THE FAUNA

OF

BLACKHEATH AND ITS VICINITY.

PART I.—VERTEBRATE ANIMALS.

BEING

THE FIRST REPORT

OF THE ZOOLOGICAL COMMITTEE

OF THE

Greenwich Natural History Club.

LONDON:
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PREFACE.

THE Greenwich Natural History Club was established in April, 1852, as a Society of Field Naturalists. Although it has held meetings regularly since its institution, at which many excellent Papers have been read, the smallness of the subscription has hitherto precluded the possibility of accomplishing much in the way of publishing its Transactions.

In the spring of 1857, it was resolved that information should be collected relating to the Natural History of a certain district round Blackheath, and a Committee was appointed for the purpose of carrying out that Resolution so far as regarded Zoology.

The limits of the district were defined as follows:—By a line commencing at the point of junction of the Rivers Thames and Ravensbourne, following the course of the latter to its source on Keston Common; thence in a straight line to the source of the River Cray, near Orpington; from thence along the course of the Cray to its junction with the River Darent; along the course of the Darent to its junction with the Thames; and finally up the Thames, to the starting-point at its junction with the Ravensbourne.

The writer was elected Chairman of the Zoological Committee, and at the request of the other members he prepared the following Report and Catalogue, which was approved by the Committee, and presented to the Club at its meeting at Greenwich, January 9th, 1858. It includes the Vertebrate division as far as at present ascertained; and inasmuch as no animal has been admitted into the list without express authority, it will be readily understood that others may yet be added, as the fruit of more extended observation.

The writer desires to take this opportunity of expressing his thanks to the Rev. A. Rawson, of Bromley Common; to Mr. G. B. Wollaston, of Chiselhurst; to Mr. Mills, of the Moat, Eltham; and to Mr. Hutchinson, of the Paragon, Blackheath, for interesting facts relative to the Birds, which will be found duly acknowledged in the text; and to Mr. W. H. Tugwell for an original list of Vertebrata. For the rest the writer is responsible, and will be very glad to receive any additions or corrections which it may be in the power of any one to make into whose hands this Report may fall.

CUTHBERT COLLINGWOOD.

Blackheath,
January, 1858.

Postscript.—Owing to circumstances into which it is not necessary to enter in this place, the publication of this Report has been delayed until the month of June, 1859.

46, *Nelson Street,*
Liverpool.

REPORT ON THE VERTEBRATA.

In pursuance of the resolution unanimously agreed upon at the meeting of the Society on April 4th, 1857, a Zoological Committee was nominated for the purpose of collecting information upon subjects connected with the Fauna of the district, and the following Report has been drawn up by its Chairman, and adopted by the Committee in council.

The results of all the inquiry and research which we have hitherto been able to bring to the subject are embodied in the accompanying Catalogue, which is not a mere list of animals, but describes, as far as possible, the comparative frequency or rarity of their occcurrence, and, in the case of less frequent ones, gives all the particulars which could be collected concerning their capture. This Catalogue contains notices of 236 Vertebrate animals, distributed as follows: Mammalia, 39; Birds, 156; Reptiles, 10; and Fishes, 31. The Report consists of a *résumé* of each class, offering generalizations and comparisons by means of which a clearer insight may be obtained into the position and relations of the British Fauna generally, and of our *local* Fauna in particular.

The nomenclature adopted in the accompanying Catalogue of Animals has been uniformly that of the admirable manuals of Professor Bell on Quadrupeds and Reptiles, and the lamented Yarrell on Birds and Fishes; works to which I stand greatly indebted, and which have been examined with reference to any incidental mention of localities falling within the strict limits of our district.

The undoubted occurrence of an animal *once* within the district has been deemed sufficient reason for including it in the list, especial notice being always taken of the occasion, and the date and circumstances of the occurrence being fully given, where practicable. It has appeared that this rule of the admission of visitors into local Faunas, so usual among Zoologists, should by no means be infringed, so long as the proper qualifications are given to the statements, and so long as no one is led to suppose that an animal is *tolerably common*, when perhaps only one notice is extant of its occurrence; just as an

illustrious French Naturalist (Duvernoy) is reported to have spoken of a certain Bat,* as "assez commune en Angleterre," because it had once been taken near Dover. To omit, however, such accidental visitors from a local Fauna, would be to destroy at once its unity and its interest; and, moreover, it would be difficult, nay, impossible, to draw the line accurately between *periodical* and strictly *occasional* visitants. The insular position of this country, to a certain extent, keeps our Fauna distinct. Our Quadrupeds can scarcely cross the barrier which separates us from the continent of Europe, except in the case of some of the smaller of them, which may be introduced amongst merchandise, and whose extraordinary powers of reproduction will establish them wherever they may once find a footing. Such is undoubtedly the case with our common brown Rat (*Mus decumanus*), which in an unlucky hour, dating little more than a century back, made its appearance upon these shores, and has since treated its English relative—itself an interloper of an earlier century—much as the Danes did the Britons of old. Other Quadrupeds at a more remote period may have been similarly imported, while, on the other hand, we all know that the Bear, the Wolf, and the Beaver—animals which are now banished far from us—roamed freely through our island within historic times. With Birds the matter is different. Their powers of locomotion permit of their crossing our narrow Channel with facility; and thus we find each new edition of the British Birds requires enlargement for the admission of errant species. Reptiles come under much the same category as Quadrupeds, allowance being made for the rapid diminution of species with the increase of latitude; and Fishes resemble Birds in their powers of locomotion, and in the wide-spread expansion of the medium through which they move.

But the district to which we confine our research must be viewed from peculiar aspects. No physical boundary cuts us off from the limited extent of country in a southerly, westerly, and easterly direction, and we are liable, therefore, to the irruption of terrestrial visitors from those points. Our proximity to the south-east corner of England places us in a position most favourable to the visits of birds from the continent of Europe; the presence of a large navigable river on our northern side, brackish even within our limits, affords opportunity for Cetaceans which have lost themselves in its estuary to reach our district while searching for an exit to the ocean; and at the same time attracts marine fish riverwards, and fresh-water fish seawards, either accidentally or for the purpose of spawning. Lastly, and by no means the least important element in our topographical position, is our vicinity to the metropolis, which, while it undoubtedly prevents certain animals from being found with us, is, I am led to imagine, in the main, favourable to the abundance as well of species

* *V. emarginatus*, Bell, 45.

as of individuals. In support of this conclusion, I would call attention to Appendix A, which contains a list of rare birds taken in the immediate vicinity of London, and which would tend to prove that, for birds at least, such a vicinity is very attractive; while of our British species of Bats, two have only been taken in London, and a third has not hitherto been found except in its immediate neighbourhood. If such an attraction for birds do exist, however, we can scarcely imagine it to be extended by the waters of the Thames to their aquatic analogues, the Fishes.

If with these advantages it be remembered that we occupy one of the most favoured parts of our island with respect to temperature and climate, it will not appear surprising that we are able to reckon so many animals in our list; and it will be a matter of pleasing interest to the Zoologist to find among them so many representatives of typical families, and so many genera and species themselves typical. So that not only is our Fauna a well-stocked one, but, if I may be permitted such an expression, it has the additional advantage of being exceedingly well-selected.

It remains for me, in these preliminary remarks, only to add a few words concerning the *systems of classification* adopted. For the Mammalia, Professor Owen's admirable arrangement, recently promulgated before the Linnean Society, so far excels the old systems in its conformity with nature, that I adopt it unhesitatingly.* For the Birds, the universally accepted Cuvierian arrangement, with slight modifications in the heterogeneous Passerine order as used by Yarrell, has been considered most convenient. Our Reptiles are so few, that the simple division into four orders has seemed most adapted to our purpose, especially as Erpetologists are not quite agreed as to the classical or ordinal value of the Amphibia; and for Fishes, the Cuvierian arrangement need not be superseded by any less authoritative system.

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* Professor Owen divides Mammalia into four great subclasses, according to the cerebral development. The first, *Archencephala*, or highest type of brain, includes only Man. The second, *Gyrencephala*, the members of which have the brain more or less convoluted, embraces the clawed and hoofed animals, as well as the Cetacea. The third, *Lissencephala*, or smooth-brained subclass, includes the Bruta, Bats, Insectivores, and Rodents; and the fourth, *Lyencephala*, the Marsupials, whose brains exhibit a peculiar loose and disconnected condition.

MAMMALIA.

WHEN we consider that the Zoologist finds himself obliged to fill up the gaps in his series of typical forms from the denizens of an extinct world (a strong presumptive argument, by the way, against the recent *Omphalic* theory of creation),* we cannot be surprised that in so small a patch of earth as our island, many important families, and indeed *orders* of Mammalia should be unrepresented. Our climate and geographical position prevent any of the highest of Owen's second brain-type (*Gyrencephala*) from being numbered in our Fauna. I refer, of course, to the Quadrumana (monkeys). The Proboscidian ungulates (Elephants, &c.), belonging to the same cerebral type, are similarly excluded, and the herbivorous Cetacea (Dugong, &c., the *Sirenia* of Owen and others) have only been occasionally found in a putrid condition, stranded upon our coasts. In the third type (*Lissencephala*), the order Bruta, including the Edentulous animals,† but scantily distributed anywhere, find no representatives in Britain; while the fourth (*Lyencephala*), or non-placentals, including the Marsupials and Monotremes, are, with the exception of a single American genus (*Didelphys*), confined to one antipodal continent and its adjacent islands.

A notable fact which I have remarked with relation to the missing orders is so interesting, and bears so directly upon our *local* Fauna, that I think it should not be passed over in silence. It is that, although missing in a recent and living state, an examination of the earth's crust reveals to us the remains of their representatives, which once existed in this island—if island it then was—and that our own district contains some of these remains; so that, as the general Zoologist fills up his series of types from extinct races, so *we* can (nearly) represent all the Mammalian orders by calling as witnesses the buried forms which lie within a few miles of us. Thus, the missing order Quadrumana is represented by two species of Macacus (called respectively eocænus and pliocænus), the latter of which lies no further off from us than the pliocene beds of Grays, in Essex, and the former in blue clay at Kyson, in Suffolk. The Proboscidian

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* Since writing the above, I have perused "Omphalos," and was surprised to find this very argument adduced in favour of the theory; a signal proof of the oblique reasoning into which an able and accomplished naturalist may be led in his ardour to support a preconceived opinion.

† The Edentata are distinguished by the absence of canine and incisor teeth. They are represented in America by the Ant-eater (*Myrmecophaga jubata*), and by the gigantic fossil Megatherium, whose skeleton is so conspicuous an object in the Museum of the College of Surgeons.

ungulates are represented by the extinct Mammoth (*Elephas primigenius*), whose remains lie in the Pleistocene deposits of the valley of the Thames within our district, as well as in many other places; and by the Mastodon angustidens of the Crag at Thorpe, in Norfolk. I am not aware of any trace of an edentulous animal, either recent or fossil, herbivorous or insectivorous, having been hitherto discovered in this island, or, indeed, in Europe; for the most part, both the extinct and living species are natives of the great continent of America; but of Marsupials we find several species, chiefly if not entirely confined, however, to the greater oolite at Stonesfield, in Oxfordshire. Here Buckland first discovered his Didelphys (*Phascolotherium Bucklandii*), and here two species of Amphitherium have since been discovered; so that with the exception of the Edentulous Bruta, and the anomalous Monotremes,—which last order contains but two genera (*Ornithorhynchus* and *Echidna*), each of a single species, and strictly confined to Australia and New Zealand,—all the great orders of Mammals exist, either recent or fossil, in our little island.

The absence of these orders from our *recent* British Fauna, however, and the scanty representation of some others, would seem to imply that a small circumscribed district, like our own, would only contain a few waifs and strays of species, insufficient to build up anything like a series, or from which to derive any results. This, however, is not the case. The British Fauna can boast of 76 Mammals, (of which 10 are in a domesticated or semi-domesticated condition,) distributed through 39 genera. Of these, at least one-half are found within the few square miles of our research, viz., 39 species, comprised in 27 genera, which include all the domesticated species, excepting only that I have rejected the guinea-pig (*Cavia aperea*), whose right of admission may be questioned. True, Mammals are not readily spared from the British list; but I will hereafter propose an exchange for one of a class far more slenderly represented. Among these 39 species, we possess some of the most typical which our island contains. In the sub-class Gyrencephala we have among those typical Carnivora, the Digitigrades, examples of the three great families which compose them; the Mustelidæ offering us three out of seven species, and most probably several more; the typical Felidæ being represented by the domestic Cat, and the Canidæ by the varieties of Dog. Not far off, at Erith, buried Hyenas (*H. spelæa*) of a past age add another genus to the canine family; and even within the last two hundred years the ravenous wolf has howled in Britain. The last wolf on record was killed by Sir Ewen Cameron of Lochiel in 1680. It is much to be regretted that we cannot with certainty record the existence of the Badger (*Meles taxus*) within our district. It is the sole Plantigrade Carnivore which Britain now produces, though up to the time of the Norman conquest, the Bear itself (*Ursus arctos*) was an indigenous brute. Of Pinnigrade Carnivora (the Seals), five of which are described by Bell, and one

more (*Phoca cristata*) since discovered in the Orwell, none are recorded to have found their way up the Thames.

