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THE POET GRAY AS A NATURALIST

THE POET GRAY
AS A NATURALIST

WITH SELECTIONS FROM HIS NOTES ON
THE SYSTEMA NATURÆ OF LINNÆUS AND
FACSIMILES OF SOME OF HIS DRAWINGS

By CHARLES ELIOT NORTON

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THE POET GRAY

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"THE unique distinction may be claimed for Gray," says Mr. Lowell in his delightful essay on the poet, "that he is the English poet who has written less and pleased more than any other." The slenderness of his poetic product, and several expressions in his letters concerning his indolence and his ennui from want of occupation have tended to create an impression of him as an intellectual idler and voluptuary whose idea of "paradisaical pleasures" was to read eternal new romances of Marivaux and Crébillon, and whose sovereign anodyne was *Fastidium*. There could hardly be a more mistaken impression. It is true that he wrote no poetry of consequence after he was forty years old. The stream of his inspiration, which up to that time had been intermittent, but had occasionally gathered head enough to set in motion the wheel of expression, after this period ceased to flow in the channels of poetry.

He regretted his own sluggishness and indisposition to write; but the effort to overcome it was beyond his power. In 1758, when he was forty-two years old, he wrote to his friend Mason, "I cannot brag of my spirits, my situation, my employments, or my fertility; the days and the nights pass, and I am never nearer to anything but that one to which we are all tending;

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yet I love people that leave some traces of their journey behind them." And again in the same letter, "If I were to coin my whole mind into phrases, they would profit you nothing, nor fill a moderate page." Ten years later he wrote to Horace Walpole, who had urged him to compose more poetry, "Till four-score and ten, whenever the humour takes me, I will write, because I like it, and because I like myself better when I do so. If I do not write much, it is because I cannot." And to his friend Wharton he excused his unproductiveness, saying, "I by no means pretend to inspiration, but yet I affirm that the faculty in question is by no means voluntary. It is the result, I suppose, of a certain disposition of mind which does not depend on one's self, and which I have not felt this long time."

Thus, with no strong impulse or special motive for expression, with no professional occupation and no liking for general society, Gray resorted to books and to the study of nature, and found in them employment which suited his temperament, afforded to him the mild happiness which turned his occupations to pleasures, and soothed his conscience for allowing his rare genius to lie fallow. In a letter written in 1757 he says, "To be employed is to be happy;" but he adds, "This principle of mine (and I am convinced of its truth) has, as usual, no influence on my practice. I am alone and *ennuyé* to the last degree, yet do nothing." The words are not to be taken literally. Few men, free

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from the compulsion of necessity or of a profession, have employed themselves more steadily. There were not many fields of knowledge, with the exception of mathematics and the physical sciences, which he did not make his own. He read everything; and when his younger friend, the Reverend Norton Nicholls, expressed surprise at the extent of his reading, he said, "Why should you be surprised, for I do nothing else?" In reality Gray did much more than merely read; his "nothing else" took no account of the extraordinary range of copious and elaborate annotations which he made on the margins of his books, and in which the extent and thoroughness of his learning and the variety of his intellectual interests were abundantly displayed. Nor did it take account of his constant and careful observations of nature, and his exact records of them. He kept minute diaries, in which he entered daily notes on the weather, and recorded the opening of the flowers, the ripening of the harvests, the changes in the vegetation of the different seasons, the coming and departure of the birds, together with many miscellaneous remarks on the objects and aspects of nature.

We have no full description of his rooms in Pembroke College, but from scattered sentences in his letters it is plain that they had a pleasant air, and gave evidence in their arrangements and furnishings of his many accomplishments and fastidious taste. He was fond of music, and well acquainted with its

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history and with the works of the great masters. There was a harpsichord in his study, and later a forte-piano, on which he often played. He was a skilful draughtsman with pen and pencil, and many portfolios of drawings and of engravings and musical scores lay about the room, or upon the shelves of his book-cases, wherever the crowd of books, of which he had a large and excellent collection, left space for them.

The ancient classics were his intimates; his knowledge of early English literature was beyond that of any of his contemporaries, with perhaps the exception of Warton, the historian of English poetry; and his familiarity with Shakespeare was that of a lover. He was master of Italian and of French, and was more or less acquainted with many other languages. His library represented the wide fields of his learning. As happens with every lover of books, the more he had the more he wanted, and "he had," writes the Reverend Mr. Cole, a familiar acquaintance of the poet in his later years, "not only a large collection in a room on the same floor with his chamber, but hired a room or two above his apartments which were completely filled with books." He adds, lighting up his description with a pleasant little gleam of the poet's character, "I have reason to mention this . . . for he was continually lending to me from his store."

In the windows of his room were boxes of flowers, which he tended with special care. "And so you have a garden of your

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own," he wrote to his friend Nicholls, "and you plant and transplant, and are dirty and amused; are you not ashamed of yourself? Why, I have no such things, you monster; nor ever shall be dirty or amused as long as I live! My gardens are in the window, like those of a lodger up three pair of stairs in Petticoat Lane or Camomile Street, and they go to bed regularly under the same roof that I do."

"The favorite study of Mr. Gray for the last ten years of his life," says Mason in his *Memoirs* of the poet, "was Natural History. . . . He followed it closely, and often said that he thought it a singular felicity to have engaged in it, as, besides the constant amusement it gave him in his chamber, it led him more frequently out into the fields, and, by making his life less sedentary, improved the general course of his health and spirits." Gray's letters afford abundant confirmation of Mason's words, but still stronger evidence of his devotion to the study of nature is found in the marginal notes with which he enriched the pages of his books. Mason speaks especially of his notes on Hudson's *Flora Anglica*, and on the *Systema Naturæ* of Linnæus, "which latter he interleaved and filled almost entirely." In a letter written after the poet's death, Mr. Cole says: "He had Linnæus's *Works* interleaved always before him, when I have accidentally called upon him."

Gray bequeathed to Mason his manuscripts and the better

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part of his books, among them this copy of the *Systema Naturæ*. At Mason's death, in 1797, they passed to Mr. Richard Stonhewer, one of Gray's oldest friends, and when he died they came into the possession of his executor, the Reverend Mr. Bright of Skeffington Hall, Leicestershire. When Mr. T. J. Mathias was preparing his edition of Gray's *Works*, which appeared in two quarto volumes in 1814, Mr. Bright placed at his disposal the mass of Gray's manuscripts, whether in independent note-books or on the margins of printed books, and from them Mr. Mathias selected the material which fills his second volume. Among his selections were specimens of Gray's annotations to the *Linnaeus*; but though they occupy twenty-five pages they represent only an inconsiderable part of the notes. Some thirty years later, in 1845, many of the books and manuscripts of Gray which Mr. Bright had possessed were sold at auction in London. Most of them were purchased by Mr. Penn of Stoke Pogis, who occupied the house called West End, which had belonged to Gray's uncle, Mr. Rogers, and in which Gray's mother had spent the last years of her life, and where she had died. Some years later Mr. Penn sold the manuscripts at auction, and apparently disposed of the mass of the books by private sale to a bookseller. At any rate some of the books got into the market, and were dispersed. The *Linnaeus* finally found its way into the hands of Mr. Ruskin. He kept it among his treasures for

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many years, and after his death it was given to me by his cousin and heir, Mrs. Arthur Severn.

Linnæus was the elder contemporary of Gray by nine years, and his life lasted for nearly seven years after the death of the poet. The first edition of his famous work was published in 1735, when he was but twenty-eight years old. It presented a comprehensive view of the three realms of nature,—the animal, the vegetable and the mineral,—and in its admirable system and not less admirable definitions brought an order into the study of zoölogy and botany which had hitherto been lacking. It at once became the chief manual of students of Natural History, but the very stimulus and guidance it afforded led to such increase of knowledge that the work required frequent revision and enlargement, and in the tenth edition, published in 1758, Linnæus embodied the results of more than twenty years of investigation and reflection. This was the edition which Gray used and annotated to such extent that his additions and illustrations are found on almost every page of the two volumes which treat of animals and plants, and if printed would form a volume at least equal in size to one of the original.

The work which these volumes exhibit is so remarkable a monument of Gray's learning and industry, and throws so much light on his occupations and interests, especially during the last ten years of his life, that some knowledge of it seems essential, not

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only to the understanding of the course of his days, but even more to a just appreciation of his character and his acquisitions.

The first volume of the *Systema Naturæ*, treating of the Animal Kingdom, has eight hundred and twenty-four pages; the second, treating of Plants, contains five hundred and sixty-six. Gray had both volumes interleaved, thus doubling their size. He divided the first into two parts, one comprising the portion dealing with Mammalia, Birds, Amphibia and Fishes, the other the portion treating of Insects and Vermes. This first part of the first volume is of three hundred and thirty-eight printed pages, so that interleaved it consists of six hundred and seventy-six pages in all, of which six hundred and twenty-two contain notes by Gray; of the fifty-four which have no notes, twenty-eight are of the general introduction, six are occupied with the lists of genera and species, while eleven only belong to the descriptive text, and most of these are in the section of *Pisces*. The notes vary greatly in character and in extent,—some consist of mere marks of reference, but most of them are of considerable length, often occupying a large part or even the whole of a page. Their main object was to add information, gathered chiefly from books but largely also from his own observation, to the brief scientific descriptions of Linnæus. Some of the notes are in English, but most of them are in Latin, with numerous citations in French or Italian. Gray wrote Latin with ease, and with mastery of a large

Pardus mas, *Panthera femina*. *Alp. Egypt.* 237. t. 15. f. 2.
Pardalis. *Raj. quadr.* 166.
Tigris mexicana. *Hern. mex.* 498. t. 498.
Pinus Dattypus. *Nieremb. nat.* 153. t. 153.
Habitat in Indiis.

Onca. 4. F. cauda elongata, corpore flavesciente maculis nigris
Brasili: jaguara, rotundato angulatis medio flavis. 2 ft. 9 inches long.
Porte: Onça. Pardus f. Lynx brasiliensis. Raf. quadr. 168. tail 1st
Eur.: Tigre d'Inde; Jaguarat. Mearns. bras. 235. weight 55 lb. 12 oz. fur was
Siberia, Chat-tigra. Habits in America meridionali another was 4 ft long.
Mexico: Jaguarat. ~~Habits in America meridionali~~

Pardalis. 5. F. cauda elongata, corpore maculis superioribus virga-
The Catamountain tis; inferioribus orbiculatis. Syst. nat. 4. n. 4.
Gallie's Le Chat-pard. Cato-Pardus mexicanus. *Hern. mex.* 512. t. 512.
mexic.; Tacod; clet. Catus Pardus f. Catus americanorum. *Raj. quadr.* 169.
Halchamqui-scaloth. Habitat in America. 3 feet 4 inches long *incl. tail* 52
 Magnitudo Mellis supra fuscus, subtus albicans; Lineae
 pandaeque nigrae per totum corpus longitudinaliter sparsae,
 sed pedes & abdomen tantum pandae; Latere li-
 ceis lateribus albis & fuscis pinguntur. Aures breves,
 margine bifide absque penicillis. Pedes 5-4. Cauda
 verticillata variegata proportionem Cati. Mystaces 4
 ordinum: in pinguo ordine setae 3. f. 5, albae basi nigrae,
 longitudine capitis.

Γ. Αἴλουρος.*

Catus.

The Cat.
Gall.: Le Chat.
It.: Gatto.
Ger.: Katz.
Hisp.: Gate.
Ital.: Gatta.
Mungl.: Emg-my.
Welsh: Cacen.
Pers.: Koc.
Rus.: Kot.

