" (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 374. By the roadside and near the River Shanow about a mile or two east of Kilflyn, 1894; roadside between Knight's bridge and Derrnidaff in the Smerlagh valley, 1904.—IX. Roadside west of Gortaglanna north of Kilmorna, 1899: *R.W.S.*

From sea-level, to 1,169 feet on the summit of the Slaheny valley road and to 1,531 feet on the summit of the Priestleap road (*R.W.S.*).

First record in 1756: *Dr. Smith*, *Hist. of Kerry*, p. 374, No. 20. Mackay in 1806, writes of it as covering whole fields at Calnafersy and as plentiful on the sides of roads near Killarney, &c.

A favourite haunt of this plant is the grassy margin of old disused roads especially in the south of the county, where it occurs often in great abundance, quite scenting the air for some distance around. It is still used in parts of Kerry by the peasants for medicinal purposes.

CHRYSANTHEMUM Linn.

C. segetum Linn. *Corn Marigold.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Colonist. Cultivated ground and waste places. Rather rare but locally abundant. Ann. June—October.

I. In a field near Dawros, Kenmare Bay, and on the east side of the Sheen River below Dromanassig bridge, 1903.—II. In several fields west of Kenmare, 1906, and sparingly south of Waterville, 1896: *R.W.S.*—III. Sparingly in a field on the south side of Portmagee estuary, 1910: *Miss Delap.* Sparingly near Cahersiveen, 1892; in several places about Dooaghs and near Lough Yganavan, 1906.—IV. In several localities about Gaddagh, Kilgobnet and Mount Rivers, &c., between the River Laune and the Reeks, 1904; fields in the Glencar valley, 1903; in a field near the Gap of Dunloe, 1909.—V. Sparingly near Anascaul, 1892, and in 1914; rather frequent in crops about Dunquin north of Sleah Head, 1905.—VI. Rather frequent about Ballymalis and in fields by the road between Aghadoe and Faha, 1904.—VII. Frequent about Killorglin and Tullig, 1906; near Boolteens,

Castlemaine and in fields near Gortatlea, 1904 : *R.W.S.*
Near Milltown, 1905 : *Capt. Creagh-Haward*.—VIII. Near
Lerrig north of Ardfert and about Abbeydorney, 1905 ; in
several spots by the road between Kilflyn and Listowel,
1894 ; among crops near Duagh east of Listowel, 1904 :
R.W.S.—IX. In crops near Ballybunnion and Beal Point,
1913 : *Phillips*.

First record in 1889 : *R.W.S., Journ. of Bot.*

Most commonly found growing in potato fields, more
rarely with grain crops, and only very occasionally in
cabbage plots.

C. Leucanthemum Linn. *Dog Daisy. Ox-Eye.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Meadows, pastures, banks, waste places, &c. Very
common. Peren. June—September.

From sea-level, to 1,125 feet near the Mount Eagle-
Castleisland road and to 1,350 feet by the Connor Hill road
(*R.W.S.*).

First record in 1882 : *Archdeacon Wynne, Journ. Roy.
Met. Soc., No. 45.*

[*C. PARTHENIUM* Linn. *Feverfew*.—This plant is fre-
quently seen growing in cottage gardens, &c., in Kerry and
has been noticed in several places by roadsides, on banks
and near houses, but only as an obvious escape or relic of
former cultivation.]

MATRICARIA Linn.

M. inodora Linn. *Pyrethrum inodorum* Smith.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Waste places, roadsides, rocks, borders of fields,
&c. Common, especially near the sea. Ann. and Peren.
July—October.

First record in 1825 : *Mackay Cat.*

Var. SALINA Bab.—*Pyrethrum maritimum* Smith.—This
fleshy-leaved form is not infrequent round the coast.

M. discoidea DC. *M. suaveolens* Buch.

Districts — II. III. — V. VI. VII. VIII. IX.
Alien. About fair-fields, roadsides, waste places and railway
tracks. Still rather rare and local, but usually abundant
where it occurs. Ann. June—August.

II. In some quantity in the village of Sneem (*James Britten*) *Journ. of Bot.* 1912, p. 288—plentiful there in 1913, and again, but sparingly, on the roadside about a mile west of Parknasilla, and—III. Sparingly in the fair-field, Cahersiveen, 1911 : *R.W.S.* Abundant at Portmagee, especially on the east side of the vilage, 1911 : *Miss Delap & R.W.S.*—V. By roadsides about Anascaul on the south side of the Dingle peninsula, 1910 : *Stelfox & Welch*—abundant at Anascaul and in several localities near it, and about Camp on the north side of the peninsula, 1914 : *R.W.S.* At Castlegregory and abundant at Deelis about three miles to the east (*Praeger & Stelfox*) *Irish Nat.* 1912, p. 163.—VI. Sparingly about the Killarney railway goods-yard, 1915 : *Mrs. Jenner*.—VII. Abundant on and about Killorglin fair-green, 1911–13, and in great plenty about the Tralee fair-field, spreading thence to the adjoining roadsides and waste ground, 1908—still in great abundance about Tralee and has spread to the canal basin, to Blennerville, and thence in many localities along the north side of Tralee Bay to near Fenit, 1914.—VIII. In many localities both north and south of Ardfert, &c., 1914 : *R.W.S.* On the railway at Lixnaw, and—IX. abundant on the fair-green at Listowel and on the railway there, 1913 : *Phillips*.

First record in 1903 : *R.W.S.*, *Irish Nat.*

Var. OCCIDENTALIS (*Greene*).—IX. In some plenty about a gateway and adjoining field-side rather more than a mile west of Beal Point on the Ballybunnion road : *R.W.S.* 1903.

The above localities are of special interest as they show the present southern limit of this aggressive alien which appears to be spreading in Kerry, as elsewhere in Ireland, at an astonishing rate. A native of North America, this plant was first noticed in the British Isles by Mr. Colgan about Carrickmines, Co. Dublin in 1894 ; since then it has been ascertained to occur in many localities both in Ireland and England, and is now on record for nearly 30 out of the 40 divisions in *Irish Topog. Bot.* The plant gathered near Beale Point differs from that found elsewhere in Kerry in its larger heads and more upright growth as well as in possessing a toothed crown to its seeds ; it has been already noticed by Mr. Colgan in Co. Dublin, and duly recorded by him in *Irish Nat.* 1894, p. 125.

[*M. CHAMOMILLA* Linn.—IX. Plentiful at Ballybunnion and Beal Castle : *Stewart* 1890. Certainly not now plentiful in either of Mr. Stewart's stations which have been examined

several times between 1894 and 1908; it was noticed, however, by Mr. Phillips in some plenty in a field near Ballylongford about five miles east of Beal, in 1913. In Ireland this plant appears to be a casual only.]

TANACETUM Linn.

T. vulgare Linn. *Tansy.*

Districts I. II. III. IV. V. VI. VII. VIII. IX. Alien. Roadsides, banks and waste places. Rather rare and local. Peren. August—September.

I. By Cleady bridge east of Kenmare, 1890–1913; by the roadside near Eskadawer bridge, &c., west of Derreen, 1894–1907.—II. An escape about Darrynane House, 1903.—III. Roadside north of Cahersiveen and near Ballycarbery Castle, Valencia Harbour, 1892–1911; sparingly about Glenbeigh and roadside east of Caragh bridge, 1906.—IV. Sparingly by the old Killorglin road about two miles from the Glencar Hotel, 1890.—V. In several places about Castlegregory, as in Killiney churchyard and near Kilcummin; near Cloghane and Fermoy, Brandon Bay, and near Camp, Tralee Bay, 1890–1908.—VI. Sparingly along roadside south of Rockfield bridge and about gardens near Killarney and Barraduff north of Headford, 1904.—VII. About Killorglin and west of Tullig, 1888–1909; near Milltown and Boolteens west of Castlemaine, 1904.—VIII. Sparingly near Abbeydorney, 1894.—IX. Near the railway station at Ballybunnion and between this and Lisselton in several places; about Tarbert, 1889–1908 *R.W.S.*

First record in 1901: *R.W.S., Topog. Bot.*

ARTEMISIA Linn.

A. Absinthium Linn. *Wormwood.*

Districts — — — — V. — — VIII. — Alien. Roadsides and about ruins. Very rare and local. Peren. August—September.

V. Sparingly about old Killiney Church and churchyard; sparingly on old Stradbally Church and abundant along the adjoining road to the sandhills and again, but sparingly, about half a mile west of Stradbally village: *R.W.S. 1891*—still in these localities in some abundance in 1900, but greatly diminished, and seen only very sparingly about

Stradbally, in 1907.—VIII. Rather sparingly by roadsides, &c., near the Ballynoe mills about a mile and a half west of Causeway, 1907 : *R.W.S.* 1908.

First record in 1891 : *R.W.S.*, *Journ. of Bot.*

This plant appears to be a decreasing species in Kerry. It is nowhere certainly native in Ireland, although thoroughly established in many places.

A. vulgaris Linn. *Mugwort.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Waste places, field borders, dry banks, sandy pastures, &c. Rather common, but irregularly distributed.
Peren. July—September.

First record in 1881 : *Barrington, Proc. R.I.A.*

Quite local in Districts I. & II., and generally more frequent in the north of the county than in the south and near the sea than inland. It occurs often about houses and in other suspicious stations as if it were the remains of former cultivation. The *var. COARCTATA* Forsell. appears to be the prevailing plant in Kerry.

[A. CAMPESTRIS Linn.—VII. “ In a field near Castleisland ” (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 372, No. 2. Some error ; the plant occurs only as a very rare casual in Ireland.]

TUSSILAGO Linn.

T. Farfara Linn. *Colts-foot.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On moist banks, roadsides and in damp fields, &c.
Common. Peren. February—April. *Calcicole B.*

From sea-level, to 1,000 feet in the Clydagh and Roughty valleys and to 1,050 feet near Lough Coomacullen, Glenbeigh (*Colgan & R.W.S.*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 174.

PETASITES Hill.

P. fragrans Presl. *Nardosmia fragrans* Reichb. *Winter Heliotrope.*

Districts I. II. III. IV. — VI. VII. VIII. IX.
Alien. Shaded and waste places, especially about roadsides and demesnes. Rather common and locally abundant.
Peren. December—January.

First record in 1901 : *R.W.S.*, *Topog. Bot.*

This sweet-scented plant, a native of South Europe, is

thoroughly established and spreading in the county and is now, no doubt, a permanent member of its flora. It appears to have been much planted formerly and is still offered for sale in Florist's catalogues.

P. officinalis Mœnch. *P. ovatus* Hill. *P. vulgaris* Desf. *Butterbur*.

Districts I. II. — — V. VI. VII. VIII. IX. Native. River-sides and other damp places. Rather rare and local, especially in the south. Peren. March—May.

I. In one or two localities about Kenmare and Kilgarvan, and—II. To the north and west of Kenmare, 1889–1913; near Darrynane, 1904.—V. About Castlegregory and frequent about Dingle, Ventry, and to the north-west of Milltown, 1890–1905.—VI. In one or two spots near the Lower Lake, Killarney, and at Ballymalis Castle, 1888–1901; near Ballyvirrane south of Milltown, 1903.—VII. Near the Spa and Kerries, Tralee Bay; about the stream at Ballybeggan, Tralee; near Ballycarty east of Tralee and in several spots about Castleisland, 1888–1907.—VIII. Near Ardfert and Lixnaw, 1888–1908.—IX. About Ballybunnion, Ballylongford and Tarbert, 1889–1908: *R.W.S.*

First record in 1890: *Stewart, Proc. R.I.A.*

SENECIO Linn.

S. vulgaris Linn. *Groundsel*.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Cultivated ground, waste places, on and about walls, &c. Common. Ann. Flowers throughout the year.

From sea-level, to 1,100 feet near the road in the upper Roughty valley (*R.W.S.*).

First record in 1881: *Barrington, Proc. R.I.A.*

Var. RADIATUS Koch.—VI. About Killarney, 1886: *Colgan*. Abundant about Killarney railway station and on the ballast and adjoining roadsides: *R.W.S.* 1890—still abundant there, extending to the Sunday's Well road and along the railway track at Headford Junction and Rathmore, 1914: *R.W.S.*—VII. About the Killorglin Hotel grounds, 1899: *Phillips & R.W.S.* In several places by footpaths, walls and waste places in Killorglin, 1913; about the railway station at Tralee and the canal basin, 1904–1914: *R.W.S.*

This plant has, no doubt, reached its Kerry localities by railway transport from Cork city where both *S. radiatus* and *S. squalidus* are abundant not only on walls and waste

places in the city itself, but even more so about the old railway station and goods-yard at Blackpool. It is worthy of note that the latter plant has not so far succeeded in gaining a footing in the county, although its seeds are afforded the same means of transport as those of *S. radiatus*.

S. sylvaticus Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On dry or rocky banks, heaths, thatched roofs, &c.
Rather common but local. Ann. June—September.
Calcifuge A.

From sea-level, to 1,000 feet on the Reeks (*Hart*), but usually lowland (*R.W.S.*).

First record in 1882: *Hart, Proc. R.I.A.*

S. Jacobæa Linn. *Ragwort.* *Ragweed.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Pastures, roadsides, sandhills, waste places, &c.
Very common. Peren. or Bien. July—October.

From sea-level, to 1,650 feet above Lough Googh, Reeks, and to 2,200 feet on the cliffs south of Lough Erhagh, Mangerton (*R.W.S.*).

First record in 1872: *More, Rec. Add.*

Var. FLOSCULOSUS (Jord.). *Var. DISCOIDEUS* Linn.—Abundant on most of the Kerry sandhills, to the almost total exclusion of the rayed form. It occurs also, but very rarely, inland, as—VII. Sparingly beside the old Killarney road about three miles south of Tralee, 1892: *R.W.S.*

Except in the loss of its rays, *S. flosculosus* is in no respect a starved or degenerate state of the type. On most of the Kerry sandhills, where this plant is characteristic and abundant, it grows quite as tall and luxuriant as rayed *S. Jacobæa*. The two plants are rarely seen growing together.

S. aquaticus Hill.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Marshes, wet ditches, stream-sides and other watery places. Common. Peren. July—September.

From sea-level, to 1,450 feet at Lough Ferta, Teermoyle Mountain, Glenbeigh (*R.W.S.*).

First record in 1890: *Stewart, Proc. R.I.A.*

[*S. SARACENICUS* Linn.—III. Roadside near Cahersiveen, abundant (*L. Ogilby*) *Cyb.* 1866. Not seen there recently and no doubt a garden escape only.]

[*S. CAMPESTRIS* DC. *S. integrifolius* Clairv.—IX. “On the side of Knockanore mountain, not far from Fell’s spa, in the barony of Iraghticonner” (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 377, No. 51. No doubt some mistake; the plant is not known to occur as a native in Ireland. The reputed station lies about three miles east of Ballybunnion and is a featureless rounded heath-clad hill rising to 880 feet.]

[*S. PALUSTRIS* Hook.—VIII. “In the barony of Clannaurice, near Lixnaw, in several ditches” (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 375, No. 23. Not a native of Ireland, and the record, like the preceding, is probably due to some confusing of names by *Dr. Smith*; perhaps *S. aquaticus* was the plant really meant.]

ARCTIUM Linn.

A. minus Bernh. *Burdock. Teasel.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Roadsides, thickets and waste places. Common.
Bien. July—September.

From sea-level, to 975 feet by the Connor Hill road (*R.W.S.*).

First record in 1756: *Dr. Smith, Hist. of Kerry*, p. 383, No. 104. “*Xanthium*, seu *Lappa minor* J. B. The lesser burdock said to be rare in England, but common in the barony of Iraghticonner, near Listowel, and other places.”

A. intermedium Lange. *A. nemorosum* Lejeune.

Districts I. II. III. — V. — VII. — IX.
Native or colonist. Roadsides, waste places, &c. Probably rather common. Bien. July—September.

First record in 1881: *Barrington, Proc. R.I.A.*

The most common Burdock in Kerry appears to be *A. minus*, although a form, or forms, with larger heads is not infrequent. It is often difficult, however, to fit the plants seen with any of the book descriptions. Some of these doubtful forms may be hybrids, but the Kerry *Arctia* need further investigation before their range can be definitely stated. So far, *A. majus* Bernh. has not been noticed.

CARDUUS Linn.

C. pycnocephalus Linn. *Thistle (genus).*

Districts — — III. — V. — — IX.
Colonist. Waste sandy places and roadside banks. Very rare and local. Bien. June—August.

III. In two or three spots about Ballinskelligs, as near the ruins of the Castle and Abbey, &c. : *R.W.S.* 1890, and in 1902.—V. Sparingly by the roadside between Milltown and Gallerus, 1905 : *R.W.S.* 1908.—IX. Sparingly by the strand at Ballybunnion : *R.W.S.* 1890, and in 1902.

First record in 1890 : *R.W.S.*, *Journ. of Bot.*

This plant is surprisingly rare in Kerry and nowhere looks native. The few localities known lie close to the sea except that for District V. which is about two miles inland. The Kerry plant is the usual form, *C. tenuiflorus* Curt.

CNICUS Linn.

C. lanceolatus Willd. *Spear Thistle.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Waste places, field borders, pastures, banks, &c.
Common. Bien. July—September.

From sea-level, to 850 feet in the Roughty valley and to 1,000 feet in the Clydagh valley (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

C. palustris Willd. *Marsh Thistle.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Wet meadows, marshy places, &c. Common.
Bien. June—September.

From sea-level, to 1,800 feet above Lough Googh, Reeks, and to 2,050 feet on cliffs south of Lough Erhagh, Mangerton (*R.W.S.*).

First record in 1890 : *Stewart, Proc. R.I.A.*

This is not uncommon with pure white flowers, as in the damp woods in the Home Park, Killarney.

C. pratensis Willd. *Bog Thistle.*

Districts I. II. [III.] IV. — VI. VII. VIII. IX.
Native. Boggy meadows and pastures, &c. Rare and local in the south, common, and sometimes abundant, over the greater portion of the north. Peren. June—August.

I. Sparingly in several spots between the road and the railway both to the east and west of Morley's Bridge station, 1904-08 : *R.W.S.*—II. Sparingly in a boggy hollow near the old mountain road east of Staigue Fort, Kenmare Bay, 1892 : *Colgan & R.W.S.* [—III. *Vide infra*].—IV. Sparingly in the Glencar valley above Bealalaw bridge, 1899.—VI. Sparingly in several spots about Killarney, as near Mahony's Point, between Brickeen bridge and Dinis and in

damp meadows between Woodlawn and Woodford bridge, 1904; in boggy meadows near Barraduff and by the railway near Rathmore, 1906.—VII. Sparingly in wet fields near Scrahan north of the Spa, Tralee Bay, 1899 : *R.W.S.*

From sea-level, to 750 feet near Staigue fort (*Colgan & R.W.S.*)

First record in 1889 : *R.W.S., Journ. of Bot.*

[District—III]. In the *Journ. of Bot.*, 1911 p. 59, Mr. W. West gives a list of plants found by him near Waterville in May, 1904. Among these, mostly common species, *Carduus pratensis* is recorded as growing on a mud-capped wall to the north of the village. Mr. West, however, was probably not aware of the extreme rarity of this plant in South Kerry; it is not mentioned as being in flower, and as it is feared some confusion of names may have taken place, it is thought better to await further confirmation before admitting this record.

C. arvensis Hoffm.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Fields, waysides, waste places, banks, &c.
Common. Peren. July—August.

From sea-level, to 850 feet by roadsides in the upper Roughty valley and to 1,000 feet in the Clydagh valley (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

Var. SETOSUS (Bess.)—VI. Muckcross demesne (*Colgan & R.W.S.*) *R.W.S.* 1902; Ross Island, Killarney, 1904 : *R.W.S.*

SILYBUM Vaill.

S. Marianum Gaertn. Mariana lactea Hill. Milk Thistle.

Districts — — — — V. — VII. VIII. IX.
Alien. Field-sides, banks and waste places near the sea, usually near ruins or houses. Local in the north, very rare elsewhere. Bien. July—September.

V. Amongst the ruins at Kilshannig north of Castle-gregory : *Hart 1884*—still about the old Church there, and on the largest of the adjacent Magharee Islands, 1894 : *R.W.S.*—VII. In a quarry near the Spa and at Kilfenora, Tralee Bay; in several spots about Fenit and frequent around Barrow Harbour : *R.W.S. 1888*, and in 1914; abundant near some high rocks between Barrow and Carrahan strand 1902 : *R.W.S.*—VIII. About Banna 1877 : *Rev. W. Raymond*. In two or three spots about Rahoneen and thence northward

to Ballinprior, 1888–1905; sparingly amongst the Ardferit ruins, 1907: *R.W.S.*—IX. On the shore at Beal Point: *Stewart 1890*. About Beal Castle ruins, 1902: *R.W.S.*, and in 1913: *Phillips*.

First record in 1884: *Hart, Proc. R.I.A.*

This handsome plant is never seen at any distance from the coast and has its headquarters in the county about the north side of Tralee Bay where it appears to be fully established.

SAUSSUREA DC.

S. alpina DC.

Districts — — III. IV. V. VI. — — —
Native. On wet cliffs and grassy slopes on mountains. Very rare and local. Peren. August—September.

III. Sparingly in a rocky gully above Coomacullen Lake, at about 1,250 feet, and in plenty on wet grassy slopes from 1,900 to 2,000 feet between Coomacullen Lake and the summit of Coomacarrea Mountain, Glenbeigh, 1892: *Colgan & R.W.S.*—IV. Cliffs on the north side of Mullaghanattin Mountain, Glencar, at about 1,800 feet (*Colgan*) *Dub. Univer. Rev. 1886*, p. 605.—V. On cliffs near the summit of Brandon, 1804: *Mackay Rar.* On Brandon Mountain, very sparingly, 1856 (*T. Wright*) *Carroll in Phytol. 1857*, p. 76. On Brandon on cliffs facing east above Lough Nalacken, abundant here from 2,000 to 2,300 feet, but not seen elsewhere: *Hart 1884*—seen here as high as 2,800 feet in 1885: *Colgan*, and in 1905: *R.W.S.*—VI. In the Horse's Glen, Mangerton (*Carroll*) *Cyb. 1866*—rather plentiful here in one or two spots on grassy slopes in the cliffs to the south of Lough Erhagh, 1888, and in 1904: *R.W.S.*

Ranges from 1,250 feet on Coomacarrea (*Colgan & R.W.S.*), to 2,800 feet on Brandon (*Colgan*).

First found in 1699 by *Lhwyd*—"On the mountains of Keri."

First record in 1712: *Lhwyd, Phil. Trans., Vol. XXVII.*, p. 524.

The absence of *Saussurea* from the many suitable cliffs on the Reeks is very hard to account for, as, indeed, is the general poverty in alpine plants of this fine range of mountains, the loftiest in Ireland. Brandon, although lying only fifteen miles further north and much nearer to the sea, has nearly double its number of alpine species with less than half its extent of cliffs.

CENTAUREA Linn.

C. nigra Linn. *Knapweed.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Fields, banks, roadsides, waste places, &c. Very
common. Peren. July—September.

From sea-level, to 1,350 feet by the Connor Hill road
(*R.W.S.*), and to 1,500 feet on the Reeks (*Druce*).

First record in 1836 : *Dr. Taylor, Flor. Hib.* (as *C. Jacea*
Linn.).

Plants with white flowers are not uncommon especially
in the Dingle peninsula, while the form with radiant flowers
has been noted in the following localities—I. Roadside above
Inchee bridge and beside the Glengarriff road near Kenmare,
1904 ; near Gowlane north of Kenmare, 1908 : *R.W.S.*—
II. Base of Carig Mountain near Kenmare (*Dr. Taylor*) *Flor.*
Hib.—as *C. Jacea*.—V. Doon Point, Ferriter's Cove, north-
west of Ventry : *Hart 1884*. Quite frequent in the extreme
west of the Dingle peninsula, as about Gallerus, Smerwick
Harbour, Brandon Creek, &c., and especially abundant
about Dunmore Head, 1905.—VI. On the banks of the
River Flesk above Coltsmann's bridge and near Sherehee
to the south-east of Killarney, 1903 ; sparingly in the
Clydagh valley, 1909 ; north of Beaufort bridge, 1901.—
VII. Between Castlemaine and Milltown and in a field near
Dysert south of Castleisland, 1903.—VIII. Near Lerrig
north of Ardfert and near Listowel, and—IX. In several
localities about Listowel, 1905 : *R.W.S.*

This radiant form ascends to 1,000 feet in the Clydagh
valley (*R.W.S.*).

[*C. JACEA* Linn. "Base of Carig Mountain near Ken-
mare" (*Dr. Taylor*) *Flor. Hib. 1836*. The plant intended
was almost certainly the radiant form of *C. nigra* mentioned
above.]

[*C. CYANUS* Linn. *Corn Blue-bottle*.—III. A garden weed
about Waterville, 1905.—IV. In a flax plot near the head
of Cottoner's River south of Killorglin, 1890.—VI. With
flax near Farranfore, and—VII. near Knockaunnaglashy
west of Tullig : *R.W.S. 1889* ; with flax near Clogherbrian,
Tralee Bay, 1892 : *R.W.S.* With the disappearance of flax
as a crop in Kerry, this plant has almost quite died
out. It was at best but a rare colonist, nowhere established,
and is now seen only as a garden outcast or casual.]

CICHORIUM Linn.

C. Intybus Linn. *Chicory.* *Wild Succory.*

Districts — — — IV. V. — — VIII. —
Colonist. Grass fields and cultivated ground. Very rare
and local. Peren. July—September.

IV. In several localities about Beaufort and Churchtown, some years in quantity, 1909–12 : *Miss L. Magill*. Sparingly in a field about a mile south of Churchtown, by the Hag's Glen road, 1911, and—V. Several plants in a field at Ballinasteenig east of Dingle, 1905 : *R.W.S.* Sparingly in a field of sown grass near Cloghane, Brandon Bay, 1913 : *Praeger*. Sparingly in a field between Stradbally and Lough Gill to the west of Castlegregory, *circa* 1890, but not seen there recently : *Dean Isaacs*.—VII. Abundant in a meadow between the Ferry bridge, Cashen River, and Sheepwalk, 1908 : *R.W.S.*

First record in 1908 : *R.W.S., Irish Nat.*

LAPSANA Linn.

L. communis Linn. *Nipplewort.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Bushy places, hedge banks, roadsides and as a weed in cultivated ground. Common. Ann. July—September.

From sea-level, to 650 feet in fields near the Kenmare-Killarney road and to 750 feet in the Roughty valley (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

CREPIS Linn.

C. virens Linn. *C. capillaris* Wallr.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Banks, roadsides, dry pastures, walls, &c. Very common. Ann. June—October.

From sea-level, to 1,200 feet on Connor Hill (*R.W.S.*).

First record in 1882 : *Hart, Proc. R.I.A.*

C. paludosa Moench. *Hieracium paludosum* Linn.

Districts — [II.] — — — VI. — VIII. —
Native. Moist shady places. Very rare and local. Peren. June—August.

[II. "In Ballybog, not far from Blandford" (*Dr. Smith*)

Hist. of Kerry, 1756, p. 377—not seen recently in this locality which is near Castlecove, Kenmare Bay].—VI. Sparingly in damp ground by the roadside a little north of the Mines, Ross Island, Killarney : *R.W.S. 1904*. Sparingly in two localities on Ross Island, 1911 : *Mrs. Jenner*.—VIII. Very sparingly on the rocky banks of the River Feale in Ballinruddery demesne east of Listowel : *R.W.S. 1891*.

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 377, No. 49.

The extreme rarity of this plant in Kerry is difficult to account for. A great portion of the county appears to be eminently suited to the growth of this northern species, yet in none of its localities were more than half a dozen plants seen, nor are the stations situated among the mountains. While rare generally in south-west Ireland, *C. paludosa* occurs in several localities in the counties adjoining Kerry.

[*C. BIENNIS* Linn.—VII. Abundant in a meadow near the police-barrack, Spa village, Tralee Bay : *R.W.S. 1903*. In 1906, this meadow had been turned into a pasture and the plant had quite disappeared. The above record is of interest chiefly as dating the first appearance in Kerry of this spreading alien. Several localities in the adjoining counties are known ; one in Limerick lying within a mile or so of the Kerry boundary.]

[*C. MOLLIS* Aschers. *C. succisæfolia* Tausch. *Hieracium molle* Smith.—IV. Moist rocks on Magillicuddy's Reeks and other mountains in Kerry, 1805 : *Flor. Hib.* No doubt some species of *Hieracium*, probably *H. anglicum*, was intended.]

HIERACIUM Linn.

H. Pilosella Linn. *Mouse-ear Hawkweed.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On dry or rocky banks, pastures, wall-tops, &c.
Very common. Peren. May—August.

From sea-level, to 2,200 feet by the Punch Bowl on Mangerton (*R.W.S.*) ; a most unusual elevation, due no doubt to the pony track up the mountain which just reaches this point ; not seen usually much above 1,000 feet.

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 85, as "mouse-ear."

[*H. AURANTIACUM* Linn.—VI. In the shrubberies by the Muckcross Hotel boathouse on the Lower Lake, Killarney, 1888–94, but appears to have died out there : *R.W.S.* By the bridge over the Torc stream in the Muckcross demesne, 1901 : *Archdeacon Wynne*. An escape, nowhere thoroughly established.]

H. anglicum Fries.

Districts I. II. III. IV. V. VI. — — —
Native. Mountain cliffs and rocky places. Rather rare.
Peren. July—August.

I. Sparingly on cliffs on the east side of Knockowen, south of Derreen, at 1,500 feet, 1894.—II. Sparingly on the east side of Ballaghbeama Gap, at about 800 feet, 1890–1907 : *R.W.S.* Sparingly above Lough Coomcalee west of Sneem and on Beewon Mountain to the north, at about 1,600 feet, 1901 : *Colgan & R.W.S.*—III. Sparingly above Coomacullen Lake on Coomacarrea Mountain, Glenbeigh, at 1,200 feet, 1892, and—IV. On cliffs above Lough Eskabehy, Glencar, descending here to about 750 feet, 1911 : *R.W.S.* On cliffs south of Cummeenmore at 2,080 feet, in Coomloughra and on Bull's Mountain in several places, finding its lowest limit for the Reeks on the cliffs above Lough Auger in the Gap of Dunloe at 1,100 feet : *Hart 1882*. On Sugarloaf Mountain (Broaghnbinnia), Black Valley, at 1,550 feet and lower : *Hart 1882 a*. In the cliffs above Lough Googh, Reeks, and at about 1,600 feet above Glas Lough on the Purple Mountain, 1904 : *R.W.S.*—V. Sparingly at 1,300 feet in the Feany valley and at 700 feet on Gearhane, Brandon : *Hart 1884*. On Brandon cliffs (*Rev. E. F. Linton*) *Journ. of Bot.*, 1886, p. 84.—VI. On Mangerton (*Carroll*) *Phytol.* 1857, p. 76 (as *H. cerinthoides* Backh.). In several places in the Horse's Glen, Mangerton, especially in the cliffs to the south of Lough Erhagh, 1888–1904 ; in the gully above Lough Nageeha and on the cliffs above Lough Glannafreaghau, Paps Mountain, 1889 and 1910 ; rather sparingly on the limestone rocks of Ross Island, Lower Lake, and on the north and east sides of the Middle Lake, Killarney, 1888–1904 : *R.W.S.*

From about 75 feet beside the Killarney lakes (*R.W.S.*), to 2,080 feet on the Reeks (*Hart*).

First record in 1857 : *Carroll, Phytol.*, p. 76 (as *H. cerinthoides*).

Next to *H. Pilosella* this species is the most widely distributed of the Kerry Hawkweeds. It is the one most

generally met with in mountain cliffs, but is very local, seldom occurring in any quantity and apparently quite absent from many suitable stations. It is very rare at low levels, the Killarney lake-shore being the only lowland locality at present known. On the Kerry mountains, *H. anglicum* appears to occur chiefly as the var. CERINTHIFORME Back. in litt.—var. DECIPIENS Syme, to which, gatherings from the Caha Mountains, from near Sneem, Brandon, Mangerton and the Paps Mountain, have been assigned.

H. iricum Fries.

Districts I. II? III. IV. — VI. — — —
Native. Limestone rocks and mountain cliffs. Very rare and local. Peren. June—July.

I. On Turner's Mountain, Kerry side: *Druce 1891*. In some plenty on rocks on the Kerry side of the Glengarriff tunnel at about 1,025 feet, 1890–1904: *R.W.S.*, these two stations are no doubt identical.—I. or II. Kenmare (*Dr. Taylor*) *Babington, Cyb.* 1866 (as *H. pallidum* Fries.).—III. Sparingly on Crowkeylaun Mountain north-east of Lough Currane, 1892: *R.W.S.*—probably this.—IV. On Purple Mountain (*H. N. Ridley*) *Journ. of Bot.* 1884, p. 91. Sparingly by the bridge above Black Lake, Gap of Dunloe, 1901–09: *R.W.S. fide Messrs. Linton*.—VI. Killarney (*Backhouse*) *Monograph Brit. Hier.* 1856 (as *H. pallidum* Fries). On Mangerton (*H. N. Ridley*) *Journ. of Bot.* 1884, p. 91. On Ross Island, Killarney: *Linton 1886* (as *H. pallidum* Fries). Abundant at intervals on the bare limestone rocks round the Lower Lake of Killarney from Ross Island to West Meadow Bay on the Muckcross shore, also on most of the limestone islands in the lake; it occurs also in similar situations on the north and east shores of the Muckcross Lake, 1888–1911: *R.W.S.*

From about 70 feet around the Killarney lakes, to 600 feet in the Gap of Dunloe (*R.W.S.*), and to 1,050 feet on Turner's Mountain (*Druce*). Further examination of the mountain localities recorded above will probably show that this plant ascends to a greater height.

First record in 1856: *Backhouse, Monograph Brit. Hier.* (as *H. pallidum* Fries).

In early summer this fine Hawkweed is quite a feature on several of the bare limestone cliffs and rocks around the Killarney lakes. Owing, however, to its very dry and exposed situation there, it not infrequently withers prematurely during any lengthened spell of hot weather.

[*H. PALLIDUM* Fries and *H. SCHMIDTII* Tausch. The various Kerry records for these plants in *Cyb. 1866, Topog. Bot., &c.*, by Backhouse, Linton, R.W.S., &c., are referred as above to *H. iricum*. The old aggregate *H. pallidum* Fries has been so whittled away in recent years that the name has now quite disappeared from the list of British Hawkweeds. Both the Killarney record of Backhouse for *H. pallidum* and that of the Messrs. Linton from Ross Island, have been transferred to *H. Schmidtii* Tausch. in *Topog. Bot.*, probably in error, as the Rev. W. R. Linton has not repeated these Killarney records under this plant in his *British Hieracia 1905*. As at present known *H. Schmidtii* is restricted in Ireland to the north, not extending further south than Co. Sligo.]

H. argenteum Fries.

District I. — — — — —
Native. Rocky places by rivers and on bridges. Very rare but locally abundant. Peren. June—August.

I. Frequent at intervals along the River Sheen south of Kenmare, from near Ashgrove to above Dromagorteen bridge, and along its tributary the Coomeelan stream for a mile or more; it is especially abundant on rocks in the river below Dromanassig bridge, 1901–1913: *R.W.S. 1904*. For a mile or more along the River Slaheny which flows into the Roughty just below Kilgarvan; it occurs there in abundance on Coolyard bridge and about the neighbouring rocks, and more sparingly on rocks beside the river about a mile above this (*Marshall & R.W.S.*) *R.W.S. 1904*, and in 1913.

First record in 1904: *R.W.S., Irish Nat.*

The above localities represent a wide extension to the previously known range of this very local species in Ireland, Galway on the west coast, Down on the east and Donegal in the north being the only other Irish counties in which it certainly occurs. In Kerry it appears to be confined to the rivers Sheen and Slaheny, the most southerly stations at present known in the British Isles.

H. orimeles W. R. Linton. *H. saxifragum* Fries, var. ORIMELES *F. J. Hanbury*.

Districts I. — III. IV. — VI. — — —
Native. Rocky places by lakes and rivers, on bridges and mountain cliffs. Very rare and local. Peren. June—early August.

I. Rather sparingly on Inchee bridge and on the adjoining rocks, upper Roughty valley, 1900-09.—III. & IV. In some plenty on Bealalaw bridge and on rocks in the neighbourhood on both sides of the Caragh River, Glencar, 1906-13, and—VI. Sparingly on a small island near Cleggan Point and in one or two spots on the Muckcross shore of the Lower Lake, Killarney, 1904 : *R.W.S. 1908*, and in 1912. In some abundance on rocks in Newfoundland bay, Upper Lake, Killarney, and more sparingly on rocks along the east side of the same lake, 1901 : *R.W.S. 1904*, and in 1914. Sparingly on cliffs in the Horse's Glen, Mangerton, to the south of Lough Managh at about 1,400 feet, 1889 (*fide Dr. Elfstrand*) : *R.W.S.*

From 70 feet about the Killarney Lakes, to 1,400 feet on Mangerton (*R.W.S.*).

First found in 1889, and recorded in 1904 : *R.W.S., Irish Nat.*

This is another wide extension to the range of a very local Hawkweed in Ireland, previously known to occur in Donegal only. The Killarney Lake *H. orimeles* bears a close resemblance to *H. argenteum* at first sight, but it may be distinguished from Kerry specimens of the latter, by having small sharp teeth to its stem leaves.

H. [serratifrons Almq.], var. LEPISTOIDES Johan.

District — — — — — VI. — — — — —
Denizen. Shady bank. Very rare and local. Peren.
June—July.

VI. Plentiful on a shady bank in the Sunk Walk, Glenflesk Castle grounds, 1889-1912 ; appears to be spreading there in recent years : *R.W.S.*

First record in 1891 : *R.W.S., Journ. of Bot.* (as *H. murorum* Linn.).

There appears to be some uncertainty as to the proper position of this plant among the numerous segregates of the old *H. murorum* Linn. Mr. F. J. Hanbury some years ago, passed the plant as "*H. murorum* Linn. *pt.*," without comment ; the Rev. E. S. Marshall referred it to the *var. LEPISTOIDES Johan.*, while the Rev. W. R. Linton said that it agreed very closely with Scandinavian *expallidiforme* Dahlst. In the *British Hieracia 1905* by the latter author, the Kerry plant appears definitely under *H. serratifrons* Almq. *var. LEPISTOIDES Johan.*, a form apparently not previously recorded from Ireland.

It is unfortunate that the claims of this plant for ad-

mission to the Kerry flora should rest solely on the unsatisfactory locality given above. It grows there on an old but artificially made bank, quite near to flower beds, and almost beside such undoubted Kerry aliens as *Linaria Cymbalaria*, *Centranthus ruber* and *Lactuca muralis*. Until quite recently, it has shown little or no tendency to spread during the twenty-three years it has been under observation, although many suitable spots occur in the vicinity; during the last few years, however, it appears to be following the example of the *Lactuca* and is now gaining a footing in the adjoining shrubberies. Until a more satisfactory locality is discovered in the county, this Hawkweed must rest under suspicion of having been accidentally introduced with flower or grass seed, or with ornamental shrubs.

H. vulgatum Fries.

District — — — — V. — — — —
Native. Rocky places. Very rare and local. Peren. July—August.

V. Very sparingly in one place on the southern margin of Lough Gal near the south-east end of the Brandon range: *Hart* 1884. On the margin of Lough Duff and sparingly on stony ground on the east side of Brandon (*Hart*): *MS.* additions to *Cyb.* 1866.

At about 350 and 1,450 feet on Brandon (*Hart*).

First record in 1884: *Hart, Proc. R.I.A.*

The claim of *H. vulgatum* to be regarded as a Kerry plant rests solely on Mr. Hart's Brandon records given above. It has not been seen in these localities since and must occur there in very small quantity indeed to have escaped all recent observers.

The plant recorded under this name in *Cyb.* 1898, and *Topog. Bot.* by R.W.S. as gathered on Mangerton, proves on further investigation to belong to *H. orimeles* (*q.v.*).

H. sciaphilum Uechtritz.

District — — — — — VII. — —
Alien or Denizen. Dry rocky garden bed. Very rare indeed. Peren. July—August.

VII. Rather sparingly in a rough rocky flower-bed in Sea-field gardens, near the Spa, Tralee Bay, 1888–1906: *R.W.S.* 1902.

First record in 1902: *R.W.S., Irish Nat.*

The station recorded for this Hawkweed is of very limited extent; a space eight yards by two would include all the

plants seen, which varied in number from about two dozen at the most, to half that quantity when last seen in 1906. Although it has successfully held its ground for at least nineteen years, its continued existence is of a most precarious nature. It grows scattered over a flower-bed amongst *Alyssums* and other cultivated flowers, and is quite at the mercy of any gardener devoid of botanical reverence.

As there is no other locality known for this plant nearer than Cahir, Co. Tipperary, fully eighty miles distant, *H. sciaphilum*, even more than *H. serratifrons*, must rest under the gravest suspicion of having been accidentally introduced into the county, most probably with flower seeds.

H. Scullyi Linton.

District I. — — — — —
Native. Rocky river-banks and on a bridge. Very rare and local. Peren. July—August.

I Sparingly on rocks by the Roughty River, both above and below Morley's Bridge, 1894–1913 (*R.W.S.*) *Cyb. 1898* (as *H. boreale* Fries). Abundant on Drohidnagower bridge about two miles lower down the same river and sparingly on rocks both above and below this bridge, 1894–1913 : *R.W.S.*

First found in 1894, and recorded in *Cyb. 1898* : *R.W.S.*, as *H. boreale* Fries ; described as a new species by the Rev. W. R. Linton in *British Hieracia*, 1905, p. 72.

This Hawkweed, at present believed to be peculiar to Kerry, is a handsome tall-growing species with a leafy stem frequently attaining two feet in height ; it appears to be the only member of the *Alpestris* section as yet recorded among the Irish Hieracia. Except in one spot where it is plentiful, it is but thinly scattered along two miles or so of the Roughty River, and until further investigation has led to its discovery elsewhere it is hoped that collectors will be sparing in their gatherings of this local and easily exterminated plant.

H. sparsifolium Lindeb.

Districts I. — — — — VI. — — —
Native. About rocky rivers and on bridges. Very rare and local. Peren. June—July.

I. Rather sparingly in several spots along the Roughty River, both above and below Morley's Bridge, 1899–1913 : *R.W.S. 1902* (as *H. gothicum* Fries) ; sparingly on rocks in the same river about half a mile south of Sillahertane, upper Roughty valley, 1904 : *R.W.S.*

Var. OLIGODON Linton.—VI. Abundant on Poulgorm bridge and on a rocky island, &c., in the River Clydagh, a little above this bridge, upper Glenflesk valley, 1899–1909 : *R.W.S. 1902* (as *H. rigidum* Hartm.), and *R.W.S. 1904*.

From about 225 to 650 feet beside the Roughty, and to 300–400 feet by the Clydagh River (*R.W.S.*).

First record in 1902 : *R.W.S., Irish Nat.* (as *H. gothicum* Fries and *H. rigidum* Hartm.).

These Clydagh and Roughty River Hawkweeds have proved very troublesome plants to name definitely. At first placed under *H. gothicum*, the Messrs. Linton and Hanbury are agreed that they must both be included under *H. sparsifolium* Lindeb. The Clydagh plant differs from the Roughty in the tothing, colour and width of the leaves, as well as in several other particulars, and the Rev. W. R. Linton in his *British Hieracia 1905*, p. 78, has described it as a new variety under the name *oligodon*. In this same work, the Co. Donegal *H. sparsifolium* has been transferred to *H. stictophyllum* Dahlst., so that, as at present known, *H. sparsifolium* Lindeb. appears to be confined in Ireland to the Kerry localities given above.

[*H. VILLOSUM* Linn. “Shaggy Alpine Hawkweed. Moist rocks on Magilly-cuddy’s reeks, county of Kerry” : *Mackay Rar. 1806*. No member of the *Alpina* group of Hawkweeds is known to occur in Kerry, and only one, indeed, in the whole of Ireland. The only *Hieracium* (other than *H. Pilosella*) as yet seen on the Reeks is *H. anglicum*, so it is reasonable to assume that this was the plant found by Mackay ; he has elsewhere recorded *Leontodon autumnalis* var. *pratensis* (Koch) from this range, which excludes that plant as a possible source of confusion.]

[*H. GOTHICUM* Fries.—I. Roughty River : *R.W.S. 1902*—was *H. sparsifolium* Lindeb., *vide sup.* *H. RIGIDUM* Hartm.—VI. Poulgorm bridge, &c., Clydagh valley : *R.W.S. 1902*—was *H. sparsifolium*, var. *oligodon* Linton, *vide sup.*]

[*H. BOREALE* Fries.—I. Roughty River above Kilgarvan (*R.W.S.*) *Cyb. 1898*—was *H. Scullyi* Linton, *vide sup.*—VI. ‘This species of *Hieracium*, sometimes mistaken for *Hieracium umbellatum* . . . among the rocks near the south side of Ross, Killarney, and near the cultivated part of the island to the left as you enter it, flowering in July” : *Wade Rar. 1804*, and “Ross Island, Killarney ; where it had

previously been observed by Dr. Wade": *Mackay Cat. 1825*—as *H. sabaudum* Smith; locality repeated in *Flor. Hib. 1836*. Not seen there recently; most probably the following species was the plant really found.]

H. umbellatum Linn.

Districts — II. III. IV. — VI. — — —
Native. River banks and lake shores, also, but rarely, on railway banks. Rare, but locally abundant. Peren. August—September.

II. Near Dunkerron: *Backhouse 1856*. Sparingly along the banks of the Owenreagh River near the Black Valley, 1909.—III. At intervals along the Caragh River from Bealalaw bridge to Lickeen, and—IV. Plentiful along the Caragh River and more sparingly along its tributary the Caraghbeg, Glencar, 1890–1913: *R.W.S. 1891*. Rather sparingly on the west bank of the Owenreagh River near the Black Valley, 1909: *R.W.S.*—VI. Galway River, near Killarney (*Babington*) *Cyb. 1866*. In several places round the shores of the Lower Lake, Killarney, and on one or two of its islands, as, abundant by the lake shore in the Home Park north of Ross Island in several spots, along the south side of Ross Island, on the shore of Castlelough bay and near Westmeadow bay, abundant on Rough Island, on the north shore of Muckcross Lake, &c., 1887–1909: *R.W.S. 1888*. In several places along the Flesk River and sparingly along the railway bank about two miles from Killarney, 1892–1914: *R.W.S.*

First record in 1856: *Backhouse, Monog. Brit. Hier.*, but perhaps first found by Wade and recorded in 1804 as *H. boreale*: *Wade Rar.*

Notwithstanding Dr. Wade's rather explicit statement to the contrary, it is most probable that the plant he really found on Ross Island was *H. umbellatum* rather than *H. boreale*. Certainly his statement "flowering in July" creates some doubt, as *H. umbellatum* at Killarney is rarely in flower before August in a normal year. Ross Island, however, has been too well examined for a conspicuous plant like *H. boreale* to have escaped observation for so many years and as neither Wade nor Mackay record *H. umbellatum* from this island where it is locally abundant, it is fairly safe to assume that these Hawkweeds were confused.

The two most widely distributed *Hieracia* in Kerry are *H. umbellatum* and *H. anglicum*, and although the latter is recorded from a greater number of Districts, the former

species probably exceeds in quantity any other two members of this family taken together, *H. Pilosella* of course excepted.

The distribution in Kerry of the *Hieracia* as a whole, shows that they are practically confined to the south of the county. There are no Hawkweeds yet recorded from the two most northerly Divisions, IX. & VIII., while in VII. they are virtually absent, in V. very rare and local, and in VI. quite restricted to its southern half. A line drawn from Tralee to Killarney and thence to Rathmore, marks the northern limit of the Kerry *Hieracia* as at present known, the ubiquitous *H. Pilosella* excepted.

HYPOCHÆRIS Linn.

H. radicata Linn. *Long-rooted Cat's-ear.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Pastures, roadsides, waste ground, sandhills, &c.
Very common. Peren. June—September.

From sea-level, to 2,000 feet on the Reeks (*Druce*).

First record in 1881 : *Barrington, Proc. R.I.A.*

This plant is often found in Kerry with its stems and branches disfigured by irregular swellings, several usually occurring on the same plant. These galls contain the larval chambers—sometimes as many as fifty—of a minute insect, *Aulax hypochæridis* ; plants near the sea appear to be specially liable to attack. An excellent plate of *H. radicata* showing this condition, is given in Connold's *British Vegetable Galls*, p. 108.

[*H. GLABRA* Linn.—VII. Gravelly shore near the upper end of the Bay of Castlemaine : *Mackay Rar. 1806*. This plant is not included in the same author's *Catalogue 1825*, nor in his *Flor. Hib. 1836*, and as it has not been seen there since nor elsewhere in the south of Ireland, it was no doubt a casual or an error of identification.]

LEONTODON Linn.

L. hirtus Linn. *L. nudicaule* Banks & Soland. *Thrinicia hirta* Roth. *Hairy Hawkbit.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Dry pastures, sandhills, banks, waste places, &c.
Common and locally abundant. Peren. May—September.

From sea-level, to 1,350 feet on Connor Hill (*R.W.S.*).

First record in 1884 : *Hart, Proc. R.I.A.*

The variety with the involucre densely hairy (*b. LASIO LÆNUM Druce*), has been gathered near Ballinskelligs, Waterville, &c., and appears to be not infrequent.

L. hispidus Linn. *Apargia hispida* Willd. *Rough Hawkbit.*

Districts — — — — V. VI. — — —
Native. Banks, pastures, &c. Very rare and local. Peren.
June—August.

V. At Castlegregory (*Moore*), and—VI. At Killarney (*Babington*) *Cyb. 1866*. Very sparingly beside the railway track a little over a mile east of Killarney : *R.W.S. 1904*—but not seen there in 1914.

First record in *Cyb. 1866* : *Moore & Babington*.

This appears to be one of the rarest plants in Kerry. It has not been seen recently in Dr. Moore's Castlegregory station, nor, unless the railway track mentioned above is Babington's Killarney locality, has it been seen in either of the *Cybele* stations since 1866. Even in the unsatisfactory 1904 station given above, the plant occurred but very sparingly, and as it grows in abundance about the railway embankment below Mallow, may very well have been carried thence along the line. It has not been seen recently in the adjoining portion of West Cork, but is frequent elsewhere in that county and occurs in both Limerick and Clare.

L. autumnalis Linn. *Apargia autumnalis* Willd.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Pastures, heaths, waste places, mountain cliffs, &c.
Very common. Peren. July—October.

From sea-level, to 3,200 feet on the Reeks (*Hart*).

First record in 1804 : *Wade Rar.*

Var. PRATENSIS (Koch)—*Apargia Taraxaci* Smith. This is a common plant on the Kerry mountains and upland pastures ; it is less frequent elsewhere, but occurs on islands off the coast as well as in the lowlands.

TARAXACUM Hall.

T. officinale Weber. *Leontodon Taraxacum* Linn.
Dandelion.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Pastures, meadows, roadsides, banks, sandhills, waste places, mountain cliffs, &c. Very common. Peren.
March—October.

From sea-level, to 2,470 feet on the Reeks and to 2,650 feet on Brandon (*Hart*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 375, No. 25, "On the top of Glenaw mountain near Lough-Lane." Most probably the *var. PALUSTRE DC.*

Var. ERYTHROSPERMUM (Andrz.)—This appears to be not uncommon on sandhills and dry banks round the Kerry coast.

Var. PALUSTRE DC.—Common on most of the damp mountain cliffs in the county and less frequently at low levels, as in Valencia (*Rev. S. Madden Cyb. 1866*). About Lough Adoon, &c. ; near the base of Connor Hill, &c., 1905 : *R.W.S.*

Var. UDUM (Jord.)—IV. In the Gap of Dunloe, and—V. about Cloghane and Fermoy, Brandon Bay ; Castlegregory, &c. (*Marshall & Shoolbred R.W.S. 1903*). On Connor Hill, 1907 : *R.W.S.*

LACTUCA Linn.

L. muralis Linn. *Wall Lettuce.*

District — — — — — VI. — — — —
Alien. In shady places. Very rare and local. Bien.?

VI. Plentiful over a small area in the pleasure-grounds of Glenflesk Castle about two miles south-east of Killarney, growing on shady banks, path-sides, walls and outhouses, as well as among ornamental shrubs, &c., 1888–1912 ; appears to be spreading there. Several plants on a wall beside the Killarney railway station, 1908, and in 1913—first appearance here, *circa* 1907 : *R.W.S.*

First record in 1890 : *R.W.S., Journ. of Bot.*

There can be but little doubt that the *Lactuca* has been introduced in both these Kerry stations. In the grounds at Glenflesk Castle there grow in the immediate vicinity of the *Lactuca* such plants as *Geranium striatum*, *Centranthus ruber*, *Linaria Cymbalaria*, *Poa nemoralis*, &c., all of them species more or less certainly introduced there. The absence, moreover, of this plant from the many suitable localities the county affords, as well as its great rarity in Ireland generally, all point to the conclusion that it has been accidentally introduced in these grounds, probably with garden seeds or ornamental shrubs, many years ago.

Elsewhere in Ireland, the *Lactuca* occurs sparingly about Cork city as an introduction, and in a few of the eastern counties, where, however, it is doubtfully native in most, if not all, of its stations.

SONCHUS Linn.

S. oleraceus Linn. *Sowthistle.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Cultivated ground, banks, waste places, walls, &c.
Common. Ann. May—October, but plants may be found
in flower all the year round.

From sea-level, to 950 feet on the Reeks (*Hart*).

First record in 1881 : *Barrington, Proc. R.I.A.*

S. asper Hill.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Cultivated ground, waste places, walls, &c.
Common. Ann. May—October, and later.

From sea-level, to 800 feet in the Slaheny valley, to
825 feet in the Roughty valley and to 1,050 feet on Connor
Hill (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

S. arvensis Linn. *Corn Sowthistle.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Cultivated ground, sandy or gravelly sea shores,
also on damp rocks by the sea or lakeside, &c. Common.
Peren. July—September.

From sea-level to 700 feet near the Kenmare-Killarney
road (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

[*TRAGOPOGON PORRIFOLIUM* Linn. *Salsify*.—VIII. “It
grows near Lixnaw on the bank of the river Brick” (*Dr.*
Smith) *Hist. of Kerry*, 1756, p. 383, No. 99. Not there now,
nor has it been seen elsewhere in the county in recent years.]

CAMPANULACEÆ.

LOBELIA Linn.

L. Dortmanna Linn. *Water Lobelia.*

Districts I. II. III. IV. V. VI. VII. — —
Native. In shallow water round lakes, ponds and sluggish
streams. Common and locally abundant, except in the
north where suitable localities are lacking. Peren. July—
August. *Calcifuge* A.

From sea-level, to 1,280 feet in Lough Barrot near

Slievanea, Connor Hill (*Hart*), to 1,450 feet in Lough Ferta, Teeremoyle Mountain, Glenbeigh, and to 1,550 feet in Glas Lough, Purple Mountain (*R.W.S.*), in flower at these heights, no doubt ascends higher in a barren state.

First record in 1804 : *Wade Rar.*, "abundant in the lakes about Killarney."

The northern limit of the *Lobelia* in Kerry is fairly represented by a line joining Tralee with Killorglin and thence through Killarney to Rathmore. Although almost confined to lakes and ponds, it is also found in sluggish streams, such as the Back Channel and portions of the Long Range connecting the Killarney lakes, as well as in the river from Lough Currane, &c. Where the *Lobelia* occurs, it usually grows in great abundance, and when in flower its lilac racemes form an attractive feature along the margins of most of the lakes in the south of the county.

JASIONE Linn.

J. montana Linn. *Sheep's Scabious. Sheep's-bit.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On dry rocky places, heaths, banks, &c. Common and locally abundant. Peren. June—September. *Calcifuge A.*

From sea-level, to 2,550 feet on the Slieve Mish range, to 3,050 feet on the Reeks and to 3,127 feet on the summit of Brandon (*Hart*).

First record in 1844 : *S. P. Woodward, Phytol.*, p. 878.

The prevailing plant in Kerry is the form *major* Mert. & Koch.

WAHLENBERGIA Schrad.

W. hederacea Reichb. *Campanula hederacea* Linn. *Ivy-leaved Bell-flower.*

Districts I. II. — IV. V. VI. — — —
Native. River banks, damp boggy meadows, ditch-sides, and other wet places. Rare but locally abundant. Peren. July—September. *Calcifuge B.*

I. At intervals along the Roughty River, as about Cleady, Kilgarvan and both above and below Morley's Bridge to Inchee bridge, 1889–1913 ; abundant in the Coomeelan valley by the Priestsleap road, from near Drehidoughteragh bridge for about a mile, 1904.—II. Abundant along the Kerry Blackwater, from Blackwater bridge to above old Dromore House, 1889–1909 : *R.W.S. 1890.*—IV. Sparingly

on the shore of the Lower Lake, Killarney, near O'Sullivan's Cascade, 1906 : *Mrs. Jenner*.—V. Along a small stream between Kilelton and Castlegregory Junction, *circa* 1885 : *Miss M'Intosh*, and in 1892 : *R.W.S.* Roadside about half a mile north of Lispolie station on the Dingle railway, 1891 (*Cecil Butler*) *Cyb.* 1898.—VI. On both sides of the River Flesk where it enters the Lower Lake, Killarney, and along nearly the whole course of that river to near the county boundary ; it is especially abundant both above and below Flesk or Brewsterfield bridge, forming dense masses in the damp fields above the bridge and extending to roadside banks, &c. ; it is abundant also, both above and below Loo Bridge on the river flats, extending up the Loo River ; in quantity also between Poulgorm and Clydagh bridges and extending for some distance up this valley and the south slopes of the Paps Mountain ; it also occurs along the Owneykeagh or Headford River and in several damp spots between it and Glenflesk, 1887–1914 : *R.W.S.* 1888, &c.

From sea-level, to 700 feet in the Coomeelan valley and to about 1,000 feet on the Paps Mountain (*R.W.S.*).

First record in 1888 : *R.W.S.*, *Journ. of Bot.*

Unless the pale blue bells of this graceful little plant are in flower, it is easily overlooked and it probably has a wider range in the county than is shown above. The valley of the Flesk, and its continuation the Clydagh, are its headquarters ; elsewhere in Kerry it is at present known only from streams flowing into the Roughty or Kenmare valley and estuary, with two outlying stations in the Dingle peninsula. In Ireland this plant is confined to Kerry and the adjoining portions of Co. Cork in the south-west, and to Wexford, Wicklow and south Dublin in the south-east.

CAMPANULA Linn.

C. rotundifolia Linn. *Hare-bell.*

Districts I. II. III. IV. V. VI. VII. VIII. —
Native. Mountain cliffs, rocky or stony places and on sand-hills. Rather common as a mountain plant, quite local at low levels. Peren. July—September.

I. Rather sparingly about Lauragh bridge, Derreen ; in cliffs on the east side of Knockowen Mountain and at about 1,450 feet on Hungry Hill, 1894.—II. In several places about Ballaghbeama Gap, 1889–1907 ; near Beeown Mountain and Lough Coomcalee north of Sneem, 1901, and on mountains east of the Upper Lake at Waterville. 1892 —

III. On Crowkeylaun Mountain north-east of Waterville ; on the Coomacarrea Mountains at 1,200 feet, Glenbeigh, and about Caragh Lake in several places, 1892–1908 : *R.W.S.*—IV. Rather common on the Reeks, as at 3,120 feet on Caher, 3,100 feet at the head of the Hag's Glen, frequent from 3,000 to 2,000 feet in Coomloughra, and disappears at 1,860 feet above Lough Curramore : *Hart 1882*. On the Mullaghanattin Mountains, Glencar, in several places, 1901–11 ; rather sparingly in the Gap of Dunloe ; on the Purple Mountain and along the Tomies shore of the Lower Lake, Killarney, 1901–09 : *R.W.S.*—V. On Brandon summit : *Hart 1884*. On Brandon cliffs, 1905, and on the Slieve Mish range, 1888.—VI. Frequent around the shores and on the islands of the Killarney Lakes ; in the Horse's Glen, Manger-ton, and on the Paps Mountain, 1888–1912.—VII. In the Gormagh cliffs, Slieve Mish range, 1892 ; about Fenit, Tralee Bay, and frequent round Barrow Harbour, 1902.—VIII. About Rahoneen west of Ardfert and thence to Ballinprior, frequent, 1888–1905 : *R.W.S.*

From sea-level, to 3,120 feet on the Reeks and to 3,127 feet on Brandon summit (*Hart*).

First record in 1882 : *Hart, Proc. R.I.A.*

The Harebell has not yet been noticed on the sandhills at Ballybunnion or Beal Point, nor elsewhere in District IX. On the mountains, it occurs as the form *lancifolia* Mert. & Koch.

VACCINIEÆ.

VACCINIUM Linn.

V. Myrtillus Linn. *Bilberry*.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. On mountains and moors, in woods and shady places. Common, often abundant, in the south, local over the greater portion of the north. A small bush. April—May. *Calcifuge A.*

Rare and local in—VIII. Sparingly along the Shanow River east of Abbeydorney, 1894, &c.—IX. Sparingly on Knockanore Mountain east of Ballybunnion and near Tarbert, 1890 : *R.W.S.*

From sea-level, to the summits of the highest mountains in the county, reaching 3,414 feet on Carrantuohill (*Hart*).

First record in 1881 : *Barrington, Proc. R.I.A.*

Although strongly calcifuge, as its distribution in the county shows, this plant may sometimes be found growing on bare limestone rocks, as on Ross Island, Killarney, &c. Ripe fruit has been gathered by *R.W.S.* within a few feet of the cairn on the summit of Carrantuohill.

V. Oxycoccus Linn. *Oxycoccus palustris* Pers. Cranberry.

Districts — — — IV. — VI. VII. — —
Native. Wet spongy bogs. Very rare and local. A small trailing shrub. June—July. *Calcifuge A.*

IV. Sparingly in a large wet bog at Garrane, upper Glencar, 1889 (*R.W.S.*) *Cyb.* 1898.—VI. Sparingly in Sherehee bog south-east of Killarney: *R.W.S.* 1888. In a bog north of Gueevgullia between Rathmore and Kingwilliamstown (*R. D. O'Brien*), *Praeger, Irish Nat.*, 1898, p. 227.—VII. Sparingly in Boggaghaneal about two miles west of Castleisland: *R.W.S.* 1889.

From about 75 feet near Castleisland (*R.W.S.*), to 750 feet near Gueevgullia (*O'Brien*).

First record in 1888: *R.W.S.*, *Journ. of Bot.*

No doubt this bog-loving plant occurs in other suitable localities in the county, but it appears to be a rapidly diminishing species in Kerry, as elsewhere in Ireland, owing to improved drainage and reclamation of the bogs. Recent searches for it in both the Sherehee and Garrane stations have been unsuccessful.

ERICACEÆ.

ARBUTUS Linn.

A. Unedo Linn. *Strawberry Tree.*

Districts I. II. III. IV. — VI. — — —
Native. In rocky places and boggy woods. Rare but locally abundant. An evergreen tree or large bush. September—October.

