SKETCH

OF THE

NATURAL HISTORY

OF

YARMOUTH

AND ITS NEIGHBOURHOOD,

CONTAINING

Catalogues of the Species

OF

ANIMALS, BIRDS, REPTILES, FISH, INSECTS, AND PLANTS, AT PRESENT KNOWN.

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ERRATUM.—Page 22, for *Anthophagus nuchicornis*, read *Onthophagus nuchicornis*.

INTRODUCTION.

It is sincerely hoped, that the name given to the present work will be interpreted literally—at nothing more than a mere "Sketch" does it aim; nor were the motives which induced its publication any but of the most unpretending description. They were founded on the idea that it might be useful; first, by adding another to the number of local histories necessary to a perfect acquaintance with that of the whole kingdom, and with the particular distribution of each species; and, secondly, that other persons residing in the town may, when the number and excellence of the productions of their own neighbourhood are in some measure pointed out, be led more diligently to pursue their investigation than hitherto, while those only casually visiting it, may be enabled more easily to procure specimens of the several rarities. Should these purposes be even inadequately fulfilled, its intention will be accomplished, more especially if it excite a spirit of research, by the assistance of which the Sketch may at some future period be filled up.

It may be useful at the outset, briefly to describe the character of the localities in which the species hereafter mentioned occur, as well as to give some general directions respecting the mode in which they may best be procured.

The town stands on a peninsula, formed between the sea on the east, and the river Yare on the west, which, at this part, runs nearly parallel to the beach; to the south, a line of cliffs extends from the Haven's-mouth for several miles along the coast, past Gorleston, Corton, Gunton, Lowestoft, Pakefield, &c., of the average height of about thirty feet, composed principally of disrupted crag, sand, and clay, beneath which has occasionally been laid bare a stratum of blue clay, the wreck of the Lias. The sand is derived from the abrasion of the flints belonging to the chalk strata, the upper edges of which constitute the Holm, Corton, and Scroby sands, upon which the sand permanently rests. In these cliffs, besides fragments of different shells of the crag stratum, very interesting remains of the mammoth have been occasionally met with, and lately, a considerable portion of the head of a beaver was found in Corton cliff, and is now in the possession of the Rev. G. R. Leathes, of Shropham, Norfolk.

Along the coast to the north of the town, runs a range of low hills of blown sand, bound together by the creeping roots of the marram and other grasses, extending from Caistor to beyond Happisburgh, passing the different villages of Ormesby, Hemsby, Winterton, &c. The North and South Denes, or Downs, are portions of this range, lying nearer to the town, and on either side of it, and are much more level than the rest, which are usually called Marrams. To the west of the town is the great alluvial flat, once the bed of the *Garienis Ostium*, whose sub-soil consists of alternate layers of moor and silt, accumulated when the sea had free ingress to these parts; remains of this fine estuary now exist in the various broads, or small lakes, at Fritton, Rollesby, Filby,

and other places, at greater distances, but more especially in that, at the junction of the Yare, Waveney, and Bure, hereafter so often mentioned by the name of Breydon. The rest now more or less completely laid dry, constitutes a continuous tract of marshes, miles in extent, stretching all round the west of the town, almost down to the very verge of the cliffs and sand-hills before mentioned. The character of these marshes is in some measure modified according as the water which flows by them, and with which they are occasionally inundated, is salt or fresh; but as there is no regular boundary to the distance to which the water of the sea is carried up the river by the flood tide, no line can be drawn between them. In general, however, those mentioned in the different parishes of Caistor, Cobham, Runham, Bradwell, and Burgh, may be considered salt marshes. For further geological information reference must be made to the various works already published on that department of the natural history of the county, by Mr. Woodward, Mr. Robberds, Mr. Taylor, &c., where a variety of most interesting points, connected with the previous condition and probable results of the changes taking place in this part of the kingdom, will be found fully treated. The first of the above gentlemen, kindly offered a much more detailed account of the neighbourhood than is here given, but as it is hoped that he will soon publish a second and enlarged edition of his "Outlines of the Geology of Norfolk," containing both this and much other matter of considerable interest, the reader is referred to that work for it.

From the above description, slight as it is, it may be easily imagined, that the surface of the country pre-

sents an appearance of monotony, which would but ill accord with any pretentions to variety of natural productions. The almost continuous tract of marsh and water is broken only by cultivated lands, which have for the most part been rescued from them, a process of change which is still rapidly going on. By the improved banking of the rivers, marshes formerly inundated, are now laid dry, and by the drainage so universally and effectually carried on, deep bogs are constantly, though slowly, converted into the finest and most fertile fields. From such causes principally arise those changes, which, it will be found, have in the course of years taken place in the natural productions of the district.

With the exception of the small thickets at the margins of some of the broads, and the carrs, or small woods, composed principally of the alder and willows, here and there interspersed with the birch, which are irregularly scattered over the swampy parts of the marshes, and which seldom cover more than an acre or two of ground, nothing deserving the name of a wood exists within the space treated of in this volume, viz. ten miles in each direction.

The effects produced by the above conditions on the various classes of the animal and vegetable kingdoms, will be more advantageously described, when each of them in turn comes to be mentioned. The following particulars, however, relative to the climate of the district, may be useful in facilitating investigations into the causes of the range of species, especially of the plants. They are a portion of the results of Mr. C. G. Harley's observations, made during upwards of the last thirty-six years in this town; the heats being the average of obser-

vations, made at different periods of the day in the shade:—

	Mean Temperature.	Mean Quantity of Rain.
January	38°. 5	1. 875 Inches.
February	41. 6	1. 375 do.
March	44. 8	1. 625 do.
April	50. 4	1. 75 do.
May	57. 2	1. 75 do.
June	63. 2	1. 75 do.
July	67. 1	2. 375 do.
August	67. 1	2. 25 do.
September	63.	2. 375 do.
October	54. 8	2. 875 do.
November	46.	2. 75 do.
December	42. 4	2. 625. do.

With this preface, a general sketch may now be given of some of the effects produced by the above circumstances, on each class afterwards enumerated. In none of them have the changes described as taken place, in consequence of cultivation, been so much felt as in the *Mammalia,* nearly all of which, with the exception of the few species which it is a matter of profit to preserve, are either totally exterminated, or in rapid progress towards being so. They now, therefore, offer but little matter of interest for future study, nor indeed were they probably at any time very numerous, as so few species are inhabitants of marshes; so that the space allowed in this district for them, must always have been but small. With the exception of the *Porpesse,* it will be found that all the *Cetacea* are only rare occasional visitants, the opportunities for observing which are extremely uncertain.

But the want of interesting matter in this first class is fully compensated by the second, the birds, of which this part of the kingdom may fairly be allowed to boast; the catalogue of which, will, it is hoped, be deemed

sufficient to justify the recommendation, given in several instances by one of the best authorities on the subject, to different Ornithologists, to reside here a year or two, for the purpose of forming, or enlarging their collections. This superiority, which exists especially among the water birds, is probably owing to the attractions which such large sheets of water as the broads present to them in their migrations, possessing, moreover as they do, the advantage of being situated in the most easterly point of the kingdom.

Under such favourable circumstances, the number of species added to the British List from this neighbourhood, exceeds that which any other place can claim, while the more frequent occurrence of the rarest species, and the great abundance of those generally distributed, present opportunities which can probably be no where else met with.

The number of wild-fowl taken in the decoys on the various broads, or shot on Breydon and elsewhere, is in some seasons prodigious, though from its dependance in a considerable degree on the weather, it is not easily estimated. It would be difficult to imagine a spot more suitable to their habits than Breydon affords, consisting as it does, of a sheet of water some miles in extent, with shallow borders, or flats, (as they are called,) and surrounded, almost as far as the eye can reach, by marshes. The water leaving its banks quite bare for a considerable extent, at every ebbing of the tide, exposes an abundance of the small crustaceous animals and other food most congenial to the duck tribe. Even in the severest winters it is seldom so completely frozen as not still to afford, in the small fish with which it abounds, and the crabs and insects about its banks, a sufficiency

of provision for the fowl; and, it is in such seasons, that the greatest numbers are procured. Almost benumbed with cold they flock together, and while they sit crowded up in a compact mass, to prevent the warmth of their bodies from escaping, the gunner, may, in his flat-bottomed boat, approach within a comparatively short distance of them, by means of channels, made in the flats, and with a single discharge of his long gun, which moves on a swivel in the midships of his boat, may effect a most extraordinary slaughter.

A remarkable case of this kind occurred to an old man named Thomas, who one morning on awaking in his boat on the flats, saw not far from him a number of wild fowl sitting in a crowd close together on the ice. From the boat being nearly covered with snow, he had escaped their observation, while they were collecting in the night. He immediately fired, (his gun carrying about a pound of shot,) and with those killed outright and the wounded, which he and his dog caught before they could make their escape, he secured no less than thirty couple of wild-fowl, consisting principally of widgeon and teal.

A bird-preserver, named Harvey, to whom, previous to the alteration of the game laws, the greater number of wild-fowl, shot hereabouts were brought, was in the habit of sending up to London on an average about fifty per week throughout the season, which generally lasts five months, viz. from October to the beginning of March or April; this number however is, as has been said, subject to great variation, according to the severity of the weather, and on particular occasions has been very much exceeded—thus in the winter of 1829, he had brought to him on one market-day, no less than four hundred wild-fowl of different descriptions, five hundred

snipes, and a hundred-and-fifty golden plovers, all of which he immediately carried up to London, and disposed of.

In addition to those, thus publicly obtained, a considerable number are taken in decoys on the broads at Fritton, &c., which, being private property, are hired by different persons at a rental.

The reedy borders of these broads also afford an admirable situation for the few species that remain with us during the summer to breed, and the eggs and young of many, elsewhere rare, may here be obtained, while at the same time an opportunity is presented of observing the changes of plumage that occur both by season and age. Here also, and in the extensive tract of both salt and fresh marshes, exists a situation almost as well suited for the resort of the different species of plover, and other genera of that family, as Breydon and the other broads are for the ducks. All the marshes, but more especially those about Oby, Thurne, and Acle, are found considerably profitable, by the number of plovers' eggs which may be collected in them, and of which there is carried on a most extensive sale during the months of March, April, and May. The same person, (Isaac Harvey,) before mentioned, sends an average of between six hundred and seven hundred eggs to the London and other markets, every week during the season. These marshes are the resort too, occasionally, of vast numbers of snipes, curlews, herons, and others of these families, among which, rarities, as might be expected, very constantly occur.

The other species of water-birds, consisting principally of the terns, gulls, &c., are for the most part met with on the beach, or in the roads. Here too many of

the rarer visitants of other tribes are shot before they have been able to get further inland, or are found dead, or exhausted by their long flight. During the herring-season especially, that is, in the months of October and November, these species are to be obtained; and this period, if accompanied by severe weather, seldom fails to produce specimens of considerable value.

It must however be acknowledged, that the success likely to be met with in the collecting this portion of the class, is extremely uncertain, from its depending so much on the season. It will be seen by the list, that a number of the rarer species have occurred in peculiar abundance in some one or more years, as has been especially remarkable in the case of the stormy petrel, of which for some winters past scarcely a specimen has been seen, while in the season there mentioned some hundreds were shot in the course of a week or two.

It is probable that by close attention in observing the coincidences between certain atmospherical conditions, and the appearance of different species, much useful and interesting information might be acquired. As a general rule, though by no means one without modifications and even exceptions, a sharp winter, and the more or less frequent occurrence of heavy gales from the E. and N. E. are the circumstances most favourable to the Ornithologist here. It is indeed sometimes singular to observe the immediate effect of these conditions; after a single night of such weather, the birds, which we must almost suppose had commenced their flight in anticipation of the approaching change, will often be found in abundance, though on the day previous, scarcely a single specimen could have been met with.

To the expertness which the boatmen by constant practice have acquired, we are principally indebted for the possession of nearly all our rarer species; their well-trained eyes immediately detect in the flock any thing different from those to which they are accustomed, and it is probable that very few rarities which make their appearance return hence alive. No sooner is the circumstance of an unusual visitant having been seen made known than a number of gunners immediately start for the spot, and an almost continued watch is kept up, till the object is either secured, or its fate certainly ascertained. Collectors, if well known, may then probably have the specimens brought to them, though they are more frequently carried to bird-stuffers, who, as they are mostly in the habit of buying very large quantities of the common species for sale in the markets, are considered entitled to the first offer of any thing of more than usual value; and from these persons, though at a considerable greater expense, they may afterwards be obtained; other rarities again are met with by the merest accident. A number of birds are brought home together, and among them is perhaps one which had escaped the observation of the gunner, or they are even exposed for sale in the markets, either here, or in London, &c., as has been the case with the red-breasted goose, harlequin duck, and others. Any assiduous collector, again, by his own exertions, will seldom fail to add many very useful specimens to his museum, though from the great hardihood of constitution which it requires to withstand the occasional severity of the weather in the marshes, he can scarcely expect to be upon an equal footing with those whose trade the pursuit is. From the description given of the general character of the district, and espe-

cially, from the almost total absence of woods, the land-birds which occur in the neighbourhood are, as may be supposed, far less numerous and valuable; scarcely any of the species of hawk can be called common, except by comparison, and many others, abundantly seen in thickly-planted situations, are but rarely met with here. It is however, to be remembered, that they have been scarcely at all investigated; the attention of all the resident Ornithologists having been almost exclusively confined to the more attractive tribes resorting to the marshes; there is little doubt that more industrious researches would soon lead to very useful discoveries, especially among the larks, willow wrens, and others, which remain with us all the year. The list given of these however will, it is hoped, be not altogether uninteresting, enriched as it is, with the orange-legged hobby, Bohemian chatterer, barred woodpecker, and above all, the woodchat. This last is an indubitable instance of this species having occurred in England. The person who shot it, and in whose possession the stuffed skin still remains, is a very respectable man, and moreover the specimen was seen in the flesh by several Ornithologists in the town. It is to be lamented that so much stress should need be laid on facts of this kind, but collectors must be too well aware of the difficulty of determining the genuineness of their specimens, and of preventing the frauds so often practised by those, who profit by the sale of foreign skins as British. It is on account of the difficulty of deciding several cases of this kind, that in the list of birds given, the particular instances of the occurrence of different species is seldom mentioned, except where necessary to establish the fact of its being entitled to a place; where, therefore, particular speci-

mens of the rarer kinds are spoken of, it is not meant to imply that they are positively the only ones which have occurred, but merely that such cases are well and sufficiently authenticated.

The nomenclature and arrangement adopted in the List, are those used by Mr. Selby in his "*Illustrations of British Ornithology;*" and this may be pleaded as a sufficient reason for the entire omission of any synonyms, of which in the more complicated genera of the plovers and ducks, a considerable number exist in our locality, founded on the different varieties in age, sex, and plumage, almost all of which are regarded as distinct species. Though some difficulty occurred in referring these to their true places, yet, it is hoped, that no inaccuracies of material consequence will be found, especially as care has been taken, where there was a chance of error, to omit the species altogether, rather than insert one which had only a doubtful claim to a place. These, however, are only some of the points which will probably be cleared up by further investigation. Many labourers are already in the field, whose collections are a sufficient proof of the ardour with which the study has been, and is still, pursued by them; and it is fortunate that, by their exertions, the rarest of our birds may still be seen in the county, or even in the town. Among those in the former, the Norwich Museum, and the magnificent collection of Edward Lombe, Esq. of Melton, deserve especially to be noticed, as possessing specimens of nearly every one of our list. In the town, the principal are those of Mrs. John Baker, collected by her brother, the late Chas. Girdlestone, Esq. whose union of first-rate sporting accomplishments, with the greatest ardour in the pursuit, gave him advantages which none here

have since equalled, and have rendered the excellent practical notes which he had made on the subject of water-birds, peculiarly valuable in the present undertaking; and of Mr. D. Preston, Mr. C. A. Preston, and Mr. Miller. To the first of these gentlemen, as well as to Capt. Chawner, of Alton, Hants, (who was for some time engaged in collecting at Yarmouth,) and to Mr. John Youell of this town, the present opportunity is gladly taken to express the obligation this volume is under, for lists of their collections and other useful information.