In the Ungulate subdivision, the even-hoofed order (*Artiodactyla*) is represented by the domestic Hog (*Sus scrofa*) in the Omnivorous tribe, the only true Pachyderm of this country now extant. We were rich in Pachyderms once, and we are yet rich in their remains. Witness the Mammoth and Mastodon just referred to, the Rhinoceros (*tichorrhinus*) at Chartham, near Canterbury; the Coryphodon in the London clay at Camberwell, the Hyopotamus, Chæropotamus, Hyracotherium, Dichodon, and other extinct genera. In the Ruminant tribe our domestic animals furnish us with the three most important groups: the Cervine, represented by the deer in our Park; the Bovine, by our domestic cattle; and the Caprine, or perhaps, more properly, the Antilopine, of which our Sheep and Goat are but aberrant forms.

The Perissodactyl order is represented in the solid-hoofed division by our domestic Horse and Ass, there being no native European genus of solidungulous quadrupeds. In the Pleistocene beds at Grays Thurrock, however, previously referred to, a Horse occurs (*Equus fossilis*), and a second species (*E. plicidens*) also exists.

One side of the triangle which comprises our district being washed by a large river like the Thames, which brings with every tide the brackish waters of its estuary within our limits, we have thus an opportunity of including in our list several species of true Cetacea, which have at different times found their way, or rather, perhaps, lost it, as high at least as Gravesend. The British coasts are visited by 13 species of Cetacea, comprised in 9 genera; and of these at least 5 species, of 4 genera, may be included (with one exception, *strictly*) in our list of visitors. The Porpoise (*Phocæna communis*) I have often seen rolling his unwieldy form in front of Greenwich Hospital, and a summer seldom passes without their visits; a Grampus (*Phocæna orca*), one of six, and measuring 31 feet long, has been harpooned in the same spot; a Bottlehead (*Hyperödon Butzkopf*), 21 feet long, has passed unmolested still higher up the river; and at least two Spermaceti Whales (*Physeter macrocephalus*) have been taken as high as Gravesend, the exception to our strict limits just referred to. The notice of one of these, together with nine others, stranded on the east coasts of England, six of them on the coast of Kent, is now, for the first time, recorded. And lastly, though by no means least, a young individual of the most colossal animal known, the northern Rorqual (*Balænoptera Boops*), was taken by the harpoon at Deptford as recently as 1842. Full particulars of these remarkable occurrences will be found in the accompanying Catalogue.

In the sub-class Lissencephala, the Cheiroptera are well represented in the insectivorous division, for we have no frugivorous Bats in this country. Out of 17 species of Bats included in 4 genera,

described by Bell, and one, if not two species (*V. pruinosus* and *V. dasycnemus?*), since discovered,* we possess at least 7 species of those 4 genera. Of these the most common are the Pipistrelle (*V. pipistrellus*), and the Long-eared Bat (*Plecotus auritus*). Of the others, some are worthy of especial notice. The Serotine Bat (*V. serotinus*) has hitherto been only found in the neighbourhood of London. The Great Horse-shoe Bat (*Rhinolophus ferrum-equinum*) and the Barbastelle (*B. Daubentonii*) were first described as British —the one by Dr. Latham, and the other by Sowerby—from specimens found in our district, viz., in the powder-mills at Dartford; and the chalk cavern, situated in a shaft 70 feet deep, at Chiselhurst, has yielded to the explorer two rare Bats (*V. Nattereri* and *V. mystacinus*), as well as the Barbastelle just mentioned. Of the remaining bats included in the British list, Vs. Leisleri, discolor, pygmæus, Bechstenii, emarginatus, and Plecotus brevimanus, have only yet been represented by a single specimen, or taken in a single locality: V. Daubentonii occurred at Islington, and V. murinus has hitherto shown its appreciation of our national collection by only allowing itself to be taken in the gardens of the British Museum. It is hardly to be imagined that the weak gyrations of the *Flittermice* would leave room for temptation to cross the Channel; and this occurrence of at least half of our British species of Bats as unique specimens, coupled with the fact, that thirty years ago only 6 species were enumerated where we now have 19, points to the high probability that it is the nocturnal habits of these animals, and the inaccessibility of their refuges during the period of hybernation, which cause them to be so little studied, and opens up a field of research in British Natural History as interesting as it is unpursued.†

In the next order, that of true Insectivora, the three great families are well represented by our commonest wild animals: the Talpidæ by the Mole, the Erinaceidæ by the Hedgehog, and the Sorecidæ by the Shrews, of which we possess 1 at least of the 3 British species.

The last order is that of the Rodents, and here the two great divisions of claviculate and non-claviculate have each their representatives. Among those Rodents which possess clavicles, we have the typical family Muridæ supplied with all the 5 British species, the most abundant being, here as everywhere, that interloping foreigner, the brown Hanoverian (*Mus decumanus*); the Castoridæ in the same division contain 2 species of Arvicola, but the typical genus Castor is now absent. Up to the year 1188, the Beaver, or *broad-tail*, as our forefathers termed it, had held possession of our fens and rivers' banks; and the bones of Castor Europæus, an extinct species, may

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* The *V. ædilis* of Jenyns appears to have been only a variety of *V. Daubentonii*.

† Gilbert White says: "At present I know only two species of bats, the common V. murinus (*V. pipistrellus*), and V. auribus" (*Plecotus auritus*). He himself added a third, and his editor in 1835 enumerates seven species.

still be found in the river's bank at Grays; the Sciuridæ have 2 species, the Squirrel and Dormouse. The typical family Leporidæ, containing 2 species, represents the division of Rodents unprovided with clavicles; and the rejected Cavia would likewise take his place here.

Catalogue of the Mammalia.

Subclass. GYRENCEPHALA.

Division. UNGUICULATA.

Order. *CARNIVORA.*

Suborder. Digitigrada.

Family. *Mustelidæ.*

Weasel (*Mustela vulgaris*), common.

Stoat (*Mustela erminea*), not uncommon.

Polecat (*Mustela putorius*), sometimes killed by keepers in the Crown and West woods. (Mr. Tugwell.)

Family. *Felidæ.*

Domestic Cat (*Felis* ——).

Family. *Canidæ.*

Dog (*Canis familiaris*).

Fox (*Vulpes vulgaris*), not uncommon. A fox took up his abode voluntarily in Mr. Newman's garden at Peckham, remaining there until it was destroyed by hounds six weeks afterwards.

Division. UNGULATA.

Order. *ARTIODACTYLA.*

Suborder. Omnivora.

Family. *Suidæ.*

Domestic Hog (*Sus scrofa*).

Suborder. Ruminantia.

Family. *Cervidæ.*

Fallow Deer (*Cervus dama*), common in a semi-domesticated condition, as in Greenwich Park.

Family. *Bovidæ.*

Ox (*Bos Taurus*).

Family. *Capridæ.*

Goat (*Capra hircus*).

Sheep (*Ovis aries*).

Order. *PERISSODACTYLA.*

Suborder. Solidungula.

Family. *Equidæ.*

Horse (*Equus caballus*).

Ass (*Asinus vulgaris*).

Division. MUTILATA.

Order. *CETACEA.*

Family. *Delphinidæ.*

Porpoise (*Phocæna communis*). This is by far the commonest Cetacean we can include. A season seldom passes without their appearance at Greenwich

and Deptford, and they occasionally pass much higher up the river. I never heard of one being captured.

GRAMPUS (*Phocæna orca*). The particulars of the capture of one of these animals in the Thames, opposite Greenwich Hospital, were collected by Sir Joseph Banks, and sent by him to Lacépède. Pennant refers to the circumstance ("Brit. Zool." i., 99) under the article "Gladiator Dolphin (*Delphinus Orca*)." It appears that six of these Cetaceans came up the Thames in 1793. The individual in question being struck by three harpoons, rushed off with the boat containing the fishermen who had harpooned him, towed it twice to Greenwich, and once as far as Deptford, against a strong tide running eight miles an hour, and notwithstanding the repeated pike wounds it received whenever it appeared above water. It was finally killed opposite Greenwich Hospital, and its expiring struggles were so violent, that no boat dared to approach it. It proved to be a very large individual, being no less than 31 feet in length, and 12 in circumference.

BOTTLE HEAD (*Hyperödon Butzkopf*). In the "Philosophical Trans." for 1787, in the paper by Hunter "On the Structure and Œconomy of Whales," is a meagre account of a "bottle-nosed whale with two teeth," with a figure of the animal. Hunter adds that "it was caught above London Bridge, in the year 1783, and became the property of the late Mr. Alderman Pugh, who very politely allowed me to examine the structure and take away the bones. It was 21 feet long." (Op. cit. p. 447.) Bell's figure is a reduced copy of our Whale, as given by John Hunter. Hunter was doubtful of its species, saying that it resembled *Delphinus Tursio* (the bottle-nosed dolphin) but was of a different genus, having only two teeth in the lower jaw, concealed by the gum. The belly was white, shaded off by the dark colour of the back. He, however, rightly conjectured that it was the species described by Dale (Harwich 411, pl. 14), viz., *Hyperödon Butzkopf*, and supposes it to have been a young one, as he mentions a skull which must have belonged to one 30 or 40 feet long. The editor of Pennant, I may observe, has fallen into a great error about the size of this specimen: he says, it "did not exceed 11 feet," while Hunter expressly tells us it was 21 feet long.

FAMILY. *Physeteridæ.*

COMMON CACHALOT, or Spermaceti Whale (*Physeter macrocephalus*). I am glad to be able here to resuscitate a still-born record of the Spermaceti whale in our river. The following is an extract from a document I found in Sir Jos. Banks's copy of the "Phil. Trans." in the British Museum.

"Extract from a letter from Walberswick, on the coast of Suffolk, dated March 7, 1788.

"A whale appearing on our coast is a rare phænomenon. The most extraordinary instance that ever happened of this sort was in February, 1763, after a hard gale of wind northerly, when no less than twelve whales, which undoubtedly came out of the Northern Ocean, were towed and driven on shore at the following places, all of them dead, and in a high state of putrefaction, excepting one." (This notable exception is) "One at the Hope Point in the River Thames. This was the only one seen alive. He ran aground, and smothered himself in the mud, and was afterwards made a shew of, in the Greenland Dock. These were all of the Spermaceti kind, and of the male gender," and it is remarkable that out of the twelve, (or rather ten, for two stranded on the Dutch coast,) six were found upon the coast of Kent. From an old engraving of the above specimen in my possession, to which a scale is attached, it appears to have been near 60 feet long.

Within a much more recent period a small Cachalot was captured in the Thames near Gravesend, but I am not in possession of any particulars of the event.

NORTHERN RORQUAL (*Balænoptera Boops*). On Sunday, October 23rd, 1842, a whale was observed in the Thames, opposite Deptford Creek. Five men put off in a boat, and attacked it with a large bearded spear, and having pushed it immediately under Deptford Pier, they overcame and despatched

it. Having by mechanical appliances raised it upon the pier, its dimensions were ascertained to be—

	Ft.	In.
Total length	14	6
Length from nose to angle of mouth	3	10
Tail from fork to fork	3	10

A full account of this whale is to be found in the "Zoologist" for 1842, with a figure; also an account of its capture, with a sketch of the animal, is to be seen in the "Illustrated London News," vol. i., p. 388.

It was a young individual of the Great Northern Rorqual, or Fin Whale (from his dorsal razor-like fin), the largest of existing animals; in its adult state reaching to the extreme length of 120 feet, with a girth of 30 or 40 feet.

Subclass. LISSENCEPHALA.

Order. *CHEIROPTERA.*

Family. *Vespertilionidæ.*

Common Bat (*Vespertilio pipistrellus*). The commonest of our indigenous bats. Very common.

Serotine Bat (*Vespertilio serotinus*). This bat, it is well known, is only found round London.

Reddish-gray Bat (*Vespertilio Nattereri*). Perhaps no limited district in Great Britain has yielded more Vespertilionidæ to the explorer than has ours. Dr. Waring, of Marlings, near Chiselhurst, found three living specimens of the present species in company with others at that place. They were discovered in a large chalk-cavern at the bottom of a shaft 70 feet in depth. He sent them still living to Professor Bell, who kept them alive for a short time, and described them in his "British Quadrupeds," p. 43.

Whiskered Bat (*Vespertilio mystacinus*). A specimen of this Bat was taken in the same cavern, and from this specimen Bell's figure is taken.

Long-eared Bat (*Plecotus auritus*). This, next to the Pipistrelle, is our most common Bat, though far less numerous than the latter. It was taken in the Chiselhurst cavern.

Barbastelle (*Barbastellus Daubentonii*). In Sowerby's "British Miscellany," p. 9, pl. 5, is to be found the first figure and description of this Bat as a British species. Mr. Sowerby's specimen was taken in the powder-mills at Dartford. A specimen was also found in the chalk cavern at Chiselhurst.

Family. *Rhinolophidæ.*

Greater Horse-shoe Bat (*Rhinolophus ferrum-equinum*). This is another species first observed as a British Bat within our district. It was discovered by Dr. Latham at Dartford, in the saltpetre-houses belonging to the powder-mills. Pennant, to whom he communicated his discovery, says that "they are found (there) in the greatest numbers, and frequent them during the evening for the sake of the gnats which swarm there. They have been also found during the winter in a torpid state, clinging to the roof."—*Brit. Zool.*, vol. i., p. 180.