6. F. cauda elongata, corpore fasciis nigricantibus; dorsifalibus longitudinalibus tribus; lateralibus spirabilibus. Felis cauda elongata, auribus æqualibus. Faun. succ. 3. Syst. nat. 4. n. 6. Felis vulgo Catus. Gefn. quadr. 98. Aldr. quadr. 565. Raj. quadr. 93. Felis. Aldr. dig. 564. Zonst. quadr. 180. t. 72.. Habitat in Europæ australis sylvis. Moribus congeneram, tranquillâ, ore molat, caudam erigens, erectius ciliisque secudit, inata transit alba

8. *F. caudâ mediocri, colore cervino simpliciter pilis* 7. F.
auricularibus brevibus, ventre albedo; auriculis rotis nigris.
The Pers: acutis, longioribus, apice hastatis; cinnubus lon-
gioribus. - gis, validis; corvone gracili. (an Linx?) femina.
Arab:) *Kabitat in Africa, India. Vocalis, veniens apertus,*
-el-Khattak. saltu. agilissimus, ardore scandit, nunciam-
(Turk.) Kara. bibit. 2 ♂ 2 inches $\frac{1}{2}$ long, tail 10 inches $\frac{1}{2}$
-coolak.
(?) Carac.
Quide diction.
Chot de Syrie.

4. Familiaris sociat in greges, hominesq. incautos aut dormientes: ventu-
pleno parum animosius carum mituit (Buffon. V:9.) piscem edit. noctu-
ejulat caris instar familiaris (Maregr. lici.)

5. Famina (ut videtur) hic descripta. Mas paulo major, pulchrior, supra rufes-
cens, subcus aspidus, fasciis dorso lateribus longis, interruptis, castaceis, nigris
punctatis, marginatis. pectus, abdomen, pedes, punctis frequentibus,
nigris. fascia per rachem ducta nigra. cauda maculis grandibus nigris.
plumum acatis annum vix accepit. carna cruda vescitur, coctam respu-
it: sanguinem animalium viventium avidè sugit. famina, donec mas ea:
tietur, nihil gustat: gemellos plerumq. parit, animal non mansuescit,
ferox, cinidum carum: greges praeclat, arbores scandit. hic quoque Chat
-Sige a Gallis vocatur. (Buffon. 13, 239)

6. Ferus domesticus major, griseus (ruffo admixto), fasciis nigris, caudâ majora,
pedum callo, naribus nigricantibus. in Helvetiâ aliquando in cibum
varit, ubi in sylvis frequens: apud nos etiam (sed rarior) inveni-
tur. Maracaia (Brasiliensum), Toca-maxillaton Mexicanorum, parum aut,
nihil variant (vide Buffon. 13. 276) Pichon Galis Americanis dicitur. in locis
non infrequens, apud nos rarior.

Domesticus, parum oculis, subdolis, sanguinarius, domino dorsum, latera.
caput, afficere amat. junior mire visibus deditus & joris, adultus tran-
quillior. bis quotannis famina. (vare scilicet & autumnus) & aliquando se-
pius, marem ejulando appellat, mordet, & ad venerem quasi compellit:
his 55, uterum gerit, pullos circa 6 parit, quos Mas saepe devorat, ali-
quando & ipsa mater. mammae 8, penis brevis glande conica retrorsum
aculeata, dentes 30 potius ad lacerandum, quam ad roendum aut mas-
ticandum parati. colore variat, totus niger; totus albus; cinereus ma-
culis fasciis nigris; rufus maculis magis saturate rufis; bicolor albo-nigro,
tricolor, albo, nigro, rufoque varius; &c. &c. tres autem aliae principales van-
itates.

1. Cinereo-casulescens maculis nullis, pilis sericeis, spicosis.
2. Pilis longis, undulatis, dependenticibus.
3. Auriculis pendulis, pilis longis. (Buffon. V:6)

8. Vide (Philos. Transact. 1760. p. 628. 2^a Parsons) Tab. 14. the figure is very bad.
there were two of them in the Tower this year, a female (here described)
which was tame; & a Male, which had some black marks about the face,
seem'd to have a deeper fur, & was wild. I. leopores, aves, &c. praeclat
sanguinem avidè sugit. leonis ductor creditur, cujus reliquias co-
medit. arbores scandit. canes ipso majores dilaniat (Buffon) V:9;
& V:12. Pennsylv. quad. p. 189. t. 19. f. 2.

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vocabulary; his style in the notes is concise, and occasionally in the description of an animal or a plant there are striking felicity and vigour in his expression. Gray's handwriting is exquisite; it is small and fine but always distinct, with ten to twelve words in an average line, with few erasures or insertions, and scarcely ever with a blot. A facsimile of one of the printed pages and of its opposite interleaved page will serve better than any description to give a correct image of his work.

In his descriptions of animals Linnæus frequently gives beside the Latin name its synonym in various languages, but on the margins of the text Gray adds greatly to the number of the synonyms, often citing from remote and little known tongues. Thus names occur from the following languages: English, Welsh, Erse, French, German, Italian, Spanish, Portuguese, Dutch, Swedish, Danish, Norwegian, Russian, Polish, Ancient and Modern Greek, Hebrew, Arabic, Persian, Mexican, Brazilian, Peruvian, and these are far from exhausting the list.

The citations from works on Natural History, books of Travel, Transactions of learned Societies, which abound in his notes, and the still more numerous references to them, show the wide range of Gray's reading. The list of books quoted or referred to runs up to not far from one hundred distinct titles, many of them of works in numerous volumes. Beside general works on Natural History, and the Transactions of learned Societies they

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include many special treatises and many narratives of travel. From Aristotle to Pliny, from Pliny to Buffon, Gray has gleaned the whole field.

The second part of the first volume of the *Systema* has four hundred and eighty-five pages of text, or nine hundred and seventy of text and interleaving, of which less than twenty are without a note or some mark of reference, while most of them contain more than one note, often of great length. The fly-leaves at the beginning are occupied with a vocabulary, *Termini Artis*, and a list of Latin terms of colour with their English equivalents. The notes on Insects are frequently of special interest from the evidence they afford of personal observation, and from their full and minute descriptions drawn from direct study of the living creatures. These descriptions in many cases enter into greater detail than those given by Linnæus, and furnish proof of Gray's excellence as a descriptive naturalist. It appears from them that he had a collection of insects, and was on the watch for specimens wherever he might be. Such entries are frequent as "*specimen nostrum*;" "*noster, sub fine mensis Junii in solidagine captus*;" "*ad Hartlepool in arenâ maris sub saxo inveni*;" "*mense Junio cepi in pratis juxta Marylebone*;" "*in pratis Chelseianis prope Thamesin mense Maio cepi*;" "*cepi in Hyde Park sub fine mensis Maii*."

An almost complete record of the places where Gray stayed

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and of his journeys in England and Scotland during the last ten years of his life might be made up from these entries. Thus in 1759 and 1760 he was living in London, where, as he says in a letter to his friend Dr. Wharton (September, 1759), "I do not see much myself of the face of nature here, but I inquire;" but, as the passages just cited show, he was catching insects in the fields of Marylebone and of Chelsea, and in Hyde Park, and there are not a few entries of "*prope Londinum cepi*" or "*repertus est.*" Similar entries show him to have been in Kent, in Suffolk, in Hampshire, in Cornwall, in Yorkshire and Lancashire, and in Durham at Hartlepool on the coast. The dates of his visits to these different regions may be gathered from his letters; and while one might learn from the letters that he was a keen and constant observer of nature, the reader would not gain from them even a faint conception of his devotion to the study of natural objects and his extraordinary proficiency as a naturalist. He did not claim the interest of his friends in pursuits for which they might have little inclination or sympathy, and so far as appears he kept up no relations with other students in the same field.

The third volume of Gray's copy (the second of the *Systema*) is devoted to Plants, and has eleven hundred and twenty-two pages of text and interleaving. The notes are not less numerous, but they are for the most part briefer than in the preceding volumes. He was an accomplished botanist, and his notes are

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excellent in their succinct statement of distinctive characteristics, and in the variety of information conveyed in them. They are, almost without exception, confined to fact, but now and then there is a sentence in them which reveals the poet. For instance, his note on the Gentianella is: "*Planta humilis, flos amplius limbo fulgentissime cæruleo, quo nihil in herbis pulchrius.*" On Coffea he writes: "*Una e tribus istis mysteriosis plantis, quas vel misericors vel iratus Deus orbi proposuit. Witsenii curâ ex Arabiâ Felici semen in Javam delatum est: nunc in Americâ colitur et frugem copiose profert. Arbuscula est rectissima, 12 pedes alta, flore albo odoratissimo, fructu rubro (H: Cliff:).* Pasqua, a Greek, servant to Mr. Edwards, a Smyrna merchant, set up the first Coffee-House in London about 1652 in St. Michael's Cornhill Churchyard." The entry opposite Nicotiana is: "*Opere Joh. Nicotii, legati apud Lusitanos, Gallis primum innotuit anno 1560. Herba nunc per orbem adorata, licet venenata.*"

In addition to the notes with which these volumes are crowded, and even of more interest, as an illustration of Gray's gifts and accomplishments, are a multitude of pen-and-ink drawings of birds, of insects and of mollusks and testacea. These drawings, as may be seen from the facsimiles contained in this volume, are the work not only of a good observer, but also of a skilful draughtsman. In the spirit with which the characteristic features

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and expression of the animals represented are rendered, and in the vigour and refinement of touch, many of these drawings are hardly to be surpassed, and their number is such as to show that they must have been executed with ease. Thus, in the first part of the first volume there are twenty-four representations of the heads of birds, and in the second part of the same volume there are no less than one hundred and seventy-two drawings of insects or of parts of them, and twenty-eight of mollusks and testacea. Many of the drawings of the parts of insects are enlarged, and they are noted as "*microscopio auctum*" or "*lente visum*," or with words to like effect.

In a letter to his old friend Dr. Wharton, in 1760, not far from the time when he was beginning his work on this copy of the *Systema Naturæ*, Gray wrote: "To find one's self business, I am persuaded, is the great art of life: . . . some spirit, something of genius (more than common) is required to teach a man to employ himself." The *Linnæus* shows that his genius was sufficient for this task. "Perhaps," said one of his old friends, shortly after his death,— "perhaps he was the most learned man in Europe. . . . But he was also a good man, a well-bred man, a man of virtue and humanity." That remarkable Swiss youth, Bonstetten, who by his many gifts and graces won the heart of Gray in the year before the poet's death, in a charming letter from Cambridge to their common friend, the Reverend Norton

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Nicholls, tells in simple, imperfect English of his life there and of Gray's kindness to him. "After breakfast," he says, "appear Shakespeare and old Lineus [*sic*] struggling together as two ghosts would do for a damned soul. Sometimes the one gets the better, sometimes the other."

Thus employed with Shakespeare and Linnæus, content with either, student and lover of both, and of all that both represent, we have our last glimpse of the solitary student of nature and of books, "perhaps the most learned man in Europe," and the author of the poem which, says Mr. John Morley, "has for nearly a century and a half given to greater multitudes of men more of the exquisite pleasure of poetry than any other single piece in all the glorious treasury of English verse."

On one of the first pages of the second part of the first volume of the *Systema Naturæ*, Gray has written the following words of Aristotle. They indicate the deeper thought which animated his studies of nature.

Διὸ δὲ μὴ δυσχεραίνειν παιδικῶς τὴν περὶ τῶν ἀτιμοτέρων ζώων ἐπίσκεψιν·
ἐν πᾶσι γὰρ τοῖς φυσικοῖς θανμαστόν τι ἔνεστι. *Aristot. De partib. Animal.*

Κελένω δ'ὕμᾱς εἰσιέναι θαρροῦντας· εἴσι γὰρ καὶ ἐνταῦθα θεοὶ. (*Id. ibid.*)

"Wherefore one ought not to feel a childish dislike at inspecting the lowest animals, for in every object of nature dwells something marvellous."

"I command you to enter with confidence, for even here are gods."