With respect to the third class, that of *Reptiles*, the small extent of the list shows that they present but few more points of interest, than in any other part of the kingdom. The subject, however, has never been looked far into, and certainly deserves more attention than has hitherto been bestowed upon it, as in a still greater degree also does that which follows it, the *Fish*. The catalogue of these is a sufficient proof of the richness of the coast, especially when it is remembered that all the varieties there mentioned, have been met with by the merest accident.

The different fishermen, in the course of their employment, have observed something unusual in the appearance of some specimen, and if not inconvenient, have brought it ashore and exhibited it about the town; but, as far as is known, no person has hitherto made this branch of natural history an especial object of study in this district. The most probable means of arriving at a more perfect knowledge of the subject, would seem to be, to accompany the shrimpers to their ground in the roads just off the town, and carefully examine the contents of their nets; by this plan, there is every reason to think that many smaller species, or the young of larger

ones hitherto unknown here, if not perfectly new, would be discovered. It would also be worth while to go out in the mackerel and herring boats, and see their nets hauled; in addition to those fish accidentally mixed with the shoals, it is probable that among the numbers of dog-fish which follow preying upon them, many varieties would be met with. A variety of other means would suggest themselves in the course of the investigation, which it is needless to mention; other points of the greatest interest would be to observe carefully the habits of the commoner species—to discover if possible, the reason of the great varieties in their frequency in different seasons—the causes of the arrival of the occasional visitants, and of their supposed migrations.

In the course of these inquiries, excellent opportunities would be found for pursuing the study of a portion of a most extensive class hitherto entirely neglected here, and which do not seem to have received nearly the attention which they deserve, in any part of the kingdom; these are the *Mollusca,* or shells, and the *Crustacea* of our coasts, in which there is a most wide and unbeaten field of interest.

In the former division too, it is probable that novelties would be met with in our Salt-marsh ditches, in many of which the weeds are covered with a variety of shells, which could scarcely fail to be productive of interest. A knowledge of the whole of the families between the Fish and Insects, including the shells, crustaceous animals, and spiders, is as yet completely a desideratum; and it is sincerely hoped, that when the richness of the neighbourhood is pointed out in the other classes, more persons will be induced to study those hitherto unexplored; assured as they may be, that the prospects held

out are fully equal, if not superior, to those whose history is already more or less known.

A strong confirmation of this, may be seen in the list of *Insects*, which have only received attention within the last six or seven years, of the results of which this Sketch includes the names of but a portion. From the great difficulty found in naming them, in consequence of the incomplete state of the works now publishing on this subject, a number of species which have already been collected, were necessarily omitted; to the same cause is owing the great disproportion between the catalogues of the various orders, so that while the *Hymenoptera*, *Trichoptera*, and others, are comparatively very poor, those of the butterflies and large moths, which have been more generally studied and described, are full, and afford an excellent proof of the prospect which the neighbourhood holds out; containing, as this does, the names of many of the rarest and most interesting insects known in the kingdom. In addition, moreover, to those already discovered, but at present unnamed, scarcely any spot can be searched for an hour or two, without several additions being made to the collection. With these acknowledgments of imperfection, an apology may be thought necessary for the publication of what is already known, instead of waiting till the list was capable of being enlarged by the addition of the others above-mentioned. It is hoped, however, that the stations given may be useful to collectors in obtaining many of the rarer species, and induce others to assist in carrying it on, to that state of completeness, which it can scarcely be possible for one person, even if he could devote his whole time to it, to attain. To have waited too for perfection either in this or any other

branch, would probably have been to postpone the undertaking *sine die*.

The peculiar advantages offered to the Entomologist will easily be perceptible from the general description of the surface of the country, given in the earlier pages of this Introduction. In addition to those afforded by the Salt-marshes, and other parts of the neighbourhood, may especially be mentioned those which the coast presents. On the sea-shore are sometimes met with, not only the rare migratory species, as *Calosoma sycophanta*, one of the most beautiful beetles in our collections, and *Locusta migratoria*, but frequently vast numbers of various descriptions, which, by a continuous series of westerly winds have been driven down from the more inland parts to perish in the sea; among these may often be found species whose real habitat is yet unknown, and which possessing, as they would there, means better suited to their concealment and escape, would probably be long looked for in vain. In fact, most of those in the list called "rare," without any habitat being mentioned, have been found near the high-water mark.

By this means, moreover, a most providential mode is supplied for the destruction of myriads of those insects, which occur in peculiar abundance in some seasons, and which if allowed to remain inland, would shortly produce material injury to the vegetation, as the various species of *Aphis*, (plant-lice,) the beetle produced from the wire-worm, and many others. In autumn a line, some inches in breadth, may sometimes be seen at high-water mark composed of the bodies of a small black fly, of the *genus bibio*, which, only a day or two before, were infesting almost every plant and blade of grass in our fields and

hedges. At other times, numbers of the large common gnat, (*Tipula oleracea,*) may be observed vainly struggling to fly up from the damp sand, with which their long legs have become encumbered, till a higher wave comes up and puts an end to their existence. This too is not the only means of their destruction, numbers of predatory insects are busily employed in the work of death: at the bottom of any little hollow, formed by the impression of the foot, or other cause, may sometimes be observed, numbers of those who, unable to crawl up its sides, have easily become a prey to their adversaries, better formed by nature to move upon this shifting soil. Among these last, besides the *Cicindelæ* and various *Carabidæ,* are especially seen a small yellow ant, running about with an insect in its mouth, often as large as itself; and a spider, which may be seen lurking at the mouth of a small burrow, which it has formed for its residence in the sand, and thence darting with great swiftness along the surface, and seizing its victim, from whom its resemblance in colour to the ground had contributed to conceal it.

In addition to these, which can be regarded only as occasional visitants, are many most interesting species whose home is here; thus the animal and vegetable substances thrown up by the waves, and left at high-water mark, afford a supply of food to numbers of the *Diptera,* (two-winged flies,) among which may be found the *Actora æstuum* in abundance, and other species more or less closely allied to it. It is most interesting to see how these, formed in strict adaptation to the circumstances in which they are placed, avoid dangers to which, as we have mentioned, many other species fall easy victims. They may be observed flitting and feasting within a few

inches of the water's edge, and with most watchful alacrity, starting up and retreating before the approach of a larger or more rapid wave.

Then again higher up on the beach, where vegetation commences, are the resorts of species which depend on the peculiar plants, to which the loose sand is congenial; while others find in the tangled roots of grasses, at the broken edges of the sand-hills, an admirable retreat against nearly all dangers but the industry of the Entomologist, who pulling away the loose herbage, and watching carefully the sand as it comes down the steep bank, will seldom fail to find in the number which roll along with it, some rare species that will amply repay him. In this manner, most of those mentioned in the list, (to which, to avoid unnecessary repetition, the reader is referred,) as occuring in the "sand-hills," have been obtained.

The name of Lowestoft Upper Light-house will be observed in the list as the station from which many of the rarer moths have been obtained; it is not probable that this is owing in any material degree to its situation near the sea, but merely to the brightness of its light, which, visible as it is from a distance of some miles, is peculiarly attractive to insects inhabiting the plantations about it. In dark warm nights hundreds of moths may be seen fluttering about the windows, to such an extent, as sometimes even to obscure the brilliancy of the light; they may be easily taken, and at all seasons; and as the plan has been hitherto found so productive of rarities, though imperfectly pursued, it holds out great hopes to any one residing there who would perseveringly adopt it.

Next to those of the coast, the insects of this district most worthy of notice are those which occur in Salt-

marshes; and it would be a subject of considerable interest to discover not only how far any particular species are confined to this description of soil, but how far it is prejudicial or destructive to others—whether the division between the two classes is as marked as in fish, where there are but few exceptions to the existence of an especial adaptation to either salt or fresh water, —or whether all species could with equal ease endure the mixture of saline materials in their food; those which are found in such situations being merely attracted thither by the greater abundance of provision or other circumstances congenial to their habits.

The best modes of collecting here, are by turning over the weeds washed higher up than usual by the flood-tides, and left on the banks, and by sweeping the short herbage with a strong bag-net, by which plan the new *Trichopterous* genus mentioned in a note, and a variety of others, have been taken. In the early spring, too, large pools of stagnant water which have remained from the inundations of the previous winter, are filled with aquatic plants, and both in these and the ditches many peculiar insects may be taken.

With respect to the insects found in other parts of the district, the investigations hitherto made have not yet been sufficient to discover whether there exist any peculiarity in them, to distinguish them from those found in similar situations elsewhere. Some of the names given in the list are a sufficient proof of the rarity of many of those indigenous to the different marshes, bogs and heaths at Belton, Lound, and Filby; and it is probable that when the number is enlarged, and carefully compared with the catalogue of plants occurring at the same spots, some general connection may be traced,

which will assist in throwing a material light on the distribution of the species of this class. For this purpose it is hoped, that even now, the union which this volume presents of lists of all the classes together, will not be found altogether useless; and it would be desirable in future, that such studies should as far as possible go hand in hand, either in the same person, or in several co-operating in the same cause.

The nomenclature and arrangement here used are, (except where the contrary is expressly stated,) those of Mr. Curtis's "*Guide to an Arrangement of British Insects,*" a reference to which will in all cases be sufficient to determine the particular species here intended.

The peculiar character of the botanical productions of the neighbourhood of Yarmouth, is, as might be supposed, a great preponderance of marsh plants, especially the *Cyperaceæ,* over the other orders; while indeed, comparatively few of these are wanting, there is an almost total exclusion, from the deficiency of woods, of many species extremely common elsewhere, such as the *Anemone nemorosa, Oxalis Acetosella,* and the *Chrysosplenia.* The absence of limestone and chalk excludes numerous others, among which are most of the *Orchideæ,* and with little or no variation in the level of the lands, species to which a high elevation is congenial. The variety which does exist, depends on the contrast between the sandy, heathy, marshy, and cultivated soils, of which, as has been said, the surface of the country is composed; on the productions of each of these a few remarks may in turn be made. In the sand of which the whole coast is more or less composed, vegetation is of course but scanty; on the beach and the hills of drifted sand which form the marrams, but few plants indeed could be

expected to flourish, owing to the great want of water, which in the heaviest rains is almost immediately filtered through before it has remained sufficient time to be absorbed by their roots. They consist almost entirely of the marram and some grasses, which require but little moisture, and of others, whose long roots penetrate to a sufficient depth below the sand, to enable them to reach any, which may exist. But in few parts of the vegetable kingdom, are more interesting cases of the beautiful adaptation of the different parts of creation to be found, than here. Were it not for the simple uninteresting looking plant, the marram grass just mentioned, it is probable, that all the country along the coast must long since have been inundated, or buried; its long creeping roots extending in many instances for twelve or fourteen feet in length, at a distance of two or three inches below the surface, and crossing and matting with each other in every direction, effectually bind down the sand blown up from the beach; while the short strong foliage prevent its being blown over the land in the neighbourhood, which is thus maintained capable of high cultivation. The roots indeed of all the species here will be found to be very fibrous and creeping; so that while this shape is the only one by which a sufficiency of spongioles could be formed to imbibe any quantity of moisture, it serves in turn the above salutary purpose; thus exhibiting nature as usual, producing a complicated variety of ends, by single and simple means. It has been interesting to observe, as the Yarmouth North-pier has been built out, and the bank of sand has been formed to the north of it along the beach, so as to oblige the sea to retreat for some yards distance, how these plants have gradually crept down towards the water, fastening the sand as it has accumulated.

Among these and still nearer the sea are found nothing but the *Bakile maritima*, *Eryngium maritimum*, *Salsola Kali*, and the two or three others, whose roots dip a foot or more below the surface, so as to reach the moist soil which lies at that distance. Higher up on the Denes, where occasional inundations of the river have left behind them particles of mud, and by the longer continuance of vegetable growth the fibrous matter of roots have been deposited, so as in some measure to enrich the soil, the herbage is rather more abundant. It is extraordinary indeed to observe how slight a change in the component nature of the soil permits a total alteration of its productions. Thus the most fertile portion of the South-Denes does not contain more than five per cent. of vegetable matter, all the rest being fine silicious sand and small stones; and yet here are produced no less than eight different species of trefoil, and a number of grasses and other plants, different from those of the beach; among them is that very local plant the *Poa bulbosa*, whose leaves constitute the greater part of the herbage, but which is confined exclusively to the South-Denes.

To the causes of the peculiar distribution of these and other such plants, it seems most difficult to obtain any clue; there is no peculiarity discoverable in the soil which does not contain more than the smallest possible proportion of saline matter, though occasionally inundated by the river. It is probable, that what little might be left after these inundations, as precipitated from the water that had been evaporated, would be dissolved in the rain falling in the course of the next few days, and filtered to a depth below the surface. The mere proximity of a large body of salt water like

the sea, seems to have no influence whatever on vegetation: corn grows at the very edges of the cliffs at Gorleston and Corton, and immediately next to the marrams, along the coast at Caistor, Hemsby, and Ormesby, completely within the spray of the waves in heavy gales. In fact, wherever the soil can be brought into a sufficient state of richness by manure, these fields are immediately laid in; and though they continue rather light, and the crops are apt to be more injured by the long droughts, than those further inland, yet they are profitably productive, and in rainy seasons are among the best in the district.

The principal heaths are those of Rollesby, Belton, Fritton, and Lound, all of which are situated immediately adjoining, and elevated only a few feet above the level of, large tracts of marshes, and deep rotten bogs: the proximity of these two very different soils, being in several places particularly remarkable. Commons, formerly existing at Hopton, Corton, &c., have been since enclosed for the purpose of cultivation, which is still every day lessening the extent of those that remain. Their vegetable productions, are in no respect different from those of similar situations elsewhere; consisting, as will be seen, of little more than a continuous surface of furze and heath, whose interstices are filled up with the rein-deer lichen, and various species of *Hypnum;* the soil of which they consist, is, after these shrubs are cut down, generally found to repay the expense of cultivation.

The tract of marsh-land, constituting so large a proportion of our district, requires, in order properly to describe its productions, to be divided into two parts, the salt and the fresh marshes; the former are composed of

the great tract extending along the borders of Breydon, and the rivers as far as the salt-water is carried by the tides; receiving their peculiar character from the occasional inundations to which they are exposed in spring-tides.

It is in the plants by which these are inhabited, that the botanist of inland counties will find the greatest number of novelties, though they are now gradually diminishing both in variety and abundance, by the improved drainage to which the marshes are subjected; which has not only totally exterminated many species known to have existed some years ago, but has confined those which are left to particular spots, for the most part small, and still continuing to grow less.

The peculiar distribution of the plants, seems effected by a system of exclusion, the seeds of all which cannot bear the action of salt being destroyed by the water, which is either carried over them by the occasional inundations, or infiltrated into the soil from the ditches. Several species may be observed one year, which are lost in the course of the next; and in the marshes near the town, a number of garden plants may be found naturalized, though they seldom resist long the effects of the salt water. The ditches and pools of water left after inundations in these marshes, abound also with a variety of species of the *Confervæ,* among which it is probable that considerable matter for further investigation may be found.

The other range of marshes, in which the water contains no unusual proportion of salt, consist for the most part of deep spongy bogs; the turf, in many situations, scarcely more than floating on the top of the water, formed of masses of *Sphagna,* matted together, with the strong perennial roots of *Carices*; and these in many parts are

rendered irregular and uneven by mounds of turf formed apparently by the roots of *Carex paniculata*, which, growing as it always does, in large tufts, has in process of time raised these up in some instances more than two feet above the surface, by successive depositions of turf formed by its decayed leaves and roots. There does not seem to be any other mode by which they could be formed, their section affording nothing but a compact mass of vegetable soil and the fibres of roots, and in almost all of them, the above grass grows in the greatest luxuriance. The very few species in which this district presents differences, from situations of the same character elsewhere, will be sufficiently seen from the list.

The last to be noticed is the cultivated land, which, as has often been repeated, is every day encroaching upon the others. It is indeed by the increased number of plants to which this description of soil is congenial, that compensation has been made for the losses sustained in those of the others. It seems probable, on a review of the number of species known to Mr. Wigg, and the botanists of his day, that no material, if any, change has taken place in the absolute number of different species afforded by the neighbourhood. At present this proportion can scarcely be satisfactorily made, so much longer a period having been occupied in his researches than since; yet as far as a rough calculation will admit, there seems no reason to suspect that, in the absolute extent of the *Flora*, the neighbourhood suffers by cultivation; however much the value of its productions may be affected by their no longer possessing the peculiarities which formerly belonged to them.