I. On an island in Lough Inchiquin south side of Kenmare Bay (*Carroll*) *Cyb.* 1866—still there in 1908, and in some plenty on islands in the Cloonee Lakes, 1895–1912: *R.W.S.*—II. On several islands towards the head of Kenmare River (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 85—not seen there recently and probably long since destroyed for smelting purposes. About Parknasilla, on Garinish Island and about

Darrynane, 1889-1912—perhaps planted. A few trees, several of them nearly dead, growing on the rocky southern side of Lough Currane a little east of Rough peninsula : *R.W.S.* 1890, and in 1904. About the Upper Lake, Killarney, 1906 (the extreme southern end of the lake extends into this District).—III. Sparingly on Green Island and in Reena-skinna bay, Lough Currane, 1892 : *R.W.S.* One tree on the mountains north-east of the lake, Waterville, 1892 (*Colgan*) *Cyb.* 1898.—IV. One old tree by the stream running from Lough Googh into the Black Valley, Reeks : *Hart* 1882. An old tree on the Derrycarna stream a little east of the previous station, 1904 : *R.W.S.*—the only *Arbutus* seen on the Reeks—most probably both these records refer to the same tree. In several places along the portions of the Upper and Lower Killarney Lakes included in this District, 1888-1912 : *R.W.S.*—VI. “ It grows in the Co. of Kerry on the Borders of Loughlen ” [Lough Lane, Killarney] : *Threlkeld* 1726. “ Wild in the rocky mountains which divide this county [Cork] from Kerry, as also in great quantities round the Lake of Killarney ” (*Dr. Smith*) *Hist. of Cork*, 1750. “ This beautiful ever-green is one of the principal ornaments of the rocks and mountains in and about Loughlane ” (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 373. “ Indigenous in that part of Kerry called Killarney ” : *Wade* *Rar.* 1804. “ Very plentiful in most of the wooded mountains about Killarney ; in the woods of Muckross and in several of the islands in the lower and upper lakes ” : *Mackay* *Rar.* 1806. Still plentiful about the Upper Lake and its islands, the Long Range and adjoining mountain slopes, about the Middle Lake, Torc Mountain and Muckross demesne, about the Lower Lake and on most of its islands, 1888-1914—it is especially luxuriant about the narrow portion of the Muckross demesne near Brickeen bridge, where many fine trees occur. One tree on a small island near the south shore of Lough Guitane, five miles south-east of Killarney, and about half a dozen bushes on cliffs above the east side of the same lake, a mile farther east, 1896-1912 : *R.W.S.*

From sea-level, to 525 feet on the Reeks (*Hart & R.W.S.*).

The earliest available reference to the *Arbutus* is found in an *MS.* inquisition of the estates of Rory O'Donohoe, made in or about the year 1584, a translation of which is given in Vol. XXXVI., p. 433, of the *Journ. of Roy. Soc. of Antiquaries* (Dec. 1906), in which the following passage referring to the Killarney woods occurs “ a great part of these woods consists of oak trees, great and small, but there are other woods

and underwoods in the island of Loughleane and elsewhere in the islands, where grow certain trees called Crankany which bear fruit every month throughout the entire year. This fruit is sweet, the size of a small damson and of little value except for its beautiful appearance." It is most interesting to note that this name "Crankany" is a very fair phonetic rendering of the Irish name (*Crouncahinyé*) for the *Arbutus* still in vogue about the Cloonee Lakes, Kenmare Bay, as ascertained there by Mr. Colgan in 1901. The earliest printed reference to this tree, however, does not occur for another fifty years or more—"of late dayes found in the West part of Ireland" (*Parkinson*) *Theatr. Bot.* 1640, pp. 1489-90. In the next two records the tree is referred to Kerry but no definite locality is given ". . . in the county of Kerry (where the *Arbutus* grows) . . .": *Ray's Synopsis, Ed. II.* 1696, p. 442—under *Pinus sylvestris*. And "on the mountains of Keri" (*Lhwyd*) *Phil. Trans.* 1712, XXVII., pp. 524-526. It is only in 1726 that a definite record with locality occurs, "it grows in the Co. of Kerry on the Borders of Loughlen" (*Dr. Molyneux*) *Appendix to Threlkeld* 1726. Subsequent to this date Dr. Smith in 1756, as well as many later writers, constantly refer to the presence of the *Arbutus* about the Killarney lakes.

Of the four Lusitanian species found in the south-west which are peculiar to Ireland, *Arbutus Unedo* is the most restricted in its range, and as a native of the British Isles is now well-nigh confined to the wooded shores of the Killarney Lakes. It occurs there pretty freely over an area roughly six or seven miles north and south, by four east and west, usually as a scattered bush or tree, but in one or two spots, notably about Brickeen Island in the Muckcross demesne, it is quite the dominant feature in the vegetation. It occurs chiefly in association with *Quercus sessiliflora*, Yew, Holly and Birch, to which are not infrequently added the hybrid Oak, Ash, Mountain Ash, Aspen and *Pyrus rupicola*. A few outlying bushes on the eastern side of Lough Guitane and a solitary shrub on the northern slopes of the Reeks near the Gap of Dunloe, mark the extreme east and west limits of its present Killarney range. Outside this area it now occurs but sparingly in a few scattered localities, of which the shores of Lough Currane and the vicinity of Adrigole on Bantry Bay, are the most remote from its headquarters, both of them lying about 30 miles south-west of Killarney, while Glengarriff, a well known locality for this tree, is about 22 miles to the south. Elsewhere in the British Isles, the

Arbutus is known only as a planted tree.* A gap of about three degrees separates its native Irish stations from those in north-west France where it reappears, according to Dr. Avicé in the *Bull. Soc. Bot. France XLIII.*, p. 123 (1896) in lat. 48° 50' in an isolated locality near Paimpol in the Côtes du Nord. It occurs also scattered along the west coast of France from about 46° N. in Charente Inferieure to the Spanish frontier; it is abundant in the Iberian peninsula, as well as all along the Mediterranean shores.

The *Arbutus* appears to have been formerly much more widely distributed in Ireland than it is at present. In Joyce's *Irish Names of Places, 2nd Series*, pp. 338-339, he cites several places, the names of which have been derived from the Irish for *Arbutus*—'caithne' (*cahinyè*), and 'cuinche' (*queenha*)—as Owenacahina, "the river of the *Arbutus*," flowing from Barley Lake to Glengariff; Iskna-gainy, near Waterville, "the stream track of the *Arbutus* trees"; Ardnacaithe near Smerwick, north of Dingle, "the height of the *Arbutus*"; while further north, Quin or Cuinche, a village, and Feaghquin, a townland, both in Clare, and Quinsheen, a small island in Clew Bay, are also called after this tree; in almost all of these localities, however, the *Arbutus* has either long since disappeared, or now exists in but small quantity.

Both Dr. Molyneux in the *Phil. Trans. 1712*, and Dr. Smith in his *Hist. of Kerry 1756*, repeatedly refer to the havoc wrought among the *Arbutus* and other trees by their use as charcoal for the smelting works. On p. 130 of his *Hist.* the latter writer for instance says that this practice "hath been the occasion of a great destruction of this beautiful tree in other parts of the country; and it is said that even here [Killarney] it suffered much from an accidental fire that laid waste a great part of a forest." There were mines and

* The date of its introduction into English gardens is uncertain, but the following extract from *Cal. State Papers, Ireland, A.D. 1568*, p. 240, shows that *Arbutus* plants were being sent from Ireland to England as early as the latter portion of the 16th century—"You shall receive herewith a bundle of trees called the wollaghan tree," [= ubhla caithne, or *Arbutus* apples] "whereof my Lord of Leicester and Mr. Secretary Walsingham are both very desirous to have some, as well for the fruit as the rareness of the manner of bearing, which is after the kind of the orange, to have blossoms and fruit green or ripe all the year long, and the same of a very pleasant taste, and growing nowhere else but in one part of Munster, from whence I have caused them to be transported immediately unto you," &c.; vide Elwes and Henry's *Trees of Gt. Britain and Ireland, Vol. III.*, p. 559.

smelting works both in Muckcross demesne and on Ross Island which, no doubt, helped greatly in the local destruction of this tree, and it certainly does not now occur where it did even in Smith's time, when it covered "at least a fourth part of the ascent of the mountains, the verges of whose bases, like that of Mangerton, and others before mentioned, are washed by the water of this lake." It has also ceased to exist in Dr. Smith's Kenmare station, probably from the same cause, and outside the Killarney district appears to be a diminishing species both in Cork and Kerry.

It is interesting to note that while the Arbutus in its Mediterranean area rarely exceeds a large bush in size, it not infrequently attains the dimensions of a tree in its more moist and equable Killarney station. Thus Mackay in his *Catalogue of Rare Plants* gives the girth of a tree measured by him in 1805 on Rough Island in the Lower Lake as $9\frac{1}{2}$ feet at one foot from the ground, it then branched into four large limbs, the height of the tree from root to extremity being 36 feet. What appears to be Mackay's tree still (1904) exists on Rough Island in much the same state as when he measured it, a hundred years ago, except that one of the four branches is lying broken on the ground. The largest Arbutus trees seen about Killarney, however, grow on Brickeen Island; one measured here by the writer in 1904, was 12 feet 2 inches in girth at two feet from the ground, it then divided into four large branches. Several others in the vicinity were from $8\frac{1}{2}$ to 6 feet in girth, some of these being fine straight trees. Two enormous boles, one on each side of Brickeen bridge, measured over 14 feet in circumference each, but divided a short distance from the ground into 4 and 6 branches respectively.

Although the Arbutus may often be seen growing in cracks among the bare limestone rocks round the Killarney Lakes, it shows no decided soil proclivities in its distribution there, fine trees being found both on the limestone and old red sandstone formations.

[ANDROMEDA POLIFOLIA Linn.—"It grows in several bogs in Iveragh and Dunkerron baronies" (*Dr. Smith's Hist. of Kerry*, 1756, p. 378, No. 54. "Common in bogs . . . in the county of Kerry": *Mackay Rar.* 1806. "Bogs in the county of Kerry": *Mackay Cat.* 1825. This plant may still, possibly, occur in the county, but no recent record is available; it is known in the adjoining counties, Limerick and Clare, but has not been seen in Cork recently. Like

Vaccinium Oxycoccus, it appears to be a decreasing species in Ireland generally, no doubt owing to improved drainage.]

CALLUNA Salisb.

C. vulgaris Salisb. *C. Erica* DC. *Erica vulgaris* Linn.
Heather. Ling.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On moors, mountains and wooded places, &c.
Very common. A small shrub. July—September. *Calcifuge* A.

From sea-level, to the summits of the highest mountains in the county, attaining 3,127 feet on Brandon (*R.W.S.*), and 3,414 feet on the Reeks (*Hart*).

First record in 1884 : *S. P. Woodward, Phytol.*, p. 878.

A prostrate form of this plant has been noticed in several places by the sea ; it is probably the state or var. *Ericæ* Ascherson mentioned by Mr. Druce in the *New Phytol.* Nov. 1911, and is especially abundant, with pure white flowers, near the cliffs on the east side of the entrance to Dingle Harbour. The white-flowered state of this species occurs rather frequently. Although strongly calcifuge, this Heather may be seen growing among the bare limestone rocks about the Killarney Lakes, &c.

ERICA Linn.

E. Tetralix Linn. *Cross-leaved Heath.* *Bell Heather.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On bogs, wet moorlands and other damp places.
Common and locally abundant. A small shrub. July—August. *Calcifuge* A.

From sea-level, to 1,650 feet on the Purple Mountain (*R.W.S.*), and to 1,950 feet on the Reeks (*Hart*).

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 99.

Plants with pale coloured bells are not infrequent ; those with pure white flowers occur, but are very rare, much more so than similar states of *E. cinerea* or *Calluna*.

E. cinerea Linn. *Heather.* *Heath.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On moors, mountains and in rocky places. Very common and usually abundant. A small shrub. June—August. *Calcifuge* A.

From sea-level, to 2,500 feet on Brandon and on the Reeks (*Hart*), and to 2,600 feet on the Purple Mountain, but very stunted there (*R.W.S.*).

First record in 1836 : *Mackay, Flor. Hib.*

This grows to large dimensions in Kerry, plants five feet or more in height having been noted. On the mountains this species frequently simulates *E. Tetralix* in its manner of flowering, the racemes being shortened into a compact little head ; on the lowlands they are often two to three inches in length. Plants with pure white flowers are not uncommon.

[*DABŒCIA POLIFOLIA* D. Don. *Boretta cantabrica* O. Kuntze. *Menziesia polifolia* Juss. *St. Dabeoc's Heath*. " This is a common plant on the mountains, and observed by Mr. Ray to grow also in Air Connaught county of Mayo. Dr. Plot in his history of Staffordshire, p. 379, says that the country people have long used it instead of hops, and that it communicates no ungrateful flavour to their beer " (*Dr. Smith*) *Hist. of Kerry, 1756*, p. 375, No. 31. This conspicuous Heath occurs neither in Kerry nor in Staffordshire, being confined in the British Isles to Galway and Mayo. No doubt Dr. Smith had some other plant in his mind, possibly *Empetrum nigrum*, which grows in all the counties he mentions.]

PYROLA Linn.

P. minor Linn. *Winter-green*.

District — — — IV. — — —
Native. Rocky wood. Very rare and local. Peren. June—July.

IV. Sparingly in a rocky wood near the Caraghbeg River, Glencar valley, 1907 (*Dr. Wood & R.W.S.*) *R.W.S. 1908*.

First record in 1908 : *Irish Nat.*, p. 53.

The discovery of *Pyrola minor* in Kerry gives a wide extension to the known range of this rare plant in Ireland. It occurred in a dense rocky wood, thickly carpeted, by the middle of July, with an undergrowth of ferns and other shade-loving plants and had it not been for a solitary flowering spike protruding through this tangle of vegetation, the *Pyrola* would certainly have remained unnoticed. A close search revealed four or five plants only, two of which were flowering. The neighbourhood, however, furnishes

many similar sites and, no doubt, a visit to these woods in June before the undergrowth assumes such dense proportions would lead to the discovery of this plant elsewhere. Owing to the very limited number of plants seen it has been thought advisable not to specify the locality minutely. Elsewhere in Ireland, this *Pyrola* is on record from six or seven counties only, and in several of these has not been seen for many years; the nearest locality to Kerry is in Tyrrell's Pass, Westmeath, nearly 150 miles to the north-east, where Dr. Moore found it in 1872.

MONOTROPEÆ.

HYPOPITHYS Scop.

H. multiflora Scop. *Monotropa Hypopithys* Linn. Yellow Bird's-nest.

District — — — — — VI. — — —
Native. Shady places. Very rare indeed. Peren. July—August.

VI. In some plenty under Beech trees in Muckcross demesne between the Abbey and Muckcross House, 1890–96 : *R.W.S.* 1891.

First record in 1891 : *R.W.S.*, *Journ. of Bot.*

This plant seems to be very uncertain in its appearances; it was noticed in the locality given above several times between 1890 and 1896, but searches within the last few years have failed to find a trace of it. No doubt it will reappear, but as the *Monotropa* proves to be very rare in Ireland generally, it has been thought better not to specify the locality too closely.

PLUMBAGINEÆ.

STATICE Linn.

S. rariflora Drej. *S. Bahusiensis* Fries. *Limonium humile* Mill. Sea Lavender.

Districts I. II. III. — — — VII. — IX.
Native. Muddy sea shores and salt marshes. Locally abundant. Peren. August—September.

I. Abundant in the Kenmare estuary, and—II. Abundant at intervals from near Kenmare to Cush Point, and on the

Greenane Islands, 1889-1913 : *R.W.S.* Near Darrynane : *Druce 1907*.—III. "Along the sea coast in Iveragh" (*Dr. Smith*) *Hist. of Kerry, 1756*, p. 379—likely enough to occur, but not seen recently in this District.—VII. About Tralee : *Hart 1884*. Along the estuary from near Tralee to Blenner-ville, 1905 ; about Barrow Harbour and again north of this, 1887-1902.—IX. Near Ballylongford and Tarbert : *R.W.S. 1888*, and in 1913 : *Phillips*.

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 379, No. 62—as "*Limonium Ger.*"

S. occidentalis Lloyd. *Limonium binervosum* C. E. Salmon.

District — — — — — VII. — —
Native. On rocks and on an old tower near the sea. Very rare and local. Peren. July—August.

VII. In some plenty on rocks at both sides of the entrance to Barrow Harbour, over a limited area, and on an adjoining old tower on the east side : *R.W.S. 1888*, and in 1902.

First record in 1888 : *R.W.S., Journ. of Bot.*

Dr. Smith's old record for "*Limonium Ger.*" given under *S. rariflora*, might very likely refer to *S. occidentalis* ; no form, however, of these plants has been recently observed in the Iveragh District. *Mackay's* record in *Flor. Hib.* (under *Statice spathulata* *Desf.*), "in many places round the Kerry coast," most probably refers to the former species, for if *S. occidentalis* really occurred as frequently as is there stated it could hardly have escaped all recent observation except in the single locality given above. The distribution of the Sea Lavenders round the coast of this county is strangely erratic, and both species are apparently absent from many suitable localities.

ARMERIA Willd.

A. maritima Willd. *Statice maritima* Mill. Sea Pink. Thrift.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On rocks and banks by the sea, and about tidal inlets ; also, but more rarely, on mountains. Very common near the sea, local on the mountains and very rare at low-levels inland. Peren. April—July.

Mountain localities are—III. Sparingly at 2,180 feet on the summit of Mullaghnarakill, Coomacarrea Mountains, 1906 : *Synnott & R.W.S.*—IV. "On the summits of the

highest of Magillicuddy's reeks": *Mackay Rar.* 1806. On the summit of Carrantuohill, 3,414 feet, and on all the highest points commonly: reaches downwards to 1,900 feet on the cliffs of Caher, and to 1,000 feet on the muddy shore of Curraghmore Lake: *Hart* 1882. Abundant on the south peak of Tomies Mountain, 1904: *R.W.S.*—V. "In flower on the summit of Brandon" (*S. P. Woodward*) *Phytol.* 1844, p. 878. From 1950 to 3,127 feet on the summit of Brandon, 1905: *R.W.S.* At 2,500 feet on Beenoskee: *Hart* 1884. On the summits of Caherconree, 2,713, and of Baurtregaum, 2,796 feet, Slieve Mish range, 1888, and—VI. At 2,200 feet on Stoompa to the east of the Horse's Glen, Mangerton, 1894: *R.W.S.*

First record in 1806: *Mackay Rar.*

The Sea Pink occurs also on Ross Island, Killarney, the only low-level inland locality known in Ireland. It grows there abundantly with *Silene maritima*, from 65 to 80 feet above sea-level, as recorded by More in *Rec. Add.* 1872, and in 1912 was still abundant about the old mines harbour and in two or three other spots on this island. It is worthy of note that *Cerastium semidecandrum* and *C. tetrandrum*, plants elsewhere in Kerry almost confined to the sea coast, occur also on the shores of the Lower Lake within two miles of these Ross Island localities, the four forming a most interesting little group of plants usually maritime in Ireland, there occurring inland at low level.

[*ARMERIA ALPINA* Willd.—A plant gathered on Carrantuohill, Reeks, has been referred to *A. alpina* by Mr. F. W. Williams in his *High Alpine Flora of Britain*, 1908; there seems, however, to be much doubt as to whether this plant really occurs in the British Isles at all: *vide* H. Stuart Thompson in *Journ. of Bot.* 1910, p. 278.]

PRIMULACEÆ.

PRIMULA Linn.

P. vulgaris Huds. *P. acaulis* Jacq. *Primrose*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On banks, in hedgerows, woods and other shady or damp places. Common. Peren. March—May.

From sea-level, to 2,650 feet on Caherconree, Slieve Mish

range (*Hart*), to 2,800 feet on Brandon (*Colgan*), and to the same height on the Reeks (*Druce*).

First record in 1881 : *Barrington, Proc. R.I.A.*

So far, the hybrid, *P. variabilis* Goupil—*P. vulgaris* × *officinalis*—has not been noticed in the county ; no doubt the local distribution of the Cowslip accounts for its rarity or absence.

P. officinalis Jacq. *P. veris* Linn. *Cowslip*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In pastures, meadows and on sandhills. Very rare in the south, rather rare and local in the north. Peren. April—May. *Calcicole A.*

I. Near the River Roughty east of Kenmare, 1898 (*Praeger*) *Topog. Bot.*—II. "On islands near the head of Kenmare river" (*Dr. Smith*) *Hist. of Kerry, 1756*, p. 85. Sparingly on limestone rocks near the sea a mile or more west of Kenmare, 1901 : *R.W.S.*—III. In a field near Reenard Cross south-west of Cahersiveen, 1907 : *Miss Delap*. Sparingly in the Hotel Grounds at Caragh Lake, 1902, and in rough fields near the lake a little to the east of the Hotel, 1908 : *R.W.S.*—IV. Sparingly in a field near Lough Cummernamuck, beside the Caragh Lake-Glencar mountain road, 1911, and for some years previously : *Major Williams*.—V. Sparingly by an old road about a mile and a half south of Gallerus, Smerwick Harbour, 1890 : *R.W.S.*, and sparingly in fields east of Inch, Castlemaine Harbour, 1900 : *Miss Delap*.—VI. Sparingly about Killarney, as on Ross Island, meadows at Southhill, &c., 1901–09.—VII. Rather frequent about Tralee, as about Kerries and Seafeld, Tralee Bay, and about Ballyseedy, &c. : *R.W.S. 1889, &c.* About Castleisland, 1903.—VIII. About Banna, Lerrig, Ballyheige and on limestone rocks about a mile west of Abbeydorney, sparingly near Causeway and between Sheepwalk and Cashen Ferry bridge, and—IX. On Ballybunnion sandhills and sparingly by the roadside near Kilmorna east of Listowel, 1899–1908 : *R.W.S.*

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 85.

LYSIMACHIA Linn.

L. vulgaris Linn. *Yellow Loosestrife*.

Districts — — III. IV. V. VI. — VIII. —
Native. River banks, lake shores and damp shady places. Rare. Peren. July—August.

III. Sparingly on the north side of the Waterville River

between the bridge and the lake, 1894.—IV. In a wet wood by the river below Laune bridge and in the Beaufort House woods, 1902 : *R.W.S.*—V. In a wood at Fermoy, Brandon Bay (*Dean Isaacs*) *R.W.S.* 1891.—VI. Opposite Muckcross gate, Killarney : *Mackay Cat.* 1825—still abundant in a swampy wood in Muckcross demesne, east of the Abbey, and in many localities about the Killarney Lakes, as on Ross Island in two or three places, near the Castletough ruins and on a small island in Ross bay ; abundant by the lake in the Home and West Parks ; beside the Back Channel, Glena ; in the old moat at Ballymalis Castle : *R.W.S.* 1888, &c., and in 1914.—VIII. By the River Brick near Lixnaw : *R.W.S.* 1891, and in 1902.

First record in 1825 : *Mackay Cat.*

A rare plant in Kerry outside the Killarney district.

L. nemorum Linn. *Wood Pimpernel.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Woods, stream-sides and in other moist or shady places. Common. Peren. May—September.

From sea-level, to 2,800 feet on the Reeks (*Druce*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 85.

[*L. NUMMULARIA* Linn.—“ Moneywort, or herb two-pence, common in the marshy ground near Lixnaw. The country people esteem it in decays, coughs, dysenteries and spitting of blood ” (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 380, No. 70. Not seen there recently, and known in Kerry only as an escape or garden outcast.]

GLAUX Linn.

G. maritima Linn. *Sea Milkwort.*

Districts I. II. III. — V. — VII. VIII. IX.
Native. On muddy or gravelly sea shores and on damp ground by the coast. Common and locally abundant.
Peren. May—July.

First record in 1890 : *Stewart, Proc. R.I.A.*

ANAGALLIS Linn.

A. arvensis Linn. *Scarlet Pimpernel.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Cultivated land, on banks, sandhills, roadsides and waste places. Common. Ann ? May—September.

First record in 1890 : *Stewart, Proc. R.I.A.*

Var. CÆRULEA (Schreb.)—VI. One plant in sandy ground near Mahony's Point, Lower Lake, Killarney (*Marshall & R.W.S.*) *R.W.S. 1904*. Two or three large plants in the garden at Lahard House near Beaufort, 1909 : *Mrs. Jenner*. The Mahony's Point plant appears to be quite distinct from those sent by Mrs. Jenner. The latter have the loose procumbent growth of the type, while the former was a slender upright little plant which recalled to the writer his first meeting with this flower on some ruins near Naples, where it was abundant.

A. tenella Linn. *Bog Pimpernel.*

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Bogs, damp peaty pastures, stream-sides, wet hollows in sandhills, &c. Very common. Peren. June—August.

From sea-level, to 1,350 feet near the Priestsleap road and to 1,600 feet on the ridge between Lough Googh and Lough Callee on the Reeks (*R.W.S.*).

First record in 1844 : *S. P. Woodward, Phytol.*, p. 878.

CENTUNCULUS Linn.

C. minimus Linn.

Districts I. II. III. IV. V. VI. VII. — IX. Native. Damp roadsides and sandy places, especially where water is liable to lodge. Rather rare, but usually fairly abundant where it occurs. Ann. June—September. *Calcifuge B.*

I. Rather frequent about Derreen, as on a roadside west of Cappul bridge, roadside west of Croanshagh bridge, &c., 1894 ; abundant on the south side of Kenmare estuary along the road near Iron Rock, 1894–1912 : *R.W.S.* Roadside south of Slaheny bridge, Kilgarvan (*Marshall & R.W.S.*) *R.W.S. 1904*.—II. By a small lake east of Lough Fadda and by the roadside between Tahilla and Rosdohan, Kenmare Bay, 1904 ; sparingly between Caherdaniel and Darrynane, 1903 : *R.W.S.*—III. Roadside between Dooaghs railway station and the sandhills, and about Lough Beg (*Marshall & R.W.S.*) *R.W.S. 1904*. Roadside west of Caragh Lake Hotel, 1896.—IV. Sparingly by roadside in the Owenreagh valley south of the Upper Killarney Lake, 1900 : *R.W.S.*—V. Castlegregory (*Moore*) *Cyb. 1866*. On moorland near Ballydavid Head north-west of Dingle : *Hart 1884*. Road-

side south of Anascaul, 1892 ; roadside by the coast west of Inch and in several places on the Inch sandhills, Dingle Bay, 1894 : *R.W.S.*—VI. At Killarney (*Babington in Herb.*) *Cyb.* 1898.—VII. Roadside near Reen north of Killorglin (*Marshall & R.W.S.*) *R.W.S.* 1904.—IX. Sparingly by a small roadside pond about a mile and a half west of Ballylongford : *R.W.S.* 1903.

From sea-level, to about 800 feet near Lough Barfinnihy, on the Sneem-Killarney road (*R.W.S.*).

First record in *Cyb.* 1866 : *Moore*.

In Kerry the *Centunculus* is often found with *Radiola* and *Microcala* growing along damp roadsides, and like these plants it shows a preference for the neighbourhood of the sea. Owing to its calcifuge tendencies it is almost restricted to the south of the county.

SAMOLUS Linn.

S. Valerandi Linn. *Brook-weed*.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. In moist places. Common near the sea, rare inland. Peren. July—September.

Some inland localities are—I. About the Cloonee Lakes.—IV. & VI. Frequent about the Killarney Lakes and along the River Launc.—VII. Near Castleisland.—VIII. Near Lixnaw, &c. : *R.W.S.*

Ascends to 500 feet near Coomakesta between Waterville and Darrynane, but usually quite lowland (*R.W.S.*).

First record in 1901 : *R.W.S.*, *Topog. Bot.*

OLEACEÆ.

FRAXINUS Linn.

F. excelsior Linn. *Ash*.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Hedges, woods and rocky places. Common. A large tree. April.

From sea-level, to 950 feet in the Horse's Glen, Mangerton, and to 1000 feet on the Paps Mountain (*R.W.S.*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 143.

The Ash very rarely forms a prominent feature in the Kerry vegetation, which may account for its rarity in the county place-names. One of the few instances noted,

occurs in the valley of the Owenreagh river, a stream flowing into the Upper Lake, Killarney, where a wood is still known as Derrynafunsha—the Oakwood of the Ashes.

Many fine examples of this tree may be seen about Killarney. One very large Ash on Innisfallen, unfortunately nearly dead, measured 24 feet in girth at three feet from the ground, and 17 feet 9 inches at seven feet; another on the same island measured in 1904, 15 feet 8 inches at three feet above ground; while a third on the Muckcross road was 17 feet in girth at seven feet from road level. Neither the Oak nor the Beech appears to attain in Kerry such large dimensions as the Ash.

LIGUSTRUM Linn.

L. vulgare Linn. *Privet*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Alien. In hedges and thickets. Rather common. Bush.
June—July.

The Privet occurs nearly throughout the county but is more frequent in the north than the south. It does not appear to extend to the sea cliffs in Kerry as it does in some other Irish counties. Most of its stations are obviously open to suspicion and it has no claim to be considered native in the south-west of Ireland.

[VINCA MAJOR Linn.—*Periwinkle*. This ornamental plant is frequently seen in cottage gardens and about houses in Kerry, and has escaped thence to roadsides and waste places in their neighbourhood. It has been noticed in such situations nearly throughout the county, and although occasionally found in wilder spots, such as on Ross Island and other localities about Killarney, it has no doubt been planted there and cannot be regarded as sufficiently established to be included in the county flora.]

[V. MINOR Linn. This plant is better established than the preceding species and occurs more often, in greater abundance, and in wilder stations, as in several spots in the Muckcross demesne, about the Meeting of the Waters and in other localities about the Killarney Lakes, 1888–1914; it is also found in Ballyseedy demesne east of Tralee and in similar situations elsewhere.]

GENTIANEÆ.

MICROCALA Hoffm. & Link.

M. filiformis Hoffm. & Link. *Cicendia filiformis* Reichb.
Exacum filiforme Smith.

Districts I. II. III. — — VI. — — —

Native. Moist peaty and sandy places, and on damp roadsides. Common and locally abundant in the south, very rare in the centre and apparently absent from the north. Ann. June—September. *Calcifuge* A.

I. Near Glanmore Lake south of Derreen (*T. Wright*) *Cyb.* 1866—still there in 1894, and abundant in many other places about Derreen, Lauragh, &c.; in many places about the Cloonee Lakes and thence west to near the county boundary and east to Dawros, 1894–1908; in damp spots north of Dromoghty Lake, abundant along the south side of the Kenmare estuary between Sheen bridge and Roughty bridge, in many places both on the east and west sides of Sheen River as far as Relagh bridge, frequent also in the Slaheny valley and in the Roughty valley above Morley's Bridge, 1889–1913; near Kenmare between the Workhouse and Sahadeen bridge, 1900: *R.W.S.*—II. Roadside between Kenmare and Killarney (*Moore*) *Cyb.* 1866—still there in several places, 1904, &c., ascending this road to within a mile of the Windy Gap, it also ascends the western side of the Sneem-Killarney road to near Lough Barfinnihy; abundant in many spots along the north side of Kenmare Bay, as on roadsides, &c., about Blackwater bridge, Old Dromore, Lough Fadda, Clashnacree, Sneem, by the old road between Caherdaniel and Staigue Fort; abundant also in bogs and swampy places about Darrynane and in several places on the south side of Lough Currane, 1889–1913: *R.W.S.*—III. Sparingly by an old road near Laragh south of Cahersiveen, 1894: *Synnott & R.W.S.* Abundant on both sides of the River Inny between Inny bridge and the ferry, and in several places along the north side of Ballinskelligs Bay as far as Boolakill: *R.W.S.* 1890, and in 1900. Rossbehy, 1845 (*W. H. Harvey*) *Herb. T.C.D.*, *Cyb.* 1898—still abundant in several places about Rossbehy and Glenbeigh, as north of the railway station and east of Caragh bridge, &c., 1903: *R.W.S.*—VI. Killarney (*L. Ogilby*) *Cyb.* 1866—still in several places about the Lower Lake, Killarney, as in damp hollows, flooded in winter, on both sides of the mouth of the Flesk River and again nearer Ross Castle,

1904 ; in some abundance between the road and the Long Range near Five Mile bridge, 1914 : *R.W.S.* Shore of Lough Guitane south-east of Killarney (*More*) *Journ. of Bot.* 1876, p. 373—still in a few spots by Lough Guitane and very abundant in several places by the roadside north of that lake, 1887–1911 : *R.W.S.*

From sea-level, to 700 feet south of the Windy Gap on the Kenmare-Killarney road and to 800 feet near Lough Barfinnihy on the Killarney-Sneem road (*R.W.S.*).

First found in 1845 by *W. H. Harvey* ; first recorded in *Cyb.* 1866, by *D. Moore, T. Wright & L. Ogilby.*

This interesting and characteristic member of the south Kerry flora occurs in great profusion in its chosen haunts, bare spots in wet peaty places and on damp roadsides ; some hundreds of plants, from one to four inches in height, may often be found crowded together in a space not more than a yard or so in diameter. The tiny petals open only in bright sunshine and with an overcast sky they contract into a bud little larger than a pin's head, and in this state the *Microcala* is easy to overlook. Like *Centunculus*, this plant varies greatly both in quantity and size from year to year ; the same spot which one season produced nothing higher than four or five inches, in another gave plants nearly ten inches high. Without being confined to the neighbourhood of the sea the *Microcala* shows a decided preference for its vicinity. The shores of Kenmare Bay form the headquarters of this plant, while its northern range in the county, as at present known, is defined by a line drawn from the sea near Killorglin, through Killarney and thence due east to the county boundary. Outside its Kerry area, it is known only from the adjoining portion of west Cork, its range in Ireland being but little wider than that of *Saxifraga Geum* and much more restricted than that of *Pinguicula grandiflora*. In Great Britain the *Microcala* is confined to portions of the south and west coasts of England with an outlying station in Norfolk ; on the Continent it has a wide range from Denmark southwards.

CHLORA Linn.

C. perfoliata Linn. *Blackstonia perfoliata* Huds. Yellow-wort.

Districts — — — — V. — — VIII. IX.
Native. Sandhills and sandy ground. Very rare and local.
Ann. June—September. *Calcicole A.*

V. A small patch on the sandhills a little west of Ventry

village : *Rev. W. E. Bentley*—in some abundance in this station extending over an area some hundred yards in length, 1905 : *R.W.S. 1908*, and in 1910 : *Stelfox & Welch*.—VIII. At the west end of Moneycashen sandhills and abundant over two large sandy pastures just south of this, also about Knoppoge between Moneycashen and the Ferry bridge : *R.W.S. 1903*.—IX. Near Ballybunnion : *Stewart 1890*. Sparingly in one or two spots on the sandhills there and in several places about Ahafona, Ahimma and Ballyeagh, south of Ballybunnion : *R.W.S. 1890*, and in 1908. Sparingly on the railway bank two or three miles east of Ballybunnion, 1913 : *Phillips*

First record in 1890 : *Stewart, Proc. R.I.A.*

Although this plant occurs in three out of the nine county divisions, its actual range is very limited, a space three miles square would include all the localities, which adjoin one another, in Districts VIII. and IX. ; these, with the outlying Ventry station, are all that are at present known. Considering the large extent of suitable ground, especially in the north of the county, the great rarity of this plant in Kerry is very surprising ; it is, however, very rare in the adjoining portions of Co. Cork but is frequent in north Limerick and Clare.

ERYTHRÆA Renealm.

E. Centaurium Pers. *Centaurium umbellatum* Gilib.
Centaury.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On sandy ground, banks and dry pastures, especially near the sea. Common. Ann. July—September.

From sea-level, to 700 feet on the Roughty-Ballyvourney road (*R.W.S.*).

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 97.

Very luxuriant in damp hollows amongst the Kerry sandhills ; white-flowered forms are not uncommon especially in the Dingle peninsula.

Var. CAPITATA Koch.—On most of the headlands round the coast (*R.W.S.*) *Cyb. 1898*.

[*E. PULCHELLA* Fries.—VIII. & IX. Abundant on the sandhills at Ballybunnion ; occurs also at Beal Point and on the north side of Tralee Bay : *Stewart 1890*. The plants referred to above prove on re-examination to be only the sandhill state of *E. Centaurium* ; so far, *E. pulchella* is not certainly known to occur in Kerry.]

GENTIANA Linn.

G. campestris Linn.

Districts — — III. IV. V. VI. VII. VIII. IX.
Native. Rough pastures, river banks and damp spots amongst sandhills. Rather rare but locally abundant. Ann. or Bien. July—October.

III. In some plenty on Waterville golf-links near the Inny River, 1912 : *Miss Crosbie*. On rough banks about the north end of Caragh Lake and on the roadside between Caragh and Glenbeigh, 1903.—IV. In two or three spots near Cottoner's River about a mile south of Mount Rivers, 1890 : *R.W.S.*—V. On Inch sandhills, Dingle Bay : *Hart 1884*—still there in abundance on the east side, 1894 : *R.W.S.*, and in 1910 : *Stelfox & Welch*. Sparingly by an old road near Castlegregory Junction, 1891 : *Miss M'Intosh*. Near the sea coast about a mile west of Camp, 1892 : *Dean Isaacs*.—VI. In several places to the east of Killarney, as near the Woodford stream and in two or three spots by the Barraduff road, 1903 ; in rough fields north of Lough Guitane and abundant by the River Flesk about Brewster-field bridge, 1904, &c.—VII. In several places by fields and roadsides west of Killorglin : *R.W.S. 1891*, and in 1903 ; sparingly on the north side of Barrow Harbour, 1899.—VIII. Abundant about Rahoneen west of Ardfert and in several places on Kerry Head : *R.W.S. 1889*, and in 1902. Near Ballingarry on the Shannon estuary, and—IX. On rocks at Ballybunnion : *Stewart 1890*. Abundant about Doon Bay near Ballybunnion, 1900 : *R.W.S.*

First record in 1882 : *Archdeacon Wynne, Journ. Roy. Met. Soc.*, No. 45.

This appears to be the only species of Gentian occurring in Kerry. *G. Amarella*, however, is on record from several localities in the adjoining counties, Cork and Limerick, and is frequent in Clare.

MENYANTHES Linn.

M. trifoliata Linn. *Bog Bean.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In bogs, wet ditches, pools, lake margins and other swampy places. Common. Peren. May—June. *Calci-fuge B.*

From sea-level, to 1,450 feet by Lough Ferta, Teermoyale

Mountain, Glenbeigh (*R.W.S.*), and to the same height on the Reeks (*Hart*).

First record in 1882 : *Hart, Proc. R.I.A.*

[*POLEMONIUM CÆRULEUM* Linn. *Jacob's Ladder*.—VIII. "In a meadow near Castleisland" (*Dr. Smith*) *Hist. of Kerry, 1756*, p. 383, No. 102. No doubt an escape and not seen recently in the county except in cottage gardens.]

BORAGINEÆ.

SYMPHYTUM Linn.

S. officinale Linn. *Comfrey*.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Denizen. Field-sides, by streams, lake shores, &c. Rare in the south, rather common elsewhere. Peren. May—August.

Rare in the following Districts—I. Sparingly near Kenmare east of Cleady, 1903.—II. By the roadside west of Kenmare, 1904, and about Castle Cove, Kenmare Bay, 1907.—III. About Portmagee, Doulus Head, Cahersiveen, and near Rossbehy, 1892–1911.—IV. A weed about Churchtown House, 1904 : *R.W.S.*

The purple-flowered form—*var. PATENS* Sibth., has been noted in many stations especially in the north.

First record in 1882 : *Archdeacon Wynne, Journ. Roy. Met. Soc.*, No. 45.

In most of its stations the Comfrey is only a survival of past cultivation, but it can claim the rank of denizen on river banks and along the shore of the Lower Lake, Killarney, especially near the mouth of the Deenagh River, where the plant appeared to be thoroughly established in 1910. It grew there on the stony shore in great luxuriance and abundance among native shrubs and plants, and were it not for its standing in the rest of the county and in Ireland generally, might pass as an undoubted native in this station. It is worthy of note that the *Symphytum* is still (1911) used about Valencia and Cahersiveen as a stupe in cases of strains, bruises, &c. (*Miss Delap*).

[*BORAGO OFFICINALIS* Linn. *Borage*. This occurs but very rarely in the county, and then only as a garden outcast or an escape. In addition to its well-known use as an

ingredient in various "cups," a novel reason for encouraging its growth in the garden was mentioned by an experienced bee-keeper living in the county who found that the pendent flowers allowed the bees to extract honey and pollen from them even in rainy weather, a consideration of no small importance in so wet a county.]

[*MERTENSIA MARITIMA* Gray.—IX. "On the beach near Beal Castle" (*Dr. Smith's Hist. of Kerry, 1756*, p. 375, No. 27. Not there now and no recent Kerry record known. The plant may very well have occurred there in Dr. Smith's time and since died out. Like *Crambe maritima*, &c., the *Mertensia* appears to be one of several maritime species rapidly decreasing in Ireland.]

MYOSOTIS Linn.

M. cæspitosa Schultz.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. In muddy ditches, margins of lakes, ponds and streams, &c. Common. Peren. June—September.

From sea-level, to 750 feet on Connor Hill (*R.W.S.*).

First record in 1901: *R.W.S., Topog. Bot.*

M. palustris With. *M. scorpioides* Linn. *Forget-me-not*.

Districts I. II. III. — V. VI. VII. VIII. IX. Native. Muddy ditches, stream-sides and other wet places. Rare except in the north where it is rather common. Peren. June—August.

I. Near the Cloonee Lakes, 1901, and by a small stream near Killowen east of Kenmare, 1899.—II. Near Gearameen, Upper Lake, Killarney, 1899.—III. Ditch south of Inny bridge, Waterville, 1892.—V. Beside the old Connor Hill road north-east of Dingle, and—VII. West of Boolteens, Castlemaine Harbour, 1890, and near Arderone south of Currans, 1903.—VIII. Riverside near Finuge west of Listowel and by the canal at Lixnaw, 1902.—IX. Rather frequent to the west of Listowel, &c., and in several places near Cashen Ferry bridge, 1904: *R.W.S.*

First record in 1901: *R.W.S., Topog. Bot.*

This appears to be the rarest of the Kerry aquatic *Forget-me-nots*.

Var. STRIGULOSA (*Reichb.*).—VI. Wet ditches in the Home Park, Killarney: *R.W.S. 1902*.—VII. Near Scrahan north of the Spa, Tralee Bay, 1890: *R.W.S.*

M. repens Don. *Forget-me-not*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Wet ditches, boggy places and by streams, &c.
Common, especially in the south. Peren. June—September.

From sea-level, to 1,325 feet by the Priestsleap road, to 1,350 feet on Mullaghveal Pass west of Connor Hill and to 1,450 feet by Lough Ferta, Teermoyle Mountain, Glenbeigh (*R.W.S.*).

First record in 1882 : *Hart, Proc. R.I.A.*

M. arvensis Lamk. *M. intermedia* Link.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On banks, in woods and cultivated land, &c.
Common. Ann. May—September.

From sea-level, to 1,175 feet on Connor Hill road (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

M. versicolor Reichb.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Dry banks, cultivated ground, waste places, &c.
Rather common. Ann. April—July.

From sea-level, to 1,350 feet on Connor Hill road (*R.W.S.*).

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 25.

Decidedly less common in Kerry than *M. arvensis*, and quite local in the south.

LITHOSPERMUM Linn.

L. officinale Linn. *Gromwell*.

Districts — — — — — VI. — VIII. —
Native. Rocky lake-shore and roadsides. Very rare and local. Peren. June—July. *Calcicole A.*

VI. Plentiful over a very limited area by the shore of the Lower Lake, Killarney, on the north side of Ross bay : *R.W.S. 1902*, and in 1904.—VIII. In some plenty on both sides of the road a little west of Lixnaw bridge, 1907 : *R.W.S. 1908*.

First record 1902 : *R.W.S., Irish Nat.*

This appears to be one of the rarest native lowland plants in Kerry. In its Killarney station it covers an area less than twenty yards square, while at Lixnaw it extends along only a few yards of the roadside

[ECHIUM VULGARE Linn. *Viper's Bugloss*.—VI. One strong plant on the sandy shore of the Lower Lake, Killarney, near the Lake Hotel avenue, 1902; not there in 1904, but another fine plant seen in 1914, a few hundred yards east of its former station: *R.W.S.*—VII. or VIII. On the sandy grounds of Ballyheigh bay not far from Fenit" (*Dr. Smith Hist. of Kerry, 1756*, p. 379, No. 60. Not seen recently in Dr. Smith's station and occurs only as a casual in Kerry.]

CONVOLVULACEÆ.

CALYSTEGIA R. Br.

C. sepium R. Br. *Convolvulus sepium* Linn. *Bindweed*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In hedges, thickets and as a weed of cultivation.
Common. Peren. July—September.

First record in 1882: *Archdeacon Wynne, Journ. Roy. Met. Soc.*, No. 45.

Plants with pink flowers are not infrequent near the sea and have been noticed about Darrynane, Waterville, Cahersiveen, in several places on Valencia Island and about Brandon Bay, &c.

C. Soldanella R. Br. *Convolvulus Soldanella* Linn.

Districts — II. III. — V. — — VIII. —
Native. On sandy sea shores. Rare, but locally abundant.
Peren. June—July.

II. Abundant on Darrynane sandhills, both on the north and south sides of the estuary, and north of Darrynane Harbour, 1889–1904.—III. Sparingly on sandhills on the south side of Inny ferry north of Waterville and more plentifully on the north side, 1889–1900; in some plenty on Dooaghs sandhills, 1913: *R.W.S.*—V. On sandhills between Castlegregory and Kilshannig, and on the west side of Smerwick Harbour and at Ferriter's Cove: *Hart 1884*—still abundant on the sandhills north of Castlegregory for a mile or more, 1907: *R.W.S.*—VIII. On Banna sandhills, 1877: *Rev. W. Raymond*. In great abundance on sandhills at the north side of Tralee Bay: *Stewart 1890*. Abundant at intervals on the long stretch of sandhills from Carrahane to Ballyheige: *R.W.S. 1888*, and in 1905.

First record in 1884: *Hart, Proc. R.I.A.*

CONVOLVULUS Linn.

C. arvensis Linn. *Small Bindweed.*

Districts I. II. III. IV. V. VI. VII. VIII. —
Native. Dry banks, roadsides, cultivated ground, railway tracks and waste places. Rather rare, especially so inland. Peren. June—August.

I. In several places about Kenmare and east of Cleady, 1890–1913.—II. Sparingly near the wells by the River Finnihy, Kenmare, 1908.—III. About Ballinskelligs Castle ; Portmagee estuary ; near Glanleam, Valencia ; near Doulus Head ; sparingly about Cahersiveen and on railway ballast west of Caragh Lake station, 1889–1913.—IV. A garden weed at Churchtown, 1904 : *R.W.S.*—V. About Camp, Tralee Bay : *Hart 1884*. Frequent about Castlegregory and near Dingle, Ventry and Sleah Head, and about Inch, Dingle Bay, 1888–1914.—VI. At intervals along the Killarney railway for some miles and sparingly on the track at Farranfore, 1890–1907.—VII. About Gortatlea railway station, 1906 ; along the shore of Tralee Bay near the Spa in several places : *R.W.S. 1889*, and in 1914.—VIII. Roadside near Ballyheige coast-guard station and by the shore east of Moneycashen, Shannon estuary, 1902, near Ballingarry, Shannon shore, 1908 : *R.W.S.*

First record in 1884 : *Hart, Proc. R.I.A.*

This is quite a local plant in Kerry and while certainly native near the sea, has the appearance only of a colonist in most of its inland stations which are chiefly railway tracks, gardens, &c.

CUSCUTA Linn.

C. Trifolii Bab. *Clover Dodder.*

Districts — — — — V. — — VIII. —
Alien. Sandy pastures near the sea, parasitical on *Lotus corniculatus*, *Galium verum*, &c. Very rare and local. Ann. July—September.

V. Abundant over several acres of sandy pastures between Castlegregory and Trench bridge (*Marshall, Shoolbred & R.W.S.*) *R.W.S. 1903*—still abundant there, 1907.—VIII. Rather sparingly over an acre or two of poor sandy pasture close to the sea between Banna and Ballinprior north-west of Ardfert : *R.W.S. 1888*—still in this locality, now a portion of the Banna golf-links, in 1908, and for several years previously, *Mrs. Goodwin : fide Miss Delap.*

First record in 1888 : *R.W.S., Journ. of Bot.*

This plant appears to be a comparatively recent arrival in its Castlegregory station ; it was not there in 1894 when the locality was closely examined. The neighbourhood is well known throughout the county for its early and excellent crops, and a large amount of seed is annually imported, with which the Cuscuta most probably arrived. It grows here in dense circular red patches, two or three yards in diameter, which were conspicuous from a considerable distance. In the Banna station the plant when first seen was in much smaller quantity and growth, and quite easy to overlook ; cultivation in this locality does not occur to any considerable extent and its presence there is difficult to account for. The two stations lie about ten miles apart on opposite sides of the more open portion of Tralee Bay.

[C. EPITHYMUM Murray.—VIII. Banna, north-west of Ardfer, 1887 (*R.W.S.*) *Topog. Bot.* Now transferred to *C. Trifolii*, vide *supra*.]

SOLANACEÆ.

SOLANUM Linn.

S. Dulcamara Linn. *Bittersweet.*

Districts [I.] II. III. — V. VI. VII. VIII. IX. Native. Stony sea shores, hedges, bushy places and on walls. Rather common by the sea, very rare inland. Peren. June—September.

[I. Planted about cottages near Kilgarvan, 1904, and in the Roughty valley, 1909 : *R.W.S.*].—VI. On a wall between Killarney and Muckcross (*H. N. Ridley*) *Journ. of Bot.* 1884, p. 91—still in one or two spots on walls by the Muckcross road about a mile from Killarney, but very sparingly ; on walls and in a shrubbery near Killarney railway station ; sparingly in a swampy wood in the Home Park, and rather plentiful in a roadside hedge near Aghadoe House west of Killarney, 1889–1914 ; sparingly near Ballymalis Castle near the River Laune, 1890–1902 : *R.W.S.*—VII. In one spot at Milltown and sparingly by the road between Milltown and Castlemaine, 1905 : *Capt. Creaghe-Haward*. Sparingly by a wall in the “Green,” Tralee, 1914 ; sparingly on walls about Fenit House and on houses near the pier, 1887–1914 : *R.W.S.*—IX. On walls about Listowel, 1913 : *Phillips*.

First record (*type*) in 1884 : *H. N. Ridley, Journ. of Bot.*, p. 91.

Var. MARINUM Bab.—II. On the stony shore south of the Waterville River, 1892.—III. Sparingly near Boolakeel south of Ballinskelligs, sparingly about Rossbehy and its Creek, and again east of Black Point : *R.W.S. 1889*, and in 1905.—V. At intervals along the shore from Camp to Castlegregory and near Kilshannig : *Hart 1884*—still in the above stations, and on Derrymore, Tralee Bay, and on Illauntannig, the largest of the Magharee Islands : *R.W.S. 1889*, and in 1905.—VII. Near Fenit coast-guard station (*J. Reilly*) *Barrington in Journ. of Bot. 1877*, p. 178. In many places about Fenit, Barrow, &c., 1889–1914.—VIII. On the strand at Ballyheige, 1902 : *R.W.S.*

First record in 1877 : *Barrington, Journ. of Bot.*

Considering how frequently the maritime form of this plant occurs around the coast of Kerry, the great rarity of the typical plant in the county is hard to account for. Even in the few localities known, it has all the look of an introduced plant, with the possible exception of one or two of its Killarney stations ; it very rarely occurs far removed from houses and is not infrequently seen trained against cottage walls.

S. nigrum Linn. *Black Nightshade.*

Districts I. II. III. IV. — VI. VII. — —
Colonist. Cultivated ground and waste places. Rare and uncertain in appearance. Ann. July—September.

I. Sparingly on the shore about three miles west of Dawros, and—II. Sparingly at Cush Point, Templenoe ; these localities are almost opposite each other on Kenmare Bay : *R.W.S. 1890*. A weed in the gardens at Darrynane, 1894–1902 : *R.W.S.*—III. A garden weed at Ripley House, Caragh Lake, 1907, and for some years previously : *Capt. Creaghe-Haward*.—IV. A garden weed at Churchtown House, 1908, and—VI. Sparingly in the gardens at Lahard House, Beaufort, 1910–12 : *Mrs. Jenner*.—VII. A weed about Sea-field gardens and on waste ground adjoining, Tralee Bay, 1889–1905 : *R.W.S.*

First record in 1890 : *R.W.S., Journ. of Bot.*

Occurs probably throughout the county as a weed of cultivation, but is little better than a casual in most of its stations.

[*LYCIUM BARBARUM* Linn. *L. chinense* Mill.—VII. Road-side near Church Hill, Barrow Harbour, 1905, and about

Fenit village, 1906.—VIII. About walls, &c., at Ballyheige, 1888–1907.—IX. In several places about Ballybunnion and near a ruined cottage at Pymont west of Tarbert, 1902–08 : *R.W.S.* An escape not yet thoroughly established.]

[*ATROPA BELLADONNA* Linn. *Deadly Nightshade*.—II. One fine plant in the garden at Darrynane, 1894, but not seen there since : *R.W.S.*—V. “ I was also informed by a resident surgeon that *Atropa Belladonna* grows near Lord Ventry’s residence [Burnham near Dingle] . . . but did not go in quest of it ” (*Rev. W. M. Hind*) *Phytol.* 1857, p. 97. Occurs only as a casual in Kerry.]

HYOSCYAMUS Linn.

H. niger Linn. *Henbane*.

Districts — — — V. — VII. — —
Denizen ? On sandy sea shores and about ruins, &c. Very rare and uncertain in appearance. Bien. June—August.

V. Amongst the ruins of Kilshannig north of Castlegregory : *Hart* 1884—still there in 1894, but in 1907 the ruins were found closely planted round with potatoes, &c., and no trace of the *Hyoscyamus* could be seen ; abundant on the east shore of Illauntannig, the largest and only inhabited Magharee Island : *R.W.S.* 1889.—VII. Abundant on the shore of Tralee Bay to the west of Fenit pier : *R.W.S.* 1888—still there, but quantity much diminished in 1890 ; one or two plants on a rubbish heap at Ballycarty east of Tralee, 1888 : *R.W.S.*

First record in 1884 : *Hart, Proc. R.I.A*

SCROPHULARINEÆ.

VERBASCUM Linn.

V. Thapsus Linn. *Mullein*.

Districts I. II. III. IV. — VI. VII. VIII. IX.
Alien. About ruins, on walls, dry banks, in quarries and waste places, &c. Rather rare. Bien. July—August.
Calicole B.

I. Quite frequent about Kenmare, especially eastward to Cleady, &c., 1889–1913 ; sparingly near Lauragh south of

Dereen and about Ardea Castle west of Cloonee, 1894.—II. Sparingly at Clashganniv, 1889, and about Castlecove House, a plant or two only, and near Darrynane, 1904.—III. Sparingly near Waterville House, on a wall near Valencia Church and near Cahersiveen, 1904 & 06.—IV. About the gardens of Dunloe Castle and Churchtown House, 1901–09.—VI. Sparingly on the railway bank near Killarney and about a mile to the east, on the Headford road, 1903–11; in the Home Park near the mouth of the Deenagh stream, 1904, in the Muckcross demesne west of the Abbey, 1908; sparingly near Molahiffe, 1903.—VII. Near the river at Killorglin and on walls about Milltown, sparingly, 1904; in a quarry at Clogherbrian and on the adjoining railway, 1892; frequent about Barrow Harbour, 1902; about the castle ruins at Castleisland, 1904.—VIII. About Ardconnell north of Ardfert, 1905–14; on the ruins of Abbeydorney, 1899; on roofs and walls west of Lixnaw bridge and near Causeway, 1907; sparingly at Duagh between Listowel and Abbeyfeale, 1894.—IX. Plentiful on an old church at Kilconly about two miles south of Beal, 1905: *R.W.S.*—still plentiful at Kilconly in 1913: *Phillips*.

First record in 1889: *R.W.S., Journ. of Bot.*

In most of its Kerry stations this plant is an obvious relic of cultivation, and it rarely occurs far from habitations, past or present; it may still often be seen growing in gardens, either as a self-sown weed, or cultivated for its reputed medicinal virtues.

[V. VIRGATUM Stokes.—I. “On the College grounds at West Green-lane near Kenmare, county of Kerry, where it was observed by Mr. George Clarke in Aug. 1804”: *Mackay Rar. 1806*, (as *V. pulverulentum*). About a dozen plants on a wall near Roughty bridge at the head of the Kenmare estuary and on waste ground adjoining: *R.W.S. 1902*—still there, but very sparingly, in 1913.—VI. A few plants on a wall in Killarney near the Post Office 1899–1909: *R.W.S.*

That the Roughty and Mackay's Green-lane records refer to the same plant there can be no reasonable doubt. A place still known as Greenlane lies within a quarter of a mile of where the plant now grows, and there is a specimen, of *V. virgatum* from this locality in Mackay's *Herbarium*. The continuance of this biennial plant in its Kenmare station for a period of at least 110 years is of great interest and almost warrants its inclusion in the Kerry as well as in the Irish floras. It shows, however, little or no tendency

to spread. During the 20 years the locality has been under the writer's observation, the plants noted never exceeded a dozen in number, sometimes falling as low as one or two. The "College grounds" of Mackay's record refers, no doubt, to Trinity College, Dublin, the owner of these lands in his time.]

[V. PULVERULENTUM Vill.—I. At West Green-lane near Kenmare, Aug., 1804 (*George Clarke*) *Mackay Rar.* 1806. *Vide supra.*]

LINARIA Hill.

L. Cymbalaria Mill. *Ivy-leaved Toadflax.*

Districts — II. III. IV. V. VI. VII. VIII. IX. Alien. On old walls, about roadsides, &c. Rather rare but occasionally abundant. Peren. April—October. *Callicole B.*

II. In several places about Sneem, Derryquin and Rossdohan near Parknasilla, 1892–1913.—III. Frequent about Cahersiveen, about Knightstown, Valencia, and near Doulus Head, 1896–1911 : *R.W.S.*—IV. In one spot by the roadside between Glencar and the Oolagh Lakes, 1905: *Capt. Creaghe-Haward.*—V. Sparingly about Dingle, 1905.—VI. Frequent about Killarney; on Ross Island; Muckcross demesne and about the Lower and Middle Lakes, 1888–1910 : *R.W.S.*—VII. Tralee Church gate, 1877 : *Rev. W. Raymond*—still there and in several other places about Tralee, Blennerville, Ballyseedy, &c., and in Finglas glen south of Tralee, 1888–1914.—VIII. Abundant on the ruins of Ardfert Abbey and Abbeydorney, 1899–1907 : *R.W.S.*—IX. Wall at Tarbert, 1913 : *Phillips.*

First record in *Cyb.* 1898 : *R.W.S.*

This plant is now thoroughly established and spreading in the county. The pretty white-flowered form, so common about Cork, occurs but very rarely in Kerry; it has been noticed, however, on a wall near Danesfort, Killarney, in the "Green," Tralee, and sparingly elsewhere in the county.

[*L. VULGARIS* Mill. *Toadflax.*—III. In some plenty on the railway ballast about half a mile west of Caragh Lake station, 1911–13 : *R.W.S.*—IV. One patch in a very wild spot near the road from Caragh to Glencar (*F. Bouskill*) *Irish Nat.* 1903, p. 58.—VI. Very sparingly along the Castlelough bay shore of the Lower Lake, Killarney, a little south

of the Lake Hotel garden wall, 1892 (*R.W.S.*) *Cyb.* 1898, but not seen there recently. An outcast or casual in all its stations. In south-west Ireland generally, it is a very rare plant, although not infrequent about the city of Cork.]

L. minor Desf. *L. viscida* Moench.

Districts — — III. — — VI. VII. VIII. IX. Alien. On railway tracks and adjoining ground, and as a weed in gardens. Rare. Ann. June—September.

III. In some abundance on the railway track at Mountain Stage, 1911: *Mrs. Jenner*. On the ballast both east and west of Caragh Lake station, 1913.—VI. At intervals along the railway from Rathmore to Farranfore: *R.W.S.* 1889, and in 1911; a garden weed at Cloghereen, Muckcross, 1896.—VII. Plentiful on most of the railway tracks in this District, as from Killorglin to Castlemaine, Gortatlea to Castleisland, about Tralee and thence to Fenit, and to Ardfert: *R.W.S.* 1889, and in 1914.—VIII. On the railway at Abbeydorney, and—IX. On the railway at Listowel, 1913: *Phillips*.

First record in 1888: *R.W.S.*, *Journ. of Bot.*

This plant was first observed in Ireland nearly a hundred years ago about Cork City, and has spread thence over the greater portion of the south, nearly always on railway tracks. It is only, however, within the last few years that it has been seen off the Kerry main lines—Rathmore, Killarney, to Tralee. It is now (1914) found over the whole county railway system, except on the recently constructed Kenmare branch, the Dingle Light Railway and the portion of the Valencia branch from Kells to Valencia Ferry.

[*ANTIRRHINUM MAJUS* Linn. *Snapdragon*.—VI. On the walls of Ross Castle and on the shores of Castletlough bay near the Lake Hotel (*Rev. W. M. Hind*) *Phytol.* 1857, p. 25—still on Ross Castle and sparingly on Castletlough ruins, 1914: *R.W.S.* The *Snapdragon* is also found occasionally on old garden walls, as in several places about Killarney, about the “Green,” Tralee, &c., but is never seen remote from habitations.]

SCROPHULARIA Linn.

S. aquatica Linn. *Water Figwort*.

Districts — II. III. — V. VI. VII. VIII. IX. Native. In wet ditches, on damp roadsides and river banks. Rare, except in the extreme north, where it is common. Peren. June—August.

II. Sparingly by the roadside in two or three spots near West Cove and near Kilcrohane Church, 1894-1907.—
 III. Sparingly along the roadside between Knightstown and the Cable station, Valencia, 1906, and sparingly on the roadside between Caragh Lake Hotel and the railway station, 1896-1913 : *R.W.S.*—V. Plentiful at the mouth of a brook at Burnham near Dingle and in several places between Dingle and Ventry : *Hart 1884*—still in these localities, and about a stream at Dunquin north of Slea Head, 1905 : *R.W.S.*—VI. In some plenty on a rather dry piece of waste ground at Southhill, Killarney, an unusual situation, and—
 VII. Sparingly about Milltown, 1909 : *R.W.S.* About Castlemaine, but not common : *Capt. Creaghe-Haward*. In one or two localities about Tralee, as near the race-course at Ballyboden, and by the roadside at Fortlands near Ballymullen, 1905.—VIII. Sparingly by the roadside near Banemore south-east of Lixnaw, 1894 : *R.W.S.*

First record in 1884 : *Hart, Proc. R.I.A.*

S. nodosa Linn. *Knotted Figwort.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
 Native. Wet ditches, banks, waste places, &c. Common.
 Peren. June—September.

First record in 1901 : *R.W.S., Topog. Bot.*

[*S. SCORODONIA* Linn.—V. “On the sea coast near the Magherie islands in Tralee Bay” (*Dr. Smith*) *Hist. of Kerry, 1756*, p. 381, No. 90. It is impossible to determine what plant was really meant by Dr. Smith. *S. Scorodonia* is not known to occur in Ireland, and in Great Britain appears to be confined to Cornwall, Devon, and the Channel Islands.]

MIMULUS Linn.

M. guttatus DC. *M. Langsdorffi* Don.

Districts — II. — — VI. VII. — —
 Alien. Wet margins of lake, about streams and other damp places. Very local. Peren. June—September.

II. Damp roadside near Garinish ferry south of Sneem, 1892.—VI. At intervals for a distance of about two miles along the north shore of the Lower Lake, Killarney, from near the mouth of the River Laune to near the Victoria Hotel, especially abundant on the shore below Lakeview House, whence it probably spread originally : *R.W.S. 1888*,

and in 1914. Two or three plants near the mouth of the Deenagh River in the Home Park, Killarney, 1901-04.—VII. In a ditch on the east side of the River Laune between the county and the railway bridges, Killorglin, 1892 : *R.W.S.*—probably an escape here from an adjacent garden.

First record in 1888 : *R.W.S.*, *Journ. of Bot.*

This ornamental plant, an introduction from North America, is now thoroughly established and spreading about the Lower Lake, Killarney, and will, no doubt, prove a permanent member of the Kerry flora. It is already abundant and fully established in many places in the adjoining county Cork. It is a favourite garden flower in both counties.

SIBTHORPIA Linn.

S. europæa Linn.

Districts — — — — V. — VII. — —
Native. In damp spots about lakes, streams, roadside banks, &c. Locally abundant. Peren. June—September.