Order. *INSECTIVORA.*

Family. *Talpidæ.*

Mole (*Talpa vulgaris*). Abundant.

Family. *Erinaceidæ.*

Hedgehog (*Erinaceus Europæus*). Common.

Family. *Sorecidæ.*

Common Shrew (*Sorex araneus*). Common.

ORDER. *RODENTIA.*

SUBORDER. CLAVICULATA.

FAMILY. *Sciuridæ.*

SQUIRREL (*Sciurus vulgaris*). Not uncommon in woods. Shooter's Hill. It has been seen in Greenwich Park.

DORMOUSE (*Myoxus avellanarius*). Common.

FAMILY. *Muridæ.*

HARVEST MOUSE (*Mus messorius*). Not uncommon.

LONG-TAILED FIELD MOUSE (*Mus sylvaticus*). Abundant.

COMMON MOUSE (*Mus musculus*). Abundant.

BLACK RAT (*Mus rattus*). There appears to be some doubt concerning the occurrence of this species, some good authorities having informed me that it only exists in a few houses in London. It may, however, be found on ship-board, and no doubt occasionally finds its way on shore, though possibly it may soon be overcome by its congener, the next species.

BROWN RAT (*Mus decumanus*). Most abundant.

FAMILY. *Castoridæ.*

WATER VOLE (*Arvicola amphibius*). Common.

FIELD VOLE (*Arvicola agrestis*). Common.

SUBORDER. NON-CLAVICULATA.

FAMILY. *Leporidæ.*

HARE (*Lepus timidus*). Common.

RABBIT (*Lepus cuniculus*). Very common.

BIRDS.

We next come to the Birds, by far the most important class of animals with which we have to do, and containing nearly twice as many species as the sum total of Quadrupeds, Reptiles, and Fishes, put together. The last edition of Yarrell's "British Birds," published just before its lamented author's decease, contains 354 species, distributed through 131 genera; and at least a dozen new species have occurred during the last few years, which are not included in that work, a list of which will be found in Appendix C. In our district, I have certified the existence of 149 species, distributed through 85 genera; and doubtless the list will be enlarged by continued research. Considering that there are known and described upwards of 6000 species of birds all over the globe, it will be at once apparent that we must not look in any one country for representatives of even every family. It is not, however, necessary to compare the British families with those of the whole world, but a glance at Appendix D will at once show the relations between the *represented* families and sub-families of Great Britain, and those which remain *unrepresented*. The number of the former is 82, while those of the latter amount to 104. The number of our sub-families, therefore, is less than one-half of those into which existing birds are divided, while of *families*, we possess 34 out of 49, or upwards of two-thirds.

It is necessary, however, to make a closer comparison of the birds of our district with those of Great Britain generally. All the great orders, or Raptorial, Insessorial, Rasorial, Grallatorial, and Natatorial birds, are found in Britain, and have their representatives in our list; but while the bulk of British birds is made up of the last two orders, the Grallatorial and the Natatorial, it is in those very two orders that *we* are deficient, and this for reasons which will be easily understood. Great Britain being everywhere surrounded by the sea, the extensive line of coast is fully as important as its comparatively limited inland parts, and the wading or littoral, and the true marine types, together constitute more than one-half of the entire number of species; and it is to be remarked, as shown by Appendix D, that Great Britain possesses all the eleven families of these two orders (except one, a Chinese family), and of the sub-families, 30 out of 44, that is, rather more than two-thirds. But we are here situated so far from the sea, that we are of course almost devoid of marine birds; and were it not for the Thames, which washes our northern side, the few stilted and swimming birds which occasionally visit us would not do so, for we have no large lake or pond to afford them cover. On the other hand, of the large tribe of Passerine

birds, including 120 species, we possess by far the greater number; indeed, they constitute fully three-fourths of our indigenous birds. Of the remaining orders, which are comparatively small, the Raptorial, being for the most part boreal or littoral, are here only represented by one-fourth of the number of British species; and of the Rasorial, or game birds, a still smaller group, we possess one-half.

The birds of our district may be conveniently classified under four heads; it being borne in mind that this classification has especial regard to the circumstances of their occurrence within the boundaries of the Zoological district which we are describing. The first, largest, and most important division contains those birds which reside with us constantly, are found at all seasons of the year, and whose nests and eggs have been observed here. These I shall call our *resident* birds, for the list probably contains some which are not strictly *indigenous* with us. The second division includes those birds which visit us every summer, arriving from the south, for the purposes of nidification and rearing their young; and which, excepting in a few accidental cases, invariably quit us for their winter quarters. In the third division are included those birds, inhabitants of more northern climes, in which they have passed the summer and reared their young, and which they quit on the approach of winter, in order to spend that season in our less frost-bound climate; and the fourth and last section consists of such *occasional* visitors as are borne hither by accidental circumstances, whose advent can never be prognosticated with certainty, and which, according to their natural habits, may be summer, winter, or indiscriminate visitors.

The first list, that of resident birds, contains 60 out of the 140 enumerated by Yarrell in his last edition. It will be seen that the bulk of them consists of Passerine birds, and of these, 20 are songsters of greater or lesser merit. They are as follows, the songsters being marked with an asterisk :—

Kestrel.
Sparrow-hawk.
Barn Owl.
Tawny Owl.
Great Gray Shrike.
*Missel Thrush.
*Song Thrush.
*Blackbird.
*Hedge Accentor.
*Redbreast.
*Stonechat.
*Gold Crest.
Fire Crest.
Great Tit.
Blue Tit.
Cole Tit.
Marsh Tit.
Long-tailed Tit.
Bearded Tit.
*Pied Wagtail.
*Meadow Pipit.
*Skylark.
*Woodlark.
Bunting.
Black-headed Bunting.
*Yellow Ammer.
Cirl Bunting.
*Chaffinch.
Tree Sparrow.
House Sparrow.
*Greenfinch.
Hawfinch.
*Goldfinch.
*Linnet.
*Bullfinch.
Crossbill.
*Starling.
Crow.
Rook.
Jackdaw.
Magpie.
Jay.
Green Woodpecker.
Great Spotted Woodpecker.
Lesser Spotted Woodpecker.
*Creeper.
*Wren.
Nuthatch.
Kingfisher.
Ringdove.
Stockdove.
Pheasant.
Partridge.
Red-legged Partridge.
Peewit.
Water Rail.
Moorhen.
Coot.
Mute Swan.
Little Grebe.

In the second list, that of summer visitors, we possess 30 out of the 63 described by Yarrell, nearly all (or four-fifths) being passerine birds. If our resident birds offer claims to our attention from their interest as a class, from their constancy to our changeable climate, and from the number, variety, and continuance of their songs, those of the present division are not less attractive from the regularity of their appearance and disappearance, the former in April and May, and the latter in September and October; from the fact of their residence with us occurring during the loveliest portions of the year; and from the number and rich quality of the notes of the songsters among them, whose music excels, for the most part, that of our resident choir. The following list of our summer birds of passage is arranged somewhat in the order in which they appear, dating generally from the first of April; and the songsters, twelve in number, are marked with an asterisk.

Chiffchaff.
*Redstart.
*Willow Warbler.
Wryneck.
*Blackcap.
*Whitethroat.
*Swallow.
*Whinchat.
Sand Martin.
*Tree Pipit.
*Nightingale.
Sandpiper.
Grasshopper Lark.
Cuckoo.
*Sedge Warbler.
*Reed Warbler.
Martin.
Yellow Wagtail.
*Lesser Whitethroat.
Wood Wren.
Spotted Flycatcher.
*Garden Warbler.
Turtle Dove.
Swift.
Red-backed Shrike.

Quail.
Landrail.
Goatsucker.
Wheatear.
Great Plover.

The last five are separated by a line from the others, because, owing to their limited numbers, I am not certain of the time of their arrival.

When these have all arrived, and swell the chorus of our native birds (in the month of May) our woods may truly be called vocal; the nightingale and blackcap leading the choir of 32 true song birds, besides the numerous chirpers and others whose limited notes do not admit them into that category.

On the departure of this summer crowd, the balance is somewhat restored by the influx of birds from the north, which, having finished their summer duties of incubation in their *native* climes, now retire before the approaching rigour of winter. For all migration is in one direction at one time, viz., southwards in autumn, northwards in spring. The *sun* is the ruling power over birds, and the *equinoxes* the signals for migration. The *advancing* sun impels the migratory herd before him—the *retiring* sun draws them back in his train. As soon as he has reached the equator in his return from the southern hemisphere, the birds of the middle region flee before the increasing power of his beams to our mild climate, and the boreal birds retire to the yet more temperate regions of Sweden and Norway; all equally bound on the same errand, all having the same purpose, and that is, to pair, to build their nests, and to rear their young. When the sun has reached the northern tropic, the full and complete

geniality of the season induces a corresponding activity in these processes of ornithological economy. He retires southward, and no sooner has he passed the equator, severing, as it were, his close union with the northern hemisphere, than the feathered tribes prepare to follow him; those which have reared their young in the far north retire *with them* from the frost-bound days and iron nights of the advancing winter, and content themselves with the less dreary scenes of *our* climate; while those more tender birds which have enlivened us, and enhanced the smiling summer with their presence, go yet farther southwards to spend the hyemal months in a more equable temperature, and in a more genial clime.

Our winter visitors are 14 in number, out of the 48 enumerated by Yarrell, and are as follows, arranged somewhat in the order in which they appear:—

Golden Plover.	Teal.	Redwing.
Snipe.	Wigeon.	Lesser Redpole.
Jack Snipe.	Merlin.	Mountain Finch.
Gray Wagtail.	Hooded Crow.	Siskin.
Wild Duck.	Fieldfare.	

Of occasional visitors, 103 are described in the "British Birds;" many of these have occurred but once, and of course in every possible section of the island. Of such visitors, the stragglers from the continent of Europe, we reckon 23. Of these, the following occur only in the summer months, being, in fact, birds of the middle region:—

Little Owl.	Thrush-like Warbler.	Alpine Swift.
Pied Flycatcher.	Rose-coloured Pastor.	Glossy Ibis.
Golden Oriole.	Hoopoe.	Wood Sandpiper.
Black Redstart.	Yellow-billed American Cuckoo.	Common Tern.
Savi's Warbler.		

The following, being boreal birds, occasionally visit us in the winter:—

Ring Ousel.	Curlew Sandpiper.	Gadwall.
Waxwing.	Dunlin.	Pintail Duck.
Parrot Crossbill.	Woodcock.	Red-crested Whistling Duck.
Ruff.	Bean Goose.	

It should be observed, that the Ring Ousel appears to have a peculiar double migration, arising from the fact of the bird appearing in spring and again in autumn. It is a boreal bird, and at these times visits us *en route* for other regions. A few more birds, although occasional visitors in our district, are in reality British residents, though *we* cannot include them as such. They are,

Dartford Warbler,	Black-throated Diver,	Kittiwake Gull,
Heron,	Cormorant,	Common Gull,
Bittern,	Gannet,	

and a few other marine birds.

Having thus reviewed the birds of our district in a general way, I shall now proceed to a closer examination of their relations to the British birds in general, and at the same time point out those species which have especial claims to our attention in this place.

Of Rapacious birds, for reasons already given, we possess but few; and of the diurnal division less in proportion than of the nocturnal. Of the two families into which the former are divided, the first, or Vultures, are at best but occasional visitors to Britain, whereas, of the Falconidæ, Britain possesses 6 out of 7 sub-families, and to these our few Accipitres belong. We have but 5 of the 10 species of Nocturni at present recorded, and 2 only common; a poor Rapacious list, which I hope to see enlarged by further research. These nocturnal Owls, I doubt not, exist in greater numbers, but for the same reason as holds with the Bats, they are little observed.

Of the Dentirostral Perchers, we possess all the Shrikes and Fly-catchers, excepting the rare Woodchat (*Lanius rutilus*), which, however, may not be so rare as reported, being sometimes, perhaps, mistaken for its ruddy congener, the comparatively common Redback (*L. collurio*). The nest of the Great Shrike is reported by Mr. Wollaston to have been taken near Gravesend, which, although out of the strict limits of our district, is worth noticing, from the infrequency of the species, and from the fact of its being a winter visitor in this country.

Of the Merulidæ, the Dipper (*Cinclus aquaticus*) is one of those birds which is never found within a certain distance of London, the nearest spot to the metropolis at which it has been observed being Esher, where the form of the river is favourable to its habits. The rare White's Thrush has been reported to me by a gentleman as having been *seen* on Shooter's Hill; but such an observation is subject to so much fallacy, that I have not ventured to include it in the list. All the seven remaining thrushes we possess, the Ring Ousel and Golden Oriole being the least common; the former occurs at regular intervals on Blackheath, and the latter has been killed at Eltham.