The marine *Algæ* may be regarded in almost the same light as those birds which are occasional visitants

here; none except the most common among them growing any where in the immediate neighbourhood; and the majority of those which are thrown upon our beach, being probably natives of the cliffs at Cromer, or of the rocks on the Northern coasts, as the roots are not always washed on shore, and, when they are, have seldom any soil attached to them, it is hardly possible to discover precisely from whence they come; and no one part of this study is subject to greater uncertainty than the collecting this tribe. Their appearances are most irregular; in some years, the beach will, (especially in the summer seasons,) be covered with them for some miles along the edge of the water, and from two or three inches, to nearly a foot deep. This was especially the case in the summer of 1829, when a far larger quantity was cast up than all the five years since have together produced. No case could have been more opposite than that of the past summer, when scarcely a hundred could at any time have been found in any distance. The prevalence of easterly and north-easterly winds has considerable influence in increasing them, though this is by no means regularly the case; the occurrence of unusually high tides, and of long continued rains, also seem in many instances to have been followed by a greater abundance; and again, as far as merely local circumstances are concerned, the form of the beach which may happen to exist at any season, will always have more or less influence on the quantity left upon it; a steeply shelving surface not allowing those washed up to remain, but permitting them to be carried back again by the drawback of the wave. Yet all these circumstances combined, appear by no means sufficient to account for the great difference which, as has been said, may be

observed in the course of a few years collecting, and which it is more probable depend on changes of condition taking place at the situations of their growth.

It is almost exclusively to these and similar objects of interest, that the botanist's attention ought now to be directed. Probably no neighbourhood has been so completely investigated as this, which has had the good fortune to have been for nearly a century, the constant stage for the action of some enquiring mind. Long ago Dr. Sims, Dr. Aikin, and Mr. Joseph Sparshall, were engaged in the observation of our plants, by the feeble light which the science, then, comparatively speaking, in its infancy, afforded them. Next came Mr. Lilly Wigg, who, for upwards of fifty years resided here, in the continual investigation of these and other branches of natural history; and whose labours, which have come before the public eye, are the discovery of many of our rarer species, particularly of the *Fucus* which has been named after him, and which seems as if, in his honour, determined by its rarity to make his name associated with one of the greatest gems in the *Herbarium*.

Contemporary with him was Mr. Mason, who, for the few last years of his life, devoted himself to the study of the plants of our coast. Deprived by paralysis of the power of walking, he was almost daily dragged along the beach, to enjoy as far as his unfortunate state would allow, his favourite pursuit. With these disadvantages, it was scarcely probable that any very important results should have attended his investigations; but he has left behind him, a volume of figures, illustrative principally of the varieties described in the *Synopsis of the British Fuci*, which are now in Mr. Dawson Turner's possession.

It is, however, to this latter gentleman, that the

Botany is especially indebted. In addition to his own continual and varied researches, his anxious desire for the advancement of science, has afforded opportunities to almost every one of the first botanists of his time, to study all the points of interest in this part of the county. Smith, Hooker, Borrer, Dillwynn, Merteus, Sowerby, and a host of other both foreign and native naturalists, have in turn, by his means and with him, made this the scene of their accurate observation. In addition to other most useful information, the present work is indebted to him for the list of the rarer fish which it contains, as well as for that of the *lichens*.

But although there be so small a chance of reward in the discovery of new species, there still remains to encourage the steady pursuit of this part of natural history a vast number of objects hitherto little investigated, or altogether unknown; such as the laws governing the distribution of species to the knowledge of which local observation so materially contribute; the determination of the modifications in structure which may arise from variety in situation of growth, and other external circumstances; and a number of other questions of a similar nature, to each of which local information is absolutely necessary.

In the list of Flowering Plants, it will be seen, that the natural arrangement of *Lindley's Synopsis of the British Flora* has been used, with the nomenclature of *Hooker's British Flora;* and in the *Cryptogamous* species those of the second volume of the latter work have been followed. It is hoped, that by this means, all possible advantages are secured, inasmuch as while by the use of the former system, a more immediate view of the vegetation of the district is obtained; the adoption

of the names of the latter, fixes the species intended, upon the best authority acknowledged in the present day. It has been thought advisable also to include all the plants as far as possible that were known to Mr. Wigg, or published in the *Botanists' Guide*, not now positively known as natives, although it is probable that a very large majority have by some means or other been exterminated. To all those and to others, which though found in the course of the last few years, have not come under personal observation, the authority on which they are introduced is mentioned; and where known, the date at which they were observed is added. For all those not thus marked, the present work will stand responsible, as well for the species as the stations assigned to them. To the rarities the best known habitat, and that within the nearest limits of the town, has been given, though it is probable that many others exist; but to the common species it was thought sufficient merely to assign the degree of frequency with which they occur.

With the advantage of the investigations carried on for so many years previous to the commencement of the present undertaking, it is hoped that, as far as the Flowering Plants are concerned, the list here given will be found a complete one, of all that have ever occurred here; in the *Cryptogamia*, however, it is probable, that in the course of further study, some more of those species which have been but lately determined or discovered, may be added.

The present affords an opportunity of which the Authors gladly avail themselves, of returning their sincere thanks to the many kind friends who have assisted them in the formation of their collections, which now include specimens of all the species of insects and plants

enumerated in the following lists, except those where the contrary is expressly stated.

In conclusion, should the present work in any degree answer its end, by either inducing those, who for any reason have hitherto held back, to commence the study of any or all of the branches of NATURAL HISTORY, which it treats of, or of those totally omitted; or if it should excite those already engaged in the pursuit to continue it with the same or greater ardour, the Authors venture to hope that any information which might contribute to a further knowledge of the subject will not be withheld from them.

As far as possible, they have everywhere tried, though perhaps insufficiently, to acknowledge the assistance they have already received; and, if any error or omission be found, their apology is, that the present is an undertaking entirely new to them.

Gt. Yarmouth, 11*th Oct.* 1834.

MAMMALIA.

Vespertilio murinus, *common bat* } common in old houses,
——— auritus, *long-eared bat* } in and about the town.
——— noctula, *great bat*—in old barns, &c. rather rare.

Phoca vitulina, *common seal*—occasionally has been seen in the roads, or been thrown upon the beach; one, weighing 14 stone, killed March, 1822. They seem formerly to have been much more common, as Sir Thomas Browne* says, that "they are often taken sleeping on the shore in the Norwich river, near Surlingham."

Canis vulpes, *fox*—now very seldom seen.

Viverra foina, *martin*—formerly at Herringfleet and Toft; now extremely rare.

——— vulgaris, *weasel*—shady lanes, &c. common; occasionally seen in the town.

——— putorius, *polecat*—not uncommon about farm-yards, &c.

——— erminea, *stoat*—rabbit-warrens, &c.; not uncommon.

Lutra vulgaris, *otter*—now seldom seen on any of the broads, where it was once not uncommon. Mr. Barber trapped three last winter, at Fritton.

Talpa Europæa, *mole*—common in fields, &c.

* See a list of Norfolk animals made by him in the beginning of the 18th century, and published in the *Monthly Magazine* for *Sept.* and *Dec.*, 1805.

Sorex araneus, *shrew*—common in lanes, fields, &c.

—— fodiens, *water-shrew*—marsh ditch-banks; rather rare.

Erinaceus Europæus, *hedgehog*—not uncommon at Burgh.

Ursus meles, *badger*—thirty years ago these were common, especially about Bradwell and Browston; but they are entirely exterminated.

Mus decumanus, *brown, or Norway rat*—abundant.

—— rattus, *black, or English rat*—this species still remains here, though its numbers are gradually decreasing; it is now seldom found, except in the ceilings and upper stories of old buildings, to which it has been obliged to retreat, before its more powerful enemies of the preceding species.

—— amphibius, *water rat*—common in marshes, &c.

—— musculus, *common mouse*
—— sylvaticus, *field ditto* } common.
—— arvalis, *meadow ditto*

Sciurus vulgaris, *squirrel*—plantations, &c.; rather rare.

Myoxus muscardinus, *dormouse*—occasionally seen in small woods, &c.

Lepus timidus, *hare*
—— cuniculus, *rabbit* } in plenty.

Balæna mysticetus, *common whale*—a small one taken near Yarmouth, July 8, 1784.

——— physalus, *fin-backed whale*—has several times been seen and taken in the herring-nets.

Delphinus phocæua, *porpesse*—very common.

——— orca, *grampus*—a specimen, weighing 4 cwt. and 11 feet long, found alive on the beach, July 21, 1823; another, 16 feet long, caught about 1694, according to Sir. T. Browne.

——— bidens, *bottle-nosed whale*—a large one caught in a herring-net, Nov. 1816; a smaller specimen about twenty years before.

BIRDS.

RAPTORES.

Haliæetus abicilla, *cinereous sea-eagle*—at Mautby, Jan. 1811; Rollesby, Jan. 1815; Gunton, 1820; Ormesby, Dec. 1827; and two in 1829.

Pandion Haliæetus, *osprey*—one or two shot nearly every year on Breydon, or the broads.

Astur palumbarius, *goshawk*—very rare; a fine specimen shot in 1833.

Accipiter fringillarius, *sparrow hawk*—common.

Falco peregrinus, *peregrine falcon*—rather rare.

—— subbuteo, *hobby*—not uncommon in summer.

—— rufipes, *orange-legged hobby*—one shot in a marsh by Breydon, in 1832, which Mr. D. B. Preston now has; three more were shot in the same year at Horning, by Mr. Heath.

—— tinnunculus, *kestrel*—common.

—— Æsalon, *merlin*—rarely met with.

Buteo vulgaris, *common buzzard*—not uncommon.

—— lagopus, *rough-legged buzzard*—rare; in the winter of 1829, nine were trapped at Somerton, and a few others have been shot at various times.

Pernis apivorus, *honey buzzard*—Mr. Girdlestone knew this to have been shot near Yarmouth, once or twice.

Circus æruginosus, *moor buzzard, marsh harrier*—rather rare.

——— cyaneus, *hen harrier*—not uncommon.

Milvus vulgaris, *kite*—very rare.

Otus vulgaris, *long-eared owl*—rarely seen.

Otus brachyotos, *short-eared owl*—common in October; they come over about the same time as the woodcocks, and are commonly called woodcock owls; they have been known to breed here.

Strix flammea, *white owl* } common.
Ulula stridula, *brown ditto* }

Noctua passerina, *little owl*—very rare; two specimens are well authenticated.

INSESORES.

Hirundo rustica, *swallow* }
——— urbica, *martin* }
——— riparia, *sand martin* } common.
Cypselus murarius, *swift* }

Caprimulgus Europæus, *goat-sucker*—not uncommon.

Alcedo ispida, *king-fisher*—common in the salt marshes, &c.

Muscicapa grisola, *spotted fly-catcher*—not uncommon.

——— luctuosa, *pied ditto*—occasionally, but rarely met with.

Lanius excubitor, *great cinereous shrike*—rarely seen.

——— Collurio, *red-backed shrike*—not uncommon.

——— rufus, *woodchat*—a specimen, shot at Bradwell, April, 1829, by Mr. Adams, a farmer in that village, and in whose possession it now is.

Merula viscivora, *missel thrush* }
——— pilaris, *fieldfare* }
——— musica, *common thrush* } common.
——— iliaca, *redwing* }
——— vulgaris, *blackbird* }

——— torquata, *ring ouzel*—rather rare.

Cinclus Europæus, *European dipper, water ouzel*—one shot at Burgh, November, 1816, which Mr. Youell had.

Saxicola Œnanthe, *wheatear* }
——— rubetra, *whinchat* } common on the North-denes.
——— rubicola, *stonechat* }

Erythaca rubecula, *redbreast* } common.
Phænicura ruticilla, *redstart* }

Salicaria locustella, *grasshopper warbler*—occasionally met with, but rare.

——— phragmitis, *sedge warbler*—not uncommon.

Philomela luscinia, *nightingale*—occasionally heard at Gunton, Burgh, &c.

Curruca atricapilla, *black-cap warbler*
——— cinerea, *white throat*
——— garrula, *lesser ditto*
Sylvia hippolais, *lesser pettichaps*
——- trochilus, *yellow wren*
Regulus auricapillus, *golden-crested wren*
} all more or less common.

Parus major, *great titmouse*
—— cæruleus, *blue ditto*
—— ater, *cole ditto*
} common.

—— palustris, *marsh titmouse*—common about Belton, Filby, and other marshes.

—— caudatus, *long-tailed titmouse*—not uncommon at Rollesby, Filby, &c.

—— biarmicus, *bearded titmouse*—common in some seasons about Rollesby and other broads.

Accentor modularis, *hedge-sparrow*
Motacilla alba, *pied wagtail*
} very common.

——— Boarula, *grey ditto*—not uncommon in winter.

——— flava, *yellow ditto*—common in marshes in the summer.

Anthus aquaticus, *rock, or shore pipit rock-lark*—a few occasionally seen about Breydon-wall.

——— pratensis, *meadow pipit, titlark*
——— arboreus, *tree pipit, field lark*
} rather common.

Bombycilla garrula, *Bohemian waxwing*—rare; several were shot in January, 1829.

Alauda arvensis, *skylark*—very common.

——— arborea, *woodlark*—not uncommon.

Plectrophanes nivalis, *snow bunting, tawny bunting*—common in the winter.

Emberiza miliaria, *common bunting*
——— citrinella, *yellow ditto*
} common.

Emberiza schœniculus, *reed bunting*—common.

Passer domesticus, *house-sparrow*—very common

——— montana, *tree, or mountain ditto*—common in lanes, &c. and not unfrequently seen about the town.

Fringilla cælebs, *chaffinch*—very common.

——— montifringilla, *mountain finch* } not uncommon.

Carduelis spinus, *siskin*

——— elegans, *goldfinch* } common.

Linaria cannabina, *common linnet*

——— montana, *mountain ditto twite* } occasionally met with.

——— minor, *lesser redpole*

Coccothraustes vulgaris, *grosbeak*—an occasional winter visitant. A large flight, January, 1823.

——— chloris, *green grosbeak, green linnet*—very common.

Loxia curvirostra, *crossbill*—occasionally shot in the winter.

Pyrrhula enucleator, *pine bullfinch*—a rare visitant. A flight seen on the Denes, Nov. 1822.

——— vulgaris, *common bullfinch*—not uncommon.

Sturnus vulgaris, *starling*—very common.

Pastor roseus, *rose-coloured pastor, or ouzel*—one shot, Aug. 1815; another by Capt. Manby, near the Hospital, April, 1820; another near Lowestoft, April, 1833.

Corvus Corax, *raven*—now very rarely seen.

——— Corone, *carrion crow* } common.

——— Cornix, *hooded ditto*

——— frugilegus, *rook*

——— monedula, *jackdaw*

Pica melanoleuca, *magpie* } not uncommon in some places.

Garrulus glandarius, *jay*

Picus viridis, *green woodpecker*

—— major, *greater spotted woodpecker*—rarely met with.

—— minor, *lesser spotted ditto*—very rare; Mr. D. Preston has a specimen, shot near Lowestoft, in 1833.

Yunx torquilla, *wryneck*—not uncommon.

Sitta Europæa, *nuthatch*—rather rare.

Certhia familiaris, *creeper*—rather rare.

Troglodytes Europæus, *common wren*—in plenty.

Upupa epops, *hoopoe*—one or two generally met with in the autumn.

Cuculus canorus, *cuckoo*—common.

RASORES.

Columba palumbus, *ring-dove*—common.

——— ænas, *stock-dove* } rarely seen.
——— turtur, *turtle-dove* }

Phasianus colchicus, *pheasant* }
Perdix cinerea, *partridge* } common.
——— rufa, *red-legged ditto* }

——— coturnix, *common quail*—not uncommon.

GRALLATORES.

Otis tarda, *great bustard*—Sir Thomas Browne says, "these were not uncommon in the open parts of the county in his time;" they are now quite lost here.

Grus cinerea, *common crane*—"cranes," Sir Thomas Browne says, "are often seen here in hard winters, especially about the open parts of the county." This is the case no longer.