V. "Found at the foot of the remarkable road over Connor Hill, on the side next to the bay of Tralee, and in a lane leading from the main road to the first cabin after you leave the hill, in Sept., 1805" : *Mackay Rar. 1806*. "Under a wall by the roadside, north side of Connor Hill, near Dingle" : *Mackay Cat. 1825*. Plentiful from Castlegregory to the base of Brandon Mountain (*Moore*) *Cyb. 1866*. On banks at sea-level near Fermoy west of Castlegregory and sparingly on the south side of Connor Hill, 1888 : *Colgan*. At intervals along the north side of the Dingle peninsula from near Kilelton, west of Derrymore, to Fermoy on Brandon Bay, and thence south-west to Connor Hill for a distance of six or seven miles ; occurring in many places beside the Connor Hill road to near the summit and descending on the south side of the pass for more than a mile and a half ; it also occurs abundantly in many places to the east of this road, as about Lough Adoon, Lough Camclaun, &c. ; it is abundant also near Lough Slat in Glanteenassig and in one or two spots in Glanlough farther east, 1890-1907. On a damp bank by an old road two or three miles east of Anascaul, 1888, but very rare on the south side of the peninsula : *R.W.S.*—VII. On the hill south of Tralee (*E. Newman*) *Charlesworth's Mag. Nat. Hist. 1840*. Along the Curraheen stream near the waterworks, about three miles south-west of Tralee, 1899 : *R.W.S.*—this is most probably Newman's station.

From sea-level (*Colgan*), to 1,700 feet near Connor Hill (*Hart*).

First record in 1806 : *Mackay Bar*.

In Ireland this plant, probably one of the oldest members of its flora, is restricted to Kerry, where it is almost confined to the north side of the Dingle peninsula, extending over a distance of about twenty miles east and west, with a maximum range of six or seven miles north and south. Within this area, it occurs often in great abundance especially about Connor Hill, its western limit. So far, it has not been found west of the Brandon range, nor on the south side of the peninsula, except for about two miles on the Dingle side of the Connor Hill road, with an outlying station east of Anascaul. Elsewhere in the British Isles, it occurs only in the south-west corners of England and Wales, while on the Continent it extends along the west coast of Europe to the Spanish peninsula, the typical distribution of Watson's *Atlantic* Type plants.

DIGITALIS Linn.

D. purpurea Linn. *Foxglove*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Banks, woods, stony hillsides, by streams, &c.
Common. June—August. *Calcifuge A*.

From sea-level, to 2,200 feet on cliffs south of Lough Erhagh, Mangerton (*R.W.S.*), to 2,250 feet on the Reeks (*Hart*), and to 2,900 feet on Brandon (*Praeger*).

First record in 1822 : *G. N. Smith*, "*Killarney*," p. 53.

Although strongly calcifuge, this plant may be seen growing on the almost bare limestone rocks about the Killarney Lakes in several places. Plants with pure white flowers are rare in the county, but have been noted near Kenmare, Boolteens and elsewhere; pale pink flowered plants, however, are not infrequent.

VERONICA Linn.

V. hederæfolia Linn. *Ivy-leaved Speedwell*.

Districts I. II. III. IV. V. VI. VII. VIII. —
Colonist. Cultivated ground especially in gardens, also on roadside banks and waste places. Locally abundant and probably common. Ann. February—August, or later.

First record in 1882 : *Archdeacon Wynne*, *Journ. Roy. Met. Soc.*, No. 45.

V. agrestis Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
 Colonist. Cultivated ground, wall-tops, waste places, &c.
 Common. Ann. February—November.

First record in 1890 : *Stewart, Proc. R.I.A.*

V. polita Fries. *V. didyma* Ten.

Districts — II. III. IV. V. VI. VII. — IX.
 Colonist. Cultivated ground, roadsides, banks and waste
 places. Rather common. Ann. February—November.

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 97.

Most probably occurs throughout the county.

V. Tournefortii C. Gmel. *V. Buxbaumii* Ten. *V. persica* Poiret.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
 Colonist. Cultivated ground, waste places, &c. Rather
 common. Ann. Flowers nearly the whole year round.

First record in *Cyb. 1866* : *Prof. Harvey*.

This plant appears to have been first noticed in Ireland
 about 1845 in the neighbourhood of Cork. Since that date
 it has spread with great rapidity and is now found as a
 weed of cultivation nearly throughout the country.

V. arvensis Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
 Native. Banks, walls, fields, sandhills and waste places.
 Common. Ann. April—September.

From sea-level, to 825 feet on the Killarney-Kenmare
 road (*R.W.S.*), and probably higher.

First record in 1881 : *Barrington, Proc. R.I.A.*

V. serpyllifolia Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
 Native. Damp roadsides, banks, fields, open woods, walls,
 &c. Common. Peren. May—September.

From sea-level, to 1,780 feet on the Reeks (*Hart*), and to
 2,600 feet on Brandon (*Praeger*).

First record in 1844 : *S. P. Woodward, Phytol.*, p. 878.

V. officinalis Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
 Native. Dry banks, rocky places, heaths and open woods
 Common, Peren. June—August.

From sea-level, to 2,400 feet on the Reeks (*Druce*), and to 2,700 feet on Brandon (*R.W.S.*).

First record in 1844 : *S. P. Woodward, Phytol.*, p. 878.

V. Chamædrys Linn. *Germander Speedwell.*

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Hedgerows, woods, banks and pastures, &c. Very common. Peren. April—July.

From sea-level, to 2,500 feet on Brandon (*R.W.S.*), and to 2,550 feet on the Reeks (*Hart*).

First record in 1844 : *S. P. Woodward, Phytol.*, p. 878.

V. montana Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Damp woods and shady places. Rather common but local. Peren. April—June.

First found by *Lhwyd* in 1699 on the mountains of Kerry, and first recorded in 1712 : *Phil. Trans.*, Vol. 27, p. 524—as “*Veronica procumbens maxima*.”

V. scutellata Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Wet boggy places, ditches, &c. Common, except in the north where it is rare. Peren. June—September.

Rare in the following Districts—VIII. Near Kilflyn, 1878 : *Rev. W. Raymond*. Abundant about Lerrig pond north of Ardfert, 1914, and about Lixnaw, 1905.—IX. About Cashen Ferry bridge, 1904 ; near Knockanure north of Kilmorna, 1894 ; about Tarbert, &c., 1905 : *R.W.S.*

From sea-level, to 1,200 feet in the Dingle peninsula (*Hart*), and to 1,250 feet in the upper Roughty valley (*R.W.S.*), and probably higher.

First record in 1882 : *Hart, Proc. R.I.A.*

This species seldom occurs in any great quantity and as it is easily overlooked is often thought to be rarer than it really is.

V. Anagallis Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Ditches, streams, shallow waters, &c. Rather rare in the south, common elsewhere. Peren. June—August.

From sea-level, to 950 feet on the Loo Bridge-Ballyvourney road (*R.W.S.*):

First record in *Cyb.* 1898 : *R.W.S.*

V. Beccabunga Linn. *Brooklime*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Ditches, streams, muddy and watery places.
Very common. Peren. June—September.

From sea-level, to 975 feet in the upper Roughty valley and to 1,020 feet on the Kerry side of the Glengarriff tunnel (*R.W.S.*), and probably higher.

First record in 1901 : *R.W.S.*, *Topog. Bot.*

EUPHRASIA Linn.**E. officinalis** Linn. (Aggregate). *Eyebright*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Pastures, heaths, banks, sandhills, &c. Very common. Ann. June—September.

From sea-level, to 2,550 feet on Baurtregaum, Slieve Mish range (*Hart*), to 2,756 feet on Mangerton summit, to 3,127 feet on Brandon summit and to 3,150 feet on the Reeks (*R.W.S.*).

First record in 1881 : *Barrington*, *Proc. R.I.A.*

The most common form of this variable species in Kerry is *E. brevipila* (Burn. & Grem.) ; it is abundant in the lowlands with flowers often rivalling those of *E. Rostkoviana* in size. Next to this in frequency comes *E. curta* (Wettst.), *var. GLABRESCENS* (Wettst.) especially on the mountains and uplands, where it almost takes the place of *E. brevipila*, and ascends to the summits of most of the Kerry mountains. Next to these comes *E. Rostkoviana* (Hayne) which also appears to be widely distributed in the county. *E. nemorosa* (H. Mart.) has been found in one or two localities, but its distribution needs further investigation; while *E. occidentalis* (Wettst.) has recently been found by Mr. Phillips at Ballybunnion. Neither *E. gracilis* (Fries), nor *E. salisburgensis* (Funck), have as yet been noticed in Kerry; the latter, however, is known to occur abundantly at no great distance in the neighbouring county of Limerick, and it is also abundant in north Clare, so that this calcicole plant may be expected on the limestone rocks in the north of the county.

BARTSIA Linn.**B. Odontites** Huds. *Odontites rubra* Gilib. *Euphrasia Odontites* Linn. *Red Bartsia*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Fields, roadsides, sandhills and waste places.
Common. Ann. July—August.

From sea-level, to 1,800 feet on the Connor Hill road (*Druce*).

First record in 1881 : *Barrington, Proc. R.I.A.*

Both the recognised forms of this plant—*a. verna* (Reichb.) and *b. serotina* (Reichb.) occur commonly in the county, the latter apparently being the more frequent. Both flower late in Kerry as elsewhere in Ireland, although the former has been noticed in full bloom by the beginning of July.

B. viscosa Linn. *Eufragia viscosa* Benth.

Districts I. II. III. IV. V. VI. VII. VIII. —
Native. Poor boggy pastures, damp meadows, roadsides, &c. Common and locally abundant except in the extreme north, where it is either very rare or absent. Ann. July—September.

Rare in the following District—VIII. By the cross-road from Shanow bridge by the old road to Fahavane, Kilflyn, 1877 : *Rev. W. Raymond*. Sparingly near Rahoneen and Banna west of Ardfert, and in a few other localities in that neighbourhood, 1914 ; sparingly about Kerry Head, 1902, and near Ballingarry, Shannon shore, 1908 ; near Abbey-dorney, 1907, and in a bog between Causeway and Ballyheige, 1905 ; sparingly near Ballyduff, 1902 ; Sheepwalk, 1908, and between Moneycashen and Cashen Ferry bridge, 1902 : *R.W.S.*—thins out perceptibly in this District and has not yet been seen in IX.

From sea-level, to 700 feet on Brandon Mountain and the Reeks (*Hart*), to the same height beside the Roughty-Ballyvourney and Kenmare-Killarney roads, and to 925 feet on the Connor Hill road (*R.W.S.*).

First record in 1806 : *Mackay Rar.*—"Plentiful in ditches at Calnafersy ; near Dingle," &c.

There is an interesting parallelism between the Irish distribution of this and another characteristic Kerry species, *Carum verticillatum*. Widely distributed and locally abundant in south and mid Kerry, both of them thin out towards the north of the county, and disappear completely from West Ireland for an interval of fully 150 miles, to reappear in Donegal, where, however, they occur each in only a single station. In Kerry the *Bartsia* is most plentiful in the west, where it may be seen in great profusion in many of the poor peaty fields in the Dingle peninsula and about Glenbeigh, Waterville, Ballinskelligs, &c. ; in these districts whole plots may be seen quite yellow with the plant, which sometimes attains a height of two feet.

PEDICULARIS Linn.

P. palustris Linn. *Lousewort.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Wet boggy places, marshes and damp meadows.
Common. Ann. May—August. *Calcifuge B.*

From sea-level, to 950 feet on the Roughty-Ballyvourney road (*R.W.S.*), and probably higher.

First record in 1844: *S. P. Woodward, Phytol.*, p. 878.

P. sylvatica Linn. *Red Rattle.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Heaths, pastures and turfy places. Common.
Peren.? April—August. *Calcifuge B.*

From sea-level, to 3,000 feet on the Reeks (*Druce*).

First record in 1857: *Rev. W. M. Hind, Phytol.*, p. 26.

Plants with white flowers are not infrequent.

RHINANTHUS Linn.

R. Crista-galli Linn. *Yellow Rattle.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Moist meadows and pastures, banks and sandy ground, &c. Very common. Ann. June—July.

From sea-level, to 2,200 feet on cliffs in the Horse's Glen, Mangerton, to 2,300 feet on Brandon (*R.W.S.*), and to 2,380 feet on the Reeks (*Hart*).

First record in 1844. *S. P. Woodward, Phytol.*, p. 878.

Gatherings of this plant made by the Rev. E. S. Marshall and *R.W.S.*, have been named *var. STENOPHYLLUS* (*Schur.*) by Dr. Sterneck, and the same form has been gathered by Mr. Druce near Dingle; it appears to be the prevailing form in Kerry both of the lowlands and the upland valleys. Another form of this plant gathered on Connor Hill by Mr. Druce, has been referred by him to his *R. monticola*; it occurred there but sparingly—*vide Druce 1907*.

MELAMPYRUM Linn.

M. pratense Linn. *Cow Wheat.*

Districts I. II. III. IV. V. VI. VII. — —
Native. Woods and shady banks, and on mountains.
Locally abundant over the greater portion of the county, but very rare in the Dingle peninsula and not yet seen in the north. Ann. June—August.

From sea-level (*type*), to 2,550 feet on the Slieve Mish

range (*R.W.S.*), to 2,650 feet on Brandon (*Hart*), to 2,756 feet on Mangerton summit (*Mackay & R.W.S.*), and to 3,150 feet on the Reeks (*Hart*)—all *var. MONTANUM Johnst.*

First record in 1825 : *Mackay Cat.*

The prevailing plant in Kerry is a form with deep yellow flowers, very near to, if not identical with, the *var. HIANs Druce.* Many of these lowland plants are very broad-leaved and might almost be referred to the *var. LATIFOLIUM Schueb. & Mart.*, which, however, is usually described as having pale yellow flowers.

Var. MONTANUM Johnst. This is found on all the higher mountains in Kerry. It nowhere occurs in any quantity, usually as scattered plants, and is the only form so far seen in District V.

OROBANCHEÆ.

OROBANCHE Linn.

O. rubra Smith. *Broom-rape (genus).*

District — — — — V. — — — —

Native. Dry banks on the sea coast, parasitical on *Thymus*.

Very rare and local. Peren. June—August.

V. Sparingly on dry banks between the quay at Dunquin and Dunmore Head (*Praeger & Stelfox*) *Irish Nat.* 1912, p. 163.

First record in 1912 : *Praeger & Stelfox, loc. cit.*

This is a welcome addition to the flora of Kerry and marks the southern limit of the Irish distribution of this plant. Except in a few localities in Antrim, Derry, and in the extreme north of Clare, *O. rubra* is a very rare plant in Ireland.

O. Hederæ Duby.

Districts — II. — — — VI. VII. VIII. —

Native. About walls and rocks, and in woods, parasitical on Ivy. Rare, but often abundant where it occurs. Peren. June—August.

II. Sparingly on Dunkerron and Greenane Islands, Kenmare Bay, 1904 ; on rocks in one or two places on the south side of Darrynane estuary and by a small bay opposite Beara Rocks between Caherdaniel and West Cove : *R.W.S.* 1890.—VI. " Upon the ruined Abbey of Muckross, and in several islands in the lake of Killarney near the roots of Ivy, on which plant it seems to grow parasitically, 1804 " :

Mackay Rar. Still abundant on Muckcross Abbey and in many spots in Muckcross demesne; also at intervals round the shores of the Lower Lake, as near the Castletlough and Victoria bays, &c., and on several of its islands, as on Ross, Cow and Lamb Islands; on the shores of the Middle Lake and in several places by the road between Killarney and Muckcross, often very abundant in the above localities, 1887-1914: *R.W.S.* 1888, &c.—VII. Kilfenora and Fenit, Tralee Bay; about Barrow Harbour and to the north-east, sparingly in all these localities, 1888-1902.—VIII. Sparingly about Rahoneen to the west of Ardfert, 1892: *R.W.S.*

First record in 1806: *Mackay Rar.*—as *O. minor*.

Very scarce outside the Killarney district. An albino form has been seen near Muckcross by Druce and *R.W.S.*

O. minor Smith.

District — — — — V. — — — —
 Alien. In meadow and pasture fields, parasitical on leguminous plants. At present very rare and local. Ann. June—August.

V. Abundant in a meadow between Dingle and Ventry and in a grass field a mile south-west of Ventry; sparingly in a pasture by the roadside near Dunbeg about two miles east of Sleah Head (*Praeger & Stelfox*) *Irish Nat.* 1912, p. 163.

First record in 1912: *Praeger & Stelfox*, *loc. cit.*

This parasitical alien is a long expected arrival in Kerry. It was noticed by *R.W.S.* in the neighbouring county Cork more than sixteen years ago and appears to be spreading rapidly over the greater portion of Ireland.

LATHRÆA Linn.

L. Squamaria Linn. *Toothwort.*

District — — — — VI. — — — —
 Native. In woods, parasitical on the roots of Beech, Hazel, &c. Very rare and local. Peren. April—June.

VI. Sparingly on the east side of Ross Island by Sandy bay, Lower Lake, Killarney: *R.W.S.* 1888, and in 1894; plentiful under a large beech tree near the north-west corner of Ross Island, 1901-04: *R.W.S.*

First record in 1888: *R.W.S.*, *Journ. of Bot.*

This plant no doubt occurs more frequently than the localities given above would show. Its early appearance and the rapidity with which it withers after flowering have most probably delayed its detection elsewhere.

LENTIBULARIÆ.

UTRICULARIA Linn.

U. vulgaris Linn. *Bladderwort* (genus).

Districts — II. III. IV. V. VI. VII. VIII. —
Native. Ditches and pools, about lake-margins, &c. Rather rare. Peren. June—August.

II. In several of the small lakes about Clashnacree east of Parknasilla, 1892; near the southern end of the Upper Lake, Killarney, 1901.—III. About the east end of Lough Currane and on the south side of Inny ferry, 1892; ditches near Caragh Lake, 1896: *R.W.S.*—IV. In Curralee Lake on Beenbane, Reeks: *Hart 1884*. Frequent in ditches and small lakes to the east of Caragh Lake, 1890: *R.W.S.*—V. In a bog drain west of Castlegregory: *Hart 1884*. In several places about Castlegregory, Fermoy, Camp and Ventry, 1890–1905.—VI. In several places around the Lower Lake, Killarney, as on the Muckcross shore, in Castlelough bay, in the old mine holes on Ross Island, &c., 1888–1904.—VII. Near Knockaunnaglashy west of Killorglin, 1892: *R.W.S.*—VIII. In a bog near Kilflyn, 1877: *Rev. W. Raymond*. Near the River Brick at Lixnaw and in a dyke near the Cashen River, Ballyduff, 1899: *R.W.S.*

From sea-level, to 800 feet on the Reeks (*Hart*).

First record in 1882: *Hart, Proc. R.I.A.*

This species rarely flowers in Kerry and it is probable that several of the localities recorded above, where the flowerless plant alone was gathered, should be referred to the following. In the absence of flowers, the relative size of the bladders, &c., proves a very unsatisfactory distinctive character.

U. neglecta Lehm. *U. major* Schmidel.

Districts I. — — — VI. VII. VIII. —
Native. Ditches, ponds and other watery places. Rare. Peren. July—August.

I. Sparingly in a ditch near the railway at Kilgarvan a little east of the station, 1894.—VI. Sparingly in pools by the shore on the north side of the Lower Lake, Killarney: *R.W.S. 1891*.—VII. Abundant in Ballycarty pond east of Tralee: *R.W.S. 1888*.—VIII. In some plenty in several roadside ditches between Lixnaw and Kilbinane, 1904; in a bog hole between Ballyheige and Causeway, 1905, and in ditches near the Ferrybridge, Cashen River, 1908: *R.W.S.*

First found, and recorded for Ireland in 1888 : *R.W.S.*, *Journ. of Bot.*, p. 77.

All the above records are founded on flowering plants. This Bladderwort will probably be found to be as widely distributed in the county as *U. vulgaris*.

U. minor Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. In bog holes, drains and in boggy roadside ditches. Rather common and locally abundant. Peren. July—September. *Calcifuge A.*

From sea-level, to 1,450 feet in Lough Fertá, Teermoyle Mountain, Glenbeigh (*Miss Delap*)—not often seen so high.

First record in 1806 : *Mackay Rar.*

This is by far the most common of the genus in Kerry. It flowers abundantly every season and often forms large tangled masses of delicate green threads floating on the surface of bog pools.

U. Bremii Heer.

District — — — IV. — — — —
Native. Boggy ditch. Very rare and local ? Peren. June—August.

IV. In a bog ditch in the Gap of Dunloe, 1875 (*G. C. Druce*) *Irish Nat.* 1910, p. 237 (*vide Prof. Glück*).

First record in 1910 : *Druce, loc. cit.*

This *Utricularia* has been recorded from Scotland on several occasions but as the specimens found were without flowers the identification could not be made with certainty. Prof. Glück, however, when examining Mr. Druce's aquatic plants detected among his Bladderworts flowering specimens of *U. Bremii* gathered in Kerry and *U. ochroleuca* from Galway, the first time these plants have been recognised as flowering in the British Isles. Their distribution in Ireland is at present quite unknown, but, no doubt, both plants will be found in other localities now that a description of their flowers is more readily available.

U. intermedia Hayne.

Districts I. II. III. IV. V. VI. — VIII. —
Native. Bog holes, lakes and ponds, sometimes floating, more often creeping along their muddy margins, also in boggy streams and ditches. Rather rare but locally abundant over the greater portion of the county, very rare in the north. Peren. August. *Calcifuge A.*

I. About the Cloonee Lakes : *Hart 1885*. In a roadside ditch south of the Suspension bridge, Kenmare, 1900.—II. In several places about Lough Beg south of the Upper Lake, Killarney, 1901 ; about Clashnacree near Parknasilla, 1892, and in several localities about Sneem, 1901 ; on the south side of Lough Currane and in streams, &c., near the upper Lake there, 1904.—III. In several places about the north side of Lough Currane, 1892 ; frequent in the Glencar valley especially round Drombrane Lake and about Lough Breesta, 1889–1911 : *R.W.S.* In bog holes near Lough Caragh (*Dr. Battersby Rec. Add. 1872*).—IV. Abundant in several places in Glencar valley south of the Hotel, 1899 ; in two or three spots in the Black Valley near the Upper Killarney Lake and to the west of the Gap of Dunloe, 1901 : *R.W.S.*—V. Near Dingle* (*Rev. W. M. Hind Phytol. 1857*, p. 97. Abundant on the north side of Lough Gal and about Lough Camclaun near Connor Hill, 1894–1907 : *R.W.S.* VI. In bog holes near Muckcross, 1805 : *Mackay Cat.* At Killarney (*Babington Cyb. 1866*. In bog drains opening into the Back Channel near Glena, on Rough Island in the Lower Lake and in a small bay near the east end of the Muckcross Lake, Killarney : *R.W.S. 1888*, and in 1901.—VIII. Abundant in bog holes west of Dredhidaclare bridge between Ballyheige and Causeway, 1905 : *R.W.S.*

From sea-level, to 780 feet near Lough Camclaun, Connor Hill (*R.W.S.*)

First record in 1825 : *Mackay Cat.*

This Bladderwort occurs more frequently in the county than any other member of this genus except *U. minor*. Owing to its small size and creeping habit it is easy to overlook, more especially as it often grows on the floating margins of swampy pools, usually difficult to examine. Although long sought for, flowering plants of this species have not yet been seen. In several of its Glencar localities where it creeps in great abundance over half submerged peaty mud fully exposed to the sunlight, it appears to be most favourably situated for the production of flowers.

PINGUICULA Linn.

P. vulgaris Linn. *Butterwort.*

Districts	I.	II.	III.	IV.	V.	VI.	—	—	—
Native.	Boggy and swampy places, and on damp rocks. Rather rare in the uplands, very rare in the lowlands.								
Peren.	June—July and sometimes August. <i>Calcifuge A.</i>								

I. On rocks by the Glengarriff road on the Kenmare side of the tunnel at 800 feet and sparingly beside the Roughty-Ballyvourney road at 700 feet, 1903.—II. By the Kenmare-Killarney road on the south side of the Windy Gap, 1903; above Lough Coomroanigh east of Waterville at 1,300 feet: *R.W.S.* 1890.—III. Valencia (*Rev. S. Madden*) *Cyb.* 1866. On Crowkeylaun Mountain east of Waterville, on Knocknadobar north-east of Cahersiveen and on Coomacarrea Mountain south of Glenbeigh, from 1,800 to 2,100 feet, 1892: *Colgan & R.W.S.*—IV. On the Coomloughra cliffs at 2,100 feet and in the Hag's Glen, Reeks, at 1,750 feet: *Hart* 1882. In several places in the Gap of Dunloe and at 2,200 feet on the Reeks, 1904: *R.W.S.*—V. On Brandon Mountain (*Rev. W. M. Hind*) *Phytol.* 1857, p. 99. On Brandon from 2,100 to 2,450 feet: *Hart* 1884—descends on Brandon to below 200 feet, 1907: *R.W.S.* On Connor Hill at 700 feet and in several places about Cloghane, Fermoyale and Castlegregory at sea-level (*Marshall, Shoolbred & R.W.S.*) *R.W.S.* 1903, &c. On the mountains south of Castlegregory, 1907: *R.W.S.*—VI. In the Horse's Glen, Mangerton at 1,800 feet (*More*) *Rec. Add.* 1872. In several places on Mangerton and in glens above Lough Guitane, 1904–12: *R.W.S.*

From sea-level, to 2,200 feet on the Reeks (*R.W.S.*); and to 2,450 feet on Brandon (*Hart*).

First record in 1857: *Rev. W. M. Hind, Phytol.*, p. 99.

A rare lowland plant in Kerry where its place is taken by the nearly allied *P. grandiflora*. It is probably scattered more frequently over the Kerry mountains than the above records would show, but unless the plants are in flower it is unsafe to discriminate between *P. vulgaris* and the following species, neither the capsules nor the size of the leaves giving a reliable distinction. Flowerless plants which might have belonged to either species were seen on the summit of Mangerton at 2,756 feet and elsewhere.

P. grandiflora Lam. *Bog Violet.* *Butterwort.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Bogs, marshy ground, moist rocky places on mountains, &c. Common, often abundant, over the greater portion of the county, very rare in the extreme north. Peren. May, to the first week of July. *Calcifuge A.*

Rare or local in the following Districts—VII. In a field near Blennerville, Tralee (*J. Reilly*) *Barrington in Journ. of Bot.* 1877, p. 178. Common on the north slopes of the Slieve Mish range. In Clogherbrien bog north-west of Tralee;

1892, abundant in the upper part of Glanageenty glen north of Gortatlea, 1890; in bogs about Castleisland, 1888: *R.W.S.* A fine patch by the Owveg River, Kilmaniheen West about four miles south of Abbeyfeale, 1903, and—VIII. On a boggy mountain-top near Rylane west of Abbeyfeale, 1902: *Rev. W. E. Bentley*. [Sparingly in a wet bog near Lixnaw, 1890—leaves only: *R.W.S.*]—IX. About the edge of a wet bog a mile and a half on the Listowel side of Tarbert, 1904: *Rev. W. E. Bentley*. [Sparingly in a small glen by the Shannon estuary south of Beale Point, 1889—leaves only: *R.W.S.*]

From sea-level, to 2,200 feet on the Slieve Mish range (*Colgan*), to 2,350 feet on Mangerton (*R.W.S.*), and to 2,800 feet on the Reeks (*Druce*).

First record in 1756: *Dr. Smith, Hist. of Kerry*, p. 85—"Towards the head of the Kenmare river, there are several islands . . . they abound also with . . . butterwort, ulmaria," &c.

Like the *Arbutus* and *Saxifraga Geum*—two other Kerry members of the Cantabrian group—*Pinguicula grandiflora* has a very restricted range. All three species are confined in Ireland to Kerry and Cork, and are not known to occur as natives elsewhere in the British Isles. On the Continent, the *Pinguicula* ranges through northern Spain and Portugal, the Pyrenees, the Alps of France and Switzerland to north lat. $47\frac{1}{2}^{\circ}$, a gap of four degrees separating its Irish stations from the nearest Continental locality. There appears, however, to be nothing in the habit of this plant to prevent it flourishing outside its somewhat restricted Irish range. A colony of about six roots planted in 1879 on the east side of Blackstairs Mountain, Co. Wexford, had greatly increased by 1896, *vide Irish Nat.* 1896, p. 212. Another colony introduced into a bog near Penzance has spread until the plant is now abundant there; very possibly, the recently discovered Clare locality—*vide Irish Nat.* 1903, p. 269—owes its origin to the same well-meant but misleading endeavour to extend the range of this beautiful plant.

Opinions appear to be very divided as to the claims of *Pinguicula grandiflora* to full specific rank, and although most authorities treat it as a species, forms connecting it with *P. vulgaris* certainly occur and have been gathered in various parts of the county by Marshall, Shoolbred, Druce, *R.W.S.* and others; it is quite possible, however, that they may be hybrids. These intermediate forms or hybrids are more frequently met with in the Alps and Pyrenees than

in south-west Ireland where *P. vulgaris* is rare, and *P. grandiflora* assumes its most extreme form.

Colour varieties are very rarely met with in this plant; forms with pure white flowers are, however, occasionally seen and have been gathered in the Gap of Dunloe by *Lady Godfrey* and on the east side of Caragh Lake by *Capt. Creaghe-Harward*, while pale lilac forms have been sent to the writer by Mrs. Jenner from the Gap of Dunloe and are recorded in the *Irish Nat.* 1906, p. 154, as occurring also on the shores of the Lower Lake, Killarney.

The flowering period is rarely extended beyond the first week in July except in some of its more sheltered mountain localities such as Connor Hill, &c., where it may be seen in good flower sometimes until the middle of that month. Isolated but healthy lowland plants have been found in full bloom, however, as late as the 8th, 11th and 22nd of August. Owing to its early flowering, few visitors to the south-west of Ireland have the opportunity of seeing this lovely plant at its best. No one who has seen its groups of deep violet flowers—sometimes over an inch in diameter—on the black dripping rocks of Connor Hill, or on the boggy roadsides between Killarney and Kenmare, will deny its claim to be considered the most beautiful member of the Irish flora.

This plant is considered by Kerry peasants in the neighbourhood of Kenmare, the Slaheny valley, &c., to be fatal to sheep if eaten by them.

P. lusitanica Linn. *Pale Butterwort.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In bogs, by mountain streams, damp roadsides and other wet places. Common over the greater portion of the county although seldom in any quantity, rare in the north. Peren. June—September. *Calcifuge A.*

Rare in the following Districts—VIII. Near Ballyheige, 1882: *Rev. W. Raymond*. In two or three spots about Kerry Head, 1902; frequent in bogs north of Lixnaw, 1905.—IX. Sparingly in several bogs east of Cashen Ferry bridge, 1894; in Shronowen bog between Listowel and Ballylongford, 1902; in a bog south of the Galey River on the Listowel-Tarbert road, 1904: *R.W.S.*

From sea-level, to 1,200 feet on Turner's Mountain near the Glengarriff tunnel (*R.W.S.*), to 1,300 feet on Connor Hill (*Druce*), to 1,450 feet east of Lough Callee, Reeks, and to 1,550 feet on the Coomacarrea Mountains, Glenbeigh (*R.W.S.*).

First record in 1806: *Mackay Rar.*

VERBENACEÆ.

VERBENA Linn.

V. officinalis Linn. *Vervain*.

Districts I. II. III. — V. VI. VII. VIII. —
 Alien. About roadsides, waste places and on banks. Rare.
 Peren. July—September. *Calcicole B.*

I. In two or three spots about Kenmare, as by the harbour, by the roadside near Riversdale, 1901, and near the estuary to the east of the Hotel, 1902, &c.—II. Sparingly north of Kenmare, 1904 : *R.W.S.*—III. Sparingly by roadside near Deelis bridge east of Cahersiveen, 1892 : *G. L. Bruce*. Sparingly at Ballinskelligs, 1889 : *R.W.S.*—V. Near Castlegregory : *Hart 1884*. In one or two spots about Castlegregory, 1894, and on the south-east side of Sleah Head west of Dingle, 1905 : *R.W.S.*—VI. Very abundant by waysides near Killarney : *Mackay Cat. 1825, addenda*. Not abundant about Killarney now, but occurs on Ross Island and about Cloghereen, 1904 ; on roadside near Fahagh school house and near Ballyvirrane south of Milltown, 1901 ; about Molahiffe, 1903.—VII. Frequent about Tralee and Blennerhille ; at the Kerries, Kilfenora and Fenit, Tralee Bay : *R.W.S. 1889*, and in 1914 ; roadside east of Barrow Harbour, 1902 : *R.W.S.*—VIII. Roadside at Ardfert : *Stewart 1890*. Sparingly in several stations about Ardfert, 1914 : *R.W.S.*

First record in 1825 : *Mackay Cat.*

More abundant about Tralee than elsewhere, but appears to be decreasing in the county.

LABIATÆ.

MENTHA Linn.

M. rotundifolia Huds. *Mint (genus)*.

Districts I. II. — IV. — VI. VII. — IX.
 Alien. By rivers, roadsides and in waste places. Rare and local. Peren. August—September.

I. In some plenty about Caher stream beside the Kenmare to Kilgarvan road : *R.W.S. 1891*, and in 1913.—II. By the River Finnihy north of Kenmare, 1894.—IV. By an old road in the wood north of the Glencar Hotel, 1889.—VI. On the north shore of the Lower Lake, Killarney, below Lakeview :

R.W.S. 1891. Sparingly by the Flesk River below Coltsmann's bridge, Killarney, 1901; near Garrie's bridge, Glenflesk, 1894.—VII. Abundant by a small stream at Fybagh bridge, Castlemaine Harbour: *R.W.S.* 1891, and in 1904.—IX. Near a cottage east of Ballybunnion, 1902, and in one or two spots near the railway between Lisselton and Ballybunnion, 1908: *R.W.S.*

First record in 1891: *R.W.S.*, *Journ. of Bot.*

Seen only in suspicious stations, and no doubt a relic of or escape from former cultivation.

[*M. SYLVESTRIS* Linn. *M. longifolia* Huds. *Horse Mint*.—II. In some plenty in one or two spots about the Coomna-horna stream below Caherdaniel, Darrynane: *R.W.S.* 1890, and in 1904.—III. Sparingly near the old Abbey at Ballinskelligs, 1911: *Miss Delap.* At Valencia (*Rev. S. Madden*) *Cyb.* 1866—but not seen there recently. In its Darrynane locality this plant grows in a small rocky stream below a village from which it has most probably been derived.]

M. piperita Linn. *Peppermint.*

Districts I. II. — — V. — — VIII. IX.
Alien. By streams and roadsides. Very rare. Peren.
August—September.

I. In several places about Kenmare, as by a roadside ditch near the Workhouse, near Killowen and by a neighbouring stream, sparingly by a roadside south of the Suspension Bridge: *R.W.S.* 1891, and in 1903.—II. With *Mentha sylvestris* beside a stream below Caherdaniel, 1889–1904: *R.W.S.*—V. Roadside about a mile north-east of Dingle: *Druce* 1907.—VIII. Sparingly by a roadside near Ardfer, 1914, and near cottages between Ballymacquin and Causeway, 1905.—IX. About Ballybunnion, 1902, and by a roadside north of Tarbert, 1904: *R.W.S.*

First record in 1891: *R.W.S.*, *Journ. of Bot.*

An escape, but appears quite established in the county.

M. hirsuta Huds. *M. aquatica* Linn. *Water Mint.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. By streams and ditches, in marshes and other wet places. Very common Peren. August—September.

From sea-level, to 850 feet by the old Killarney-Kenmare road (*R.W.S.*), and probably higher.

First record in 1804. *Wade Rar.*

M. sativa Linn.—*M. hirsuta* × *arvensis*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Damp meadows, river banks, ditches and other wet places. Common. Peren. July—September.

First record in 1804: *Wade Rar.*—as *M. arvensis* var. *d. Fl. Brit.* = *M. gentilis* Smith.

M. Malinvaud in *Comp. Rend. Congrès des Soc. savantes 1898—Sciences*, and M. Lloyd in *Flore de l'Ouest*, 5th Ed. p. 265, have shown that *M. sativa* may almost certainly be regarded as a natural hybrid between *M. hirsuta* and *arvensis*; this would fully account for the great variability shown by the plant in Kerry as elsewhere. Numerous forms appear to occur in the county, amongst those gathered being var. *PALUDOSA* (Sole) and var. *SUBGLABRA* (Baker) near the Killarney Lakes, &c. M. Malinvaud also draws attention (*loc. cit.*) to the aggressive vigour of the hybrid Mints shown in the free production of layers and suckers, by means of which they spread rapidly. This is well illustrated in Kerry by the wide distribution of *M. sativa*, whereas *M. arvensis*, one of its reputed parents, is quite a local plant over a great portion of the county.

M. arvensis Linn. *Corn Mint.*

Districts I. — — IV. V. VI. VII. VIII. IX.
Colonist or native. Roadsides, fields and waste places. Local in the south, rather common elsewhere. Peren. July—September.

Rare in the following Districts—I. In several places about Kenmare, 1908, and on roadsides near Cleady east of Kenmare, 1904.—IV. A weed about Churchtown, 1909: *R.W.S.* About Beaufort, 1911: *Mrs. Jenner*.

From sea-level to 550 feet on roadside north of Rathmore (*R.W.S.*).

First record in 1901: *R.W.S.*, *Topog. Bot.*

Probably more frequent in the south of the county than the above records would show.

M. Pulegium Linn. *Penny-royal.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Roadsides, damp waste places, lake- and pond-margins and other marshy spots. Rare in the extreme south and north, rather common and locally abundant elsewhere. Peren. August—September.

I. By the roadside near Lehid wood north of Derreen, 1894, and on the shore of the Middle Cloonee Lake, 1908.—

II. By the Finnihy River just north of Kenmare near the town wells: *R.W.S.* 1890, and in 1908.—III. Sparingly near Ballinskelligs, 1900, in many spots about Glenbeigh, near Dooaghs and east of Caragh bridge: *R.W.S.* 1889, &c., and in 1906.—IV. Roadside near Coolmagort south of Beaufort and in one or two spots between Meanus and Owengarry bridge, 1909: *R.W.S.*—V. Abundant at Murriagh near Ballynagall and roadside near Ballydavid, Dingle peninsula: *Hart* 1884. Near Smerwick Bay west of Dingle; sparingly west of Aughils, Castlemaine Harbour; near Minard west of Anascaul, and west of Derrymore bridge, Tralee Bay, 1890–1914: *R.W.S.*—VI. “In Earl Kenmare’s park, near Killarney”: *Wade Rar.* 1804—still there in 1901, and abundant around the swampy pond at Sherehee south-east of Killarney: *R.W.S.* 1888, and in 1909. Near Rockfield bridge north of Killarney and in several places by the River Laune, as near Ballymalis, &c., 1901. Around Dromin pond south of Milltown and about Molahiffe, 1903: *R.W.S.*—VII. Common in ditches near Calnafersy, &c.: *Mackay Rar.* 1806—still about Milltown east of Calnafersy and very abundant about Killorglin in many places, 1906: *R.W.S.* Frequent about Cromane, Tullig and other places on the south side of Castlemaine Harbour, 1903; in a stream-bed west of Booltens, &c., 1904; in several places about Scrahan north of the Spa, Tralee Bay, and about Castleisland, 1905, beside the Tralee-Ardfert road near Ballyroe, &c., 1907–14: *R.W.S.*—VIII. In moist ground about Lixnaw in great quantities (*Dr. Smith*) *Hist. of Kerry*, 1756. Abundant in several localities about Ardfert and abundant about Lerrig, 1905–14; in plenty by the roadside near Ballingarry, Shannon estuary, 1908.—IX. Roadside about four miles south of Tarbert: *R.W.S.* 1891.

First record in 1756: *Dr. Smith, Hist. of Kerry*, p. 381, No. 80.

While most of the stations known for this Mint are about roadsides and houses it looks quite native in its pond and lake-side localities, and may fairly be included in the indigenous flora. The neighbourhood of Killorglin and the poor wet country to the west as far as Rossbehy, appear to be its headquarters in the county. The upright form (*var. ERECTA* *Syme*) is quite as frequently seen as the prostrate plant, but it appears to be only a state due to situation and hardly deserving of varietal rank. The Penny-royal is still in use among the Kerry peasants for medicinal intusions.

LYCOPUS Linn.

L. europæus Linn. *Gipsywort.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Wet ditches, river-sides, swampy woods, pond margins, &c. Rather common, but local. Peren. July—September.

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 379, No. 66. "In several places in the barony of Clanmaurice plentifully."

ORIGANUM Linn.

O. vulgare Linn. *Marjoram.*

Districts I. II. — — — [VI.] [VII.] — —
Native. Limestone rocks and bushy places, and as a garden escape on walls. Very rare and local. Peren. July—September. *Calcicole A.*

I. On limestone rocks by the Finnihy River below Kenmare : *R.W.S.* 1890, and in 1913 ; sparingly in a field near Cleady east of Kenmare, 1890.—II. Abundant along the limestone rocks on the north side of the Finnihy west of Kenmare, 1901 ; on limestone rocks about Clashganniv, Kenmare Bay, 1889 : *R.W.S.* [—VI. Killarney : *Druce* 1907. Occurs in several places about Killarney, but seen there by *R.W.S.* only as a garden escape, on walls, &c., as by the railway arch over the Park road, at the Priory, about the ruins of Castletlough, &c., 1901–14.—VII. On banks near the Seafeld gardens, Tralee Bay, 1888–1906 : *R.W.S.*]

First record in 1890 : *R.W.S., Journ. of Bot.*

Although strongly calcicole in Kerry, this plant appears to be absent as a native from the limestone about the Killarney Lakes and in the north.

THYMUS Linn.

T. Serpyllum Linn. *Wild Thyme.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Rocky places, sandhills, dry banks, pastures and mountain moorlands. Common, often abundant. Peren. July—September.

From sea-level, to the summits of the highest mountains in the county, attaining 3,414 feet on Carrantuohill, Reeks (*R.W.S.*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 382, No. 93. "Common mother of thyme, in most of the islands of Lough-Lane, and on the adjacent hills plentifully."

The Wild Thyme is a very abundant and variable plant in Kerry. It frequently grows there to considerable size, and both Wade in his *Plantæ Rariores 1804* and Mackay in 1806, make reference to its growth on the limestone rocks about Killarney where it attains an almost shrubby luxuriance. A form with densely ciliate and very strongly veined leaves, gathered on sandhills round the coast, appears to be *T. præcox* Apiz. The Kerry Thymes, however, need much further investigation.

T. Chamædrys Fries. *T. glaber* Mill.

Districts — II. III. — V. — VIII. —
Native. Sandhills, mountains, &c. Rare? Peren. July—September.

III. Dooagh sandhills, Rossbehy, 1913 : *R.W.S.*—V. On Brandon (*Druce*) *Journ. of Bot.* 1909, p. 384. On Fermoye sandhills, 1913 : *Praeger*. A plant gathered in Maghanaboe glen, Connor Hill, 1905, appears best referred here, it grew abundantly in dense tufts on stony flats beside the river : *Miss Delap & R.W.S.*—VIII. On the sandhills near Banna west of Ardfert : *R.W.S. 1889* (*fide Ar. Bennett*).

Var. ovatus (Mill.)—II. Darrynane (*Druce*) *Journ. of Bot.* 1909, p. 385.

First record in 1889 : *R.W.S., Journ. of Bot.*

No doubt more widely distributed in Kerry than the above records would show.

CALAMINTHA Linn.

C. officinalis Moench. *C. montana* Lam. *Clinopodium Calamintha* O. Kuntze. *Calamint*.

Districts I. II. — IV. — VI. VII. — —
Native. Limestone rocks, dry banks, roadsides, &c. Rare. Peren. July—September. *Calcicole A.*

I. Near Kenmare : *Mackay Rar. 1806*. Frequent on the limestone about Kenmare and on roadsides from Kenmare to Kilgarvan : *R.W.S. 1890* and in 1913. About Ardea Castle south-west of Cloonee, 1894.—II. At intervals on the limestone from Kenmare to Clashganniv, 1901, and on Dunkerron and Greenane Islands, Kenmare Bay, 1904 : *R.W.S.* Near Castle Cove : *Druce 1907*.—IV. Sparingly by the roadside between Beaufort and Churchtown, 1904–11 : *R.W.S.*—VI. On several of the islands in the Lower Lake, Killarney : *Mackay Rar. 1806*. At Killarney (*Babington*) *Cyb. 1866*. Rather frequent on the limestone about the Killarney Lakes,

especially in Muckcross demesne and about the north side of the Middle Lake; it occurs also on the Mangerton road near Cloghereen, on the roadside near Torc and sparingly beside the Rathmore road about five miles from Killarney: *R.W.S. 1888, &c.*, and in 1912.—VII. On limestone rocks near Clogherbrien north-west of Tralee: *R.W.S. 1889.*

First record in 1806: *Mackay Rar.*—as *Clinopodium vulgare*.

[C. NEPETA Savi. *C. parviflora* Lam.—VI. Near Killarney (probably near Muckcross): *Babington in Cyb. 1866.* Prof. Babington has since stated that his specimens belonged to *C. officinalis*: *vide Rec. Add. 1872.*]

[C. CLINOPODIUM Spenn. *Clinopodium vulgare* Linn. *Wild Basil.*—I. By the side of the road near Kenmare, and—VI. On several of the islands, Lower Lake of Killarney: *Mackay Rar. 1806.* On a limestone knoll between the Muckcross and Lower Lakes, Killarney, to the south of some old farm buildings: *R.W.S. 1890.* There can be but little doubt that the plant found by Mackay at Kenmare and Killarney was *C. officinalis*, to which his records have been referred. In the Muckcross station, although the plant looked quite native, it was confined to an area only a few square yards in extent and it is safer to regard the Wild Basil as accidentally introduced there as elsewhere in Ireland.]

NEPETA Linn.

N. Glechoma Benth. *Glechoma hederacea* Linn. *Ground Ivy.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Hedgebanks, woods and bushy places, &c. Rather common. Peren. March—June.

From sea-level, to 600 feet in the Gap of Dunloe (*R.W.S.*).

First record in 1882: *Archdeacon Wynne, Journ. Roy. Met. Soc., No. 45.*

SCUTELLARIA Linn.

S. galericulata Linn. *Skull-cap.*

Districts — II. — IV. V. VI. VII. VIII. IX.
Native. Roadsides, lake and river margins, stony waste places, &c. Rather common about Killarney, rare elsewhere. Peren. July—September.

II. Sparingly by the sea towards the north-east end of Rossdohan Island, Parknasilla, 1902.—IV. In several places along the Tomies shore, Lower Lake, Killarney, 1901; about the River Laune and on a stony waste by the roadside near Kilgobnet, 1904.—V. Near Aughils on the north shore of Castlemaine Harbour, 1894: *R.W.S.*—VI. “In wet ground at the bottom of Glenagh mountain, near the cottage; and in several other places near Killarney”: *Mackay Rar.* 1806. In many spots around the Lower and Middle Lakes, Killarney; in Ross Island and Muckcross demesne, &c., 1888–1912; about Cloghereen and Ardagh ponds, 1902; near Beaufort bridge, 1903.—VII. By the roadside west of Boolteens, Castlemaine Bay, 1890: *R.W.S.*—VIII. By an old road from Crotta gate to Kilfeighy cross, Kilflyn, 1877: *Rev. W. Raymond*.—IX. Sparingly by a small stream west of Tarbert Island, 1890: *R.W.S.*

First record in 1806: *Mackay Rar*

S. Nicholsoni Taubert. *S. galericulata* × *minor*.

I. In a damp wood on the south side of Kenmare estuary east of the Suspension Bridge: *R.W.S.* 1902.—VI. At Mahony's Point, Lower Lake, Killarney (*Levinge*) *Cyb.* 1898. Abundant in several spots in Muckcross demesne; in a swamp on the north side of Ross Bay and in other places about the Lower and Middle Lakes; near the north end of Newfoundland Bay, Upper Lake, Killarney, 1888–1911: *R.W.S.*

Like most hybrids, this varies greatly in appearance. The form most usually seen about Killarney is nearer to *S. galericulata*, while the Kenmare plant is nearer to *S. minor*.

S. minor Huds.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Boggy and marshy places. Rare in the north, common elsewhere. Peren. July—September. *Calcifuge* A.

Rare in the following Districts—VIII. In a bog near Kilflyn, 1877: *Rev. W. Raymond*. In damp spots between Abbeydorney and Kilflyn, 1894.—IX. In a bog east of Cashen Ferry bridge, sparingly, 1899: *R.W.S.*

From sea-level, to 875 feet in the Horse's Glen, Mangerton, to 925 feet by Lough Callee, Reeks, and to 1,000 feet near the old Kenmare-Glengarriff road (*R.W.S.*).

First record in 1806: *Mackay Rar.*

This plant appears to be almost confined in Ireland to its southern half; it is not yet known to occur farther north than Howth Head, Co. Dublin, on the east side, but reaches well into Co. Mayo on the west.

PRUNELLA Linn.

P. vulgaris Linn. *Self-heal.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Pastures, meadows, waste places, &c. Common.
Peren. June—September.

From sea-level, to 1,550 feet on the Reeks (*Hart*), to 1,600 feet on the Purple Mountain and to 2,300 feet on cliffs south of Lough Erhagh, Horse's Glen, Mangerton (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

Plants with white flowers are not uncommon in poor boggy pastures in the west of the county and in several small fields between Dingle and Smerwick they appeared to be even more numerous than the blue.

[MARRUBIUM VULGARE Linn. *White Horehound*.—II. On garden waste at Darrynane, 1889.—VI. A garden weed at Southhill, Killarney, 1909.—VII. One plant on the beach below Seafield House and several near the gardens there, Tralee Bay : *R.W.S. 1888*, and in 1906.—IX. Near Beal Point, Shannon estuary, 1913 : *Phillips*. This occurs in the county only as a garden weed or outcast and has nowhere succeeded in establishing itself in Kerry as it has about Carrigline and in other places in the adjoining county Cork.]

STACHYS Linn.

S. Betonica Benth. *Betonica officinalis* Linn. *Betony.*

Districts I. II. — — — VI. VII. — —
Native. Woods and bushy places, river banks and rough pastures. Rare but locally abundant. Peren. July—September.

I. Kenmare (*Prof. Harvey*) *Cyb. 1866*. Along the Finnihy River from Sahadeen bridge to its mouth below Kenmare, 1889–1913 ; along the stream from the Cloonee Lakes in several places and by the river near Croanshagh bridge, Derreen, 1894.—II. Abundant along the Finnihy River both above and below Kenmare, 1904 ; sparingly opposite Rossdohan near Parknasilla, 1892 ; one large patch near the road about two and a half miles east of Castlecove, 1901 : *R.W.S.*—VI. “ Very common in the woods at Muckruss, Killarney ” : *Wade Rar. 1804*. In Ross wood and several of the islands in the Lower Lake of Killarney : *Mackay Rar. 1806*. Still

abundant in Wade's and Mackay's stations and in several other places about the lakes, as at Mahony's Point (*Levinge*), on the Cahernane and Muckcross shores, at Glена, &c., 1888-1911; in Flesk Castle woods and elsewhere along the River Flesk; in a field opposite a school-house about three miles north of Killarney on the old Tralee road; abundant in rough fields by the railway about two miles south of Farranfore; near some quarries, &c., to the west of Mola-hiffe, 1888-1909.—VII. In several rough fields on the south slopes of the Slieve Mish range above Ballyfinnane bridge on the old Tralee road: *R.W.S.* 1889.

First record in 1804: *Wade Rar.*

A very rare plant in Kerry outside District VI. and the neighbourhood of Kenmare Bay.

S. palustris Linn. *Marsh Woundwort.*

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Damp ditches, river banks, about fields and in cultivated ground. Common. Peren. July—September.

From sea-level, to 1,025 feet by the Roughty-Ballyvourney road (*R.W.S.*).

First record in 1881: *Barrington, Proc. R.I.A.*

S. ambigua Smith. *S. palustris* × *sylvatica*.

VI. In a ditch near the Killarney railway station, 1904, and—VIII. On the roadside south of Ballymullen, Tralee, 1905: *R.W.S.* 1908. No doubt occurs in many other Kerry localities.

S. sylvatica Linn. *Hedge Woundwort.*

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Hedgerows, woods and bushy places. Common, but local in many parts of the county. Peren. July—September.

From sea-level, to 850 feet by the Roughty-Ballyvourney road (*R.W.S.*).

First record in 1901: *R.W.S., Topog. Bot.*

S. arvensis Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Colonist or native. Cultivated peaty fields, roadsides, &c. Rather rare. Ann. July—September.

I. Sparingly in fields about Lauragh, Derreen, 1894.—II. Fields near Kenmare and Cush Point, Kenmare Bay, 1901: *R.W.S.*—III. Valencia (*Rev. S. Madden Cyb.* 1866).

Still there, 1906, and about Waterville, 1900, and near Doulus Head west of Cahersiveen, 1892.—IV. In several places in the Glencar valley, 1890 : *R.W.S.*—V. Fields on the east side of Trabeg near Dingle : *Hart 1884*. Near Dingle, 1905, and near Inch, Dingle Bay, 1894, about Cloghane and Castlegregory, Brandon Bay, 1901 : *R.W.S.*—VI. Killarney (*Babington*) *Cyb. 1866*. A weed in Flesk Castle gardens and at the Muckross Hotel, &c., 1906 ; in fields near Lough Guitane and in several places about the River Laune, as near Ballymalis Castle, near Gweestin bridge, &c., 1904.—VII. In fields about Killorglin, 1906 ; the Spa, Tralee Bay, 1905, and around Barrow Harbour, 1902.—VIII. About Banna and Kerry Head, and—IX. North of Cashen Ferry bridge ; about Ballybunnion and Tarbert, 1902–04 : *R.W.S.*

First record in *Cyb. 1866* : *Babington & Rev. S. Madden*.

Shows a decided preference in Kerry for the neighbourhood of the coast.

GALEOPSIS Linn.

G. Tetrahit Linn. *Hemp-nettle.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Colonist. Cultivated land, roadsides, &c. Common. Ann.
July—September.

From sea-level, to 1,000 feet in the Clydagh and to 1,050 feet in the upper Roughty valleys (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

[*G. VERSICOLOR* Curt. *G. speciosa* Mill.—VII. “ In several fields near Castle-Island ” (*Dr. Smith*) *Hist. of Kerry, 1756*, p. 382, No. 94. Not seen in the county since, and most probably the record refers to the preceding species.]

LAMIUM Linn.

L. amplexicaule Linn. *Henbit.*

Districts — — — — V. — VII. — —
Colonist. Sandy cultivated ground and waste places. Very local indeed. Ann. May—July.

V. In potato gardens and among corn on the eastern extremity of the Great Basket Island : *Barrington 1881*—still in some quantity in this locality and very luxuriant, 1912 : *Praeger & Stelfox*.—VII. Sparingly on waste ground, the site of an old cottage, Glen Ellen, Milltown, 1905 : *Capt. Creaghe-Haward*.

First record in 1881 : *Barrington, Proc. R.I.A.*

It is only its persistence in Mr. Barrington's station for a period of over thirty years that entitles this plant to a place in the county flora. Although long sought for in the sandy cultivated area about Castlegregory and in other suitable spots, in has not yet been seen growing on the mainland of Kerry by R.W.S. The plant appears to be very rare in the adjoining counties of Limerick and Clare and is stated by Mr. R. A. Phillips to be also rare in the county Cork.

L. purpureum Linn. *Red Dead-nettle.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Colonist or native. Cultivated ground, roadsides, waste places, &c. Rather common. Ann. Flowers nearly all the year.

From sea-level, to 650 feet on roadsides south of Rathmore (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

L. hybridum Vill. *L. incisum* Willd.

Districts — — III. — V. — VII. VIII. IX.
Colonist. Cultivated ground, &c. Rather rare? Ann April—September.

III. In fields near Caragh Lake, 1900 : *R.W.S.*—V. Fields on the Great Blasket Island : *Barrington 1881*. Frequent about Castlegregory, 1901.—VII. In several spots about Killorglin : *R.W.S. 1889*, and not infrequent about the Spa, &c., Tralee Bay, 1905.—VIII. In potato fields, &c., about Lixnaw, and—IX. In several places about Ballybunnion, 1902 : *R.W.S.*, and in 1913 : *Phillips*.

First record in 1881 : *Barrington, Proc. R.I.A.*

No doubt more frequent in Kerry than the above records would show.

TEUCRIUM Linn.

T. Scorodonia Linn. *Wood Sage.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Bushy and stony places, on banks, in woods, &c. Common. Peren. July—September.

From sea-level, to 1,200 feet on the Reeks (*Hart*), and to the same height on Turner's Mountain near the Glengarriff tunnel (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

AJUGA Linn.

A. reptans Linn. *Bugle.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Damp shady places, river banks, &c. Common
but rather local. Peren. May—June.

From sea-level, to 2,200 feet on cliffs south of Lough
Erhagh, Horse's Glen, Mangerton (*R.W.S.*).

First record in 1882 : *Hart, Proc. R.I.A.*

PLANTAGINEÆ.

PLANTAGO Linn.

P. major Linn. *Plantain.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Waysides, pastures, waste places, &c. Common.
Peren. June—August.

From sea-level, to 1,350 feet on the Priestsleap and
Connor Hill roads (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

Var. INTERMEDIA (Gilib.)—II. Near Blackwater bridge,
1904.—VI. Lake shore at Ross Bay, Lower Lake, Killarney:
R.W.S. 1888, and most probably not uncommon.

P. lanceolata Linn. *Ribwort.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Pastures, meadows, waysides, banks, waste places,
&c. Very common. Peren. May—August.

From sea-level, to 2,200 feet on the Reeks and to 2,380
feet on Brandon (*Hart*).

First record in 1881 : *Barrington, Proc. R.I.A.*

P. maritima Linn.

Districts I. II. III. — V. — VII. VIII. IX.
Native. Rocky and muddy sea shores, also on mountain
cliffs and lake shore. Common by the sea, very rare inland.
Peren. June—September.

Inland localities are—V. On Brandon above Lough
Nalackan at 1,250 feet : *Hart 1884*. At 2,050–2,200 feet
on Brandon, 1905, and—VII. At the east end of Lough
Yganavan, a freshwater lake west of Killorglin, about a
mile from the nearest sea, 1906 : *R.W.S.*—IX. Sparingly on
a wall at Listowel, 1913 : *Phillips*.

Ranges on Brandon from 1,250 feet (*Hart*), to 2,200 feet (*R.W.S.*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 85.

As a mountain plant this species appears to be confined in Kerry to the Brandon range.

P. Coronopus Linn. *Buck's-horn Plantain*.

Districts I. II. III. — V. — VII. VIII. IX.
Native. Turfy places, banks, rocks, pastures, &c., near the sea. Common. Peren. June—September.

First record in 1881 : *Barrington, Proc. R.I.A.*

Occurs inland on the sandy east margin of Lough Yganavan, a fresh water lake, 1896–1905, with *Plantago maritima* and *Carex arenaria*.

Var. CERATOPHYLLUM Rapin.—V. About Fermoy and Stradbally, Brandon Bay (*Marshall & Shoolbred*) *R.W.S. 1903*. This luxuriant form of the very variable *P. Coronopus* appears to be not infrequent round the Kerry coast.

[*P. MEDIA* Linn.—VI. Seven or eight small patches on the garden lawn at Southhill, Killarney, 1909 : *R.W.S.* Most probably introduced there with grass seed.]

LITTORELLA Bergius.

L. lacustris Linn. *L. uniflora* Aschers. *L. juncea* Bergius.

Districts I. II. III. IV. V. VI. VII. VIII. —
Native. Lake margins, in shallow ponds and along sluggish streams. Rather common and locally abundant. Peren. June—August. *Calcifuge B.*

From sea-level, to 1,450 feet in Lough Ferta, Teermoyle Mountain, Glenbeigh, to 1,550 feet in Glas Lough on the Purple Mountain and to 1,590 feet in Lough Googh, Reeks (*R.W.S.*).

First record in 1825 : *Mackay Cat.*

[“*HERNIARIA*, Gerar. Rupture wort, on Lamb-head near the mouth of the river of Kenmare” (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 377, No. 48. Not seen there since and most likely the record is due to some confusion of plant-names by Dr. Smith ; can he have meant *Empetrum nigrum*, which is abundant on this headland ?

Kerry is also credited with the only other Irish record for *Herniaria*. Mr. W. Andrews distributed many specimens of “*Herniaria glabra*” through the *Botanical Society of*

London labelled "Castlemain Bay, Kerry. Aug. 1841, W. Andrews." Mr. Arthur Bennett has pointed out, however, that the plants distributed are not *H. glabra* Linn. but *H. ciliata* Bab. No form of *Herniaria* is known to occur in Ireland as a native, and Mr. Andrew's record can only be considered as unsatisfactory as his reputed discovery of *Saxifraga Guthriana*—a garden hybrid—which he stated he found in a remote mountain gully in Glencar.]

CHENOPODIACEÆ.

CHENOPODIUM Linn.

C. album Linn. *White Goosefoot.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Colonist. Cultivated ground, roadsides and waste places.
Common. Ann. July—September.

From sea-level, to 1,050 feet amongst crops near the Roughty-Ballyvourney road (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

Both forms, *C. candicans* (Lamk.) and *C. viride* (Linn.), are of common occurrence.

C. rubrum Linn. *Red Goosefoot.*

Districts — — — — V. — VII. VIII. IX.
Colonist or denizen. Moist waste places near the sea. Very rare and uncertain in appearance. Ann. July—September.

VII. In some plenty in a damp hollow near Fenit, Tralee Bay, 1914.—VIII. Sparingly near the sea at Rahoneen west of Ardfert and near the tidal Akeragh Lough south of Ballyheige : *R.W.S.* 1888.—IX. Sparingly near Ballybunnion, 1894 : *R.W.S.*

First record in 1888 : *R.W.S., Journ. of Bot.*

Var. PSEUDO-BOTRYOIDES Watson.—V. In a damp stony hollow near the east end of Derrymore Island, Tralee Bay, in some plenty : *R.W.S.* 1888.

Unlike the type which is rarely seen far from habitations this variety grew in a locality quite remote from any obvious source of introduction.

C. Bonus-Henricus Linn. *Good King Henry. Allgood.*

Districts — II. [III.] — — VI. — — —
Alien. Roadsides and waste places about towns. Very rare and local. Peren. June—August.

II. Sparingly near the town wells beside the River Finnihy just north of Kenmare (*R.W.S.*) *Cyb.* 1898, and in 1908 [—III. Very abundant on the Little Skellig Rock (*Rev. A Delap*) *Irish Nat.* 1893, p. 112].—VI. Sparingly at the Mill bridge, Deenagh River, and rather abundant on a roadside at the Workhouse, both these stations lie a little north of Killarney : *R.W.S.* 1889, and in 1911.

First record in 1889 : *R.W.S.*, *Journ. of Bot.*

It is somewhat surprising to find this *Chenopodium* so very rare in Kerry as it was, no doubt, cultivated formerly in the county for culinary purposes, as elsewhere in Ireland. The *Rev. A. Delap*'s record for this plant on the Little Skellig Rock quoted above is, it is feared, an error. The plant is stated by the finder to grow there in such abundance as to be known on the adjacent mainland as the "*Skellig Spinach*"; a plant, however, gathered by Miss Delap on the Blasket Islands which lie about 18 miles to the north and sent to *R.W.S.* as the "*Skellig Spinach*," proved on examination to be *Beta maritima*. The station, moreover, is an unlikely one for this roadside-loving species. It is a small rocky islet rising precipitously to a height of 440 feet and, so far as is known, has never been inhabited. Nor does this plant appear to grow on the Great Skellig another precipitous island which rises to over 700 feet and lies about two miles further west. It is at present inhabited by light-house keepers only, but is well known to antiquarians for its interesting remains of an ancient ecclesiastical settlement. The nearest known station for this *Chenopodium* on the mainland is Kenmare, fully forty miles distant.

BETA Linn.