Of the 29 species of Sylviadæ, we possess 23—a fair proportion—the 6 absentees being occasional visitants of rare occurrence. Two rare Salicarias are, however, numbered in our list, viz., Savi's Warbler (*Salicaria luscinioides*), and the Thrush-like Warbler (*S. turdoides*). Of the first of these, a bird of Southern Europe, and there a summer visitor of some rarity, a nest and five eggs were taken at Erith, on 28th May, 1853. The second, although occurring on the west coast of France, has only found admission into the last edition of Yarrell's "Birds," and has within the last few years been taken at Dartford, at Erith, and at Sevenoaks. A bird, however, which offers particular claims to our notice, occurs in this family, viz., the Dartford Warbler. This little bird, it will be

remarked, is named from a well-known town within our limits. In fact, it was first observed upon Bexley Heath, in April, 1773; and specimens falling into the hands of the venerable ornithologist, Dr. Latham, he described them under the name of Dartford Warbler (*Sylvia Dartfordiensis*). Dr. Leach, however, separated it from the true Sylvias, and constituted it a genus, under the name Melizophilus. Although it has been spoken of as common even on Blackheath, it does not appear that it ever was really so, and certainly is at present rare in our district. Before I had received any information of its being obtained here, having sought in vain, an eminent ornithologist had expressed to me his conviction that it would not be found in this part of Kent, affirming that it was too near London; but I have since learned from the Rev. A. Rawson, of Bromley Common, that he has himself shot it *there*.

This family (the Sylviadæ) includes many of our most admired songsters, both resident and migratory; the Robin and Hedge-accentor being among the first, and the Nightingale and Blackcap in the latter class.

All the species of Parus, excepting only the occasional Crested Tit (*P. cristatus*), reside with us; but the Blue Tit (*P. cæruleus*) is the most common; and the Bearded Tit (*Calamophilus biarmicus*), not a genuine Parus, the least so, being confined to marshy districts beside the Thames.

The British representative of the family Ampelidæ, the Bohemian Waxwing (*Bombycilla garrula*), occurs not unfrequently in winter. Whether the Gray-headed Wagtail (*Motacilla neglecta*) visits us, I have not discovered. These Motacillidæ require much care in discrimination, from the general similarity of colouring in different species, and from the seasonal changes which their plumage undergoes. Although the White Wagtail (*Motacilla alba*) is reported as common, this must be a mistake, as it is a continental species of rare occurrence. Of Anthidæ, we have the ordinary species.

Among the Conirostal Insessores we possess the usual Larks and Buntings, but of the large family of Finches (*Fruigillidæ*) some require notice. Of the 17 species, we have all but 3 or 4 occasional or local birds. Among them, the Mountain Finch (*Fringilla montifringilla*), usually reckoned rare in these southern parts of England, appears to be a regular visitor to our district in winter; the Tree Sparrow (*Passer montanus*) likewise occurs; and the Hawfinch (*Coccothraustes vulgaris*), a local bird, is not uncommon, and has occasionally nested at Bexley. Of the Common Crossbill, likewise a local bird, precisely the same report may be made, for at Chiselhurst they are not uncommon, and their nests have been found near Dartford. The rare Parrot Crossbill (*Loxia pityopsittacus*) has been taken at Eltham.

Of the Sturnidæ it may be mentioned that the first British specimen of the Rose-coloured Pastor (*P. roseus*) was taken at

Norwood, and from it Pennant's figure was drawn. The Corvidæ require no particular mention.

In the Scansorial sub-order, we possess all the Picidæ, excepting the Great Black Woodpecker (*Picus martius*), a very doubtful British bird, which some would have expunged from the list; all the Certhiadæ, including the Hoopoe (*Upupa epops*), which has been taken in Greenwich Park — indeed, I may mention that of the 9 species of these Scansorial families, all (except the doubtful *Picus martius*) have been found in the Park, and, indeed, in that limited corner of it termed the *Wilderness*. Of the 3 Cuculidæ, 2 of which are very rare occasional visitors, we have 2, Mr. Wollaston having assured me that in 1831 he took four eggs of the Yellow-billed American Cuckoo (*Coccyzus Americanus*) from a chaffinch's nest in an elm half way between Dartford and Gravesend. This occurrence is worthy of notice, from the rarity of the species in question, only 4 of which have been taken in Britain.* The Fissirostral Hirundines all occur, except the American Purple Martin (*H. purpurea*), only once found in Britain, but then apparently hatched here.

The Rasorial Birds are few in number, and are represented by Doves, Pheasants, Grouse, and Bustards. Of the Doves we have the 3 common species; of the Grouse family, consisting of 8 species, we have only the Partridges and the Quail; the true black, gray, and white game being confined to more northern latitudes, and the Red Grouse (*Lagopus Scoticus*) being, as is well known, strictly a British bird, and found nowhere else in the world. Bustards we have none.

I have often speculated on the reason why the domestic birds were not included by Yarrell in his list. Professor Bell has described ten domestic animals in his "British Quadrupeds," being one-eighth of the whole number of species. Why should not our small number of Rasorial birds be enriched by the addition of the Peacock, the Turkey, the Guinea-fowl, and the various stocks of domestic fowls—the Malay, the Java, the Cochin China, and the Spanish?—birds which are as familiar to us all as the sparrows that hop about our path—nay, more so, for there are many persons who would not feel quite sure of a sparrow if they saw a *clean* one among a number of other birds, but who would feel no diffidence if called upon to discriminate between a peacock and a turkey, a guinea-hen and a cochin-china. The mute Swan, a domesticated species, is always included in British lists, but only on account of its tameness and domesticity, at least, I, for one, never heard of a *wild* domestic swan in England, though they occur in France and Holland. We have domesticated

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* If I fully understand Mr. Wollaston, he still possesses one of the eggs in question, by means of which any doubt upon the point might yet be cleared up. The remainder have been destroyed by an unfortunate accident.

examples of all the four classes of Vertebrata—domestic quadrupeds, domestic birds, a domestic reptile, and a domestic fish. "For every kind of beasts, and of birds, and of serpents, and of things in the sea, is tamed, and hath been tamed of mankind." (James iii. 7.) Of the domestic reptile I shall speak hereafter, and the fish I refer to is of course the Goldfish. I have therefore included the following Rasores, usually met with in a domesticated state—the Peacock, the Turkey, the Guinea-fowl or Pintado, the Domestic Fowl, and the Domestic Pigeon.

The Grallatorial or Wading Birds next claim our attention. Our list is, however, very small, for reasons already given; but it will, without doubt, be increased. Of the 12 Plovers, we have but 3; of the Heron family, numbering 14, we have also 3, viz., Herons, from the Cobham or the Penshurst Heronries (they being the nearest), which often forage within our limits; the Bittern sometimes visits our marshes; and the rare Glossy Ibis (*I. falcinellus*) has been taken near Dartford. Of the 34 Scolopacidæ, 8 are all I find at present recorded; amongst them, however, are some rare ones. The Wood Sandpiper (*Totanus glareola*), slightly more frequent of late years than formerly, was shot at Woolwich; and of the Curlew Sandpiper (*Tringa subarquata*), the second example known was shot at Greenwich, and called by Pennant the Pigmy Curlew (*Numenius pygmæus*). Another of Pennant's (or rather of Dr. Latham's) spurious species is a bird which he described in his Index Ornithologicus under the name of the Greenwich Sandpiper (*Tringa Grenovicensis*), from the place where it was shot. Here we might be inclined to consider Greenwich as ornithologically honoured as Dartford was by the Warbler before mentioned; but the *honour* proved as aërial and fleeting as Falstaff's, and the Greenwich Sandpiper finds no place in modern descriptions. It was not until after much search, both in men and books, for the real "daw in borrowed plumes," that I at length discovered the synonym in G. R. Gray's Catalogue of the British Birds in the Museum, from which it appears that some immature or anomalous condition of the Ruff (*Machetes pugnax*) was referred to, a bird not otherwise occurring in our district, though abundant in some parts of England,—and in Leadenhall Market in September.

Lastly, of Natatorial birds we have very few indeed. The only *two* which we can boast as residents with us, out of the 102 British species, are the Domestic Swan (*Cygnus olor*), and the Little Grebe or Dab-chick (*Podiceps minor*). No doubt a few occasionally visit our district in winter, for they are nearly all boreal birds, or winter birds of passage, and the occurrence of a score or so has thus been noticed; representing, indeed, all the British families, except the Alcadæ or Auks, short-winged swimmers, which could only reach us by sheer accident; but the bulk of the Anatidæ, containing about 46 species, and of the Laridæ, 36 species, which chiefly make up this

order, are never seen within our limits, the fact being, as before stated, that in those orders in which Britain generally is richest, *we* are most deficient.

It would be, however, useless to endeavour to fill up these deficiencies (as we have done in the Mammalia) from the remains of extinct species, for it is well known that Ornitholites are extremely scarce in England, not more than a dozen having yet been discovered; while of this scanty list one half consists of mere Ornithichnites, or impressions of footsteps of birds, and no remain has, I believe, been found within our limits.

Catàlogue of the Birds.

Order. *RAPTORES.*

Suborder. Plumicolles.

Family. *Falconidæ.*

Merlin (*Falco æsalon*). This species has been shot near Eltham. (Mr. Tugwell.)

Kestrel (*Falco tinnunculus*). Not uncommon. I have seen it in my garden, Wellington Grove, December, 1853.

Sparrow Hawk (*Accipiter nisus*). Not uncommon.

Hen Harrier (*Circus cyaneus*). Occasionally seen in the marshes beyond Greenwich. (Mr. Tugwell.)

Suborder. Nocturni.

Family. *Strigidæ.*

Long-eared Owl (*Otus vulgaris*). Shot at by myself, but missed, in Eltham. (Mr. Wollaston.) Has also been taken at Dartford.

Short-eared Owl (*Otus brachyotos*). I have seen a specimen of this owl, killed near Greenwich. (Mr. Tugwell.) Has been taken at Dartford.

Barn Owl (*Strix flammea*). Common. They breed in the east end of Eltham Palace.

Tawny Owl (*Syrnium stridula*). Less common than the last. I have seen one in my garden, which remained there several days, and swooped down upon persons who went out.

Little Owl (*Strix passerina*). Caught at Eltham by Mr. Mills, in the spring of 1857, and kept alive for some weeks.

Order. *INSESSORES.*

Suborder. Dentirostres.

Family. *Laniadæ.*

Great Gray Shrike (*Lanius excubitor*). Seen in Burnt-ash Lane by Dr. Gray. Shot near Bromley in January, 1854. (Rev. A. Rawson.) Taken at Eltham by Mr. Mills. Mr. Wollaston, of Chiselhurst, has seen a nest and young between Dartford and Gravesend. Within the last two or three years one was taken by a bird-catcher behind Mr. Spencer's house at Kidbrook. It pounced upon the lure-birds, and was killed by the net.

Red-backed Shrike (*Lanius collurio*). Not uncommon. Nests on Shooter's Hill. Regularly visits Eltham.

Family. *Muscicapidæ.*

Spotted Flycatcher (*Muscicapa grisola*). Common.

Pied Flycatcher (*Muscicapa atricapilla*). A young bird was shot at Bromley in the summer of 1856. Some others were with it, but I could not hear that

the old birds had been seen. (Rev. A. Rawson.) Mr. Mills, of the Moat, Eltham, has twice, during the last forty years, seen the pied ~~flycatcher~~ wagtail bring up a young cuckoo.

FAMILY. *Merulidæ.*

MISSEL THRUSH (*Turdus viscivorus*). Common.

FIELDFARE (*Turdus pilaris*). Common in winter. The Rev. A. Rawson has observed it at Bromley as late as May 13th; probably a wounded bird.

SONG THRUSH (*Turdus musicus*). Common.

REDWING (*Turdus iliacus*). Common in winter.

BLACKBIRD (*Turdus merula*). Common.

RING OUSEL (*Turdus torquatus*). Mr. Hutchinson, of the Paragon, Blackheath, tells me that an occasional visitor has made its appearance in his garden, one at a time, for several seasons, both on their vernal and autumnal migrations.

GOLDEN ORIOLE (*Oriolus galbula*). This single European species of a large genus seems to favour the county of Kent with its presence more than any other. In the Blackheath district, one was shot by Mr. Joiner, of the Crown Manor Lodge, at Eltham, on 14th June, 1853.

FAMILY. *Sylviadæ.*

HEDGE ACCENTOR (*Accentor modularis*). Common.

REDBREAST (*Erythaca rubecula*). Common.

REDSTART (*Phœnicura ruticilla*). Generally distributed. Common in Greenwich Park.*

BLACK REDSTART (*Phœnicura tithys*). Seen between Widmore and Bromley. (Mr. Hutchinson.)

STONECHAT (*Saxicola rubicola*). Generally distributed on furzy commons.

WHINCHAT (*Saxicola rubetra*). Ditto.

WHEATEAR (*Saxicola œnanthe*). I have seen this bird on Blackheath and in Burnt-ash Lane, Lee. It is not common within the district.

GRASSHOPPER WARBLER (*Salicaria locustella*). I have heard this bird at Rushy Green, on Shooter's Hill, and in the fields behind Morden College.

SEDGE WARBLER (*Salicaria phragmitis*). Among reeds on the banks of the Thames. They generally frequent a small patch of reeds between Burnt-ash Lane and Hithergreen.—Lane between Charlton and the river. Not uncommon.