SELECTIONS
FROM THE NOTES OF GRAY IN HIS COPY OF
THE SYSTEMA NATURÆ OF LINNÆUS
WITH FACSIMILES OF SOME OF THE PAGES

SELECTIONS
FROM THE NOTES OF GRAY IN HIS COPY
OF THE SYSTEMA NATURÆ

THE following selections have been made with the object of showing the general character and the great variety of Gray's notes, while the facsimiles illustrate the excellence of his drawings, and exhibit the aspect of the pages. But the mass of his work cannot be shown, and yet it is the mass which alone can convey a true impression of his diligence, of the range of his reading, of the constancy and accuracy of his observation, and of his skill as a descriptive naturalist. He does not appear to have intended to contribute to the advance of knowledge; his work was undertaken for its own sake, and it remains as the chief monument of the occupations of his later years.¹

¹*In printing these selections the text has been closely followed, except occasionally in its punctuation, and except also in a peculiarity of Gray's writing, that of frequently beginning a sentence without a capital.*

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VOLUME I. PART 1.

MAMMALIA, AVES, AMPHIBIA, PISCES

· ·

MAMMALIA

ELEPHAS MAXIMUS

The Elephant

IN Africâ occidentali frequens, sed minor; in Orientali, Asiâ meridionali, insulisq Indicis maximus. Naturâ gregarius, nec ferox nisi lacessitus. Annos vivit circiter 200. . . . Captivi non generant. Colore variat cinereo, nigricante, vel rufo, vel (quod rarum est) albescente. Pondus 4000 lb. facile portat. Animal generosum, superbum, sagacissimum, gratum, fidele. Elephas optimus (in Indiâ) pretio sæpe 1500.£ monetæ Anglicæ venditur. Oryzæ lb. 100 cum saccharo nigro & pipere quotidie comedit; vinum amat, spiritusq ardentis; herbas, folia, floresq odoratos accurate seligit, insecta decutit. Aquam, pulveremq super corpus suum spargit, munditiæ studiosus. Optime natat, proboscide erectâ. Porci vocem etiam, ignemq horret. Iter 20 leucarum singulis diebus facit, & si opus est, etiam 35. In Europâ (etiam maxime Australi) non diu vivit. Elephantiasi laborat. Cilia in utrâque palpebrâ dura, longa; setæ quoque in apice caudæ: pili corporis rari, breves. Horum ossa dentesq in Siberiâ, Russiâ, Germaniâ, &c: etiam in Americâ, sub terrâ inveniuntur. [p. 33.]

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VULPES

The Fox, or Tod

MURES etiam, reptilia, insecta, pisces, fructus, (præsertim uvas) erinaceos, apum favos, ova avium, &c. devorat. Hyeme coit, Aprili mense 3 ad 6 catulos parit, qui fere biennes generant. Annos circ. 14 vivit. Hyeme varias edit voces, ululat, latrat, ejulat more pavonis; æstate tacet. Captus acriter mordet, animose pugnat, moriturus silet. Merulæ, picæ glandariæ, aviculæ, speculantur; strepitu denunciant; ut noctuam, persequuntur. Cum cane famil. non procreat. Catenâ vinctus gallinas illæsas juxta se sinit: nunquam perfecte mansuescit; tandem, libertatis desiderio, contabescit. Caro autumnò esculenta, cum avarum pastu pinguescit (*Buffon*, v. 7). Melem ex antro sæpe expellit, ut ipse habitet (*ibid.*). [p. 40.]

FELIS CATUS

The Cat

DOMESTICUS parum docilis, subdolus, adulatorius; domino dorsum, latera, caput, affricare amat. Junior mire lusibus deditus et jocus; adultus tranquillior. Bis quotannis fœmina (vere scilicet et autumnò) et aliquando sæpius, marem ejulando appellat, mordet, et ad venerem quasi compellit; dies 55 uterum gerit; pullos circ. 6 parit, quos mas sæpe devorat, aliquando et ipsa mater. Mammæ 8. Penis brevis, glande conicâ retrorsum acu-

THE POET GRAY

leatâ. Dentes 30 potius ad lacerandum, quam ad rodendum aut masticandum parati. Colore variat: totus niger; totus albus; cinereus maculis fasciisq nigris; rufus maculis magis saturate rufis; bicolor albo-niger; tricolor, albo, nigro, rufoq. varius: &c. &c.. Tres autem aliæ principales varietates:

Melitensis 1. Cinereo-cærulescens maculis nullis, pilis sericeis, spissis.

Ancyranus 2. Pilis longis, undulatis, dependentibus.

Sinensis 3. Auriculis pendulis, pilis longis (*Buffon*, v. 6).

[p. 42.]

MUSTELA ICHNEUMON

The Pharaoh's Rat, or Mungo

β. MUSTELA glauca. Port. *Muncos*. Belg. *Rottevanger*. Malab. *Quirpelè*. Bengal. *Sunsa*. Javan. *Gagarangan*. Maxime agilis, & velox, sæpe erecta incedit, pedibusq anterioribus, ut sciurus, utitur, quos, cum nihil agit, pectori imponit, innocentiam simulans; capite nunquam quiescit, omnia observans. Facile mansuescit, & cum homine, ut catus, ludit. Vegetabilia respuit. Stercus fætidissimum. Si canis accedit, sclopeti fragore stridet. Conglobata dormit (*Rumph.*). Corpus postice in caudam attenuata, ut in laceratis; oculi ignei. Rostrum acutiusculum. Ægyptia Indicâ duplo major, apice caudæ subfloccosâ: cætera similis (*Edw.*). Extrema pedum nigra (*Buffon*, v. 13, p. 150).

[p. 43.]

AS A NATURALIST

MUS GERMANICUS

The Hanover Rat

CAUDÂ elongatâ subnudâ, dorso & fronte gibbis, supra cinereo-rufescens, infra albidus. 9 inches $\frac{1}{4}$ long, tail $7\frac{1}{2}$. weigh'd 13 oz. 5 Dr. $\frac{1}{2}$. Circ. ann. 1728 paucis abhinc annis in Angliâ notus. M. Ratto major, robustior, ferocior, quem fere hospes in exilium pepulit. Antra in ripis excavat, optime natans, horrea, domosq infestat, cuniculorum, gallinarum, &c. pullos enecat, acerrime mordet, cum cato fortiter dimicat, quem aliquando in fugam vertit, canum furonumq præda. Ter quotannis parit, unâ vice 12 ad 19 catellos (*Buffon*, v. 8). Origo incerta. In Norvegiâ ignotus. [p. 61.]

CAMELUS DROMEDARIUS

The Camel

IN Africâ a mari Mediterraneo ad Nigrum usque flumen, Asiâq totâ, quæ sub eâdem latitudine jacet, frequentissimus. Arabum divitiæ, quorum onera portat, quibusq lac pro potu, carnem pro cibo, pilos (ovinis molliores) pro veste & tentoriis suppeditat. Varietas est minor, levior, gracilior, quæ curâ atq assiduâ exercitatione instituitur, ut equos cursu vincat; iter quotidie faciat leucarum 40. . . . Tophum dorsi unicum, solitoq minorem gerit. Camelus cibi parcissimus plantis asperis, spinosis gaudet; sitim q. dierum tolerat; musicâ exhilaratur. . . . Onus portat 700 lb., aliquando & 1500. Equis assuescit. Ferus nusquam (quod scimus) reperitur. [p. 65.]

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AVES

LIST OF ALL THE BIRDS FOUND IN GREAT BRITAIN¹

*Those mark'd with * are scarce birds with us. Those with ** are extremely rare. Those with † are usually eaten.*

FALCONES

1. The Brown Ring-tail'd Eagle **	<i>Fulvus</i>
2. The Ringtail, or Hen-Harrier	<i>Pygargus</i>
3. The Kite	<i>Milvus</i>
4. The Falcon-Gentle **	<i>Gentilis</i>
5. The Blew-Hawk **	<i>Macrocnemus</i>
6. The Hobby	<i>Subbuteo</i>
7. The Buzzard	<i>Buteo</i>
8. The Kestrell	<i>Tinnunculus</i>
9. The Bald-Buzzard	<i>Haliaëtus</i>
10. The Honey-Buzzard	<i>Apivorus</i>
11. The Moor-Buzzard	<i>Æruginosus</i>
12. The Goshawk	<i>Palumbarius</i>
13. The Sparrow-Hawk	<i>Nisus</i>

STRIGES

14. The Horn-Owl **	<i>Otus</i>
15. The White-Owl	

[¹A list similar to this of the Birds precedes the other Classes of Animals in this part of the first volume.]

AS A NATURALIST

16. The Screech-Owl	<i>Stridula</i>
17. The Grey-Owl	<i>Ulu</i>

LANII

18. The Great Butcher-bird	<i>Excubitor</i>
19. The Flusher	<i>Collurio</i>
20. The Bohemia-Chatterer **	<i>Garrulus</i>

CORVI

21. The Raven	<i>Corax</i>
22. The Carrion-Crow	<i>Corona</i>
23. The Rook †	<i>Frugilegus</i>
24. The Royston-Crow	<i>Cornix</i>
25. The Jack-daw	<i>Monedula</i>
26. The Jay	<i>Glandarius</i>
27. The Magpie	<i>Pica</i>
28. The Rock-Ousel	<i>Infauftus</i>
29. The Cuckow (CUCULUS)	<i>Canorus</i>
30. The Wryneck (JYNN)	<i>Torquilla</i>

PICI

31. The Green Woodpecker	<i>Viridis</i>
32. The Greater Spotted Woodpecker	<i>Major</i>
33. The Lesser “ “	<i>Medius</i>
34. The Least “ “	<i>Minor</i>
35. The Nuthatch (SITTA)	<i>Europæa</i>
36. The Kings-fisher (ALCEDO)	<i>Ispida</i>

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UPUPÆ

37. The Hoopoe **	<i>Epops</i>
38. The Cornish-Crow	<i>Pyrrhocorax</i>
39. The Tree-Creeper (CERTHIA)	<i>Familiaris</i>

ANATÆS

40. The Wild-Swan	<i>Cygnus</i>
(a) The Swan †	
41. The Wild-Goose	<i>Anser</i>
(a) The Goose †	
42. The Wild Duck †	<i>Boschas</i>
(a) The Duck †	
43. The Bergander	<i>Tadorna</i>
44. The Swan-Goose †	<i>Cygnoides</i>
45. The Great Black-Duck	<i>Fusca</i>
46. The Scoter, or Black-Diver	<i>Nigra</i>
47. The Canada Goose	<i>Canadensis</i>
48. The Brent-Goose, or Barnacle †	<i>Bernicla</i>
49. The St. Cuthbert's Duck **	<i>Mollissima</i>
50. The Muscovy-Duck †	<i>Moschata</i>
51. The Shoveler †	<i>Clypeata</i>
52. The yellow-leg'd Shoveler	<i>Platyrhyncos</i>
53. The Gadwall, or Gray	<i>Strepera</i>
54. The Golden-Eye	<i>Clangula</i>
55. The Widgeon †	<i>Penelope</i>

AS A NATURALIST

56. The Sea-Pheasant, or Easterling †	<i>Caudacuta</i>
57. The Pochard, or Dun-bird †	<i>Farina</i>
58. The Teal †	<i>Crecca</i>
59. The Summer-Teal	<i>Circia</i>
60. The hook-bill'd Duck	<i>Adunca</i>
61. The tufted Duck	<i>Fuligula</i>

MERGI

62. The Gooseander, or Dun-diver	<i>Merganser</i>
63. The long-beak'd Duck	<i>Serrator</i>
64. The Smew, or Lough-diver	<i>Albellus</i>
65. The Weesel-Coot	<i>Minutus</i>

ALCÆ

66. The Razor-Bill	<i>Torda</i>
67. The Puffin †	<i>Arctica</i>
68. The Guillemot	<i>Lomvia</i>
69. The Puffinet, or Sea-Turtle	<i>Grylle</i>
70. The Greenland Dove	<i>Alle</i>

PELECANI

71. The Cormorant	<i>Carbo</i>
72. The Shag	<i>Maculosus</i> ?
73. The Soland Goose, or Gannet †	<i>Bassanus</i>

COLYMBI

74. The Ember-Goose **	<i>Arcticus</i>
75. The great crested Loon **	<i>Cristatus</i>

THE POET GRAY

76. The Didapper, or Dobchick *Auritus*

LARI

77. The Grey-Gull, or Tarrock *Tridactylus*

78. The Herring-Gull *Canus ?*

79. The great black and white Gull *Marinus ?*

80. The Coddly-moddy *Fuscus ?*

STERNÆ

81. The Sea-Swallow, or Tern *Hirundo*

82. The Brown Tern *Nigra*

ARDEÆ

83. The Crane *Grus*

84. The Heron *Cinerea*

85. The White Heron * *Alba*

86. The Bittern † *Stellaris*

SCOLOPACES

87. The Red-Shank † *Totanus*

88. The Curlew † *Arquata*

89. The Whimbrel *Phæopus*

90. The Woodcock † *Rusticola*

91. The Snipe † *Gallinago*

92. The Godwit, or Yarwhelp † *Ægocephala*

TRINGÆ

93. The Ruff † *Pugnax*

69. *Lari*
rostrum.