B. maritima Linn. *Sea Beet.*

Districts I. II. III. — V. — VII. VIII. IX.
Native. On sea cliffs and gravelly sea shores. Common.
Peren. June—September.

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 374, No. 13. "Common on the shores of the river of Kenmare near Ballybog, and more westerly towards the river's mouth."

This plant is known about Cahersiveen and on Valencia Island, &c., as the *Skellig Spinach*.

ATRIPLEX Linn.

A. patula Linn. *Orache* (genus).

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Colonist. Cultivated ground, roadsides and waste places.
Rather common. Ann. July—September.

From sea-level, to 720 feet on the Reeks (*Hart*), and probably higher.

First record in *Cyb. 1866* : *Babington*.

Both *A. erecta* Huds. and *A. angustifolia* Smith occur, the latter being the more frequent as elsewhere in Ireland.

A. hastata Linn.

Districts I. — III. — V. VI. VII. VIII. IX.
Native, on gravelly and sandy sea shores ; as a colonist, on waste and cultivated ground. Common near the sea, rare inland. Ann. July—September.

First record in 1890 : *Stewart, Proc. R.I.A.*

Plants referable to both *A. triangularis* and *A. deltoidea* of *Babington* are included in the distribution given above. In one or other of its forms, *A. hastata* occurs, probably, throughout the county.

A. Babingtonii Woods.

Districts I. II. III. — V. — VII. VIII. IX.
Native. Gravelly and sandy sea shores and along estuaries. Common. Ann. July—September.

First record in 1881 : *Barrington, Proc. R.I.A.*

This is much the most common of the genus in Kerry. It varies greatly in its manner of growth as well as in its colour, but both the red and green forms are frequent. It ascends to at least 400 feet on cliffs in the Blasket Islands (*Barrington*).

A. portulacoides Linn. *Obione portulacoides* Moq.

Districts — — — — V. — VII. —
Native. Muddy and rocky sea shores. Very rare. Peren. August—September.

V. Coast between Dingle and Castlemaine Bay (*Moore*) *Cyb. 1866*.—VII. "Near the exit of the river Mang, not far from Calinafersy" (*Dr. Smith*) *Hist. of Kerry, 1756*, p. 373, No. 12.

First record in 1756 : *Dr. Smith, loc. cit.*

Although this plant has not been seen recently in the county there is no reason to doubt its occurrence there. It is found in several localities about Cork Harbour on the one side and near Ballyvaughan in Co. Clare on the other. Dr. Smith's old locality has been examined several times recently without success and the plant is very probably extinct there. Major Leeson Marshall of Callanafersy House states that the mouth of the River Maine has been much changed since Dr. Smith's time. Large sums were spent about 1820 in embanking and reclaiming the low-lying slob on both sides of the river and what was then tide-riven waste has now become in great measure pasture or meadow land. Mr. Moore's record is unfortunately very vague, the distance "between Dingle and Castlemaine Bay" representing fully twenty-five miles of coast-line, much of it very difficult to examine.

[A. LITTORALIS Linn.—IX. "On the banks of the river Galey plentifully" (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 373, No. 11. Not seen recently; it occurs, however, in the adjoining Co. Clare and in Mid Cork.]

SALICORNIA Linn.

S. herbacea Linn. *S. europæa* Linn. *Glasswort*.

Districts I. II. III. — V. — VII. VIII. IX.
Native. Muddy sea shores. Common and locally abundant.
Ann. August—September.

First record in 1884: *Hart, Proc. R.I.A.*

SUÆDA Forskal.

S. maritima Dum. *Lerchia maritima* O. Kuntze. *Sea Blite*.

Districts I. II. III. — V. — VII. VIII. IX.
Native. On sand, mud and rocks by the sea. Common.
Peren. July—September.

Ascends to between 400 and 500 feet on the Tearaght Rock, Blasket Islands (*Barrington*).

First record in 1756: *Dr. Smith, Hist. of Kerry*, p. 374, No. 15. "On the shore near Callanafersy the bottom of Castlemaine harbour. This plant, says Mr. Ray, synop., p. 156, is an excellent boiled salad."

SALSOLA Linn.

S. Kali Linn. *Prickly Saltwort.*

Districts — — III. — V. — VII. VIII. IX.
Native. Sandy sea shores. Rather common. Ann. July—September.

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 378, No. 53. "On the sea shore all along the bottom of Ballyheige strand."

This is much less frequent than either of the preceding plants and rarely occurs in any abundance.

POLYGONACEÆ.

POLYGONUM Linn.

P. Convolvulus Linn. *Climbing Buckwheat.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Colonist. Cultivated ground and waste places. Common.
Ann. July—September.

First record in 1901 : *R.W.S., Topog. Bot.*

P. aviculare Linn. *Knotgrass.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Cultivated ground, roadsides, sandy and waste places. Common. Ann. June—September.

From sea-level, to 1,100 feet in crops by the Roughty valley road and to 1,325 feet on the Connor Hill road (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

A very variable plant in Kerry as elsewhere. The prostrate sandhill form *P. arenastrum* (Boreau) has been gathered in many stations round the coast.

P. Raii Bab.

Districts I. — III. — V. — VII. — IX.
Native. Sandy sea shores. Rather rare. Ann. July—September.

I. Sparingly on the shore near Lehid north of Derreen, 1894.—III. Sparingly on the shore near Dooaghs, Rossbehy Creek, 1903 : *R.W.S.* On the Rossbehy sandhills, 1912 : *Mrs. Jenner*.—V. Below Camp, Tralee Bay, and at Smerwick west of Dingle : *Hart 1884*. On the shore between Camp and Castlegregory, 1894, and on Ventry sandhills,

1905.—VII. Shore near Blennerville and the Spa, Tralee Bay, 1894.—IX. Sparingly on the shore near Ballybunnion, 1899 : *R.W.S.*

First record in 1884 : *Hart, Proc. R.I.A.*

P. Hydropiper Linn. *Water Pepper*.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. About damp roadsides, ditches, waste places, pond margins, &c. Locally common. Ann. August—September. *Calcifuge B.*

From sea-level, to 1,010 feet on the Reeks (*Hart*), and to 1,100 feet near a game-keeper's house in the upper Roughty valley (*R.W.S.*).

First record in 1882 : *Hart, Proc. R.I.A.*

P. minus Huds.

District — — — — — VI. — — — Native. Damp stony places and lake shores. Very rare and local. Ann. July—September.

VI. Abundant along the north side of Ross Bay in several places and near the pier at the north-west corner of Ross Island ; abundant about the old mine holes on the south side of this island and on Innisfallen, Lower Lake, Killarney : *R.W.S.* 1888, and in 1914.

First record in 1888 : *R.W.S., Journ. of Bot.*

All the above localities for *P. minus* lie about the shores of the Lower Lake, Killarney, and are included within a space little more than a square mile in extent. Most probably the plant will be found elsewhere, but it is undoubtedly very rare in the county.

P. Persicaria Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. In waste ground, about roadsides and as a weed in cultivated fields. Very common. Ann. June—September.

From sea-level, to 1,100 feet near a game-keeper's house in the upper Roughty valley and to 1,350 feet on the summit of the Connor Hill road (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

P. maculatum Trim. & Dyer. *P. nodosum* Reichb.

District — II. — — — — — Colonist. In waste places. Rare ? Ann. July—September. II. Sneem : *Druce* 1907.

First record in 1907 : *Druce, Irish Nat.*, p. 150.

The distribution in Ireland of this critical plant is almost unknown ; it will most probably be found in other localities in Kerry.

P. lapathifolium Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Colonist. Cultivated ground and, very rarely, in waste places. Rather common and locally abundant but rare over large areas. Ann. July—September.

First record in 1901 : *R.W.S., Topog. Bot.*

While *P. lapathifolium* is generally much rarer in Kerry than *P. Persicaria* it is sometimes found to be the more abundant species over some limited area. It is very seldom seen outside cultivated ground, potato fields on poor peaty soil being its favourite habitat in the county.

P. amphibium Linn.

Districts — II. III. IV. V. VI. VII. VIII. IX.
Native. Lakes, ditches and slow streams, also on damp roadsides and waste places. Rather common but quite local or absent over large areas in the south. Peren. July—September.

First record in 1901 : *R.W.S., Topog. Bot.*

The terrestrial form of this plant is more frequently seen in Kerry than the aquatic. In the neighbourhood of Killarney especially, the latter is a very rare plant.

P. viviparum Linn.

District — — — — V. — — — —
Native. Damp ground on a mountain Very rare and local.
Peren. July.

V. On Pierasmore ridge at 2,380 feet, about a mile and an eighth north of the summit of Brandon, not far from the ruins of an old signal tower : *Hart 1884.*

First record in 1884 : *Hart, Proc. R.I.A.*

This interesting alpine species appears to be limited in Kerry to the single station recorded above in which it is very rare. Elsewhere in Ireland, it occurs only on the Donegal and the Sligo and Leitrim mountains and reaches on Brandon its southern limit in the British Isles.

P. sagittatum Linn. *Arrow-leaved Tear-thumb.*

District — II. — — — — — —
Alien or Denizen. In wet boggy places and in damp or stony places by a stream. Very rare and local. Ann. July—September.

II. Abundant in a small bog and in the adjoining swampy fields and ditches near the head of the Castlecove stream, extending over an area of about twelve acres; also, at intervals, along the stream between this bog and the sea a distance of about a mile; and in a small wet hollow by the old road a little to the west of the bog mentioned above: *R.W.S.* 1890, &c.—still in much the same quantity, 1907: *R.W.S.*

First found in Ireland in 1889, and recorded in 1890: *R.W.S.*, *Journ. of Bot.*, p. 111—as *P. arifolium* Linn.

This prickly *Polygonum* is a native of North America where it is found on wet ground over a wide area in the United States and Canada, extending from Newfoundland, Nova Scotia, and the North-west Territories in the north, to Florida and Kansas in the south. Although several Kerry localities are given above, they are all obviously derived from the swampy hollow in which the plant is very abundant. Rough hills rising from 1,000 to 1,785 feet in height almost surround this hollow, through which a small stream runs, which has carried the plant with it as far as the sea at Castlecove, a distance of rather more than a mile. An old road which ran from the village of Caherdaniel to Sneem crosses this stream just where it leaves the hollow; this road, however, has long since been deserted for the more level highway constructed along the coastline and is now reduced in parts to little better than a rough foot-track. The dwellings which occur in the vicinity are of the poorest description.

It is difficult to account satisfactorily for the presence of this American *Polygonum* in Kerry. That it has been introduced here in some way there can be no doubt, the difficulty being rather to suggest the means by which the plant has come to be so thoroughly established in a small secluded bog in this south-west corner of Kerry, the only locality apparently known for it in the whole of Europe. The late Mr. A. G. More when first shown this plant in 1889 suggested that it had been accidentally introduced with foreign grain. The locality, however, is quite remote from the usual sources of alien introduction, such as ports, railways, distilleries, &c., while the inhabitants in the neighbourhood are too poor to buy damaged foreign grain for fowl feeding, &c., as occasionally occurs in more prosperous districts. If introduced in this manner, as seems most likely, it is difficult to understand why it has not been found in places more favourably situated for the spread of

alien species, such as the vicinity of ports where a large trade in American grain is carried on, or the neighbourhood of mills where this grain is often handled in immense quantities, rather than in this isolated bog in Kerry. The most probable explanation is that the plant was introduced here about the time of the terrible famine of 1847, when American grain was distributed to the starving peasantry in this part of Kerry as elsewhere in the south and west of Ireland. The present restricted range of the plant outside America is, however, impossible to account for. The hard nuts and the prickly clinging character of this Polygonum would appear to lend themselves readily to its dispersion, but during the nineteen years that it has now (1907) been under observation, very little difference has been noted either in its quantity or in the area it occupies, except that in 1904 the plant was more abundant along the course of the stream than formerly; these river-bed stations, however, vary no doubt from year to year with a dry or wet season.

The fact that all the five Irish members of the North American group grow within a radius of less than twenty miles of this spot—one of them, *Juncus tenuis*, occurring abundantly within a few hundred yards of it—renders caution additionally necessary when enquiring into the standing of any newly discovered American plant within this area. The very restricted nature of its solitary station outside of America, would alone render it an unlikely native of Kerry and it is, moreover, worthy of note that the Polygonum is an annual, while the other members of the Irish American group are perennials with the exception of the aquatic plant *Najas flexilis*. And tempting as it undoubtedly is to make *Polygonum sagittatum* an addition to this most interesting little group, it must be regarded rather as an alien in some way accidentally introduced many years ago and now fully established in a wild locality.*

[P. BISTORTA Linn. *Snakeweed*.—VII. “In Sir Thomas Denny’s park near Tralee” (*Dr. Smith*) *Hist. of Kerry, 1756*,

* Mr. G. C. Druce when visiting the locality in 1906 was given the following explanation of the presence of this Polygonum by a peasant. About fifty years ago the owner of a small mill which formerly existed on this stream, ground there some Indian corn, the cargo of a boat wrecked on the neighbouring shore. According to this informant the Polygonum appeared in the neighbourhood the following year and thence spread to the sites where it is now found—vide *Irish Nat.* 1907, p. 150. The master of the local schools, a resident in the district all his life and now an old man, informed

p. 374, No. 14. Not seen there recently, and no doubt originally planted or an escape. It is still occasionally seen as a garden plant in Kerry, but appears to be less grown now than formerly, and even as an escape is a rare and decreasing species in Ireland.]

OXYRIA Hill.

O. digyna Hill. *O. reniformis* Hook. *Mountain Sorrel*.

Districts — II. III. IV. V. VI. VII. — —
Native. Wet mountain cliffs. Rare. Peren. July—
August.

II. In a gully to the south of Beeown Mountain north of Sneem, 1901, and—III. Above Lough Coomacullen, Coomacarra Mountains, Glenbeigh, 1892 : *Colgan & R.W.S.*—IV. On the cliffs upon the highest of the Magillicuddy's Reeks, 1804-05 : *Mackay Rar.* In most of the upper gullies on the Reeks : *Hart 1882*, and in 1905 : *R.W.S.* On Mullaghanattin Mountain, 1886 : *Colgan*, and on the north side of Beeown, upper Glencar, 1901 : *Colgan & R.W.S.*—V. On Brandon Mountain, 1804-05 : *Mackay Rar.* On Brandon cliffs from 2,000 to 3,000 feet above Lough Nalacken and at 1,150 feet on Brandon Head : *Hart 1884*, and in 1908 : *R.W.S.* On Connor Hill near Dingle, below 1,000 feet (*Moore*) *Cyb. 1866*. Sparingly on the Slieve Mish Mountains, 1888 : *R.W.S.*—VI. On Mangerton (*Carroll*) *Phytol. 1857*, p. 76. Frequent in the Horse's Glen cliffs, Mangerton, above Loughs Managh and Erhagh, 1904, and—VII. Sparingly in the Gormagh cliffs above the Curraheen stream, Slieve Mish Mountains, 1892 : *R.W.S.*

Ranges from 550 feet on the Reeks (*Hart & Colgan*), "below 1,000 feet" on Connor Hill (*Moore*), and 1,150 feet on Brandon (*Hart*), to 3,000 feet on Brandon and to 3,150 feet on the Reeks (*Hart*).

First record in 1806 : *Mackay Rar.*

the present writer in 1907, that he could remember, when a boy, his parents speaking of a mill on this stream as then only recently destroyed, the date of its destruction he roughly estimated at about sixty years ago. The ruins of a small house still exist close to the stream near the bog in which the *Polygonum* has its headquarters and may possibly be the remains of the mill referred to. In either case, whether introduced as suggested in the text or as stated by Mr. Druce's peasant, the plant appears to have continued in its present position for at least sixty years.

RUMEX Linn.

R. conglomeratus Murr. *Dock (genus).*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Roadsides, damp fields, waste places, &c. Rather
common. Peren. July—September.

First record in 1890 : *Stewart, Proc. R.I.A.*

R. nemorosus Schrad. *R. viridis* Sibth.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Shady places, banks, waste ground, &c. Rather
common. Peren. July—September.

First record in 1901 : *R.W.S., Topog. Bot.*

The Kerry plant is, as elsewhere, the form *R. viridis* Sibth. ;
the red-veined form, *R. sanguineus* Linn., has not, so far,
been seen in the county and is very rare generally in Ireland.

R. maritimus Linn. *Golden Dock.*

District — — — — — VII. — —
Native. Wet ground near the sea. Very rare and local.
Bien.? July—August.

VII. In some plenty in a small swamp near Fenit, Tralee
Bay (*H. Crookshank & R.W.S.*) *Irish Nat.*, 1914, p. 225.

First record in 1914 : *H. Crookshank and R.W.S. loc. cit.*

This Dock appears to be a very rare plant in Ireland.
Including the locality given above, it is known to occur
in four Irish stations only ; one in each of the neighbouring
counties of Limerick and Cork, with a third in Wexford.
It has been recorded also from Garristown bog in Co. Dublin
but has not been seen there for many years.

R. obtusifolius Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Damp roadsides, meadows and waste places, &c.
Common. Peren. July—August.

From sea-level, to 1,150 feet beside the Connor Hill road
(*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

R. crispus Linn. *Curled Dock.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Waysides, fields, waste places and on rocks or
shingle by the sea. Common. Peren. June—September.

From sea-level, to 1,000 feet in the Clydagh valley and to
1,025 feet by the Roughy-Ballyvourney road (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

Var. TRIGRANULATUS *Syme*—this appears to be a common form around the Kerry coast.

R. acutus Linn. *R. pratensis* Mert. & Koch. *R. crispus* × *obtusifolius*.

VI. At Killarney (*Babington*) *Cyb.* 1866—no doubt overlooked elsewhere.

R. Hydrolapathum Huds. *Water Dock.*

District — — — — V. — — — —
Native. Around the margin of a lake and adjoining swampy ground. Very rare and local. Peren. July—August.

V. On the south side of the lake at Castlegregory and in heavy marshes to the west of it : *Hart 1884*. Still in both these localities and more sparingly on the north and east sides of the lake, 1907 : *R.W.S.*

First record in 1884 : *Hart, Proc. R.I.A.*

Mr. Hart's Castlegregory station still remains the only locality for this Dock in Kerry. Considering the many suitable spots there are, it is surprising to find this plant one of the very rarest species in the Kerry flora. It occurs in the adjoining counties, Cork, Limerick and Clare, but appears to be rare in all of them.

R. Acetosa Linn. *Common Sorrel.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Meadows, marshy and shady places, &c. Very common. Peren. May—August.

From sea-level, to the summits of the highest mountains in the county, attaining 3,127 feet on Brandon and 3,414 feet on Carrantuohill, Reeks (*Hart*).

First record in 1881 : *Barrington, Proc. R.I.A.*

This plant grows to very large dimensions on damp rocks and islands around the coast.

R. Acetosella Linn. *Sheep's Sorrel.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Peaty and sandy ground, dry and rocky banks, waste places, &c. Common, often abundant. Peren. May—August. *Calcifuge B.*

From sea-level, to the summits of the highest mountains in the county, like the preceding species (*Hart & R. W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

ELÆAGNACEÆ.

HIPPOPHÆ Linn.

H. Rhamnoides Linn. *Sea Buckthorn.*

Districts — — — — V. — [VII.] [VIII.] —
 Alien. Sandy shores and sea cliffs. Rare and local. Bush.
 May.

V. On the shore between Milltown and Burnham, Dingle Harbour; planted by Lord Ventry and spreading slightly: *Hart 1884*, and in 1905: *R.W.S.* Along the cliffs between Anascaul and Inch, Dingle Bay, in one or two places, 1892–1914 [—VII. An escape about Seafeld and Fenit House, Tralee Bay, 1888–1906.—VIII. In several spots about Ballyheige, 1889–1907]: *R.W.S.*

First record in 1884: *Hart, Proc. R.I.A.*

This ornamental bush appears to be thoroughly established in District V. It may be seen also in gardens or shrubberies in various parts of the county although not commonly met with. Dr. Smith in his *Hist. of Kerry, 1756*, p. 180, note (p), strongly recommends this bush, then little known, to the Kerry landlords as one likely to succeed on the coast; it has not, however, thriven so well there as he confidently expected. Its introduction has met with much greater success on the less exposed coast of Wexford where this bush is thriving and spreading in several localities.

EUPHORBIACEÆ.

EUPHORBIA Linn.

E. Helioscopia Linn. *Sun Spurge.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
 Colonist. Cultivated ground and waste places. Common.
 Ann. May—September.

From sea-level, to 550 feet in the Roughty valley (*R.W.S.*), and probably higher.

First record in 1881: *Barrington, Proc. R.I.A.*

E. hiberna Linn. *Irish Spurge.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
 Native. About rivers, woods, bushy places, upland fields and rocky declivities. Common and locally abundant over

the greater portion of the county but quite rare in the Dingle peninsula and thinning out towards the north. Peren. April—June.

Rare or local in the following Districts—V. On the western side of Brandon Mountain and on poor upland slopes east of Mount Eagle near Ventry : *Hart 1884*. Along several road-banks and field borders south of Gallerus near Smerwick Harbour, 1905.—VIII. Abundant along the Shannow River east of Abbeydorney and about Banemore near Pallas Hill, 1894 ; abundant along the valley of the River Feale from Listowel to the county boundary and along its tributary the Smerlagh River : *R.W.S. 1891*, and in 1905.—IX. Abundant along the River Feale from Listowel to Abbeyfeale and along a small stream near Kilmorna, 1905 : *R.W.S.*

From sea-level, to 1,500 feet in the Horse's Glen, Mangerton (*More*), and to the same height above Coomasaharn Lake, Glenbeigh, to 1,550 feet on Beeown Mountain north of Sneem (*Colgan & R.W.S.*), to 1,650 feet on mountains east of Waterville (*R.W.S.*), and to 1,800 feet "in Kerry" (*Hart*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 382, No. 98. "Tithymalus Hybernicus, *Merr. Pin.* Irish spurge, called *Makinboy*, or knotty rooted spurge, common on the mountains of this county." Writing in 1804, Wade states that "it grows in immense quantities on the public road between Cork and Killarney and all about Killarney" : *Wade Rar.* It was, however, known to occur in Ireland as long ago as 1650, as it appears, without any locality, under the name *Tithymalus hibernicus* in How's *Phytologia Britannica*. It is mentioned also in Ray's *Synopsis*, 2nd Ed. 1696, as found "in Hibernia."

This characteristic Kerry plant is no doubt one of the survivors of the Lusitanian invasion which reached Ireland probably in pre-glacial times. Unlike some of its companions, it is not quite confined to Ireland in the British Isles, being found in two or three localities in the south-west corner of England. In Kerry this Spurge is one of the most abundant of all Watson's *Atlantic* group of plants, its bright yellow-green tufts forming quite a feature in the vegetation of many of the upland glens and river sides in early summer.

The distribution of this plant in the Dingle peninsula is very peculiar. It appears to be quite absent from the Slieve Mish range west of a line joining Blennerville with Milltown and from both sides of the peninsula for a distance of about

twenty-five miles, the few localities known in this District lying to the west of Dingle and the Brandon range. *Carum verticillatum* appears to share this antipathy to the peninsula although to a somewhat less degree, while on the other hand *Bartsia viscosa*, another characteristic Kerry and Atlantic Type plant, is especially abundant there. The *Euphorbia* thins out perceptibly in North Kerry and appears to be absent from the portion of the county bordering on the Shannon. Elsewhere in Ireland it occurs in the adjoining counties of Cork and Limerick, finding its eastern limit in Waterford, while along the west coast it occurs in south-east Galway, and west Mayo finding its northern limit for Europe in Donegal. In Great Britain it grows in one locality in north Devon and has recently been found in west Cornwall and south Somerset. It ranges on the Continent from France to Switzerland and Italy.

This Spurge has long been used in Kerry to poison fish. Mackay in his *Plantæ Rariores* writing in 1806 says, "I am informed in Kerry that it is sometimes thrown into rivulets to kill trout, its juices being very pernicious"; unfortunately this practice continues even to the present day.

E. Paralias Linn. *Sea Spurge.*

Districts — II. III. — V. — VII. VIII. IX.
Native. Sandhills and sandy sea shores. Rather common and locally abundant. Peren. June—August.

First record in 1855: *J. Woods, Phytol.*, p. 159.

This is especially abundant around Brandon and Ballyheige Bays.

E. portlandica Linn.

Districts — II. III. — V. — VII. VIII. IX.
Native. Rocky and sandy places by the sea. Rather rare. Peren. May—August.

II. Darrynane, sparingly (*More*) *Rec. Add.* 1872. In several localities about Darrynane, as on both sides of the estuary, &c., and on the shore between Caherdaniel and Westcove, 1904.—III. Frequent about the mouth of the Inny River north of Waterville, 1900: *R.W.S.*—V. Near Trabeg east of Dingle and on the Inch sandhills, Dingle Bay: *Hart* 1884—still in both these localities, 1894, and—VII. Frequent on the north side of Barrow Harbour, 1902.—VIII. Sparingly on the sandhills near Banna and about Ballyheige, 1905: *R.W.S.*—IX. Sparingly on sandhills at Ballybunnion: *Stewart* 1890—still there in 1908: *R.W.S.*

First record in 1872: *More, Rec. Add.*

E. Peplus Linn. *Petty Spurge*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
 Colonist. Cultivated ground, waste places, banks and walls.
 Common. Ann. May—September.

First record in 1890 : *Stewart, Proc. R.I.A.*

[*E. EXIGUA* Linn. *Dwarf Spurge*. Although long sought for, this plant has not yet been seen in Kerry and if not quite absent it must be very rare indeed there. It occurs in all the adjoining counties but is local, generally, along the west coast of Ireland. It is not unlikely, however, to be found as a colonist in some of the well cultivated areas near the sea as about Castlegregory, Ardfert, &c.]

[*MERCURIALIS ANNUA* Linn.—IX. “On the shore near Beal Castle, plentifully” (*Dr. Smith*) *Hist. of Kerry, 1756*, p. 379, No. 67. Not there now, nor is this a very likely locality for such a lover of cultivated ground and waste urban sites. So far, neither *M. annua* nor *M. perennis* are known to occur in the county and most probably the record quoted above is due to some confusion of names.]

U R T I C A C E Æ.

ULMUS Linn.

U. montana With. *Wych Elm*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
 Denizen or Alien. Hedges, woods, &c. Rather common.
 Tree. February—March.

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 205.

The Wych Elm rarely occurs in wild-looking stations in Kerry where it has been almost certainly introduced. The date of its introduction into the county, however, must be very remote, for it appears to have given its name to the River Laune which according to Dr. Joyce is equivalent to *Leamhain* or the Elm River (*vide Irish Names of Places, 1st Series*, p. 490), one of the few instances known of the Elm entering into the place-names of this country. Dr. Smith, moreover, in his *History of Kerry* speaks of large Elms as among the “improvements” seen by him in various demesnes and as both *U. montana* and *U. campestris* are frequent in such localities, the Wych Elm must have been established in the county long before 1756.

[*U. CAMPESTRIS* Linn. *Common Elm*. Occurs nearly throughout the county as a planted tree, usually in demesnes or near houses. As stated under the preceding species, Dr. Smith records the planting of Elms in such localities as far back as 1756. Several fine trees may be seen in the Home Park and elsewhere about Killarney.]

[*HUMULUS LUPULUS* Linn. *Hop*. I. Cloonee, 1898 (*Praeger*) *Topog. Bot.* In a quarry at Kenmare and near Cleady, 1904; roadside south of Morley's Bridge, 1903.—II. Planted about Darrynane and on the roadside near Templenakilla south of Waterville, 1905.—IV. About cottages at Beaufort, &c., 1904–09.—V. Roadside near Inch, Dingle Bay, 1894, and sparingly near Castlegregory in a churchyard, 1890.—VI. Sparingly about Muckcross Abbey, Cloghereen, and other places near Killarney; near the Laune at Ballymalis, 1904; roadside about two miles east of Killorglin: *R.W.S.* 1889.—VII. “They grow near the Abbey of Killagh, the estate of John Godfrey Esq.; having been probably cultivated there formerly by the monks of the said abbey” (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 379, No. 63, but not seen recently in this locality which is near Milltown. On roadsides near Castlemaine and Blennerville, 1901; about Ballyseedy east of Tralee, 1890.—VIII. Roadsides near Listowel and in hedges near Ballyhorgan quay, Feale River, 1904, and near Lixnaw bridge, 1907: *R.W.S.* The Hop is thinly scattered over the greater portion of the county usually near houses, ruins, along roadsides or in other suspicious stations and has nowhere succeeded in establishing itself in a wild locality.]

URTICA Linn.

U. dioica Linn. *Nettle* (*genus*).

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Waste places, field- and roadsides, thickets, about ruins, &c. Very common. Peren. June—September.

From sea-level, to 1,300 feet on the Connor Hill road and to 2,200 feet beside an old shelter near the Punch Bowl on Mangerton (*R.W.S.*), the latter a very unusual height.

First record in 1780: *Arthur Young, Tour in Ireland*—about Muckcross Abbey.

The exceptional height recorded for this nettle is no doubt

due to the tourist track up Mangerton which just reaches the shelter referred to, where ponies await the return of visitors to the summit. The nettle has been most probably introduced with pony fodder, but appears to thrive well even at this elevation, the highest known for it in Ireland.

U. urens Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Colonist. Cultivated ground, waste places, about dwellings, &c. Rather common. Ann. April—September.

First record in 1901 : *R.W.S., Topog. Bot.*

More frequent in the north of the county than in the south and near the sea than inland ; it appears to be especially fond of waste places about houses.

PARIETARIA Linn.

P. officinalis Linn. *P. diffusa* Koch. *P. ramiflora* Moench.
Wall Pellitory.

Districts I. II. — IV. V. VI. VII. VIII. IX. Native. Old walls, rocks and stony banks. Rare in the south, rather common elsewhere, especially near the sea. Peren. May—October. *Calcicole B.*

I. On limestone rocks near the mouth of the River Finnihy, Kenmare, 1900 ; about Ardea Castle, &c., south of Cloonee, 1894.—II. Sparingly near the mouth of the Finnihy, Kenmare, 1900 ; on the old Church at Templenoe near Cush Point, Kenmare Bay, 1889.—IV. On walls about Churchtown west of Beaufort, 1904.—V. About Castlegregory, Ventry and frequent about Dingle, 1890–1907.—VI. In several places about Killarney, as on Ross Castle, on the Ross road, &c., 1888–1914 ; on Ballymalis Castle by the River Laune, 1903 ; plentiful about Molahiffe, &c., 1903.—VII. About Killorglin, Currans, Castleisland, Tralee, Fenit, Barrow Harbour, &c., 1888–1914.—VIII. Ardfert, Banna, Ballyheige, &c. ; and, inland, on Ballymacquin Castle, Lixnaw, and Ballinruddery near Listowel, 1894–1914.—IX. Frequent near the sea in this District and occurring inland about Listowel, 1889–1907 : *R.W.S.*

First record in 1890 : *Stewart, Proc. R.I.A.*

Shows decided calcicole tendencies in Kerry which, no doubt, explains its frequent occurrence on old castles, walls, &c.

MYRICACEÆ.

MYRICA Linn.

M. Gale Linn. *Bog Myrtle.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Bogs and wet moory ground. Common and locally abundant. A small bush. May—June. *Calcifuge B.*

From sea-level, to 1,000 feet on Brandon (*Hart*), to 1,025 feet in the Roughty valley, to 1,100 feet in the Slaheny valley (*R.W.S.*), and to the same height on the Reeks (*Hart*).

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 25.

CUPULIFERÆ.

BETULA Linn.

B. pubescens Ehrh. *B. glutinosa* Fries. *Common Birch.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Woods, mountain slopes and glens, roadsides, &c. Common. Tree. April—May.

From sea-level, to 1,280 feet by Lough Barrot near Connor Hill, to 1,380 feet on the Reeks (*Hart*), and to 1,550 feet by Glas Lough on the Purple Mountain (*R.W.S.*).

First record in 1806 : *Isaac Weld's Killarney*, p. 133.

This is much the more common form of Birch in Kerry where it occurs both as an upland and a lowland tree. As might be expected from its frequency and attractive growth, the Irish equivalent for Birch, *Beith* [*beh*], enters freely into Kerry place-names ; the following two examples may be given—Rossbehy, or the *Point of the Birches*, a little watering place on Dingle Bay, and Beheenagh, or the *Place abounding in Birch*, which is situated in the north of the county near the River Feale.

Many fine trees occur about Killarney especially along the roadside between Five Mile bridge and Derrycunihy ; one measured here in June, 1903, was $7\frac{1}{2}$ feet in girth at 6 feet from the ground, while another was rather over 8 feet at 2 feet from the ground.

[*B. VERRUCOSA* Ehrh. *B. alba* Linn., *in part.* This tree appears to be confined to the lowlands in Kerry where it occurs nearly throughout the county planted in woods, hedges, demesnes and about houses, &c. It has nowhere the

look of a native and occupies a position in the county similar to that occupied by *Ulmus campestris*.

In addition to the trees that can be referred to one or other of the above species, there are many Birches met with about Killarney and elsewhere in the county, that cannot with certainty be included under either ; some of these are almost certainly hybrids as has been suggested by several observers.]

ALNUS Mill.

A. glutinosa Gaertn. *A. rotundifolia* Mill. Alder.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. River banks, damp woods and hedges, and other swampy places. Common. Tree. March.

From sea-level, to 650 feet above Lough Coomasaharn, Glenbeigh, and to 900 feet near houses on the Loo Bridge-Ballyvourney road (*R.W.S.*).

First record in 1805 : *John Carr*, "*A Stranger in Ireland in the year 1805.*"

Some fine Alders grow in the swampy woods about Killarney ; one in the Home Park near the Ross road, measured in 1904, was nearly 6½ feet in girth at three feet from the ground.

CORYLUS Linn.

C. Avellana Linn. Hazel.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Thickets, rocky places, hedges, &c. Common. A bush or small tree. February—March.

From sea-level, to 850 feet on the Reeks (*Hart*), to 900 feet in the Slaheny valley and to 950 feet in the Horse's Glen, Mangerton (*R.W.S.*).

First record in 1882 : *Hart*, *Proc. R.I.A.*

This sometimes attains considerable dimensions about the Killarney lakes. A tree measured in 1904 near the Derry-cunihy stream below the Queen's Cottage slightly exceeded six feet in girth at two feet from the ground where it divided into several branches.

QUERCUS Linn.

Q. Robur Linn. Oak.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Woods, hedges, rocky places, &c. Common. A large tree. April—May.

From sea-level, to 1,125 feet on rocks near the summit of the old Kenmare-Glengarriff road (*R.W.S.*).

The earliest available notice of the Oak as occurring in the county is found in an *MS.* inquisition of the estates of Rory O'Donohoe, made in or about 1584, a translation of which is given in Vol. XXXVI., p. 433, of the *Journ. of the Roy. Soc. of Antiquaries* (Dec. 1906). Referring to the Killarney woods, it states that "a great part of these woods consists of oak trees, great and small." It is curious that Dr. Smith in his *History of Kerry, 1756*, makes no reference to the Oak in that work although he often alludes to other timber trees both native and foreign. The earliest printed record, indeed, does not occur apparently until fully fifty years later, when Mr. Isaac Weld in his *Illustrations of the Scenery of Killarney* published in 1806, makes constant reference to the Oak trees growing about the Lakes and in several places alludes to the ruthless destruction of these trees then going on.

All three forms of the British Oak occur in Kerry. About Killarney, *Q. sessiliflora* Salisb. appears to be the prevailing form. Out of 95 trees examined in the woods of Ross Island, Muckcross demesne, and about the Upper Lake, 74 proved to be *Q. sessiliflora* while only 3 were *Q. Robur*, the remaining 18 being their hybrid. An old Oak wood in Barry's Glen between Killarney and Farranfore proved, on the other hand, to be composed mainly of *Q. Robur*.

Like other timber trees, the Oak has been much planted in the county and it is now difficult to distinguish the native from the introduced growth. It appears, however, to be truly native in several localities about Killarney and is certainly so in some of the old woods in the remoter glens and valleys in several parts of the county. The frequency in Kerry of place-names with the prefix or affix *derry* an oak wood, point to the tree having formerly been much more plentiful in the county than it is at present. Joyce in his *Irish Names of Places* gives *Darrery*, or a place abounding in Oaks, as the Irish name for Valencia Island, where, outside the demesne at Glanleam, the Oak as a native tree has now almost ceased to exist. Names such as Derrymore, Derrysallagh, Derrycunnihy, Darrynane, Kilderry, Derrynasaggert, Derreen, &c., are only a few examples of places which may be found scattered all over the county from north to south.

Many fine trees occur about Killarney, especially in the Home and Deer Parks, as well as in the grounds of Flesk

Cottage on the Muckcross road and elsewhere about the Lakes. One of the tallest, though not the largest in girth, is the Royal Oak on the Tomies shore of the Lower Lake east of O'Sullivan's Cascade; this tree measured in 1901, was $13\frac{1}{2}$ feet in girth at three feet from the ground; another in the Home Park, similarly measured in 1912, was $15\frac{1}{2}$ feet in girth.

FAGUS Linn.

F. sylvatica Linn. *Beech*.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Alien. Woods, hedges, demesnes, &c. Common. A large tree. April—May.

First record in 1756: *Dr. Smith, Hist. of Kerry*, p. 205.

The Beech has been much planted in Kerry and has very rarely the appearance of a native; it sows itself readily, however, and seems to thrive well in the moist climate. Many fine trees grow about Killarney, Muckcross, Torc, &c.; one measured in 1904 near Muckcross Abbey, was 14 feet 8 inches in girth at four feet from the ground; two others in the Home Park, Killarney, measured in 1912, were $14\frac{3}{4}$ and $15\frac{3}{4}$ feet in girth respectively at three feet above the ground.

[CARPINUS BETULUS Linn. *Hornbeam*. This handsome tree occurs but very rarely in Kerry even as an introduction. That there is nothing in the climate adverse to its growth is shown by the fine specimen—the largest of the very few seen in the county—which grows at Mahony's Point on the north side of the Lower Lake, Killarney. This tree, measured in July, 1903, was $15\frac{1}{2}$ feet in girth at about one foot from the ground, it there divided into many large spreading branches, of which one of the finest fell a victim to the great gale of 27th February, 1903.]

[CASTANEA SATIVA Mill. *Sweet Chestnut*. This tree has been planted in several localities in Kerry and thrives very well indeed there. Dr. Smith in his *Hist. of Kerry*, 1756, p. 163, mentions some fine avenues of Walnut, Chestnut, &c., as occurring near Tralee, while Mackay in his *Catalogue of Plants*, 1825, also refers to some fine examples, which are still flourishing. Many other large trees are to be seen in the Home Park, Killarney, and elsewhere in the county.]

SALICINEÆ.

SALIX Linn.

S. pentandra Linn. *Bay-leaved Willow.*

Districts — II. [III.] [IV.] — VI. — — —
 Alien. Hedges, marshy ground and about houses. Rare.
 A small tree or bush. May—June.

II. Frequent about Sneem and Castlecove in hedges, &c. :
R.W.S. 1890, and in 1913; sparingly about Clashnacree
 and near Blackwater bridge, Kenmare Bay, 1903 [—III. One
 or two small trees by a cottage north of Inny bridge on the
 Cahersiveen road, 1905.—IV. One tree by a cottage on the
 Ardraw-Gaddagh road west of Churchtown, 1903.]—VI.
 Several bushes in a swampy wood on the west side of Ross
 Island, Killarney : *R.W.S.* 1904, and in 1912.

First record in 1890 : *R.W.S.*, *Journ. of Bot.*

This handsome Willow is quite established about Sneem
 and Castlecove and appears to be spreading there slightly.

S. fragilis Linn. *Crack Willow.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
 Denizen or Alien. Hedges, marshy ground and by streams.
 Rather common. Tree. April—May.

First record in 1901 : *R.W.S.*, *Topog. Bot.*

This tree is most probably not native in Kerry; it must,
 however, have been introduced many years ago and is now
 thoroughly established in the county.

S. alba Linn. *White Willow.*

Districts I. II. III. — V. VI. VII. VIII. IX.
 Alien. Damp places, nearly always in hedges or about
 houses. Rather common in the north and south of the
 county, but quite rare over large areas in the centre. Tree.
 April—May.

Rare in the following Districts—III. About Glanleam,
 Valencia Island, 1906.—V. Sparingly about Castlegregory,
 1901.—VI. Sparingly in Muckcross demense, Killarney, 1900 :
R.W.S.

First record in 1890 : *Stewart, Proc. R.I.A.*

More frequent in the north than elsewhere in the county
 but looks less native than even *S. fragilis*. It appears to
 reach a greater size in Kerry than the preceding; several
 very large trees may be seen about Ballyhorgan south-west
 of Listowel.

S. cinerea Linn. *Sally. Grey Willow.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Hedges, stream-sides, damp woods and marshy places. Common. A small tree or bush. March—April.

From sea-level, to 1,330 feet on the Reeks (*Hart*), and to 1,550 feet by Glas Lough, Purple Mountain (*R.W.S.*).

First record in 1882 : *Hart, Proc. R.I.A.*

S. aurita Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Wet thickets and moors, stream-sides, swampy places, &c. Common. Bush. March—May.

From sea-level, to 1,625 feet on cliffs south of Lough Erhagh, Mangerton, and to 1,900 feet on the Coomacarrea Mountains, Glenbeigh (*R.W.S.*).

First record in 1882 : *Hart, Proc. R.I.A.*

One of the most common Willows in Kerry, especially on the lower slopes of mountains.

S. caprea Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Hedges, about houses, bushy places, &c. Rather common but rare over wide areas. A small tree. March—April.

Rare in the following Districts—III. Sparingly near Caragh Lake, 1906.—IV. By the Tomies shore, Lower Lake, Killarney, 1901, and near the River Laune, 1892.—VIII. About Ardfert, 1905, and Kerry Head, 1902 : *R.W.S.*

From sea-level, to 700 feet in a glen south of Lough Guitane (*R.W.S.*), and to 1,380 feet above Lough Cummeenmore, Reeks (*Hart*), but rarely seen above 500 feet.

First record in 1882 : *Hart, Proc. R.I.A.*

This is much rarer in Kerry than are either of the preceding species and seldom occurs in any abundance. It is usually lowland and in many of its stations is open to the suspicion of introduction, but there can be no doubt that it is native in mountain glens in the south of the county. Several fine trees grow by the roadside close to the iron bridge crossing the River Laune near its exit from the Lower Lake and also by the road near Fybagh bridge north of Castlemaine Harbour.

S. repens Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Damp spots in sandhills, rocky or heathery places by the sea and, more rarely, inland on moors, &c. Rather

common and locally abundant. A small trailing bush. April—May.

From sea-level, to 650 feet in the Roughty valley (*R.W.S.*).

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 25.

This plant, which is as variable in its appearance as it is in its habitats, is especially abundant in damp flats among the sandhills, sometimes almost concealing the surface for many square yards.

S. ambigua Ehrh. *S. repens* × *aurita*.

II. Near Gleesk south-west of Sneem, 1904, with its parents.—III. Roadside between Ballinskelligs and St. Finians Bay a little south of the summit, 1900, with the parents : *R.W.S.* In a damp sandy field between Dooaghs and Cromane, Castlemaine Bay (*Marshall & R.W.S.*) *R.W.S.* 1904, and in 1913.—IV. In a damp field a little north of the Gap of Dunloe, 1904 : *R.W.S.*

S. viminalis Linn. *Osier.*

Districts I. II. III. IV. V. VI. VII. VIII. IX. Alien. Roadside banks and ditches, about cottage gardens and in damp places. Common. Bush. April—May.

From sea-level, to 800 feet by cottages in the upper Roughty valley and to 850 feet on the Loo Bridge-Ballyvourney road (*R.W.S.*).

First record in 1901 : *R.W.S., Topog. Bot.*

S. Smithiana Willd. *S. viminalis* × *caprea*.

This hybrid appears to be one of the commonest Willows in Kerry and extends to much wilder stations than *S. viminalis*. Like other hybrids, it varies much in appearance.

S. herbacea Linn.

Districts I. II. III. IV. V. VI. VII. — — Native. In cracks in the bare rocks and in stony or grassy places on the higher mountains. Rather rare. A very small, low, shrub. June—July. *Calcifuge A.*

I. On Hungry Hill at 2,200 feet and on Knockowen, Cahal Mountains, at 2,100 feet, 1894 : *R.W.S.*—II. On Beeown Mountain north of Sneem, from 1,800 to 2,300 feet, 1901 : *Colgan & R.W.S.*—III. Sparingly on Crowkeylaun Mountain east of Waterville, 1892 : *R.W.S.*—IV. On Carn Tual, Reeks (*More*) *Rec. Add.* 1872. In many localities on the Reeks, ranging from 2,350 to 3,050 feet : *Hart* 1882. On Broaghna-binnia (Sugarloaf Mountain), Black Valley, at 1,800 feet

and lower : *Hart 1882 a.* On the north side of Mullaghannattin Mountain, upper Glencar : *Colgan 1886*.—V. On Pierasmore north of Brandon summit, at 2,500 feet, lower limit at 1,900 feet near Connor Hill ; at 2,500 feet on Beenoskee near Castlegregory and at 2,650 feet on Caherconree, Slieve Mish range : *Hart 1884*. Frequent on the Slieve Mish range especially on Baurtregaum : *R.W.S. 1889*, and ascends to 2,950 feet on Brandon.—VI. “ Pretty common on the top of Mangerton mountain, by the steep side of the horse pool, or Poul-na-coppel ” : *Wade Rar. 1804*. On Mangerton (*Carroll*) *Phytol.*, 1857, p. 76. Still occurs pretty plentifully in Wade’s station which lies on the ridge dividing the Punch Bowl from the Horse’s Glen ; it occurs also near the point marked on the map 2,568 feet north of the Punch Bowl, on rocks south of Lough Managh and sparingly on Stoompa to the east of the Horse’s Glen, 1890–1904.—VII. Sparingly on the Slieve Mish range above the Gormagh cliffs, 1889 : *R.W.S.*

Ranges in Kerry from about 1,800 to 3,050 feet (*Hart*).

First record in 1804 : *Wade Rar.*

This diminutive Willow is next to *Saxifrage stellaris* and *Sedum Rhodiola*, the most common and widely distributed of the alpine plants in Kerry.

S. purpurea Linn.

Districts — II. III. — V. VI. VII. — IX. Alien or Denizen. Hedges, riversides and damp places. Rare. A bush or small tree. April—May.

II. Sparingly near Blackwater bridge and Clashnacree, Kenmare Bay, 1894.—III. Near Ballinskelligs, 1900, and about Knightstown, Valencia, 1906.—V. In several places about Castlegregory ; abundant about Fermoy, &c., and between Hillville and Connor Hill, Brandon Bay, 1888–1908.—VI. In several localities about Killarney, as on Ross Island, near the old mine holes, &c., in Muckcross demesne and near Cloghereen, 1888–1913 ; abundant along the River Flesk near Brewsterfield bridge, 1888–1914.—VII. Sparingly on the roadside west of Boolteens, Castlemaine Harbour, 1904, and sparingly at Ballyseedy east of Tralee, 1890.—IX. By roadsides on the north side of Knockanore Mountain near Ballybunnion, 1894 : *R.W.S.* Near Listowel, 1913 : *Phillips*.

First record in 1889 : *R.W.S., Journ. of Bot.*

Very abundant and thoroughly established in some of its stations near Brandon Bay, and in Glenflesk.

[*S. NIGRICANS* Smith. "Near Dunkerrin, County of Kerry (*Dr. Taylor*)" *Flor. Hib. 1836*—as *S. cotinifolia* Smith. Most probably an error or some confusion of forms.]

[*S. RETICULATA* Linn. "On several rocky mountains in the barony of Dunkerron" (*Dr. Smith*) *Hist. of Kerry, 1756*, p. 381, No. 88. No doubt an error; most probably the dwarf mountain state of *S. aurita* or perhaps *S. herbacea* was the plant intended.]

POPULUS Linn.

P. tremula Linn. *Aspen.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Rocky places, hedges and woods, &c. Rather rare.
A small tree. March—April.

I. Sparingly about Kenmare and in the old grave-yard near Sheen bridge, 1904; a few trees south-west of Roughty bridge, 1903; sparingly about cottages near Lough Inchiquin south of Cloonee, 1908.—II. Sparingly north of Kenmare, 1904, and in the Darrynane woods, 1905.—III. In several localities on the north and east sides of Caragh Lake, on roadsides, rough bushy slopes and woods, some of these stations looking native, 1906–13; sparingly in the Lickeen woods, Glencar, 1911.—IV. Along the Tomies shore near Stag Island, Lower Lake, Killarney, native, 1904; sparingly in Beaufort woods, 1902; roadside west of Bauncune near the River Laune and by cottages on the Ownagarry-Caragh road, 1904; on the east side of Caragh Lake near the Sugar-loaf, 1913.—V. Sparingly in a small wood below Fermoy, Brandon Bay, 1905.—VI. Plentiful on rocks overhanging the Lower Lake both east and west of Brickeen bridge and about Glenna Bay, Killarney; about the Old Weir bridge and along the Long Range; abundant also on rocks along the east side of the Upper Lake and about Cromaglan, 1888–1914, native in all these stations; it occurs also in several other localities about Killarney, as on a small island in Ross Bay, on Mahony's Point, by the side of the River Laune near Grenagh, &c.; some fine trees on the Southhill road and sparingly in Glenflesk near Loo Bridge, 1901–09.—VII. On roadsides, &c., about Killorglin, Castlemaine, Boolteens, Fyback, &c., 1904.—VIII. By the Listowel-Lixnaw road in several places, and—IX. In several localities about Listowel and Kilmorna; especially fine near Tarbert, &c., 1899–1908: *R.W.S.*, and seen in several stations in District IX. in 1913: *Phillips*.

From sea-level, to 800 feet on rocks beside Lough Crinkaun near the Upper Lake, Killarney (*Phillips*).

First record in 1901 : *R.W.S.*, *Topog. Bot.*

There can be no reasonable doubt that the Aspen is native in most of its stations about the Killarney lakes, where it occupies much the same position on the sandstone that *Pyrus rupicola* does on the limestone. It appears to be native also in Glenflesk and in some of its Caragh Lake localities but elsewhere in the county it has most probably been planted.

Although usually but a small tree, the Aspen occasionally attains to very considerable dimensions in Kerry. A tree measured in 1904 on Brown Island, Lower Lake, Killarney, just exceeded four feet in girth at three feet from the ground, while another near Gleng Cottage, measured the same year, was 6 feet 8 inches in girth at the same height from the ground and was about 60 feet in height.

[*P. NIGRA* Linn. *Black Poplar*. This tree appears to be rarer in Kerry than the following species, *P. serotina*, and like it to occur only where it has been planted. It is much more commonly seen in the north of the county than in the south being rather frequent about Tarbert, Ballylongford, Listowel, Lixnaw, Ardfert, Tralee, &c. In the south it has been noticed sparingly in two or three places about Kenmare and Killarney, one fine tree growing about half a mile from the latter town near the Muckcross road and another on Cloghereen green. It has also been seen growing by streams in a few spots in the Dingle peninsula and appears to be thinly scattered over the rest of the county. All the trees so far examined by Mr. R. A. Phillips and R.W.S. belong to the *var. betulifolia* with pubescent twigs, the usual form in the British Isles.

The *Lombardy Poplar*, regarded by Prof. Henry as only a sport of *P. nigra*, is not a common tree in Kerry but has been noticed in several localities in all of which it has been planted.]

[*P. SEROTINA* Hartwig. *P. nigra* × *deltoidea*. This conspicuous tree, planted in every case, is thinly scattered throughout the county usually along roadsides, in hedges or in damp places. Judging by its wide distribution and the size to which it has attained it must have been introduced into Kerry many years ago. It is a hybrid of *P. nigra* and *P. deltoidea* neither of these species being native in Ireland

nor, indeed, in the British Isles unless the former is so in the south of England. Several fine trees occur about Listowel, Killarney, &c. ; one near Ross Castle almost beside the Lower Lake, measured in 1904, was 12 feet 8 inches in girth at 3 feet from the ground, while another near by was 13 feet 8 inches at the same height.]

EMPETRACEÆ.

EMPETRUM Linn.

E. nigrum Linn. *Crow-berry.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On heaths, usually at a high elevation. Common as a mountain plant, rare at low levels. A dwarf trailing shrub. April—June. *Calcifuge* A.

Low-level stations are—II. Abundant on the Abbey Island, Darrynane (*R.W.S.*) *Cyb.* 1898, and at the west end of Lamb's Head, from 100 to 325 feet above sea-level, 1904 : *R.W.S.*—III. On the western face of Bolus Head, Ballinskelligs Bay, 1906, and abundant on Doulus Head, Valencia Harbour, 1908 : *Miss Delap.*—V. Near sea level on Brandon Head : *Hart* 1884. At about 700 feet on the Great Blasket Island : *Barrington* 1881.—VIII. In several places on Kerry Head : *R.W.S.* 1889.—IX. On heaths south-west of Ballybunnion : *Stewart* 1890.

From sea-level, to 3,314 feet on the summit of Beenkeragh, Reeks (*Hart*).

First record in 1804 : *Wade Rar.* “Near Killarney on Mangerton, Turc, and Purple mountains.”

This plant occurs on nearly all the Kerry mountains above 2,000 feet in height, often in great abundance. It rarely descends on them below 1,600 feet, a gap of 1,400–1,200 feet generally separating the mountain from the lowland stations. The berries are said to be greatly esteemed by grouse.

CERATOPHYLLÆ.

CERATOPHYLLUM Linn.

C. demersum Linn. *Hornwort.*

District — — — — VI. — — —
Native. In still water. Very rare and local. Peren.
June—July.

VI. Abundant in a pool at the foot of Ross Castle, Kil-

larney Lakes (*H. N. Ridley*) *Journ. of Bot.* 1884, p. 92. Still abundant in this pool which is used by the Killarney boatmen as a harbour, and thinly scattered over the adjoining Ross Bay with which this pool communicates, 1910 : *R.W.S.*

First record in 1884 : *H. N. Ridley, loc. cit.*

This plant appears to be confined in Kerry to one small area in the Lower Lake, Killarney. Only two localities are known for it in the adjoining county Cork and one in Lime-ric ; it is nowhere a common plant in Ireland.

CONIFERÆ.

JUNIPERUS Linn.

J. communis Linn. *Juniper*.

Districts — II. — — — VI. [VII.] — —
Native. Rocky and bushy places. Rare and local. Bush.
May.

II. Abundant and fine about the south end of the Upper Lake, Killarney, 1906 : *R.W.S.*—VI. “ In the mountains of Dunkerron and some few about Killarney lake, near Muckross ” (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 377, No. 52. “ About the Lakes of Killarney particularly on a rock called Juniper Island, near Mucruss ” : *Wade Rar.* 1804. Still in Muckross demesne and near the east end of the Middle Lake ; abundant on some of the islands and on portions of both the north and south shores of the Upper Lake, Killarney, 1888–1912, and [—VII. Frequent in Ballyseedy demesne, east of Tralee, 1890—planted] : *R.W.S.*

First record in 1756 : *Dr. Smith, loc. cit.*

As a native plant in Kerry, *Juniperus communis* is now almost confined to the neighbourhood of the Killarney Lakes. It occurs there chiefly about the southern half of the Upper Lake where many fine old bushes still exist. It is much rarer than the closely allied *J. nana* in both Kerry and Cork ; indeed, with the exception of an old and unconfirmed record from the “ mountains in Bere ” which should most probably be referred to the following, it appears to be unknown elsewhere in the south-west of Ireland as a native tree. With the Yew, *Arbutus* and *Pyrus rupicola*, this bush must be numbered among the diminishing species in Kerry.

J. nana Willd. *J. sibirica* Burg.

Districts I. II. III. IV. V. VI. — — —
Native. Rocky and heathy places and mountain cliffs.
Rather rare and local. A prostrate shrub or low bush. May.

I. Several very old bushes on a small island in the Middle Cloonee Lake, 1900 : *R.W.S.*—II. "On some of the islands towards the head of Kenmare river" (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 85. On Abbey Island and in several other places about Darrynane, 1905 ; abundant on the north side of Lamb's Head, 1904 : *R.W.S.*—III. On the west side of Beginish Island, Valencia Harbour, 1892 : *G. L. Bruce*. In Coarhabeg bog near Bray Head, Valencia Island, 1907 : *Miss Delap.*—IV. At 1,800 feet on Carn Tual, Reeks : *Druce* 1891.—V. Sparingly at 1,650 feet above Lough Nalacken on Brandon Mountain : *Hart* 1884.—VI. Found by an apothecary on one of the islands in Lough Lane, Killarney (*Dr. Molyneux*) *Phil. Trans.*, 1697, No. 227—as "*Sabina*." Recorded also under the same name—" *Sabina* " or " *Savin* "—as found "in the islands of Lough-Lane (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 381, No. 87. Still occurs sparingly about the Lower Lake, Killarney, as on Cow Island and on one or two rocky islets near Ardnagluggen Point on the Muckcross shore, 1912 : *R.W.S.*

From sea-level in several places, to 1,650 feet on Brandon (*Hart*), and to 1,800 feet on the Reeks (*Druce*).

First record in 1697 : *Dr. Molyneux*, *Phil. Trans.*, No. 227, p. 511, as "*Sabina*," a name applied by early writers to *J. nana*. This is the earliest definite botanical record for Kerry, a record it shares with *Saxifraga umbrosa*.

What *J. nana* really is, subspecies, variety or merely a state, is still uncertain. Mr. Elwes and Prof. Henry in their *Trees of Great Britain and Ireland* state that seeds of *J. nana* sown at Berlin produced plants indistinguishable from *J. communis*, while the common Juniper cultivated on Mont Blanc at an elevation of 6,800 feet assumed the habit of *J. nana* in three years. Both these bushes, however, appear to retain their respective forms about the shores of the Killarney Lakes where they are found growing within a few miles of each other at little above sea level.

[*J. SABINA* Linn. *Savin*. *Dr. Molyneux's* record for this plant in *Phil. Trans.* 1697, and *Dr. Smith's* in his *Hist. of Kerry*, 1756, are referred to *J. nana*, *vide supra*.]

TAXUS Linn.

T. baccata Linn. *Yew.* *Palms.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Rocky places, woods and thickets, &c. Rather rare. A small tree. March—April.

I. In several places about Kenmare and some fine trees in Ardtully demesne, 1904 ; about the Cloonee Lakes, especially fine on an island in the Middle Lake, 1900-12.—II. Sparingly about Kenmare, Blackwater bridge, Darrynane, 1904, and more frequently in the Owenreagh valley south of the Upper Killarney Lake, 1909.—III. Sparingly in the Lickeen woods, Glencar, 1911.—IV. In Beaufort woods and two or three fine trees by Dunloe Castle, 1901 ; sparingly on the west side of the Purple Mountain, 1904, and very sparingly above Lough Gouragh in the Hag's Glen, Reeks, 1911 ; in the Glencar valley and on the east side of Caragh Lake near the Sugarloaf, 1913.—V. About Fermoy, Brandon Bay, 1905.—VI. Plentiful about all the Killarney Lakes and on most of their islands as well as about the Long Range, &c., 1888-1914, sparingly in Glenflesk, 1904.—VII. Frequent in Ballyseedy demesne east of Tralee, 1890.—VIII. About Ardfert Abbey, &c., 1907 ; in Ballinruddery demesne near Listowel, 1899.—IX. About Lislughtin Abbey near Ballylongford, 1904 : *R.W.S.*

From sea-level, to 1,275 feet above Lough Gouragh, Reeks, and to 1,550 feet beside Lough Glas on the Purple Mountain (*R.W.S.*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 382, No. 97.

There can be no doubt that the Yew like the Arbutus and the Oak was formerly much more abundant in Kerry than it is now. The Irish equivalents for this tree—*eo* (o' or yo') and *iubhar* (oor or yure), and *eochaill* (ohill) a yew wood enter frequently into the county place-names. In several of these localities, however, as at Aughils on the north side of Castlemain Harbour where it must once have been a prominent feature not a tree is now to be seen. *Dr. Smith*, writing in 1756, states in his *History of Kerry*, p. 382, that "it grew in prodigious quantities on the mountains of all our southern baronies, until it was destroyed for making coals for the iron-works" ; it is now quite a rare tree in Kerry outside the Killarney lake district and most probably cannot claim to be native in some of the stations given above.

Many fine trees may still be seen about Killarney. The Muckross Abbey Yew was mentioned by *Dr. Smith* in 1756 as one of the tallest he had ever seen and as even then overshadowing the whole cloister, while in 1780, *Arthur Young*, in his "*Tour in Ireland*" states it to be "the most prodigious" he had ever beheld and as then measuring 2 feet in diameter and 14 feet in height. In 1904, this tree was found

to be 9 feet 3 inches in girth at two feet from the ground, and 9 feet 1 inch at five feet, so it appears to have increased about a foot in diameter during the last 125 years. According to the local custodian the tree was most probably planted in the Abbey about the year 1344, the date of its completion, but there appears to be some diversity of opinion as to the correctness of this date. While the Muckross Abbey Yew is the most famous and probably the most symmetrical, it is not the largest growing about these lakes. A tree near the Abbey, measured in 1904, was 9 feet 9 inches in girth at three feet from the ground, while another, on Innisfallen Island, was 13 feet in girth near the ground where it divided into two large branches, one 9 feet 2 inches, the other 4 feet 3 inches in girth; a somewhat similar tree on the same island was 10 feet 11 inches in girth, dividing into two branches of 8 and 4 feet respectively. Several other Yews measured in 1903-04, some of them well grown straight trees, varied in girth from 7 feet to 10 feet 6 inches.

[PINUS SYLVESTRIS Linn. *Scotch Fir*. There can be no doubt that this tree was formerly abundant as a native in Kerry as elsewhere in Ireland, many of the bogs being still full of its roots and stumps. When, or how, these Pine forests were destroyed is not very clear. Some of the stumps show the marks of fire, but a conflagration however great, could hardly account for the wholesale destruction which must have taken place. This extermination is thought by some writers to have occurred during the Glacial Epoch,* but as the peat in which these pine stumps are now found is a post glacial formation, it is evident that the Scotch Fir was abundant in Ireland at a date subsequent to this period. If the early botanical writers can be relied on, this Fir appears to have been growing in Kerry as a native in comparatively modern times. Thus in Ray's *Synopsis*, Ed. 2nd, 1696, the Scotch Fir is stated to have been "found by Mr. Harrison . . . in the county of Kerry (where the Arbutus grows) by a person of good integrity and skill in the knowledge of plants." While Dr. Smith, writing in 1756, says that both the "Common Fir-tree" and the "Scotch Fir" were formerly wild in the county but that "these trees have been much destroyed of late years, for except a small shrub here and there among the rocks, there are none standing at present of any large size" (*Hist. of Kerry*,

* Vide Clement Reid's *Origin of the British Flora* 1899, Chap. IV., &c.

p. 372, No. 1). Whether these trees were really native in the county it is now impossible to decide. According to Dr. Joyce, the Fir tree has not given its name to many places in Ireland, which may be taken as showing that it had become quite rare in very early times, and even in the few place-names into which it enters, it is quite open to question whether the living tree or bog-deal is referred to. No native Fir is now known in Kerry although it occurs as a planted tree nearly throughout the county. Several of these trees have attained to large dimensions, as about Mahony's Point and elsewhere in the neighbourhood of Killarney.

Seedling Firs, not much more than an inch in height, have several times been noted in the summer months growing abundantly on the damp shrunken margin of the Lower Lake, Killarney; they appear, however, to be destroyed by the first rise of water.]

MONOCOTYLEDONES.

HYDROCHARIDÆ.

ELODEA Michx.

E. canadensis Michx. *Anacharis Alsinastrum* Bab.
Water Thyme.

Districts — — — — — VIII. IX.
Alien. In rivers and ditches, in sluggish or still water.
Very rare. Peren. July–August.