REED WARBLER (*Salicaria arundinacea*). By no means so generally distributed as the last species. They may be found in the marshes between Erith and Woolwich; but twenty years ago they existed in numbers on the banks of the Surrey Canal, near New Cross, and in marshy spots on the Lower Road, Deptford, but were driven from these haunts by the progress of building, and by the Greenwich Railway. *See* "Zoologist," p. 97.

THRUSH-LIKE WARBLER (*Salicaria turdoides*). This was recorded in the "Zoologist" (3476) as the Thrush Nightingale (*Philomela turdoides*). A specimen of this bird was killed at Dartford in May, 1852, and a second has been shot at Erith. One also occurred between Tunbridge and Sevenoaks. (Yarrell, 2nd Supp.)

SAVI'S WARBLER (*Salicaria luscinioides*). A nest and five eggs of this rare bird were taken at Erith on 28th May, 1853, by Mr. Green, of City Road. "Zool." 3945.

NIGHTINGALE (*Philomela luscinia*). Widely distributed; common on Shooter's Hill, and has sung on the south side of Blackheath within the last two years, and in Morden College gardens in the present spring.

BLACKCAP (*Curruca atricapilla*). Common.

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* When a particular locality is mentioned in connection with a not uncommon bird, it is because, as far as my experience serves me, it is certain to be found there at the proper season.

Garden Warbler (*Curruca hortensis*). By no means common. I have heard him singing near Morden College.

Whitethroat (*Curruca cinerea*). Common.

Lesser Whitethroat (*Curruca sylviella*). Much less common than the last. Regularly builds in my garden.

Wood Wren (*Sylvia sylvicola*). Tolerably common in Shooter's Hill wood. I have heard it also much nearer town; but they usually frequent high trees in woody places.

Willow Warbler (*Sylvia trochilus*). The most abundant of the summer warblers. Sings incessantly.

Chiff-chaff (*Sylvia hippolais*). Common. Love Lane. In my garden.

Dartford Warbler (*Melizophilus Dartfordiensis*). This bird was first made known as inhabiting this country by Dr. Latham, from specimens obtained at Bexley Heath in April, 1773. Mr. Rennie speaks of having observed it on Blackheath in 1830, but I have never been able to meet with it, nor could I hear of any one who had seen it of late years, until the Rev. A. Rawson, of Bromley Common, reported to me that he had himself shot this bird on Hayes Common. A writer in "Loudon's Magazine," thirty years ago, states that for many years he had diligently searched the neighbourhood of Dartford for them, but in vain.

Golden-crested Regulus (*Regulus cristatus*). Not unfrequent, especially where there are firs. Love Lane; Tanner's Hill; Chiselhurst; Wickham Wood, &c.

Fire-crested Regulus (*Regulus ignicapillus*). Mr. Hutchinson assures me he has seen this species in his garden.

Family. *Paridæ.*

Great Tit (*Parus major*). Common.

Blue Tit (*Parus cæruleus*). Abundant.

Cole Tit (*Parus ater*). Not common. Greenwich Park.

Marsh Tit (*Parus palustris*). Not common. Greenwich Park.

Long-tailed Tit (*Parus caudatus*). Not uncommon.

Bearded Tit (*Calamophilus biarmicus*). Charlton. (Mr. Hutchinson.)

Family. *Ampelidæ.*

Bohemian Waxwing (*Bombycilla garrula*). Not unfrequently taken in winter. A specimen was captured at Eltham in January, 1850. "Zool." 2767. Mr. Mills, of Eltham, also mentions one captured there, possibly the same specimen. Mr. W. Morris, Jun., informs me that this bird has been shot at Deptford and at Lewisham.

Family. *Motacillidæ.*

Pied Wagtail (*Motacilla Yarrellii*). Common.

Gray Wagtail (*Motacilla boarula*). Not uncommon in winter. Mr. Blyth once observed a pair on Penge Common, at the end of May, that evidently had a nest in the neighbourhood, but he was unsuccessful in his endeavours to find it. Dartford.

Ray's Wagtail (*Motacilla flava*). Common.

Family. *Anthidæ.*

Tree Pipit (*Anthus arboreus*). Not uncommon.

Meadow Pipit (*Anthus pratensis*). Common.

Suborder. Conirostres.

Family. *Alaudidæ.*

Skylark (*Alauda arvensis*). Abundant.

Woodlark (*Alauda arborea*). By no means common. Shooter's Hill and Eltham.

FAMILY. *Emberizidæ.*

COMMON BUNTING (*Emberiza miliaria*). Abundant in hedgerows.

BLACK-HEADED BUNTING (*Emberiza schæniclus*). Not uncommon in marshy places. I have observed it in the small reed patch between Hithergreen and Burnt-ash Lane.

YELLOW BUNTING (*Emberiza citrinella*). Abundant in hedgerows.

CIRL BUNTING (*Emberiza cirlus*). Mr. Tugwell informs me he has seen this species in fields between Eltham and Shooter's Hill.

FAMILY. *Fringillidæ.*

CHAFFINCH (*Fringilla cœlebs*). Abundant.

MOUNTAIN FINCH (*Fringilla montifringilla*). Common about Bromley in winter, where the Rev. A. Rawson has observed it as late as April 8th. Mr. Newman says ("Zool." 3982) that in March, 1853, he found several frozen to death in his garden at Peckham; and Mr. Tugwell has seen specimens shot near Greenwich.

TREE SPARROW (*Passer montanus*). The Rev. A. Rawson reports to me its existence about Bromley, but says it is uncommon.

HOUSE SPARROW (*Passer domesticus*). Abundant everywhere.

GREENFINCH (*Coccothraustes chloris*). Common.

HAWFINCH (*Coccothraustes vulgaris*). This sparingly-distributed species has been observed to exist in considerable numbers at Dartford. A nest, with three eggs and one young bird, was taken from a tall tree near Bexley (Yarrell, i. 532), although it is a winter visitor. Pennant also relates (i. 421, last ed.) that a Hawfinch was shot near Dartford in the summer months. Mr. Wollaston says: "They are in considerable abundance in this parish (Chiselhurst); more particularly in my garden, where they have once built." Mr. Hutchinson tells me he has seen flocks of these birds at Eltham Green; and the Rev. A. Rawson, of Bromley Common, informs me that the Hawfinch is in that locality very frequent in spring and summer. He adds: "I have counted seven at once in my garden, and have eggs from a neighbouring one."

GOLDFINCH (*Carduelis elegans*). Absent from the immediate neighbourhood of Blackheath; not uncommon in other parts of the district.

SISKIN (*Carduelis spinus*). This I have seen once or twice near Lewisham. (Mr. Tugwell.) Common in winter about Bromley. (Rev. A. Rawson.) Between Lee and Eltham, in winter.

LINNET (*Linota cannabina*). Absent from the immediate neighbourhood of Blackheath; common in other parts of the district, especially on furzy commons.

LESSER REDPOLE (*Linota linaria*). Not uncommon in some parts of the district.

BULLFINCH (*Pyrrhula vulgaris*). Not uncommon. I have seen this bird on Blackheath.

COMMON CROSSBILL (*Loxia curvirostra*). The editor of the last edition of Pennant's "Zoology" (i. 427) says: "I know but one certain instance of their breeding in England, and that on a pine-tree within two miles of Dartford, in Kent. The nest, almost the size of a blackbird's, was made on the lowermost fork of the tree, composed of dried twigs of a loose texture; however, no eggs were laid, for from the too great curiosity of frequent observers, the birds forsook it." He further goes on to observe, that "a female, shot at Erith in August, 1791, was bare on the breast; a circumstance common to sitting birds." I am not aware that this curious fact has since been paralleled in England. At Penshurst, near Tunbridge Wells, these birds, according to Yarrell, have appeared in such numbers that nine were killed at one shot. Mr. Wollaston says they are not unfrequent at Chiselhurst; and the Rev. A. Rawson informs me that a red male was taken on Bromley Common on March 9th, 1851.

PARROT CROSSBILL (*Loxia pityopsittacus*). This very rare British bird has been once shot, by Mr. Wollaston, at Eltham. It was a female.

FAMILY. *Sturnidæ.*

STARLING (*Sturnus vulgaris*). Abundant.

ROSE-COLOURED PASTOR (*Pastor roseus*). Judging from Pennant's account of this bird ("Brit. Zool.," i. 413), it would seem that it was first known as a visitant to Britain at Norwood. He says: "Mr. Edwards discovered this beautiful bird twice in our island; once near London, at Norwood, and another time in Norfolk." Though Norwood is not within the strict limits of our district, the circumstance is too interesting to omit. Pennant's plate was taken from the Norwood specimen.

FAMILY. *Corvidæ.*

CARRION CROW (*Corvus corone*). Not common. They may often be seen hovering over the river, and dipping *into* it in search of food.

HOODED CROW (*Corvus cornix*). I have seen this species on Blackheath. (Mr. Hutchinson.) Abundant in winter in the meadows between Lee and Eltham. (Mr. Wollaston.)

ROOK (*Corvus frugilegus*). Abundant.

JACKDAW (*Corvus monedula*). Common.

MAGPIE (*Pica caudata*). Not uncommon.

JAY (*Garrulus glandarius*). Not uncommon.

SUBORDER. SCANSORES.

FAMILY. *Picidæ.*

GREEN WOODPECKER (*Picus viridis*). Not uncommon. Greenwich Park.

GREAT SPOTTED WOODPECKER (*Picus major*). Rare. Greenwich Park.

LESSER SPOTTED WOODPECKER (*Picus minor*). Rare. Greenwich Park. (Mr. Tugwell.) Mr. Mills has seen it at Eltham.

WRYNECK (*Yunx torquilla*). Not uncommon. Greenwich Park.

FAMILY. *Certhiadæ.*

CREEPER (*Certhia familiaris*). Common.

WREN (*Troglodytes Europæus*). Common.

HOOPOE (*Upupa epops*). One was shot in Greenwich Park five or six years ago. Mr. Tugwell refers to another specimen, but I have no particulars.

NUTHATCH (*Sitta Europæa*). Not uncommon, but local. Common in Greenwich Park, near the Wilderness.

FAMILY. *Cuculidæ.*

CUCKOO (*Cuculus canorus*). Common. Greenwich Park, May, 1859.

YELLOW-BILLED AMERICAN CUCKOO (*Coccyzus Americanus*). Mr. Wollaston of Chiselhurst, in 1831, took from the nest of a chaffinch (?) between Dartford and Gravesend, in an elm-tree, about twelve feet from the ground, four eggs which long puzzled him, until he recognised them, from specimens in the British Museum cabinet, to be the eggs of this bird.

SUBORDER. FISSIROSTRES.

FAMILY. *Halcyonidæ.*

KINGFISHER (*Alcedo ispida.*) Banks of Ravensbourne and Cray. Occasionally seen in the Wilderness, Greenwich Park, but does not remain. It built its nest there a few years since, and apparently visited the river for food.

FAMILY. *Hirundinidæ.*

SWALLOW (*Hirundo rustica*). Abundant.

MARTIN (*Hirundo urbica*). Common.

SAND MARTIN (*Hirundo riparia*). Common, but more local than the preceding. They may generally be seen on Blackheath.

SWIFT (*Cypselus apus*). Generally distributed.

ALPINE SWIFT (*Cypselus alpinus*). Has been shot at Lewisham, as I am informed by Mr. W. R. Morris.

FAMILY. *Caprimulgidæ.*

NIGHTJAR (*Caprimulgus Europæus*). Not uncommon on the borders of woods. Shooter's Hill, where they were formerly abundant. Common near Bromley. (Rev. A. Rawson.)

ORDER. *RASORES.*

FAMILY. *Columbidæ.*

RINGDOVE (*Columba palumbus*). Common in woods.

STOCKDOVE (*Columba œnas*). Less common than the preceding.

TURTLE DOVE (*Columba turtur*). Not uncommon in summer.

COMMON PIGEON (*Columba* ——?). The *C. domestica* of Pennant, and its varieties. Although some derive our domestic species from the Rock Dove (*C. livia*), there appears to be scarcely sufficient reason for so doing.

FAMILY. *Phasianidæ.*

PHEASANT (*Phasianus colchicus*). Common in the West and Crown Woods.

PEACOCK (*Pavo cristatus*). No doubt, originally from India, from the testimony of all ancient historians. They were first imported to Samos, and kept in the temple of Juno, whence has spread a notion that they were natives of that place. Athenæus, ix.; Ælian. Nat. Anim. v.

TURKEY (*Meleagris Gallopavo*). Undoubtedly from America. Its name implies that it was supposed to partake of the nature of the Guinea-fowl, the domestic fowl, and the peacock.

DOMESTIC FOWL (*Gallus* ——?). An excellent authority, Mr. Blyth, considers the domestic varieties to be derived from the *Gallus ferrugineus* (Blyth), which is the *Gallus Bankiva* of Temminck, and inhabits the jungly districts of all N. India. (*See* Cat. Mus. Asiat. Soc. Calcutta.)

GUINEA-FOWL (*Numida meleagris*). Originally from the Guinea coast of Africa.

FAMILY. *Tetraonidæ.*

PARTRIDGE (*Perdix cinerea*). Common. May be heard on the skirts of Blackheath.