Ardea cinerea, *common heron*—common.

——- purpurea, *crested purple, or African heron*—has been killed either three or four times. One Col. Montagu had; another was sent to the British Museum by the Rev. George Lucas.

—— ralloides, *squacco heron*—one caught in a bow-net that was hanging out to dry, by Ormesby Broad, Dec. 1820; another, which Mr. Miller has, was shot at Oulton, May, 1831; a third at Ormesby, June, 1834, which Capt. Chawner bought.

Botaurus stellaris, *common bittern*—not uncommon; breeds at Ranworth.

——— minutus, *little bittern*—one shot at Ludham, now in Mrs. J. Baker's collection; another at

Lowestoft, June, 1830, in Mr. C. A. Preston's; another at Barnaby, which Mr. Miller has.

Nycticorax Europæus, *night heron*—Mr. Youell has known six or seven of them to have been shot here at different times.

——— Cayenensis, *Cayenne night heron*—a specimen shot off a fruit-tree out of the North-gates, May, 1824, as recorded by Mr. Youell in the Linnean transactions, vol. xiv. It was sold by Hervey, the bird preserver, to Mr. Geo. Thurtell, of Lakenham.

Ciconia alba, *common stork*—a pair shot in the Burgh marshes in the summer of 1817; another before that time, and one seen in the autumn of 1810.

Platalea leucorodia, *spoonbill*—a flock in the marshes in 1774; several killed in 1808, and two or three are generally shot every spring, on Breydon.

Ibis falcinellus, *glossy ibis*—a pair shot at the mouth of the Norwich river, September 13, 1824, now in the possession of J. J. Gurney, Esq. Earlham; there were four more in company with them.

Numenius arquata, *common curlew* } very common.
——— phæopus, *whimbrel* }

Totanus fuscus, *dusky sandpiper, spotted redshank*—occasionally met with on Breydon. By the boatmen they are generally called redshanks; they are shot in all their plumages.

——— calidrys, *redshank sandpiper*—called here, redleg; very common.

——— ochropus, *green sandpiper*—not uncommon.

——— glareola, *wood, or long-legged sandpiper*—a pair shot in the spring of 1833.

——— hypoleucos, *common sandpiper*—common.

——— glottis, *greenshank*—not uncommon with the common godwit.

Recurvirostra avocetta, *avocet*—on Breydon, &c.; but have of late years been rather rare.

Limosa melanura, *black-tailed godwit*—common about Breydon.

Limosa rufa, *red, or common godwit*—common about Breydon.

Scolopax rusticola, *woodcock*—more or less common in different autumns.

——— Gallinago, *common snipe*—very abundant.

——— Gallinula, *jack snipe*—ditto. Mr. C. Girdlestone offered a sovereign to any one who would bring him a specimen of this bird, shot in summer. In 1822, he had one brought him in June; and in the same month, in 1824, he himself saw a pair on Bradwell common: about two years after another specimen was shot. As, perhaps, no one in the kingdom was ever more practically acquainted with these birds, his authority may be considered indubitable. Mr. Miller says he has had jack snipes' eggs brought to him; they were smaller, and of a more elliptical shape than those of the common snipe, which they otherwise exactly resembled.

——— major, *great, or solitary snipe*—not uncommon in the autumn.

Machetes pugnax, *ruff*—common; especially at Reedham and Acle.

* Tringa Canutus, *knot*—common in both winter and summer plumage.

——— minuta, *little stint*—not uncommon about Breydon: probably the Tringa Temminckii occurs too.

——— variabilis, *dunlin, or purre*, (here, *stint*)—abundant both in summer and winter plumage.

——— subarquata, *curlew tringa, pigmy curlew*—common in winter, but rare in summer plumage.

Phalaropus lobatus, *grey phalorope*—rather rare; eight or nine in the winter of 1828.

Lobipes hyperborea, *red phalarope, or lobefoot*—very rare. Mr. Miller has a pair; one in winter, and the other in summer plumage.

* Great difficulty has been experienced throughout this part of the Order of the Gallatores, in referring the different varieties in sex and plumage to their proper species It may, perhaps, receive additions at some future period.

Rallus aquaticus, *common water rail*—abundant in the marshes.

Crex pratensis, *corn crake*—common.

—— porzana, *spotted crake*—not uncommon at Belton, &c.

Gallinula chloropus, *common gallinule, or water hen*—common about the broads.

Fulica atra, *common coot*—abundant.

Hæmatopus ostralegus, *oyster catcher*—not uncommon on the beach.

Strepsilas interpres, *common turnstone, or sea dotterel*—not uncommon.

Arenaria calidrys, *sanderling*—not uncommon on the beach, in summer and in winter.

Glareola torquata, *collared, or Austrian pratincole*—a pair shot on the Breydon-wall, May, 1827.

Vanellus cristatus, *lapwing*—abundant.

Squatarola cinerea, *grey plover*—not uncommou in summer and winter plumage.

Charadrius pluvialis, *golden plover*—common.

——— morinellus, *dotterel*—rather rare.

——— hiaticula, *ring dotterel*—common.

——— cantianus, *Kentish plover*—rarely met with.

Himantopus melanopterus, *black-winged stilt, long-legged plover*—a pair shot a Hickling, in 1822; another two miles up the north river, in 1824; this last is in Mrs. Baker's collection.

Œdicnemus crepitans, *common thick knee, Norfolk plover*—rarely met with here.

NATATORES.

Anser palustris, *wild goose, grey lag*—very common.

—— ferus, *bean goose*—less frequently met with.

—— erythropus, *white-fronted goose*—occasionally shot on Breydon.

—— bernicla, *bernacle goose* } not uncommon.
—— brenta, *brent goose* }

—— ruficollis, *red-breasted goose*—Mr. Wigg accident-

ally bought a specimen of this bird in the market, which, to his constant regret, he plucked and cooked.

Cygnus ferus, *whistling, or wild swan*—more or less common in different seasons.

Tadorna vulpanser, *common shieldrake* } not uncommon.
Spathulea clypeata, *common shoveller* }

Chauliodus strepera, *gadwall*—two or three generally shot every year on Breydon.

Anas boschas, *common wild duck*—very common.

Querquedula acuta, *pintail*—not uncommon.

——— crecca, *common teal*—common; Mr. Girdlestone shot the young bird at Hickling, in July.

——— circia, *gargancy*—not uncommon, and occasionally breeding, according to the same authority.

Mareca Penelope, *wigeon*—abundant.

Oidemia nigra, *black Scoter*—common in some winters.

——— fusca, *velvet Scoter*—occasionally shot in hard winters; several in the very severe one of 1829-30.

Somateria spectabilis, *king eider*—a female shot on Breydon, July 25, 1813.—Mr. Wigg.

Fuligula ferina, *red-headed pochard, poker*—common.

——— Nyroca, *castaneous duck, Nyroca pochard*—very rare; has, in a very few instances, been shot on Breydon.

——— marila, *scaup pochard* } not uncommon.
——— cristata, *tufted ditto* }

——— dispar, *western ditto*—the only British specimen was shot at Caistor, Feb. 10, 1830, and soon after was presented to the Norwich Museum by the Rev. Geo. Steward.

Harelda glacialis, *long-tailed hareld*—very rare; occasionally shot on Breydon in hard winters.

* Clangula vulgaris, *golden-eye* (here, *rattlewings*, the tufted pochard being called golden-eye) not uncommon.

* Mr. Miller has a specimen, which he considers proves that the morillon (anas glaucion of Linn.) is different from the golden-eye. It was an old male bird, but is full one third less than the males of the golden-eye, and the bill is considerably shorter; besides which, the plumage is rather different.

Clangula histrionica, *harlequin garrot*—Mr. Wigg once bought this in the market.

Mergus Merganser, *goosander*—occasionally here in severe winters.

——— serrator, *red-breasted Merganser*—not uncommon in hard winters; several in 1829-30.

——— cucullatus, *hooded Mergauser*—a specimen killed in the winter 1829, which Mr. Selby has.

——— albellus, *white-headed smew*—not uncommon in hard winters.

Podiceps rubricollis—*red-necked grebe*—very rare; three shot in January, 1828.

——— cristatus, *crested grebe*—common on the broads.

——— cornutus—*horned grebe*—the young bird is not uncommon on Breydon in winter.

——— auritus, *eared grebe*—rarely shot on Breydon or the broads.

——— minor, *little grebe*—not uncommon.

Colymbus glacialis, *northern diver*—occasionally shot on Breydon; the young bird, colymbus immer, is more common.

——— septentrionalis, *red-throated diver*—both this and its young, the c. stellatus, speckled diver, are common on Breydon.

Uria troile, *guillemot*—frequent in the roads.

Mergulus melanoleucos, *rotch, little auk*—occasionally shot in the roads.

Alca torda, *razor bill* } also occasional visitants.
Fratercula arctica, *puffin* }

Phalacrocorax carbo, *cormorant*—common.

——— cristatus, *crested shag*—very rare.

Sula Bassana, *solen gannet*—not uncommon; several were shot in the roads after the severe gale of October 31, 1827.

Sterna Caspia, *Caspian tern*—one in the Norwich museum, which was shot here; another October, 1825.

——— Boysii, *Sandwich tern*—not uncommon.

Sterna Hirundo, *common tern*—very common.

——— Dougallia, *roseate tern*—Mr. Youell has known this to have been shot here.

——— minuta, *lesser tern*—common.

——— nigra, *black ditto*—sometimes in plenty on the beach.

Larus minutus, *little gull*—rarely met with.

—— ridibundus, *black-headed ditto* } common.
—— canus, *common ditto* }

—— Rissa, *kittiwake*—rather rare.

—— argentatus, *herring gull*—rather rare.

—— marinus, *great black-backed gull*—common.

—— fuscus, *lesser ditto ditto*—rare; two shot, April, 1821.

Catarractes vulgaris, *common skua*—four shot in the roads, October 7, 1827.

——— parasiticus, *arctic skua*—Both this and its young, the black-toed gull, have occasionally been shot.

Procellaria glacialis, *fulmar petrel*—occasionally shot, or caught in the roads.

Puffinus Anglorum, *shearwater*—rare.

Thalassidroma Pelagica, *storm petrel*—a few generally shot every winter. In November, 1824, between two and three hundred shot after severe gales.

——— Bullockii, *fork-tailed storm petrel, Leach's petrel*—a specimen found on the beach, Dec. 5, 1823, now in Mrs. J. Baker's collection.

REPTILES.

Rana temporaria, *common frog* } abundant.
—— Bufo, *toad* }
—— rubeta, *natter jack*—common in gardens in and about the town, and in dry healthy lanes, at Belton, Oby, &c.
Lacerta agilis, *green lizard*—common on heaths, &c.
——— vulgaris, *common newt*—not uncommon.
——— palustris, *warted newt* } in the lily-pits, Bradwell.
——— aquatica, *common water newt* }
Coluber Berus, *viper* } common at Belton, Fritton, &c.
——— Natrix, *snake* }
Anguis fragilis, *slow worm*—common in clay-pits, &c.

FISH.

Anguilla vulgaris, *common eel*—abundant in the Roads, as well as in the rivers and broads.
——— Conger, *Conger eel*—not uncommon in the Roads; one, weighing nearly 50lbs., caught in 1808.
Anarichas Lupus, *wolf fish*—occasionally taken.
Ammodytes aculeatus, *sand launce*—not uncommon; sometimes found in the sand off Winterton.
Callionymus Lyra, *gemmeous dragonet*—very rare; taken in shrimp-nets, April 1816 and 1826.
——— Dracunculus, *sordid dragonet*—also taken, May, 1816.

Trachinus Draco, *weever*—often taken in nets off the beach.
——— major. (Donovan) *greater weever*—also caught, but much rarer than the preceding.

Gadus Morhua, *cod* } abundant.
—— Æglefinus, *haddock* }
—— Luscus, *bib*—one found on the beach, 1813.
—— Merlangus, *whiting* } plentiful.
—— Carbonarius, *coal fish* }
—— Molva, *ling*—common.
—— Mustela, *five-bearded cod*—a very small specimen taken December 17, 1821.

Blennius Gunnellus, *spotted blenny*—sometimes caught in the roads.
——— viviparus, *viviparous blenny*, (here, *eel pouts*)—not uncommon in the roads and river.

Gobius minutus, *spotted goby*—occasionally taken in shrimp-nets.

Cottus Gobio, *bull-head* } common.
——— Scorpius, *father lasher* }
——— cataphractus, *armed bull-head* }

Zeus Faber, *common doree*—hitherto considered rare; but this summer several have been caught on the Knowl, by the turbot fishers.
—— Luna, *opah doree*—a magnificent specimen found in the breakers, Nov. 1828; another Dec. 24, 1823.

Pleuronectes Hippoglossus, *holibut* } all in more or less abundance.
———— Platessa, *plaise* }
———— Limanda, *dab* }
———— Flesus, *flounder* }
———— Solea, *sole* }
———— tubercutatus, *turbot* }
———— Rhombus, *brill* }

Sparus aurata, *lunulated gilthead* } each taken once or twice.
——— niger, *toothed gilthead* }

Perca fluviatilis, *perch* } in plenty in the rivers and broads.
—— cernua, *ruffe* }
—— Labrax, *bass*—very rarely taken on Breydon.

Scomber Scomber, *mackerel*—abundant; in 1823, 142 lasts were caught.

——— Thynnus, *tunny*—small specimens not unfrequently taken during the mackerel fishery.

——— Trachurus, *scad*—rarely caught, and those that are taken are generally very small.

Gasterosteus aculeatus, *common stickleback*—common.

——— spinachia, *fifteen-spined ditto*—rather rare.

Mullus barbatus, *red surmullet*—in some mackerel seasons abundant, in others scarcely seen; (10,000 were sent in one week in May, 1831, to the London markets).

Trigla Gurnardus, *grey gurnard* } occasionally met with.
—— Cuculus, *red gurnard* }

Salmo Salar, *salmon*—small ones have very rarely been taken in the mackerel nets.

—— Trutta, *salmon trout*—common in the Roads, Breydon, &c.

—— Eperlanus, *smelt*—common in Breydon, and the roads and rivers, especially the Yare.

Esox Lucius, *common pike*—rivers and broads in plenty.

Mugil Cephalus, *common, or grey mullet*—like the surmullet, this varies greatly as to frequency.

Clupea harengus, *herring*—from a journal of the herring-fishery, kept for fifty years by Mr. George Errington, it appears that the average number caught annually during that period, in the months of October and November, was about 2500 lasts of 10,000 each. The smallest number taken in one year, was in 1789, when less than 700 lasts were taken by the boats of the two towns, (Yarmouth and Lowestoft) together. The opposite extreme seems to have been in 1817, when between 7000 and 8000 lasts were caught. In the former year 130, and in the latter, 193 boats of different sizes were employed.

——— Pilchardus, *pilchard*—some few generally taken every year in the herring nets; in some years they have been abundant, as in 1780 and 1790, and in 1799,

so many were taken, that one tower received upwards of a last as his perquisite.

Clupea Alosa, *shad*—not uncommon with the herrings.

——— sprattus, *sprat*—abundant.

——— Encrasicolus, *anchovy*—a specimen found on this beach, May, 1830.

Cyprinus carpio, *carp*—in some of the broads.

——— Gobeo, *gudgeon*—in plenty in most of the broads.

——— Tinca, *tench*—ditto, ditto.

——— Brama, *bream*
——— Rutilus, *roach*
——— Leuciscus, *dace*
——— Phoxinus, *minnow*
} all more or less common.

Pteromyzon marinus, *lamprey*—Mr. L. Wigg had known this taken.

Raja Batis, *skate*
—— clavata, *thornback*
} in plenty.

—— Pastinaca, *sting ray*—a specimen taken in a shrimp-net, August, 1813.

Squalus Canicula, *spotted dog-fish*—one caught 1828.

——— Catulus, *lesser ditto*—our most common species.

——— glaucus, *blue shark*—also seen with the herrings, but much more rarely.

——— Cornubicus, *porbeagle shark*—one taken 1818; another 1822.

——— maximus, *basking shark*—several of this species have been taken at different times.

——— acanthias, *picked dog-fish*—common.

——— Zygœna, *hammer-headed shark*—one taken Oct. 1829; head now in the Norwich Museum.