VIII. Abundant in several spots in the Lixnaw canal and in the River Brick, 1902–07; sparingly in roadside ditches about Sleveen and again one mile south of Cashen Ferry bridge, 1904; sparingly in the River Feale about Listowel, 1897–1908, this locality extends into—IX.: *R.W.S.*, *Cyb. 1898*.

First record in *Cyb. 1898*: *R.W.S.*

This North American water-weed was first noticed in Ireland about 1836 and spread like a plague over the greater portion of the country within twenty-five years. It seems to have taken but a slight hold in Kerry considering the many suitable localities the county offers. It appears, however, to be increasing in the stations recently examined.

ORCHIDÆÆ.

MALAXIS Swartz.

M. paludosa Swartz. *Bog Orchis.*

Districts I. — III. IV. — — — —
Native. Spongy bogs and wet turfy places. Rare and local.
Peren. July—September.

I. In a marsh between Priest's Leap Mountain and Ashgrove, on the Kenmare side : *Mackay Rar.* 1806. In a wet hollow near the summit of Ballaghscart Pass between Glanmore valley and Adrigole, 1894.—III. Sparingly in a couple of spots near the Holy Well at the foot of Knocknadobar Mountain north of Cahersiveen, 1896 : *R.W.S.*—IV. In small quantity by Lough Curraley, Beenbane, Reeks : *Hart* 1882, and in 1887 : *R.W.S.* Near the foot of Mullaghannattin Mountain, Glencar, 1885 (*Colgan*), and rather sparingly on the wet slopes of the Glencar River below Bealalaw bridge, 1887 (*R.W.S.*) *Cyb.* 1898.

Ranges from 150 feet in Glencar, &c. (*R.W.S.*), to about 800 feet on the Reeks (*Hart*), and to 900 feet at Ballaghscart (*R.W.S.*).

First record in 1806 : *Mackay Rar.*

This little Orchid is very irregular in its appearances, not a trace of the plant being found one year where it was fairly plentiful a year or two previously. It is easy to overlook owing both to its small size and inconspicuous colour and will, no doubt, be found to have a much wider range in the south of the county than the above records would indicate.

NEOTTIA Adans.

N. Nidus-avis Rich. *Bird's-nest Orchis.*

Districts I. — — — — VI. — — IX.
Native. Woods and shady places. Very rare. Peren.
June—July.

I. Uragh wood by Lough Inchiquin, Cloonee : *Hart* 1885.—VI. Rather frequent about Killarney, as in several spots by the roadside both north and south of the entrance to Torc Waterfall, 1887–1914 ; rather frequent in Muckcross demesne and about the Middle Lake, 1901–12 ; on Ross Island : *R.W.S.* 1888, &c. ; sparingly in the Woodlawn House shrubberies, 1909–12.—IX. Sparingly in the wood near Tarbert House : *R.W.S.* 1891, and in 1913 : *Phillips*.

First record in 1885 : *Hart, Proc. R.I.A.*

Like *Malaxis* this species appears to vary greatly in

quantity in the same locality from year to year ; quite 40 or 50 plants were once seen along a short stretch of the Torc road where hardly a plant could be found the following year. It is very rare in Kerry outside the Killarney district.

LISTERA R. Br.

L. cordata R. Br.

Districts — — III. IV. V. VI. — — —
Native. Amongst damp mosses under Heather in mountain districts. Rare. Peren. June—August.

III. Above Roads Lough on Kells Mountain, Dingle Bay, 1892 (*Colgan & R.W.S.*) *Cyb.* 1898. Above Lough Coomasaharn, Glenbeigh, 1906.—IV. In several places on the south-east slopes of the Purple Mountain ascending there to 2,450 feet, 1904 : *R.W.S.* 1908.—V. In the Feany valley, Brandon ; on Ballydavid and Brandon Heads : *Hart* 1884. On Slievedonagh, Great Blasket Island, at 700–900 feet (*Praeger & Stelfox*) *Irish Nat.* 1912, p. 160. In several localities about Connor Hill, as above Lough Clogharee, frequent about the Peddler's Lake, Lough Camclaun, &c., 1902–08 : *R.W.S.*—VI. Under an Oak by the roadside at Derrycunihy, Upper Lake, Killarney (*Praeger*) *Irish Nat.* 1898, p. 227. Above Lough Glannafreaghaun to the east of the Paps Mountain (*Marshall & R.W.S.*) *R.W.S.* 1904. On the north side of this mountain above Lough Nageeha, 1910, and frequent on the lower slopes of Mangerton west of Lough Garagarry, 1904 : *R.W.S.*

Ranges from about 125 feet near the Killarney Lakes (*Praeger*), to 1,300 feet on Brandon (*Hart*), and to 2,450 feet on the Purple Mountain (*R.W.S.*).

First record in 1884 : *Hart, Proc. R.I.A.*

Few plants escape observation better than this little Orchid. Its favourite haunt is amongst mosses growing about the roots and stems of *Calluna* and *Erica cinerea*, and it is not until this growth, sometimes two or three feet in depth, has been separated that the plant can be seen. It is, no doubt, much more widely distributed in the county than the above records would show.

L. ovata R. Br. *Twayblade*.

Districts I. — III. IV. — VI. VII. VIII. IX.
Native. Moist woods and pastures. Rather rare. Peren. June—July.

I. In several localities about Kenmare, as in a wood below Mucksna and on both the north and south sides of the

estuary east of the Suspension Bridge; sparingly near Killowen, frequent in the Ardtully woods and west of Kilgarvan, 1890–1904.—III. Sparingly by the roadside on the west side of Blackstones bridge, Glencar, 1911: *R.W.S.* A small form about Lickeen, Glencar, 1903: *F. Bouskell*.—IV. Sparingly in the Glencar woods near the Caraghbeg River, 1911; in Beaufort woods, 1902, and sparingly on the banks of the Owenreagh stream south of the Upper Killarney Lake, 1899.—VI. In many localities about the Killarney Lakes, often very fine and abundant, as in Muckcross demesne, the Home Park, &c.; near Rockfield and Fahagh; in a boggy pasture west of Barraduff; sparingly in woods west of Loo Bridge, Glenflesk; about Farranfore, 1888–1914.—VII. Abundant in Ballyseedy woods east of Tralee, 1890, and sparingly about Scrahan near the Spa, Tralee Bay, 1899: *R.W.S.* Near Kilmaniheen and Beheenagh south of Abbeyfeale, rather frequent here in poor pastures, 1903: *Rev. W. E. Bentley*.—VIII. In a wet field east of Lixnaw and rather frequent south of the Cashen Ferry bridge, 1902.—IX. Sparingly in woods by the River Feale east of Listowel, 1890; in fields near Shrone bridge by the River Galey and east of Ballybunnion, 1902; sparingly in Tarbert House woods, 1890: *R.W.S.* Still in Tarbert wood, 1913: *Phillips*.

First record in *Cyb.* 1898: *R.W.S.*

The Twayblade grows to large dimensions about the Killarney Lakes; plants over two feet in height with leaves measuring 6 inches by $5\frac{1}{2}$ inches have been gathered in Muckcross demesne.

SPIRANTHES Rich.

S. autumnalis Rich. *S. spiralis* Koch. *Lady's Tresses*.

Districts I. II. III. — V. — VII. VIII. — Native. Pastures near the sea and about sandhills. Rare but locally abundant. Peren. August–October. *Calci-cole A.*

I. By the River Finnihy west of Kenmare, 1889, and abundant on the south side of the estuary east of Sheen Falls, 1904.—II. On the north side of the Finnihy west of Kenmare: *R.W.S.* 1891, and in 1901.—III. On Beginish Island, Valencia Harbour, 1892: *Rev. A. Delap*, and in 1905. Cahersiveen (*W. H. Beeby*) *Topog. Bot.* 1901.—V. Abundant about the sandhills near Castlegregory and on sandy pastures about Kilshannig, 1894.—VII. Frequent on the north side

of Barrow Harbour and all over the Barrow peninsula, 1902.—VIII. Abundant about Rahoneen west of Ardfert, 1899 : *R.W.S.*

First record in 1891 : *R.W.S.*, *Journ. of Bot.*

CEPHALANTHERA Rich.

C. ensifolia Rich. *C. longifolia* Fritsch.

Districts — — III. — — VI. — — —
Native. Wet shady places. Very rare and local. Peren.
June—July.

III. In a wet wood near Lickeen at the head of Caragh Lake (*Dr. Battersby*) *Rec. Add.* 1872—still there but very sparingly in 1911 : *R.W.S.*—VI. In a wood by the Kenmare road from Killarney (*A. Balfe*), and near Derrycunihy Cascade (*More*) *Rec. Add.* 1872—still by the Killarney-Kenmare road near Derrycunihy, 1891–1902 : *R.W.S.*—probably these last two records refer to the same station. Sparingly in a shady swamp east of Brickeen bridge, Muckross demesne, Killarney : *R.W.S.* 1889.

First record in 1872 : *A. G. More*, *Dr. Battersby & A. Balfe*, *Rec. Add.*

This Orchid appears to occur very sparingly in Kerry, not more than two or three plants being seen at the same time in any of the above stations. Like several other members of the *Orchideæ*, it appears to be uncertain in its occurrence in the same spot from year to year.

EPIPACTIS Adans.

E. latifolia Allioni. *Helleborine latifolia* Druce.

Districts — — — — VI. — VIII. IX.
Native. Woods and bushy places. Rare and local. Peren.
July—early September. *Calcicole B.*

VI. “In the fissures of the rocks, and the shady hedges in the woods at Ross, Killarney” : *Wade Rar.* 1804. Plentiful near the mines, Muckross woods, Killarney : *Mackay Rar.* 1806. An *Epipactis* is still abundant in both these localities, extending to roadsides, bare limestone rocks and swampy hollows in the neighbourhood, 1910, as well as in the Home Park, Killarney, 1914 ; sparingly also in the woods at Glenflesk Castle, Killarney, 1904.—VIII. Sparingly under trees near the old Castle in Ballinruddery demesne east of Listowel, and—IX. In a small wood south-east of Tarbert, 1890 : *R.W.S.*, very sparingly in both the latter stations.

First record in 1804: *Wade Rar.*—as *Serapias latifolia*.

Var. MEDIA (Fries)—VI. About the Muckcross woods, Killarney (Babington) *Cyb.* 1866 &. (*Levinge*) *Cyb.* 1898.

Var. ATROVIRIDIS (W. R. Linton)—VI. Abundant about the old mines on Ross Island, Killarney, 1902 (*Marshall, Shoolbred & R.W.S.*) *Marshall, Journ. of Bot.* 1910, p. 109. In Muckcross demesne near the old mines on the Middle Lake, 1910: *R.W.S.*

There can be but little doubt that the Killarney plant recorded as *Serapias latifolia* by Wade and *Epipactis latifolia* by Mackay, as well as that recorded from the same locality by Babington and Levinge as *E. media*, should be referred to the recently segregated *Epipactis atroviridis* which was described and figured by the Rev. W. R. Linton in his *Flora of Derbyshire*, p. 270 (1903). Whether restricted *E. media* or type *E. latifolia* really occur in Kerry is very doubtful; certainly the Ballinruddery as well as the Glenflesk Castle plant appear to fit the description of *E. atroviridis* as perfectly as those from Ross Island. Outside the immediate vicinity of the Lower and Middle Killarney Lakes, *E. latifolia* in any form, is one of the rarest plants in the county where it shows decided calcicole tendencies.

E. palustris Crantz.

Districts — — — — V. — VII. VIII. IX.
Native. Swampy and marshy ground. Rare and local.
Peren. June—July.

V. Ferriter's Cove west of Dingle (*Babington in Herb.*) *Cyb.* 1898.—VII. Plentiful in a small swampy hollow near the railway at Clogherbrien north-west of Tralee: *R.W.S.* 1888, and in 1899.—VIII. In some plenty in swamps between Sleveen and Ballincrossig, 1908.—IX. Plentiful in a swamp about a mile and a half from Tarbert on the Listowel road: *R.W.S.* 1891, and in 1904.

First record in 1888: *R.W.S., Journ. of Bot.*

ORCHIS Linn.

O. pyramidalis Linn. *Anacamptis pyramidalis* Rich.

Districts — II. III. — V. VI. VII. VIII. IX.
Native. Dry pastures, banks, sandhills, &c. Rather rare in the south, rather common elsewhere. Peren. June—August. *Calcicole A.*

Rare or local in the following Districts—II. Frequent about Darrynane, 1905.—III. On Ballinskelligs sandhills,

1900, and Beginish Island, Valencia Harbour, 1892 : *R.W.S.*—V. About Castlegregory and on the west side of Smerwick Harbour : *Hart 1884*. Abundant about Castlegregory, 1907, and about Fermoy sandhills, Brandon Bay, 1905 : *R.W.S.* On sandhills near Brandon village, 1913 : *Praeger*.—VI. Sparingly in Muckcross demesne between the House and the Lower Lake, 1901, and near the mouth of the River Deenagh in the Home Park, Killarney, 1904 : *R.W.S.*

First record in 1884 : *Hart, Proc. R.I.A.*

Of the few representatives of Watson's *Germanic* group which occur in Kerry, this Orchid is the only one that forms a conspicuous element in its flora. It follows closely the distribution of the limestone and sandhills in the county.

[*O. MORIO* Linn. *Green-winged Orchis*.—III. Around Rossbehy near Glenbeigh, "varying from the palest pink to the deepest purple" (*F. Bouskell*) *Irish Nat.* 1903, p. 53. If correct, this record would give a welcome extension to the known range of this Orchis. It has recently been found in the north of Co. Clare, but is otherwise not known to occur nearer than south Galway and Tipperary. It has not been seen moreover in the county by any other observer and there is reason to fear that some other Orchis was mistaken for it, probably *O. incarnata* or *O. latifolia*, both of which occur abundantly in the locality mentioned.]

***O. mascula* Linn.** *Early Purple Orchis.*

Districts I. II. — IV. V. VI. VII. — IX. Native. Shady places, banks, moist pastures, &c. Rather common, but rare over wide areas. Peren. April—May.

From sea-level, to 2,300 feet on Brandon (*Marshall & Shoolbred*).

First record in 1890 : *Stewart, Proc. R.I.A.*

Probably occurs throughout the county, but appears to be very unevenly distributed. The height for which this plant is recorded on Brandon is quite exceptional ; it is very rarely seen above 1,000 feet.

***O. incarnata* Linn.**

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Wet pastures, bogs, damp hollows in sandhills, &c. Common, often abundant. Peren. May—July.

From sea-level, to 750 feet in the Slaheny valley (*R.W.S.*), and probably higher.

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 25.

This plant appears to be rather more widely distributed in Kerry than the following species and to affect wetter situations. It is not uncommon even in soft shaky bogs, where its colour is usually pale salmon or sometimes pure white.

O. latifolia Linn.

Districts I. II. III. IV. V. VI. VII. — IX.
Native. Wet meadows and pastures, damp places in sand-hills, &c. Common, often abundant. Peren. May—July.

From sea-level, to 800 feet in the Glencar valley (*R.W.S.*).

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 25.

When this and the preceding plant grow together, as they sometimes do abundantly, intermediate forms have been gathered which could not be referred definitely to either species. Mr. Marshall, who noticed similar forms about Castlegregory, &c., has suggested a hybrid origin for these plants.

O. maculata Linn. *Spotted Orchis.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Pastures, heaths, banks, woods, damp places, &c. Common. Peren. June—July.

From sea-level, to 2,380 feet on Brandon (*Hart*), to 2,796 feet on the summit of Baurtregaum, Slieve Mish range, (*R.W.S.*), and to 2,800 feet on the Reeks (*Hart*).

First record in 1881 : *Barrington, Proc. R.I.A.*

The most common and widely distributed of the Kerry Orchids ; it is sometimes seen with pure white flowers.

O. ericetorum Linton.

This subspecies or variety, first described by the Rev. E. F. Linton in his *Flora of Bournemouth*, appears to be quite as common in Kerry as the type. The Rev. E. S. Marshall and Mr. W. Shoolbred found it to be abundant in the Dingle Peninsula during their visit in 1902 (*vide R.W.S. 1903*), and it has been noted by the writer in many other places nearly throughout the county.

OPHRYS Linn.

O. apifera Huds. *Bee Orchis.*

Districts — — — — — VI. — — IX.
Native. Grassy places and sandhills. Very rare and local.
Peren. June—July. *Calcicole A.*

VI. Abundant over a small area in the Home Park

Killarney (*Marshall & R.W.S.*) *R.W.S.* 1904. Sparingly on the lawn at Carriglea between Killarney and Muckcross, 1904 : *R.W.S.* 1908.—IX. Sparingly towards the east end of Beal sandhills, Shannon estuary : *R.W.S.* 1903.

First record in 1903 : *R.W.S.*, *Irish Nat.*

HABENARIA Willd.

H. conopsea Benth. *Gymnadenia conopsea* R. Br. *Fragrant Orchis*.

Districts — II. — — V. — — — IX.
Native. In damp or swampy places. Very rare. Peren.
July—August.

II. Darrynane : *Druce* 1907.—V. Near the west end of Castlegregory Lake : *Hart* 1884. In a swamp near the east end of Castlegregory Lake and rather plentifully in swamps on the north side of the stream draining the lake : *R.W.S.* 1889, and in 1902.—IX. Rather plentiful round a swampy pond about a mile and a half from Tarbert on the Listowel road : *R.W.S.* 1891, and in 1904.

First record in 1884 : *Hart*, *Proc. R.I.A.*

H. albida R. Br. *Gymnadenia albida* Rich.

Districts I. II. III. IV. — VI. — — —
Native. Heathery places, rough pastures and banks. Rare and local. Peren. June—July.

I. On damp bushy slopes on the south side of Kenmare estuary east of Sheen falls, 1904.—II. Near the roadside about a mile south of Lough Brin, 1900 : *R.W.S.*—III. By Coomasaharn Lake near Rossbehy (*J. Woods*) *Phytol.* 1855—still on the north-west side of this lake, 1892 : *Colgan & R.W.S.* Plentiful on a rough heathery point between Rossbehy Creek and Caragh Creek : *R.W.S.* 1904.—IV. Sparingly beside the Caraghbeg River about a mile east of the Glencar Hotel : *R.W.S.* 1890. On the west bank of the Owenreagh River about a mile west of Looscaunagh Lake, 1900.—VI. Sparingly on the south bank of the Flesk below Brewsterfield bridge and more plentifully where the Finnow joins the Flesk : *R.W.S.* 1889. Sparingly in Glenflesk near Loo Bridge railway station, 1903 : *Marshall & R.W.S.*

From sea-level, to 550 feet by Lough Coomasaharn (*Colgan & R.W.S.*).

First record in 1855 : *J. Woods*, *Phytol.*, p. 208.

H. viridis R. Br. *Frog Orchis.*

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Rough pastures, about sandhills, damp fields, &c. Rather common, but rare in parts of the county. Peren. June—July.

Rare in the following Districts—I. On the south side of Kenmare estuary east of Sheen falls, 1904.—IV. In Cottoner's River valley north-east of Lough Nafanida, 1892; in fields near Churchtown, 1901.—VIII. About Ardfer and Rahoneen, 1902; in a bog west of Duagh near the River Feale, 1894.—IX. In sandy pastures near Ballyeagh south of Ballybunnion, 1908; in fields near Ardmore and Knockinglas Points, Shannon estuary, north-east of Ballylongford, 1890: *R.W.S.*

From sea-level, to 550 feet south-east of Headford (*R.W.S.*).

First record in 1884: *Hart, Proc. R.I.A.*

H. bifolia R. Br. *Butterfly Orchis.*

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Marshy pastures and heaths. Rather common especially in the north, but rare over wide areas in the south. Peren. June—July.

Rare in the following Districts—II. In fields north of Kenmare, 1901.—V. Sparingly in Aragen south of Castle-gregory, 1907: *R.W.S.* South-east of Connor Hill near Dingle (*Rev. W. M. Hind*) *Phytol.* 1857, p. 97.

From sea-level, to 510 feet on the Reeks (*Hart*), and probably higher.

First record in 1857: *Rev. W. M. Hind, loc. cit.*

Both *H. bifolia* and *H. chloroleuca* appear to be about equally distributed over a large portion of the county; in the north, however, *H. bifolia* is the more common, while in the Dingle peninsula and the south it appears to be the rarer.

H. chloroleuca Ridley. *H. chlorantha* Bab. *Butterfly Orchis.*

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Rough pastures, damp fields, &c. Rather common, but rare in the north. Peren. June—July.

Rare in the following Districts—VIII. In the Smearlagh River valley, 1890, and about Duagh east of Listowel, 1904.—IX. Near the River Feale east of Listowel, 1894: *R.W.S.*

From sea-level, to 700 feet on Brandon (*Hart*), and to 975 feet near the Brosna-Mount Eagle road (*R.W.S.*).

First record in 1882 : *Hart*, *Proc. R.I.A.*

IRIDEÆ.

IRIS Linn.

I. *Pseud-acorus* Linn. *Yellow Flag.* *Flagger.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Marshy places, wet meadows, stream- and lake-sides, ditches, &c. Very common. Peren. Mid May—July.

From sea-level, to 950 feet in the Roughty valley (*R.W.S.*).

First record in 1806 : *Weld's Killarney*, p. 111.

The prevailing if not the only form of this plant in Kerry appears to be the *var. ACORIFORMIS* (*Boreau*).

[I. FÆTIDISSIMA Linn. *Gladdon*.—II. Sparingly in Derryquin woods near Parknasilla, 1907.—V. In the wood at Hillville near Fermoy, Brandon Bay, 1908 : *R.W.S.*—VI. Muckross, Killarney (*Admiral Jones*) *Cyb.* 1866—still in the Muckross shrubberies in two or three spots, 1914.—VII. In Kiltallagh graveyard north-east of Castlemaine, 1901.—IX. Sparingly near Knockanure Chapel north of Kilmorna, 1899 : *R.W.S.* This is a rare plant in Kerry even as an escape ; it deserves to be mentioned here, however, for its persistence in the Muckross shrubberies where it has been known for many years. Wade in his *Plantæ Rariores 1804*, ascribes a somewhat unexpected virtue to the roots of this Iris, “swine bitten by a mad dog have escaped the disease by taking the fresh roots mixed with their food, whilst others bitten by the same dog died raving mad.”]

SISYRINCHIUM Linn.

S. *angustifolium* Mill. *S. Bermudianum* Linn. *S. anceps* Cav. *Blue-eyed Canadian Grass.*

Districts I. II. III. — V. VI. VII. — —
Native. Moist pastures and meadows, about streams and lakes, and in damp heathery places. Rare, but usually abundant where it occurs. Peren. June—August.

I. Between the Lower and Middle Cloonee Lakes (*Dr. Fogerty*), and in two spots by the River Sheen near Dromanassig bridge (*Praeger*) *Irish Nat.* 1898, p. 227. Still below Dromanassig bridge in 1904, and abundant and fine along

the shore of the Lower Cloonee Lake especially at its south-west end, 1900-07 : *R.W.S.*—II. Near the roadside school-house about five miles west of Sneem, Kenmare Bay, 1911 : *Mrs. Green.*—III. Rather sparingly on damp rocky ledges by the sea at Cooncrome about three miles north-west of Cahersiveen, 1892 : *Colgan & R.W.S.*—still there in 1911, and in some plenty on rough damp pastures near the coast about half a mile north of this : *R.W.S.* Sparingly on the north shore of Caragh Lake near the Southern Hotel (*Thompson & Elliott*) *Journ. of Bot.* 1910, p. 227—still rather sparingly along this shore both east and west of the Hotel, 1913 : *H. Crookshank & R.W.S.*—V Sparingly on a rough mountain slope above Aughils, Castlemaine Bay : *R.W.S.* 1891. In great profusion over several wet fields on both sides of the high road west of Aughils, 1904 : *R.W.S.* 1908. In wet meadows a little south of Inch House, Dingle Bay, 1894 : *Lady Godfrey.* In a rough pasture near the river about half a mile north of Anascaul, 1914 : *R.W.S.*—VI. In a field near Dromin Lough about two miles south-west of Milltown (*Rev. A. Isaacs*) *More : Journ. of Bot.* 1882, p. 8. Very sparingly near the mouth of the River Flesk and near Mahony's Point, Lower Lake, Killarney, 1907-16 : *Mrs. Jenner.* On the swampy margin of the Upper Lake, Killarney, near its northern end (*Marshall, Shoolbred & R.W.S.*) *R.W.S.* 1903—still there, but certainly not spreading, 1914.—VII. Very abundant and forming quite a considerable portion of the herbage in wet roadside fields about two miles west of Boolteens, Castlemaine Bay, 1904 : *R.W.S.* 1908. In a poor wet pasture near the north-west angle of Killaclohane wood east of Milltown (*Lady Godfrey*) *More : Journ. of Bot.* 1882, p. 8—still there in 1890, and abundant along the east bank of the River Laune, from just above the stone bridge to a small wood about half a mile distant : *R.W.S.* 1891—still abundant in the latter station, 1911. Very abundant in a large wet pasture field and sparingly in one or two fields adjoining, on the west side of the old Castlemaine-Tralee road just south of Laharan House : *R.W.S.* 1903—seen in this locality some four years previously by *Sir W. Godfrey* ; still abundant there and in rough furzy fields on both sides of this road about half a mile above Laharan House : *R.W.S.* 1908.

From sea-level, to 400 feet near Castlemaine Bay (*R.W.S.*).

First record in 1882 : *Lady Godfrey & Rev. A. Isaacs, Journ. of Bot.*, p. 8.

The Blue-eyed Grass belongs to that remarkable group

of North American plants which finds a home in the west of Ireland. Four plants out of this group of five occur in Kerry, the sole absentee being an Orchid, *Spiranthes Romanzoffiana*, which, however, is found on the shores of Bantry Bay within a few miles of the county boundary. While the claim of the *Spiranthes*, *Eriocaulon* and *Naias* to rank as native in Ireland has been generally conceded, the true standing there of *Sisyrinchium* and *Juncus tenuis*, is still in question. While certainty on this point cannot be attained, the present writer is of opinion that both these plants are indigenous in Kerry. Several of the stations in which the *Sisyrinchium* occurs lend themselves readily to examination from year to year, and although this plant is recorded to have remarkable powers of spreading when once it has become established, as for instance in Germany, Queensland, &c., it appears to have made no appreciable increase in Kerry in the localities where it has been under observation longest, a period in some cases of over twenty years. This behaviour is in great contrast to the rapid spread in the county of such undoubted introductions as *Matricaria discoidea*, *Linaria minor*, *Diplotaxis muralis*, &c. It is well to remember, too, that the discovery of fresh localities for this plant in Kerry, or elsewhere along the west of Ireland, would not necessarily be a proof of its recent arrival there. Unless the flowers are open, and they are only found so in bright sunlight, few plants are more easily overlooked, the grass-like leaves blending readily with the surrounding herbage, so that it is most improbable that the actual distribution of this plant is even now fully known.

Most of the Kerry localities at present on record for the *Sisyrinchium* lie in the vicinity of Castlemaine Bay or Harbour, the almost landlocked extremity of Dingle Bay; and although possible sources of introduction here are not wanting, such as old mills, &c., in several of the stations, even in this neighbourhood, as about Aughils, Boolteens, Laharan and Inch, the plant appears quite native. In its more remote localities elsewhere in the county, especially near the Upper Lake, Killarney, and on the sea coast near Cooncrome, it is impossible to suggest any source of accidental introduction.*

* In a locality taken at random near Laharan, the following plants were associated with the *Sisyrinchium* :—*Potentilla Tormentilla*, *Carum verticillatum*, *Achillea Ptarmica*, *Erica tetralix*, *Anagallis tenella*, *Juncus acutiflorus*, *Anthoxanthum*, *Triodia*, &c., nor were any introduced plants seen in the neighbourhood.

It has been thought that the *Sisyrinchium* owes its start in Ireland to the famine of 1847, when a large quantity of American grain was distributed amongst the starving peasantry in Kerry as elsewhere in the west; but the *Sisyrinchium* is not a plant of cultivated ground and so is most unlikely to be found in any grain field. This objection would apply with equal force to the suggestion that the species may have been introduced with imported damaged grain for fowl feeding.

In Ireland this plant is found in most of the counties bordering on the Atlantic, from Schull in south-west Cork, through Kerry, Clare and south-east Galway, to Sligo, Fermanagh and south Donegal, a range of fully 220 miles. It appears to be still unknown in Great Britain, but occurs on the Continent in several places and is stated to be spreading rapidly in north and west Germany. In its American home, it extends from Newfoundland to British Columbia in the north and from Virginia to Colorado in the south.

The Kerry plant appears to be *S. angustifolium* Mill.—with the floral bracts unequal; the closely allied *S. graminoides* Bicknell and *S. Atlanticum* Bicknell—with the floral bracts equal, have not, so far, been observed; all three plants are widely distributed in North America.

[*RUSCUS ACULEATUS* Linn. *Butcher's Broom*.—I. In Ardtully woods west of Kilgarvan, 1904: *R.W.S.*—VI. “It grows wild near Mucruss, and in the islands of Lough-Lane” (*Dr. Smith*) *Hist. of Kerry, 1756*, p. 381, No. 86. Still in the Muckross shrubberies in two or three spots, 1908; it occurs also in the Home Park, Killarney, near the Deenagh River and in Glenflesk Castle grounds, 1904.—VII. In several places in the “Green,” Tralee, 1907, and sparingly about Killagh Abbey ruins, Milltown, 1909.—IX. About the ruins of Kilelton Castle near Ballylongford, 1902: *R.W.S.* An introduced plant or an escape, showing little or no tendency to increase; it has held its own, however, in the Muckross shrubberies for more than 150 years.]

[*CONVALLARIA MAJALIS* Linn. *Lily of the Valley*.—VI. “On the island of Inisfalen in Lough-Lane, and the woods round that lake” (*Dr. Smith*) *Hist. of Kerry, 1756*, p. 379, No. 61. Not seen recently on Innisfallen, but a few plants were noticed in Muckross demesne: *R.W.S. 1889*. No doubt an introduction there; growing quite near were such plants as *Ruscus*, *Allium Scorodoprasum*, &c.]

LILIACEÆ.

SIMETHIS Kunth.

S. bicolor Kunth. *S. planifolia* Gren. & Godr. *Pubilaria bicolor* Raf.

District — II. — — — — —
Native. On rocky ground, rough furzy heaths and in peat-filled fissures in rocks near the sea. Very rare, but rather frequent locally. Peren. May to early July.

II. Hills near Darrynane Abbey, Kerry [on the Abbey Island] (*Rev. T. O'Mahony*) *London Journ. of Bot.* 1848, p. 571. On the mainland a little west of Darrynane (*Dr. E. P. Wright*) *Cyb.* 1866. In several places amongst stunted Furze, Heaths and *Molinia*, &c., on the west side of Abbey Island and in several places on the mainland to the west of this island as far as the headland opposite Kid's Island, about a mile west of Darrynane; in several places on the Darrynane side of Lamb's Head; in many places near the shore of Kenmare Bay for a distance of eight or nine miles east of Darrynane, extending inland for about a mile east of Caherdaniel: *R.W.S.* 1890, &c., and in 1901.

Ascends to about 400 feet east of Caherdaniel (*R.W.S.*).

First record in 1848: *Rev. T. O'Mahony*, *London Journ. of Bot.*, p. 571.

This is, perhaps, the most interesting member of that small group of plants whose range in Ireland does not extend beyond the borders of Kerry, a group which includes, as at present known, only three other species in the Irish flora—*Sibthorpia europæa*, *Polygonum sagittatum* and *Nitella confervacea*. Although the *Simethis* is now known to occur over an area extending eight miles east and west by one to two miles north and south, it still remains one of the rarest and most local plants in Ireland. In Great Britain it is even more restricted in its range, being confined to one locality at Bournemouth, where it is now threatened with destruction owing to the spread of building operations. It is interesting to note that were it not for the existence of this precarious Dorsetshire station, the *Simethis* would be included with *Arbutus Unedo*, *Pinguicula grandiflora*, &c., amongst the *Lusitanian* group of plants peculiar in the British Isles to Ireland. On the Continent, the plant ranges over west Italy, Sardinia, Corsica and along the Mediterranean to northern Spain, south-west France and Normandy, attaining in Kerry its northern limit for Europe.

While usually not infrequent where it occurs, the plant unless in flower is very easily overlooked. The grass-like leaves simulate these of *Molinia cærulea* amongst which it often grows, and when past flowering the whole plant withers rapidly. Fortunately the *Simethis* is not a plant easily exterminated, its long, tough, perennial roots being usually difficult to extract from its place of growth.

ALLIUM Linn.

A. *Scorodoprasum* Linn. *A. arenarium* Smith.

Districts I. II. — — — VI. VII. — —
 Alien. Woods and rough bushy places. Rare and local.
 Peren. June—July.

I. A few plants by a small stream at Killowen east of Kenmare, and—II. Abundant in the wood and shrubberies about Darrynane House: *R.W.S.* 1890—still at Darrynane in 1905.—VI. Plentiful in the thickets at Muckcross, Killarney (*Moore*) *Cyb.* 1866. Thinly scattered in the Muckcross shrubberies near the Abbey and along the rocks, &c., on the north side of Dundag Bay, Muckcross Lake, 1901–12.—VII. Abundant in the “Green,” Tralee, and sparingly along a small stream near by: *R.W.S.* 1889—still abundant in the “Green,” especially in woods north and west of the Castle ruins, 1914: *R.W.S.*

First record in *Cyb.* 1866: *Moore*.

This plant is never seen in Kerry at any distance from ruins or dwellings and is most probably only an escape from cultivation in the remote past. Although distinctly northern in its distribution in Great Britain, it appears to be quite confined in Ireland to its south-west corner, all its known stations being situated either in Kerry or the adjoining county, Cork. This plant varies considerably in quantity in the same locality from year to year.

A. *vineale* Linn. *Crow Garlic*.

District — — — — — VII. — —
 Native. Banks and bushy places. Very rare and local.
 Peren. June—July.

VII. Very sparingly on the east bank of the River Laune in a small wood about half a mile above Killorglin, 1896, and in 1901: *R.W.S.* In some abundance about hedges and bushy places at Glenellen, Milltown, 1912: *Capt. Creaghe-Hayward*.

First record in *Cyb.* 1898 : *R.W.S.*

The above localities, which lie about four miles apart, are the only stations at present known for this *Allium* in Kerry. It was gathered by the writer near the Shannon in Co. Limerick just outside the Kerry boundary, and as it occurs elsewhere both in that county and in Cork, it is most probable that this easily overlooked plant will be found in other Kerry localities. As is usually the case in Ireland, the Kerry plant is *A. compactum* Thuill.

A. ursinum Linn. *Ramsons.*

Districts — — III. IV. — VI. VII. — IX.
Native. Damp woods and shady banks. Rare. Peren.
May—June.

III. Rather sparingly in Lickeen woods, Glencar, to the north of Lickeen House, 1890–1911.—IV. In the Glencar woods near the river, 1889–1911, and in Beaufort woods by the River Laune, 1902.—VI. In several localities about Killarney, as frequent in the Home Park, on Ross Island and on the south side of Muckross Lake, 1888–1908 ; in roadside woods to the west of Loo Bridge, 1903.—VII. In Killaclohane wood east of Milltown, 1890 ; abundant in Ballyseedy demesne east of Tralee, 1901.—IX. In the wood near Tarbert House, 1904 : *R.W.S.*, and in the last-named station, 1913 : *Phillips*.

First record in 1889 : *R.W.S.*, *Journ. of Bot.*

[*A. TRIQUETRUM* Linn.—I. In wooded ground, away from houses, near Kenmare, 1899 (*Praeger*) *Irish Nat.* 1910, p. 156.—VI. Abundant on a bank in the wood near the Park House, Killarney : *R.W.S.* 1902—still there in 1914 : *Mrs. Jenner*. No doubt an escape or accidentally introduced in both these stations ; it is nowhere native in Ireland.]

SCILLA Linn.

S. nutans Smith. *Endymion nutans* Dum. *Agraphis nutans*
Link. *Hyacinthus non-scriptus* Linn. *Blue Bell*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Woods, bushy places, hedge banks, heaths, &c.
Common and locally abundant. Peren. April—May.

From sea-level, to 700 feet near Sneem (*Colgan & R.W.S.*), and probably higher.

First record in 1881 : *Barrington*, *Proc. R.I.A.*

NARTHECIUM Huds.

N. ossifragum Huds. *Bog Asphodel.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Bogs, peaty moors and swampy ground. Common
and locally abundant. Peren. July—August. *Calcifuge* A.

From sea-level, to 2,750 feet on Mangerton and to 2,796
feet on the summit of Baurtregaum, Slieve Mish range
(*R.W.S.*).

First record in 1844 : *S. P. Woodward, Phytol.*, p. 879.

[PARIS QUADRIFOLIA Linn. “Herb Paris, True love, or
One berry. This plant is esteemed as an eminent alexi-
pharmic, for which use the country people take it in malig-
nant fevers. It grows in the wood near Ross-castle near the
Lake” (*Dr. Smith*) *Hist. of Kerry, 1756*, p. 377, No. 46.
Although often sought for, this plant has not been re-found
in Dr. Smith’s station ; nor is it known to occur elsewhere in
Ireland. In this and other records of the author it is now
impossible to determine whether he wrote from his own
knowledge, or merely accepted the records and statements
of others. Young seedling plants of the Horse Chestnut,
bearing a superficial resemblance to the Herb Paris, have
often been noticed in the neighbourhood referred to ; it is
most probable, however, that the record is due merely to
erroneous information supplied to Dr. Smith.]

JUNCACEÆ.

JUNCUS Linn.

J. bufonius Linn. *Toad Rush.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Damp sandy or muddy places and on ground
where water occasionally lodges. Common. Ann. June—
August.

From sea-level, to 1,489 feet on the summit of the Priests-
leap road (*R.W.S.*), to 1,900 feet “in Kerry” (*Druce*), and
to 1,950 feet on Mangerton (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

Var. FASCICULATUS (*Bert.*).—V. On Connor Hill near
Dingle (*J. Ball*) *Cyb. 1898*. This form appears to be not
uncommon in Kerry near the coast.

[*J. TRIFIDUS* Linn.—IV. One small patch on the summit of Carrantuohill, Reeks, July 1910 (*H. Thompson & A. Elliott*) *Journ. of Bot.* 1910, p. 227. This is the only modern record of the occurrence in Ireland of *Juncus trifidus*, a high alpine Rush. Unfortunately neither Mr. Thompson nor Mr. Elliott was aware at the time of the extreme interest to Irish botanists of their discovery, and no specimens from Carrantuohill are available. In reply to an enquiry from the present writer, Mr. Thompson wrote that a spike or two of the *Juncus* had been gathered and placed in an envelope, but that they were subsequently lost.

That this plant should have remained so long unnoticed on this well-known summit is very surprising. The whole range of the Reeks, from the Glencar valley on the west to the Gap of Dunloe on the east, was examined in detail by Mr. H. C. Hart in 1881, and his interesting report on its botany appeared the following year in the *Proceedings of the Royal Irish Academy*; neither he, however, nor any of the numerous botanists who have visited this mountain were fortunate enough to detect this Rush. Wade, indeed, in his *Plantæ Rariores* published in 1804, records *Juncus trifidus* as occurring "in the marshy ground at the foot of Mangerton mountain, Killarney"—a most unlikely station for this plant—as well as "on many of the boggy mountains in Cunnemara," but both these records may be safely dismissed as errors of identification, and although Mr. Thompson's record rests on a very different footing it appears desirable to await actual specimens from Carrantuohill before admitting this most interesting plant as a Kerry native.

In the British Isles, *Juncus trifidus* is known to occur only on the higher mountains of Scotland, a gap of fully four degrees of longitude separating the Carrantuohill from the nearest Scottish station.]

J. squarrosus Linn. *Heath Rush.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native Mountain moors and boggy heaths. Common and locally abundant except in the north where it is local.
Peren. June—July. *Calcifuge A.*

Rare in the following Districts—VIII. On Kerry Head, 1902; near Duagh, &c., between Listowel and Abbeyfeale, 1904; in the Smerlagh River valley, 1890.—IX. Near the River Feale between Kilmorna and Abbeyfeale, 1902; abundant on the hills east of Ballybunnion, 1894, and near Ballylongford, 1904: *R.W.S.*

From sea-level, as about Barrow Harbour and near Glenbeigh, to the summits of the highest mountains in the county, attaining 3,127 feet on Brandon and 3,414 feet on the Reeks (*R.W.S.*).

First record in 1844 : *S. P. Woodward, Phytol.*, p. 878.

J. Gerardi Loisel. *J. cœnosus* Bich. *Rush* (genus).

Districts I. II. III. — V. — VII. VIII. IX.
Native. Salt marshes and wet rocky places by the sea.
Common and locally abundant. Peren. June—July.

First record in 1889 : *R.W.S., Journ. of Bot.*

A plant gathered near Banna appears to come very near to *J. compressus* Jacq. in the size and shape of its capsules.

J. tenuis Willd.

Districts I. II. III. IV. V. VI. — — —
Native or Denizen. Old roads and damp roadsides, beaten tracks, wet pastures, &c. Rather rare and local, but usually abundant where it occurs. Peren. July—August.

I. Abundant in many places on roadsides, waste ground, &c., about Derreen, Lauragh, &c., extending to beyond the county boundary on the west, while to the north-east it reaches the cross-roads above Lehid and the roadside about a mile south of the Cloonee Lakes, a distance of fully five miles, 1894 (*R.W.S.*) *Cyb.* 1898, and in 1907. Sparingly on the damp roadside near the Iron Rock on the south side of Kenmare estuary, 1912 ; sparingly beside the old Kenmare-Killarney road about a mile north of the Workhouse, 1908 ; rather sparingly by the Kenmare-Glengarriff road about half a mile south of Releagh bridge : *R.W.S.* 1891—still in about the same quantity here in 1904. Sparingly by the roadside in the Slaheny valley near Inchimore and abundant by the Priestsleap road about Drehidoughteragh bridge and the old churchyard near by, 1904.—II. Sparingly by the sea about a mile west of Kenmare and very abundant in poor wet pastures, just above tidal influence, a little further west extending inland for about half a mile : *R.W.S.* 1889—still in both these localities in much the same quantity, 1901. Sparingly at intervals along the road from about two miles west of Blackwater bridge to near Sneem and plentiful on old roads, paths and waste places near Derryquin, 1892, and in 1913. Abundant on an old road between Caherdaniel and Sneem about three miles east of the former place and a mile from the nearest sea : *R.W.S.* 1889—still abundant there in 1907.—III. Sparingly by the roadside about a mile west of Blackstones bridge, Glencar, 1911.—IV. One large

tuft on a rough foot track by the riverside between Blackstones bridge and Glencar Hotel, 1913 : *R.W.S.*—V. At about 900 feet on the roadside north of Connor Hill, 1913 : *Praeger*.—VI. About two dozen plants in a locality near the Upper Lake, Killarney, 1894—still there in much the same quantity, 1914 : *R.W.S.*

From sea-level, to 500 feet in the Coomeelan valley, to 550 feet near Derreen and Kenmare, to 650 feet in the Slaheny valley (*R.W.S.*), and to about 900 feet on Connor Hill (*Praeger*).

First recorded for Ireland in 1889 : *R.W.S.*, *Journ. of Bot.*, p. 335.

This member of the small group of American plants present in Ireland has like *Sisyrinchium angustifolium* fallen under the suspicion of having been introduced. It occurs in dry or moist soil, especially on paths and tracks, almost throughout North America, and appears to have spread rapidly thence as an introduced plant over the greater portion of Europe. It has been known as such in Great Britain, since 1863, and it is perhaps owing to its having escaped observation in Ireland until 1889, that it has been regarded as a similar introduction there. That it should have remained unobserved in Ireland so long, however, is probably due to the fact that most of the localities known for this plant lie off the beaten tracks to which botanists, as well as tourists, generally adhere, and that unless the plant occurs in some abundance, it is easily passed over. The Rush, certainly, has not been noticed in situations so remote from possible sources of introduction as has the *Sisyrinchium*, but in the United States and Canada it shows a predilection for just the stations in which it is usually found in Cork and Kerry, such as roadsides and foot-tracks. There has been, moreover, nothing in the behaviour of this plant in various Kerry stations, in some of which it has been under observation for a period of over 20 years, to strengthen the suspicion of introduction. In one of the outlying localities given above—near the Upper Lake, Killarney—the tufts of this Rush were carefully counted in 1894, the first year the plant was noticed there, and found to be 24 in number, they were last counted in 1914, when they numbered 22 ; so, for a period of twenty-one years, the plant has remained practically stationary, not alone in quantity but also in the extent of ground covered, although there was nothing in its surroundings to prevent its expansion over a much larger area. Frequent visits were made to the locality during this period

without any material variation in the quantity present being noticed. In the stations that lie along public routes, such as those by the Glengariff and Kenmare roads, &c., the plant is more likely to have been derived from its local headquarters than to have been introduced from abroad.

While a positive decision is difficult to arrive at, the claims of this Rush appear sufficiently strong to entitle it to a place among the native plants both of Cork and Kerry.

The headquarters of this plant in Ireland appears to be the wild rocky promontory between Kenmare and Bantry Bays, where it ranges over an area of about thirty miles by ten in the combined counties of Cork and Kerry; in portions of this space it is the prevailing Rush. It is also fairly abundant along the northern side of Kenmare Bay, thinning out in the Roughty valley glens, with outlying stations elsewhere, of which those in Glencar, near the Upper Lake, Killarney, and on Connor Hill, are the most distant from its headquarters. It has recently been found in salt marshes on Aranmore Island off the coast of Clare, and at Belfast Harbour, Co. Down.

J. glaucus Ehrh. *J. inflexus* Linn.

Districts I. — — — VI. VII. VIII. IX. Native. Damp fields, roadsides and ditches. Common and locally abundant in the north, very rare and probably introduced in the south. Peren. June—July. *Calcicole A.*

Rare in the following Districts—I. A few tufts beside the railway track at Kilgarvan station, probably accidentally introduced: *R.W.S.* 1902—still there in about the same quantity, 1913.—VI. Sparingly by the roadside between Danesfort and Sheheree, 1904–09.—the only station known about Killarney or in the southern portion of this District although it is locally abundant about Firies, Farranfore, &c.. in the northern half: *R.W.S.*

First record in 1884: *Hart, Proc. R.I.A.*

This plant is strongly calcicole in Kerry, so its occurrence on sandstone near Kilgarvan increases the doubt attaching to an already suspicious station. The apparent absence of this Rush from the rather extensive limestone areas in Districts I. and II. is very surprising.

J. effusus Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Damp meadows, ditches and other wet or marshy places. Common. Peren. June—July.

From sea-level, to 2,300 feet on Mangerton and to 2,325 feet on Brandon (*R.W.S.*).

First record in 1890 : *Stewart, Proc. R.I.A.*

J. conglomeratus Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Wet boggy and marshy places. Common. Peren.
June—July.

From sea-level, to 2,250 feet on the Reeks (*Hart*).

First record in 1881 : *Barrington, Proc. R.I.A.*

Appears to be less common than the preceding plant.

J. maritimus Lam.

Districts I. II. III. — V. — VII. VIII. IX.
Native. Salt marshes and muddy sea shores. Common and locally abundant. Peren. July—August.

First record in 1884 : *Hart, Proc. R.I.A.*

J. supinus Moench. *J. bulbosus* Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Lakes, bog-pools, ditches and other watery places, wet peaty heaths, &c. Rather common especially in the south. Peren. June—September. *Calcifuge A.*

From sea-level, to 2,250 feet on Mangerton (*R.W.S.*), to 2,400 feet on the Reeks (*Druce*), and to 3,127 feet on the summit of Brandon (*R.W.S.*).

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 97.

Both the upright form—*J. uliginosus* Smith and the floating form—*J. fluitans* Lam. of this variable plant occur frequently in Kerry, the latter sometimes forming dense masses of very great extent in lakes and water-ways, as in the Long Range and Upper Lake, Killarney ; the flowers are often viviparous.

J. obtusiflorus Ehrh. *J. subnodulosus* Schrank.

Districts — — — — V. — VII. — —
Native. Marshy places, usually near the sea. Rare but locally abundant. Peren. July—August.

V. Near Dingle (*Moore Rec. Add. 1872*). In one or two spots by the sea between Blennerville and Camp, Tralee Bay : *Hart 1884*. Abundant in several places on the coast between Castlegregory and Fermoy, Brandon Bay, 1894, and in 1907.—VII. In swamps at the east end of Barrow Harbour and in a swampy hollow near Clogherbrien north-west of Tralee : *R.W.S. 1888*, and in 1902.

First record in 1872 : *Moore, Rec. Add.*

Probably more frequent than the above records would show.

J. lamprocarpus Ehrh. *J. articulatus* Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Wet and marshy places. Rather common. Peren.
July—August.

First record in 1881 : *Barrington, Proc. R.I.A.*

J. acutiflorus Ehrh.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Boggy pastures and wet or marshy places.
Common. Peren. July—September.

From sea-level, to 2,100 feet “in Kerry” (*Druce*), to 2,200 feet on the Reeks (*Hart*), and to 2,250 feet on Mangerton (*R.W.S.*).

First record in 1882 : *Hart, Proc. R.I.A.*

LUZULA DC.

L. vernalis DC. *L. pilosa* Willd. *Wood-rush* (genus).

Districts I. II. III. IV. — VI. — — —
Native. Woods and shady places. Rare in the south, and not yet seen in the north. Peren. April—May.

I. Sparingly in the wood on the south side of the lower Cloonee Lake, 1899, and in Lehid wood to the south-west of Cloonee, 1907.—II. In woods about Parknasilla and Askive, 1901.—III. Frequent in the Lickeen woods, Glencar valley, and—IV. In woods by the River Caragh north of the Hotel, Glencar, 1890–1911.—VI. In many localities about Killarney, as in the Deer Park, Woodlawn, Ross Island, Muckcross demesne, Dinish Island, roadsides about Torc and Cromaglan, about Derrycunihy, &c., 1888–1914 : *R.W.S.*

First record in 1888 : *R.W.S., Journ. of Bot.*

Most probably this Rush is not really absent from the north of the county ; suitable localities, however, are not frequent there.

L. maxima DC. *L. sylvatica* Gaud.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Woods, thickets and rocky or heathy places on mountains. Common and locally abundant. Peren. May—June. *Calcifuge A.*

From sea-level, to the summits of the highest mountains

in the county, reaching 3,127 feet on Brandon (*R.W.S.*), and 3,414 feet on the Reeks (*Hart*).

First record in 1872 : *More, Rec. Add.*

This plant almost invariably forms a portion of the vegetation on even the most lofty and storm-swept summits of the Kerry mountains. It is local in the north as might be expected from its calcifuge tendencies.

L. campestris DC.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Dry pastures, banks, &c. Very common. Peren.
March—May.

From sea-level, to 3,120 feet on the Reeks (*Hart*).

First record in 1882 : *Hart, Proc. R.I.A.*

L. erecta Desv. *L. multiflora* DC.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Marshy places, mountain heaths, &c. Common.
Peren. April—August. *Calcifuge B.*

From sea-level, to 3,070 feet on the Reeks (*Hart*), and to 3,127 feet on the summit of Brandon (*R.W.S.*).

First record in 1804 : *Wade Rar.*—"on marshy boggy ground, Mangerton mountain, Killarney."

Var. PALLESCENS (*Bessr.*)—VI. Woods at Aghadoe, Killarney—(labelled as *L. multiflora* var.)—*H. N. Ridley, Aug. 30, 1883 : Herb. Brit. Mus.*—communicated by the Rev. E. S. Marshall. The bracts, &c., in this variety are pale yellowish-brown instead of dark brown as in the type.

TYPHACEÆ.

TYPHA Linn.

T. latifolia Linn. *Reed Mace.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Swampy places, ditches and lake- or pond-margins. A rare plant over the greater portion of the county, but rather abundant locally. Peren. June—July.

I. Sparingly in a swamp by the River Sheen near the Kenmare-Glengarriff road, 1904.—II. Sparingly in a roadside ditch west of Kenmare, 1901–13.—III. In some plenty in Stoonkaun Lake and swamp near Mountain Stage railway station, 1906 : *R.W.S.*—IV. Near Lough Acoose on the west side of the Reeks : *Hart 1882*. Still there in two or

three localities, 1913, and—V. In many spots about Castlegregory, near Fermoy on Brandon Bay and Camp on Tralee Bay, 1888–1908 ; in Minard swamp west of Anascaul, 1914, and sparingly near Inch on Dingle Bay, 1894.—VI. In many localities about Killarney, as in the Home Park, on Ross Island, near the mouth of the Flesk, about Muckcross and Cloghereen, in Sheheree swamps, &c. ; near the Flesk River above Brewsterfield bridge ; in Glenflesk near Loo Bridge ; at Ballymalis on the River Laune, 1888–1911 ; near the river east of Castlemaine, 1896.—VII. Swamps west of Castlemaine, 1906 ; at Clogherbrien and the Spa near Tralee Bay, 1902.—VIII. Near Ardfert and frequent about Lixnaw and Sleeven north of the River Brick ; in bog holes, &c., between Ballyheige and Causeway, 1899–1908.—IX. In a ditch by the railway between Lisselton and Ballybunnion, 1908 ; in a swamp south of Tarbert, 1904 : *R.W.S.*

From sea-level, to 510 feet near Lough Acoose on the west side of the Reeks (*Hart*).

First record in 1882 : *Hart, Proc. R.I.A.*

SPARGANIUM Linn.

S. ramosum Huds. *S. erectum* Linn. *Bur-reed* (genus).

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Ditches, streams, pools and swampy places.
Common. Peren. June—August.

From sea-level, to about 1,125 feet in Lough Coomacullen, Coomcarrea Mountains, Glenbeigh (*R.W.S.*).

First record in 1882 : *Hart, Proc. R.I.A.*

S. neglectum Beeby.

Districts I. II. III. — V. VI. VII. VIII. IX.
Native. Ditches, swamps and other wet places. Rather common. Peren. June—August.

I. In swamps about the Middle Cloonee Lake, 1908, and—II. Ditches near Darrynane, 1889 : *R.W.S.*—III. Near Cahersiveen 1906 : *Miss Delap.* In ditches near Caragh Lake, 1913.—V. In swamps and near the lake at Castlegregory, 1888–1907 ; in Minard swamp west of Anascaul, 1914.—VI. In ditches near the Flesk River east of Killarney, 1909, and in ditches near Lough Guitane, 1911.—VII. Near Clogherbrien north-west of Tralee, &c. : *R.W.S. 1889.* In a ditch near Ballyroe between Tralee and Ardfert, 1906 :

Miss Raymond.—VIII. In several places about Lixnaw 1904, and—IX. About Ballybunnion, 1908 : *R.W.S.*

First record for Ireland in 1889 : *R.W.S.*, *Journ. of Bot.*, p. 90.

This is probably as common in the county as the preceding ; in several localities in the north of the county it appears to be the prevailing form. The plant gathered in Lough Coomacullen at over 1,100 feet elevation, and referred to *S. ramosum*, may really belong to *S. neglectum* of which it had the upright little-branched inflorescence, but ripe fruit was unfortunately wanting, and its manner of growth may have been due only to its almost alpine situation.

S. simplex Huds.

Districts I. — — IV. V. VI. VII. VIII. —
Native. Ditches, and about lakes, pools and sluggish streams. Rare. Peren. July—August.

I. About the Middle Cloonee Lake, 1901 : *R.W.S.*—IV. In Curraley Lough, Beenbane, on the west side of the Reeks : *Hart* 1882—as *S. natans*, but as *S. simplex* in *Hart* 1890. In Lough Nagat south-west of Killorglin, 1904 : *R.W.S.*—V. In a swamp west of Castlegregory and in Ballinloghig Lough east of Smerwick Harbour : *Hart* 1884. In several spots about Castlegregory and in a swamp west of Camp, Tralee Bay, 1894 ; in the stream near its exit from Lough Camelaun, Connor Hill, 1905 ; in Minard swamp west of Anascaul, 1914.—VI. In several spots around the Lower Lake, Killarney, as near the Muckcross Hotel boathouse, near Ross Island, &c., 1901–09.—VII. About Killorglin, 1904 ; Ballycarty east of Tralee and about Parkmore pond east of Farranfore, 1903.—VIII. In ditches near Lixnaw and near Sleveen, 1904 ; frequent in ditches south of Causeway, 1905 : *R.W.S.*

From sea-level, to 770 feet near Connor Hill (*R.W.S.*), and to 800 feet by Lough Curraley, Reeks (*Hart*).

First record in 1884 : *Hart*, *Proc. R.I.A.*

S. affine Schnizl. *S. natans* Linn.

Districts I. II. III. IV. V. VI. — — —
Native. Lakes, ponds and sluggish streams. Rare and chiefly amongst the mountains, not yet seen in the north. Peren. July—August.

I. In the Middle Cloonee Lake, and—II. Boggy pools near the river south of Lough Brin, 1901 ; in a small pool on the

north slope of Coomcallee Mountain west of Sneem, and—
 III. On the west side of Lough Currane near Rabbit Island, 1892 ; in a small bog-pool west of Caragh Lake railway station, 1906.—IV. Near Lough Beg south of Lough Acoose, Glencar, 1894 ; in Lough Callee on the south side of the Reeks and in Glas Lough on the Purple Mountain, 1904 : *R.W.S.*—V. In Loughs Duff and Gal between Connor Hill and Brandon, 1902 : *Marshall & Shoolbred*. In a stream at the west end of Castlegregory Lake, 1894.—VI. In two or three places in the Long Range, Killarney, 1906 : *R.W.S.*
 From sea-level, to 1,550 feet in Glas Lough on the Purple Mountain and to 1,800 feet in a small pool on Coomcallee (*R.W.S.*).

First record in 1888 : *R.W.S.*, *Journ. of Bot.*

Like the preceding plant, this is probably more abundant in Kerry than the above records would show ; a few of the early records for *S. natans* Linn., as an aggregate, are omitted.

S. minimum Fries.

Districts I. II. — IV. V. VI. — VIII. —
 Native. Lakes, ditches, bog pools, sluggish streams, &c.
 Rather rare. Peren. July—August.

I. In one or two spots about Derreen and abundant in Doorus Lake, Kilmakilloge Harbour, 1894 ; in a small lake about a mile east of Cloonee, 1901.—II. In Alick's Lough east of Parknasilla, 1892 ; near Lough Dreenaun and in the stream from Coomroanig Lough on the east side of Lough Currane, 1889 : *R.W.S.*—IV. In Lough Eighter in Coomloughra and in Lough Callee on Mount Brassel, Reeks : *Hart 1882*.—V. In Lough Gal and in other lakes on the east side of the Brandon range, ascending to 700 feet : *Hart 1884*. In bog drains south-east of Castlegregory Lake, 1902 : *R.W.S.*—VI. On Ross Island, Killarney : *Linton 1886*. Still on Ross Island in two or three places, 1909 ; in Kilbreen Lake three or four miles north-east of Killarney, 1901.—VIII. In several spots about Lixnaw and near Ratoo north of the River Brick, 1902 ; in a ditch near Cashen Ferry bridge, 1899 : *R.W.S.*

From sea-level, to 1,425 feet in Lough Eighter, Reeks (*Hart*).

First record in 1882 : *Hart, Proc. R.I.A.*

This plant appears to be more frequent and wide-spread in Kerry than the preceding, but the distribution of neither species has yet been thoroughly ascertained.

AROIDÆ.

ARUM Linn.

A. maculatum Linn. *Cuckoo Pint.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Woods, hedgebanks, shady rocky places, &c.
Local in the south, rather common in the north, but unevenly
distributed. Peren. April—May.

Local or rare in the following Districts—I. Plentiful in the
Ardtully woods west of Kilgarvan, 1904 : *Miss I. Orpen*.—
II. About Darrynane, 1905.—III. In Glanleam demesne and
other spots in Valencia Island, and near Cahersiveen, 1896 :
R.W.S. About Caragh Lake, but not common, 1906 : *Capt.*
Creaghe-Haward.—IV. In Beaufort woods, 1904 : *Miss N.*
Magill.—V. In woods, &c., about Camp, Tralee Bay, 1892,
and—VIII. Sparingly about Ballinruddery south-east of
Listowel, 1899 : *R.W.S.*

First record in 1901 : *R.W.S., Topog. Bot.*

Owing to the leaves of this plant withering early, the *Arum*
appears to be rarer in Kerry than it probably is. The form
with the leaves blotched or spotted is not uncommon about
Killarney ; several plants were noted in Woodlawn lane on
the Muckross road and others in the grounds of the Lake
Hotel, Killarney in 1903. Except in a few restricted areas
in the south of England, this spotted form appears to be
much the rarer of the two throughout the British Isles ; see
an interesting paper on the Leaf spots of *Arum maculatum*
by Dr. Pethybridge in the *Irish Nat.* 1903, p. 145.

LEMNACEÆ.

LEMNA Linn.

L. trisulca Linn.

District — — — — — VI. — — —
Native. In clear swift-flowing streams. Very rare but
abundant where it occurs. Ann. June.

VI. In a small stream joining the River Flesk opposite
the mills below Southhill and abundant in a small spring
flowing into the same river about a mile higher up on the

south side, 1888–1912; abundant in the Bilrook stream flowing into Castletough Bay, Lower Lake, Killarney, 1901–08: *R.W.S.*

First record in 1888: *R.W.S., Journ. of Bot.*

This plant no doubt occurs elsewhere in the county, but it must be very rare indeed there. As at present known it is confined in Kerry to the neighbourhood of Killarney. The three stations recorded above are all swift-flowing limestone springs with courses less than a mile in length; they all lie within an area of three miles square.

L. minor Linn. *Duckweed.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Stagnant pools and ditches. Rather common.
Ann. June—July.

First record in 1890: *Stewart, Proc. R.I.A.*

ALISMACEÆ.

ALISMA Linn.

A. Plantago Linn. *Water Plantain.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Ditches, ponds, sluggish streams, swamps, &c.
Rather common. Peren. July—September.

First record in 1888: *R.W.S., Journ. of Bot.*

When growing in deepish water, as in some of the old mine holes on Ross Island, Killarney, young plants of this *Alisma* throw up long filiform stalks which expand into small oval or spear-headed floating leaves, sometimes barely half an inch in length. Very possibly it is this form, or a deep water state of the following species, that has been mistaken in Kerry for the rare *Elisma natans*.

A. ranunculoides Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On the margins of lakes and ponds, in marshy ground, ditches, about sluggish streams, &c. Rather common except in the extreme south where it is rather rare and local. Peren. June—July.

First record in 1884: *Hart, Proc. R.I.A.*

A profusely stoloniferous form, producing flowers and leaves at the numerous rooting nodes, is rather common on the shores of some of the larger Kerry lakes, such as those

at Killarney and Caragh, as well as in various spots along the course of the River Laune. In deeper water, these nodes, in addition to a tuft of short grass-like leaves, throw up long tapering stems which expand on the surface into narrow acute floating leaves. In several places where this *Alisma* occurs in abundance, as about the Lower Lake, Killarney, these extreme submerged forms may be seen as the water shallows passing through all the stages into the typical plant growing on the adjoining shore.

ELISMA Buchen.

E. natans Buchen. *Alisma natans* Linn.

District — — — — — VI. — — —
Native. Boggy ditch. Very rare and local. Peren. July—August.

VI. In two or three feet of water in a ditch near Muckcross, Killarney, not in flower, 1875 (*vide* Prof. Glück) : *G. C. Druce, Irish Nat.* 1910, p. 237. [In ditches near the Upper Lake of Killarney (*Moore*) *Cyb.* 1866. In the Middle and Lower Lakes, Killarney (*Rev. E. F. & W. R. Linton*) *Journ. of Bot.*, 1886, p. 16—latter record subsequently withdrawn].

Previous to 1910, *Elisma natans* had been reported on several occasions as growing at Killarney as well as in several other localities in Ireland, but in all these instances there was reason to fear that a barren form of one or other of the *Alisma* species had been mistaken for it. However, in the year mentioned, Prof. Glück of Heidelberg, a well known authority on the subject, when examining the aquatic plants in Mr. Druce's *Herbarium*, referred a submerged barren plant gathered at Killarney in 1875 by Mr. Druce, as well as another gathering by Mr. Bolton King from Co. Clare, to *Elisma natans* without any hesitation.