78.
Singa
Varadhi
caput (N° 2)

AS A NATURALIST

94. The Lapwing †	<i>Vanellus</i>
95. The Turnstone	<i>Interpres</i>
96. The Grey coot-footed Stint **	<i>Phalaropus</i>
97. The Sand-piper	<i>Hypoleucos</i>
98. The Knot †	<i>Canutus ?</i>
99. The Grey Plover †	<i>Squatarola</i>

CHARADRII

100. The Green Plover †	<i>Pluvialis</i>
101. The Sea-Lark	<i>Hiaticula</i>
102. The Dottrell †	<i>Morinellus</i>
103. The Stone-Curlew	<i>Oedicnemus</i>
104. The Shooping-Horn ** (RECURVIROSTRA)	<i>Avosetta</i>
105. The Sea-Pie (HÆMATOPUS)	<i>Ostralegus</i>

FULICÆ

106. The Coot †	<i>Atra</i>
107. The Moor-Hen †	<i>Chloropus</i>

RALLI

108. The Land-Rail * †	<i>Crex</i>
109. The Water-Rail †	<i>Aquaticus</i>

OTIDES

110. The Bustard †	<i>Tarda</i>
111. The Small Bustard ** †	<i>Tetrax</i>
112. The Peacock † (PAVO)	<i>Cristatus</i>
113. The Turkey † (MELEAGRIS)	<i>Gallopavo</i>

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PHASIANI

114. The Cock †	<i>Gallus</i>
115. The Guinea-Hen †	<i>Meleagris</i>
116. The Pheasant †	<i>Colchicus</i>

TETRAONES

117. The Heath-cock, or Black Game †	<i>Tetrix</i>
118. The Grouse, or Red-Game †	<i>Rubens</i>
119. The Partridge †	<i>Perdix</i>
120. The Quail †	<i>Coturnix</i>

COLUMBÆ

121. The Wood-Pigeon	<i>Oenas</i>
(a) The Pigeon †	
122. The Turtle-Dove * †	<i>Turtur</i>

ALAUDÆ

123. The Sky-Lark †	<i>Arvensis</i>
124. The Tit-Lark	<i>Pratensis</i>
125. The Wood-Lark	<i>Arborea</i>
126. The Pippit	<i>Campestris</i>
127. The Water-Ousel (STURNUS)	<i>Cinclus</i>

TURDI

128. The Missel-Thrush	<i>Viscivorus</i>
129. The Feldefare †	<i>Pilaris</i>
130. The Red-wing	<i>Iliacus</i>
131. The Song-Thrush †	<i>Musicus</i>

July: 144. The Starling. Sturnus.

Spinus: 145. The Aberdeen, or Liskin. *

Linaria: 146. The Linnet.

Cannab: 147. The Red-headed Linnet.

Dom: 148. The Sparrow.

Schan: 149. The Red-sparrow.

Mont: 150. The Mountain-sparrow. *

Card: 151. The Gold-finch.

Curr: 152. The Hedge-sparrow.

Luscin: 153. The Nightingale.

Hippol: 154. The Pettecharos.

Salic: 155. The Ledge-bird.

Sylvia: 156. The White-throat.

Alba: 157. The Wagtail.

Flava: 158. The Yellow Wagtail.

Rubetr: 159. The ~~Robin~~ Linnet.

Canagth: 160. The Wheat-eat.

Arvic: 161. The Black-cap.

Tharic: 162. The Red-start.

Rubec: 163. The Robin.

Froled: 164. The Wren.

Regulus: 165. The Copped Wren. *

Frochil: 166. The Green Wren.

Crist: 167. The Crested Titmouse.

Major: 168. The Great Titmouse.

Carul: 169. The Tom-tit.

Ater: 170. The Coal-mouse.

Palustr: 171. The Marsh Titmouse.

Caudat: 172. The Long-tail'd Titmouse.

Biarm: 173. The Beardmarica. *

Austic: 174. The Swallow.

Urbic: 175. The Marten.

Ripar: 176. The Sand-Marten. Hirundines.

Apus: 177. The Swift.

Eupop: 178. The Goatsucker. Caprimulgus.

Impanj: 179. The Gair-fowl, or Penguin. * * Alca.

Procellaria: 180. The Fulmar. Procellaria.

Gloss: 181. The Great Plover. * * Scolopax.

Pelecan: 182. The Petterilly. Procellaria.

Rubicola: 183. The Stone-Chat. Motacilla.

If these the Canada-Goose, Swan-Goose, Muscovy-Duck, Pea-
cock, Turkey, Guinea-Fowl, Pheasant, Cock & Hen, have been
undoubtedly imported into these our islands.

AS A NATURALIST

132. The Rose-Ousel **	<i>Roseus</i>
133. The Black-bird	<i>Merula</i>
134. The Ring-Ousel	<i>Torquatus</i>

LOXIE

135. The Cross-bill **	<i>Curvirostra</i>
136. The Gross-beak **	<i>Coccothraustes</i>
137. The Bull-finch	<i>Pyrrhula</i>
138. The Green-finch	<i>Chloris</i>

EMBERIZÆ

139. The Pied-Chaffinch **	<i>Nivalis</i>
140. The Bunting-Lark	<i>Calandra</i>
141. The Yellow-Hamber	<i>Citrinella</i>
142. The Chaffinch (FRINGILLÆ)	<i>Cælebs</i>
143. The Brambling (FRINGILLÆ)	<i>Montifringilla</i>
144. The Starling (STURNUS)	<i>Vulg.</i> ¹

FRINGILLÆ

145. The Aberduvine, or Siskin *	<i>Spinus</i>
146. The Linnet	<i>Linaria</i>
147. The Red-headed Linnet	<i>Cannab.</i>
148. The Sparrow †	<i>Dom.</i>
149. The Reed-Sparrow	<i>Schæn.</i>
150. The Mountain-Sparrow *	<i>Mont.</i>

[¹ The facsimile shows that the space on the page is so occupied with drawings that for lack of room many of the following names are abbreviated.]

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151. The Gold-finch *Card.*

MOTACILLE

152. The Hedge-Sparrow	<i>Curr.</i>
153. The Nightingale	<i>Luscin.</i>
154. The Pettychaps	<i>Hippol.</i>
155. The Sedge-bird	<i>Salic.</i>
156. The White-Throat	<i>Sylvia</i>
157. The Wagtail	<i>Alba</i>
158. The Yellow-Wagtail	<i>Flava</i>
159. The Whin-chat	<i>Rubetr.</i>
160. The Wheat-ear †	<i>Oenanth.</i>
161. The Black-cap	<i>Atric.</i>
162. The Red-start	<i>Phœnic.</i>
163. The Robin	<i>Rubec.</i>
164. The Wren	<i>Troglod.</i>
165. The Copped Wren *	<i>Regulus</i>
166. The Green Wren	<i>Trochil.</i>

PARI

167. The Crested Titmouse	<i>Crist.</i>
168. The Great Titmouse	<i>Major.</i>
169. The Tom-tit	<i>Cærul.</i>
170. The Coal-mouse	<i>Ater</i>
171. The Marsh Titmouse	<i>Palustr.</i>
172. The long-tail'd Titmouse	<i>Caudat.</i>

Names of Birds found in Ireland, as yet uncertain.

1. The Diver-Goose.
2. The Peeping-Goose. or *Anas Sadorna*?
3. The Coot. *crustata*, *caudalonga*, *anare minor*, *lanugine tecta*. or *Anas Platy*.
4. The Goldeneye. *Alca diademata*. *Alca Arctica*. (Martin, of the W. Isles. p. 227.)
5. The Kittiwake, a gull. *Larus Rissa*.
6. The Puffin.
7. The Sea-Cuckoo.
8. The Gull.
9. The Sea-Cock.
10. The Lark.
11. The Gull. or *Colymbus Gryllus*?
12. The Gadwall.
13. The Merganser.
14. The Coot.
15. The Merganser-cock.
16. The Gull.
17. The Gull.
18. The Rain-Goose.
19. The Bonin's Gull, Bishop, or Cornish.
20. The Gull, or Malin.
21. The Gull.
22. The Gull. *Larus Parasiticus*

Birds found at Harlepool, in the Bishoprick of Durham, as yet doubtful. 1755.

1. The Gull. *Larus Parasiticus*.
2. The Gull. or *Anas Bernicla*?
3. The Gull. *Sterna Hirundo*?
4. The Gull.
5. The Gull. *Larus* *lidibundus*.
6. The Gull. *Alca Forda*?
7. The Gull. *Fringa*.
8. The Gull. or *Fringa* *lincolniensis*?
9. The Gull. or *Alca*?
10. The Gull.
11. The Gull.
12. The Gull. *Fringa Alpina*.
13. The Gull. or *Alca*?
14. The Gull.
15. The Gull.

AS A NATURALIST

173. The Beardmanica *

Biarm.

HIRUNDINES

174. The Swallow

Rustic.

175. The Marten

Urbic.

176. The Sand-Marten

Ripar.

177. The Swift

Apus

178. The Goatsucker (CAPRIMULGUS)

Europ.

179. The Gair-fowl, or Penguin ** (ALCA)

Impenn.

180. The Fulmar * (PROCELLARIA)

Glacialis

181. The Great Plover ** † (SCOLOPAX)

Glottis

182. The Peterill * (PROCELLARIA)

Pelagica

183. The Stone-chat (MOTACILLA)

Rubicola

Of these the Canada-Goose, Swan-Goose, Muscovy-Duck, Peacock, Turkey, Guinea-Fowl, Pheasant, Cock & Hen, have been undoubtedly imported into these our islands.

NAMES OF BIRDS FOUND IN SCOTLAND

(AS YET UNCERTAIN)

1. The Dunter-Goose

2. The Skeeling-Goose, or Anas Tadorna ?

3. The Colk, cristata, cauda longa, ansere minor, lanugine tecta:
an Anas Mollissima ?

4. The Albanock. Alca Arctica (Martin, of the W. Isles, p. 227).

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5. The Kittiwake, a Gull. *Larus Rissa*.
6. The Pickerel
7. The Sea-Coulter
8. The Taster
9. The Sea-Cock
10. The Lyre
11. The Tyst, *an* *Colymbus Grylle* ?
12. The Badoch
13. The Smlefanger
14. The Cockandy
15. The Thrissel-cock
16. The Gare
17. The Gawlin
18. The Rain-Goose
19. The Bonnivochil, Bishop, or Carrard
20. The Goylir, or Malifigy
21. The Sereachan-aittin.
22. The Faskidar. *Larus Parasiticus*

BIRDS FOUND AT HARTLEPOOL IN THE BISHOPRICK OF DURHAM

(AS YET DOUBTFUL—1765)

1. The Teazer. *Larus Parasiticus*
2. The Rot-Goose, *an* *Anas Bernicla* ?

AS A NATURALIST

3. The Terum. Sterna *Hirundo*
4. The Little Pet
5. The Black-headed Gull. Larus *Ridibundus*
6. The Willock. Alca *Torda*
7. The Brocket. Tringa
8. The Grey Stint, an Tringa *Cinclus* ?
9. The Black “
10. The White “
11. The Rae
12. The Dunling. Tringa *Alpina*
13. The French (or White) Linnet, an Embariza *Nivalis* ?
14. The Gold-Spink
15. The Curlew-Hilp

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FALCO CHRYSÆTOS

The True, or Royal Eagle

IN rupibus præruptis nidus: ova 4 (*Faun. Suec.*). Voce querulâ, acutâ, clangit, ferociâ summâ (*Aldrov.*). Cadaveribus etiam pridem emortuis vescitur (*Kramer*). In Hiberniæ montibus, in Snowdon & in Cheviot, sed rarius, nidificat (*Pennant, & Wallis*) ad Warkworth in Northumbriâ. [p. 88.]