RED-LEGGED PARTRIDGE (*Perdix rufa*). Occasionally met with in company with the last. An introduced species.

QUAIL (*Coturnix vulgaris*). Not uncommon. Between Morden College and Eltham. They have been observed in the open square of Greenwich Hospital.

ORDER. *GRALLÆ.*

FAMILY. *Charadriidæ.*

GREAT PLOVER (*Œdicnemus crepitans*). Not uncommon.

GOLDEN PLOVER (*Charadrius pluvialis*). Fields and open places near Dartford. (Mr. Tugwell.)

PEEWIT (*Vanellus cristatus*). Not uncommon.

OYSTER-CATCHER (*Hæmatopus ostralegus*). A notice of the capture of this bird near Dartford may be found in "Loudon's Magazine," iii. 435.

FAMILY. *Ardeidæ.*

HERON (*Ardea cinerea*). Occasionally seen flying over. The nearest Heronries are at Cobham Hall, near Gravesend, and at Penshurst Park, near Tunbridge Wells. A heron run down by a boy near Bexley was found to have a good-sized water-rat in its crop.

BITTERN (*Botaurus stellaris*). Mr. Tugwell says that this bird has been shot in the marshes between Erith and Dartford.

GLOSSY IBIS (*Ibis falcinellus*). A specimen of this rare visitant was shot in 1827 on the bank of a fish-pond at Blendon Hall Park, near Bexley.

FAMILY. *Scolopacidæ.*

COMMON SANDPIPER (*Totanus hypoleucos*). Not uncommon by streams.

WOOD SANDPIPER (*Totanus glareola*). A specimen of this rare bird was shot at Woolwich on June 1, 1850. ("Zool." 2853.)

RUFF (*Machetes pugnax*). This is the Greenwich sandpiper (*Tringa Grenovicensis*) of Dr. Latham and Pennant. (*See* Brit. Mus. List.)

WOODCOCK (*Scolopax rusticola*). Uncommon.

SNIPE (*Scolopax gallinago*). Marshes beyond Greenwich.

JACK SNIPE (*Scolopax gallinula*). Same as last.

CURLEW SANDPIPER (*Tringa subarquata*). Pennant gives the first notice of this bird under the name of pigmy curlew (*Numenius pygmæus*), and says: "Only one instance occurs of this rare bird having been observed in England, which was shot near Sandwich." The editor of the last edition appends in a note: "Another has since been met with at Greenwich, in August." (ii. 38.)

DUNLIN (*Tringa variabilis*). Visits the Kent Waterworks, Deptford. (Mr. Morris.)

FAMILY. *Rallidæ.*

LAND-RAIL (*Crex pratensis*). Not uncommon.

WATER-RAIL (*Rallus aquaticus*). Not uncommon.

MOORHEN (*Gallinula chloropus*). Not uncommon. Three or four years ago these birds bred on the round pond in Blackheath Park.

FAMILY. *Lobipedidæ.*

COOT (*Fulica atra*). Not uncommon. Ponds at East Wickham. (Mr. Tugwell.)

ORDER. *NATATORES.*

FAMILY. *Anatidæ.*

BEAN GOOSE (*Anser segetum*). Occasionally seen passing over in flocks at the beginning and end of winter.

DOMESTIC GOOSE (*Anser* ——?). Most writers derive this bird from the Gray-lag Goose (*Anser ferus*); but some are disposed to consider it as a cross between the Bean Goose and the White-fronted (*A. albifrons*).

HOOPER, or WHISTLING SWAN (*Cygnus ferus*). Has been taken in times past in Dartford marshes.

MUTE SWAN (*Cygnus olor*). On some pieces of water, semi-domesticated.

COMMON SHELLDRAKE (*Tadorna vulpanser*). Has been shot in the marshes near Dartford.

GADWALL (*Anas strepera*). This rare duck was shot on a pond at Bromley Common in company with tame ducks. (Rev. A. Rawson.)

PINTAIL DUCK (*Anas acuta*). This species occurs in winter along the Thames. (Mr. Tugwell.) Dartford marshes.

WILD DUCK (*Anas boschas*). Not uncommon.

DOMESTIC DUCK (*Anas* ——). Probably traceable to the Mallard, or Wild Duck. It may be remarked that several species of ornamental water-fowl may be seen at the Moat, Eltham, in the neighbourhood of the ancient bridge, as well as in Scott's Park, near Chiselhurst.

TEAL (*Anas crecca*). Not common.

WIGEON (*Anas penelope*). Not common.

VELVET SCOTER (*Oidemia fusca*). Has been shot in the marshes near Dartford.

COMMON SCOTER (*Oidemia nigra*). Ditto.

RED-CRESTED WHISTLING DUCK (*Fuligula rufina*). A specimen was killed, out of a flock of eighteen, on the Thames near Erith, and is figured by Gould in his "Birds of Europe."

SCAUP DUCK (*Fuligula marila*). Has been shot in the marshes near Dartford.

SMEW (*Mergus albellus*). Ditto.

GOOSANDER (*Mergus merganser*). Has been taken in Erith marshes; also in the marshes near Dartford.

FAMILY. *Colymbidæ.*

LITTLE GREBE (*Podiceps minor*). Not uncommon on secluded waters.

BLACK-THROATED DIVER (*Colymbus arcticus*). A male specimen was killed on Jan. 21st, 1850, at the Saltings, near Purfleet, on the Thames. ("Zool." 2706.)

FAMILY. *Pelicanidæ.*

CORMORANT (*Phalacrocorax carbo*). One was taken in April, 1848, on the Thames at Swanscombe. ("Zool." 2149.)

GANNET (*Sula alba*). A Soland goose was captured by a shepherd in a turnip-field, three miles from Dartford, and five from the Thames. ("Zool." 1701.)

FAMILY. *Laridæ.*

COMMON TERN (*Sterna hirundo*). Sometimes follows up the course of the Thames on their spring return.

BLACK-HEADED GULL (*Larus ridibundus*). Has been taken in Dartford marshes.

GREAT BLACK-BACKED GULL (*Larus marinus*). Ditto.

KITTIWAKE GULL (*Larus tridactylus*). I have seen this species flying over the Thames in rough weather during winter. (Mr. Tugwell.)

COMMON GULL (*Larus canus*). Not uncommon over the Thames. I have seen it in my garden, and over Blackheath.

REPTILES.

In Reptiles this country is extremely poor, and that probably for a reason hinted at in a former place. These creatures are found in their greatest abundance and variety in tropical countries, where the heat of the sun makes up for the deficiency of their animal temperature; and as we rise northwards through the temperate zone, they rapidly decrease in number. In Gilbert White's time, 12 species were mentioned, though that was a larger number than were really known; for we find, only twenty years ago, that 12 species were all that were described. The only difference made on the *last* edition of Bell's "Reptiles" is, that one species* described as such in the former edition is struck out, finally reducing the number of indigenous Reptiles to 15. And yet we are, zoologically, better off than our sister island, whence, as is well known, through the benevolence of St. Patrick, the snakes were long ago expelled.

Although Britain possesses only 15 species of Reptiles, distributed through 11 genera, it must not be supposed that our zoological good fortune has deserted us. Among these 11 genera are representatives of all the 4 great orders of Reptiles—the Chelonians, the Saurians, the Ophidians, and the Amphibians; and the 15 species they contain are, for the most part, typical of many of the most important Reptilian families.

In our immediate district we possess 9 of the 15 species, comprised in 7 genera; but among these we retain the types, as far at least as concerns the second, third, and fourth orders. Of Chelonian reptiles, the only specimens which have put forth any claims to admission into the British Fauna are two or three marine species, which have at rare intervals been taken on our coasts, wanderers from warmer latitudes. None of these have come within our limits; but there is within a short distance from us, viz., at Burham, three miles from Chatham, a Tortoise (*Chelonia Benstedi*) inclosed in the lower chalk, which in that district is so rich in reptilian remains. But, not to go so far even as Burham, we may find a Chelonian to represent the otherwise vacant rank; and here I must redeem my promise of introducing an animal in exchange for the Guinea-pig which was denied admission among our domesticated Mammalia. We have a domestic Chelonian which I think has claims to admission greater than those of the Restless Cavy, viz., the common Tortoise (*Testudo Græca*), one of the land family, whose frequent presence in our markets, and wide distribution in our gardens, whose tolerance of our climate, and

* *Rana Scotica*, only a large variety of the common Frog.

whose well-known habits, warrant its admission into our domestic British Fauna. Who has not had, at some time or other, a tortoise? or who has not (as Gilbert White would have said) "made acquaintance with" some tame one?

The order of Saurian Reptiles is large, and embraces a considerable diversity of forms. The gigantic reptiles of distant ages form 3 suborders in this division; and it is perhaps worth mentioning that, although we have no remains discovered up to the present time, within the strict limits of our district, yet within a very short distance from us are found the remains of all the three great extinct Saurian families. At Maidstone that gigantic Dinosaur, the *Iguanodon Mantelli*, lies imbedded in the lower greensand; the *Pterodactylus compressirostus* and *Pt. giganteus*, types of the anomalous Pterosaurians, are found at Burham and at Maidstone, in the strata before mentioned; and the same Burham chalk contains that strange Enaliosaurian, the Plesiosaurus. All these lie within 30 miles of us. But of recent Saurians we have a sorry list, our common *Zöotoca vivipara* being the sole representative; but we must not complain, for it is typical of the Lacertilian family. Loricated Saurians, of which the Crocodile is the type, are, of course, confined to tropical countries, and we must content ourselves with the extinct Crocodile, whose tomb is in the London clay at Hackney.

Of Ophidians we possess three, each of them representatives of a well-marked family. The false snakes (Saurophidia) are represented by the Slow-worm (*Anguis fragilis*), while the true serpentine character is possessed by the other two; one of which, the Viper (*Pelius Berus*), exhibits the venomous, and the other, the ringed snake (*Natrix torquatus*), the Colubrine, or non-venomous form; the latter representing, in addition, the aquatic family.

Among the Amphibia we possess but one of the two British species of Frog, the other being of very local distribution. We claim, however, both the British species of Toad, the Natter-jack (*Bufo calamita*) being peculiarly our property. These all represent the tail-less family of Amphibia. Of the family Urodela, or Salamandrine Amphibia, we possess one Triton and one Lissotriton of the two of each genus accounted British. All these five Amphibia belong, of course, to the Caducibranchiate form; and the remaining families are very anomalous, very rare, and contain very few species.

Catalogue of the Reptiles.

Order. *TESTUDINATA.*

Family. *Cheloniadæ.*

Common Tortoise (*Testudo Græca*). Common in a domesticated condition.

Order. *SQUAMATA.*

Suborder. Sauria.

Family. *Lacertadæ.*

Viviparous Lizard (*Zootoca vivipara*). Common on furzy heaths, and in gravel-pits. Blackheath, though not so abundant now as ten years ago.

Suborder. Saurophidia.

Family. *Anguidæ.*

Blind Worm (*Anguis fragilis*). Not uncommon in woods.

Suborder. Ophidia.

Family. *Colubridæ.*

Ringed Snake (*Natrix torquata*). Not common.

Family. *Viperadæ.*

Common Viper (*Pelius Berus*). This species is by no means common, or at all events shows itself but seldom. Mr. Tugwell has met with it in Westwood.

Order. *AMPHIBIA.*

Suborder. Anoura.

Family. *Ranadæ.*

Frog (*Rana temporaria*). Abundant in every pond.

Family. *Bufonidæ.*

Common Toad (*Bufo vulgaris*). Abundant.

Natter-Jack Toad (*Bufo calamita*). This toad was formerly common on Blackheath, and several other such spots in the neighbourhood of London. (*See* "Loudon's Mag.," vi., 185.) It is not so frequent in the former place now as it used to be. Bell says: "I have found it in considerable numbers near ponds and ditches, not far from Deptford, where they appear to have congregated for the purpose of breeding."—*Brit. Rep.*, p. 117.

Suborder. Urodela.

Family. *Salamandradæ.*

Common Warty Newt (*Triton cristatus*). Not uncommon in ponds and ditches.

Common Smooth Newt (*Lissotriton punctatus*). Abundant in ponds and ditches.

FISHES.