Mr. Druce has been kind enough to send to the writer one of the Killarney plants identified by Prof. Glück, which, to the unaided eye is quite indistinguishable from submerged states of *Alisma ranunculoides*. It is most unfortunate that the inclusion of this rare and interesting species in the Irish flora should depend solely on the recognition of immature plants, and though Prof. Glück, who has made a study of such aquatic growths, is not likely to have made a mistake, the discovery of flowering *Elisma natans* in Ireland is much to be desired.

NAIADACEÆ.

TRIGLOCHIN Linn.

T. palustre Linn. *Arrow-grass (genus).*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Marshes and wet pastures, &c. Rather common.
Peren. June—August.

From sea-level, to 1,350 feet near the Priestsleap road
(*R.W.S.*).

First record in 1890 : *Stewart, Proc. R.I.A.*

T. maritimum Linn.

Districts I. II. III. — V. — VII. VIII. IX.
Native. Salt marshes and muddy sea-shores. Common
and locally abundant. Peren. June—August.

First record in 1890 : *Stewart, Proc. R.I.A.*

POTAMOGETON Linn.

P. natans Linn. *Pondweed (genus).*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Lakes, ponds, ditches, streams, &c. Common.
Peren. June—August.

From sea-level, to 1,100 feet in Lough Callee, Hag's Glen,
Reeks, to 1,280 feet in Lough Barrot east of Connor Hill
(*Hart.*), and to 1,450 feet in Lough Ferta, Teermoyle
Mountain, Glenbeigh (*R.W.S.*).

First record in 1882 : *Hart, Proc. R.I.A.*

In the Long Range, Killarney, *P. natans* occurs in a very
puzzling form which was referred by Boswell Syme to
P. polygonifolius var. *linearis* (*vide London Bot. Exch. Club
Report, 1875, p. 37*). This plant was first gathered in the
above locality by Mr. A. G. More ; it grows there in great
abundance in water several feet in depth, and is kept by
the current which is fairly swift in places, almost constantly
submerged. The broad floating leaves of *P. natans* are
consequently seldom produced and the flowering spikes even
more rarely, while the whole plant is much drawn out and
branched, the lower phyllodes, sometimes attaining 15 or 16
inches in length with the diameter of a coarse thread. When
present, the floating leaves vary in number on different
plants from one to many ; they also differ greatly in their

size and shape, most of them being linear or oblong rather than ovate. A full series may be gathered, however, showing every gradation between the form with phyllodes only and the plant with the typical leaves of *P. natans*. In the very swift current between the Old Weir Bridge and the Meeting of the Waters at Dinish Island, this form produces little else than phyllodes which are shorter and thicker than elsewhere in the Long Range; some of the few leaves seen here measured $2\frac{3}{4}$ inches long by about $\frac{1}{8}$ inch broad. Dr. Morong, Dr. Tiselius, Alfred Fryer and Arthur Bennett are agreed in referring *P. polygonifolius* var. *linearis* Syme to *P. natans* Linn.

P. polygonifolius Pourr. *P. oblongus* Viv.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Streams, bog pools, lakes, on wet ground, &c.
Common. Peren. June—August. *Calcifuge* A.

From sea-level, to 1,550 feet in Glas Lough on Purple Mountain, to 1,590 feet in Lough Googh, Reeks, and to 2,250 feet in the Coumaknock Loughs on Brandon (*R.W.S.*); it ripens fruit even at the last mentioned height.

First record in 1875: *Boswell Syme, London Bot. Exch. Club Report*, p. 37.

Var. CANCELLATUS Fryer. A peculiar plant growing submerged in the Long Range, Killarney, and in mountain streams in the south of the county, should most probably be referred to this variety. Mr. Arthur Bennett, to whom a large series was sent in 1889, seemed satisfied with the provisional naming "*P. polygonifolius* Pourr., *submerged form*" (*vide Journ. of Bot.* 1890, p. 111). It differs, however, from the ordinary submerged form of that plant, as Mr. Fryer points out in his *Potamogetons of the British Isles*, p. 21, in the shape and texture of the membranous leaves and in the rarity with which floating leaves are produced; he also draws attention to the remarkable similarity of the Kerry plant to some forms of *P. plantagineus* with which he was formerly inclined to unite it. In Kerry *P. plantagineus*, however, is very rare indeed and appears to be confined to limestone areas in the extreme north, whereas this "submerged state" is widely scattered over the southern non-calcareous portion of the county, occurring in many of the upland streams, especially in those flowing from mountain lakes. Mr. Fryer gives an excellent figure of this var. in his *Potamogetons of the British Isles*, pl. 12; both plate and description exactly matching the Kerry plant.

[*Var. PSEUDO-FLUITANS* Syme, to which the previous plant was referred in *Cyb. 1898*, appears to be the ordinary submerged state of *P. polygonifolius* from which, as already mentioned, the Kerry plant differs in several particulars.]

P. plantagineus Ducr. *P. coloratus* Hornem.

District — — — — — VIII. —
Native. In bog ditches. Very rare and local. Peren.
June—July.

VIII. Rather plentiful in roadside bog-ditches between Sleveen and the River Brick north of Lixnaw : *R.W.S. 1903*.

First record in 1903 : *R.W.S., Irish Nat.*, p. 115.

This plant proves to be unexpectedly rare in Kerry as, indeed, it is throughout the greater portion of south-west Ireland; it will probably, however, be found in other localities in the north of the county. Although often growing in peaty or boggy ditches, this plant is almost confined to calcareous areas.

P. rufescens Schrad. *P. alpinus* Balb.

Districts — — III. IV. — VI. — VIII. —
Native. Lakes, pools, ditches, &c. Rare and local. Ann.
(*fide Fryer*). June—July.

III. About an old boathouse-cutting on the west bank of the Caragh River near Lickeen House, 1889–1913.—IV. At the south-east end of Caragh Lake, Glencar : *R.W.S. 1890*.—VI. In several localities about the Lower Lake, Killarney, as in two or three ponds on Ross Island, near the mouth of the River Flesk and in the Muckross Hotel boathouse bay : *R.W.S. 1889*, and in 1912.—VIII. In a ditch near old Lixnaw House : *R.W.S. 1891*, and in 1902.

First record in 1889 : *R.W.S., Journ. of Bot.*

[*P. LANCEOLATUS* Smith.—IV. Near the Gap of Dunloe, Killarney (*Moore*) *Babington : Cyb. 1866*. This record is most probably an error. As at present known, *P. lanceolatus*—usually regarded as a hybrid between *P. heterophyllus* and *P. pusillus*—is known in Ireland only from one locality in Clare and two in north-east Galway.]

P. heterophyllus Schreb.

Districts — — — — — V. VI. — — —
Native. Lakes and pools. Very rare but locally abundant.
Peren. June—July.

V. Along the northern shore of Castlegregory Lake and in the stream leading from it: *Hart 1884*. Still in Castlegregory Lake and in swamp-pools a little to the west of the lake, rather sparingly, 1894.—VI. In several localities in the Lower Lake, Killarney, as in Castlough Bay, along the Cahernane shore, on both sides of the River Flesk mouth, in the old mine holes, &c., on Ross Island, abundant in some of these localities, 1888–1904: *R.W.S.*

First record in 1884: *Hart, Proc. R.I.A.*

Typical *P. heterophyllus* appears to be very local in Kerry and almost confined to still water. It should, however, occur in the upper part of the River Laune near its exit from the lake, as this river for nearly its whole course of about twelve miles is almost filled in places with *P. nitens* and other *P. heterophyllus* hybrid forms.

P. graminifolius Fries.

Districts — — — IV. — VI. VII. — —
Native. In swift-flowing and, rarely, in still water. Very rare but locally abundant. Peren. June—July.

IV. &—VI. Abundant at intervals in the River Laune especially in its lower portion towards Killorglin, reaching to well within tidal influence: *R.W.S. 1889*, and in 1913. Rather sparingly near Rough Island in the Lower Lake, Killarney, 1888.—VII. The River Laune locality extends into this District near Killorglin: *R.W.S.*

First record in 1889: *R.W.S., Journ. of Bot.* (as "*P. Zizii* form").

This Pondweed has been a very difficult plant to determine satisfactorily. When first gathered, such formidable combinations as "*heterophyllus* × *perfoliatus* × *Zizii*" and "*heterophyllus* × *Zizii*" were suggested as its possible origin, and as *P. perfoliatus* was, next to this puzzling plant, the most abundant Pondweed in the neighbourhood, the hybrid origin suggested appeared probable. Mr. Alfred Fryer, however, failed to see any trace of hybridity in the plant and after examining a large series of specimens, fresh and dried, both he and Dr. Tiselius were satisfied that the River Laune plant was not only almost identical with Scandinavian "*graminifolius* Fries," but that it also agreed with the plant from the River Boyne, long misnamed *P. Lonchitis* Tuck., and with that from Pidley Fen, Huntingdonshire. Of this latter plant, Mr. Fryer has given two excellent plates and a full description in the *Journ. of Bot.* 1892, p 33, plates 317, 318.

P. nitens Weber.

Districts — — — IV. V. VI. — — —
Native. Lakes and running water. Very rare but locally abundant. Peren. June—August.

IV. Abundant in the upper portion of the River Laune from its exit near the Lower Lake, Killarney, to near tidal influence: *R.W.S. 1890*, &c., and in 1904.—V. In a large lake between Castlegregory and the sea, plentifully (*Moore*) *Journ. of Bot.*, 1864, p. 326—still there in 1907; and—VI. In several places in the Lower Lake, Killarney, as in the old mine-holes on Ross Island, along the Cahernane shore, in Castlough Bay, along the Muckcross shore, &c.: *R.W.S. 1888*, and in 1909. Abundant in the River Laune from its exit near the lake to near tidal influence, 1889–1909: *R.W.S.*

First record in 1864: *Moore, Journ. of Bot.*, p. 326.

In Kerry this species includes a number of very dissimilar forms. The still-water plant from the Lower Lake, Killarney, differs, however, but slightly from that gathered in Castlegregory Lake, the Killarney plant approaching nearer to type *nitens* than that from Castlegregory, which is usually the *var. CURVIFOLIUS* *Hartm.* The River Laune, on the other hand, is a regular storehouse of puzzling forms, which differ very widely in appearance.

Mr. Fryer who examined a large series of these forms, both fresh and dried, had no hesitation in placing them under *nitens* as an aggregate, and as he regards *P. nitens* Weber as a series of hybrids—*P. graminifolius* × *perfoliatus*, *P. heterophyllus* × *perfoliatus* and *P. Zizii* × *perfoliatus*, his views receive additional confirmation from these Laune plants, in the well known tendency to variation in hybrids, as well as from the presence in the river of *P. graminifolius* and *P. perfoliatus* in great abundance. It may be noted also that while these hybrid forms flower freely there, they very rarely ripen fruit. One very interesting form which grows abundantly in the upper portion of the river near the lake, shows the influence of *P. perfoliatus*, amongst which it grows, in a marked degree; it has the short stout flowering spikes of this plant, while the leaves on some of the specimens examined measured $3\frac{3}{4}$ inches long by $1\frac{1}{4}$ inches broad. It was formerly named *P. nitens* Weber *var. LATIFOLIUS* *Tis.*, by Mr. Ar. Bennett, while Mr. Fryer referred it to *P. nitens* *forma PRÆLONGIFOLIA* *Tis.*; it has finally found a resting place as *P. nitens* *var. MAXIMUS* *Ar. Benn.*—*vide Journ. of Bot. 1907*, p. 173.

While this latter variety is abundant in places, the most common Pondweed in the upper portion of the river is a *nitens* form bearing a superficial resemblance to the *graminifolius* plant already mentioned. As Mr. Fryer has pointed out, however, they may be distinguished by the *nitens* form having amplexicaul leaves, while in the *graminifolius* plant they are only narrowed into the stem.

P. Zizii Koch. *P. angustifolius* Presl.

District — — — — VI. — — —
Native. Still water. Very rare and local. Peren. July—August.

VI. In Doo Lough, a small lake in Muckcross demesne : *R.W.S.* 1889. In West Meadow Bay on the Muckcross shore, Lower Lake, Killarney, 1894 : *R.W.S.*

First record in 1889 : *R.W.S.*, *Journ. of Bot.*

Probably not so rare as the above scanty records would indicate ; it appears, however, to be very local in the county. The *P. Zizii* form recorded from the River Laune in *R.W.S.* 1889, &c., proves to be *P. graminifolius* Fries (*quod vide*).

P. lucens Linn.

District — — — — VI. — — —
Native. Still water. Very rare and local. Peren. June—July.

VI. In Ross Bay and in a small pond or offshoot of the lake on the east side of Ross Island ; in a bay near the Muckcross Hotel boat-house in some plenty, and in Glenna Bay ; all these stations are in the Lower Lake, Killarney, 1894–1907 : *R.W.S.*

First record in 1901 : *R.W.S.*, *Topog. Bot.*

This is another very local Pondweed in Kerry although it probably occurs in more stations than those given above. In the Muckcross Bay locality specimens were gathered with the leaves ending in a mucro, sometimes several inches in length—the state known as *P. acuminatus* Schum.

P. prælongus Wulf.

Districts — II. — IV. — VI. — — —
Native. In lakes and in a river. Very rare and local. Peren. June—July.

II. In the Blackwater River, Kerry (*Dr. Taylor*) *fide C. C. Babington* : *Supp. Eng. Bot.* 1841—but not seen there recently.—IV. Rather sparingly at the south end of Lough Acoose, Glencar : *R.W.S.* 1891.—VI. In several stations in the Lower Lake, Killarney, as between Victoria and Ross

bays, in a small bay near the Muckcross Hotel boat-house and in Glens Bay : *R.W.S.* 1890, and in 1907.

From about 60 feet above sea-level at Killarney, to 507 feet in Lough Acoose, Glencar (*R.W.S.*).

First record in 1841 : *Dr. Taylor, Supp. Eng. Bot.*

P. perfoliatus Linn.

Districts — II. III. IV. V. VI. VII. VIII. IX. Native. Lakes and rivers. Rather common and locally abundant, but rare over wide areas. Peren. June—July.

II. In the Waterville Lakes, 1904, locality extending into—III. In Caragh Lake and the Glencar River, both localities extending into—IV. In Lough Acoose, 1890–1913 ; abundant in the Lower Lake, Killarney, and the River Laune, 1909.—V. In Castlegregory Lake and in some of the lakes about Connor Hill, 1905.—VI. In many localities in the Killarney Lakes and in the River Laune, 1888–1912.—VII. Common about Killorglin, 1904.—VIII. In the River Brick near Sleveen and in the Cashen River, 1902, the latter station extending into—IX. : *R.W.S.*

From sea-level, to 770 feet in Lough Camclaun near Connor Hill (*R.W.S.*).

First record in 1884 : *Hart, Proc. R.I.A.*

P. crispus Linn.

Districts — — III. — V. VI. VII. VIII. IX. Native. Ditches, streams, lakes and ponds. Very rare in the south, local in the north. Peren. June—July.

III. In a pond near Knightstown, Valencia Island, 1906 (*Miss Delap*) *R.W.S.* 1908.—V. On the north side of Castlegregory Lake and in the stream from it : *Hart* 1884.—VI. In two or three spots about the River Maine between Farranfore and Castlemaine, 1899, localities extending into—VII. Sparingly in the River Laune just above Killorglin, 1911 ; in the River Lee near Tralee, 1906.—VIII. Frequent about Banna and Lixnaw, and in ditches, &c., at Ardfert, 1888–1907 ; in streams and ditches about Abbeydorney and near the Cashen River, &c., 1904.—IX. In the Cashen River, 1902 : *R.W.S.*

First record in 1884 : *Hart, Proc. R.I.A.*

This species has not, so far, been noticed about the Killarney Lakes, and only sparingly in one locality near the tidal portion of the River Laune, a river in which nearly all the Kerry Pondweeds congregate.

P. densus Linn.

Districts — — — — — VI. VII. — —
Native. In still and slow-running water. Very rare and local. Peren. June—July.

VI. Killarney (*Babington*) *Cyb.* 1866—not seen about Killarney recently.—VII. Abundant in a small stream and adjoining ditch near Blennerville, Tralee, 1892 (*R.W.S.*) *Cyb.* 1898, and in 1905.

First record in *Cyb.* 1866 : *Babington*.

This is probably the rarest Pondweed in Kerry. As at present known, it occurs over an area only a few square yards in extent, but is not unlikely to be found in the north of the county. Although often sought for, this plant has not yet been refound in Prof. Babington's somewhat vague locality.

P. obtusifolius Mert. & Koch. *P. gramineus* Smith.

Districts — — — — — VI. VII. — —
Native. In ponds. Very rare and local. Peren. June—July.

VI. In a small pond, joined to the lake in high water, a little to the east of Ross Island, Lower Lake, Killarney, 1892 (*R.W.S.*) *Cyb.* 1898.—VII. In Parkmore pond about three miles east of Farranfore : *R.W.S.* 1902.

First record in *Cyb.* 1898 : *R.W.S.*

P. pusillus Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Lakes and pools, streams and ditches. Rather common. Peren. June—July.

From sea-level, to 1,590 feet in Lough Googh on the south side of the Reeks (*Hart*), an unusual height.

First record in 1882 : *Hart*, *Proc. R.I.A.*

P. pectinatus Linn.

Districts — — III. — V. — VII. VIII. IX.
Native. Ditches, lakes and streams, usually near the sea. Rare in the south, rather common in the north. Peren. June—July.

Rare in the following Districts—III. In two or three localities along the north side of Ballinskelligs Bay, 1892 : *R.W.S.*—V. Along the north shore of the Castlegregory Lake and in the stream from it : *Hart* 1884. In several localities about Castlegregory, 1902, and near Inch on Castlemaine Harbour, 1894.—VII. About Blennerville west of Tralee, 1899 : *R.W.S.*

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 381, No. 79, "In the river Galey and other places."

P. flabellatus Bab. *P. interruptus* Kit.

Districts — II. — — V. — VII. VIII. IX.
Native. Ditches, lakes and slow streams near the sea.
Rare over the greater portion of the county, locally abundant in the north. Peren. June—July.

II. Abundant in Drongawn Lough east of Parknasilla, 1913.—V. Abundant in Castlegregory Lake and near Derrymore, Tralee Bay, 1894–1907.—VII. In brackish ponds between Tralee and Blennerville, 1914.—VIII. In the old River Brick near Lixnaw and in ditches, &c., near Sleveen, 1904 ; in ditches, &c., near Cashen bridge, and—IX. On the north side of the Cashen River, 1902–08 : *R.W.S.*

First record in 1889 : *R.W.S., Journ. of Bot.*

The var. *SCOPARIUS* *Fryer* is abundant in Castlegregory Lake.

RUPPIA Linn.

R. maritima Linn. *R. spiralis* Hartm.

Districts — — — — V. — VII. — —
Native. In brackish water near the sea. Rare and local.
Peren. July—August.

V. In Castlegregory Lake and abundant in the stream flowing from it : *R.W.S.* 1889, and in 1907.—VII. Plentiful in a small pond on the "Island" west of Barrow Harbour : *R.W.S.* 1891.

First record in 1889 : *R.W.S., Journ. of Bot.*

No doubt rarer than the following species in Kerry, but probably more frequent than would appear from the above records.

R. rostellata Koch.

Districts I. II. III. — V. — VII. — IX.
Native. Tidal mudflats, brackish pools, ditches and streams.
Rather common and locally abundant. Peren. June—August.

First record in 1884 : *Hart, Proc. R.I.A.*

Almost certainly overlooked in District VIII.

ZANNICHELLIA Linn.

Z. palustris Linn.

Districts — — — — V. — VII. VIII. IX.
Native. Ponds, ditches and lake-margins, usually near the sea. Rather common in the north and in the Dingle

peninsula, very rare inland, and not yet noticed in the south. Peren. June—August.

Inland localities are—VII. In a pond at Ballycarty east of Tralee, 1890 ; in a quarry-hole near Castleisland, 1894.—VIII. In Lerrig pond north of Ardferit, 1902 : *R.W.S.*

First record in 1884 : *Hart, Proc. R.I.A.*

The most common form of this plant about the coast appears to be *Z. pedunculata* Reighb., while inland *Z. brachystemon* Gay—with almost sessile fruit, has alone been gathered.

ZOSTERA Linn.

Z. marina Linn. *Grass-wrack.*

Districts I. II. III. — V. — VII. VIII. IX. Native. In the sea and on mud in estuaries. Common and locally abundant. Peren. July—August.

First record in 1855 : *J. Woods, Phytol.*, p. 159.

Var. ANGUSTIFOLIA Fries. Occurs in many places, often growing with the type.

Z. nana Roth.

Districts — — — — V. — VII. — — Native. Tidal estuaries. Very rare and local. Peren. July—August.

V. Abundant on the south side of the Cloghane inlet, Brandon Bay, 1913 : *Praeger*.—VII. In two or three places along the north shore of Tralee Bay between the Spa and Fenit : *R.W.S.* 1888, and in 1902.

First record in 1888 : *R.W.S., Journ. of Bot.*

The two bays from which *Z. nana* has been recorded, connect with one another, and are only separated by the Castlegregory stretch of sandhills and the Magharee Islands. It will, no doubt, be found in other localities round the coast.

NAIAS Linn.

N. flexilis Rostk.

Districts — II. III. IV. — VI. — — — Native. In rather shallow water in lakes. Very rare, but locally abundant. Ann. August—September.

II. In the Upper Lake, Killarney, south of Roynane's Island, 1906—locality extending into VI. : *Hanbury & R.W.S.*—III. In the south-west corner of Caragh Lake, Glencar, 1896–1906 : *R.W.S.*—IV. In the south-east corner of Caragh Lake, in water from fifteen to twenty feet in depth

(*More*) *Journ. of Bot.* 1877, p. 350. Still there in two or three spots, in water six feet and deeper, 1906 : *R.W.S.*—VI. In Ross Bay, Killarney (*Rev. E. F. Linton*) *Journ. of Bot.* 1886, p. 83. Still in Ross Bay and in several other localities in the Lower Lake, Killarney, as in Victoria Bay, in a sandy bay south-east of Ross Island, abundant in a boggy bay outside the Muckross Hotel boat-house and sparingly in the boat-harbour adjoining : *R.W.S.* 1888, and in 1907. In the Upper Lake, Killarney, *vide supra*, District II.

First record in 1877 : *More, Journ. of Bot.*, p. 350.

This is the rarest and the most restricted in its Irish range of the four North American plants found in Kerry. Unlike the *Sisyrinchium* and *Juncus tenuis* already referred to, its standing as a native of the British Isles has never been called in question. At present, the *Naias* is known in three lakes in Kerry and one in Galway ; it is very probable, however, that when the lakes in the west of Ireland have been more thoroughly explored, the range of this plant will be much extended. It is known in one locality in England, and two in Scotland. Elsewhere it is found in several localities in northern Europe and is known to occur in Asia. On the other side of the Atlantic it is found in ponds and streams nearly throughout North America.

ERIOCAULONEÆ.

ERIOCAULON Linn.

E. septangulare With. *Pipewort.*

Districts I. II. III. IV. — — — — —
Native. Lakes, ponds, bog-pools and sluggish streams.
Rather rare and local, but abundant where it occurs. Peren.
July—September. *Calcifuge* A.

I. Abundant in the Cromeen [Cloonee] Lakes, eight miles below Kenmare, behind Hungry Hill (*Carroll*), and in Inchiquin Lake a little south of the Cloonee Lakes (*T. Wright*) *Cyb.* 1866. Still in all these lakes abundantly, and in the streams from them, 1889–1912 : *R.W.S.* In a small pond near the roadside at Lohart about a mile north of Cloonee, 1902 ; in Gowlaun Lake about two miles north of Derreen, 1894 ; about Dromoghty Lough two miles south of

Dawros, Kenmare Bay, 1904 : *R.W.S.*—II. In Lough Fadda between Sneem and Blackwater bridge (*H. N. Ridley*) *Journ. of Bot.* 1884, p. 91—still abundant there, 1913 : *R.W.S.*—III. In about six feet of water in Lough Namona north-east of Waterville, 1913 : *Miss Delap.* In Caragh Lake and in Lough Beg near it (*More*) *Journ. of Bot.* 1877, p. 350. Still abundant in Lough Beg and along the west shore of Caragh Lake at intervals, and more sparingly along its northern shore : *R.W.S.* 1889, and in 1911. In bog-holes at the north end of Caragh Lake (*Dr. Battersby*) *Rec. Add.* 1872. Still in three or four small bog pools about half a mile to a mile north of Caragh Lake, and in the lower of the two Loughs Nambrackdarrig about two miles north-west of Caragh, 1900 & 1906 ; these are the most northerly localities at present known for this plant in Kerry.—IV. At the south-east corner of Caragh Lake and at intervals along its east side, 1889–1913 ; abundant in Lough Licka about a mile east of Caragh Lake on the old mountain road from Glencar to Killorglin : *R.W.S.* 1904.

From sea-level, to about 600 feet in Lough Licka (*R.W.S.*).

First record in *Cyb.* 1866 : *Carroll & T. Wright*.

This species, like the preceding, belongs to the North American group of plants native in Ireland. It appears to have a restricted and irregular distribution in Kerry. Thus it is found in many localities on the south side of Kenmare Bay, while on the north side it is known in one spot only. It occurs in one at least of the lakes which form the head waters of Lough Currane, and is abundant in Caragh Lake and its vicinity, but is absent from the entire Killarney district as well as from the Dingle peninsula. It appears, indeed, to be quite confined to the south-west corner of the county, a line drawn from Killorglin to Kenmare and thence to Glengarriff would inclose all the localities at present known. Along the west coast of Ireland it is found at intervals from near Adrigole in County Cork to Mullaghderg in Donegal, being especially abundant in west Galway and Mayo. This gives the plant a range of $3\frac{1}{4}$ degrees, or within half a degree of the whole extent of Ireland. Elsewhere in the British Isles it is known only from two localities on the west coast of Scotland—the islands of Skye and Coll. It is not known to occur on the continent of Europe. In North America, the *Eriocaulon* has a very wide range indeed, extending across the continent from Newfoundland to Minnesota in the north and from Florida to Texas in the south.

CYPERACEÆ.

ELEOCHARIS R. Br.

E. acicularis R. Br. *Spike-rush* (genus).

Districts — — — IV. — VI. VII. — —
Native. Shallow water and wet or muddy places about lakes and along rivers. Rare but locally abundant. Peren. July—August.

IV. On the Tomies shore of the Lower Lake, Killarney, 1912 : *Mrs. Jenner*. Abundant at intervals about the River Laune, especially near its exit from the lake, 1888–1909.—

VI. In many localities around the Lower Lake, Killarney, as in the Muckross Hotel boat-harbour, in Castletlough Bay, about the mouth of the river Flesk, on Ross Island in pools, &c., in Victoria Bay, &c., and at intervals along the northern side of the River Laune, extending into—VII. where it occurs in the tidal portion of this river near Killorglin : *R.W.S.* 1888, and in 1912.

First record in 1888 : *R.W.S.*, *Journ. of Bot.*

This plant is known to occur in Kerry only about the Lower Lake, Killarney, and the River Laune which flows from it, but is so inconspicuous that it may very likely have been overlooked elsewhere.

E. palustris R. Br.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Marshy places, and about lakes, rivers and pools. Common. Peren. June—July.

From sea-level, to 1,039 feet in Coomnacronia Lake, to about 1,125 feet at Coomacullen Lake, Glenbeigh Mountains, and to 1,450 feet at Lough Ferta, Teermoyle Mountain, in the same range (*R.W.S.*).

First record in 1882 : *Hart*, *Proc. R.I.A.*

E. uniglumis Link.

Districts — — — III. — V. — VII. — —
Native. Marshy places by the sea. Rare, apparently. Peren. July—August.

III. Salt marshes near Rossbehy, 1874 (*Moore*), and—
V. Near Ballydavid Head, Smerwick Harbour, 1891 (*Cecil Butler*) *Cyb.* 1898. Coast marshes near Fermoy and Castlegregory, Brandon Bay (*Marshall & Shoolbred*) *R.W.S.* 1903.—VII. Muddy sea shore near Blennerville : *Hart* 1884.

First record in 1884 : *Hart*, *Proc. R.I.A.*

Var. WATSONI (*Bab.*).—This plant occurs probably in one

or more of the localities given above, but the specimens gathered proved too immature to show the fruit character satisfactorily.

E. multicaulis Smith.

Districts I. II. III. IV. V. VI. VII. VIII. — Native. Wet spots about lakes and in bogs. Common in the south, rather less so in the north. Peren. June—August.

From sea-level, to 2,000 feet on the Reeks (*Druce*).

First record in 1806 : *Mackay Rar.*

SCIRPUS Linn.

S. pauciflorus Lightf.

Districts I. — III. IV. V. VI. — VIII. — Native. Marshy places, especially on sandy ground. Rare, but locally abundant. Peren. May—July.

I. About Cloonee, 1898 (*Praeger*) *Topog. Bot.*—III. Damp hollows amongst the Dooaghs sandhills, Rossbehy, 1913 : *R.W.S.*—IV. Near the Gap of Dunloe, 1906 : *Mrs. Jenner.*—V. In damp hollows amongst the sandhills north of Castlegregory : *Hart 1884*. On the coast west of Castlegregory, 1902 : *Marshall & Shoolbred*. In several places about Castlegregory, abundant amongst the Ventry sandhills and near Smerwick Harbour, 1890–1907.—VI. Near Lough Guitane south-east of Killarney, 1896.—VIII. Abundant in damp hollows about the Banna sandhills north-west of Ardfert, 1902 : *R.W.S.*

First record in 1884 : *Hart, Proc. R.I.A.*

S. cæspitosus Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Heaths, moors and rocky places, especially on mountains. Common and often abundant over the greater portion of the county, rather rare at low elevations and in the extreme north. Peren. May—June. *Calcifuge A.*

From sea-level (near the Cloonee Lakes, Lixnaw, &c.), to 2,756 feet on the summit of Mangerton (*R.W.S.*), and to 3,000 feet on the Reeks (*Moore*).

First record in *Cyb. 1866* : *Moore*.

S. parvulus Roem. & Schult. *S. nanus* Spreng.

Districts — — — — — VIII. IX. Native. On mud exposed in a tidal river. Very rare but locally abundant. Ann. July—August.

VIII. & IX. Along both sides of the River Cashen, from near the Ferry bridge south of Ballybunnion, to near Dysert Church, abundant at intervals for a distance of about three miles : *R.W.S.* 1890, and in 1904.

First record in 1890 : *R.W.S.*, *Journ. of Bot.*, p. 110.

This appears to be one of the most local plants in the Irish flora, as, apart from the locality given above, it is known to occur only about the mouth of the river at Arklow on the Wicklow coast. In Great Britain this plant is found in two or three localities along the south coast of England and in one in North Wales. Owing to its diminutive size it is a very easy plant to overlook, while the tidal nature of its stations often renders their examination impossible.

S. fluitans Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Bog-drains, ditches, streams, lake-margins, &c.
Common, except in the extreme north, where it is very local.
Peren. June—July. *Calcifuge A.*

From sea-level, to 800 feet in Lough Curraley, Beenbane (*Hart*), and to 920 feet near Lough Callee, Black Valley, Reeks (*R.W.S.*).

First record in 1804 : *Wade Rar.*—"In stagnant pools near Ture bridge, Killarney, county Kerry."

S. Savii Seb. & Maur. *S. cernuus* Vahl. *S. filiformis* Savi.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Moist places, usually near the sea. Rather common.
Peren. July—August.

From sea-level, to 850 feet on the Reeks (*Hart*).

First record in 1881 : *Barrington*, *Proc. R.I.A.*

Although much rarer inland than by the sea, this plant is not infrequent about the Killarney Lakes and elsewhere in the county. The *var. MONOSTACHYS* has been gathered near Smerwick Harbour, &c., mingled with the type.

S. setaceus Linn. *Isolepis setacea* R. Br.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Moist sandy or gravelly places. Common. Peren.
July—August.

From sea-level, to 1,450 feet near the Priestsleap road (*R.W.S.*).

First record in 1881 : *Barrington*, *Proc. R.I.A.*

S. lacustris Linn. *Bullrush.*

Districts I. II. III. IV. V. VI. — — —
Native. Lakes, ponds and sluggish streams. Rather

common, except in the north where it has not been noticed. Peren. June—July.

From sea-level, to about 1,000 feet in Lough Akinkeen in the Slaheny valley (*R.W.S.*).

First record in 1901 : *R.W.S.*, *Topog. Bot.*

S. Tabernæmontani Gmel. *S. glaucus* Smith.

Districts I. II. III. — V. — VII. VIII. IX. Native. Lakes, pools, sluggish streams and ditches by the sea. Rather common. Peren. June—July.

First record in 1884 : *Hart, Proc. R.I.A.*

More widely distributed in the county than the preceding plant, occurring at intervals all round the Kerry coast.

S. maritimus Linn. *Sea Club-rush*.

Districts I. II. III. — V. — VII. VIII. IX. Native. Brackish ditches, marshes, tidal rivers, &c. Common and locally abundant. Peren. July—August.

First record in 1884 : *Hart, Proc. R.I.A.*

This plant has not been noticed in Kerry in any locality certainly removed from maritime influence. It occurs as far inland, however, as Sleveen, Lixnaw, &c., the latter place nearly eight miles distant from the nearest sea ; but all this district is very low-lying and was, no doubt, subject to tidal flooding before the present very extensive embankments were completed. On the Continent it appears to grow irrespective of maritime influence, being found in many inland stations in Germany, Switzerland, &c.

S. rufus Schrad. *Blysmus rufus* Panz.

Districts — II. — — V. — — VIII. — Native. Salt marshes and damp sandy ground near the sea. Rare but locally abundant. Peren. July—August.

II. About the east end of Darrynane estuary : *R.W.S. 1890*.—V. In a swamp by the stream from Castlegregory Lake ; swamp at Castle Gallerus near Smerwick Harbour and about the head of the estuary between Dingle Harbour and Bull's Head : *Hart 1884*. In several localities about Castlegregory, 1902, and in damp sandy flats among the Ventry sandhills, 1905.—VIII. About Rahoneen estuary, abundant in damp hollows in the Banna sandhills and in marshes about Akeragh Lake, Ballyheige Bay : *R.W.S. 1888*, and in 1902.

First record in 1884 : *Hart, Proc. R.I.A.*

This plant, which belongs to Watson's *Scottish* or northern group, reaches in Kerry its extreme southern limit in the British Isles, more than a degree of latitude separating the nearest station in England from its Darrynane locality.

ERIOPHORUM Linn.

E. vaginatum Linn. *Hare's-tail Cotton-grass.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Moorlands, bogs and heaths, especially in mountain districts. Common, often abundant. Peren. April—May. *Calcifuge A.*

From sea-level, as near Lixnaw, &c., to 2,756 feet on the summit of Mangerton (*R.W.S.*), to 2,776 feet on the Reeks (*Hart*), and to 2,796 feet on the summit of Baurtregaum, Slieve Mish range (*R.W.S.*).

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 98.

E. angustifolium Roth. *E. polystachion* Linn. *Cotton-grass.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Bogs, bog-pools and drains, and in swamps. Very common. Peren. May—June. *Calcifuge A.*

From sea-level, to 2,756 feet on the summit of Mangerton (*R.W.S.*).

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 98.

E. latifolium Hoppe. *E. pubescens* Smith.

Districts I. II. — IV. — VI. — IX.
Native. Boggy and swampy places. Rare and local, and seldom occurring in any abundance. Peren. May—June. *Calcifuge A.*

I. Sparingly beside a small stream near the summit of the Priestsleap road, 1904 ; sparingly in the Roughty valley about a mile above Morley's Bridge, 1908.—II. In several spots about the upper Waterville Lake and near the summit of the old Sneem road east of Staigue Fort : *R.W.S. 1890.*—IV. In one or two spots between the Glencar Hotel and the Caragh River, and in some plenty near the school house north of Bealalaw bridge, 1899–1911 ; on the banks of the River Laune about a mile west of Beaufort bridge : *R.W.S. 1889.* A few plants at the south end of the Gap of Dunloe : *Druce 1891.*—VI. Sparingly on a wet bank near Laune bridge on the west side of the road, 1894 ; in a boggy swamp near Victoria Bay, West Park, Killarney, 1908.—IX. Rather plentiful by a swampy pool about a mile south of Tarbert on the Listowel road : *R.W.S. 1891*, and in 1904.

From sea-level near Waterville, to 1,350 feet near the Priestsleap road (*R.W.S.*).

First record in 1889 : *R.W.S., Journ. of Bot.*

RYNCHOSPORA Vahl.

R. fusca Roem. & Schult.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Spongy bogs and, rarely, in small boggy hollows in rocky ground. Rather common and locally abundant in the south, very local in the Dingle peninsula and in the north. Peren. July—August. *Calcifuge* A.

I. In several localities about the Cloonee Lakes : *Hart, Praeger & R.W.S.* Near Lauragh, Derreen, Eskadawer bridge, &c., 1894–1907.—II. Abundant south of the Upper Lake, Killarney, 1903 ; near Tahilla and frequent about Sneem, 1889–1913, and about the upper Lake at Waterville, 1892.—III. Near Maulcore Lough towards the head of the Inny valley ; in Carhan bog near Cahersiveen ; in many places in the Glencar valley, as near the Bunglasha school-house, about Drombrane Lough, in Kealboy bog, &c. ; in several places north and north-west of Caragh Lake, 1889–1913 : *R.W.S.*—IV. In wet bogs near the bottom of the Purple Mountain, Killarney : *Mackay Rar. 1806*. Still in Mackay's station, &c., in the Black Valley, and in the Owenreagh valley south of this ; in many spots in the Glencar valley from Caragh Lake to Loughs Cloon and Reagh ; in several spots near Cottoner's River nearly as far as the River Laune and near Baunclune House, &c., 1889–1907 : *R.W.S.*—V. Near the base of Connor Hill, Dingle (*Moore*) *Cyb. 1866*. Abundant near Lough Slat south of Castlegregory, 1890.—VI. Rather sparingly near the Killarney-Kenmare road about half a mile west of Mulgrave police barracks, 1901 ; in Sheheree bog near Killarney, and thence at intervals, to the big bog north of Lough Guitane, especially abundant near the Doo Loughs ; in a large bog south of Headford, 1887–1903.—VII. About Lough Yganavan near Castlemaine Harbour, 1905 ; in Bawnaskehy bog south of Castleisland, 1888.—VIII. Between the Brick and Cashen Rivers north of Lixnaw, 1902.—IX. Sparingly on the north-west side of Knockanore Mountain near Ballybunnion, 1894 : *R.W.S.*

From sea-level, to 500 feet near the Killarney-Kenmare road (*R.W.S.*), but usually quite lowland.

First record for Kerry and Ireland in 1806 : *Mackay Rar.*

This is one of the most characteristic plants of bogs in the west of Ireland. It ranges almost throughout its western half, from south-west Cork to south Donegal, and is already on record for 21 out of the 40 sub-divisions in *Topographical Botany*. In Kerry it occurs often in great abundance, especially in the south of the county, growing usually in

dense masses in the wettest portions of the bog and sometimes almost filling the slight depressions where the surface is composed of *Sphagnum* floating on mud. Even when not in flower the presence of this plant is betrayed at a considerable distance by the tawny colour of the stems.

In Great Britain the *Rynchospora* occurs at intervals along the south and west coasts of England and Wales and in two counties on the west side of Scotland. On the Continent it is very widely distributed, ranging from Norway and Russia to Austria and Italy ; while in North America it extends from New Brunswick and Delaware westward to the Great Lakes and Michigan.

R. alba Vahl.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Wet bogs and moors. Common and locally abundant. Peren. July—August. *Calcifuge A.*

From sea-level, to 1,050 feet on the Reeks (*Hart*), to the same height in the Slaheny valley, to 1,075 feet on the Coomacarra Mountains and to 1,175 feet near the summit of the old Kenmare-Glengarriff road (*R.W.S.*).

First record in 1825 : *Mackay Cat.*

SCHÆNUS Linn.

S. nigricans Linn.

Districts I. II. III. IV. V. VI. VII. VIII. —
Native. Marshy ground, wet moorlands, lake margins, banks near the sea, &c., Common and locally abundant, except in the extreme north, where it is either very rare or absent. Peren. June—July.

From sea-level, to 1,200 feet on the Reeks and to 1,400 feet on Beenoskee west of Castlegregory (*Hart*).

First record in 1806 : *Mackay Rar.*

This is a plant of most varied habitats. It appears to thrive as well in brackish marshes as in fresh-water swamps, on lowland as on upland moors ; it is abundant also on the wet flats and stony margins about the Killarney Lakes and on steep grassy slopes by the sea, as near Carrahan strand, &c., west of Ardfert.

CLADIUM P. Brown.

C. Mariscus R. Br. *C. jamaicense* Crantz.

Districts I. II. III. IV. V. VI. — VIII. —
Native. Margins of lakes, pools, sluggish streams and in wet marshy places. Rather common in the south and about

Killarney, but a rare and local plant over the greater portion of the county. Peren. July—August.

I. Frequent around the Cloonee Lakes and along the Cloonee River, 1889–1908 ; in Doorus Lake west of Derreen, 1894 : *R.W.S.*—II. In Lough Fadda (*H. N. Ridley*) *Journ. of Bot.* 1884, p. 91. Still in Lough Fadda east of Tahilla and frequent in the small lakes between this and Sneem ; in Dromtine Lough north of Sneem, 1889–1913 ; in two or three small lakes south of Ballaghbeama Gap and in Lough Beg south of the Upper Killarney Lake, 1901–06 ; sparingly in Lough Currane, 1906.—III. At the east side of Lough Currane and in the river flowing from it, 1896 ; in Lough Beg on the west side of Caragh Lake, 1906 ; in Drombrane Lake, Glencar, 1889–1913.—IV. Sparingly in Lough Reagh near Cloon Lough, upper Glencar valley, 1889 : *R.W.S.*—V. In Ballinloghig Lake east of Smerwick Harbour : *Hart* 1884.—VI. In many localities about the Killarney Lakes, Long Range, &c., and in Lough Guitane and a small lake near it, 1888–1914.—VIII. Abundant in marshes between the River Brick and Sleveen, 1902–08 : *R.W.S.*

First record in *Cyb.* 1866 : *Carroll*.

CAREX Linn.

C. dioica Linn.

Districts I. II. III. IV. V. VI. VII. — —
Native. Wet bogs and swamps. Local, but rather common in the south ; very rare in the north. Peren. May—June.
Calcifuge A.

I. In a bog near Croanshagh River, Lauragh, and plentiful about Knockatee to the north of Derreen, 1894 ; in two or three spots in the Sheen valley, as near Derreenhard, Ashgrove, and below the Glengariff road south of Realagh bridge, also in the upper Slaheny valley, 1903.—II. In the Owenreagh valley south of the Upper Lake, Killarney, 1899 ; near Lough Fadda ; between Tahilla and Parknasilla, and in several spots about Sneem, 1901 ; near the north end of Glan Lough east of Castlecove and east of the upper Waterville Lake, 1892.—III. In a large bog near Kealboy bridge on the road to Ballaghisheen, Glencar, 1889.—IV. In several localities in Glencar, as below the Hotel, near Bealalaw bridge, and around Lough Reagh ; in the Owenreagh valley, 1899 : *R.W.S.* In the Gap of Dunloe, 1906 : *Mrs. Jenner*.—V. Marshes near Camp, Tralee Bay ; in a marsh on the sands near Ventry and in Gallerus bog near Smerwick Harbour : *Hart* 1884 Still on Ventry strand and about Loughs Gal

and Camelaun near Connor Hill, and in very wet swamps on the south side of Castlegregory Lake, 1890.—VI. In bogs south of Lough Guitane; plentiful west of Barraduff near Headford and in a swamp by the Glanooragh River north of Killarney, 1890–1901.—VII. In swamps near Clogherbrian between Tralee and the Spa: *R.W.S.* 1888, and in 1899.

From sea-level, to 800 feet near Connor Hill and in the Owenreagh valley, and to 950 feet near the summit of the foot-track between the Waterville Lakes and Sneem (*R.W.S.*) and probably ascends higher.

First record in 1884: *Hart, Proc. R.I.A.*

A plant easily overlooked; it most probably occurs in some of the large bogs in the north of the county.

C. pulicaris Linn. *Flea Sedge.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Wet heathery or boggy places, especially on mountains. Common. Peren. May—June. *Calcifuge B.*

From sea-level, to 2,650 feet on Brandon (*R.W.S.*), and to 3,000 feet on the Reeks (*Druce*).

First record in 1804: *Wade Rar.* “At the foot of Manger-ton mountain, Killarney.”

C. disticha Huds. *C. intermedia* Good.

Districts — — — — V. — — VIII. —
Native. River margins and swampy places. Very rare. Peren. May—June.

V. On the highest portion of the Great Blasket: *Barrington* 1881—a most unlikely station for this moisture-loving species, nor was it seen anywhere on the island by *Messrs. Praeger & Stelfox* in 1912. Sparingly by a stream near Ventry strand, and—VIII. By the River Brick near Lixnaw: *R.W.S.* 1891. Sparingly near the River Feale in Ballinruddery demesne near Listowel 1894: *R.W.S.*

First record in 1881: *Barrington, Proc. R.I.A.*

This appears to be one of the rarest of the Kerry sedges, and even in the few localities known, it occurred but very sparingly. It is very rare also in the neighbouring county Cork and in Donegal. Can Mr. Barrington's Blasket record for this plant given above, really refer to *C. arenaria* which occurs in the station mentioned, although apparently not seen there by him?

C. arenaria Linn.

Districts — II. III. — V. — VII. VIII. IX.
Native. Sandhills and sandy places near the sea. Common and locally abundant. Peren. May—June

Ascends to 700 feet on the Great Blasket Island (*Praeger & Stelfox*), a most unusual height.

First record in 1806 : *Mackay Rar.*

Although practically confined to the sea coast in Ireland, this plant is found in Kerry in one locality, Lough Yganavan, which is quite removed from any present maritime influence. It occurs there rather sparingly along the sandy east shore of the lake, which lies about a mile from the nearest sea at Castlemaine Harbour. Another unusual station for this sedge is reported by Messrs. *Praeger & Stelfox* who found it fringing the summits of the high cliffs on the Great Blasket Island up to 700 feet, where there was no trace of sand. On the Continent this plant, like *Scirpus maritimus*, quite loses its maritime exclusiveness and is found there in many inland stations.

C. teretiuscula Good. *C. diandra* Schrank.

Districts — — — — V. — VII. — —
Native. Wet marshes and swamps. Very rare and local.
Peren. June.

V. In heavy marshes at the south-west corner of Castle-gregory Lake and in the swamp at its west end ; in a low wet stretch of ground between Castle Gallerus and the sea east of Smerwick Harbour : *Hart 1884*. Still in the localities mentioned above, 1890–1907, and—VII. In Clogherbrien bog between Tralee and the Spa : *R.W.S. 1889*, and in 1899.

First record in 1884 : *Hart, Proc. R.I.A.*

C. paniculata Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Swamps and boggy places, and wet woods. Rather common except in the extreme north, where it is local.
Peren. May—June.

From sea-level, to 1,900 feet on Crowkeylaun Mountain east of Lough Currane (*R.W.S.*).

First record in 1806 : *Mackay Rar.* “ On Glenna Mountain, Killarney.”

C. Bœnninghausiana Weihe. *C. paniculata* × *remota*.

District — — — — VI. — — —
Native. Wet shady places. Very rare and local. Peren.
June—July.

V. In some abundance in a wet swampy wood by the Bilrook stream east of Muckross Abbey, growing with its reputed parents : *R.W.S. 1889*—still there in 1911. One patch in the Home Park near Ross Bay, Killarney : *R.W.S. 1902*.

First record in 1889 : *R.W.S., Journ. of Bot.*

The Muckcross locality recorded above strengthens the opinion held by many, that this plant is a hybrid between *C. paniculata* and *C. remota*. Both these sedges grow there in great abundance, and it was this juxtaposition in such favourable surroundings that led to a search being made for their hybrid. Although variable in appearance, the Kerry plant is usually much nearer to *C. paniculata*, of which it has the strong upright growth and densely tufted habit. Elsewhere in Ireland only one locality, in Donegal, appears to be on record for this plant.

C. vulpina Linn.

Districts I. II. III. — V. — VII. VIII. IX.
Native. Marshes, ditches and other damp places, especially near the coast. Rather common near the sea, very rare inland. Peren. June—July.

First record in 1884 : *Hart, Proc. R.I.A.*

This plant occurs more frequently in the north of the county than elsewhere ; it is very rarely seen any distance from the sea in Kerry, but has been noticed about Lisselton, Lixnaw, &c., the latter locality being about seven miles inland.

C. muricata Auct. angl. *C. contigua* Hoppe.

Districts — — — — — VII. VIII. —
Native. About limestone rocks. Very rare and local. Peren. June. *Callicole A.*

VII. On rocks at Clogherbrien between Tralee and the Spa, and below Fenit House, Tralee Bay, sparingly in both localities : *R.W.S. 1889, &c.* About the strand below Sea-field House, sparingly, 1905 ; on a knoll north-east of Barrow, 1902.—VIII. Sparingly near Rahoneen, west of Ardfert : *R.W.S. 1903.*

First record in 1889 : *R.W.S., Journ. of Bot.*

C. divulsa Good.

Districts I. II. — — — VI. VII. — —
Native. Banks, hedgerows and bushy places on limestone rocks. Rare. Peren. June—July. *Callicole A.*

I. At intervals along the lower Roughty valley from Kenmare Harbour to near Kilgarvan, 1889–1913.—II. On rocks about Kenmare : *R.W.S. 1890*, and in 1901.—VI. At Muckcross, Killarney (*More*) *Rec. Add. 1872*. Frequent in Muckcross demesne, in the Home Park and in many spots on the limestone about Killarney : *R.W.S. 1888, &c.*, and in 1914.—VII. Plentiful on rocks below Fenit House, Tralee Bay, 1888 : *R.W.S.*

First record in 1872 : *More, Rec. Add.*

A very rare sedge in Kerry outside the Killarney and Kenmare districts, and quite confined to the limestone.

C. echinata Murr. *C. stellulata* Good.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Bogs, wet marshy places, moorlands, &c. Very common. Peren. May—July.

From sea-level, to 3,127 feet on the summit of Brandon (*R.W.S.*), and to 3,300 feet on the Reeks (*Hart*).

First record in 1806 : *Mackay Rar.*

C. remota Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Damp shady places, ditch banks, woods, &c. Rather common. Peren. June—July.

First record in 1884 : *Hart, Proc. R.I.A.*

[*C. AXILLARIS* Good. *C. remota* × *vulpina*.—II. or VI. Near the Upper Lake at Killarney (*Herb. Mackay*) *Cyb. 1866*. This record is most probably an error. The plant has not been seen in the county by any recent observer, nor does *C. vulpina*, one of the parents of this hybrid, appear to grow about the Killarney Lakes. Many of the specimens in Mackay's *Herbarium* are known to have been obtained from the Botanic Garden, and were only inserted to represent the species. Very possibly the plant found by Mackay was *Carex filiformis* which occurs in some abundance near the extreme southern end of the Upper Lake and along the Back Channel, Killarney.]

C. curta Good.

Districts — — — IV. — VI. — VIII. —
Native. Wet places. Very rare and local. Peren. June. *Calcifuge A.*

IV. In several places about the south end of Lough Acoose and near Lough Beg, Glencar, 1911 : *R.W.S.*—VI. "In small quantities in the marshes at the foot of Mangerton Mountain, Killarney" : *Wade Rar. 1804*. In a swamp by the Finnow stream where it joins the Flesk : *R.W.S. 1889*—this is quite near the foot of Mangerton and may very well be Wade's station. In a swamp at Toormore bridge about six miles north-east of Killarney : *R.W.S. 1902*.—VIII. In a swamp on the south bank of the River Feale about a mile west of Abbeyfeale, 1894 : *R.W.S.*

From about 150 feet above sea-level by the River Flesk, to 510 feet by Lough Acoose and to about 550 feet at Toormore (*R.W.S.*).

First record in 1804 : *Wade Rar.*

C. ovalis Good. *C. leporina* Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Wet meadows and pastures, marshy places, roadsides, &c. Common, sometimes abundant. Peren. May—June.

From sea-level, to 1,450 feet by the Priestsleap road and to 1,480 feet in the upper Roughty valley (*R.W.S.*).

First record in 1882 : *Hart, Proc. R.I.A.*

One of the most abundant of the Kerry sedges, forming sometimes no inconsiderable portion of the herbage in poor wet pastures.

Var. CAPITATA Sonder.—III. On damp sand-flats near Dooaghs, Castlemaine Bay (*Marshall & R.W.S.*) *R.W.S. 1904.*

C. Hudsonii Ar. Benn. *C. stricta* Good. *C. elata* All.

Districts — II. — IV. — VI. — — —
Native. Lake margins and marshy places. Rare and local. Peren. May—June.

II. In several spots about the southern extremity of the Upper Lake, Killarney, 1901.—IV. Sparingly by Coosaun Lake, Gap of Dunloe, 1909 : *R.W.S.*—VI. “At the bottom of Turc mountain growing among stones by the side of the lake, Aug. 1805” : *Mackay Rar.* In several localities about the Killarney Lakes, as about Torc Lake, in Muckcross demesne, at O’Sullivan’s Punch Bowl on the Back Channel, about Cromaglan valley and the Upper Lake, &c., but nowhere abundant : *R.W.S. 1889, &c.*, and in 1912.

First record in 1806 : *Mackay Rar.*

Almost confined in Kerry to the neighbourhood of the Killarney Lakes.

C. acuta Linn. *C. gracilis* Curt.

Districts — — III. — — VI. — — —
Native. Wet places. Very rare and local. Peren. May—June.

III. Sparingly on the west side of Caragh Lake near its upper end, 1889 : *R.W.S.*—IV. Killarney (*Babington*) *Cyb. 1866.* Sparingly near a small pond, joined to the lake at high-water, a little east of Ross Island, Killarney : *R.W.S. 1889*—“an abnormal form” (*Ar. Bennett*).

First record in *Cyb. 1886* : *Babington.*

Apparently one of the rarest sedges in the county and occurring in very small quantity in the few localities in which it has recently been observed, although in its Irish stations outside of Kerry it usually appears in abundance. The record for this plant in *R.W.S. 1888*, was intended for *C. Hudsonii*.

C. rigida Good.

Districts I. II. III. IV. V. VI. VII. — —
Native. Wet stony and peaty places on the higher mountains.
Rather common. Peren. June—July.

Ranges from 2,020 feet near Connor Hill and 2,050 feet on the Reeks (*Hart*), to 3,127 feet on the summit of Brandon (*Moore*), and to 3,414 feet on the summit of Carrantuohill (*Thompson & Elliott*).

First record in 1806 : *Mackay Rar.* “ On Mangerton near the Devil’s Punch-bowl ; and on other high mountains in Kerry.”

C. aquatilis Wahl.

Districts — — III. IV. — VI. — — —
Native. Margins of streams and bog drains. Very rare and local. Peren. June—July.

III. Sparingly by a small stream near the south-west corner of Caragh Lake : *R.W.S. 1889*—still there in 1906, and abundant in several places along the river and its backwaters between Caragh Lake and Blackstones, 1890–1913.—

IV. Sparingly at the south end of Caragh Lake and along the east bank of the Caragh River, also in several of the bog drains near the lake : *R.W.S. 1890*. By the stream connecting Lough Beg with L. Acoose, 1911.—VI. Rather plentifully by the river about half a mile above Galway’s bridge on the Kenmare-Killarney road : *R.W.S. 1890*—still there in 1914, but flowering rather sparingly.

From near the sea-level, to 510 feet near Lough Acoose (*R.W.S.*).

First record in 1889 : *R.W.S., Journ. of Bot.*

Although Mr. S. A. Stewart’s discovery of this northern sedge in Ireland dates only from 1884, it is already on record for 13 out of the 40 subdivisions of *Irish Topographical Botany*. This wide distribution of *C. aquatilis* in Ireland is very remarkable, as also is the fact that this *Highland Type* sedge, which in Scotland ascends to at least 3,300 feet, should in Ireland occur only at low levels, its Kerry stations ranging from about 60 feet above sea-level at Caragh Lake to about 500 feet near Lough Acoose. These Kerry localities are the most southerly at present known for this plant in Europe, although it is recorded from nearly the same latitude in one of the Welsh counties.

Amongst the forms of this variable species found in the British Isles, specimens from Kerry, and from the Thurso River, Caithness, come nearest to Wahlenburg’s type *aquatilis* ; most of the other Irish gatherings are referable either to the *var. ELATIOR* of Babington, or to the *var. VIRESCENS* of Anders.

As at present known this sedge is confined in Kerry to the lower end of the Glencar valley with an outlying station near the Upper Lake, Killarney.

C. hibernica Ar. Benn. *C. aquatilis* × *Hudsonii*?

District — — — — — VI. — — —
Native. River bank. Very rare and local. Peren. June.

VI. Rather sparingly on the boggy bank of the river about half a mile above Galway's bridge on the old Killarney-Kenmare road, 1889: *R.W.S.*,—still there in 1909, but flowering very sparingly and apparently decreasing.

First found in 1889 by *R.W.S.*, and recorded in 1897: *Ar. Bennett, Journ. of Bot.*, p. 250.

Mr. Arthur Bennett to whom specimens of this puzzling *Carex* were sent, has described it as a new form under the name *C. hibernica* (*vide loc. cit.*). The Rev. E. S. Marshall who has shown the plant growing *in situ*, at once accepted the hybrid origin suggested by Mr. Bennett. It grows there mixed with *C. aquatilis* and *C. vulgaris*, but *C. Hudsonii*, one of its reputed parents, has not been seen growing nearer than the south end of the Upper Lake, fully two miles distant and nearly 300 feet lower; it is quite possible, however, that *C. Hudsonii* occurs in the neighbourhood or has died out comparatively recently, as indeed both *C. hibernica* and *C. aquatilis* appear to be doing in this locality. This hybrid has but little resemblance to either of its suggested parents. Of the two, however, it appears nearer to *C. aquatilis* of which plant it has the growth. The locality given above appears to be the only one known for this plant in the British Isles.

C. vulgaris Fries. *C. Goodenowii* Gay. *C. cæspitosa* Smith.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Marshy and boggy places, about rivers and lake-sides, &c. Common. Peren. May—June.

From sea-level, to 1,800 feet on mountains north of Sneem and to 2,250 feet on Brandon (*R.W.S.*).

First record in 1881: *Barrington, Proc. R.I.A.*

Var. JUNCELLA (Fries). This form of the variable *C. vulgaris* has been gathered near the Upper Lake, Killarney, about Connor Hill, &c.: *R.W.S. 1890, &c.*, and proves to be not uncommon in the more mountainous parts of the county.

C. glauca Scop. *C. flacca* Schreb. *C. recurva* Huds.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Pastures, banks, gravelly places, &c. Common.
Peren. April—June. *Calcicole B.*

From sea-level, to 2,600 feet on Brandon (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

C. limosa Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Spongy bogs and about the swampy margins of pools. Rather common in the south, local in the north, but usually abundant where it occurs. Peren. June. *Calcifuge A.*

I. Near Croanshagh bridge near Derreen, 1894 ; by a small lake north-east of Cloonee, 1901 ; in the Slaheny valley near Derreenhard and in the Roughty valley above Morley's bridge, 1903.—II. In the Owenreagh valley south of the Upper Killarney Lake, 1899 ; near Old Dromore on the east side of the Blackwater, 1904 ; near the small lakes between Tahilla and Parknasilla, 1892 : *R.W.S.* In some profusion in spongy bogs north of Sneem : *Hart 1885*. In many localities about Sneem, often very abundant, 1901 ; near the upper Lake at Waterville, 1892.—III. Near the River Inny ferry and abundant near Maulcore Lake in the upper Inny valley, 1900 ; in several localities east of Cahersiveen, 1896 ; frequent about Glenbeigh, &c., and near Caragh Lake, 1913 ; frequent in the Glencar valley as about Drombrane Lough, Kealboy bog, &c., 1889–1911 : *R.W.S.*—IV. Forming a fringe around Curraley Lough, Beenbane, Reeks : *Hart 1882*. Still at Curraley Lough and in many localities in Glencar, as near Bealalaw bridge, Garrane's bog, near Lough Reagh, &c., 1899–1911 ; in several bogs between Glencar and the River Laune, 1901 ; in the Black Valley and in the Owenreagh valley to the south of it, 1904 : *R.W.S.*—V. At the base of Connor Hill, Dingle (*Moore*) *Cyb. 1866*—still there in 1908 : *Miss Delap & R.W.S.* In a bog east of Camp, Tralee Bay ; swamps at south end of Castlegregory Lake ; swamp near Gallerus and near the Feohanagh River, Smerwick Harbour : *Hart 1884*. Still in several localities about Castlegregory, 1902.—VI. Abundant in Sheheree bog near Killarney and in several bogs about Headford, &c., 1903 : *R.W.S.* Near Gueevgullia north of Rathmore (*Praeger*) *Irish Nat. 1898*, p. 227.—VII. Abundant in Boggaghaneal west of Castleisland, 1888.—VIII. Abundant in a bog between the Rivers Brick and Feale north of Lixnaw, 1902.—IX. In a bog north-west of Listowel and sparingly in a bog near Knockanure five miles east of Listowel, 1894 : *R.W.S.*

From sea-level, to 950 feet east of Lough Currane, and to 1,450 feet at Lough Ferta, Teermoyle Mountain, Glenbeigh (*R.W.S.*).

First record in *Cyb.* 1866 : *Moore*.

The long list of localities recorded above, is given to show that this northern sedge is not nearly so rare in Kerry as was formerly thought ; in fact, few of the wetter bogs in the county are without it. Like *Drosera intermedia* and *Rhynchospora fusca*, it is very partial to the *Sphagnum* hollows which are often found in these floating bogs.

C. pilulifera Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Heaths and moors, chiefly in mountainous districts. Rather common, but rare in the extreme north. Peren. May—June. *Calcifuge A.*

From sea-level, to 2,756 feet on Mangerton summit, to 3,000 feet on Brandon (*R.W.S.*), and to 3,120 feet on the Reeks (*Hart*).

First record in 1844 : *S. P. Woodward, Phytol.*, p. 878.

Var. LONGIBRACTEATA Lange—*var. LEESII* Ridley.—IV. On Carrantuohill, Reeks, at 2,800 feet : *Druce* 1891.

C. præcox Jacq. *C. verna* Chaix. *C. caryophyllea* Latour.

Districts I. II. III. IV. V. VI. VII. VIII. IX Native. Dry pastures, banks and heaths, &c. Rather common and locally abundant. Peren. April—May.

From sea-level, to 950 feet on the Reeks (*Hart*), and probably higher.

First record in 1882 : *Hart, Proc. R.I.A.*

A curious form of this plant was gathered on a heath south-east of Killarney, in which the stalks of the lowest spikes were fully two inches long and the sheaths of the bracts quite half an inch in depth ; it appears to be the form *C. mollis* Host.

C. pallescens Linn.

Districts I. II. III. IV. V. VI. — — — Native. In bushy or shady places and in moist spots on heaths and meadows. Widely but thinly distributed over the mountainous portion of the county, not yet noticed in the north. Peren. May—June.