——— Squatina, *angel shark*—one taken 1817; another 1822; and others previously.

Accipenser Sturio, *sturgeon*—has been taken in the harbour.

Lophius Europæus, *angler*, *frog-fish*—not uncommon in the roads, and sometimes taken in the harbour.

Cyclopterus lumpus, *lump sucker*—one taken in the river, 1819.

——— Liparis, *unctuous sucker*—has also been taken in the river.

Cephalus brevis, *short sun-fish*—one taken Nov. 1821.

Syngnathus Acus, *great pipe-fish*—common.

——— Typhle, *shorter ditto* } have both been taken.
——— barbarus, *little ditto* }

——— Hippocampus, *sea-horse ditto*—also occasionally met with.

INSECTS.

COLEOPTERA.

Cicindela maritima—by Caistor rails and along the coast; common.

——— *campestris*—Lound and Belton; not uncommon.

Cychrus rostratus—Belton and Burgh, in stumps of trees; rare.

Carabus catenulatus—North-denes; common.

——— *monilis*—rather rare.

——— *granulatus*—in moss on the hedges in winter; common.

——— *violaceus*—rather rare.

——— *clathratus*—June; Belton bog and Burgh marshes; very rare.

Calosoma sycophanta—very rarely taken on the beach in June and July.

Helobia brevicollis—common.

Leistus rufescens—moss near Belton bog; rare.

Loricera pilicornis—common.

Panagæus Crux-Major—once found at Caistor marrams.

Demetrias atricapillus } common.
Dromius linearis }

——— 4-*maculatus*—hedges at Belton, in moss; uncommon.

——— *melanocephalus* } common.
——— *foveolus* }

Dyschirius fulvipes? } Gorleston cliffs; common.
Broscus cephalotes }

Steropus madidus, common.

Omaseus Nigrita } common.
——— *melanarius* }
Platysma nigra—rather rare; Belton clay-pit.
Pogonus chalceus—river-side; common.
Ophanus obscurus—Gorleston cliffs; uncommon.
——— *puncticeps*—rare.
——— *cribellum* } river-side, near the ferry; common.
——— *pubescens* }
Harpalus ruficornis—common.
——— *binotatus*—rare.
——— *æneus*—common.
——— *maritimus*—North-denes; rare.
——— *anxius*—ditto; common.
——— *rufimanus*—common.
Curtonotus aulicus—Bradwell; on thistles.
Bradytus apricarius—common.
——— *ferrugineus*—river-side; common.
Amara vulgaris } common.
——— *Erythropa* }
——— *tibialis*—Caistor marrams; common.
Pœcilus dimidiatus—Fritton heath; not uncommon.
——— *cupreus*—common.
Calathus cisteloides }
——— *flavipes* } Denes, in sand-banks; common.
——— *rufangulus* }
——— *mollis* }
——— *melanocephalus*—common.
Argutor vernalis—Belton bog; in moss.
Synuchus vivalis—uncommon.
Odontonyx rotundatus—Hemsby cliffs; uncommon.
Agonum marginatum—Denes; common.
——— *parumpunctatum*—very common.
——— *mæstum*—Belton bog; in moss; rare.
Pristonychus subcyaneus—common under rubbish.
Anchomenus prasinus—hedges and fields; common.
Chlænius nigricornis—Belton bog; rare.
Badister bipustulatus—in moss; common.

Trechus minutus—North-denes; common.
——— *fulvus*—rare.
Peryphus littoralis—Gorleston cliffs; abundant.
——— *rupestris*—clay-pit, Belton; common.
Notaphus ustulatus—Breydon-bank; common.
Lopha 4-guttata—clay-pit, Belton; common.
Tachypus properans—common.
Bembidium flavipes—moss, Belton, Lound, &c.; uncomm.
Elaphrus uliginosus—very rare; clay-pit, Belton.
——— *cupreus*—borders of Ormesby broad.
Notiophilus aquaticus } common.
——— *biguttatus* }
Blethisa multipunctata—Belton bog, North-denes, &c.; rather common.
Haliplus obliquus—ditches, Bradwell }
——— *lineato-collis*—lily-pits, ditto } common.
——— *flavicollis*—ditto }
Hyphydrus ovatus—ditto }
Hygrotus confluens—lily-pots; uncommon.
——— *inequalis* }
——— *pictus* } ditches; common.
Hydroporus lineatus }
——— *sexpustulatus* }
——— *ovalis*—lily-pits; common.
——— *nigrita* }
——— *pubescens* }
Laccophilus hyalinus } ditches, &c.; common.
Noterus sparsus }
Colymbetes obscurus }
——— *fuliginosus*—ditches, &c.; common.
——— *uliginosus*—stagnant water in marshes between Yarmouth and Caistor; common.
——— *hipustulatus* } common.
——— *Sturmii* }
——— *notatus*—lily-pits; May; not uncommon.
——— *collaris* } rare.
——— *conspersus* }

Colymbetes subnebulosus—Steph. } common.
——— *fuscus*
——— *oblongus*—rare.
Dyticus marginalis } not uncommon in ditches.
——— *circumflexus*
——— *punctulatus*—common in ditches.
——— *dimidiatus*—once found on the beach.
Acilius sulcatus
Gyrinus natator } common.
——— *bicolor*
Parnus prolifericornis—rare.
Heterocerus marginatus—Breydon banks; rare.
Hydrochus elongatus—lily-pits; uncommon.
Helophorus aquaticus
——— *granularis* } common.
——— *nubilus*
——— *fennicus*—North-denes; frequent.
Hydrous piceus—North-denes, in ditches; rare.
Hydrophilus caraboides—rare.
Hydrobius fuscipes
——— *torquatus* } common.
——— *testaceus*
——— *margipallens*—lily-pits; very common.
——— *atricapillus*—ditches, Bradwell; frequent.
——— *minutus*—common.
——— *globulus*—rather rare at lily-pits.
——— *bipunctatus*—very common.
——— *orbicularis*—common.
Berosus æriceps—stagnant water in marshes between Yarmouth and Caistor; very common.
——— *globosus*—March and April; lily-pits; rare.
Cercyon piceum
——— *melanocephalum* } common.
Sphæridium scarabæides
——— *bipustulatum*—rather rare.
Anthophagus nuchicornis—Fritton heath; very common.
——— *Dillwyunii*—North and South Denes; very common.

Aphodius fossor
——— *hæmorrhoidalis*
——— *erraticus*
——— *fimetarius*
} common.
——— *fœtens*
——— *inquinatus*
} North-denes; common.
——— *turpis*—North-denes; rare.
——— *rufipes*
——— *nigripes*
} common.
——— *depressus*—North-denes; May; rare.
——— *circumcinctus*—uncommon.
——— *prodromus*
——— *ciliaris*
} common.
——— *merdarius*
Ægialia globosa
} common on the Denes.
Geotrupes sylvaticus—Fritton heath; common.
——— *stercorarius*—common.
Melolontha vulgaris
——— *solstitialis*
} common, in some seasons.
Typhæus vulgaris—Fritton heath; uncommon.
Serica brunnea—uncommon.
Anomala Frischii—North-denes; common.
——— *Julii*—North-denes; rare.
Anisoplia horticola—common.
Hoplia pulverulenta—very uncommon.
Hister uncolor
——— *cadaverinus*
} common.
——— *carbonarius*—uncommon.
——— *purpurascens*—North-denes; uncommon.
——— *æneus*—North-denes; common.
——— *nitidulus*—ditto; uncommon.
Catheretes bipustulatus—Oby; very common.
Nitidula æstiva—common in hedges.
——— *grisea*—uncommon.
Atomaria atra—North-denes; not common.
Cryptophagus fumatus
Byturus tomentosus
} common.

Leiodes punctulata—North-denes, in the sand-pits, Nov.; common.

Ptomophagus truncatus—not common.

——————— *velox*—rare.

Choleva augustata—common.

Phosphuga atrata—December; hedges at Belton, in moss; uncommon.

Silpha lævigata—lanes, Fritton; common.

—— *obscura*—about Burgh-castle; uncommon.

—— *opaca*—river-side; uncommon.

Oiceoptoma opaca—Denes; abundant.

——————— *sinuata*—Denes and Fritton; rather rare.

——————— *rugosa*—ditto; abundant.

——————— *thoracica*—Fritton and Lound, in fungi; rather common.

Necrodes littoralis } by the river-side, near the ferry, in
——————— *Curtisii* } carrion; but uncommon.

Necrophorus mortuorum—rare at Lound wood, in fungi.

——————— *vestigator* } rather rare; in carrion.
——————— *Humator* }

——————— *Anglicus*—ditto, in ditto; on the sand-hills.

——————— *Vespillo* } common.
Creophilus maxillosus }

Staphylinus nebulosus }
——————— *erythropterus* } North-denes; not uncommon.
——————— *stercorarius* }

——————— *æneo-cephalus*—Gorleston-cliffs, Denes, &c.; abundant.

Ocypus olens—common.

——— *punctulatus*—rare.

Tasgius rufipes—Caister marrams, September; very rare.

Quedius impressus } very common.
——— *picipes* }

Philonthus marginatus—river-side, &c.; common.

Cafius xantholoma—Breydon-banks, under rejectamenta; common.

Achenium ———?—river-side; rare.

Gyrohypnus cruentatus—common.

Lathrobium brunnipes—Fritton and Lound, under moss in winter; uncommon.

Tachinus rufipes
Tachyporus marginatus } common.
——— *obtusus*

Boletobius lunulatus—Fritton and Ashby, in fungi; uncommon.

Anthobium piceum—moss, Belton bog.

Lesteva obscura—Burgh rand; uncommon.

Oxyporus rufus—Lound wood, in Boleti; rare.

Drusilla canaliculata—common under rejectamenta, by the river-side.

Encephalus complicans—moss, Belton bog, in winter; rare.

Pæderus riparius—common.

——— *littoralis*—Lound; rather rare.

Rugilus orbiculatus } moss, Belton; common.
——— *augustatus*

Autalia rivularis—ditto, ditto; rare.

——— *impressa*—Lound wood, in fungi; common.

Arcopagus bulbifer } moss, Belton, winter; common.
——— *puncticollis*

Bryaxis juncorum—ditto, ditto; common.

——— *fossulatus*—ditto, off stumps of trees, Fritton; April; rare.

——— *sanguineus*—ditto, Belton; common.

Pselaphus Herbstii—ditto, off stumps of trees, Fritton; rare.

Scydmænus elongatus—hedge moss, Bradwell; rare.

——— *pusillus*—ditto, Belton and Fritton; common.

——— ——— *thoracicus*—ditto, ditto; rare.

Silvanus Surinamensis—in some bonding warehouses; abundant in wheat.

Rhyzophagus cylindricus—moss, Fritton; common.

Cerylon histeroides—Lound wood, in stumps of trees; common.

Tenebrio moliter—common.

Pedinus gibbium—sand-hills; abundant.
Opatrium tibiale—Caistor marrams, ditto; May.
Sarrotrium muticum—marrams and North-denes; rare.
Phaleria cadaverina—rare.
Crypticus quisquilius—Denes; common.
Helops cæruleus—rare; larvæ once found in abundance, destroying a window-frame.
Blaps mortisaga—very common in stables and out-houses.
Melandrya caraboides—rare.
Cistela murina—hedges; common.
——— *fusca*—ditto; rare.
——— *sulphurea*—Belton clay-pit; uncommon.
Lagria hirta
Anaspis frontalis
——— *ruficollis*
Œdemera cærulea
} very common.
——— *melanura*—on the Quay, in July; common.
Pyrochroa rubens—hedges; uncommon.
Meloe proscarabæus—common.
Notoxus monoceros—Belton clay-pit, May; rare.
Anthicus fuscus—not uncommon.
Ptinus imperialis—near Burgh-castle; May; rare.
—— *fur*—common.
Ptilinus pectinicornis—ditto, in some houses.
Anobium castaneum—hedges at Belton; rare.
——— *striatum*—too common in every house.
——— *paniceum*—sometimes in abundance.
——— *tessellatum*—common.
Dermestes lardarius—uncommon.
Attagenus Pellio
Anthrenus Verbasci
} common.
Byrrhus varius—pathways, Belton; rare.
——— *pilula*—fields, Belton; common.
Elater minutus—hedge-banks, Burgh; rare.
——— *aterrimus*—rare.
——— *holosericeus*—Caistor marrams; abundant.
——— *murinus*—ditto, and Gorleston cliffs; ditto.

Elater fulvipes } rather common.
——— *sputator* }
——— *obscurus*—abundant.
——— *lineatus*—ditto, in some seasons.
——— *æneus*—Belton and Fritton, on banks; May; rare.
——— *nigrinus*—rare.
——— *marginatus*—not uncommon.
——— *limbatus*—woods at Fritton; rare.
Elodes lividus }
Scirtes hemisphæricus } common.
Telephorus fuscus }
——— ——— *rusticus* }
——— ——— *nigricans*—uncommon.
——— ——— *bicolor*—common.
——— ——— *lividus*—abundant.
——— ——— *flavilabris*—abundant in meadows, and a variety with the thorax black, common in marshes, at Caistor.
——— ——— *testaceus* } common.
——— ——— *melanurus* }
Malachius bipustulatus—in lanes at Belton; scarce.
——— *sanguinolentus*—Oby turf-meadow, July; scarce.
Corynetes violaceus—common.
Cis Boleti—Fritton, in moss, off stumps of trees: uncommon.
Scolytus Destructor } occasionally met with.
Hylesinus Fraxini }
Baris semicylindricus—Caistor marrams and Lound; rare.
Calandra granaria—In some malt-houses; too common.
Cionus Verbasci—Oby, on Scrophularia aquatica.
Orobitis cyaneus—sand-hills; uncommon.
Ceutorhynchus rubicundus—Fritton woods; common.
——— *Sisymbrii*—on plants in ditches, Caister and Fritton; common.
Orchestes Alni } common.
——— *scutellaris* }

Orchestes Ilicis } common.
Tychius cinarescens }

Notaris acridulus—scarce.

Hypera punctata—sand hills; abundant.

——— *Arator*—Caistor marrams; uncommon.

——— *Pollux*—common.

——— *nigrirostris*—sand hills; common.

Orthochætes setiger—moss off heathy banks at Belton, in April, and near the bogs in the winter; not uncommon.

Molytes punctatus—common.

Hylobius Abietis—rare.

Alophus triguttatus—Gorleston cliffs; rare.

Barynotus obscurus—Caistor marrams; common.

Liophlæus nubilus—weeds in hedges; ditto.

Otiorhynchus Ligustici—uncommon; Belton clay-pit.

——— *sulcatus* }
——— *picipes* } abundant.
——— *ovatus* }

Trachyphlæus tessellatus—moss, Belton heath; common.

Thylacites geminatus—sand-hills; abundant.

——— *Coryli*—Fritton wood; ditto.

Sitona Spartii—near Burgh castle, on the broom; abundant.

——— *ruficlavis*—sand-hills; ditto.

——— *puncticollis*—abundant.

Polydrusus flavipes—fields at Belton; scarce.

——— *oblongus* }
Phyllobius Alneti }
——— *argentatus* } common.
——— *Mali* }
——— *uniformis* }

Cleonus sulcirostris—Gorleston cliffs and Winterton marsh; rather rare.

Apion æneum } common.
——— *Malvæ* }

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Apion vernale—hedges, Bradwell; frequent.
—— *rufirostre*
—— *flavipes* } common.
—— *assimile*
—— *frumentarium*—frequent.
—— *hæmatodes*—ditto; Caistor marrams.
—— *punctifrons*
—— *Ulicis*
Rhynchites minutus } common.
—— *æquatus*
—— *interpunctatus*—frequent.
Deporäus Betulæ—Lound wood; common.
Attelabus curculionoides—ditto, on oaks; scarce.
Bruchus ater—Fritton; uncommon; on the broom.
Salpingus planirostris—ditto; ditto on osiers.
Cerambyx moschatus—willows, turf-meadow, Oby; rare.
Saperda Cardui—turf-meadow, Oby, July; rare.
—— *cylindrica* } rare.
Clytus arcuatus
—— *Arietis*—Burgh and Belton; uncommon.
Obrium minutum.—rare.
Rhagium bifasciatum—old stumps of trees, Belton bog, April; common.
Leptura elongata—Lound wood, on honey-suckles; uncommon.
—— 4-*fasciata*—turf-meadow, Oby, July; rare.
—— *ruficornis*—Burgh; rare.
—— *livida*—Lound; ditto.
Donacia Lemnæ—common.
—— *dentipes*—Belton bog; rare.
—— *Proteus* } common.
—— *nigra*
—— *Menyanthidis*—Fritton lake; common.
—— *linearis* } common.
Crioceris cyanella
—— *melanopa*—Breydon marshes; common.
—— *Asparagi*—gardens, Southtown; ditto.