It was not originally contemplated to include the River Thames within the prescribed boundaries of our district; but on consideration it appeared to be a pity to omit any opportunity of adding to our stock of zoological information, or to pass over with neglect a branch of Zoology already too little studied; and I have therefore obtained, as far as possible, accounts of the fish which pass through any part of the Thames within our limits, it being obviously impossible to draw any other line of demarcation. It is true, we have the rivers Cray and Ravensbourne on either side of us, rivulets which produce about fifteen fishes of the ordinary brook species, which have supplied sport to the angler from time immemorial. It was supposed, however, that by including the Thames, many a sea-fish, as well as many fresh-water fishes which delight in broader and deeper-flowing streams than the brook-like Cray, would be included, and our Fauna somewhat swelled by the accession. For old Izaak, the father of the angle, speaks of the Thames as "the river of chiefest note in the nation," and Walton always had an eye to fish and fishing; the angler also will remember the Thames (*our* Thames) quoted by him for its piscine productiveness. Thus, speaking of the Roach, he says: "The Thames I believe to afford the largest and fattest in this nation, especially below London Bridge." And when we remember that the Thames ebbs and flows twice a day through upwards of sixty miles, the peculiar advantages of the situation of the river might make us expect abundance of fish. But it is at once her glory and her bane that she bears upon her bosom the great Metropolis. She is the main source of the wealth and commerce of London, and we repay the obligation by making her the receptacle of the foulest offscourings of the overcrowded city, the largest common sewer in the world. The consequences may easily be inferred. Fish which formerly were accustomed periodically to ascend high up the river in abundance, now never come at all, or only at rare intervals; regular fisheries have long since been abandoned, and London fishermen are a phenomenon. The Thames in the vicinity of London Bridge was formerly much frequented by amateur anglers, a fact which accounts for the number of fishing-tackle shops in Crooked Lane, leading to London Bridge; and within the memory of man, a person has gained a livelihood by attendance upon these Cockney anglers; but this is now a matter of history. Until recently, fishermen have pushed off by night from Greenwich, and brought ashore Flounders, or made a haul of Whitebait between Blackwall and Woolwich; but these are now rarities; flounders are

not worth the looking after, and whitebait seldom appear above Erith.* The Thames shad, or Twaite shad (*Alosa finta*), was, a dozen years ago, abundant between Greenwich and Blackwall; and the wharf now occupied by Coles Child and Co., was formerly called *Shad Wharf*, from its being a favourite spot for these fish; but the fishermen must go far down the river now in search of Shad. Even eels have, of late years, not mustered in sufficient quantities to make the "fare" worth noticing. So it is with salmon and all other fish. And it is not alone the increase of the volume of London sewage which poisons the water, and renders it uninhabitable (and some would say, indeed, that this has little or no share in the matter), but the streams of noxious waste liquors from gas manufactories, and such like, on its banks for miles down on either side, the abundance of steam-boats, and the constant agitation and disturbance caused by them, all assist in preventing the access of fish, it being remembered that these latter are in the greatest crowd in the summer, a season when most fish would visit us, but which is holiday time for *Londoners* as well as for fishes. The only wonder, indeed, is, that any single fish should be found to adventure himself into so vile a compound as Thames water; and we should be inclined to make a prospective speculation in Geology, which is, that should our Thames at some future time dry up, and its bed be brought under the inspection of a future Agassiz, it would be found amazingly rich in ichthyolites, the remains of fish which have wandered into the poisonous fluid, and have there sunk helpless, to be imbedded in the mud and silt which will one day form so rich and fertile an alluvium.

In spite, however, of all these vital obstacles, fish *do* breathe the Thames, and live. We have seen that the large aquatic Mammalia reach us, not lately, it is true, except porpoises, which come up nearly every summer, and have been observed as high as Vauxhall; also a few of the fish in the accompanying Catalogue are from time to time likewise found.

Great Britain is well supplied with fishes; and not only is every section and every order represented by fishes which visit its extensive coast-line, but every family of fishes in the Cuvierian arrangement (adopted also by Yarrell), excepting only three of the Acanthopterygii, finds its representative on our shores, which are visited by

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* I am informed by my friend Professor Busk that he well remembers the time when Whitebait might be seen swarming about the 'Dreadnought,' and when the water pumped up into the ship contained abundance of shrimps. At that time, also, the bank opposite the 'Dreadnought' was thickly covered with vegetation—*Alisma plantago*, *Sagittaria sagittifolia*, &c.; and this was a favourite resort for flounder-catchers. The disappearance of all this animal and vegetable life the Professor attributes, not to the London sewage, but to the great increase of chemical works, gas-works, patent fuel-factories, &c., the evil effects of which will be just as great, and as much felt, after vast sums have been spent in merely diverting the comparatively innocuous house-sewage, as they are now.

254 species of fish. It cannot be expected that we should be able to include a member even of each order, as we are not near the sea; but we have both Osseous and Cartilaginous fishes, the former including both hard and soft-finned fishes, and the latter two of the three orders. The bulk of our fishes, however—viz., two-thirds—belong to the order of abdominal Malacopterygii; that is, flexible-finned fishes, having the ventral fins situated on the belly, without any connection with the bones of the shoulder.

It was said of the River Trent, that it was so named from its possessing *thirty* different kinds of fish, a number esteemed very considerable for a single river. Just this number are enumerated in the accompanying Catalogue, as inhabitants of the Thames and its tributaries in our district. Among these are the ordinary fish in request by the angler, and the following sixteen fish are taken in the Ravensbourne and Cray: perch, miller's-thumb, and two sticklebacks, in the hard-finned order; carp, gudgeon, tench, bream, roach, dace, chub, bleak, minnow, loach, pike, and trout, in the flexible-finned division.

Some of the Thames fishes deserve especial notice, and not the least remarkable is the dobule roach (*Leuciscus dobula*). The only specimen of this fish ever taken in Britain was captured near Woolwich by the late Mr. Yarrell himself in a whitebait-net. This fish is a native of the continental rivers—the Rhine, Elbe, Oder, and Wesel.

The last Salmon caught in the Thames was in 1833, and not forty years ago, as is stated in the "Curiosities of Natural History." It was formerly not uncommon to take a salmon in the spring, and the fishermen were generally on the look-out when the *salmon-bird*, as it was called (or common tern), made its appearance. It was a great prize, because a Thames salmon, from its freshness, fetched the highest price in the London market. Another of the Salmonidæ, which has much decreased of late, is the Smelt (*Osmerus eperlanus*), which formerly passed in great numbers up from the sea in the spring to the parts of the Thames above bridge, affording occupation for thirty or forty boats at a time. But perhaps the most noticeable fish of the Thames is one which was long esteemed peculiar to it, although it is now proved by Dr. Parnell that the Firth of Forth possesses it in considerable numbers; I allude to the Whitebait (*Clupea alba*), which has certainly not yet deserted us. These little celebrities come up with every flood-tide in the season (from April to September) as far as the limits of the brackish water, and are caught in a peculiar manner, described by Yarrell *in loco*. It appears that they were first observed and mentioned by Pennant; and his account is amusing, as read by the light of a wiser age and generation. He says: "During the month of July, there appear in the Thames, near Blackwall and Greenwich, innumerable multitudes of small fish, which are known to the Londoners by the name of whitebait. They

are esteemed very delicious when fried with fine flour, and occasion, during the season, a vast resort of the lower order of epicures to the taverns contiguous to the places they are taken at." I have referred to the Thames Shad, formerly an important fish: besides this species, the Alice Shad (*Alosa communis*), or true shad, a far larger fish, occurs occasionally, though the Severn, on the other side of England, is a more favourite river of this species.

The migration of eels in the Thames has often attracted much attention, the myriads of small fry passing from the sea being observed moving upwards for days together, passing obstacles which would at first appear insurmountable, and constituting what is called "eel-fare." Nothing proves the foulness of the Thames more than this, that these bottom fishes, which feed among the mud (and thrive almost anywhere), and, consequently, are very tenacious of life (I say consequently, for this tenacity appears to be in inverse proportion to their proximity to the atmosphere, as surface-swimmers), that they should have diminished very materially, and are now, comparatively speaking, rare—is a striking proof of the effects of the foul water.

It is well known that a Sturgeon (*Acipenser sturio*) will occasionally pass up the river, and sometimes penetrates to a considerable distance above bridge. When this fish is taken in the Thames, it is considered a royal fish, and goes to the royal larder; but such a circumstance has not occurred now for some years. Lastly, river Lampreys, or lamperns (*Petromyzon fluviatilis*), formerly so abundant above Battersea Bridge, are now very scarce, and still more rarely come so low down the river as this; while the occasional visits of the sea Lamprey (*P. marinus*) are like those of angels, "few and far between."

But let us not despair. What has been once may be yet again; and when the good time comes that all abuses shall be rectified, and all nuisances abolished—ay, and sooner;—when the great drainage plan shall be carried into effect, which it inevitably *must*, sooner or later, the Thames shall once more be a limpid stream—and the fishes will not be the last to discover the change—and although it is true some adverse influences must increase, yet I am by no means persuaded but that the purification of the river would restore, in a great measure, to the angler, his sport,—to the fisherman, his occupation,—and to *us*, the lost members of our Fauna.*

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* Since the above was written, affairs have come nearer to a crisis. During the very hot weather which occurred in the middle of June last year, the stench of the Thames was so intolerable, that fears were entertained of an epidemic arising from the foulness of the river. Happily, these fears were not realized; but already, before the middle of the present June, and while the weather is yet only moderately warm, the pestiferous odour has reappeared, imperatively warning the Legislature that some measures must be taken, without delay, for the purification of the river.

Catalogue of the Fishes.

Subclass. **OSSEI.**

Division. PECTINIBRANCHII.

Order. *ACANTHOPTERYGII.*

Family. *Percidæ.*

Perch (*Perca fluviatilis*). Common. Ravensbourne, &c.

Family. *Loricati.*

River Bullhead, or Miller's Thumb (*Cottus gobio*). Common. Ravensbourne, &c.

Smooth-tailed Stickleback (*Gasterosteus leiurus*). Common. Ravensbourne; also ponds and ditches.

Rough-tailed Stickleback (*Gasterosteus trachurus*). Common in the same situations.

Order. *MALACOPTERYGII.*

Suborder. Abdominales.

Family. *Cyprinidæ.*

Common Carp (*Cyprinus carpio*). Common. Ravensbourne, &c.

Prussian Carp (*Cyprinus gibelio*). In a pond at Kidbrook. (Mr. Tugwell.)

Gold Carp (*Cyprinus auratus*). Domesticated in ornamental ponds. A Chinese species.

Gudgeon (*Gobio fluviatilis*). Common. Thames and Ravensbourne.

Tench (*Tinca vulgaris*). Common. Ravensbourne, &c.

Bream (*Abramis brama*). Thames and Ravensbourne.

Roach (*Leuciscus rutilus*). Common. Thames; Ravensbourne. Donovan says the finest roach are taken in the Thames about the middle of May, or early in June. Izaac Walton speaks of 2 lbs. roach, but Mr. Jesse tells us of one that weighed 3 lbs., which was taken in the Thames; the largest on record, unless we may believe Pennant, who, on the authority of an "intelligent fishmonger," mentions one which weighed 5 lbs.

Dobule Roach (*Leuciscus dobula*). The only instance of this fish, which inhabits continental rivers, as the Rhine, Elbe, Oder, and Wesel, appearing in our own streams, fell under the notice of Mr. Yarrell himself, who says (i. 397), "While fishing in the month of August, 1831, in the Thames below Woolwich, with the mouth of a whitebait-net open against a strong flood-tide, I caught a single specimen of the fish above named, but have not been so fortunate as to obtain any more since."

Dace (*Leuciscus vulgaris*). Common. Thames and Ravensbourne.

Chub (*Leuciscus cephalus*). Not uncommon. Thames and Ravensbourne.

Rudd (*Leuciscus erythrophthalmus*). This fish is found in the Thames, and other waters round London.

Bleak (*Leuciscus alburnus*). Common in the Thames.

Minnow (*Leuciscus phoxinus*). Common. Thames and Ravensbourne.

Loach (*Cobitis barbatula*). Common. Ravensbourne.

Family. *Esocidæ.*

Pike (*Esox lucius*). Common. Thames and Ravensbourne.

Family. *Salmonidæ.*

Salmon (*Salmo salar*). This prince of esculent fishes is sometimes, though rarely, found in the Thames, and such a circumstance is now less common than formerly. Yarrell, whose "Brit. Fishes" was published in 1841, says that the last Thames salmon he had a note of was taken in June, 1833. The appearance of the common Tern, or sea swallow (*Sterna hirundo*), which on

its arrival in May wings its flight for miles up the Thames, is the signal to the fishermen to keep a good look-out for a salmon. The occasionally coincident reappearance of a tern and a salmon has induced some of the Thames fishermen to apply to the former the name of the *salmon-bird*. A Thames salmon is a prize to a fisherman, which, like other prizes, occurs but seldom; for in the London market a Thames salmon fetches the highest price, on account of the proximity of its place of capture to the place of sale, and its consequent freshness.

COMMON TROUT (*Salmo fario*). Thames and Ravensbourne.

SMELT (*Osmerus eperlanus*). These, like their congeners the Salmon, ascend rivers, especially the Thames and Mersey. "The Thames and Medway fishing with small-meshed nets for smelts is permitted under the jurisdiction of the Lord Mayor of London, from St. Augustine's day (28th August) till Good Friday. Formerly the Thames from Wandsworth to Putney Bridge, and from thence upwards to the situation of the present suspension bridge at Hammersmith, produced abundance of smelts, and from thirty to forty boats might be seen working together; but very few are now to be taken; the state of the water preventing the fish from advancing so high."—Yarrell, ii., 13.