I. In Uragh wood by Inchiquin Lough : *Hart* 1885. Still there in 1908, and near Dromoghty Lough south of Dawros ; sparingly on both sides of the estuary east of Kenmare and along the Roughty River, 1904 ; on Knockboy Mountain, &c., Slaheny valley, 1894–1907.—II. Sparingly on the south side of Lough Currane, 1900.—III. In several places on the Glenbeigh Mountains, as above Coomasaharn and Cooma-

cullen Loughs, 1906 ; in the Glencar valley near Lickeen, &c., 1890.—IV. In two or three localities in the Glencar valley and near Cloon Lough, 1890 ; in Beaufort woods, 1902 : rather frequent along the Tomies shore, Lower Lake, Killarney, 1901 : *R.W.S.*—V. In a thicket near Fermoy, Brandon Bay, and by Lough Gal near Connor Hill : *Hart 1884*.—VI. In many localities about the Killarney Lakes, usually in small quantity, as in the West and Home Parks, on Ross and Rough Islands, Muckross in many spots, Glenna, &c. ; along the Torc and Muckross shores of the Middle Lake ; near the Tunnel Rock and Derrycunihy, &c., on the Upper Lake : *R.W.S. 1888, &c.*, and in 1912. By the old Kenmare road above Galway's bridge, 1901 ; in several spots in the Horse's Glen, Mangerton, 1904 ; in Glenflesk west of Loo Bridge station, 1907 ; near the Laune east of Killorglin, 1901 : *R.W.S.*

From sea-level, to 1,400 feet on Knockboy in the Slaheny valley, to 1,500 feet in the Glenbeigh Mountains and to 2,000 feet in cliffs to the south of Lough Erhagh, Horse's Glen, Mangerton (*R.W.S.*).

First record in 1884 : *Hart, Proc. R.I.A.*

C. panicea Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Boggy and marshy ground, heaths, &c. Common.
Peren. May—June.

From sea-level, to 2,550 feet on the Reeks (*Hart*).

First record in 1881 : *Barrington, Proc. R.I.A.*

Var. TUMIDULA *Læst.*—V. By the coast between Cloghane and Castlegregory, and in other places about Brandon Bay, 1902 : *Marshall & Shoolbred*.

C. pendula Huds.

Districts — — III. — — VI. VII. VIII. IX.
Native or Denizen. Moist woods and shady banks, riversides. Rare but locally abundant. Peren. May—June.

III. In several places in the Glanleam woods, Valencia Island, 1892–1911.—VI. Sparingly in the steep wood above Glenna Bay, Lower Lake, Killarney, 1894.—VII. By the Lee stream near Ballycarty and very abundant about this stream in Ballyseedy demesne, and again near Tralee ; abundant in Kilcolman demesne, Milltown—planted : *R.W.S. 1888, &c.*, and in 1906.—VIII. On steep wooded banks by the River Feale, just within Ballinruddery demesne near Listowel : *R.W.S. 1891*, and in 1899.—IX. Plentiful by a stream near Tarbert, 1913 : *Phillips*.

First record in 1888 : *R.W.S., Journ. of Bot.*

In many of the stations given above, this handsome sedge has been most probably planted, as it certainly has in Kilcolman demesne. It appears to be native in its Glena locality, although even there, introduced shrubs, &c., are not far distant.

C. strigosa Huds.

Districts — — — — — VII. — IX.
Native. Damp shady places. Very rare and local. Peren.
May—June.

VII. Very abundant in several places in Ballyseedy demesne especially towards its east side, also about the adjoining stream and on banks and roadsides on the north of this demesne; rather sparingly in Chutehall demesne near the road: *R.W.S. 1888*, &c., and in 1906.—IX. One or two large patches in a wood on the north side of the River Feale about two miles above Listowel: *R.W.S. 1891*.

First record in 1888: *R.W.S., Journ. of Bot.*

C. sylvatica Huds.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Woods and shady places. Rather common. Peren.
May—June.

From sea-level, to 1,150 feet above Lough Coomacullen, Glenbeigh Mountains (*R.W.S.*), but not often seen so high.

First record in 1884: *Hart, Proc. R.I.A.*

C. lævigata Smith. *C. helodes* Link.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In swampy or wet shady places, along streams, &c. Rather common in the mountainous parts of the county, but local in the extreme north. Peren. May—June.

From sea-level, to 1,350 feet in the Slaheny valley (*R.W.S.*).

First record in 1884: *Hart, Proc. R.I.A.*

C. binervis Smith.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Moors, heaths, &c. Common over the greater portion of the county, but local in the north. Peren. May—June. *Calcifuge A.*

From sea-level, to 2,550 feet above Lough Googh, Reeks (*Hart*), and to 2,756 feet on the summit of Mangerton (*R.W.S.*).

First record in 1806: *Mackay Rar.*, but no doubt the entry in Wade's *Plantæ Rariores 1804*, "C. distans . . . near the top of Mangerton mountain, Killarney," should be referred here.

C. distans Linn.

Districts I. II. III. — V. — VII. VIII. IX.
Native. Salt marshes, wet places about sea cliffs and other damp spots near the sea. Rather common. Peren. May—June.

First record in 1889 : *R.W.S., Journ. of Bot.*

C. punctata Gaud.

Districts I. II. III. — V. — — VIII. —
Native. Brackish marshes, damp spots about sea cliffs and in wet stony places near the sea. Rather common and sometimes abundant in the south, rare and local elsewhere. Peren. June.

I. Near Croanshagh bridge, by Doorus Lake west of Derreen and in several spots near the mouth of the Cloonee River, 1894 ; among the limestone rocks near the mouth of the River Finnihy below Kenmare, and—II. Near the mouth of the Finnihy on the north side : *R.W.S. 1890*, and in 1901. At Sneem (*J. Woods*) *Phytol. 1855*, p. 157. In many places along the north side of Kenmare Bay, as by the shore west of Blackwater bridge, between Tahilla and Parknasilla, frequent about Sneem and along the coast near Gleesk, &c., about Castlecove and abundant in many places between Caherdaniel and Darrynane Harbour, on Abbey Island, on Lamb's Head, &c. ; on the shore of Ballinskelligs Bay near Loher.—III. Near the old Cahersiveen road about three miles north of the River Inny, about Portmagee and around Lough Kay near Doulus Head. 1889–1913 : *R.W.S. 1890, &c.*—V. “Near the mouth of the harbour, about a mile or so from Dingle, near a tower occupied by the revenue service” (*D. Oliver*) *Phytol. 1853*, p. 1095. On wet ledges in the sea-cliffs about a mile east of Ventry : *R.W.S. 1891*.—VIII. Sparingly on the cliffs between Ballyheige and Kerry Head : *R.W.S. 1889*.

Ascends to 325 feet on sea cliffs at Lamb's Head (*R.W.S.*).

First record for Kerry and Ireland in 1853 : *D. Oliver, Phytol.*, p. 1095.

This sedge appears to be confined in Ireland to the counties of Cork and Kerry, and has its headquarters about the shores of the lower portion of Kenmare Bay or River, becoming gradually more abundant as the western extremity of this bay is approached. Although restricted usually to the neighbourhood of the sea, it has been noticed growing nearly two miles inland north of Sneem, which village is itself about two miles north of Kenmare Bay ; it occurs again at nearly the same distance from the sea about

four miles south of Cahersiveen. In the field *C. punctata* may be readily distinguished from *C. distans* by its *spreading* fruit which is a very constant character in the Kerry plant, the fruit of *C. distans* being always more or less ascending ; this *patent* characteristic of the fruit was also noticed by its finder, D. Oliver. In Great Britain this sedge is found in several localities along the west side of England, Wales and the south-west corner of Scotland, with an outlying station in Suffolk ; on the Continent it occurs in Norway, France, Italy, &c., but is only doubtfully reported from the Spanish peninsula.

C. Hornschuchiana Hoppe. *C. fulva* Host. *C. speirostachya* Smith.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Boggy or swampy places, chiefly in mountain districts. Rather common, but rare in the extreme north. Peren. May—June.

Rare in the following Districts—VIII. In bogs near Lixnaw, 1902.—IX. In several localities about Tarbert, 1890 : *R.W.S.*

From sea-level, to 1,450 feet on Slieveanea near Connor Hill (*Hart*), and to 1,800 feet on the Reeks (*Druce*).

First record in 1806 : *Mackay Rar.*

C. xanthocarpa Degl. *C. Hornschuchiana* × *Æderi* var. *œdocarpa*.

V. Coast between Cloghane and Stradbally, Brandon Bay: *Marshall & Shoolbred*, and—VI. Muckcross Hotel boat-harbour, Lower Lake, Killarney, 1902 : *Marshall & R.W.S.* A critical plant no doubt occurring elsewhere in the county.

C. extensa Good.

Districts I. II. III. — V. — VII. VIII. IX. Native. Salt marshes and damp rocky places by the sea. Rather common and sometimes abundant. Peren. June.

First record in *Cyb.* 1866 : *Moore*.

The form—var. *PUMILA* Anders.—var. *MINOR* Syme, occurs not infrequently around the coast, while a lax form, with long bracts and the lowest spikelet very remote, is recorded in *Druce* 1891 as occurring at Kenmare ; it has been noted also at Rossbehy, &c., by *R.W.S.*

C. flava Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Boggy and marshy ground, on heaths, &c. Rather common. Peren. May—June.

From sea-level, to 2,550 feet on the Reeks and to 2,650 feet on Caherconree, Slieve Mish range (*Hart*).

First record in 1806 : *Mackay Rar.*

This is usually a tall growing plant in Kerry, very similar to, if not identical with, the *var.* LEPIDOCARPA (*Tausch*) ; it differs much in the distance between the fertile spikes and in the length of stalk in the male spikelets.

C. Ederi Retz.

Districts I. — III. IV. V. VI. VII. — IX. Native. Boggy and swampy ground, lake margins, &c. Rather common. Peren. May—June.

First record in 1844 : *S. P. Woodward, Phytol.*, p. 878.

This sedge most probably occurs throughout the county and will, no doubt, be found to ascend as high on the mountains as the closely allied *C. flava*. The small cæspitose plant is abundant in many localities around the margins of the Killarney Lakes, but the prevailing form in Kerry is a much taller plant, probably referable to the *var.* CEDOCARPA Anders.

C. filiformis Linn. *C. lasiocarpa* Ehrh.

Districts — II. III. IV. — VI. — VIII. — Native. Margins of lakes, sluggish streams and in swamps. Rare but locally abundant. Peren. May—June.

II. Along the extreme south end of the Upper Killarney Lake and abundant round Lough Beg, a little to the south of this : *R.W.S. 1890*, and in 1904. Almost filling a small lake or swamp, Lough Coad, north of West Cove, Kenmare Bay, 1907 : *R.W.S.*—III. & IV. Lough Carra [Caragh], County of Kerry (*J. Drummond*) *Flor. Hib. 1836*—most probably along the sluggish river at the southern extremity of this lake.—VI. Along the Back Channel, Lower Lake, Killarney, 1899 : *R. A. Phillips & R.W.S.*, and in 1912.—VIII. Abundant in a swamp where the railway crosses the River Brick near Lixnaw : *R.W.S. 1891*, and in bog ditches between Sleveen and the River Brick near Ballyduff, 1904 : *R.W.S.*

First record in 1836 : *J. Drummond, Flor. Hib.*

This *Carex* has not been seen recently in Drummond's station about Caragh Lake, but is likely enough to occur there. At present it is known for certain only from the neighbourhood of the Killarney Lakes, the River Brick and an outlying station near Kenmare Bay.

C. hirta Linn.

Districts — — — IV. V. VI. VII. — IX.
Native. Wet pastures and marshy places. Locally abundant, but unevenly distributed and quite a rare plant over the greater portion of the county. Peren. May—June.

Rare in the following Districts—IV. Near the Gap of Dunloe, 1912 : *Mrs. Jenner*. In several places about the River Laune, 1903 : *R.W.S.*—V. On the coast between Cloghane and Stradbally, Brandon Bay, 1902 : *Marshall & Shoolbred*. On the east side of Dingle Harbour, 1905.—IX. Near the Cashen Ferry bridge and abundant on damp spots in the sandhills and elsewhere about Ballybunnion, near Beal Castle and abundant in a swampy wood at Letter Point on the Shannon, 1890–1908 : *R.W.S.*

First record in 1889 : *R.W.S., Journ. of Bot.*

Var. SPINOSA Mort.—VI. On Brown Island and the Muckcross shore, Lower Lake Killarney, 1888–1902 : *Marshall & R.W.S.*

C. riparia Curt.

Districts — — — — VI. VII. VIII. IX.
Native. Ditches, swampy ground and about streams. Locally abundant in the north of the county, not yet seen in the south. Peren. May.

VI. Abundant in a swamp by the Monk's Walk east of Muckcross Abbey : *R.W.S. 1899*, and in 1911 ; in several localities on the south side of the River Maine, 1903.—VII. Frequent about Killorglin and Castlemaine, 1904 ; sparingly near the Spa, Tralee Bay, 1902.—VIII. In swamps near the sea north of Rahoneen near Ardferf ; ditches north of Abbeydorney and along the old River Brick, 1907.—IX. In ditches near Cashen Ferry bridge and in a ditch near the shore about two miles north-west of Tarbert, 1890–1908 : *R.W.S.*

First record in 1888 : *R.W.S., Journ. of Bot.*

The fertile spikes of this sedge are much attacked in Kerry by a fungus or rust, probably the same species—*Ustilago olivacea*—mentioned by Mr. Colgan in his *Flora of the Co. Dublin*, as infesting this plant about Donabate.

C. ampullacea Good. *C. inflata* Huds. *C. rostrata* Stokes.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In shallow water, ditches and other swampy places. Common and locally abundant, but rare in the extreme north. Peren. May—June.

From sea-level, to 1,125 feet in Lough Coomacullen, Glenbeigh Mountains (*R.W.S.*), and probably higher.

First record in 1882 : *Hart, Proc. R.I.A.*

C. vesicaria Linn.

Districts — — — IV. — VI. VII. — —
Native. Swampy places and shallow water. Rare but locally abundant. Peren. May—June.

IV. Sparingly in the Glencar valley, 1890, and in several places along the River Laune, 1902 : *R.W.S.*—VI. Killarney Lakes (*Moore*) *Cyb.* 1866. In many localities about the Killarney Lakes and the Long Range : *R.W.S.* 1888, &c., and in 1912 ; frequent along the River Laune, as below Grenagh House, in the old moat at Ballymalis Castle, &c., 1909 ; sparingly on the south side of the River Maine, 1901.—VII. Sparingly near the River Laune about Killorglin, 1896–1911 : *R.W.S.*

First record in *Cyb.* 1866 : *Moore*.

A very rare plant in Kerry outside the neighbourhood of the Killarney Lakes and the River Laune.

GRAMINEÆ.

PHALARIS Linn.

P. arundinacea Linn. *Digraphis arundinacea* Trin.
Ribbon Grass. *Reed Grass.*

Districts — II. III. IV. V. VI. VII. VIII. IX.
Native. Wet ditches, riversides and damp bushy places. Rather common, local in the south. Peren. June—July.

First record in 1901 : *R.W.S.*, *Topog. Bot.*

[*P. CANARIENSIS* Linn. *Canary Grass*—VI. Sparingly on roadsides near Killarney, 1903 : *R.W.S.* Sparingly in Lahard gardens near Beaufort, 1910–12 : *Mrs. Jenner*.—VII. About roadsides near the railway station and near Ballymullan, Tralee, 1908.—IX. On roadsides south of Listowel, 1899–1904 : *R.W.S.* A casual introduced with seeds and nowhere established.]

ANTHOXANTHUM Linn.

A. odoratum Linn. *Sweet Vernal Grass.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Pastures, meadows, heaths, woods, &c. Very common. Peren. April—June.

From sea-level, to 2,550 feet on Mangerton (*R.W.S.*), and to 3,030 feet on the Reeks (*Hart*).

First record in 1881 : *Barrington, Proc. R.I.A.*

ALOPECURUS Linn.

A. geniculatus Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Ditches, damp roadsides, about ponds and other marshy places. Rather common. Peren. June—August.

First record in 1901 : *R.W.S., Topog. Bot.*

A. pratensis Linn. *Meadow Fox-tail.*

Districts — II. — IV. V. VI. VII. VIII. IX. Native. Moist meadows, field-sides, banks, &c. Rather common in the north, rare and local elsewhere. Peren. May—June.

Rare in the following Districts—II. Meadows near Parknasilla, 1904.—IV. Sparingly in the Glencar valley, 1890.—V. Meadows east of Camp, Tralee Bay, 1894.—VIII. Sparingly near Ballinruddery south-east of Listowel, 1899 : *R.W.S.*

First record in *Cyb.* 1898 : *R.W.S.*

MILIUM Linn.

M. effusum Linn. *Millet Grass.*

Districts I. II. III. IV. V. VI. VII. VIII. — Native. Woods and shady banks. Rather rare and local. Peren. May—June.

I. Sparingly near Lauragh Chapel, Derreen, 1894.—II. In Askive wood near Parknasilla, 1892, and sparingly north of Darrynane Harbour, 1889.—III. In St. Finan's wood north of Lough Currane, 1900 ; in one or two spots near Lickeen, Glencar, and in a rocky wood at the south-west angle of Caragh Lake, 1889–1913.—IV. Sparingly at the south-east corner of Caragh Lake near the Sugarloaf, and west of the Glencar Hotel, 1890–1911 ; in several places along the Tomies shore, Lower Lake, Killarney, as about O'Sullivan's Cascade and the Royal Oak, &c., 1888–1904.—V. Very sparingly near Fermoy House, Brandon Bay, 1894 : *R.W.S.*—VI. Woods at Muckross, Killarney (*Moore*) *Cyb.* 1866. Still there, and not infrequent about the Killarney Lakes, as at Glena and along the shore near Darby's Garden on the Lower Lake, near Kilbeg bay on the Middle Lake and near Torc Waterfall, &c. ; in rocky woods near the Tunnel by the

Upper Lake, &c.; in the Deer Park Glen, Killarney, 1888–1914; in Crohane wood, upper Loo valley, 1904.—VII Sparingly in the “Green,” Tralee, 1888–1907.—VIII. In a roadside wood between Listowel bridge and Ballinruddery : *R.W.S.* 1891, and in 1904.

First record in *Cyb.* 1866 : *Moore*.

PHLEUM Linn.

P. pratense Linn. *Timothy Grass.*

Districts I. II. III. — V. VI. VII. VIII. IX. Native. Meadows and waste grassy places. Rather rare in the south, rather common elsewhere. Peren. July—August.

I. Sparingly about Derreen, 1894, and Kenmare, 1904, &c.—II. Near Blackwater bridge, near Darrynane and south of Waterville, and—III. In one or two places near Waterville and sparingly near Lickeen, Glencar, 1901–04 : *R.W.S.*

First record in 1890 : *Stewart, Proc. R.I.A.*

P. arenarium Linn.

Districts — — — — V. — — VIII. — Native. Sandhills and sandy pastures by the sea. Very rare but locally abundant. Ann. May—July.

V. Castlegregory (*Moore*) *Cyb.* 1866. Still about Castlegregory, occurring abundantly in many places as far as Kilshannig about four miles to the north, and—VIII. Abundant at intervals on the sandhills from Carrahan strand to Ballyheige, a distance of between five and six miles : *R.W.S.* 1888, and in 1907.

First record in *Cyb.* 1866 : *Moore*.

At present this grass is known from only two of the numerous sandy tracts in the county. It appears to be absent from the extensive sandhills at Inch and Rossbehy at the head of Dingle Bay, as well as from those at Darrynane and Ballinskelligs Bay in the south, and Ballybunnion and Beal Point in the north.

AGROSTIS Linn.

A. canina Linn. *Bent Grass (genus).*

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Heaths, moors, bogs, &c. Common. Peren. July—August. *Calcifuge B.*

From sea-level, to 2,756 feet on the summit of Mangerton

(*R.W.S.*), to 3,100 feet near the summit of Brandon (*Druce*), and to 3,400 feet near the summit of Carrantuohill, Reeks (*More*).

First record in 1872 : *More, Rec. Add.*

Var. LÆVIS Hackel.—V. Near the summit of Brandon : *Druce 1907.*

This form, first gathered by Mr. Druce on Brandon, has been described by Prof. Hackel as a new variety. It differs from the type in its larger spikelets and broader leaves, and in its panicle branches and pedicels being smooth instead of rough.

A. alba Linn. *A. palustris* Huds. *Fiorin.*

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Moist meadows, damp roadsides, ditches, &c., and on rocks by the sea. Very common. Peren. July—August.

From sea-level, to 1,650 feet on the Reeks (*Hart*), and to 2,450 feet on the Purple Mountain (*R.W.S.*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 377, No. 44. "Common on Mangerton and our other mountains."

A. vulgaris With. *A. tenuis* Sibth.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Dry pastures, heaths and waste places. Very common. Peren. July—August.

From sea-level, to 2,756 feet on the summit of Mangerton (*R.W.S.*), and to 3,414 feet on the summit of Carrantuohill, Reeks (*Hart.*).

First record in 1806 : *Mackay Rar.*

Var. PUMILA (Linn.)—This *var.* or state occurs frequently in the county. It ascends to 1,169 feet on the summit of the Slaheny valley road and to 2,000 feet on the pony track up Mangerton (*R.W.S.*).

PSAMMA Beauv.

P. arenaria Roem. & Schult. *Ammophila arundinacea* Host. *A. arenaria* Link. *Marram. Bent.*

Districts — II. III. — V. — VII. VIII. IX. Native. Sandhills and sandy sea shores. Common and locally abundant. Peren. June—July.

Ascends to fully 700 feet on the Great Blasket Island (*Praeger & Stelfox*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 174.

"They [*i.e.* the Inch sandhills, Dingle Bay] are covered with a long kind of sedgy grass that renders them compact, and binds the sand together. When the country people cut and

carry away this sedge, as they frequently do for thatch and other purposes, the sea and wind make great irruptions into the sandhills."

This grass was found by Messrs. Praeger and Stelfox growing along the dry top of high cliffs on the south side of the Great Blasket Island where there was no trace of sand, a most unusual station.

AIRA Linn.

A. caryophyllea Linn. *Airopsis caryophyllea* Fries.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Heaths, banks, walls, sandy fields and waste places.
Common. Ann. May—June.

From sea-level, to 1,010 feet on the Reeks (*Hart*), to 1,075 feet on Mangerton, to 1,169 feet on the summit of the Slaheny valley road and to 1,250 feet on Connor Hill (*R.W.S.*)

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 98.

Var. AGGREGATA (*Tim.*). This appears to be not infrequent in the county and has been gathered at Kenmare (*Druce*), near Cloghane (*Marshall*), and in several places about Killarney, &c. (*R.W.S.*).

A. præcox Linn. *Airopsis præcox* Fries.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Heaths, bare stony or sandy places, dry banks, wall-tops, &c. Common. Ann. May—June.

From sea-level, to 1,800 feet on the Reeks (*Hart*), and to 2,250 feet on Mangerton (*R.W.S.*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 377, No. 45. "This grass grows on all our mountains."

DESCHAMPSIA Beauv.

D. cæspitosa Beauv. *Aira cæspitosa* Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. By streams and ditches, in damp woods and meadows, in wet places on mountains, &c. Common.
Peren. July—August.

From sea-level, to the summits (*var. brevifolia*, or *var. alpina*), of most of the higher Kerry mountains, attaining 2,756 feet on Mangerton, 2,796 feet on Baurtregaum, 3,127 feet on Brandon (*R.W.S.*), and 3,370 feet on the Reeks (*More*).

First record in 1853 : *Dr. Balfour, Phytol.*, p. 1006.

Var. BREVIFOLIA Parn.—*var. PSEUDO-ALPINA* Syme—

I. On Knockboy in the Slaheny valley and on the south side of Mangerton, 1894.—V. On Brandon, 1905, and the Slieve Mish range, 1888.—VI. Frequent on cliffs in the Horse's Glen and in other localities on Mangerton, 1904.—VII. On the Gormagh cliffs, Slieve Mish range, about four miles south-west of Tralee, 1892: *R.W.S.*

This form is frequent on most of the higher mountains, and is almost always viviparous.

Var. ALPINA Roem. & Schult.—IV. Near the summit of Carrantuohill (*More*) *Rec. Add.* 1872. Frequent on the cliffs of Magillicuddy's Reeks from 3,100 to 2,550 feet: *Hart* 1882.—V. On Brandon Mountain: *Linton* 1886. On Baurtregaum, Slieve Mish range: *Hart* 1882a.—VI. Upper part of the Horse's Glen, Mangerton (*H. N. Ridley*) *Journ. of Bot.* 1884, p. 91.

While there is reason to think that most of the above records for *var. alpina* should be referred to *var. brevifolia*, the plants gathered by Mr. A. G. More on the Reeks were examined by Dr. Boswell Syme and considered by him to be indistinguishable from the Scottish *alpina* "except that the florets are not viviparous." The experience, however, of Mr. Hart on these mountains, as well as of the present writer, was that whether the plant be really *alpina* or *brevifolia*, it was almost always viviparous in the stations recorded above.

D. flexuosa Trin. *Aira flexuosa* Linn. *A. montana* Huds.

Districts I. II. III. IV. V. VI. VII. VIII. — Native. Heaths, moors, rocky places, &c., especially in mountain districts. Rather common and locally abundant but rare in the north. Peren. June—July. *Calcifuge* A.

From sea-level, as about Parknasilla, &c., to the summits of the highest mountains in the county, attaining 3,127 feet on Brandon (*R.W.S.*), and 3,414 feet on Carrantuohill (*Hart*).

First record in 1844: *S. P. Woodward, Phytol.*, p. 878.

HOLCUS Linn.

H. mollis Linn.

Districts I. II. III. IV. — VI. VII. VIII. IX. Native. Woods and shady places, on banks and field borders, &c. Rather common, but unevenly distributed and quite a rare plant over large areas Peren. July—August.

First record in *Cyb.* 1898: *R.W.S.*

H. lanatus Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Meadows, pastures, moors, waste places, &c.
Very common. Peren. June—August.

From sea-level, to 1,900 feet on Mangerton (*R.W.S.*), and to the same height near Connor Hill (*Druce*).

First record in 1881 : *Barrington, Proc. R.I.A.*

TRISETUM Pers.

T. flavescens Beauv. *T. pratense* Pers. *Avena flavescens* Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Dry pastures, meadows, banks, &c. Local in the south, rather common in the north. Peren. June—August. *Calcicole B.*

I. Frequent about Kenmare and in the Roughty valley to Kilgarvan, 1913.—II. On limestone west of Kenmare and at Clashganniv, 1890.—III. Sparingly north of Ballycarbery Castle, Valencia Harbour, 1911 ; sparingly near Lickeen in the Glencar valley, 1890.—IV. Near the River Laune below Beaufort, 1892 : *R.W.S.*—V. Between Cloghane and Brandon, 1902 : *Marshall & Shoolbred*. Rather common elsewhere : *R.W.S.*

First record in 1889 : *R.W.S., Journ. of Bot.*

AVENA Linn.

A. pubescens Huds.

Districts — — III. — V. VI. VII. VIII. —
Native. Dry meadows and pastures, banks and sandy places by the sea. Rather common locally in the north, very rare elsewhere. Peren. May—June. *Calcicole A.*

Rare in the following Districts—III. Sparingly on sandy waste ground near the coastguard station at Kells, Dingle Bay, 1892.—V. In two or three localities about Castlegregory : *R.W.S. 1889*, and in 1902. Sparingly on the east side of Dingle Harbour near the entrance, 1890 : *R.W.S.*

First record in 1889 : *R.W.S., Journ. of Bot.*

[*A. FATUA* Linn. *Wild Oat*—V. In cornfields near Dingle (*Moore*) *Cyb. 1866*. This grass is not infrequent about the margins of fields, roadsides, &c., but is only the remnant of former cultivation and nowhere permanent.]

ARRHENATHERUM Beauv.

A. avenaceum Beauv. *A. elatius* Mert. & Koch. *False Oat-grass*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Meadows, field-sides, banks, bushy and waste places, &c. Very common. Peren. June—August.

From sea-level, to 1,050 feet in the upper Roughty valley (R.W.S.).

First record in 1881 : *Barrington, Proc. R.I.A.*

TRIODIA R. Br.

T. decumbens Beauv. *Sieglingia decumbens* Bernh.
Heath-grass.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Heaths, moors and poor pastures. Common, especially in the south. Peren. June—July.

From sea-level, to 1,950 feet on Mangerton (R.W.S.), to 2,100 feet on Brandon (*Druce*), and reported to ascend to 3,414 feet on the summit of Carrantuohill (*Thompson & Elliott*).

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 98.

PHRAGMITES Adans.

P. communis Trin. *Arundo Phragmites* Linn. *Common Reed*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Margins of lakes and ponds, ditches, marshes and sluggish rivers, also on wet cliffs and in bushy spots by the coast. Common and locally abundant. Peren. July—August.

From sea-level, to 700 feet on Brandon (*Hart*), and to 925 feet in the Horse's Glen, Mangerton (R.W.S.).

First record in 1882 : *Hart, Proc. R.I.A.*

CYNOSURUS Linn.

C. cristatus Linn. *Dog's-tail Grass*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Pastures, meadows, roadsides, waste places, &c. Very common. Peren. June—July.

From sea-level, to 1,450 feet by the Priestsleap road (R.W.S.), and to 1,900 feet near Connor Hill (*Druce*).

First record in 1884 : *Hart, Proc. R.I.A.*

KŒLERIA Pers.

K. cristata Pers. *K. gracilis* Pers.—var. *BRITANNICA* Domin.

Districts — II. III. — V. VI. VII. VIII. IX.
Native. Dry banks, pastures and in sandy or rocky places.
Rather common and locally abundant by the sea, very rare
inland. Peren. June—July.

Inland localities are—VI. Abundant on limestone knolls
near Molahiffe, 1904—the only locality at present known in
this District.—VIII. On limestone knolls north of Abbey-
dorney, 1899 : *R.W.S.*

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 98.
The var. *GLABRA* DC. of *K. albenscens* DC. has been gathered
near Darrynane by Mr. Druce ; *vide Irish Nat.* 1909, p. 212.

MOLINIA Schrank.

M. cœrulea Moench. *M. varia* Schrank.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Heaths, moors, and boggy places. Common, often
abundant. Peren. July—August. *Calcifuge* B.

From sea-level, to 2,250 feet on the Reeks (*Hart*), and to
2,300 feet on Brandon (*R.W.S.*).

First record in 1806 : *Mackay Rar.*

CATABROSA Beauv.

C. aquatica Beauv.

Districts I. — — IV. V. VI. VII. VIII. IX.
Native. Ditches, pools and muddy places. Rather rare,
especially in the south. Peren. June—August.

I. Frequent in ditches about Kilgarvan and to the south-
west of Morley's Bridge, 1903.—IV. In two or three spots
near the River Laune, 1901 : *R.W.S.* Near Dunloe, 1912 :
Mrs. Jenner.—V. In several places about Castlegregory,
1907.—VI. Rather frequent in the vicinity of Killarney and
near Barraduff north of Headford, 1901 ; near Beaufort
bridge, 1902.—VII. About Ballyseedy and plentiful about
Arabela east of Tralee, 1892 ; near the River Maine at Castle-
island, 1903 ; near Blennerville and the Spa, Tralee Bay,
1905.—VIII. In several localities south of Cashen Ferry
bridge, 1902.—IX. In a roadside ditch on the north side of
Knockanure bog east of Listowel, 1894 : *R.W.S.*

First record in 1889 : *R.W.S., Journ. of Bot.*

MELICA Linn.

M. uniflora Retz. *M. nutans* Linn.

Districts I. II. — — — VI. — — IX.
Native. Rocky and shady places. Rare and local. Peren.
May—June.

I. Sparingly on limestone rocks near the mouth of the River Finnihy, Kenmare, 1899; sparingly by the River Roughty at Ardtully west of Kilgarvan, 1904.—II. On limestone rocks by the Finnihy west of Kenmare, 1901.—VI. Rather frequent about the Lower and Middle Lakes, Killarney, as, on Ross Island, in several places in Muckcross demesne, about Torc, &c., 1888–1914; rather sparingly by the River Flesk below Southhill, 1909.—IX. Sparingly in a rocky wood by the River Feale east of Listowel, 1890: *R.W.S.*

First record in 1891: *R.W.S., Journ. of Bot.*

A very rare grass in Kerry outside the Killarney Lake district.

DACTYLIS Linn.

D. glomerata Linn. *Cock's-foot Grass.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Meadows, pastures, roadsides, waste places, &c.
Very common. Peren. June—August.

From sea-level, to 1,200 feet on the Reeks (*Hart*).

First record in 1881: *Barrington, Proc. R.I.A.*

Var. ABBREVIATA Bernh.—VII. On limestone rocks near Barrow Harbour, 1890: *R.W.S.*, and elsewhere in exposed positions.

BRIZA Linn.

B. media Linn. *Quaking Grass.*

Districts I. II. — IV. V. VI. VII. VIII. IX.
Native. Dry pastures and banks, &c., chiefly on limestone.
Rare in the south, rather common in the north. Peren.
June—July. *Callicole B.*

Rare in the following Districts—I. & II. Sparingly about Kenmare, 1889–1913.—IV. In fields near the River Laune, 1892.—V. In fields south-east of Cloghane, Brandon Bay, 1902: *R.W.S.*

First record in 1890: *Stewart, Proc. R.I.A.*

POA Linn.

P. annua Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Pastures, cultivated ground, roadsides, waste places, &c. Very common. Ann. Flowers throughout the year.

From sea-level, to the summits of most of the higher mountains in the county, attaining 2,756 feet on Mangerton (*R.W.S.*), 3,127 feet on Brandon (*Hart*), and 3,200 feet on the Reeks (*More*).

First record in 1881 : *Barrington, Proc. R.I.A.*

Var. SUPINA Gaud. Frequent on the higher mountains.

***P. alpina* Linn.**

District — — — — V. — — — —
Native. On a rocky mountain summit. Very rare indeed.
Peren. July—August.

V. "On the summit of Brandon, near the well, on a rock thinly covered with earth, in September, 1804, not at all viviparous" : *Mackay Rar. 1806*. On Brandon Mountain, Aug., 1856 (*T. Wright Carroll, Phytol. 1857*, p. 76. "On an isolated crag a few feet below the summit (*Colgan*) *Dub. Univer. Rev. 1886*, p. 738—still on this crag, but very sparingly, 1905 : *R.W.S.*

At 3,100 feet above sea-level (*Mackay*).

First record in 1806 : *Mackay Rar.*

No doubt all the above records refer to the same spot—an exposed fissured rock a few square feet in area—where this grass appears to be now dying out. It is likely, however, that some other station for it will be found on the fine range of cliffs of which Brandon mountain forms the summit. This is the most southerly locality known in the British Isles for *Poa alpina* which elsewhere in Ireland occurs only on the Sligo mountains.

***P. nemoralis* Linn.**

Districts I. — — — — VI. VII. — —
Alien. Woods and shady places in demesnes and gardens.
Very rare. Peren. July—August.

I. Rather sparingly in Ardtully grounds, Kilgarvan, a little to the west of the House and near the river, 1904 : *R.W.S. 1908*.—VI. Plentifully on a bank in the "Sunk Walk," in the pleasure grounds of Glenflesk Castle, Killarney, 1888–1912, and now spreading to the neighbouring shrubberies and woods ; plentiful among Rhododendrons, &c., a little to the west of Lord Kenmare's stables and sparingly under trees in two or three spots in the surrounding woods, Home Park, Killarney : *R.W.S. 1902*, and in 1910 ; sparingly by walks, &c., in the flower garden at Southhill, Killarney, 1909 : *R.W.S.* Sparingly in the grounds of Lahard House north of Beaufort, 1911–12 : *Mrs. Jenner*.—VII. Sparingly in the wooded portion of the "Green," Tralee : *R.W.S. 1908*.

First record in 1901 : *R.W.S., Topog. Bot.*

In all its Kerry stations *P. nemoralis* is open to the very gravest suspicion of having been accidentally introduced. Without exception the stations are all situated in demesnes or near residences, with introduced shrubs or flowers growing in the immediate neighbourhood. It appears, moreover, to be quite absent from the many suitable localities found in the older and more remote woods about the Killarney Lakes and elsewhere in the county. Although undoubtedly native in parts of Ireland, this grass has little or no claim to be considered so in Kerry, where it has been most probably introduced with grass or flower seeds, or, perhaps, in the packing around the roots of imported shrubs. This species is a favourite constituent of grass mixtures sold by seedsmen for sowing in shady places.

P. pratensis Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Pastures and meadows, banks, waste places, &c.
Very common. Peren. June—July.

From sea-level, to 2,650 feet on Baurtregaum, Slieve Mish range, and to 3,000 feet on Brandon (*Hart*).

First record in 1881: *Barrington, Proc. R.I.A.*

P. trivialis Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Meadows, pastures, ditch banks, moist places, &c.
Very common. Peren. June—July.

From sea-level, to 1,650 feet on the Reeks (*Hart*).

First record in 1881: *Barrington, Proc. R.I.A.*

Var. GLABRA Doell—*var. KOELERI* DC. This form has been gathered in several places and is probably not infrequent.

[*P. BALFOURI* Parn. This alpine grass was thought by Dr. Balfour to have been gathered by him on Brandon in August 1852—*vide Phytol.* 1853, p. 1005. The record, however, has not been repeated by him and was most probably found to be an error, or the result of some accidental mixing of specimens from other localities; it is not known to occur in Ireland.]

GLYCERIA R. Br.

G. fluitans R. Br.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Wet ditches, shallow pools and in muddy or damp places. Common. Peren. June—September.

From sea-level, to 1,550 feet on the Reeks (*Hart*).

First record in 1882 : *Hart, Proc. R.I.A.*

Var. TRITICEA Lange. This plant has been gathered near Killorglin : *R.W.S. 1904*, and in many other stations in the county.

Var. DECLINATA (Bréb.)—I. Roadsides in the Slaheny valley, and—*III.* About Glenbeigh and Dooaghs, Castle-maine Bay, 1903 : *Marshall & R.W.S.—V.* About Cloghane and Stradbally, Brandon Bay, and—*VII.* About Tralee (*Marshall & Shoolbred*) *R.W.S. 1903*. This dwarf variety appears to be not infrequent, and most probably occurs throughout the county.

G. plicata Fries.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Wet ditches, pools and muddy or damp places.
Common. Peren. June—August.

First record in 1890 : *R.W.S., Journ. of Bot.*

G. maritima Mert. & Koch. *Sclerochloa maritima* Lindl.

Districts I. II. III. — V. — VII. VIII. IX.
Native. Muddy sea shores, salt marshes and moist rocky places by the sea. Common and locally abundant. Peren. June—July.

First record in 1889 : *R.W.S., Journ. of Bot.*

[*DESMAZERIA SICULA* Dum. This Mediterranean grass is recorded in *Seeman's Journ. of Bot. III.*, p. 156, 1865, as having been once found growing in some quantity by roadsides near Sneem, Co. Kerry ; it has not been seen there recently, and was, no doubt, accidentally introduced.]

FESTUCA Linn.

F. rigida Kunth. *Sclerochloa rigida* Link. *Poa rigida* Linn.

Districts I. II. III. IV. V. VI. VII. VIII. —
Native. Walls, rocky places, dry banks, &c. Rather common, but very unevenly distributed and quite a rare plant over wide areas. Ann. June—July.

I. Frequent about Kenmare, 1912, extending into—
II. Near Darrynane, 1894.—III. On walls, &c., near the mouth of the Inny north of Waterville and about Ballinskelligs, 1900 ; about Cahersiveen, 1911 ; near the railway station at Glenbeigh, 1903.—IV. Sparingly in the Glencar valley, 1890.—V. Frequent about Castlegregory, 1902.—
VI. In several places about Killarney and frequent about

the railway there, 1914 ; near Woodford and near the River Flesk at Brewsterfield, 1901.—VII. About Castlemaine and in many spots about Tralee, as at Blennerville, the Spa, Kilfenora, Ballycarty, &c. 1902–14.—VIII. Frequent about Ardfer, Banna, &c., 1902 : *R.W.S.*

First record in 1884 : *Hart, Proc. R.I.A.*

F. rottboellioides Kunth. *Sclerochloa loliacea* Woods.
Desmazeria loliacea Nym.

Districts I. II. III. — V. — VII. VIII. IX.
Native. Sandy and gravelly places, walls, rocks, &c., by the sea. Rather common. Ann. June–July.

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 97.

F. Myuros Linn. *F. pseudo-myuros* Soy-Will. *Vulpia myuros* Gmel.

Districts I. II. — IV. V. VI. VII. VIII. IX.
Native or Denizen. Wall-tops, stony or gravelly roadsides, dry banks, &c. Rather common and sometimes abundant, but unevenly distributed and rare or absent over wide areas. Ann. June–July.

I. Common in this District, being frequent about Kenmare and at intervals along the Roughty valley as far as Morley's Bridge ; it occurs also in great profusion along the gravelly roadsides in the Slaheny valley for a distance of three or four miles ; again, but more sparingly, on roadsides in the Dromoghty valley and on a bridge east of the Cloonee Lakes, 1890–1907.—II. On a wall about a mile west of Kenmare, 1894.—IV. On a cottage roof west of Ballaghbeama Gap, 1901 ; sparingly on Beaufort bridge, 1902 : *R.W.S.*—V. On walls at Dingle (*More*) *Rec. Add.* 1872. On a wall and banks by the police barracks at Castlegregory, 1907.—VI. Sparingly about Beaufort bridge, 1902 ; in several places on walls about Killarney, in the Flesk valley about Brewsterfield and between Glenflesk and Headford Junction, 1888–1907 : *R.W.S.*—VII. On walls at Milltown (*More*) *Rec. Add.* In many localities in this District, as at Killorglin, abundant about Castlemaine and Tralee, 1888–1906 ; near Edenburn north of Gortatlea, 1890 ; near Clogherbrian, Tralee Bay, 1905 ; sparingly about Churchhill near Barrow Harbour, 1899.—VIII. Near Lerrig north of Ardfer, and frequent about Ballyheige, 1888–1902 ; on walls east of Lixnaw, and—IX. On walls at Ballylongford and Tarbert, 1904 : *R.W.S.*

First record in 1872 : *More, Rec. Add.*

The rather full list of localities recorded above, is given

chiefly for future reference in order to ascertain whether this species is increasing or diminishing in the county. The precise standing of *F. Myuros* is very difficult to determine. It appears to be native in some of its stations in the Roughty valley, &c., and although first noticed in Kerry only so recently as 1872, its present wide distribution there suggests that it had been previously overlooked rather than recently introduced.

F. sciuiroides Roth. *F. bromoides* Linn. *Vulpia sciuiroides* Gmel.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Dry sandy, gravelly or rocky places, wall-tops, &c.
Very common. Ann. June—July.

From sea-level, to 1,169 feet on the summit of the Slaheny valley road and to 1,350 feet on Connor Hill (*R.W.S.*).

First record in 1857 : *Rev. W. M. Hind, Phytol.*, p. 98.

F. ovina Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Heaths, moors, dry pastures, waste places, &c.
Very common. Peren. June—July.

From sea-level, to the summits of the highest mountains in the county, attaining 2,756 feet on Mangerton (*Wade*), 2,796 feet on Baurtregaum, 3,127 feet on Brandon (*R.W.S.*), and 3,414 feet on Carrantuohill (*More*).

First record in 1806 : *Wade Rar.* "On the summits of all our high mountains—on Mangerton and Purple mountains, Killarney."

This grass is nearly always viviparous in its mountain stations.

F. rubra Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Banks and dry grassy places, sandy shores, walls, waste places, &c. Common. Peren. June—July.

From sea-level, to 2,550 feet on Mangerton (*R.W.S.*), and to 2,900 feet on Brandon (*Druce*).

First record in 1881 : *Barrington, Proc. R.I.A.*

The following forms of this variable grass have been noted—

Var. PRUINOSA Hackel—VI. On several of the islands in the Lower Lake and elsewhere about Killarney : *R.W.S. 1904*. This very distinct-looking form is probably not infrequent.

Var. FALLAX Hackel—IV. Frequent about Beaufort, &c., 1904 : *R.W.S.*—V. About Cloghane and Stradbally, Brandon Bay (*Marshall & Shoolbred*) *R.W.S.* 1903.—VI. In several places about the Killarney Lakes, as near Castletlough bay, Home Park, &c., 1904 : *R.W.S.*, and no doubt throughout the county.

Var. BARBATA Hackel—V. & VI. Frequent in damp spots on Brandon and Mangerton Mountains, &c., ascending to 2,550 feet, 1904-07 : *R.W.S.*

Var. ARENARIA (Godr.). F. oraria Dum. This glaucous sea-side form appears to occur commonly on the coast.

F. sylvatica Vill. *F. Calamaria* Smith.

Districts — — — — — VI. — VIII. —
Native. Rocky woods. Very rare and local. Peren.
July—August.

VI. Cromaglaun woods near the Upper Lake, Killarney (*Moore*) *Cyb.* 1866. Still in two or three spots in the rocky woods on the east side of the Upper Lake, sparingly, 1888-1914, and—VIII. Rather plentiful in a steep rocky wood on the south bank of the River Feale about a mile above Listowel (*R.W.S.*) *Journ. of Bot.* 1893, p. 56.

First record in *Cyb.* 1866 : *Moore*.

F. elatior Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Moist meadows, shady places, river banks, &c.
Rather common. Peren. June—July.

First record in 1901 : *R.W.S.*, *Topog. Bot.*

Var. ARUNDINACEA (Schreb.). This appears to be quite a rare grass and has been noted only in a few localities near the sea, as about Blennerville and the Spa, Tralee Bay.

F. pratensis Huds.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Meadows, pastures, river-sides, damp waste places, &c. Common. Peren. June—July.

First record in 1901 : *R.W.S.*, *Topog. Bot.*

BROMUS Linn.

B. giganteus Linn. *Festuca gigantea* Vill.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Woods and damp shady places. Rather common, but local and rare over large areas. Peren. July—September.

Rare in the following Districts—III. About Lickeen, &c., in the Glencar valley, 1906.—V. In woods near Camp, Tralee Bay, and at Hill Ville, Fermoy, Brandon Bay, 1905 : *R.W.S.*

First record in 1888 : *R.W.S., Journ. of Bot.*

B. asper Murr. *B. ramosus* Huds. *B. serotinus* Benck.

Districts I. II. III. IV. — VI. VII. VIII. IX. Native. Woods, banks and shady places. Rather common but local, and rare or absent over wide areas. Peren. July—August.

Rare in the following Districts—III. Wood in the Gleensk valley below the railway viaduct, Dingle Bay, 1896 : *R.W.S.*—IV. Near Dunloe Castle, 1914 : *Mrs. Jenner.*—VIII. In Ballinruddery wood east of Listowel, 1904 : *R.W.S.*

First record in 1901 : *R.W.S., Topog. Bot.*

B. sterilis Linn.

Districts — — — IV. V. VI. VII. VIII. IX. Native. Dry banks, about walls and waste places. Rather common locally, but rare over the greater portion of the county and not yet seen in the extreme south. Ann. June—July.

Rare in the following Districts—IV. On a roadside near the River Laune, 1901.—V. Rather sparingly about Castlegregory, 1902.—IX. About Lislaughtin Abbey near Ballylongford, 1904 : *R.W.S.*

First record in 1901 : *R.W.S., Topog. Bot.*

[*B. ERECTUS* Huds.—VI. Two or three small tufts in a meadow beside a disused avenue at Southhill, Killarney : *R.W.S. 1890*. One large tuft still there : *R.W.S. 1902*—but not seen subsequently. During the thirteen years this plant remained under observation, it showed no tendency to spread although the locality appeared in every way suitable. This handsome grass appears to be spreading in Ireland chiefly along the railways from Dublin ; it is known, however, to occur also in old pastures near Ballyvaughan, less than forty miles from the Kerry boundary.]

B. racemosus Linn. *Serrafalcus racemosus* Parl.

Districts — — — — V. VI. VII. — IX. Native. Meadows, pastures, roadsides and waste places. Probably common. Bien. June—July.

V. About Cloghane and Fermoy, Brandon Bay, and about Castlegregory (*Marshall & Shoolbred*) *R.W.S. 1903.*—

VI. In Muckcross demesne and elsewhere about Killarney : *R.W.S.* 1902. In some abundance in damp meadows west of Listry on the Killarney-Milltown road, 1902.—VII. Plentiful in fields by the estuary at Blennerville : *R.W.S.* 1903.—IX. About Kilelton, &c., near Ballylongford, 1899 : *R.W.S.*

First record in 1902 : *R.W.S.*, *Irish Nat.*

B. commutatus Schrad. *Serrafalcus commutatus* Bab.

Districts — — — IV. V. VI. — — —
Colonist or native. Meadows, roadsides, &c. Rather rare ?
Bien. June—July.

IV. In Beaufort demesne, 1902.—V. By a roadside east of Dingle, 1905 : *R.W.S.*—VI. Abundant in meadows about Ardagh pond south of Killarney (*Marshall, Shoolbred & R.W.S.*) *R.W.S.* 1903.

The distribution in Kerry of this and the preceding species is still but very imperfectly known and both these grasses most probably occur in many other localities.

[*B. SECALINUS* Linn. *Serrafalcus secalinus* Bab.—VIII. Sparingly in a meadow a little east of the coast-guard station at Moneycashen : *R.W.S.* 1903. Probably occurs elsewhere, but it appears to be the rarest in Kerry of these closely allied grasses and little better than a casual there.]

B. mollis Linn. *B. hordeaceus* Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Meadows, roadsides, banks, waste places, &c.
Common. Ann. June—July.

From sea-level, to 1,169 feet on the summit of the Slaheny valley road and to 1,350 feet on the summit of the Connor Hill road (*R.W.S.*).

First record in 1882 : *Hart, Proc. R.I.A.*

BRACHYPODIUM Beauv.

B. sylvaticum Roem. & Schult. *B. gracile* Beauv.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Woods, banks and other bushy or shady places.
Common and locally abundant. Peren. July—August.

From sea-level, to 850 feet near the source of the River Caragh on the south side of the Reeks (*Hart*), and to 960 feet "in Kerry" (*More*).

First record in 1882 : *Hart, Proc. R.I.A.*

LOLIUM Linn.

L. perenne Linn. *Rye Grass.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Meadows, waste places, banks, wall-tops, roadsides, &c. Common. Peren. June—July.

From sea-level, to 1,350 feet on the summit of the Connor Hill road and to the same height on the Priestsleap road (*R.W.S.*).

First record in 1881 : *Barrington, Proc. R.I.A.*

The curious form with the rachis so shortened as to bring the spikelets into a broad flat head, is not uncommon in the county.

[*L. ITALICUM* Braun. This grass occurs nearly throughout the county on field-borders, roadsides, waste places, &c., as an escape from, or survival of, cultivation.]

L. temulentum Linn. *Darnel.*

Districts — — III. — V. VI. VII. VIII. IX.
Colonist. About roadsides, waste places and cultivated ground. Rare in the south, less so in the north. Ann. June—August.

III. Sparingly near Waterville, 1892.—V. In several places about Castlegregory, 1894.—VI. In several places about Killarney, as near Muckcross, Cloghereen, and on roadsides near the town, &c., 1904.—VII. Rather frequent about Tralee and near the Spa, Tralee Bay, 1902.—VIII. About Abbeydorney, roadsides near Banemore wood and south of Listowel, and—IX. In several places about Listowel and Ballybunnion, 1899 : *R.W.S.*

First record in 1901 : *R.W.S., Topog. Bot.*

AGROPYRON J. Gaertn.

A. repens Beauv. *Triticum repens* Linn. *Scutch. Couch Grass.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Banks, cultivated ground, waste places, &c., and on sandy shores. Common. Peren. July—August.

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 376, No. 43. “Common on the sea coast, in many parts of this county.”

A very variable grass ; the awned form, *var. BARBATUM* (*Duval-Jouve*) appears to be not uncommon about hedge-

rows, banks, &c., while a plant which is probably referable to *A. repens* × *junceum* (*Triticum acutum* auct. angl.) occurs in several localities about Castlegregory, and was noticed also near Dingle by Mr. Hart.

A. junceum Beauv. *Triticum junceum* Linn.

Districts — II. III. — V. — VII. VIII. IX.
Native. Sandy sea shores. Rather common and locally abundant. Peren. July—August.

First record in 1855 : *J. Woods, Phytol.*, p. 158.

LEPTURUS R. Br.

L. filiformis Trin. *Rottboellia filiformis* Roth.

Districts — — — — V. — VII. VIII. IX.
Native. Salt marshes. Rather rare, but locally abundant.
Ann. July—August.

V. Rather sparingly a little to the north of Castlegregory, 1894, and more abundantly near Tullaree to the east, 1907.—VII. Abundant about Barrow Harbour north of Fenit : *R.W.S. 1888*, and in 1902.—VIII. “On the north side of Tralee Bay” : *Stewart 1890*—Tralee Bay being taken by Mr. Stewart as extending from Kerry Head to the Magharee Islands.—IX. Abundant along the Shannon estuary : *Stewart 1890*. In many places along this shore, as near the Cashen River, about Ballybunnion, near Kilelton, Ballylongford and abundant near Tarbert : *R.W.S. 1891*, and in 1902. About Beal Point and on Carrig Island, Shannon estuary, 1913 : *Phillips*.

First record in 1888 : *R.W.S., Journ. of Bot.*

NARDUS Linn.

N. stricta Linn. *Mat Grass*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Heaths and moors, especially in mountain districts. Common and often abundant, but becoming rarer in the north. Peren. June—July. *Calcifuge A.*

From sea-level in several places, as about Rossbehy, &c., to 3,127 feet on the summit of Brandon (*R.W.S.*), and to 3,200 feet on the Reeks (*More*).

First record in 1872 : *More, Rec. Add.*

CRYPTOGAMIA.

FILICES.

HYMENOPHYLLUM Smith.

H. tunbridgense Smith. *Filmy Fern.*

Districts I. II. III. IV. V. VI. VII. — —
Native. On damp rocks in shady places, and on tree trunks, usually more or less mixed with mosses. Common and locally abundant, but very rare or absent in the extreme north. Peren. July—October.

Local in the following Districts—VI. Confined to the southern portion where, however, it is very abundant and luxuriant.—VII. In several localities on the northern slopes of the Slieve Mish range, as in the Curraheen and Finglas glens, &c. : *R.W.S.*

From sea-level, to about 1,500 feet on Priestsleap Mountain (*Carroll*), but seldom seen much above 1,000 feet where its place is taken by *H. unilaterale*.

First record in 1804 : *Wade Rar.* "Amongst moss, on moist rocks to the south of Turc bridge, Killarney, and in the Glynn [Glen] Earl Kenmare's park"—seen recently in both these stations : *R.W.S.* "Very common in the wooded mountains near Killarney and other mountains in Kerry: *Mackay Rar.* 1806.

This beautiful little fern occurs in great luxuriance about the Killarney lakes as well as in many other localities in the south and west, sometimes quite concealing the surface of damp shady rocks with a dense mantle of semi-transparent overlapping fronds. With the following species, it is not infrequently sold to confiding tourists as the "real Killarney Fern," a title both of them deserve more than does the now rarely seen *Trichomanes radicans*.

H. unilaterale Bory. *H. Wilsoni* Hook. *H. peltatum* Desv.
Filmy Fern.

Districts I. II. III. IV. V. VI. VII. — —
Native. On damp rocks in shady or mossy places, and on tree trunks. Common and locally abundant, but very rare or absent in the extreme north. Peren. July—October.

Local in the following District—VII. In several localities on the northern slopes of the Slieve Mish range and sparingly in the Finglas glen, &c. : *R.W.S.*

From sea-level near Lough Currane, &c., to 3,127 feet on the summit of Brandon (*R.W.S.*), and to 3,300 feet on the Reeks (*Hart*).

First described as a British plant in 1830 under the name *H. Wilsoni* by Hooker in *Brit. Flor. 1st Ed.*, p. 446, from specimens gathered by Mr. W. Wilson at Killarney.

This is the more widely distributed of the two Filmy Ferns in Kerry, as, indeed, it appears to be throughout the British Isles. It is more partial to the mountains than *H. tunbridgensis* and usually ascends on them to a much greater height. In the lowlands, however, they not infrequently grow mixed together and both are especially abundant and luxuriant about the Killarney Lakes.

TRICHOMANES Linn.

T. radicans Swartz. *T. speciosum* Willd. Killarney Fern.

Districts I. II. III. IV. V. VI. — — —
Native. In damp shady places amongst rocks, in hollows under or beside large boulders and along rocky mountain streams. Locally abundant as recent as 60 years ago, now very rare indeed. Peren. August—October.

I. Near Kenmare : *Cyb. 1866*.—II. Near Lough Brin north of Blackwater bridge, Kenmare Bay (*Rev. C. F. d'Arcy*) *Dub. Univer. Rev. 1886*, p. 605. By the Lake at Waterville (*Bab. in Herb.*) *Cyb. 1866* and '98. Gathered by several collectors in various places along the south side of Lough Currane, circa 1875, but these stations have long been stripped.—III. Near Derriana Lake north-east of Waterville : *Cyb. 1866*. Valencia, "perhaps introduced" * (*Kinahan*) *Cyb. 1866*—still flourishing in several spots on Valencia, 1905 : *Miss Delap.* At Blackstones, Glouin [Glen] Caragh (*Andrews*) *Newman 1844*, p. 310.—IV. On the south side of Mount Brassel, Reeks, at about 500 feet, but exterminated there recently : *Hart 1882*. Plants gathered on the Reeks were offered there for sale to Mr. Colgan in 1885 :

* Bearing on the status of these Valencia localities, there occurs in Newman's *British Ferns* 1844, p. 309, the following passage, "Mr. Robson found it [*Trichomanes*] higher up the stream [Toro] . . . in such plenty as to procure a number of roots which he has planted abundantly, not only about Killarney, but about Glengarriff and in Valencia Island"; it is quite possible, however, that the fern is both indigenous and planted in different localities in this island.

Dub. Univer. Rev. 1886, p. 484.—V. Mount Eagle near Dingle (Moore) Newman 1844. Several localities in the neighbourhood of the Brandon Mountains are still preserved by Lord Ventry on whose property they are ; it ascends there to about 1,000 feet : *Hart* 1884, p. 217. Two tufts under Brandon Peak (*Rev. C. F. d'Arcy*) *Dub. Univer. Rev.* 1886, p. 738. Seen on the Brandon range, 1914 : *A. W. Stelfox*.—VI. "First found in fructification on moist shady rocks near the Waterfall between Mangerton and Turc Mountains, Killarney, 1804" : *Mackay Rar.* 1806. Abundant along the Torc stream (*Captain Jones & Mr. Robson*) ; in a ravine of Cromaglaun Mountain (*Messrs. Wilson & Christy*) ; at Gortagree between Killarney and Kenmare (*Dr. Taylor*) ; and "in a great number of localities" in the Killarney district : *Newman* 1844, p. 309, &c. Abundant on Turc Mountain : *Kinahan* 1858. Now very scarce about Killarney and in the county generally, but seen growing sparingly near the base of Torc Mountain in 1889 ; this station, however—a huge mossy boulder—appeared to be known, as no trace of the fern could be found there on a subsequent visit (*R.W.S.*) *Cyb.* 1898. Gathered again not far from the preceding locality in 1910 : *Mr. J. Dwyer*.

Var. ANDREWSII Newm.—The Blackstones, Glen Caragh, plant, which differed from the usual Kerry form in having winged involucra and fronds lanceolate instead of triangular, was named as above after its finder by Mr. Newman in 1844 ; it was subsequently found to occur also about Killarney, but has long since been exterminated in all its known stations. By several botanists this variety was considered to be only a state or form induced by an exceptionally favourable station.

From sea-level, to about 1,000 feet on Brandon (*Hart*).

First record in 1806 : *Mackay Rar.*

Few plants have suffered more from the depredations of unscrupulous collectors, both botanical and mercenary, than has the Killarney Fern. That it once occurred in sufficient abundance to form quite a feature in the local beauty of Killarney, the following lines from Newman's *British Ferns* clearly show ; speaking of Torc waterfall he writes "I have stood amid the roar of waters gazing on hundreds of the dark green fronds of this fern, as they waved to and fro in the agitated air, and sparkled with myriads of sunlit drops." Not a frond is to be seen there now and the same, unfortunately, might be said of nearly all the localities given above. Several rocky streams from which peasants had removed

this fern literally in baskets full have been carefully searched by the writer, without so much as a trace of the plant being found. Even so late as 1892, a large box filled with the roots and fronds of the *Trichomanes* was seen by the writer being taken round to the different hotels in Killarney by a peasant who had come from the neighbourhood of Sneem. Failing to find a purchaser for the entire box, for which he asked £5, he ultimately disposed of the contents in lots for which he only too readily obtained sums varying from 2s. 6d. to 7s. 6d.; that box, no doubt, represented the total destruction of another station, the growth probably of ages. While this beautiful fern has been almost exterminated in its more exposed stations, there is little doubt that it still occurs thinly scattered over the mountainous portion of the county. It exists there chiefly on the undersides of large boulders and damp piled-up rocks, hidden away from prying eyes and in some cases safe from anything less destructive than a charge of dynamite.

Although well known as the "Killarney Fern," the *Trichomanes* is by no means restricted to Kerry, occurring in 13 or 14 of the Irish vice-counties, and on the east coast as well as on the west. It is on record also from North Wales and from Arran Island on the west coast of Scotland, and appears to have grown formerly in Yorkshire. Outside the British Isles, it has a very wide distribution, being known to occur in West Europe, tropical Africa and America, in the Himalayas, Japan and Polynesia, &c.

[*ADIANTUM CAPILLUS-VENERIS* Linn. *Maidenhair*. On Cahir Conree Mountain, near Tralee (*W. Andrews*) *Flor. Hib.* 1836. Sparingly on the Cahir Conree Mountain near Tralee (*W. Andrews*) *Newman* 1844, p. 85. On the Cahir Conree range, at a considerable elevation (*W. Andrews*) *Cyb.* 1866. This fern occurs at intervals along the west coast of Ireland from Donegal in the north to the neighbouring county Clare in the south, usually in small quantity but abundantly in several localities in the last named county. Its distribution also in England, where it occurs sparingly along both the south and west coasts as far as the Isle of Man and Morecambe Bay, just two degrees north of its reputed Cahirconree station, fully warrants the expectation of its occurrence in Kerry. The fern, however, shows a marked calcicole tendency and is nowhere known either in Ireland or England to ascend much above sea level, so if it really exists on the Cahirconree Mountains, a non-calcareous range,

at a "considerable elevation," its occurrence there is quite at variance with its usual habits in the British Isles. It is true there are a few large limestone erratics on the western slopes of this range, but several of these have been examined without success, and as this fern has not been seen elsewhere in Kerry, nor indeed anywhere in the south-west of Ireland, it seems better to await confirmation of these records, no doubt all referring to the same station, before admitting the *Adiantum* among the native plants of Kerry.]

PTERIS Linn.

P. aquilina Linn. *Bracken*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Heaths, moors, woods, sandhills, &c. Very common. Peren. July—September. *Calcifuge* B.

From sea-level, to 1,600 feet on the Coomacarrea Mountain, Glenbeigh (*R.W.S.*), to 1,650 feet on Brandon and to 1,700 feet on the Reeks (*Hart*).

First record in 1844 : *S. P. Woodward, Phytol.*, p. 878.

[CRYPTOGRAMME CRISPA R. Br. *Allosurus crispus* Bernh. *Parsley Fern*. "On the rocks among most of the mountains in the southern baronies" (*Dr. Smith*) *Hist. of Kerry, 1756*, p. 373, No. 6. In this, as in several other records of Dr. Smith, it is difficult to suggest what plant was really intended. The Parsley Fern is not known to occur in the southern half of Ireland, and even in the few localities known in the north, it is found in very small quantity, so there can be no question of its former occurrence in many localities in Kerry and its subsequent recent extinction there. Probably Dr. Smith's record really referred to a small mountain form of *Lastrea æmula* which is often found in the stations he indicates, or possibly *Cystopteris fragilis* was the fern intended.]

BLECHNUM Linn.

B. Spicant With. *B. boreale* Swartz. *Lomaria Spicant* Desv. *Hard Fern*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Heaths, moors, woods, banks, mountain cliffs, &c. Common. Peren. July—October. *Calcifuge* A.

From sea-level, to 3,050 feet on Brandon (*R.W.S.*), and to 3,150 feet on the Reeks (*Hart*).