Cassida equestris—near Ormesby broad, on Mentha hirsuta; common; July.

——— *rubiginosa*—nettles; common.

——— *obsoleta*—near Ormesby broad; rare, July.

Galeruca Tanaceti—common.

——— *Cratægi*—hedges, Bradwell, in white-thorn; rare.

——— *Capreæ* } common.
Adimonia halensis }

——— *quadrimaculata*—turf-meadow, Oby; July; rare.

Haltica nemorum }
——— *atricilla* } common.
Macronema flava }
——— *Modeeri* }

——— *cyanea*—Lound wood; not uncommon.

——— *Erucæ*—turf meadow, Oby; common.

——— *orbiculata*—moss, Fritton and Belton; common in winter.

Cryptocephalus labiatus—oaks, Lound wood, common.

——— *pusillus*—Caistor marrams; common.

Helodes Phellandrii—very common; on aquatic plants.

Chrysomela marginella—Belton bog, in moss, off stumps in winter; common.

——— *Vitellinæ*—uncommon; on willows.

——— *Cochleariæ*—ditch plants; common.

——— *tumidula*—rare.

——— *Polygoni*—abundant.

——— *Raphani*—turf-meadow, Oby.

——— *Populi* }
——— *polita* } Belton bog and Oby; common.
——— *Staphylea* }

——— *Hyperici*—Burgh rand, September; rare.

——— *Litura*—Fritton wood; common on broom.

Timarcha tenebriosa—very common.

——— *coriaria*—Denes, ditto.

Scymnus Litura }
Cacidula pectoralis } common.

Coccinella 19-*punctata*
——— 13-*punctata*
——— 11-*punctata*
——— *dispar* } common.
——— *variabilis*
——— 22-*punctata*
——— 7-*punctata*
—— —— *ocellata*—rare; Gorleston cliffs.
—— —— 14-*guttata* —oaks, Lound wood, Sep.; common.
——— *globosa*—turf-meadow, Oby, July; ditto.
Chilocorus renipustulatus—Lound heath; common.
—— —— 4-*verrucatus*—Lound wood; common.

DERMAPTERA.

Forficula auricularia—every where.
——— *forcipata*—sand-hills and river-side, by the ferry; common.
Labia minor—occasionally.

DICTYOPTERA.

Blatta orientalis—in most houses.

ORTHOPTERA.

Gryllotalpa vulgaris—Caister; occasionally.
Acheta domestica —in some bake-offices, very common.
Acrida viridissima—Caistor marrams; frequent.
——— *aptera*—Lound wood, Sept.; common in damp places.
Locusta flavipes—Belton bog: common.
Acrydium bipunctatum—common.

HYMENOPTERA.

Cimbex varians } Larvæ common in September, on
Trichiosoma lucorum } birches at Lound wood.
Zaræa fasciata—Corton cliff; rare.
Selandria costalis—rather rare.

Allantus arcuatus
——— *rusticus*
——— *cinctus*
——— *solitaria*
——— *lividus*
Tenthredo ornata
} common.

Cræsus septentrionale—in 1832, larvæ in such immense abundance on willows in meadows, at Gorleston, that many were entirely stripped of their leaves.

Cladius difformis—rare.

Cephus pygmæus—common.

Sirex Gigas—has very rarely been taken in the town.

—— *juvencus*—occasionally met with in the town.

Ichneumon Atropos, (Curtis) from Chrysalis of Smerinthus Populi—rare.

——— — *molitorius?*—Gorleston meadows; common; and from Chrysalis of D. Elpenor.

——— *vaginatorius*
——— — *luctatorius*
Alomya ovata
Pimpla manifestator
} uncommon.

——— *instigator*—common.

Peltastes necatorius—gardens, August; sometimes abundant.

Anomalon lætatorius—common.

Banchus compressus—North-denes, in the spring; uncom.

Paniscus ———*?N. S.*—from Chrysalis of Cimbex varians.

Ophion luteus—very common.

Dryinus formicarius—Denes, June; common.

Smiera clavipes—marshes at Gorleston, August; rather common.

Cleptes semiaurata—sand-hills, July and Aug.; common.

Chrysis ignita—common.

——— *cyanea*—rare.

Mutilla Europæa—Lound heath, September; uncommon.

Pompilus fuscus
——— *viaticus*
} common.

Pompilus pulcher } sand-hills; common.
——— *niger* }
——— *rufipes*—ditto; scarce.
Ammophila vulgaris—ditto; common.
——— *hirsuta*—rare.
Oxybelus uniglumis } common.
Crabro palmatus—gardens }
Mellinus arvensis—sand-hills and Lound heath; common.
Arpactus tumidus—ditto, June } rare.
Psen equestris—Lound heath }
Vespa Crabro—in gardens, occasionally.
—— *vulgaris*—every where.
—— *holsatica*—sand-hills at Caistor } rare.
Colletes fodiens—Lound heath, September }
Andrena Clarkella—uncommon.
Sphecodes gibbus—Belton lanes } common.
Halictus rubicundus }
Panurgus ursinus—on dandelions at Lound; sometimes common.
Anthidium manicatum—North-end gardens } uncommon.
Osmia bicornis—gardens }
Megachile Willughbiella—common.
——— *ligniseca*—uncommon in gardens.
Cœlioxys conica—common.
Nomada picta—rare.
——— *ruficornis*—gardens; uncommon.
Anthophora retusa—ditto; very common.
Bombus vestalis—rare.
——— *muscorum* } common.
——— *sylvarum* }
——— *fragrans* }
——— *Rossiellus* } rather rare.
——— *Tunstallanus* }
——— *Hortorum* }
——— *terrestris*—common.
——— *subterraneus* } uncommon.
——— *Raiellus* }

Bombus lapidarius } very common.
Apis mellifica }

NEUROPTERA.

Libellula depressa—common.
——— 4-*maculata*—Lound, &c.; rather rare.
——— *conspurcata*—ditto, ditto.
Cordulia ænea—Fritton wood; rare; May.
Æshna varia—common.
——— *grandis*—Oby, &c.; rare.
Panorpa communis }
Chrysopa Perla } common.
Sialis lutarius }

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LEPIDOPTERA.

Papilio Machaon—meadows in Oby and Thurne, May and August; in some years, (as the present,) very abundant.
Gonepteryx Rhamni—uncommon.
Colias Edusa—some years not uncommon in August.
—— *Hyale*—very rare; observed this year in lanes at Belton, in September.
Pontia Cardamines—Bradwell, &c.; rather rare.
——— *Brassicæ* }
——— *Rapæ* }
——— *Napi* } common.
Hipparchia Megæra }
——— *Ægeria*—Lound wood; common.
——— *Semele*—Caistor marrams and Lound; common; August.
——— *Janira*—common.
Hipparchia Tithonus } common.
——— *Hyperanthus* }
Vanessa Cardai—more or less abundant in different years.

* A species belonging to an undescribed Trichopterous genus, remarkable for its very depressed and broad head and abdomen—taken in a marsh between Yarmouth and Caister, off rushes, on Augnst 14, 1833. It will shortly be accurately described in one of the publishing works.

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Vanessa Atalanta } common.
——— *Io* }

——— *Antiopa*—one specimen taken this year by a boy, (Aug. 27, 1834,) in the North-end gardens.

——— *Polychloros*—gardens and lanes; rather rare.

——— *Urticæ*—common.

Argynnis Aglaia—July; Caistor marrams and Lound heath; common.

——— *Paphia*—a single specimen taken at Bradwell.

——— *Lathonia*—a single specimen taken this year, Aug. 2, by Capt. Chawner, near Caistor rails.

Melitæa Silene—Lound wood and heath; rare; May and June.

Thecla Quercus—oaks at Oby; rare.

Lycæna Phlæas } common.
Polyommatus Dorylas }

——— *Argus*—Lound heath; very common.

——— *Agestis*—rather uncommon.

Hesperia Linea—clay-pit, Belton; common.

——— *Sylvanus*—small wood, near Lowestoft; rather rare.

Ino Statices—Caister marrams } common.
Zygæna Loti }
——— *Filipendulæ* }

Macroglossa Stellatarum—common in gardens; the larvæ on Galium verum on North-denes.

Deilephila Porcellus } North-end Gardens, on honey-
——— *Elpenor* } suckles; some years common.

——— *Galii*—only one specimen known here till this August, when four were taken, and eight or nine seen. Several caterpillars have been found feeding on Galium verum, on the North and South Denes.

Sphinx Ligustri—common.

——— *Convolvuli*—one or two specimens generally taken in the autumn.

Acherontia Atropos—in some years the larvæ are not uncommon on the potato; but the moth is very rare.

Smerinthus ocellatus—larvæ on willows } very common.
——— *Populi*—larvæ on poplars }

Ægeria tipuliformis—gardens, North-end; common on black-currant bushes.

Hepialus Humuli } common.
——— *Lupulinus* }

——— *sylvinus*—rare.

——— *Hectus*—turf-meadow, Oby; rare.

Cossus Ligniperda—larvæ have been found in the North-end gardens.

Zeuzera Æsculi—very rare.

Pygæra Bucephala—common.

Notodonta dromedarius—Runham and Lound; rare; larvæ on birches.

——— *ziczac*—ditto; ditto.

——— *Tremula*—rare.

——— *camelina*—Lound; larvæ common on the birch.

Petasia Cassinea—at Lowestoft Upper light-house, where it is attracted by the strong light, with other moths, in immense numbers; rare.

Episema cæruleocephala—larvæ not uncommon on white thorn.

Cerura Furcula—very rare; larvæ on poplars, near North-end gardens.

——— *Vinula*—common.

Saturnia Pavonia-minor—larvæ at Belton bog, abundant; perfect insect rather rare.

Eriogaster Populi—Lowestoft light-house; common.

Clisiocampa Neustria—common.

Lasiocampa Rubi—Belton bog and Caistor marrams, rare; larvæ common.

——— *Quercus* } common.
Odonestis Potatoria }

Gastropacha quercifolia—larvæ on white thorn at Lound and Fritton; rare.

Orgyia antiqua—common.

Laria fascelina—rather rare; larvæ common.

Laria pudibunda—rather rare; larvæ common.

Arctia Salicis
——— *chrysorrhœa*
——— *phœorrhœa*
Spilosoma lubricipeda
——— *Menthrastri*
} some years very common.

——— *Urticæ*—Gorleston meadows; rare.

Phragmatobia fuliginosa—Belton, &c.; rather rare.

Eyprepia Villica—ditto.

——— *Caja*—common.

——— *Russula*—Belton bog and Lound; male rather common; female rare.

Callimorpha Jacobeæ—Caistor and Winterton marrams; common.

Lithosia rubricollis—rare.

——— *quadra*
——— *griseola*
} common.

——— *complana*—rare.

Nudaria mundana
Scoliopteryx Libatrix
} common.

Charæas Graminis—some years not uncommon.

Agrotis æqua—rare; sand-hills.

——— *segetum*—common.

——— *valligera*—Denes and Caistor, in sand-banks; common.

——— *exclamationis*—very common.

——— *pupillata*—Denes and Caistor; among roots in sand-hills; and a variety with upper wings of a pale green; abundant.

Graphiphora plecta—Caistor marrams; rare.

——— *C. nigrum*—rare.

Orthosia Rufina—Lowestoft upper light; common.

Amphipyra pyramidea—North-end gardens; rare.

Triphæna orbona
——— *Pronuba*
} common.

——— *Janthina*—gardens; rare.

Xylina exoleta—rare; Ormesby and Runham.

Xylina polyodon—common.

——— *musicalis*—some years not uncommon.

Rhizolitha Lambda—trunks of firs, Hopton; rather common; October.

Mamestra Pisi—larvæ common at Belton bog.

——— *oleracea*—in gardens; common.

——— *Persicariæ*—rare.

——— *Brassicæ*—very common.

——— *Albicolon.—Steph.*—Denes, in sand-banks; not uncommon.

——— *basilinea*—uncommon.

Miselia Aprilina—rare.

Apamea humeralis—lanes, Bradwell; rare.

Acronycta leporina—rare; larvæ common in the autumn in a plantation at Runham.

——— *Bradyporina*—ditto, ditto.

——— *Psi*
Acronycta tridens } common.
——— *megacephala*

Polia flavocincta
Actobia porphyrea } rare.

Bryophila Perla—very common; a variety with ochraceous markings, uncommon.

Phlogophora lucipara—rare; North-end gardens.

——— *meticulosa*—common.

Gortyna flavago—perfect insect, rare; larvæ abundant in burdocks, 1833.

Nonagria Typhæ—perfect insect, rare; larvæ in plenty this year in the Cat's-Mace, West Caistor.

——— *crassicornis*—a male taken at Lowestoft lighthouse, 1831, and a female in Yarmouth, Nov. 1833.

Leucania littoralis—taken this year at Caistor, in sand-hills, but rarely, June.

——— *rufescens*—common.

——— *Phragmitidis*—turf-meadow, Oby, July; rare.

Cucullia umbratica
——— *Lactucæ* } common at North-end gardens.

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Plusia Festucæ—North-end gardens; uncommon.
——— *Chrysites*—ditto; common.
——— *Iota*—ditto; uncommon.
——— *Gamma*—abundant.
Heliothis marginata—Caistor and Lowestoft; rare.
——— *Dipsacea*—by Caistor rails; common.
Anarta Myrtilli—Lound heath; rare.
Mormo Maura—common.
Catocala Nupta—on willows in August; occasionally.
——— *Fraxini*—one specimen found in a garden by the North-gates, now in Mr. Sparshall's cabinet.
Euclidia Mi—Winterton marsh; common.
Biston prodromarius—Lowestoft light-house; rare.
——— *Betularius*—rare; larvæ common.
——— *hirtarius*—Lowestoft light-house; uncommon.
Alcis rhomboidaria—rather scarce; Denes and Ormesby.
Cleora Lichenaria—North-end gardens; not common.
Fidonia atomaria—Lound heath
Aspilates plumbaria—Caistor marrams
Cabera exanthemaria—Lound wood
——— *pusaria*—ditto
} common.
——— *rotundaria*—rare.
Hipparchus vernarius
——— *papilionarius*—at Belton bog
Himera pennaria—sand-hills
Metrocampus Margaritia
Larentia cervinaria
} uncommon.
——— *Chenopodiata*
Zerynthia ferruginea
Halia Vauaria—gardens
} very common.
Ephyra omicronaria—rare.
Hybernia stictaria
——— *defoliaria*
——— *brumata*
} occasionally at North-end gardens.
Oporabia multistrigaria—gardens; rare.
Eupithecia rectangulata
——— *vulgata*
} common.

Eupithecia centaureata—gardens
Bapta punctata—North-end gardens
Rumia Cratægata
Abraxas Grossulariata
} common.

Zerene albicillata—Ormesby; rare.

——— *rubiginata*—North-end gardens
Electra testata
——— *spinachiata*
——— *fulvata*
Ypsipetes elutata
} common.

——— *impluviata*—Belton bog
——— *miata*
Larissa plagiata—clay-pit, Belton, May
} rather rare.

Lozogramma lineolata—Denes, May and August
Camptogramma bilineata
Ptychopoda remutata—Lound
} abdt.

Macaria clathrata—clover-fields
——— *Thymiaria*—lanes
Ourapteryx Sambucaria—gardens
} common.

Tortrix viridana—uncommon.

——— *oporana*
——— *fulvana*
Pendina tripunctana
} common.

Carpocapsa Pomonella—gardens; uncommon.

——— *Wæberana*—ditto; common.

Argyrotoza Bergmanniana
——— *ciliana*
} hedges, common.

Nola strigulalis—trunks of trees on the Quay; rare.

Simaethis Fabriciana—on flowers of Senecio Jacobæa; abundant.