FALCO MILVUS

The Kite, or Glede

ALIS expansis in ære se librat, nunc immobilis, nunc fluxu quodam in gyris natans, prædæ intentus. In Angliâ omni anni tempore conspicitur, avibus domesticis insidians, audax & molestus. Pedes flavi (*Brisson, v. 1, p. 415*). Iris flava. Magnitudo Galli majoris. Alæ subtus albescent (*Kramer*) qui tres alias species (aut varietates) describit, p. 326. In Scotiâ dicitur *the Fish-tail'd Gled*.

[p. 89.]

UPUPA CRISTATA

The Hoopoe, or Hoop

IN Northumbriâ interdum, sed rarius, & in agro Surreiano & Cornubiâ visa. Sono proprium nomen exprimit; Sæcis rusticis belli omen. Ova in cavis arboribus duo cinerea ponit (*Linn. F. Suec.*) crista duplex, plicatilis, testacea, apicibus nigris (*Brisson, v. 2, p. 456*). Victitat insectis (*Kramer*). In Scotiâ etiam & Or-

Adia (ex Brissonis, 4. 537) *M.* dorsa ferruginea; subtus, capiteq. & collo flavescentibus, fascia per oculos, remigibusq. nigris apice rubris, rectricibus flavis apice viridibus. Habitat in Europa australi. . pedes flavi. . *Catalanis Formique*, *Polonis Solna-Szara*. *Uropygium viride-luteum*. (~~*Uropygium*~~) *M.* *congener* (Linn. S. P. cl. 12. 12. 3. 1).

1. In Creta nusquam non conspicitur in aere hirundinum more-gregationi in praedam suam intentus; voce clara, sibilata. Romae saepe in foro venalis] fascia genarum nigra: gula lutea: remiges-rectricesq. viridi-caeruleae. iris oculorum rubra, rostrum nigrum. (Brisson, 4. 534) pedes rufo-fusci. ova in caverna profundo excavata 4 vel 5 alba ponit, ubi nidum a musco conficit. (Kraus) in Russia etiam trans Volgam gregatione victitat. (Del. Angl. 1767)
2. Fascia per oculos, tubulaz pectoralis nigra. rectrices intermedia longiora, angustae, apice fuscae. (Edw.)

3. Rostrum viridi-nitens: caput cinereum.

Uropygia Epops, N° 1.
rostrum.

1. In Northumbria interdum, sed rarius, & in agro Lurraciano, ^{& Cornubia} visa } sono pro: prium nomen exprimit; Suecis rusticis belli omen. ova in cavis arboribus duo cinerea ponit (Linn. S. Suec.) crista duplex, plicatilis, testacea, apicibus nigris. (Brisson, V. 2. p. 456) victitat insectis. (Kraus) in Scotia etiam & in Islandia vivit et subsistit; in insula etiam Ceylone. vivit migratoria. (Sav. 1811)

AS A NATURALIST

cadibus visa est (*Sibbald*). In insulâ etiam Zeylonâ avis migratoria (*Edw. l.c.*). [p. 117.]

ANAS TADORNA

The Sheldrake, or Burrow-Duck, or Bergander

WELL known in Kent, Lancashire, Wales, etc. Caro non admodum sapida aut delicata, quamvis in ventriculo nec pisces neque ossa piscium invenerim (*Willughby, p. 278*) plumæ mollissimæ, ut in No. 12. Mas carunculam gibbam habet ad basin rostri; caput & collum superius nigro-sericea, fasciam per abdomen ductam nigram. In cuniculorum foraminibus nidificat (*Will.*). Litora etiam Northumbriæ, Farnamq insulam habitat (*Wallis*). Marem (primi anni avem) Cantabrigiæ descripsi, die 3 Martii. Caput antice compressum, vertice depresso totum nigro-nitens. Collum, alarum tectrices, corpus, femora, nivea; pectus, dorsum antice, crissumq ferruginea; fascia in dorso utrinq, & per totum abdomen a sterno ad crissum usq nigra. Remiges 1 ad 10 subacutæ, nigre; 11-23 (quæ speculum formant) extus viridi-nitentes basi atq apice nigre; intus albæ, apicem versus oblique nigre; 22-24 extus ferrugineæ & prope rachin nigre, intus albæ; 25 alba, margine exteriori nigro; cæteræ albæ. Cauda rotundata alba, retractoribus 16 (1 exceptâ) apice nigris. Rostrum sinum coccineum, ungue apicis naribusq nigris. Pedes pallide incarnati, unguibus nigris. [p. 122.]

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ANAS GLAUCION

The Lesser Red-headed Duck

MARIS caput sordide nigrum, maculâ alarum albâ. Fœminæ caput sordide fuscum, loco maculæ alaris pennæ 5 distinctæ albæ; collare album (*F. Succ.*). Avis Cantabrigiæ in foro venalis mense Februario mihi allata est, *Pockerill* vel *Pocker* ibi dicta. Caput colore murino; collum & latera albida; dorsum & cauda rotundata e cano nigricant. Remiges 1–10 nigricantes, intus canæ: 11–14 apice interiore albæ: 15–21 totæ fere albæ. Caudæ tectrices subtus albæ. Abdomen album circa anum cinerascens. Rostrum plumbeum lateribus & subtus nigrum. Pedes lutescentes membranâ nigrâ palmati. Caro nigra, dura, piscosa. Irides flavæ. Parum cum Glaucio, *Will.* No. 12, convenit, multo melius cum fœminâ *A. Clangulæ*, *p.* 369. [*p.* 126.]

MELEAGRIS GALLOPAVO

The Turkey

CARO lautissima, candidissima. Mas inflatus, capite præ irâ rubicundo, gressu lento & ridicule superbo circa fœminarum pullo- rumq cohortem vigilat; canes, homines etiam (præsertim si terga vertant, aut veste rubrâ utantur) rostro, unguibus, alis adoritur, quamvis innoxius & imbecillus. Vox tumultuosa, cum fragore effusa. Principio sæculi 16i, ut avis mira & peregrina a P. Gillio & Longolio apud Gesner. describitur; nunc ubiq in Europâ com-

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munis in villarum cortibus (it was first brought into England in 1530). Fœmina carunculâ frontis brevior; caudâ nunquam erectâ, timidum animal, calcaribus carens, interdum pectore barbato (*Brisson, v. 1, p. 160*). Sylvestris pondere aliquando 60 lb., sæpe 40 lb. In vivariis Angliæ nunc propagatur; carne sapidissimâ, Phasianum æmulatur. [p. 156.]

ALAUDA ARBOREA

The Wood-Lark

GREGATIM volitando cantillat: cantus liquidus, varius, suavissimus, soli Lusciniæ cedens. Arboribus insidet, primo vere & per autumnum integrum præcipue canora. Plumas capitis subinde in cristam erigit. Inter frutices ad sylvarum margines nidificat.

[p. 166.]

LOXIA PYRRHULA

The Bullfinch

HORTIS invisâ, gemmis vescitur; voce simplici, sibilâ, clarâ. Musicas modulationes addiscit miro ingenio & docilitate, quas recitat fistulæ tonos imitata. Facile cicuratur. Ova 5 parit in sepibus.

[p. 171.]

HIRUNDO URBICA

The Marten, or Martlet

PAULO antequam migrant, mane congregantur in tectis soli expositis. Pedes albâ lanâ vestiti. Nidus parieti adhærens, ostio

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lateralis, e luto. In terrâ male ambulat. Semper eâdem fere tempore redit, nullâ caloris ratione habitâ, & insecta nulla inveniens aliquando inediâ perit (*Mem. de l'Acad. des Sciences, 1740. Reaumur*). Cauda minus bifurca, quam in No. 1. Subtus albissima est, pedes quoq albidis (*Brisson, v. 2, p. 491*). In litore nostro australi (ad Southampton) festo S. Michaelis frequentes volitare vidi; die Octobr. 2do. omnes discesserant, tempestate tepidâ. [p. 192.]

Caprimulgus
 Europaei (N. 1)
 caput.

1. In Angliâ variis locis, præsertim montosis, invenitur, avis migratoria.
 in. Musis remigibus 2 & 3 macula magna alba, rectricum 1 & 2 apices
 albi, quibus femina caret (Linnæus:) caprarum udera noctu multum
 creantur. Turnerus noster ecce nare avem se lacte cum dicitur ad ges-
 sationem scribit. apud nos in dumetis manifestat.

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AMPHIBIA REPTILIA

LACERTA VULGARIS

The Newt, or Wall-Newt

SOLE occidente, Septembri exeunte, in gramine cepi Cantabrigiæ. Caput supra depressum, oculis prominentibus. Color livide flavesceus, fasciâ ad dorsum utrinque longitudinali fuscâ. Cutis (lente visa) scabriuscula apparet. In aquâ ope caudæ agitatæ celeriter natare potest, nec tamen libenter. [p. 206.]

AMPHIBIA NANTES

RAJA

The Ray, Skate, or Flaire

TESTULÆ illæ parallelogrammi oblongi figurâ, quarum longiora latera sandapilæ aut vehiculi manualis in modum utrinque extensa sunt, æstu marino ejectæ in arenosis frequentes littoribus, nihil aliud sunt quam ovorum testæ Raiarum, aliorumq piscium cartilagineorum: aperto Raiæ utero bina hujusmodi ova perfecte formata et partui proxima exemimus (*Willughby*, p. 76). These on the coast of Durham are call'd Sea-Purses, & in Cornwall Pizgee's (*i.e.*) Fairie's Purses. They are of a tough membranaceous substance more flexible than horn, but stiffer than leather: their colour is a dark reddish-brown, and shining (on the inside) like satten. [p. 231.]

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PISCES

MURÆNA ANGUILLA

The Eel

IN fluviis nostris, lacubus, piscinis fere omnibus frequentissimæ. . . . Our Ancestors divided them according to their size and price into Great-eels, Spitch-cock eels, Shaft-eels, Brewet-eels, Pimpering-eels, etc. tho' possibly this latter might be a fish of a different kind, for Gesner describing a species of Loach call'd in Germany *Beizker* or *Meerput*, adds, *Idem aut simillimus fuerit, qui a Flandris Pymper-ele nominatur: e Flandriâ in Angliam importari audio.* The smaller eels we now call *Grigs*. Nella città di Comacchio, la quale è circondata d'acqua salsa, si piglia gran quantità d'Anguille, che son le migliori di Lombardia, e si portano salate per tutta Italia (*B. Scappi. f. 136*). Ex Arno fl. anguillæ omnes Augusto mense ad mare descendunt, ut ibidem pariant; fætus autem a mari statis temporibus (a Febuario ad Aprilem) ad Pisas usque ascendunt (*Redi apud Raium, Synops. Pisc. p. 37*). They are also caught in the sea at Southampton in October, but greenish of colour, and yellow on the belly, and at Hartlepool in summer, tho' small, not varying at all in colour.

[*p. 245.*]

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MURENA CONGER

The Conger Eel

CONGRI mari refluxo capti in fossis et puteis litoralibus Cornubiæ eviscerantur, sole exsiccantur, et resolvuntur in pulverem, qui in Portugalliâ venditur et usurpatur vice farinæ avenacæ (*Robinson apud Willughby, append. pag. 27*). Hodie neque aulæ principes, neque ipsi cupedivoræ, congrum magni faciunt: soli Hispani, Romanæ urbis inquilini, eum in summo honore habere videntur (*P. Jovius, c. 30*).