FAMILY. *Clupeidæ.*

WHITEBAIT (*Clupea alba*). Pennant's description (before quoted) of a kind of *bleak*, as he called them, which he met with, in his "Journey to Dover" (i. 23), is amusing to read in the present days of ministerial and municipal banquets. These dainty fishes were long supposed to be the peculiar property of the Thames, but Dr. Parnell, in his "History of the Fishes of the Firth of Forth," says: "I have found it to inhabit the Firth of Forth in considerable numbers during the summer months. From the beginning of July to the end of September they are found in great abundance." In the Thames they begin to make their appearance, very small, about the end of March or beginning of April, and the season lasts from the beginning of April to the end of September, when they are taken at every flood-tide. Yarrell says: "When fishing as high as Woolwich, the tide must have flowed from three to four hours, and the water become sensibly brackish to the taste before these fishes will be found to make their appearance. They return down the river with the first ebb-tide, and the various attempts to preserve them in well-boats, in pure fresh water, have uniformly failed." (Yarrell, ii., 204.) Some have held that these fish are the young state of other fishes; and Dr. Fleming, that they are the fry of the Alice shad, to be mentioned presently. This theory is not accepted.

TWAITE SHAD (*Alosa finta*). This is the common Thames shad, another sea-fish, which enters our rivers about May to deposit spawn, returning about the end of July. "Twaite shads appear during these three months in abundance in the Thames from the first point of land below Greenwich, opposite the Isle of Dogs, to the distance of a mile below, and great numbers are taken every season." (Yarrell.) They are usually twelve or sixteen inches long, weigh half a pound to two pounds, which it never exceeds, and are said by Pennant to be "esteemed a very insipid, coarse fish." Fishermen are prohibited from taking shad in the Thames after June 30th, in order that the remaining fish may be allowed to spawn without interruption.

ALICE SHAD (*Alosa communis*). This is the Severn shad, or true shad, and weighs from four or five to eight pounds. It is taken, though rarely, in the Thames. A specimen was brought to Yarrell, caught, in 1831, above Putney Bridge, and another is mentioned by Jesse ("Gleanings," 3rd Series, p. 147) as having been taken in 1833, June 25th, opposite Hampton Court Palace.

SUBORDER. SUBBRACHIALES.

FAMILY. *Pleuronectidæ.*

FLOUNDER (*Platessa flesus*). The Thames fishermen take abundance of these fish from Deptford as high as Teddington and Sunbury.

ORDER. *APODES.*
FAMILY. *Murænidæ.*

SHARP-NOSED EEL (*Anguilla acutirostris*). Multitudes of these fishes pass up and down the river in their periodical migrations, constituting the "eel-fare" or fair; little eels to the size of three inches proceeding from the sea (or, rather, brackish water) upwards, passing even the locks in their undeviating course. This generally takes place in the spring. In the autumn the old eels pass in the contrary direction towards the sea. Dr. Roots, of Kingston, relates (Jesse's "Gleanings") that as many as sixteen to eighteen hundred small eels were observed to pass through a given space in one minute, and the fair lasted five or six days.

BROAD-NOSED EEL (*Anguilla latirostris.*)

SUBCLASS. **CHONDROPTERYGII.**
ORDER. *ELEUTHEROPOMI.*
FAMILY. *Sturionidæ.*

COMMON STURGEON (*Acipenser sturio*). Taken occasionally, but rarely.

ORDER. *CYCLOSTOMI.*
FAMILY. *Petromyzidæ.*

LAMPREY (*Petromyzon marinus*). A marine Lamprey travels up the Thames from time to time, in the face of all difficulties. Broderip says one was taken in June, 1834, and another as high as Sunbury weir in 1835.

LAMPERN (*Petromyzon fluviatilis*). The river Lamprey abounds in the Thames, and although best between October and March, they are to be obtained, says Yarrell, every month in the year. They were formerly much used as bait for other fish, and were sold for that purpose to the Dutch. Yarrell says that the Thames alone supplied from one million to twelve hundred thousand annually. These were chiefly taken between Battersea Reach and Taplow Mills.

Having thus completed a general survey of the animals of our district, as far as at present known, it only remains for me to add my conviction that very much yet remains to be done in the way of additions to the foregoing list. Should any one think that the subject is exhausted, let him bear in mind what one of the most intelligent, as he was one of the most indefatigable, field-naturalists (Gilbert White) says on this subject. In the 20th letter to Pennant, he exclaims: "I find in Zoology, as it is in Botany, all Nature is so full that *that* district produces the greatest variety which is the most examined." And this is the experience of all whose pursuits lead them to such investigations; and while it spurs on the adept to the acquisition of knowledge from the open volume of nature, it should at the same time encourage the tyro to observe for himself, and to cast aside the excuse of indolence, that there is nothing left for him to do. The smallest fact, *accurately* noted—for accuracy is indispensable—may be useful, may supply a link, or confirm a supposition; and the field of nature is inexhaustible. "Life," says Hippocrates, at the opening of his Aphorisms, "is short, Art is long;" * but he might have added, "Nature is longer, more boundless, and more pervading, for Nature is the Mother and Instructress of Art."

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* Ὁ βίος βραχὺς, ἡ δὲ τέχνη μακρὴ.

Appendix A.

The following list of rare Birds, which are recorded as having been captured in the immediate vicinity of London, has been collected from various sources.

Hobby (*Falco subbuteo*). Clapham.

Great Gray Shrike (*Lanius excubitor*). Picked up in Kentish Town; also at Kilburn.

Little Owl (*Strix passerina*). In London, and at Lambeth.

Black Redstart (*Phœnicura tithys*). At Shepherd's Bush, and in Regent's Park.

Richard's Pipit (*Anthus Ricardi*). Copenhagen Fields and Bermondsey.

Ortolan (*Emberiza hortulana*). Marylebone fields.

Gray-headed Wagtail (*Motacilla neglecta*). Finsbury. Yarrell's figure is from it.

Hoopoe (*Upupa epops*). Fulham.

Bohemian Waxwing (*Bombycilla garrula*). Kilburn and Clapton.

Red-winged Starling (*Aglaius phœnicurus*). Shepherd's Bush.

Great Black Woodpecker (*Picus martius*). Battersea fields.

Little Crake (*Crex Porzana*). Chelsea.

Gray Phalarope (*Phalaropus lobatus*). Battersea.

Red-breasted Merganser (*Mergus serrator*). Thames, Putney Bridge.

Eared Grebe (*Podiceps auritus*). Pond near Hampstead.

Common Tern (*Sterna hirundo*). Bushey Park.

Richardson's Skua (*Lestris Richardsoni*). Thames at Battersea.

Pomarine Skua (*Lestris pomarinus*). Hackney marshes.

Little Gull (*Larus minutus*). Thames near Chelsea. The first British specimen. (Montagu.)

Great Black-backed Gull (*Larus marinus*). Putney.

Stormy Petrel (*Thalassidroma pelagica*). In Old-street Road; also, one was shot from a coal-barge between Blackfriars and Westminster Bridges.

The remaining Birds are only described as having been captured "near London," and I have no clue to the exact locality.

Rough-legged Buzzard (*Buteo lagopus*). Penn.

Scops-eared Owl (*Scops Aldrovandi*).

Pied Flycatcher (*Muscicapa atracapilla*).

Lapland Bunting (*Emberiza lapponica*).

Mealy Redpole (*Linota canescens*).

Purple Heron (*Ardea purpurea*).

Night Heron (*Nycticorax Gardeni*). The first British-killed specimen.

Red-breasted Goose (*Anser ruficollis*). The first British-killed specimen.

Fork-tailed Petrel (*Thalassidroma Leachii*).

Appendix B.

The following rare Birds have been observed in the Poulterers' shops in London, especially in Leadenhall Market.

Tengmalm's Owl (*Noctua Tengmalmi*).
Bearded Tit (*Parus biarmicus*). Brought alive from Holland.
Crossbill (*Loxia curvirostra*). Alive.
Parrot Crossbill (*Loxia pityopsittacus*). Alive.
Capercaillie (*Tetrao urogallus*).
Ptarmigan (*Lagopus vulgaris*).
Quails (*Coturnix vulgaris*). In February.
Gray Plover (*Squatarola cinerea*).
Sanderling (*Calidris arenaria*). In January.
Purple Heron (*Ardea purpurea*) and eggs, from Holland.
Spotted Redshank (*Totanus fuscus*).
Greenshank (*Totanus calidris*).
Avocet (*Recurvirostra avocetta*). Twenty specimens in one month.
Bar-tailed Godwit (*Limosa rufa*).
Black-tailed Godwit (*Limosa melanura*). Living, from Holland.
Black-winged Stilt (*Himantopus melanopterus*).
Brown Sandpiper (*Macrorhamphus griseus*).
Ruffs and Reeves (*Machetes pugnax*).
Little Stint (*Tringa minuta*).
Dunlin (*Tringa variabilis*).
Spotted Crake (*Crex Porzana*).
Little Crake (*Crex pusilla*). The second specimen known.
Gray-lag Goose (*Anser ferus*).
Pink-footed Goose (*Anser brachyrhynchus*).
White-fronted Goose (*Anser albifrons*).
Brent Goose (*Anser torquatus*).
Whistling Swan (*Cygnus ferus*).
Polish Swan (*Cygnus immutabilis*).
Gadwall (*Anas strepera*). A specimen of which Montague tried in vain to procure.
Bimaculated Duck (*Anas glocitans*). The only known specimen since the first.
American Widgeon (*Anas Americana*). Male and female, the first specimens known in this country.
Eider Duck (*Somateria mollissima*).
Velvet Scoter (*Oidemia fusca*).
Red-crested Whistling Duck (*Fuligula rufina*).
Pochard (*Fuligula ferina*).
Ferruginous Duck (*Fuligula nigroca*).
American Scaup (*Fuligula mariloides*). The first of the only two specimens seen in this country; in Leadenhall Market.
Long-tailed Duck (*Fuligula glacialis*).
Goosander (*Mergus merganser*).
Sclavonian Grebe (*Podiceps cornutus*).
Black-throated Diver (*Colymbus arcticus*).
Little Auk (*Mergulus alle*).
Glaucous Gull (*Larus glaucus*).
Common Skua (*Lestris catarractes*).
Fork-tailed Petrel (*Thalassidroma Leachii*). One alive.

Appendix C.

List of Birds which have been recently noticed in England, but are not included in the last edition of Yarrell's "British Birds" (1856).

Australian Spine-tailed Swallow (*Acanthylis caudacuta*). In Essex.
Red-billed Whidah Bird (*Emberiza vidua*).
Crimson Weaver-bird (*Euplectis ignicolor*). Coast of Kent.
Minor Grackle (*Gracula religiosa*) a pair. Norfolk.
Great Northern Shrike (*Lanius borealis*). Aberdeen.
Red-breasted Tanager (*Ramphophis purpurea*). Cheltenham.
Yellow-backed Whidah Finch (*Vidua chrysonotus*). Oxfordshire.
Hairy Woodpecker (*Picus villosus*).
Summer Duck (*Dendronessa sponsa*). Coast of Kent.
Swift Tern (*Sterna velox*). Dublin.

N.B. There are, besides, some other accidental visitors, a list of which will be found in Gray's "Museum Catalogue."

Appendix D.

A Comparative List of the Families and Subfamilies of the Birds of Great Britain with the rest of the world, arranged according to Gray and Mitchell's "Genera of Birds."

FAMILIES.	Number of Subfamilies represented.	Number of Subfamilies unrepresented.
I. *Accipitres*—		
i. Accipitres diurni—		
Vulturidæ . .	2	2
Falconidæ . .	6	1
ii. Accipitres nocturni—		
Strigidæ . . .	4	0
II. *Passeres*—		
i*a*. Fissirostres nocturni—		
Caprimulgidæ .	1	2
i*b*. Fissirostres diurni—		
Hirundinidæ . .	2	0
Coraciadæ. . .	1	3
Trogonidæ . .	0	1
Alcedinidæ . .	1	3
Meropidæ . . .	1	0
ii. Tenuirostres—		
Upupidæ . . .	1	1
Promeropidæ . .	0	2
Trochilidæ . .	0	3
Meliphagidæ . .	0	3
Certhiadæ . .	2	5
iii. Dentirostres—		
Lusciniadæ . .	5	2
Turdidæ . . .	2	3
Muscicapidæ . .	1	5
Ampelidæ . .	1	4
Laniadæ . . .	1	1
iv. Conirostres—		
Corvidæ . . .	1	5
Paradiseidæ . .	0	1
Sturnidæ . . .	2	5
Fringillidæ . .	6	3
Colidæ. . . .	0	1
Musophagidæ . .	0	2
Bucerotidæ . .	0	1
III. *Scansores*—		
Rhamphastidæ	0	1
Psittacidæ .	0	5
Picidæ . .	2	5
Cuculidæ . .	2	3
IV. *Columbæ*—		
Columbidæ .	1	4
V. *Gallinæ*—		
Cracidæ . .	0	2
Megapodidæ .	0	2
Pharsianidæ .	4	1
Tetraonidæ .	2	3
Chionididæ .	0	2
Tinamidæ . .	0	1
VI. *Struthiones*—		
Struthionidæ .	1	2
VII. *Grallæ*—		
Charadriadæ .	5	1
Ardeadæ . .	3	2
Scolopacidæ .	6	0
Palamediadæ .	0	2
Rallidæ . .	2	0
VIII. *Anseres*—		
Anatidæ . .	5	3
Colymbidæ .	2	1
Alcidæ . .	2	2
Procellaridæ .	2	0
Laridæ . .	2	1
Pelicanidæ .	1	2
Total . .	82	104

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