Hydrocampa Potamogeta—common; a very dark variety, rarely found at Caistor and Filby.

——— *Nymphæata*
——— *Lemnata*
} common.

Scopula sambucalis—rather rare.

——— *verticalis*
——— *Urticalis*
} very common.

Scopula forficalis—very common.
——— *sericealis*—rare; Belton and Lound.
——— *hybridalis*—Denes and Caistor; rather common.
Hypena proboscidalis—North-end gardens; abundant.
Asopia glaucinalis—gardens; rare.
——— *farinalis*—stables; abundant.
Aglossa pinguinalis—ditto; not uncommon.
Chilo Phragmitellus—Belton bog, July; rare.
Crambus Pinitellus—Lound heath; common.
Oncocera Marisci—South-denes; rare.
Eudorea Mercurella
Œcophora Sulphurella
Depressaria Heracleana } very common.
——— *applana*
Anacampsis sarcitella
Argyrosetia J. W. Ella—Lound wood; abundant.
Erminea padella—gardens
Ypsolophus variellus
Tinea tapezella
Pterophorus didactylus—Caistor } common.
——— *pentadactylus*
Alucita hexadactyla

HOMOPTERA.

Livia juncorum—by Filby broad, &c.; common.
Amblycephalus viridis—very common.

HEMIPTERA.

Notonecta furcata—lily-pits, November; common.
——— *glauca*
Naucoris cimicodies
Nepa cinerea } ditches; very common.
Velia currens
Hydrometra stagnorum
Reduvius subapterus—Caistor marrams, Sept.; abundant.
——— *personatus*—flying to lights in the evening, in August; rare.

Phytoceris striatus—Lound wood; uncommon.
N. G. Abietis—on a fir on Lound heath; common.
Plinthisus brevipennis—sand-hills; not uncommon.
Coryzus Hyoscyami—Caistor marrams, on Ononis arvensis; August; rare.
Chorosoma Arundinis } Caistor marrams, on Arundo are-
——— *microptera* } naria; abundant.
Coreus marginatus—Fritton and Lound; rare.
Œlia acuminata—Caistor; on Arundo arenaria; frequent.
Acanthosoma hæmorrhoidalis—rather rare.
——— *liturata*—Lound wood; on birches, Sept.; abundant.
Pentatoma bidens—Caistor marrams; common.
——— *rufipes*—very common.
——— *ferrugator*—the only specimen of this fine insect ever taken in this country, was found in a garden, on a plant of the Butcher's broom, (Ruscus aculeatus,) on April 22, 1828. It is now in Mr. Curtis' collection.
——— *lurida*—Lound wood, on birches; rather rare.
——— *dissimilis*—on furze; very common.

APHANIPTERA.

Pulex irritans } common.
—— *canis* }

DIPTERA.

Rhipidia maculata—rare.
Limnobia xanthoptera—turf-meadow, Oby; common.
Pedicia rivosa—Lound wood; rather rare; September.
Tipula gigantea—North-end gardens; ditto.
——— *oleracea*—common.
——— *crocata*—North-end gardens; common.
Scatopse punctata
Bibio Marci
Rhyphus fenestralis } common.
Beris clavipes

Tabanus alpinus—Belton bog } rare.
——— *tropicus*—Lound wood }
Hæmatopota pluvialis }
Chrysops cæcutiens } common.
——— *relictus* }
Bombylius major—Burgh and Belton; rather common.
Asilus crabroniformis—fields, Fritton; sometimes common.
—— *forcipatus*—Denes and Caistor; abundant.
Hilara cilipes—Lound; common.
Sargus infuscatus—uncommon.
——— *formosus* }
——— *politus* }
Oxycera trilineata—Burgh & Bradwell marshes } comm.
Odontomyia Hydroleon—marshes }
Stratiomys Potamida—meadows, Oby }
Rhingia campestris }
Syrphus ruficornis—Oby; rare.
Scæva Pyrastri } common.
—— *Ribesii* }
Sericomyia borealis—Lound heath and Caistor marrams; some years common.
Helophilus transfugus—Breydon marshes; rare.
——— *pendulus*—common.
——— *Ruddii*—Breydon marshes; very rare.
Eristalis tenax } common.
——— *Arbustorum* }
Volucella bombylans—sand-hills, Caistor }
——— *plumata*—Gorleston cliffs & ditto }
——— *pellucens*—Lound heath } rather rare.
Porphyrops diaphanus—gardens }
Medeterus notatus—ditto }
Stomoxys calcitrans—common.
Tachina vulpina—Denes; rare.
Mesembrina meridiana }
Sarcophaga carnaria } common.
Musca Cæsar }
Scatophaga stercoraria }

Psila fimetaria—rather rare.

Actora æstuum—on the beach at high-water mark, Aug.; common.

Sepedon sphegens, marshes } common.
Tetanocera marginata, marrams }

Ochthera Mantis—once by Lound run, in September.

Oxypterum pallidum—on swifts; rather rare.

VASCULARES.—*Flowering Plants.*

EXOGENÆ.

RANUNCULACEÆ.

Clematis Vitalba—in hedges occasionally; but doubtful if wild.

Thalictrum flavum—rather rare; Burgh-castle ditches.

Anemone nemorosa—very rarely, if ever found. Mr. Turner used to find it in the plantations at Gunton-hall.

Myosurus minimus—dry bank, opposite Browston-hall; Mr. Turner. At Ormesby, and in gardens; B. G.

Ranunculus Flammula
——— *Lingua*
——— *Ficaria*
——— *sceleratus*
——— *bulbosus*
——— *hirsutus*
——— *repens*
——— *acris*
} very common.

——— *arvensis*—fields at Caistor; Mr. Turner.

——— *parviflorus*—Little Ormesby church-yard; lane, Hemsby; B. G.

——— *hederaceus*—rather rare; ditches, Caistor causeway, Belton bog, &c.

——— *aquatilis*—α. β. γ. abundant.

Caltha palustris—abundant.

BERBERIDEÆ.

Berberis vulgaris—hedges, Caistor, Burgh, and Lound. Mr. Wigg.

NYMPHÆACEÆ.

Nymphæa alba } common on most of the broads.
Nuphar lutea }

PAPAVERACEÆ.

Papaver Argemone }
——— *dubium* } abundant.
——— *Rhæas* }
——————— *var, flore albo*—field, Burgh-castle, 1834.
——— *hybridum*—near Bradwell mill; Mr. Turner.
——— *somniferum*—occasionally naturalized.
Glaucium luteum—occasionally by the South-pier, and on the coast.
Chelidonium majus—not uncommon.

FUMARIACEÆ.

Fumaria officinalis, α. β.—abundant.
——— *parviflora*—very rare; weed in gardens.
——— *capreolata*—rather rare; Ormesby; Mr Cooper.

CRUCIFERÆ.

Cheiranthus Cheiri } abundant.
Nasturtium officinale }
——— *sylvestre*—rare; marsh ditch-banks; Oby.
——— *terrestre* } not uncommon.
——— *amphibium* }
Barbarea vulgaris—common.
——— *præcox*—hedge by Bradwell marshes; Mr. Wigg in B. G.
Cardamine pratensis } very common.
——— *hirsuta* }
Koniga maritima—naturalized in the Breydon marshes.
Draba verna—abundant.
Cochlearia officinalis—this used to be found in a marsh at Caistor, but is now lost.
——— *Anglica*—salt marshes; abundant.

Cochlearia Danica—a specimen of this sprung up, with a quantity of Aira canescens, of which Mr. Wigg had sent the seeds from our Denes to Mr. Stock of Bungay, and which he planted in his garden. It has not been else seen either there or here.

——— *Armoracia*—common; naturalized.

Thlaspi arvense—Caistor and Belton; Pakefield by Lowestoft road; B. G.

Teesdalia nudicaulis—occasionally occurs in different parts of the Denes; but uncertain.

Cakile maritima—beach, in plenty.

Sisymbrium officinale
——— *Sophia*
——— *thalianum*
Erysimum Alliaria
} very common.

——— *cheiranthoides*—not rare; but uncertain in its locality.

Coronopus Ruellii—Denes, &c.; abundant.

Capsella Bursa Pastoris—abundant.

Lepidium latifolium—river-side; B. G. Lost long ago.

——— *ruderale*—salt marsh-banks, &c.; abundant.

——— *campestre*—road-sides; not uncommon.

——— *Smithii*—Browston. Rev. G. R. Leathes.

Brassica Napus
——— *Rapa*
——— *campestris*
——— *oleracea*
} more or less commonly naturalized.

Sinapis arvensis
——— *alba*
——— *nigra*
} very common.

——— *tenuifolia*—old walls in the town, especially by the Church; abundant.

Raphanus Rhaphanistrum—common.

VIOLACEÆ.

Viola odorata
——— *canina*
} very common.

Viola canina fl. albo—V. lactea?—occasionally on the North-denes.

—— *palustris*—bogs near Lound mill and at Hopton, 1802. Mr. Wigg.

—— *flavicornis?*—North-denes; abundant—*See Br. Fl.*

—— *tricolor*—common.

DROSERACEÆ.

Drosera rotundifolia—bogs in Sphagnum and in gravelly meadows; very common.

——— *longifolia*—rather rare; bogs at Lound, Ormesby, &c.

——— *anglica*—rare; Ormesby common in Sphagna, in plenty.

FRANKENIACEÆ.

Frankenia lævis—damp broken banks on the South-denes, and by the North-river; but far rarer than it used to be.

POLYGALEÆ.

Polygala vulgaris—very common.

MALVACEÆ.

Malva sylvestris } very common.
——— *rotundifolia* }

——— *moschata*—Mautby; very rare, 1809. Mr. Wigg.

Althæa officinalis—Salt-marsh ditch-banks; common.

HYPERICINEÆ.

Hypericum Androsæmum—used many years ago to grow at Mautby, but is now lost.

——— *quadrangulum* } very common.
——— *perforatum* }

——— *humifusum*—rather rare; Ormesby and Bradwell commons.

——— *pulchrum* } common.
——— *elodes* }

Holosteum umbellatum.. Church Yard Walk.

May, 1835. M. Ewing.

CARYOPHYLLEÆ.

Saponaria officinalis—Burgh-castle, near the inn; scarcely wild.

Silene anglica—fields, Lound and Bradwell. B. G.

—— *noctiflora*—turnip-field, Herringfleet, 1810. Mr. Turner.

—— *inflata* } common.
Lychnis Flos-Cuculi }

——— *dioica* } both very common; but the
——————— β. *sylvestris* } latter by far the most so.

Agrostemma Githago }
Spergula arvensis } common.
——— *nodosa* }

Sagina maritima—Gorleston. Mr. J. Backhouse, 1810.

——— *apetala* } common.
——— *procumbens* }

Mœnchia erecta—rare; South-denes. Mr. Turner.

Arenaria peploides—beach; abundant.

——— *trinervis*—Belton, Bradwell, &c.; not rare.

——— *serpyllifolia* }
——— *rubra* }
——— *marina* } very common.
Cerastium vulgatum }
——— *viscosum* }

——— *semidecandrum*—old walls, &c.; not uncommon.

——— *tetrandrum*—South-denes, and by the pier; not uncommon; varying in the number of its stamens, &c. on the same plant.

——— *arvense*—very common.

Stellaria uliginosa—not uncommon.

——— *media*—abundant every where.

——— *Holostea* }
——— *graminea* } common.
——— *glauca* }

LINEÆ.

Linum perenne—occasionally naturalized in waste ground.

Linum catharticum—rather rare.

Radiola millegrana—Rollesby, Belton, &c.; not uncomm.

GERANIACEÆ.

Geranium Robertianum
——— *molle*
——— *pusillum*
——— *dissectum*
} common.

——— *columbinum*—rare, dry-banks, Oby. Rev. W. Blyth, 1834.

Erodium cicutarium—abundant.

——— *maritimum*—Acle. Mr. Crow, 1808.

OXALIDEÆ.

Oxalis Acetosella—Mr. Turner used to find this in a small wood at Lound, but it is now lost.

PORTULACEÆ.

Montia fontana—rather rare; damp spots, Denes.

CRASSULACEÆ.

Tillæa muscosa—dryest spots on the South-denes, and on Lound heath; not uncommon.

Sedum Telephium—hedge banks; not rare.

——— *anglicum*—under furze on the Denes; abundant.

——— *acre*—very common.

——— *reflexum*—very rare; Palmer's cottage-roof, Ormesby; certainly wild.

Sempervivum tectorum—common on roofs in and about the town; not unfrequently flowering.

SAXIFRAGEÆ.

Parnassia palustris—Gorleston, &c.; common.

Saxifraga granulata—rather rare, Ormesby and Toft.

——— *tridactylites*—town walls; becoming rare; Burgh-castle walls; common.

SALICARIEÆ.

Peplis Portula—damp spots, North-denes, &c.; common.
Lythrum Salicaria—by the broads; common.

RHAMNEÆ.

Rhamnus catharticus—Belton, by the three mile-stone. Mr. Borrer, 1808; now lost.
——— *Frangula*—rather rare; alder carrs, Oby, &c.

ILICINEÆ.

Ilex Aquifolium—common.
Euonymus Europæus—rare; hedge, Oby.

LEGUMINOSÆ.

Ulex Europæus—abundant.
—— *nanus*—Ormesby, &c.; not uncommon.
Genista tinctoria—marsh, Bradwell, 1801. Mr. Wigg.
——— *anglica* } common.
Cytisus scoparius }
Anthyllis vulneraria—rare; Caistor marrams. Mr. Turner,
Ononis arvensis—beach, &c.; abundant.
Melilotus officinalis—lily-pits, &c.; not uncommon.
——— *leucantha*—Denes at Yarmouth, Br. Flora, now lost.
Trifolium repens—meadows, &c.; abundant.
——— *suffocatum*—South-denes. July, August; in sandy spots, and where heaps of stones have been laid.
——— *subterraneum*—South-denes, common; May.
——— *pratense*—abundant.
——— *medium*—rather rare.
——— *maritimum*—Salt marshes. B. G. lost long since.
——— *arvense*—very common.
——— *scabrum*—in the church-yard, by the South battery, &c.; rather common.
——— *glomeratum*—South-denes; very dwarf specimens; clayey hill, West Caistor, in plenty.
——— *fragiferum*—salt marshes, &c.; abundant.

Trifolium procumbens } common
——— *filiforme*—α & β }

Lotus corniculatus }
—— *tenuis* } common.
—— *major* }

Trigonella (Trifolium) ornithopodioides—South-denes in different parts; common.

Medicago sativa—not uncommon naturalized.

——— *falcata*—fields, &c.; but very uncertain.

——— *lupulina*—abundant.

——— *maculata*—not uncommon in salt marshes, &c.

Ervum tetraspermum }
——— *hirsutum* }
Vicia Cracca } common.
—— *sativa* }
—— *sepium* }

—— *lathyroides*—sandy ground, Burgh-castle. Mr. Wigg in B. G.

Lathyrus pratensis—very common.

——— *palustris*—Burgh-castle marshes, Belton bog, &c.; not uncommon.

Ornithopus perpusillus—sandy lanes, South-denes, &c.; very variable in size.

ROSACEÆ.

Spiræa Ulmaria—common.

Prunus domestica }
——— *spinosa* } more or less common in hedges, &c.
——— *insititia* }

——— *Padus*—Fritton wood; not wild.

Rubus cæsius—Caistor marrams, &c.

——— *corylifolius* } abundant.
——— *fruticosus* }

——— *idæus*—alder carrs, Oby and Thurne, bearing a profusion of both red and white fruit.

Fragaria vesca—not uncommon.

Potentilla anserina—very common.

Potentilla argentea—rather rare, Burgh-castle walls; South-denes.

——— *reptans*
——— *Fragariastrum* } common.
Tormentilla officinalis

——— *reptans*—Belton, Corton. B. G.

Geum urbanum
Comarum palustre
Agrimonia Eupatorium
Rosa spinosissima
—— *rubiginosa* } common.
—— *canina*
—— *arvensis*

—— *tomentosa* Belton, Bradwell. B. G.

Alchemilla arvensis
Mespilus oxyacantha
Pyrus Malus } common.
——— *communis*

——— *Aucuparia*—rather rare; Lound wood, &c.