Il Gongoro è assai buono quando si piglia nella sua stagione, laqual comincia da Decembre, e dura per tutto Marzo (*B. Cappi*). Dorsum lateraque cinerea; abdomen album; pinnæ cærulescentes margine nigricante. Linea later. subelevata, recta; sub eâ punctorum ordo albidorum. Tentacula 2 rostri brevissima, obtusa; labia crassa, pulposa; dentes serrati, minimi; iris oculi argentea; pin. pect. radiis circ. 13; membr. branch. 7 tantum. P. d. (caudali analiq unita) infinitis. In Southampton, Oct. 9. observavi (45 inches long, 10 round, weigh'd 6- $\frac{1}{4}$ lbs.) Vitæ tenax, ut anguilla; caro albissima, oculis grata, solida, sed insulsior, et aristis scatens innumeris. [p. 245.]

GADUS MORHUA

The Cod, Keling, or Melwell

Ex hepatibus asellorum majorum fit oleum, quod lucernis aliis-

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que usibus mechanicis inservit, præsertim in Islandiâ. Horum piscium ova saliuntur, condiuntur, et in usu sunt, vice Caveare et Botargo: Dani, Galli, et Batavi deferunt (Fr. *Resare, Rave, Rogues*) ab Islandiâ magnam quantitatem hujusmodi ovorum ad impascendas piscinas et lacus, et ad saginandos pisces fluviatiles. (*Dr. Robinson, ap. Willughby, append. pag. 27.*) Vesica Morhuæ natatoria, crassa, glutinosa, dorso annexa, quam *cod-sounds* dicimus, (Norw. *Sundemaver*) ob suavitatem saporis maxime expetitur. Huic pisci variis modis exsiccato aut salito innititur pars magna commercii nostri. Aere frigido Islandiæ et Norvegiæ exsiccatus, sine sale, *stock-fisch* vocatur, cum sale autem *klip-fisch*. Ubique in nostro oceano capitur, sed in Americano infinitâ copiâ circa insulam Newfoundland a Februarii mensis initio per æstatem integram: in Norvegiâ etiam copiosissimus, cum præcedente, sed æstate. [p. 252.]

CONUS SCORPIUS

The Father Lasher

PISCICULUM mihi ad Hartlepool allatum describo, quem C. Scorpium puto, licet colore variantem. Thoracicus erat. D: 9, 15. P: 15. V: acuminatæ, albidæ, 4. A: 12. C: circ: 12. Memb. branch. 5. Longit. unc. 1- $\frac{3}{4}$. Nigricabat totus, abdomine medio albedo. Pinnæ (ventralibus exceptis) omnes fusco maculosæ. Caput magnum: oculi in vertice depresso approximati; inter hos spinæ 2 retror-

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sum spectantes: opercula utrinq spinis 4. Sulcus longitud. a fronte ad pinnam dorsi ductus. Maxillæ subæquales denticulis scabræ. Corpus antice tumens, teretiusculum: a pectore postice compressum, attenuatum. [p. 265.]

PLEURONECTES SOLEA

The Sole

MAXIMA in Belgicis Oceani litoribus; Romæ pedalem longitudinem raro superat; in lautioribus conviviis, in summâ etiam cæterorum piscium copiâ, magnam obtinet claritatem (*P. Jov. c. 26*). Semper Angliæ mensis et Galliæ accepta. Nulli cedit suavitate et salubritate; semper charo constat, quamvis frequentissima. Testaceis vescitur, quorum testas menstruo quodam in visceribus dissolvit (*Phil. Trans. 1744, p. 37. Collinson*). Oculi magis inter se distantes quam in congeneribus; filamenta pilos imitantia, alba, innumera, in sinistrâ capitis parte; pinna caudæ subrotundata; ventrales minimæ, exiles; pectoralis sinistra alba, dextra dimidio nigra (*Arted.*); os arcuatum. [p. 270.]

GASTEROSTEUS ACULEATUS

The Stickleback, or Bonstickle

SPINAS pro lubitu arrigit vel deprimit (*Will. p. 341*). Anterior corporis pars loricata tegmine osseo; pro pinnis ventralibus laminæ duæ osseæ triangulares, singulæ aculeo valido armatæ (*ibid.*). Rivuli & piscinæ fere omnes hoc pisce scatent, qui aliorum piscium

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ova & pisciculos recens natos avidissime vorat, majores etiam audacissime persequitur, & aculeis vulnerat. Mense Maio parit (*Phil. Trans.* 1747, p. 424). In fluvio Witham agri Lincolnensis juxta Boston oppidum copiâ infinitâ capiuntur, unde incolæ magnam olei vim extrahunt (*Act. Anglic.* 1696, p. 348). In mari ad Hartlepool frequens, ubi Sea-Hass vocatur; specie (ut credo) non diversus, caudâ utrinq carinatâ, pinnâ c. bifurcâ; membranâ p. v. sanguineâ. [p. 295.]

TRIGLA CUCULUS

The Red Gurnard

A nostris inter lautos pisces habetur: captus spinas erigit et sonitum *curre* edit, unde nomen (*Will. pag.* 281). In nostro specimine oris ambitus, opercula subtus, pinnæ ventrales, analis, caudalis, pectoraliumque basis, rubræ; latera etiam media rubescunt: caput supra totum, dorsumque cinereo-virescent; venter albus; labium superius apice emarginatum, lobis rotundatis, asperis. Supercilia spinosa; pone branchiarum opercula utrinque spina: pinnæ dorsales (quarum 1ma radiis spinosis) in sulco spinis utrinq. marginato recumbunt; linea lateralis recta, fusca. Corpus teretiusculum, postice attenuatum; caput magnum, fronte depressa. In Southampton observavi die secundo Octobris. Caro alba, solida, sapidissima; pinnæ pectoris maximæ, rotundatæ, intus cinereo-virescentes, margine pulchre cæruleo; os magnum, labiis, palato,

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linguâque scabris; radiis osseis arcuatis branchiorum intus obtuse dentatis; pinna caudæ sub-bifida (*ibid.*). [p. 301.]

CLUPEA ALOSA

The Shad, or Mother of Herrings

SABRINAM, fluvium nostrum, Martio & Aprili mense ascendunt pingues & ovis prægnantes, Maio macilentæ & effœtæ ad mare redeunt (*Will. p. 227*). Itali pro magnitudine piscis variis nominibus appellant. Romæ pulparum mollitie & sapore primo vere æstimantur, sed spinulæ frequentes inter edendum molestæ suavitatis gratiam minuunt (*P. Jovius, c. 37*); gravi pretio ibi venduntur. In Pado etiam, Arno, Liri, Vulturno, &c. capitur. At Rome it comes into season in February, and lasts all May; it must be dressed the day it is caught (*Bart. Cappi*). Degli Agoni salati, che si pigliano in gran copia nel lago di Como, ne son portati per tutta Italia (*B. Scappi. f. 129*). The Irish call it a *Pollan*. In Southampton Octob: ineunte observavi. Squamæ magnæ aurato-argentæ: dorsum pulchre cæruleo-virescens. Litura, maculæq ovatæ 4 s. 5. utrinq nigricantes. Cauda bifurca; linea later. recta. [p. 318.]

CLUPEA ENCRASICOLUS

The Anchovy

ENCRASICOLI inveniuntur in mari Britannico, præsertim vero circa litora Cambro-britanniæ, ubi numerosissime capiuntur, præ-

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parantur, & huc illuc transmittuntur sub falso nomine *Shads*. Italicis vix inferiores sunt (*Collins, de sale & piscaturâ, p. 101*). In litore Cataloniæ & Provinciæ magnis gregibus natantes ab initio Decembris ad Martium medium noctu accensis facibus capiuntur (*Encyclop.*). Corpus teretiusculum, pellucens; rictus amplus; cauda forcipata; squamæ deciduæ. [p. 318.]

CYPRINUS CARASIUS

The Crucian, or Crusoe (in Suffolk)

IN piscinis Suffolciæ invenitur. Sapore Cypr. Carpioni longe inferior, Aprili optimus, Maio parit. Caro subflava & viscosa. Ad *Thornham* sub fine Septembris observavi. D. 19, P. 13, V. 9, A. 7 vel 8, C. 19. Vertex & dorsum lividum: abdomen & latera subaurata. Pinnæ livido-sanguineæ. Iris subaurata nubeculis fuscis. Squamæ magnæ imbricatæ. Linea lateralis subarcuata, ventri parallela. Longit. 10 unc. $\frac{1}{2}$, latit. 4 unc. Radius 2dus pinn. dorsi aniq postice duplici serie aculeatus. A Lernæa Cyprinaceâ vexatur, quam C. Tinca repurgare creditur (*S.N. ed. 12*). [p. 321.]

CYPRINUS AURATUS

The China Gold and Silver Fish

PISCUM pulcherrimus, e Chinâ primum in insulam S. Helenæ deinde in Angliam A.D. 1728 invectus in vivariis nostris facile propagatur. Fine Aprilis Maioq mense parit. Colore & magnitudine multum variat, apud nos sæpe pedalis, pinnâq caudæ

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simplici. Secundo ætatis anno fulgorem acquirit: sunt tamen qui semper nigricant. Caro sapore C. Carpionem superare dicitur, elixa aut frixa editur. (*Baster*) narium tubuli extantes. Pinna dorsalis caudalisq variant: cæteræ omnes apice rotundatæ (*Edw.*). Fine Aprilis Majoq mense prurit, ventrem cum mare collidens. Circa Idus Junias pulli apparent nigricantes. Micis panis, insectisq vescuntur. Pinnis mire variant: dorsum nunc læve omnino apterygium; nunc tuberculis adiposis pinnarum vice; nunc pinnâ magnâ rad. 18 vel 20; nunc parvâ rad. 3 vel 5; nunc pinnis 2, rad. 8, 5. Pinna ani nunc gemina; sæpe simplex, rad. 9. Pinna caudæ nunc simplex, rad. 18; nunc gemina, basi superius coalita. Maxillæ (ore clauso) æquales. Linea lateralis curva dorso propior. Oculi prominentes, iride angustissimâ (*Baster. l.c.*). Pinnæ ani radius 2dus. postice serratus (*S.N. ed. 12*). [p. 322.]

CYPRINUS ARGENTEUS

The White Bait

MAXILLA inferiore longiore, iridibus argenteis. Habitat in mari Angliæ, flumina subiens. Thamesin æstate ad *Blackwall & Woolwich* usque magnâ copiâ ascendit.

Biuncialis, Eperlano simillimus: sed membrana branch. radiis 3 tantum; pinna dorsalis unica. Nec odorem violæ habet. Farinâ respersus, frixusq editur, tenerrimus, nec aristæ ullæ percipi possunt. Junio mense gustavi. [p. 323.]

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CYPRINUS ORSUS

The red-backed Chub, Rudd, or Fin-scale

IN fluvio Cherwell Oxoniæ notus, & in lacubus agri Lincoln. & Eboracensis. Aprili mense parit, semper fere tempestivus, mensisq; acceptus (*Will. p. 253*). De pisce hoc, quem *Rudd* vel *Fin-scale* vocamus, dubito. Corpore est maxime compresso, ut in C. Bramâ, dorso cultrato. Pinna D. rad. circiter 18, pectorales subrotundatæ rad. 13, ventr. 9 s. 10, analis 7 tantum, quorum primus robustior & postice serratus. Cauda bifida rad. circ. 20. In operculo branch: utroq; seriem punctorum 13 juxta margines numeravi; inter rostrum autem oculosq; utrinq; 3. Linea later. rectiuscula, in medio corpore subdescendens. Rostrum obtusiusculum, rictus non magnus. Specimen a fl. Cherwell allatum apud D. Barrington observavi.

Back red, sides yellow-brown, scarlet spot on the gills, belly white, belly-fins and tail reddish, broad sides. The flesh is red, dry, short & wholesome. [p. 324.]