First record in 1844 : *S. P. Woodward, Phytol.*, p. 878.

ASPLENIUM Linn.

A. lanceolatum Huds. *Spleenwort* (genus).

Districts — — [III.] — V. — — — —
 Native. On roadside banks (and on ruins). Very rare and local. Peren. July—October.

[III. On an old tower at Reencahirne near Portmagee and on Ballycarbery Castle near Cahersiveen (*Rev. S. Madden*) *Rec. Add.* 1872—no subsequent confirmation and not seen in either station in 1896 by *R.W.S.*]—V. Sparingly near the village of Camp, Tralee Bay (*R.W.S.*) *Journ. of Bot.*, 1893, p. 20.

First record in 1872 : *Rev. S. Madden, Rec. Add.*

This appears to be one of the rarest ferns in Ireland, as outside the localities given above, it is known to occur only in a few places in the neighbouring county Cork and in a recently discovered station in Carlow. In the *Rev. S. Madden's* Portmagee and Cahersiveen stations, which admit of very easy examination, this fern has either been exterminated, or, possibly, some error of identification may have been made, as on neither of these old castles could a trace of this plant be found in 1896 ; both *A. Adiantum-nigrum* and *A. marinum* grew on them in some abundance, with *A. Trichomanes* and *Polypodium vulgare* on Ballycarbery.

A. Adiantum-nigrum Linn. *Black Spleenwort*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
 Native. Walls, hedge-banks, rocks, &c. Common and locally abundant. Peren. July—October.

From sea-level, to 1,500 feet on the Reeks (*Hart*), to 1,700 feet on the north side of the Paps Mountain (*R.W.S.*), and to 1,800 feet "in Kerry" (*Druce*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 373, No. 5. "In the wood near the lake of Killarney, on the side of Toomish mountain, also on the walls of the ruined abbey on the island of Innisfalen, and other places."

Var. ACUTUM (*Bory*)—III. Inveragh [*Iveragh*], and above Blackstones, Glen Caragh : *Thos. Moore* 1855. On the walls of an old slate-yard, Knightstown, Valencia, 1913 : *John Lecky*.—IV. By Caragh Lake (*Miss Battersby*) *Cyb.* 1898. Near the Sugarloaf, Caragh Lake, 1895 : *R.W.S.* On the Purple Mountain (*G. H. Kinahan*) *Cyb.* 1866.—V. On Cahir Conree Mountain six miles from Tralee (*W. Andrews*) *Flor. Hib.* 1836.—VI. On limestone rocks at Muckcross, 1805 :

Mackay Cat. 1825. On Turc Mountain (*J. R. Kinahan Cyb.* 1866. Foot of Cromaglaun : *Thos. Moore* 1855. In dry rock-clefts near the Upper Lake, Killarney, 1896-1914, and sparingly in rock-clefts near Loo Bridge, Glenflesk, 1907 : *R.W.S.*

This elegant form of *Asplenium Adiantum-nigrum* is, unfortunately, like the *Trichomanes*, in much request by fern hunters and has been almost certainly exterminated in several of the localities given above ; for this reason a too exact description of any new locality in which this fern may be found is not advisable. It is probably, however, not so rare in the county as would appear from the few records given. It is a lover of rather dry clefts in rocks, rarely growing in exposed positions, and so readily escapes observation. Although a well marked example of this variety looks very distinct, intermediate forms occur both in Kerry and elsewhere, and Dr. Moore has found that under cultivation even the extreme form reverts to the type ; see also *Newman's British Ferns* 1844, p. 260.

This well-marked form occurs chiefly in the south and west of Ireland, it has been found also in the west of England. It is abundant in several districts in the Spanish peninsula.

A. marinum Linn. *Sea Spleenwort.*

Districts I. II. III. — V. VI. VII. VIII. IX. Native. In clefts, caves and rocky hollows by the sea, and on old walls near the coast. Rather common and sometimes abundant around the coast, also found in one locality inland. Peren. July—October.

Inland—VI. By the Upper Lake on the road between Killarney and Kenmare : *Newman* 1840 & 1844—still in this locality, but sparingly, in 1914 : *R.W.S.*

Ascends to 325 feet above sea-level at Lamb's Head, Darrynane, to about 400 feet in the slate quarries on Valencia Island (*R.W.S.*), and to 700-750 feet on the cliffs of the Great Blasket Island (*Praeger & Stelfox*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 374, No. 21. "On the rocks near Dingle, and many other places on this coast."

The inland locality for this fern given above is especially interesting as being the only one in Ireland where it grows quite removed from maritime influence. The few other inland localities known are situated either along tidal estuaries, as at Snowhill, Co. Kilkenny, or in the vicinity of

the sea, as on the cliffs at Benevenagh which are about two miles inland. The Kerry locality is purposely left rather vague as it occurs there in very small quantity.

A. viride Huds.

Districts — — III. IV. V. VI. — — —
Native. Mountain cliffs. Rare and local. Peren. July—October.

III. In the Iveragh Mountains (*Moore*) *Cyb.* 1866. In two or three places on the Coomacarrea Mountains south of Glenbeigh, 1892 (*Colgan & R.W.S.*) *Cyb.* 1898.—IV. On the rocky mountains in Dunkerron and near Blackstones (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 383. On Magillicuddy's Reeks, Aug., 1805: *Mackay Rar.* A common plant at a sufficient height on the Reeks: *Hart* 1882. On the north side of Beeown Mountain above Lough Reagh, Glencar, 1901: *Colgan & R.W.S.*—V. On Brandon Mountain (*Carroll*) *Cyb.* 1866. From 2,100 to 2,450 feet on the Brandon range: *Hart* 1884, and in 1902: *Marshall & Shoolbred.*—VI. Killarney (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 383. On the cliffs near the summit of Turc Mountain: *Mackay Rar.* 1806. On Mangerton Mountain (*S.P. Woodward*) *Phytol.* 1844, p. 878. Rather frequent in the Horse's Glen, Mangerton, on cliffs south of Lough Erhagh, from 2,000 to 2,300 feet, 1904: *R.W.S.*

Descends in a wet gully on the Coomacarrea Mountains to about 1,250 feet (*Colgan & R.W.S.*); ascends to 3,150 feet on the Reeks (*Hart*).

First record in 1756: *Dr. Smith, Hist. of Kerry*, p. 383, No. 101.

A. Trichomanes Linn. *Maidenhair Spleenwort.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On rocks, walls and banks. Common, but local in the extreme north of the county. Peren. July—October.

From sea-level, to 2,750 feet on Brandon (*R.W.S.*), and to 2,850 feet on the Reeks (*Hart*).

First record in 1756: *Dr. Smith, Hist. of Kerry*, p. 383, No. 100. "Common among the rocks in the lake of Killarney," &c.

A. Ruta-muraria Linn. *Wall Rue.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. On walls and rocks. Common. Peren. July—October. *Calcicole B.*

From sea-level, to 850 feet on the Loo Bridge-Ballyvourney road and to 950 feet on the Roughty-Ballyvourney road (*R.W.S.*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 372, No. 3. "It grows near Blackstones, on the side of a rocky cavern."

ATHYRIUM Roth.

A. Filix-fœmina Roth. *Aspidium Filix-fœmina* Bernh. *Lady Fern.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Streamsides, moors, banks, moist shady places, &c.
Very common, especially in the south. Peren. July—September. *Calcifuge A.*

From sea-level, to 2,650 feet on Caherconree, Slieve Mish range (*Hart*), and to 2,750 feet on Brandon (*R.W.S.*).

First record in 1833 : *John White, Irish Flora*.

Var. RHÆTICUM (Roth)—*var. CONVEXUM* Newm. This well-marked form of the variable Lady Fern is not uncommon in Kerry and has been noted in many localities, especially in peaty places.

CETERACH Willd.

C. officinarum Willd. *Asplenium Ceterach* Linn. *Scale Fern. Rustyback.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Old walls, bridges and rocks. Rather common, but unevenly distributed and quite rare over considerable areas. Peren. July—October. *Calcicole A.*

Rare in the following Districts—III. Roadside wall between Ballinskelligs and St. Finans Bay, 1900 ; on a wall at Chapelstown, Valencia Island, 1906.—IV. Sparingly on a wall near Churchtown, 1904 ; on Dunloe Castle, on Coosaun bridge in the Gap and sparingly on a bridge in the upper Owenreagh valley, 1909.—V. On a churchyard wall near Camp, Tralee Bay ; on Stradbally bridge west of Castle-gregory and sparingly on walls about Dingle, 1902–07 : *R.W.S.* Near Fermoy, Brandon Bay, 1902 : *Marshall & Shoolbred*.—IX. On a bridge near Listowel Workhouse and about Gunsboro' to the north-west of that town ; on Carrig Island near Ballylongford, 1904 : *R.W.S.* Sparingly on walls at Listowel and Tarbert and abundant on a wall near Beal, 1913 : *Phillips*.

From sea-level, to 700 feet in the Slaheny valley and on the Loo Bridge-Ballyvourney road, and to 750 feet on the Roughty-Ballyvourney road (*R.W.S.*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 374, No. 22. "In several islands in Killarney lake growing among the rocks."

The *var. CRENATUM* *Milde* appears to be the prevailing form in Kerry as elsewhere in Ireland.

SCOLOPENDRIUM Smith.

S. vulgare Smith. *Phyllitis Scolopendrium* Newm. *Hart's-tongue*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Banks, hedgerows, shady places, walls, &c.
Common. Peren. July—October.

From sea-level, to 1,800 feet on the north side of Beeown Mountain above Lough Reagh, Glencar (*Colgan & R.W.S.*), but not often seen much above 700 or 800 feet.

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 380, No. 77. "In the glins among the mountains near Killarney."

CYSTOPTERIS Bernh.

C. fragilis Bernh.

Districts — II. — IV. V. VI. VII. — —
Native. On damp cliffs in mountains and, exceptionally, on lowland walls and rocks. Rather common on the higher mountains, very rare at low-levels. Peren. July—October.

II. Near Staigue Fort, 1906 : Rev. H. Kingsmill Moore.
—IV. On M'Gillicuddy's Reeks (*Dr. Balfour Phytol. 1853*, p. 1005. From 1,400 to 3,150 feet on the Reeks : *Hart. 1882*, and in 1905 : *R.W.S.* Sparingly on the north side of Beeown Mountain above Lough Reagh, Glencar, 1901 : *Colgan & R.W.S.*—V. Near the summit of Brandon (*S. P. Woodward Newman 1844*. From 2,000 to 3,000 feet on Brandon : *Hart 1884*, and in 1907 : *R.W.S.* At 2,650 feet on Baurtregaum, Slieve Mish range : *Hart 1882 a*—in several localities on these mountains, 1888 : *R.W.S.*—VI. On Mangerton and "on several mountains round the lake of Killarney, near the new road to Glanerought" (*Dr. Smith Hist. of Kerry*, p. 375. On the cliffs above the Punchbowl on Mangerton at 2,500 feet (*S. P. Woodward Newman 1844*. Rather frequent in the Horse's Glen, Mangerton, on cliffs

to the south of Lough Erhagh, 1888–1904, and on the north and east sides of the Paps Mountain, 1904–10; sparingly at low-level on rocks near the Middle Lake in Muckross demesne, 1891.—VII. In the Gormagh cliffs, Slieve Mish range, south-west of Tralee, 1888; and plentiful over a limited area on a roadside wall, at little above sea-level, near Cromane, Castlemaine Bay, 1888–1903: *R.W.S.*

At sea-level near Castlemaine Bay (*R.W.S.*); on mountain cliffs it ranges from 1,400 to 3,150 feet on the Reeks (*Hart*).

First record in 1756: *Dr. Smith, Hist. of Kerry*, p. 375, Nos. 33 & 34.

The *var. DENTATA* *Hook.* appears to be the prevailing form of this variable fern. It has been gathered on Brandon by several visitors and on the Slieve Mish range, Mangerton and elsewhere by *R.W.S.*

[*C. ALPINA* *Desv.* *C. regia* *Presl.*—IV. “On the south side of the rocks called the Reeks” (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 373, No. 4. This fern, often regarded as a variety or subspecies of the preceding plant, is not known to occur in Ireland, and the record, most probably, refers to some form of *Cystopteris fragilis*.]

ASPIDIUM Swartz.

A. Lonchitis Swartz. *Polystichum Lonchitis* Roth. *Holly Fern*.

Districts — — — IV. V. VI. — — —
Native. On mountain cliffs. Very rare and local. Peren.
August—October.

IV. On cliffs north of Lough Googh on the south side of the Reeks: *Hart* 1882. On Mullaghanattin Mountain, Glencar, at about 1,300–1,400 feet (*Colgan*) *Dub. Univer. Rev.* 1886, p. 605.—V. Near the summit of Brandon (*S. P. Woodward*) *Newman* 1844. From 2,450 feet between Brandon Peak and the summit, to about 2,000 feet in the Feany valley: *Hart* 1884—seen in two or three places on Brandon Mountain in 1907: *R.W.S.*—VI. On moist rocks in the Horse’s Glen, Mangerton (*Carroll*) *Phytol.* 1857, p. 77—still in the Horse’s Glen cliffs south of Lough Erhagh, but very sparingly, 1888–1904: *R.W.S.*

Ranges between 1,350 feet on Mullaghanattin, Glencar, and 2,800 feet on Brandon (*Colgan*).

First record in 1844: *S. P. Woodward, Newman’s Brit. Ferns*, p. 165.

This is one of the rarest ferns in Ireland where it is quite confined to the western counties. In addition to Kerry, it occurs in West Galway, Sligo, Leitrim and West Donegal. It appears to be more plentiful on Brandon than elsewhere in the county.

A. aculeatum Swartz. *Polystichum aculeatum* Roth.
Prickly Shield Fern.

Districts I. II. — IV. V. VI. VII. — —
Native. On mountain cliffs, on banks and in shady places. Rather rare and local. Peren. July—October.

I. Sparingly on shady banks, &c., about Kenmare, Kiltowen and Ardtully in the Roughty valley, 1907.—II. Sparingly near Parknasilla and on the east side of the Ballaghbeama Pass, 1906–13 : *R.W.S.*—IV. At 900 feet in Cummeenacappul and at 2,470 feet in the Black Valley, but scarce on the Reeks : *Hart 1882.*—V. On Brandon cliffs to 2,000 feet, 1913 : *Praeger.*—VI. Rather frequent on cliffs in the Horse's Glen, Mangerton, and more sparingly on the north and east sides of the Paps Mountain ; sparingly on Ross Island near the Cottage, 1903–10 : *R.W.S.*—VII. About Kiltallagh Church near Castlemaine : *Lady Godfrey*, and in 1890 : *R.W.S.* Sparingly on walls at Seafield, Tralee Bay, 1905 : *R.W.S.*

From sea-level in the Roughty valley, &c. (*R.W.S.*), to 2,470 feet on the Reeks (*Hart*).

First record in 1882 : *Hart, Proc. R.I.A.*

This fern occurs in Kerry usually as the form or *var.* *LOBATUM Swartz*—with the pinnæ but little divided. Both the type, the *var.* *LOBATUM* and intermediate states have been gathered by the writer growing quite near each other in the Horse's Glen, Mangerton ; but, speaking generally, this fern in any form is not a common plant in Kerry and appears to be quite absent from large tracts of the county.

A. angulare Kit. *Polystichum angulare* Presl.

Districts I. II. — IV. V. VI. VII. VIII. IX.
Native. Banks, woods and other shady places. Rather common over the greater portion of the county, but quite rare over wide areas. Peren. July—October.

Rare in the following Districts—IV. On the east side of Caragh Lake, 1896.—V. Near Camp, Tralee Bay, 1892 : *R.W.S.*

First record in 1844 : *S. P. Woodward, Phytol.*, p. 878.

LASTREA Presl.

L. Thelypteris Presl. *Marsh Fern.*

District — — — — — VI. — — —
Native. Wet marshy places. Very rare indeed, but locally abundant. Peren. July—September.

VI. "In marshy grounds between Muckcross house and the mines near the side of the road": *Mackay Rar.* 1806. In the grounds at Muckcross (*J. Woods*) *Phytol.* 1855, p. 125. Still abundant in Mackay's station and sparingly near the Muckcross Hotel boat-harbour on the Lower Lake: *R.W.S.* 1888, and in 1912. At Ross Castle, Killarney (*Dr. Balfour*) *Phytol.* 1853, p. 1006. On Ross Island (*Moore*) *Cyb.* 1866. Still abundant in one locality on Ross Island near its western end: *R.W.S.* 1889, and in 1912. Sparingly near Cromaglan bridge, Upper Lake, Killarney: *R.W.S.* 1889.

First record in 1806: *Mackay Rar.*

This fern appears to be confined to the neighbourhood of the Killarney Lakes and to be unknown elsewhere in the south-west of Ireland.

L. Oreopteris Presl. *L. montana* T. Moore. *Sweet Mountain Fern.*

Districts I. II. — IV. V. VI. VII. — —
Native. Mountain slopes, on banks, about stream-sides and other damp places. Locally abundant, but rare or absent over a great portion of the county. Peren. July—September. *Calcifuge B.*

I. Abundant in a wood south of Glanmore Lake, Derreen, 1894; sparingly in the Sheen valley north of Dromogorteen bridge; abundant in the Slaheny valley and in the Roughty valley about Morley's Bridge, 1894–1908: *R.W.S.*—II. Mountain slope near Gearha bridge, Blackwater valley, 1911: *Mrs. Jenner.*—IV. A few plants on the east shore of Cloon Lough, Glencar (*Hart*) *Journ. of Bot.* 1882, p. 174. Sparingly on the roadside between Caragh and the Oolagh Lakes, 1904: *R.W.S.* At 1,600 feet on Carrantuohill, Reeks: *Druce* 1891. Sparingly in the Tomies wood, Lower Lake, Killarney, 1911: *Mrs. Jenner.*—V. Abundant about Anascaul Lake and along the river to the south of Anascaul, Dingle Bay; abundant in the upper Finglas valley south of Camp; in Glanlough, Glanteenassig and Arraglen, all three localities lie to the south of Castlegregory; between Kilcummin and Cloghane near the Connor Hill road, 1890–1914: *R.W.S.*—

VI. "On Mangerton, about half-way up near the usual ascent to the Devil's Punch Bowl": *Mackay Rar.* 1806. Still on the Mangerton slopes near the ascent to the Punch Bowl, 1904, and by the old Kenmare road above Galway's bridge; in Cromaglan glen near the Upper Lake, Killarney; in several places in the Flesk valley, both above and below Brewster-field bridge and near Loo Bridge, 1888-1909.—VII. Very sparingly on the stony shore of Lough Yganavan north of Caragh Lake, 1896, and abundant in Glanageenty glen between Tralee and Castleisland, 1890: *R.W.S.*

From sea-level near the Glanmore and Yganavan Lakes (*R.W.S.*), to 1,600 feet on the Reeks (*Druce*).

First record in 1806: *Mackay Rar.*

L. Filix-mas Presl. *Aspidium Filix-mas* Swartz. *Polystichum Filix-mas* Roth. *Male Fern.*

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Banks, woods, stream-sides, &c. Common and sometimes abundant. Peren. July—September.

From sea-level, to 2,950 feet on Brandon (*R.W.S.*), and to 3,150 feet on the Reeks (*Hart*).

First record in 1836: *Dr. Taylor, Flor. Hib.*

L. spinulosa Presl. *Aspidium spinulosum* Swartz.

Districts — II. III. — — VI. — — —
Native. Wet or shady places. Rare and local. Peren. July—September.

II. In hedges near Dunkerron Castle, Kenmare Bay (*Dr. Taylor & S. P. Woodward*) *Phytol.* 1844, p. 878.—III. Near Cahersiveen (*J. R. Kinahan*) *Nat. Hist. Rev.* 1858, p. 175.—VI. At Killarney: *Thos. Moore* 1855. In some abundance in wet boggy thickets at the east end of Ross Bay and sparingly in a swampy flat a little west of the Muckcross Hotel boat-house, Lower Lake, Killarney, 1894-1904; sparingly in the Deer Park glen, 1903: *R.W.S.*

First record in 1844: *Dr. Taylor & S. P. Woodward, Phytol.*, p. 878.

Although a rare fern in Kerry, it has probably a wider range than the above scanty records would indicate.

L. dilatata Presl. *L. aristata* Rendle & Britten.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Woods, banks, heaths, rocky places, &c. Very common in the south, less so in the north. Peren. July—September. *Calcifuge A.*

From sea-level, to 2,796 feet on the summit of Baurtre-

gaum, Slieve Mish range (*R.W.S.*), to 2,850 feet on Brandon and to 3,000 feet on the Reeks (*Hart*).

First record in 1844 : *Dr. Taylor & S. P. Woodward, Phytol.*, p. 878.

L. æmula Brack. *L. recurva* Newm. *Aspidium æmulum* Swartz. *Hay-scented Fern*.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Woods, banks, rocky places, streamsides, &c. Common and locally abundant, but thins out in the north. Peren. July—September.

From sea-level, to 1,850 feet on Brandon and to 2,100 feet above Lough Googh on the Reeks (*Hart*).

First record in 1844 : *Dr. Taylor, Messrs. Ogilby & S. P. Woodward, Newman's Brit. Ferns*, p. 227. This is most probably the fern gathered by Dr. Wade "in Earl Kenmare's park, Killarney," and recorded by him, although with some doubt, as "the true *Polypodium fragrans* of Linneus" in his *Plantæ Rariores 1804*, p. 91.

Probably nowhere in Ireland do *Lastrea æmula* and *L. dilatata* attain to greater perfection than in the moist shady glens and woods of south Kerry. About Killarney and its neighbourhood especially, both these ferns occur in great abundance and luxuriance and add much to the charm of many beauty spots round the Lakes. When well grown, *Lastrea æmula*, with its pale green fronds and crimped pinnæ, is certainly one of the most handsome and characteristic of the larger Kerry ferns.

POLYPODIUM Linn.

P. vulgare Linn. *Common Polypody*.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. On the trunks and branches of trees, and on walls, rocks, banks, &c. Common. Peren. July—September.

From sea-level, to 2,610 feet on the Reeks (*Hart*), and to 2,800 feet on Brandon (*Colgan*).

First record in 1806 : *Mackay Rar.* "In Ross woods, Killarney."

Var. SERRATUM Willd.—"In various parts of the county Kerry" : *Newman 1840*.—VI. In Ross woods, Killarney : *Mackay Rar.* On Muckross Abbey (*S. P. Woodward Phytol. 1844*, p. 878).

Var. CAMBRICUM Willd.—VI. On the castle ruins at Castlelough, Lower Lake, Killarney, 1903 : *R.W.S.*, and elsewhere in the county.

P. Phegopteris Linn. *Phegopteris polypodioides* Feé. *Beech Fern*.

Districts — II. III. IV. V. VI. — — —
Native. Wet gullies and rocky places about mountains.
Rare and local. Peren. July—September.

II. On rocks near the roadside on the descent into the Owenreagh valley north of Lough Barfinnihy, 1903-09; in a gully on the west side of Eagle's Lough north of Sneem, 1892: *R.W.S.*—III. On cliffs above Coomasaharn Lake, Coomacarrea Mountains, Glenbeigh, 1894 (*Rev. C. F. d'Arcy*) *Cyb.* 1898.—IV. In a gully at about 900 feet between Lough Reagh (Black Valley) and the summit of Broaghna-binnia, and in a gully south of Lough Reagh upper Glencar (*Hart*) *Journ. of Bot.* 1882, p. 174—seen in the latter station, 1889: *R.W.S.* In the Gap of Dunloe, circa 1900, and in 1916: *Mrs. Jenner*.—V. On rocks by the waterfall above Lough Adoon near Connor Hill, 1913: *Praeger*.—VI. "In marshes near Mr. Herbert's House at Muckcross" (*Dr. Taylor*), and between Killarney and Kenmare (*Moore*) *Newman* 1844. On Torc Mountain and about Killarney (*Kinahan, Newman, &c.*) *Cyb.* 1866. On the stony slopes of Torc between the waterworks and the Falls, circa 1900: *Archdeacon Wynne*. Very fine in a gully on the north side of the Paps Mountain and on rocks above Lough Glannafreaghaun on the east side: *R.W.S.* 1890, and in 1910.

Ranges from about 300 feet above sea-level on Torc Mountain (*Archdeacon Wynne*), to 1,700 feet on the Paps Mountain (*R.W.S.*).

First record in 1844: *Dr. Taylor & Mr. Moore, Newman's Brit. Ferns*, p. 120.

No doubt occurs in further localities in the south and west of the county.

[*P. DRYOPTERIS* Linn. *Oak Fern*. VI. "Found in the stony parts of Turc Mountain, Killarney": *Wade Rar.* 1804. "On Turc Mountain, Killarney . . . where it had been previously noticed [by] Dr. Wade:" *Mackay Cat.* 1825. This locality is repeated in the *Irish Flora* 1833, and in *Mackay's Flor. Hib.* 1836. "Mr. Woodward informs me there is a single frond in Dr. Taylor's herbarium, labelled Muckcross": *Newman* 1844. This latter locality is repeated by Thos. Moore in his *Nat.-printed Ferns of Grt. Brit. and Ireland* 1855, but the accuracy of all these records is doubted by the Editors of *Cyb.* 1866.

If the Oak Fern really occurred at Killarney, and Dr.

Taylor's *Herbarium* specimen is deserving of special consideration, it has not been seen there in a native state, nor indeed anywhere else in the south-west of Ireland, for many years past, and it seems better to regard it as now lost or extinct. That there is nothing in the climate of Kerry particularly repellent to this fern is shown by the success with which Archdeacon Wynne grew it for many years in his garden at Killarney where it was flourishing up to the time of his removal to Limerick about 1904. Although the Oak Fern occurs pretty commonly over the greater portion of England, Wales and Scotland, it is one of the very rarest ferns in Ireland, being certainly known from only four of the Irish counties, in three of which it occurs in but a single locality.]

OSMUNDA Linn.

O. regalis Linn. *Royal Fern*.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Wet peaty ditches, boggy places, river- and lake-sides, &c. Common and often abundant. Peren. July—September. *Calcifuge A*.

From sea-level, to 850 feet on the Reeks (*Hart*), to 900 feet by the Roughty-Ballyvourney road, to 925 feet in the Slaheny valley (*R.W.S.*), and to 1,200 feet "in Kerry" (*Druce*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, pp. 376 & 380, No. 35. "In several bogs in the barony of Iraghti-connor and elsewhere," and No. 73 "in a marshy wood near Lixnaw."

The Royal Fern, like *Lastrea dilatata* and *L. cœmula*, grows in great profusion in many localities in the south of Kerry. Around the Lakes of Killarney especially it attains to large dimensions and may be seen in perfection along the Back Channel between the Meeting of the Waters and O'Sullivan's Punch-bowl, where it gives an almost tropical luxuriance to the vegetation of this lovely spot. There, and elsewhere in the county, fronds five to six feet in height are not uncommon.

Var. DECOMPOSITA Druery—II. Between Kenmare and Sneem in some plenty (*Messrs. Boyd & Cowan*) *R.W.S.*, *Irish Nat.* 1902, p. 159. The discovery here of this new variety of the *Osmunda* is especially interesting as it appears to be a species that very rarely deviates from its typical state. The station given above is the only one at present on record for the British Isles.

Although the published locality was deliberately left vague, there is reason to fear that it has become known to some unscrupulous fern exterminator, as very little indeed of this fine variety was seen there on a recent visit by the present writer.

OPHIOGLOSSUM Linn.

O. vulgatum Linn. *Adder's-tongue.*

Districts I. II. III. — V. VI. VII. VIII. IX.
Native. Damp pastures, meadows, woods, &c. Rather rare and local. Peren. May—July.

I. Near the shore west of Lehid Harbour, Kenmare Bay, 1894 ; in two or three localities about Kenmare, as by the River Finnihy and in woods to the south and east of Cleady, 1890–1904 ; sparingly in a field in the Roughty valley near Sillahertane, 1903.—II. Sparingly in Darrynane wood : *R.W.S.* 1890.—III. Sparingly on Beginish Island, Valencia Harbour, 1892 : *R.W.S.*—still there in 1906, and near the sea north of Knightstown and Bray Head, Valencia Island, and on the mainland about a quarter of a mile from the Ferry Point : *Miss Delap.* Locally abundant at Caragh, 1903 (*F. Bouskell*) *Trans. Leicester Lit. & Phil. Soc.*, Vol. IX., 1905, p. 40.—V. Abundant on Beginish, one of the Blasket Islands (*Praeger & Stelfox*) *Irish Nat.* 1912, p. 161.—VI. Sparingly in a wet wood near Muckcross Abbey : *R.W.S.* 1889 ; on Ross Island and in the Home Park, Killarney, 1892–1912 ; plentiful between the River Flesk and the railway at Woodford east of Killarney, 1894 ; plentiful in a wet meadow by the Gweestin River near Ballymalis bridge. 1901 : *R.W.S.*—VII. In Kilcolman Abbey grounds, 1900 : *Miss Godfrey.* Abundant in Killaclohane wood near Milltown and sparingly on the south side of Lough Yganavan, 1896 ; in a meadow at Seafeld, Tralee Bay, and near Ballycarty east of Tralee, 1892 : *R.W.S.*—VIII. “ In a meadow near the ruined Abbey of Odorney, esteemed as a vulnerary by the country people ” (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 380. In a swampy meadow to the east of Lixnaw canal, sparingly, and—IX. In several places about Ballybunnion, as by the coast near Leek Point and near Doon to the north, and in damp sandy pastures about a mile to the south, &c., 1902–08 : *R.W.S.*

From sea-level, to 650 feet in the Roughty valley (*R.W.S.*), and probably higher.

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 380, No. 72.

Var. POLYPHYLLUM Braun—*var. AMBIGUUM C. & G.*—V. Sparingly on Deelick Point, Brandon Head, and plentiful on the “Three Sisters,” near Smerwick Harbour, from 350 to 600 feet above sea-level : *Hart 1884*—gathered in the last-named locality, a storm-swept headland, by *R.W.S.* Abundant on a grassy summit (593 feet) on the Great Blasket Island (*Praeger & Stelfox*) *Irish Nat.* 1912, p. 161.

This diminutive plant, which rarely exceeds two inches in height, was at first thought by its finder, Mr. H. C. Hart, to be *O. lusitanicum* Linn. It fruits, however, at the same time as the type and fully answers to text-book descriptions of *var. POLYPHYLLUM Braun*, showing a strong tendency to produce two fronds from the same rootstock—two out of three specimens gathered in Mr. Hart’s “Three Sisters” locality by *R.W.S.* having double fronds—while the spores although appearing smooth were seen to be covered with minute tubercles under the microscope.

BOTRYCHIUM Swartz.

B. Lunaria Swartz. *Moon-wort.*

Districts I. — III. IV. V. VI. VII. — — Native. Rough pastures, heaths and grassy places, &c. Rare and seldom in any quantity, but easily overlooked. Peren. May—July.

I. About Cloonee (*Hart*) *Journ. of Bot.* 1885, p. 232. Sparingly on a heathy mound about a mile north of the Cloonee Lakes, 1907 ; by the roadsides a mile north of the Glengarriff tunnel and in fields near the Iron Rock south-east of Kenmare, 1901 : *R.W.S.*—III. On a rocky mound near Lickeen, Glencar, *circa* 1875 : *More*. Sparingly in a pasture near Dooaghs, Rossbehy, 1903 : *Marshall & R.W.S.*, and between Caragh and Rossbehy Creeks : *R.W.S.* Near the sea just north of Knightstown and on Geokaun Hill to the west, Valencia Island, and on the mainland at Ballycarberry Point, 1906 : *Miss Delap.*—IV. In a rough field north of the Gap of Dunloe, 1904, and—V. Sparingly on an old fort on the south side of Castlegregory Lake, 1888 : *R.W.S.* Sparingly on a bridge parapet on the north side of Connor Hill road, 1913 : *Praeger.*—VI. Near Doo Lough in Muckross demesne, 1892, and in a thick wood on Brown Island in the Lower Lake, Killarney, 1904 : *R.W.S.* Sparingly near the Aghadoe boat-house on the Lower Lake, 1899 : *Mrs. Jenner*. By the River Flesk near Brewsterfield bridge ; in poor pastures near Rockfield north of Killarney and in a field between Listry and Milltown, 1902–04 :

R.W.S.—VII. Near Milltown, 1900 : *Miss Godfrey*. Near the Kerries west of Tralee and on both the west and south sides of Barrow Harbour, 1902 ; sparingly about seven miles north of Castleisland on the Listowel road, 1890 : *R.W.S.*

From sea-level, to 750 feet on the Kenmare-Glengarriff road (*R.W.S.*), and to about 900 feet on the Connor Hill road (*Praeger*).

First record in 1885 : *Hart, Journ. of Bot.*, p. 232.

Probably more widely distributed in the county than the above records would show.

EQUISETACEÆ.

EQUISETUM Linn.

E. maximum Lam. *E. Telmateia* Ehrh. *Horsetail* (genus).

Districts I. — — IV. — VI. VII. VIII. IX. Native. Wet banks, ditches, field-sides, &c. Rather common in the north, but quite rare and local over the greater portion of the county. Peren. April—May.

I. In two or three localities in the Roughty valley between Kenmare and Morley's Bridge, and in the Slaheny valley, 1903—08.—IV. In several places between Beaufort and Churchtown, and in a damp wood by the River Laune, 1888—1911.—VI. In several localities about the Lower and Middle Lakes, Killarney, and along the north side of the River Laune, 1910 ; near Aghadoe, 1903 ; near Loo Bridge, upper Glenflesk, 1901.—VII. Ditch banks, &c., south of Castlemaine, 1904 : *R.W.S.*—VIII. " Plentifully in the River Brick not far from Lixnaw " (*Dr. Smith*) *Hist. of Kerry*, 1756. In ditches about two miles south-east of Causeway, 1905, and in one or two places in the Smearlagh valley, 1904.—IX. On banks and in ditches north of the Cashen Ferry bridge, sparingly, and near Ballybunnion, 1902 ; by the shore near Kilconly Point and near Ballylongford, 1894 : *R.W.S.* Near Tarbert, 1913 : *Phillips*.

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 375, No. 28.

E. arvense Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX. Native. Waysides, cultivated ground, waste places, railway tracks, &c. Common. Peren. April—May.

From sea-level, to 800 feet in the Slaheny valley (*R.W.S.*), and probably higher.

First record in 1890 : *Stewart, Proc. R.I.A.*

E. sylvaticum Linn.

Districts I. — — V. VI. VII. VIII. —
Native. Wet banks and shady places, in damp pastures and on mountain slopes. Rather common locally, but a rare plant over the greater portion of the county. Peren. April—May. *Calcifuge B.*

I. In several places in the Roughty and Slaheny valleys, 1907 ; at 700 feet on the north side of Hungry Hill, 1894.—V. By the stream from Lough Bierne, Connor Hill : *R.W.S.* 1891. On headlands between Brandon Point and Brandon Head : *Hart* 1884.—VI. Near Aghadoe to the west of Killarney, 1912 : *Mrs. Jenner*. Rather frequent in this District, as about Rockfield and in several other localities to the north of Killarney ; on the lower slopes of Mangerton Mountain, both east and west of the Horse's Glen ; frequent in the upper Flesk and Clydagh valleys, and in several places on the railway banks between Rathmore and Killarney, 1888–1912.—VII. In a mountain valley south of Tralee, 1902, and abundant in Glanageenty glen between Castleisland and Tralee, 1890.—VIII. Sparingly about two miles west of Abbeyfeale, 1899, near the River Feale south of Listowel, 1894 : *R.W.S.* Near Listowel, 1913 : *Phillips*.

From sea-level, to 800 feet in the Roughty and to 875 feet in the Clydagh valleys (*R.W.S.*).

First record in 1884 : *Hart, Proc. R.I.A.*

E. palustre Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. Marshy ground, ditches and wet places. Rather common and locally abundant. Peren. May—July.

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 375, No. 30. "Very common in the said barony [Clanmaurice]."

Var. POLYSTACHYUM Weigel—II. In boggy ditches near Darrynane House (*R.W.S.*) *Cyb.* 1898.—VI. Abundant in the West Park, Killarney, 1908 : *R.W.S.*

E. limosum Linn.

Districts I. II. III. IV. V. VI. VII. VIII. IX.
Native. In shallow water, wet ditches, &c. Common. Peren. May—June.

From sea-level, to 1,450 feet on the Reeks (*Hart*), and to 1,500 feet near the Connor Hill road (*Praeger*).

First record in 1882 : *Hart, Proc. R.I.A.*

Var. FLUVIATILE (*Linn.*). A common form in Kerry.

E. hyemale Linn.

Districts — — — — VI. — [VIII.] —
Native. River banks. Very rare and local, but usually abundant where it occurs. Peren. June—July.

VI. In several places by the River Flesk between Flesk Castle bridge and Brewsterfield bridge, and more sparingly by the River Laune not far from Ballymalis Castle : *R.W.S. 1888, &c.*, and in 1903 [—VIII. “ In a bog through which the said rivulet (the River Brick, not far from Lixnaw) runs ” (*Dr. Smith*) *Hist. of Kerry*, 1756, p. 375]—but not seen there in recent times.

First record in 1756 : *Dr. Smith, loc. cit.*

It is probable that *Dr. Smith's* early record “ *Equisetum nudum* Ger,” should be referred to *E. limosum* which occurs as commonly in the locality he mentions as elsewhere in the county, whereas *E. hyemale*, if it really exists about Lixnaw, has not been seen there since *Dr. Smith's* time, 160 years ago. Moreover, *E. hyemale* is an inhabitant of river banks and wet thickets rather than of bogs, and, as at present known, is confined in Kerry to the Rivers Flesk and Laune.

E. trachyodon Braun. *E. Mackarii* Newm.

Districts — — — IV. — VI. — — —
Native. Shady or bushy river banks. Very rare and local. Peren. June—July.

IV. Sparingly by the river-side in Beaufort demesne, 1902, and again some distance lower down the Laune, 1888.—VI. Rather sparingly by the side of the River Laune in one or two spots below Ballymalis Castle : *R.W.S. 1889*, and in 1903.

First record in 1889 : *R.W.S., Journ. of Bot.*

This plant appears to be confined in Kerry to a few miles of the River Laune. It is rare in Ireland generally, and with the exception of another station near Cork, is known to occur elsewhere only in a few localities in the west and north.

E. variegatum Schleich.

Districts — — — IV. — VI. — — —
Native. In ditches and shallow water about lake-margins, and on a damp mountain cliff. Very rare and local. Peren. July—August.

Var. MAJUS Syme—VI. Rather sparingly on a damp ledge in a gully on the north side of the Paps Mountain at about 1,600 feet : *R.W.S. 1890* (as *var. WILSONI* Newm.)—still in this locality in 1910, but appears to be decreasing.

Var. WILSONI (Newm.)—IV. In shallow water near the Sugarloaf Island, Caragh Lake, 1889 : *R.W.S.*—VI. In ditches bordering on the lake in Muckcross demesne, Killarney (*W. Wilson*) *Brit. Flor. Eds. II. & IV., 1831 & 1838*, and *Irish Flora 1833*—still there in 1885, and by a small rocky islet near Ross Island : *Linton 1886*. In one or two localities in Ross Bay, Lower Lake, Killarney, 1888 : *R.W.S.*, and in 1903.

Ranges from about 50 feet above sea-level in Caragh Lake (*var. Wilsoni*), to 1,600 feet on the Paps Mountain (*var. majus*) ; *R.W.S.*

First record in 1831 : *W. Wilson, Brit. Flor. Ed. II.*

The Paps Mountain *Equisetum* is a slender form with stems from 8 to 13 inches in height and is indistinguishable from plants gathered by the writer in several localities in the neighbourhood of Zermatt. It was noticed for instance in some abundance on damp slopes near the Riffelalp Hotel and in wet hollows in the old moraine beside the Findelen glacier, at heights varying between 7,250 and 7,550 feet. It is remarkable that the Kerry locality recorded above still remains the only mountain-cliff station known for this plant in Ireland.

The *var. Wilsoni* appears to be confined in the British Isles to a few localities about the Killarney and Caragh Lakes ; it is a plant, however, but little understood and may yet be found to occur about other lakes in Ireland.

The procumbent plant—*E. arenarium* Newm.—has not, so far, been detected on any of the numerous sandhills round the Kerry coast ; it appears to be a very rare plant in Ireland generally.

LYCOPODIACEÆ.

LYCOPODIUM Linn.

L. Selago Linn. *Holy Moss.* *Fir Club-moss.*

Districts I. II. III. IV. V. VI. VII. — —
Native. Mountain cliffs, moors and heathy or peaty places. Rather common over the greater portion of the county, but rare at low levels and in the north, and nowhere occurring in abundance. Peren. July—October. *Calcifuge B.*

From sea-level near Kenmare and Sneem, &c. (*R.W.S.*), to 3,370 feet on the Reeks (*Hart*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 382, No. 92. "On Mangerton, and most of the mountains round the lake of Killarney."

L. inundatum Linn.

District — — — — — VI. — — —
Native. Wet margin of lake, covered in high water. Very rare and local. Peren. July—August.

VI. On the shore of Lough Guitane near Killarney (*More*) *Journ. of Bot.* 1876, p. 373—still on the west side of this lake, but occurring there very sparingly, 1896 : *R.W.S.*

First record in 1876 : *More, loc. cit.*

This Club-moss appears to be one of the very rarest plants in Kerry. In the only locality known less than a dozen plants were noticed. It is a plant, however, very easily overlooked, and so many suitable stations occur both in the south and west that its discovery elsewhere is very probable. The known distribution in Ireland is strictly western, several stations in west Cork, one in Kerry, two in west Galway and another in west Mayo, are all that are at present on record.

L. clavatum Linn. *Stag's-horn Moss.*

District — — — — — VI. — — —
Native. On mossy or heather-grown spots, usually on mountains. Very rare and local. Peren. July—August.

VI. Sparingly in two or three spots on the northern ascent to Mangerton where the car road changes to a foot-track, and more plentifully on a summit marked 2,568 feet in the inch Ordnance map, about a third of a mile north-east of the Devil's Punch-bowl : *R.W.S.* 1888, &c., and in 1901. Sparingly near the roadside south of Dinish Island, Killarney, circa 1895 : *J. Dwyer*.

From about 100 feet above sea-level near Dinish (*J. Dwyer*), to 2,568 feet on Mangerton (*R.W.S.*).

First record in 1756 : *Dr. Smith, Hist. of Kerry*, p. 379, No. 65. "Plentiful in all the southern baronies of this county."

While there is no reason to question Dr. Smith's statement as to the former abundance of this plant in Kerry, it appears to have very much decreased there since his time. It is, however, a very easy plant to overlook, especially when it grows amongst the heather with only its fruiting spikes

showing. Elderly peasants who knew this Club-moss well, have informed the writer that they remembered it occurring much more plentifully when they were young than it does now. Owing to the highly inflammable nature of its spores, this plant seems to have been in much request for lighting purposes before the advent of cheap matches.

L. alpinum Linn.

Districts — — — IV. V. VI. — — —
Native. On the higher mountains. Very rare and local.
Peren. July—August.

IV. On the mountain ridge running south-west from Curraghmore summit, *circa* 1874 (*More*) *Cyb.* 1898.—V. On Brandon (*W. Wilson*) *Newman* 1844.—VI. “On Mangerton and other mountains in Kerry: *Flor. Hib.* 1836—but not seen recently in the county.

At about 2,650 feet on Curraghmore, Reeks (*More*).

First record in 1836: *Mackay, Flor. Hib.*

Although this plant has not been seen in Kerry for more than fifty years, there is no reason to doubt its occurrence in the county. It is not improbable, however, that some mistake was made in the *Flor. Hib.* record given above, as even allowing for a possible decrease in the plant, it would almost certainly have come under the notice of some recent visitor had it been as widely distributed as is there stated. Elsewhere in Ireland it occurs chiefly on the mountains in the north and west.

SELAGINELLACEÆ.

ISOETES Linn.

I. lacustris Linn. *Quillwort.*

Districts I. II. III. IV. V. VI. VII. — —
Native. In shallow water in lakes and sluggish streams. Rather common and locally abundant in the mountainous portion of the county. Peren. June—August. *Calcifuge B.*

Rare in the following District—VII. Rather sparingly near the east end of Lough Yganavan, 1906: *R.W.S.*—the eastern half of this lake is in District VII., and is the only locality known in VII. VIII. or IX.; it occurs there as a small form with spreading leaves, not unlike *I. echinospora* in its manner of growth.

From sea-level at Waterville, &c., to 2,300 feet on Brandon (*R.W.S.*), and to 2,338 feet on the Reeks (*Hart*).

First record in 1806 : *Mackay Bar*.

The Quillwort appears to be the hardiest aquatic plant in the Irish flora. It is found at 2,338 feet in Lough Cummeenoughter on the Reeks and at 2,300 feet in the uppermost of the Coomaknock Lakes on Brandon, the two most elevated sheets of water in Kerry, or indeed in Ireland. The *Isoetes* was accompanied in the lower of these lakes by *Myriophyllum alterniflorum*, in the higher it was the only representative of aquatic vegetation. Although many text-books mention 2 to 6 inches as the growth of this plant, it is frequently found much exceeding this in Kerry. Some washed-up leaves found on the shore of Lough Slat in Glanteenassig south of Castlegregory in 1908, measured 18 to 20 inches in length, rivalling specimens of *I. Morei* from Upper Lough Bray, Co. Wicklow, in the writer's *Herbarium*.

I. echinospora Dur.

Districts — II. III. IV. — VI. — — —
Native. Lakes and sluggish streams on a peaty bottom. Rather common, locally, in the south. Peren. June—August. *Calcifuge A.*

II. In Lough Fadda between Sneem and Blackwater bridge, 1905 ; in the boggy portion of the river from Lough Currane, locality extending into—III. Frequent about Caragh and Glencar, as in the Caragh Lake and Lough Beg beside it, in the river between the Lake and Blackstones, in some of the pools in the Glencar River, &c., 1890–1911.—IV. Rather frequent in this District, as in the Glencar River, in several of the Oolagh Lakes and Lough Licka, in Lough Acoose, 1888–1911 : *R.W.S.* In lakes near the Gap of Dunloe (*Moore*) *Cyb.* 1866. In Coosaun Lough and in boggy pools in the River Loe below Kate Kearney's cottage, Gap of Dunloe, and in Glas Lough on the Purple Mountain, 1904 : *R.W.S.*—VI. " In the upper [Lower] lake of Killarney, near Glenagh Cottage (*Moore*) *Cyb.* 1866. In Ross Bay, Lower Lake, Killarney : *Linton* 1886. Still in both *Moore's* and *Linton's* stations, and in many other spots about the Killarney Lakes, as in Bog Bay, &c., on the Muckcross shore, in the Back Channel at O'Sullivan's Punch Bowl, in several localities on the north side of the Middle Lake, in the Long Range and Upper Lake, &c. ; in Ardagh pond to the south-east and in Kilbrean Lake to the north-east of Killarney, 1887–1904 : *R.W.S.*

From sea-level at Waterville, to 1,550 feet in Glas Lough on the Purple Mountain (*R.W.S.*).

First record in *Cyb.* 1866 : *Moore*.

This plant has most probably a wider range in the south of the county than the above records would show. When growing, it may be distinguished from *I. lacustris* by its paler green and spreading leaves which taper much more gradually to their long subulate points than do those of the preceding species ; the plant is also more partial, if not quite confined, to soft peaty bottoms. Elsewhere in Ireland it has so far been recorded only from near Kilrush in Co. Clare, Inish Bofin off the Galway coast, and Newport in west Mayo. In Great Britain it has been found in north Wales and in two or three localities in Scotland. Like the preceding plant it has a northern distribution in Europe and America.

[SELAGINELLA SELAGINOIDES Gray—"Sandy ravines near the sea ; counties Donegal, Londonderry, Dublin, Kerry, Wicklow, &c." (*Messrs. Mackay & Moore*) *Phytol.* 1841, p. 65. This inconspicuous plant has not been noticed recently in Kerry and it seems better to await some more definite record than the above before admitting it to the county flora. It is known in one locality in west Cork and will most probably be re-found in Kerry, but it is a very rare plant generally in the south-west of Ireland.]

MARSILEACEÆ.

PILULARIA Linn.

P. globulifera Linn. *Pillwort*.

Districts — II. — IV. — VI. — — —
Native. Muddy margins of still and sluggish water, usually submerged. Very rare, but locally abundant. Peren. June—August. *Calcifuge A.*

II. Sparingly at the south-west end of the Upper Killarney Lake : *R.W.S.* 1890.—IV. About the mouth of the River Gearhameen, Upper Lake, and—VI. Abundant at intervals along nearly the whole length of the Long Range, Killarney : *R.W.S.* 1902, and in some abundance on ground usually submerged about the mouth of the River Flesk, Lower Lake, Killarney, 1909–12 : *R.W.S.*

First record in 1890 : *R.W.S. Journ. of Bot.*

Although this diminutive plant usually grows quite sub-

merged in its Killarney stations, it may be seen covering large tracts of the exposed margins of the Long Range after a long spell of dry weather. The actual range of this plant in Kerry is very limited being quite confined, so far as at present known, to the Killarney Lakes. Elsewhere in Ireland it is on record only from west Galway and a few of the northern counties.

CHARACEÆ.

CHARA Linn.

C. fragilis Desv.

Districts I. II. III. IV. V. VI. VII. VIII. IX
Native. Lakes, pools, ditches, sluggish streams, &c. Rather common over the greater portion of the county, but local in the north. June—August.

From sea-level, to 1,100 feet in Lough Nageeha on the Paps Mountain (*R.W.S.*).

First record in *Groves* 1880: *Moore*.

Var. CAPILLACEA Coss. & Germ.—I. In Cloonee Lough: *Praeger* 1902. Near Morley's Bridge in the Roughty valley, 1894.—III. Near the mouth of the River Inny north of Waterville and near Ballinskelligs, 1889.—V. In several places about Ventry, 1905.—VI. In several localities in the Killarney Lakes, 1887–1904: *R.W.S.*—probably not uncommon in the county.

Var. DELICATULA Braun.—VIII. Lerrig pond north of Ardfert, 1914: *R.W.S.*

Var. BARBATA Gant.—V. Near Ventry (*D. M' Ardle*) *Groves* 1895.

C. aspera Willd.

Districts — — III. — V. VI. — VIII. —
Native. Lakes, pools and ditches. Rare, but locally abundant. July—August.

III. In a sandhill pool near Black Point, Rossbehy: *R.W.S.* 1889.—V. In Castlegregory Lake (*Moore*) *Groves* 1880—abundant in this lake: *R.W.S.* 1889, and in 1907.—VI. In several localities in the Lower Lake and in the old mine holes on Ross Island, Killarney: *R.W.S.* 1888, and in 1909.—VIII. In a roadside bog-ditch between Sleveen and the River Brick, 1908: *R.W.S.*

First record in *Groves* 1880: *Moore*.

C. polyacantha Braun.

District — — — — — VIII. —
Native. Bog ditches. Very rare and local. June—August.

VIII. Abundant in roadside bog-ditches between Sleeven and the River Brick : *R.W.S. 1903*, and in 1908.

First record in 1903 : *R.W.S., Irish Nat.*, p. 116.

Although *Chara polyacantha* is undoubtedly rare in Kerry it may be expected to occur elsewhere in the north. In spite of its predilection for bog ditches, the distribution of this plant in Ireland is strongly calcicole ; it occurs abundantly in most of the central counties, but is very rare or absent in the extreme north and south.

C. contraria Kuetz.

District — — III. — — — — —
Native. Brackish pond. Very rare and local. June—August.

III. In a sandhill pond near Black Point, Rossbehy : *R.W.S. 1889*.

First record in 1889 : *R.W.S., Journ. of Bot.*, p. 85.

On visiting the above locality in 1903, the pond was found to have been almost quite destroyed by some winter storm and no trace of the plant could be found. The pool, however, was beginning to form again and no doubt *C. contraria* will reappear. This species is easily passed over as *C. vulgaris*, and will most probably be found elsewhere in the county.

C. hispida Linn.

Districts — — III. — V. VI. — — —
Native. Lakes and ponds. Rare and local. June—August.

III. In a sandhill pond near Black Point, Rossbehy, and—
V. In Castlegregory Lake : *R.W.S. 1889*, and in the latter station, 1902. Near Ventry (*D. M'Ardle*) *Irish Nat. 1895*, p. 37.—VI. In Victoria Bay, Lower Lake, Killarney : *R.W.S. 1888*.

First record in 1888 : *R.W.S., Journ. of Bot.*, p. 71.

C. vulgaris Linn. *C. fetida* Braun.

Districts — II. III. IV. V. VI. VII. VIII. IX.
Native. Pools, ditches, lakes, &c. Rather common. May—June.

First record in *Groves 1880 : Moore*.

Var. LONGIBRACTEATA Kuetz.—V. In pools near Brandon Bay west of Castlegregory : *R.W.S. 1891*.—VI. Near Blenner-

ville west of Tralee, and—VIII. In brackish pools near the Banna sandhills west of Ardfert : *R.W.S.* 1889. Most probably a not uncommon form in the county.

Var. PAPILLATA Wallr.—III. Near the Inny Ferry, Waterville : *R.W.S.* 1890.—VII. In a ditch near the sea west of Tralee (*Marshall & Shoolbred*) *R.W.S.* 1903.

C. canescens Loisel.

District — — — — V. — — — —
Native. Lake near the sea. Very rare and local. July—August.

V. Abundant in Castlegregory Lake (*R.W.S.*) *Irish Nat.* 1895, p. 39, and in 1907.

First record for Ireland in 1895 : *R.W.S. loc. cit.*

This rare and beautiful species has since been found in two other localities in Ireland, one near Wexford Harbour by the Rev. E. S. Marshall, the other near Galway by Mr. R. A. Phillips. Elsewhere in the British Isles it is known to occur only in a few stations on the English coast.

TOLYPELLA Leonh.

T. glomerata Leonh. *Nitella glomerata* Chevall.

District — — — — — VIII. —
Native. Brackish pond. Very rare and local ? April—June.

VIII. In a small brackish pool near the Banna sandhills west of Ardfert : *R.W.S.* 1903.

First record in 1903 : *R.W.S., Irish Nat.*, p. 116.

This species can scarcely be limited in Kerry to the solitary locality given above ; it fruits rather early and appears to decay soon afterwards and has been most probably passed over elsewhere in the county.

NITELLA Agardh.

N. confervacea Braun. *N. Nordstedtiana* H. & J. Groves.
N. batrachosperma Braun.

Districts — — III. IV. — VI. — — —
Native. In large lakes, occurring in water from 6 to 12 feet deep. Very rare and local. July—August.

III. &—IV. In two or three spots near the south end of Caragh Lake, and—VI. In some abundance over a rather limited area between Fir and Ash Islands near the Muckross Hotel boat-harbour, Lower Lake, Killarney : *R.W.S.*

1890 & .91, and in 1907; sparingly in Castletlough Bay and between Swallow and Crow Islands, not far from Ross Island, in the same lake, 1892–1907 : *R.W.S.*

First record for Ireland in 1890 : *R.W.S.*, *Journ. of Bot.*, p. 111 (as *N. gracilis* Agardh).

The two Kerry lakes recorded above still remain the only localities known for this diminutive plant in Ireland. As it rarely much exceeds an inch in height and appears to grow in rather deep water, it is most probable that further investigation of the numerous lakes elsewhere along the west side of Ireland will extend the range of this rare species. In Kerry it very seldom comes to the surface alone, being usually mixed with *Najas flexilis* or some other *Nitella*. Elsewhere in the British Isles, it has so far been found only in one station in the Outer Hebrides, where it occurs in a smaller and more compact form than in Kerry. Outside the British Isles it has a very wide distribution in North, Central and South Europe, as well as in North America and Australia.

N. translucens Agardh.

Districts I. II. III. IV. V. VI. — — —
Native. Lakes and ponds. Rather rare but locally abundant. July—August.

I. In the Middle Cloonee Lake, 1899.—II. In a pond near the roadside south of Ballaghbeama Pass, 1901; in Lough Currane and in a small mountain pond on Coomcalee east of Waterville : *R.W.S.* 1890, &c.—III. In Caragh Lake (*More*) *Groves* 1880—in both Caragh and Waterville Lakes : *R.W.S.* 1890, and in a small bog-pond west of the Caragh Lake railway station, 1905.—IV. Abundant in Caragh Lake and Lough Acoose, and rather sparingly in Cloon Lough, Glencar, 1889–1907 : *R.W.S.*—V. “Mannabone Mtns.” (*D. M’Ardle*) *Irish Nat.* 1895, p. 40—this record probably refers to lakes near Maghanaboe glen on the east side of Connor Hill, where it occurs in Lough Camclaun, 1913 : *Praeger*.—VI. Killarney (*Linton*) *Groves* 1886. In several localities in the Lower Lake and abundant in the Upper Lake, Killarney, especially near its southern extremity : *R.W.S.* 1888, and in 1907. In Lough Nageeha on the north side of the Paps Mountain, 1889 : *R.W.S.*

From sea-level, to 1,100 feet in Lough Nageeha on the Paps Mountain and to about 1,800 feet on Coomcallee Mountain (*R.W.S.*).

First record in *Groves* 1880 : *More*.

N. flexilis Agardh.

Districts — II. III. IV. — VI. VII. — —
Native. In lakes and, rarely, in rivers. Rather rare but locally abundant. June—July.

II. &—III. In several spots in Lough Currane and in the northern and western portions of Caragh Lake: *R.W.S. 1890*.—IV. In the south-east corner of Caragh Lake (*More Journ. of Bot. 1877*, p. 350—still in this locality, and in Lough Acoose: *R.W.S. 1890*, and in 1905; rather sparingly in Cloon Lough, Glencar, 1907.—VI. In two or three localities in the Lower Lake, Killarney, as in Ross Bay, in the Muckross Hotel boat-harbour bay, &c., 1888–1907.—VII. In the River Laune near the Killorglin railway bridge, 1892: *R.W.S.*

From sea-level, to 508 feet in Lough Acoose, Glencar (*R.W.S.*).

First record in 1877: *More, Journ. of Bot.*, p. 350.

Var. NIDIFICA Wallm.—VI. Killarney, 1861 (*Carrington Groves 1895*).

N. opaca Agardh.

Districts — II. III. IV. V. VI. VII. — IX.
Native. Lakes, pools, rivers, ditches, &c. Rather common and sometimes abundant. May—June.

From sea-level, to 1,100 feet in Lough Nageeha, Paps Mountain, to about the same height in Lough Coomacullen, Glenbeigh Mountains, and to 1,450 feet in Lough Ferta, Teermoyle Mountain, in the same range (*R.W.S.*).

First record in *Groves 1880: Moore*.

Widely distributed and no doubt occurring throughout the county.

[*N. CAPITATA* Agardh—VI. At Killarney (*W. H. Harvey*) *vide Braun: Groves 1880*. Further confirmation of this record is thought desirable by the Messrs. Groves. In the British Isles it is known to occur certainly only in Cambridgeshire.]

APPENDIX.

—•••••—

Suggested arrangement of the various forms of *Saxifraga Geum* and its hybrids found in Kerry, in the order of their divergence from type towards *S. umbrosa*—

Reniform leaves with blunt teeth	}	<i>S. Geum</i> Linn. <i>sensu stricto.</i>	}	<i>S. Geum</i> <i>sensu lato</i> (Hooker, &c.)
Reniform leaves with acute teeth				
Roundish cordate leaves with blunt teeth	}			
Roundish cordate leaves with acute teeth				
Round but not cordate leaves with blunt teeth				
Round but not cordate leaves with acute teeth				
Oval cordate leaves with blunt teeth	}	<i>S. hirsuta</i> Linn. <i>sensu stricto.</i>	}	<i>S. hirsuta</i> <i>sensu lato</i> (Hooker, &c.)
Oval cordate leaves with acute teeth				
Oval but not cordate leaves with blunt teeth	}			
Oval but not cordate leaves with acute teeth				

The last named group is the one that approaches nearest to *S. umbrosa*, especially to its *var.* or hybrid, *punctata*.

LOCALITIES IN WHICH THE LEAVES SHOWN ON
THE PLATES WERE GATHERED.

PLATE I.

1. Connor Hill, Dingle	11. Valencia Island
2. Valencia Island	12. Uragh Wood, Cloonee
Valley
3, 4. Uragh Wood, Cloonee
Valley	13. Torc Mtn., Killarney
5. Ballaghbeama Gap,
Glencar	14. Ballaghbeama Gap,
Glencar
6. Valencia Island	15. Connor Hill, Dingle
7. Uragh Wood, Cloonee
Valley	16. Uragh Wood, Cloonee
Valley
8. Connor Hill, Dingle	17. Connor Hill, Dingle
9. Maghanaboe Glen,
Connor Hill	18. Mullaghanattin Mtn.,
Glencar
10. Torc Mtn., Killarney	

PLATE II.

1. Connor Hill, Dingle	14. Beeown Mtn., Sneem
2. Uragh Wood, Cloonee
Valley	15. Mullaghanattin Mtn.,
Glencar
3. Ballaghbeama Gap,
Glencar	16. Ballaghbeama Gap,
Glencar
4. Mullaghanattin Mtn.,
Glencar	17. Valencia Island
5. Near Darrynane	18. Connor Hill, Dingle
6. Maghanaboe Glen,
Connor Hill	19. Mullaghanattin Mtn.,
Glencar
7. Ballaghbeama Gap,
Glencar	20. Torc Mtn., Killarney
8. Connor Hill, Dingle	21, 22. Connor Hill, Dingle
9. Valencia Island	23, 24. Torc Mtn., Killarney
10. Ballaghbeama Gap,
Glencar	25. Connor Hill, Dingle
11. Mullaghanattin Mtn.,
Glencar	26. Slieve Mish Mtns.
12. Torc Mtn., Killarney	27, 28. Connor Hill, Dingle
13. Ballaghbeama Gap,
Glencar	29. Torc Mtn., Killarney
	30. Slieve Mish Mtns.
	31. Gap of Dunloe
	32-34. Connor Hill, Dingle

PLATE III.

1. Torc Mtn., Killarney	11. Near Upp. Lake, Killarney
2. Uragh Wood, Cloonee Valley	12, 13. Connor Hill, Dingle
3. Torc Mtn., Killarney	14. Paps Mtn., Headford
4. Valencia Island	15. Connor Hill, Dingle
5. Torc Mtn., Killarney	16. Blackwater br. Kenmare Bay
6. Mullaghanattin Mtn., Glencar	17. Torc Mtn., Killarney
7. Kerry (Rev. A. Ley)	18. Hungry Hill, Derreen
8. Valencia Island	19. Slieve Mish Mtns.
9. Finglas, Camp, Dingle Peninsula	20. Base of Brandon Mtns.
10. Torc Mtn., Killarney	21. Torc Mtn., Killarney
	22. Slaheny Valley, Kilgarvan
	23. Torc Mtn., Killarney

PLATE IV.

Hybridising Experiments—Synthesis of Intermediates

PLATE V.

Hybridising Experiments—Analysis of *S. hirsuta*

PLATE VI.

1-5. Carhan Wood, Cahersiveen	14, 15. Torc Mtn., Killarney
6. Finglas, Camp, Dingle Peninsula	16. Connor Hill, Dingle
7. Connor Hill, Dingle	17. Valencia Island
8. Torc Mtn., Killarney	18. Connor Hill, Dingle
9. Near tunnel, Glengarriff Road	19. Mangerton Mtn.
10. Connor Hill, Dingle	20. Upper Glencar Valley
11. Near Waterville	21. Connor Hill, Dingle
12. Near Upper Lake, Killarney	22. Torc Mtn., Killarney
13. Slieve Mish Mtns.	23. Paps Mtn., Headford
	24. Gap of Dunloe
	25-27. Pyrenees
	28, 29. Derbyshire

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Synonyms are printed in italics. Varieties are marked thus—(var.)

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MAP OF KERRY

showing the
BOTANICAL DIVISIONS

English Miles
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Roadways Roads Canals

Baronies thus VERAGH