2. Cerv.
3. Thorax.
4. Antennae.
5. Tarsus.

3. Maxilla
forcipacea

Scarabaeus Cereus.
n° 58. (Geoffroy)

Larva Scarabaei
Mecynotoma.
n° 43. (Lisier)

Antenna
S. Melanotoma

1. Clava antennarum in pleura trifida, in Maxillosis quadrifi-
da, in *Sulphura* & *Melanotoma* multidentata. alia divisio 2. dentium
numero in tibia antici, qua in *Sulphura* unidentata, in *Sis-*
trictis 2 te, in *Melanotoma* 3 te, in *Lunari* 4 te, in *Scarabaeo*-
multidentata. (Scopulus)
1. iter; elytris glaucis, glabris, punctis fuscis raris; oculis cuscaceis (M.L.L.)

2. *Colophaerum* (Cochlearis) *osteorum* maximum. niger, abdomine
nigro. *perforatus*. elytra nec striata, nec nitida.

3. Niger, elytris pictis, levibus

4. Niger, glaber elytris levibus, minus punctis

5. Picus, glaber, nitens; subdens hirsutus. magnitudo tripla S. *Medicinis*. pal-
ma 5. dentata (M.L.L.)

6. *Sulphura* *lucida* *cornea* *glabra*. subdens hirsutus. caput ligni abne-
-sive super medio cornu lineata, aere bene, cauda simpli longius-
-susculumbens, retroscum *perforatus*. thorax excavato rugosus 12
-trina cornu erecto, compofo, subpuncto; intermedium choletrum, fusi-
-cula longitudinali in lineis vicinis divisa. elytra marginata, costis
in utroque circiter crenatis. antenna clava subobsoleta lamellis tribus.
tibia antica multidentata. scutellum semilobatum punctatum. o-
culi nigri. alia longissima. in Partis Orientali usque in colla gra-
-minosa volatantem capi, mane Junio medio. (C)

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VOLUME I. PART 2.

INSECTA

[On a fly-leaf of this second part of the first volume Gray has written the following:—]

TERMINI ARTIS

Antennæ. Organa mobilia insectorum, ad oculos posita.

Setaceæ, quæ extrorsum tenuiores.

Filiformes, quibus eadem fere totius est crassities.

Moniliformes, quæ ex pluribus compositæ sunt globulis, faciemq præbent monilis.

Clavatæ, quæ extrorsum crassiores.

Capitatæ, apicem globulo terminantes.

Fissiles, cum clava in lamellas longitudinaliter se dividit.

Perfoliatæ, cum verticillatim lamellæ transversales apparent.

Pectinatæ, quorum unum latus pilis instruitur in formam pectinis.

Barbatæ, quæ pilis sine ordine fuis.

Alæ Primores, (in papilionibus) sunt majores, seu anteriores.

“ *Secundariæ*, posteriores.

Larva, vermiculus e semine insecti natus, antequam subierit metamorphosin.

Pupa, larva quum primam metamorphosin subierit, antequam in perfectum statum pervenerit.

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Coleoptera, insecta, quorum alæ elytris tectæ sunt.

Hemiptera, insecta, quorum alæ non ex toto, sed ex parte, tectæ sunt elytris.

Gymnoptera, insecta elytris destituta.

Elytron, ala superior cornea, sive crustacea, quæ alas inferiores tenuiores tegit.

Scutellum, crusta parva inter elytrorum aut alarum paria ad basin thoracis collocata, quasi thoracis apex a tergo.

Sutura, rima quæ coeunt elytra, vel cum thorace, vel inter se invicem.

Palpi, quasi antennulæ, ad os collocati.

Halteres, capitella petiolata sub alis Dipterorum.

Elinguis, os nullum, unde insectum edere nequit.

Spirilinguis, os linguâ spirali simplici, vel duplici.

Tetrapus, 4 pedes unguiculati, licet sæpe duo alii absque unguibus.

[*The following list of terms of colour is written on the leaf next after that on which are the Termini Artis.*]

1. *Testaceus*, colour of a tile, or brick-dust.
2. *Griseus*, a mixture of brown and red, or red-hasel.
3. *Rufus*, same, more heighten'd with red.
4. *Æneus*, copper-colour'd, with the reddish lustre of that metal.
5. *Ferrugineus*, of a reddish-yellow, like the rust of iron.
6. *Ater*, of a deep and perfect black.

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7. *Pallidus*, a pale sordid flesh-colour, with a tint of yellow.
8. *Sericeus*, with a shining gloss, like silk-stuffs.
9. *Holosericeus*, with a pile, like velvet.
10. *Auratus*, with a golden gloss.
11. *Piceus*, black with an eye of red.
12. *Violaceus*, deep blew-purple, or indigo.
13. *Atro-cærulescens*, shining black with an eye of blew.
14. *Fulvus*, bright orange-tawney.
15. *Cinereus*, of a sordid yellowish-brown, or dark-olive.
16. *Niger*, a dull and brownish black.
17. *Castaneus*, a deep chesnut colour.
18. [*A line obliterated.*]
19. *Fuscus*, dark brown.
20. *Cyaneus*, deep-blew, like polish'd steel Neal'd in the fire.
21. *Canus*, grey.
22. *Luteus*, saffron-yellow.
23. *Purpureus*, scarlet.

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[*The following verses descriptive of the Orders and Genera of Insects are on the inserted leaves opposite the characters of the Orders and Genera as given by Linnæus. They are a mere piece of ingenious trifling, but they illustrate Gray's easy mastery of Latin versification. They were printed by Mathias in his Works of Gray, 1814, vol. ii. p. 570.*]

I. COLEOPTERA

ALAS loricâ tectas Coleoptera jactant.

Antennis Clavatis

Serra pedum prodit Scarabæum et fissile cornu.
Dermesti antennæ circum ambit lamina caulem,
Qui caput incurvum timidus sub corpore celat.
In pectus retrahens caput abdit claviger Hister.
Occiput Attelabi in posticum vergit acumen.
Curculio ingenti protendit cornua rostro.
Silpha leves peltæ atque elytrorum exporrigit oras.
Truncus apex clavæ, atque antennula Coccionellæ.

Antennis Filiformibus

Cassida sub clypei totam se margine condit.
Chrys'mela inflexâ loricæ stringitur orâ.
Gibba caput Meloë incurvat, thorace rotundo.
Oblongus frontem et tenues clypei exerit oras

7. *Insectum alatum in floribus Syngenesium metisot* (Geoplin, 12° 40')

8. *Roemeria rubrum*. enout ferrugineum, antennae, oculi nigri, pro:
:mipentes. elytra pubescentia striata, fasciis 1 & 2. imperfectis, 12:
:tura media interruptis. thorax postica contractus, teres. forma
:elongata (⊕) prope Londinum exstans.

Cerambyx

albipennis.

12° 23. (Geoplin)

1. *Hydra dilatata*, holosericea, nigra, undis. Sord. reversisq longitudine:
:labes variegata. pdes antici. (int. albis raris) corpore duplo longiores.
:caput reflexum. myriades in supercilio nuda (12. 12. 12.)

AS A NATURALIST

Tenebrio. Abdomen Mordellæ lamina vestit.

Curta elytra ostentat Staphylis, caudamque recurvam.

Antennis Setaceis

Tubere cervicis valet, antennisque Cerambyx.

Pectore Leptura est tereti, corpusque coarctat.

Flexile Cantharidis tegmen, laterumque papillæ.

Ast Elater resilit sterni mucrone supinus.

Maxillâ exertâ est, oculoque Cicindela grandi.

Buprestis antennæ graciles, cervice retractâ.

Nec Dytiscus iners setosâ remige plantâ.

Effigiem cordis Carabus dat pectore trunco.

Necydalis curto ex elytro nudam explicat alam.

Curtum, at Forficulæ tegit hanc, cum forcipe caudæ.

Depressum Blattæ corpus, venterque bicornis.

Dente vorax Gryllus deflexis saltitat alis.

II. HEMIPTERA

DIMIDIAM rostrata gerunt Hemiptera crustam.

Fœmina serpit humi interdum: volat æthere conjux.

Rostro Nepa rapax pollet, chelisque. Cicada

Fastigio alarum et rostrato pectore saltat.

Tela Cimex inflexa gerit, cruce complicat alas.

Notonecta crucem quoque fert, remosque pedales;

THE POET GRAY

Cornua Aphis caudæ et rostrum: sæpe erigit alas;
Deprimit has Chermes, dum saltat, pectore gibbo.
Coccus iners caudæ setas, volitante marito;
Thrips alas angusta gerit, caudamque recurvam.

III. LEPIDOPTERA

SQUAMAM alæ, linguæ spiram Lepidoptera jactant.
Papilio clavam et squamosas subrigit alas.
Prismaticas Sphinx antennas, medioque tumentes;
At conicas gravis extendit sub nocte Phalæna.

IV. NEUROPTERA

RETE alæ nudum, atque hamos Neuroptera caudæ.
Dente alisque potens, secatur æthera longa Libella.
Caudâ setigerâ, erectis stat Ephemera pennis.
Phryganea elinguis rugosas deprimit alas;
Hemerinusque bidens: planas tamen explicat ille.
Et rostro longo et caudâ Panorpa minatur.
Raphidia extento collo setam trahit unam.

V. HYMENOPTERA

AT vitreas alas, jaculumque Hymenoptera caudæ,
Fœmineo data tela gregi, maribusque negata.
Telum abdit spirale Cynips, morsuque minatur.

Squama alarum
microscopio visa.

Larva P. Machaonis. N° 27.

s. tentacula retractilibus.

Antennae
clavato-capitatae.

Lingua spiralis.

Pupa P. Polychlori. N° 113.

(Assumes)

Papilio.

s. Ala denticata, cau-
-dosa, erecta.

s. Alarum textura solito solidior. colores purissimi. abdomen flavib-
-num: thorax niger lineis laterum transversis, coccineis. antennae
adhuc ignota (M. Lill.)

3. Speciosissima, precedenti urbi affinis.

4. Prima magnitudinis. scelli alarum in Mare oblongi, in lamina osti-
= latis, & nigredine violacea cineti (M. L. L.)

5. Cauda alarum inferiorum longissima.

6. Mas magis fulvus; femina cinerea, aliquant. major. larva viridifla-
= vescent; verruca ejus fulva, circulo nigro ad basin cineta, unda pili
cani. prodeunt (Ray) mense Martio & Aprili phalana apparet (albin)

Ph: Noctua Pronuba.
N° 87.

Ph: Geometra
Utricularia, N° 195.

Ph: Bombyx Quercus
N° 13.

Ph: Tortrix
N° 230.

Ph: Finea Culmella.
N° 246.

Ph: Alucita Bernardiella.
N° 305.

ala digitata.
Alucita.
(larva rufa)

Ph: Tortrix Prasinaria
N° 232.

215. Mares acules nullo, abdomine versus apicem crassiore, & quasi truncato.

Sirex (sive *Schnausson*) *gigas*. N° 1. (Schnausson)

Abdomen petiolatum
Sire: femine.

- Tres primæ species ad novum genus *Sirex* transferendæ (L. Lucc. 1765):
1. & rima sub ventre medio aculeus exit, & ultra caudam extenditur: cauda mucro teres, rectus, aculeus; thorax aler: incisura lutea cor: = pora dimidio breviores. alæ ferrugineæ (L. Lucc. & Saumur).

4. Sic quoque *Sirex* est. alis parvis plicatis, ut species 3 præcedentes. (Scopoli, p. 231.) sequentes autem alis omnibus planis.

Schnausson. Isculitor. N° 48.
(volans)

AS A NATURALIST

Maxillas Tenthredo movet, serramque bivalvem;
Ichneumon gracili triplex abdomine telum.
Haurit Apis linguâ incurvâ, quod vindicat ense.
SpheX alam expandit lævem, gladiumque recondit.
Alæ ruga notat Vespa, caudæque venenum;
Squamula Formicam tergi, telumque pedestrem,
Dum minor alatâ volitat cum conjuge conjux.
Mutilla impennis, sed caudâ spicula vibrat.

VI. DIPTERA

DIPTERA sub geminis alis se pondere librant.
Os Oestro nullum est, caudâque timetur inermi.
Longa caput Tipula est, labiisque et prædita palpis.
Palpis Musca caret, retrahitque proboscida labris;
Qua Tabanus gaudet pariter, palpis sub acutis.
Os Culicis molli e pharetrâ sua spicula vibrat;
Rostrum Empis durum et longum sub pectore curvat;
Porrigit articuli de cardine noxia Conops;
Porrigit (at rectum et conicum) sitibundus Asilus;
Longum et Bombylius, qui sugit mella volando.
Unguibus Hippobosca valet; vibrat breve telum.

VII. APTERA

APTERA se pedibus pennarum nescia jactant.

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CICINDELA CAMPESTRIS

MENSA Aprili medio in loco arenoso collium Hogmagog prope Cantabrigiam cepi, Maio etiam in pratis. Labium superius, & maxillarum bases flavescunt; dentes, palpi, infimiq antennarum articuli auro resplendent; harum summi tomentosi, opaci; oculi grandes nigricant; abdomen a tergo sub alis smaragdo viridius lucet; punctis albidis aliquando caret.

Aureus nitor ex toto corpore radiat. Pedes longissimi (*F. Suec.*). Majuscula inter coleopteros, in borealibus Angliæ montosis ad Calendas Junias admodum frequens, erucas (etiam hirsutas) saltu & volatu venatur, devoratq (*Lister*). Larva 6-pus, albida, capite fusco. Foveam cylindricam in arenâ excavat, cujus in osteo vigilat, ut insecta prætereuntia captet, devoretq (*Ins. Paris. v. 1, pp. 140 et 154*). Coleopterorum nostratium forte pulcherrima est. Abdomen glabrum, aureo-violaceum; corpus subtus viridi-auratum, lateribus cupro nitentibus; elytra plana, viridi-sericea, punctis eminentibus confertis, auratis, aspersa; maculæ læves albo-flavescunt; margines aurei; femora æneo-purpurea, supra pilis flavis ciliata; thorax angustus, rugosus, viridi-auratus, marginibus purpureo-auratis; ad femorum basin corpus ovale durum; alæ fuscæ. Viciniâ Londini vere primo non infrequens. [p. 407.]

CIMEX GOTHICUS

NOSTER, quem in Solidagine cepi Julio mense medio, descriptioni

AS A NATURALIST

Linnæi non in omnibus convenit: sed Scopoli *C. Gothicus* (No. 381) proculdubio idem est. Corpus nigrum est, glaberrimum: thorax convexus, niger; elytra ferruginea versus marginem nigricantia, ubique punctata (uti & thorax), juxta apicem corii maculâ luteorubrâ, ipso tamen apice nigro: membrana elytri nigricans, maculâ in margine baseos albidâ; scutellum thoraci concolor; alæ nigricantes. Caput inter antennis lævissimum, postice ferrugineum. antennæ, corporis fere longitudine, articulis 4, quorum infimi 2 crassi, subvillosi, nigri: 2^{dus} longissimus, 4^{tus} brevissimus. Femora nigra e apice, tibiisq; mediis ferrugineis. Variat elytris, thorace, scutello, flavescentibus: alis inferioribus hyalinis, radiantibus.

[p. 447.]

COCCUS CACTI

The Cochineal

COMMERCI Hispanici pars maxima, regni Mexicani thesaurus, auro atq; argento æquiparandus. Quotannis in Europam importantur lb circiter 880,000. quæ æstimantur 15,050,690 Libr. Fr. monetæ. Servari potest detrimento nullo annis centum (*Reaumur*). In Georgiâ & Carolinâ australi Cacto Opuntiâ vescens non raro invenitur. Fœmina adulta viciæ magnitudine, rubra; thorax convexus, glaber, abdomine duplo longior; antennæ breviores; artus intumescentiâ corporis inutiles evadunt, & intra rugas conduntur. Mas pulicis magnitudine, glaber, ruber; alis 4 niveis incumben-
tibus sub-patentibus, basi attenuatis; antennis thorace paulo lon-

THE POET GRAY

gioribus; collo coarctato, capite globoso; setis caudalibus, quadruplo corpore longioribus; agilissimus (*Ellis*). Fœmina tincturam illam nobilem, pretiosam, suppeditat lanæ sericoq aptam; non lino, neque gossypio; e violaceo coccineam, additâ autem dissolutione stanni, igneo-coccineam, colorum omnium fulgidissimum. Insectum hoc sylvestre *Cochenille Campetiane* dicitur, domesticum autem *Mesteque* sive *Tescalla* (*Encyclop. Teinture*). [p. 457.]

MUSCA CUPRARIA

PULCHERRIMA. Seta antennæ fere terminalis: caput inter oculos nitide cæruleo-viride, uti & pectus, subtus; os album, tumidum; abdomen cupro rubente fulgens, subtus nigricans, depressum, versus apicem latius; halteres albidi; alæ hyalinæ maculâ fuscâ. Variat (sexu, ut videtur) capite, thorace, abdomine rubro-auratis, sive violaceis nitentibus: margine abdominis villosa: ano diminuto: alis versus apicem fuscescentibus, maculâ mediâ fuscâ grandi: oculis supra brunneis, subtus viridibus. Hæc major est; *Musca Formosa* (ut opinor) Scopoli, No. 910. In horto cepi, die 28 Junii. Pedes nigricant geniculis primis pallidis. [p. 598.]

ACARUS CANCROIDES

TERMETE Pulsatorio victitat. Cutem hominum capite penetrans, unde papulæ cum dolore horrendo. Motu retrogrado utitur (*F. Suec.*). In cistulâ ligneâ inter Hymenopterorum cadavera ambulantem die 1^{mo} Julii observavi; motu directo tardiuscule progredi-

AS A NATURALIST

diebatur, manibus chelatis (corpore longioribus) porrectis, expansis, vibratisq viam explorans, prædæ intentus. Totus ferrugineus est: abdomen a tergo lineis transversis distinctum, quas, intersecat medias linea una pallidior longitudinalis: subtus in medio ventre macula pallescens. [p. 616.]

PHALANGIUM OPILIO

*The Shepherd-Spider, or Carter, or Long-legs,
or Harvest-Spider*

PEDIBUS longissimis, tenuissimis; post frontem verrucula, cujus apex in duplicem cristam spinularum abit; corpus subcrustaceum incisurâ nullâ; maribus cornicula prælonga, pedes magis fusi. Fœminæ Augusto mense gravidæ. Frequens in pratis, hortisq (*Ray*) culices & muscas prædatur. Abdomen subtus segmentis 4, s. 5; supra indivisum, spinulis sive denticulis sparsis (uti & thorax) asperum. In medio thorace tuberculum eminens, duplici spinarum serie cristatum, oculos laterales (utrinque unum) sustinet: nec plures ego, nec Geoffræus, nec Scopulus, vidimus. In fronte brachia 2, corpore toto longiora (cum extendantur), ex unico articulo præter basin constantia, apice acuto, manus sive chelas inflexas, longissimas, teretes, subventricosas sustinente pollice mobili, digito fixo, omnino ut in Cancris plerisque: digiti subæquales apice nigri; palpi 2 pediformes, articulis 5, ut in Araneis. Igitur a Cancris distinguitur *palpis pediformibus, oculis*

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in tuberculo thoracis sitis, abdomine subgloboso, non inflexo; ab Araneis oculis 2, manibusq chelatis. [p. 618.]

ARANEA

The Spider

[*The first sentence of the following passage is from Linnæus, the rest is added by Gray.*]

ARANÆ fila ducunt, pleræque telas struunt, insectis pascuntur rapinæque vivunt; Penes in palpis gerunt. Solitariae, vigiles, meditabundæ, famelicæ, exosæ, fæcunditate summâ, moribus diversæ. 1. *Textrices*, quæ rete horizontale texunt. 2. *Aucupes*, quæ perpendiculare. 3. *Captivæ*, quæ in foliis convolutis, florum calycibus, &c. se includunt. 4. *Erraticæ*, quæ prædam discurrendo quærunt. 5. *Geometræ*, pedibus anticis extensis. 6. *Vibrantes*, salientes, coarctatæ. 7. *Laterigradæ*, incessu etiam laterali. (*Scopulus*, p. 393.)

VERMES. MOLLUSCA

ASTERIAS OPTIURA

The Sea-Scorpion of Barbadoes

LEGE—*stellâ orbiculatâ, squamosâ (F. Suec.)*. Ad Hartlepool non infrequens a piscatoribus in pelago capitur, dum escas in hamo, ut No. 2, arrodit, in littore nunquam inveni. Corpus parvum, planum, figura subinde mutabili, (nunc enim orbiculatum, nunc pentagonum, nunc 5-lobum) tactu asperum: squamas ne

AS A NATURALIST

lente quidem distinguo, sed tubercula potius minutissima, conferta: color sanguineus centro lutescente. Radii concolores 5, longi, aculeorum ordinibus 6 utrinque ciliati; aculei pallide flavescents, duriusculi, obtusi; e sulco longitudinali sub radiis singulis tentacula innumera vivens exserit, ut No. 2. Radii omnes e vertebra osseis miro artificio junctis compositi, quos motu serpentino in omnem partem torquet, & moriens sæpe ipsa frangit, abjicit, ut Cancer chelas. [p. 662.]

VERMES. TESTACEA

OSTREA MAXIMA

The Scallop

OSTREÆ eduli proximæ deliciæ. In freto juxta *Portland* & alibi in illo mari piscantur (*Lister*). Valvæ separatæ ad *Hartlepool* aliquando ejiciuntur, radiis circiter 20 vel 22. [p. 696.]

OSTREA EDULIS

The Oyster

L'OSTRICA in Corsica, nelle spiagge d'Ancona e in quelle di Chi-ozza è molto conosciuta, perchè in questi due mari n'è maggior copia che in altri luoghi. In Venetia se ne trovano quasi tutto l'anno (*B. Scappi*). Mense Junio prægnans ovulis, initio Augusti vivos foetus parit: sine coitu genus propagat (*Baster. Subsec. 1, p. 31*). Ostrea recens nata, tenella, celerrime natat, undu-

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latoq motu branchiarum gaudet, quas tunc parum e testâ exserere potest: adulta in fundo maris quiescere cogitur (*id. t. 2, l. 3, p. 146*). Maxima inter Scotiæ rupes expiscatur; in Essexiâ & Cantio mediocris, sed sapore omnium delicatissimo, in fossis alveisq maritimis pinguefacta: in alto mari salsior, macriorq.

[*p. 699.*]

TURBO LITTOREUS

The Whelk or Periwinkle

IN locis scopulosis frequentissimus, Junio mense. Coit in sicco. A Belgis editur, gustu non insuavi (*Lister*). Linguam habet exerendam, spiralem, apice in setas divisam, fere ut in Lepade Balano (*Baster. Subsec. l. 3, p. 111*). In Scotiâ etiam frequens editur. Londini quoq in viis coctus puerulis vendi solet. Striæ (in majoribus saltem) non eminent, sed fasciæ potius sunt angustæ, quæ spiram sequuntur. Margo anfractuum majorum cariosus: suturæ etiam aliquot transversæ, subeminentes, irregulares. Color variat, plerumq canescens fasciolis nigricantibus; aliquando fulvus; intus albus.

[*p. 761.*]

PATELLA PELLUCIDA

PATELLA forte eadem, quam semel ad Hartlepool inveni. Livida erat, obovata, gibba, supra subopaca: vertex lævis, margini postico propior, subrecurvus, apice tamen non libero, nec in mucronem assurgente: ex hoc lineæ 4 cærulescentes antrorsum

Voluta Pleurostoma 306. (Rumphius)
(Cassidaria)

357 *Voluta Pleurostoma 306. (Rumphius)*
(Cassidaria)

AS A NATURALIST

ducuntur, subinde interruptæ: utrinq̃ autem lineolæ similes 8, s. 10 (testâ luci appositâ) pellucet: subtus tota cæruleo-nitens pro situ variabilis; margine dilatato planiusculo, in sinum postice retuso, labiato. Diametrum longius, 10 lin. $\frac{1}{2}$. Vidi etiam minorem, membranaceam, absque vertice, pallidam, radiis 4 tantum cæruleis. An varietas? [p. 783.]

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