Ribes rubrum
—— *nigrum* } not uncommonly naturalized.
—— *Grossularia*

ONAGRARIÆ.

Epilobium hirsutum
——— *parviflorum*
——— *montanum* } common.
——— *tetragonum*
——— *palustre*

Circæa lutetiana—Lanes, Browston. Mr. Turner.

HALORAGEÆ.

Myriophyllum spicatum—Ditches; common.

——— *verticillatum*—rather rare; ditches, Gorleston, Bradwell, Belton, &c.

Hippuris vulgaris—Caistor, &c.; common.

UMBELLIFERÆ.

Daucus Carota
Torilis Anthriscus
——— *infesta*
——— *nodosa*
Heracleum Sphondylium
} very common.

Peucedanum palustre—marshes, not uncommon, Belton, Ormesby, Oby, &c.

Angelica sylvestris—Belton bog, &c.; very common.

Silaus pratensis—rather rare; Burgh and Belton.

Crithmum maritimum—Hemsby marrams, very rare; about the year 1781. Mr. Wigg.

Fœniculum vulgare—Burgh-castle, under the walls; Fritton church-yard, &c.; not uncommon.

Œthusa Cynapium
Œnanthe fistulosa
} common.

——— *pimpinelloides*—marsh ditches, (especially salt); common.

——— *Phellandrium*—not uncommon; Burgh-castle, ditches, &c.

Bupleurum tenuissimum—rare; Breydon wall.

Bunium flexuosum—common in Fritton wood, &c.

Pimpinella saxifraga—rather rare; Acle new road.

Sium latifolium—Oby, Acle, &c.; not uncommon.

——— *angustifolium*
Helosciadium nodiflorum
——————— *repens*
——————— *inundatum*
} common.

Sison Amomum—Caistor and Gorleston, 1804. Mr. Wigg.

Petroselinum segetum—hedge by Acle dam; Mr. Wigg, July. B. G.

——— *sativum*—old walls and wastes; not uncommon.

Apium graveolens—Breydon bank; abundant.

Cicuta virosa—by Ormesby and Filby broads, &c; common.

Ægopodium Podagraria—rare? hedges, Burgh.

Anthriscus vulgaris
——— *sylvestris*
Scandix Pecten
Chærophyllum temulentum
Conium maculatnm
} very common.

Smyrnium Olusatrum—hedges, Belton, &c.; but rare.
Eryngium maritinium—beach; very common.
Sanicula Europæa—rather rare.
Hydrocotyle vulgaris—very common.

STELLATÆ.

Galium cruciatum
——— *palustre*
——— *saxatile*
——— *uliginosum*
——— *verum*
——— *Aparine*
} very common.

Asperula odorata—has been found, but scarcely wild.
Sherardia arvensis—common.

CAPRIFOLIACEÆ.

Lonicera Periclymenum—common.
Viburnum Opulus—occasionally in alder carrs.
Sambucus Ebulus—Gorleston and Acle. B. G.
——— *nigra*—abundant.
Bryonia dioica—hedges, Ludham, &c.; but rather rare.
Cornus sanguinea—rare; hedges at Ormesby.
Hedera Helix—very common.

CAMPANULACEÆ.

Campanula rotundifolia
Jasione montana
} very common.

VALERIANEÆ.

Fedia olitoria—Burgh-castle walls and hedge-banks; common.
—— *dentata*—lane between Bradwell and Gorleston. Mr. Wigg, 1816.

Valeriana dioica—not uncommon, Belton, &c.
——— *officinalis*—common.

DIPSACEÆ.

Dipsacus sylvestris
Scabiosa succisa
Knautia arvensis
Eupatorium cannabinum
} common.

COMPOSITÆ.

Limbarda crithmoides—a single specimen found on the Caistor marrams, by Mr. Wigg in 1784.
Pulicaria dysenterica—common.
——— *vulgaris*—rare; Ormesby common, by the road-side.
Solidago Virgaurea—rather uncommon.
Gnaphalium sylvaticum β.—by Corton wood. By the Beccles road; B. G.
——— *uliginosum*
——— *minimum*
——— *germanicum*
Senecio vulgaris
——— *sylvaticus*
——— *Jacobæa*
——— *aquaticus*
} more or less abundant.
——— *tenuifolius*—damp hedge-banks; not uncommon.
Tussilago Farfara
Petasites vulgaris
} common.
Cineraria palustris—this used several years ago to grow in the greatest abundance in a marsh at Caistor and elsewhere. It is now very rarely and uncertainly seen at Belton, or by Ludham and Heigham bridges.
Bellis perennis—abundant.
Chrysanthemum Leucanthemum
——— *segetum*
Pyrethrum Parthenium
——— *inodorum*
} common.

Matricaria Chamomilla—waste grounds, &c.; abundant.
Artemisia maritima—Breydon and river-banks, in plenty.
——— *Absinthium*—abundant.
——— *vulgaris*—about Ormesby, &c.; but not comm.
Tanacetum vulgare } common.
Anthemis Cotula }
——— *nobilis*—rather rare; Ormesby common, near Sir E. K. Lacon's.
Achillea Ptarmica—rather rare, marshes, Bradwell, &c.
——— *Millefolium*—very common.
Bidens cernua—common.
——— *tripartita*—rather rare.
Onopordum Acanthium
Cnicus lanceolatus
——— *palustris* } common.
——— *arvensis*
——— *pratensis*—rare; Ormesby common, Belton bog.
Carlina vulgaris—rare; Caistor marrams.
Arctium Lappa—very common.
Silybum (Carduus) marianum—river-side and waste ground; common.
Centaurea Cyanus
——— *nigra* } road-sides, &c.; common.
——— *Scabiosa*
——— *Calcitrapa*—road-sides and wastes; not uncommon.
Carduus nutans
——— *acanthoides* } very common.
——— *tenuiflorus*
Sonchus palustris—ditches by Burgh-castle.
——— *arvensis*—clayey fields; common. It grows too on the banks of the same ditches, where the former grows in the water, and many specimens are with difficulty distinguished.
——— *oleraceus*—very common.
Lactuca virosa—Fritton church-yard and by St. Bennet's Abbey.

Prenanthes muralis—rare.

Lapsana communis
Leontodon Taraxacum
——— *palustre*
Crepis tectorum
} very common.

Picris hieracioides—chalk-hill, Blundestone, 1794. Mr. Wigg.

Helminthia echioides—rare; fields, Bradwell.

Hieracium Pilosella—very common.

——— *umbellatum*—rare, hedge-bank, Browston road.

Hypochæris radicata—very common.

Tragopogon porrifolius—once found apparently wild in a hedge at Bradwell, 1832.

——— *major*—in shady hedges, not uncommon.

——— *pratensis*—by the ferry-house, Gorleston, certainly much rarer than the preceding.

Thrincia hirta
Apargia hispida
——— *autumnalis*
Cichorium Intybus
} very common.

BORAGINEÆ.

Echium vulgare—common.

Lithospermum officinale—by Burgh-castle, but not generally common.

——— *arvense*—common.

Symphytum officinale—marsh, Southtown, but doubtful if wild.

Borago officinalis
Lycopsis arvensis
} common.

Anchusa sempervirens—by Haddiscoe church in plenty, and occasionally an outcast of gardens. In the spot where it used 20 years ago to grow in abundance, by the Burgh-castle road, it is now entirely lost, and it is singular that *Lamium album* which at that time was never found near Yarmouth, now almost overruns the same hedges.

Myosotis palustris
——— *cæspitosa*
——— *arvensis*
——— *collina*
——— *versicolor*
Cynoglossum officinale
} common.

CONVOLVULACEÆ.

Convolvulus arvensis—abundant.
——— *Sepium*—alder carrs, &c.; common.
——— *Soldanella*—beach, May, June; in abundance.
Cuscuta Epithymum—on furze and heath, Rollesby, Belton, &c.; abundant.

PLANTAGINEÆ.

Plantago media—very rare; by Little Ormesby churchyard, 1833, Mr. Geo. Cooper.
——— *major*
——— *lanceolata*
——— *maritima*
——— *Coronopus*
} very common.
Littorella lacustris—by the muddy margins of several of the broads; abundant.

PLUMBAGINEÆ.

Statice Limonium—has not been found here for the last 50 years.

OLEINEÆ.

Ligustrum vulgare—in hedges occasionally, but probably not wild.
Fraxinus excelsior—abundant.

ERICEÆ.

Calluna vulgaris
Erica cinerea
——— *Tetralix*
} abundant.
——— *flore albo*—Rollesby common, &c.; rare.

PYROLEÆ.

Pyrola rotundifolia—Bradwell common. Mr. Wigg in B. G. now lost; but still grows at Upton, 15 or 20 miles off.

APOCYNEÆ.

Vinca minor—hedge-bank, Fritton road; apparently quite wild.

—— *major*—occasionally naturalized.

GENTIANEÆ.

Erythræa Centaurium—not uncommon, especially abundant in Fritton wood.

——— *pulchella*—by the river-side, on the Denes, and by Gorleston cliffs, but very rare.

Gentiana Pneumonanthe—on Rollesby common in abundance.

Menyanthes trifoliata—abundant.

SOLANEÆ.

Datura Stramonium—used to be very common in lanes about Fritton, but now only rarely occurs near, and in gardens.

Hyoscyamus niger—waste ground by the North battery, on the beach, &c.; abundant.

Verbascum Thapsus—common.

——— *pulverulentum*—rather rare; Fritton wood in plenty.

——— *Blattaria* } both occasionally naturalized
——— *virgatum* } about Southtown, &c.

Solanum Dulcamara } very common.
——— *nigrum* }

Atropa Belladonna—hedge at Hemsby, 1833. Mr. Turner.

PRIMULACEÆ.

Centunculus minimus—Filby heath, near water, and by Oulton broad; but rare.

Glaux maritima—salt marshes; abundant.

Primula vulgaris—abundant.

——— *elatior*—a single specimen found at Hobland, 1834. Many of the stalks bore single flowers.

——— *veris*—Mr. Wigg used to find at Belton.

Lysimachia vulgaris—common by the broads.

——— *nemorum*—Filby, &c., but rare.

——— *Nummularia*—river-bank at Oby, Ludham, &c.; rather rare.

Hottonia palustris—Filby, Belton, &c.; not uncommon.

Anagallis arvensis
——— *tenella* } very common.
Samolus Valerandi

LENTIBULARIÆ.

Utricularia vulgaris—rare, ditches, Ormesby common.

——— *minor*—Lound, Belton, &c.; more common than the preceding.

SCROPHULARINEÆ.

Veronica serpyllifolia
——— *Beccabunga* } common.
——— *Anagallis*

——— *scutellata*—Ormesby common, Bradwell, &c.; not uncommon.

——— *montana*—Acle wood. Mr. Crowe, 1808.

——— *officinalis*
——— *Chamædrys*
——— *arvensis* } common.
——— *hederifolia*

——— *agrestis* } the latter by far most common.
——— *polita*

Rhinanthus Crista Galli
Pedicularis palustris
——— *sylvatica* } common.
Bartsia Odontites
Euphrasia officinalis

Linaria Cymbalaria—very commonly naturalized on walls in the town.

Linaria spuria } dry hedge-bank, Burgh. Mr. Turner.
——— *Elatine* }
——— *vulgaris*—very common.
——— *var Peloria*—by Hopton toll-bar. B. G.
——— *minor*—very rare; has occurred as a weed in gardens.
Antirrhinum majus—town wall; abundant.
——— *Orontium*—very rare; hedge-bank at Belton, 1831.
Limosella aquatica—on the beach at Lowestoft, by the fish-houses. Mr. Borrer, 1808.
Scrophularia nodosa } common.
——— *aquatica* }

OROBANCHEÆ.

Orobanche major—on furze near Winterton. Mr. G. Cooper, 1834.
——— *minor*—in some years, as the present, abundant in clover.

VERBENACEÆ.

Verbena officinalis—common by hedges, especially at Ormesby.

LABIATÆ.

Salvia verbenaca—Gorleston church-yard and cliffs, &c.; not uncommon.
Lycopus Europæus—by the broads, &c.; common.
Ajuga reptans—damp hedge-rows, &c., but far from common.
Teucrium Scorodonia } abundant.
Glechoma hederacea }
Mentha sylvestris—by Fritton broad, 1834; Burgh-castle and by Browston-hall. B. G.
——— *citrata?*—east side of Reedham, by the river. Mr. Wigg in B. G.
——— *hirsuta*—abundant, and extremely variable.
——— *rubra*—Acle. Mr. Borrer, 1811.

Mentha Pulegium—rare, Filby common, near the Inn, Runham and Belton. B. G.

——— *arvensis*—common.

Ballota nigra—abundant, and not rarely with white flowers.

Leonurus Cardiaca—waste places, Caistor and Belton; rare, 1801. Mr. Wigg.

Marrubium vulgare—occasionally occurs, but apparently introduced from gardens where it is very commonly cultivated.

Stachys sylvatica } common.
——— *palustris* }

——— *arvensis*—in corn-fields; but by no means com.

——— *ambigua*—Acle. Mr. Borrer, 1809.

Lamium album—waste ground, &c.; common. See Anchusa sempervirens.

——— *purpureum*—abundant.

——— *dissectum*—Filby and Burgh, 1802. Mr. Wigg.

——— *amplexicanle*—not uncommon.

Nepeta Cataria—Hobland, Ormesby, but rather rare.

Galeopsis tetrahit—corn fields, &c.; common.

——— *Ladanum*—dry lane, Burgh. Mr. Turner.

——— *versicolor*—rare; fields, Bradwell and Gorleston.

Scutellaria galericulata—common.

Calamintha officinalis—hedge-banks, Gorleston, &c.; not uncommon.

——— *Nepeta*—much rarer; Oby, Mr. G. Cooper.

Prunella vulgaris—common.

Clinopodium vulgare—rather rare; Lily-pits.

ELEAGNEÆ.

Hippophae rhamnoides—marrams, Caistor and Hemsby; abundant.

THYMELEÆ.

Daphne Laureola—thicket, opposite Caistor-castle.

POLYGONEÆ.

Rumex maritimus—Caistor, North-denes, &c.; close by,

and at Heigham, Oby, &c.; some way from the sea; not uncommon.

Rumex palustris—rather rare; Filby common, by the public-house.

——— *pulcher*
——— *obtusifolius* } waste ground; common.
——— *acutus*

——— *sanguineus*—Lowestoft. B. G.

——————— β.—Lound, and other woods; not uncommon.

——— *crispus*
——— *Hydrolapathum*
——— *Acetosa*
——— *Acetosella*
Polygonum amphibium } common.
——————— *Persicaria*
——————— *lapathifolium*
——————— *Hydropiper*

——————— *minus*—by Ormesby and Rollesby broads; not uncommon.

——————— *aviculare*
——————— *Convolvulus* } abundant.

Fagopyrum—occasionally naturalized.

——————— *Fagopyrum*—occasionally naturalized.

CHENOPODEÆ.

Salsola Kali—beach; abundant.

Salicornia herbacea
——————— β. *procumbens* } river-side, &c. com.

Chenopodium Bonus Henricus
——————— *urbicum* } common.
——————— *rubrum*

——————— *botryodes*—sandy waste ground, Chapeldenes, &c.; rather rare.

——————— *murale*
——————— *album* } common.

——————— *ficifolium*
——————— *hybridum* } waste places by the river, &c.

Chenopodium olidum—waste-ground by the Denes, &c.; abundant.

——— *maritimum*—salt marshes; abundant.

Beta maritima—by the river-side; but rather rare.

Atriplex portulacoides—seems now lost, but was once not rare in some of the Breydon marshes.

——— *laciniata*—on the beach by the North-battery. B. G. Lost.

——— *patula*
——— *angustifolia* } common.
——— *littoralis*

——— *pedunculata*—in some of the damp salt-marshes at Cobham and Runham, in plenty.

SCLERANTHEÆ.

Scleranthus annuus—common.

URTICEÆ.

Parietaria officinalis
Urtica urens } common.
——— *dioica*

——— *pilulifera*—under old walls at Gorleston, but rarer than formerly.

Humulus Lupulus—hedges, Burgh, &c.; and on Burgh-castle walls; common.

RESEDACEÆ.

Reseda luteola } common.
——— *lutea*

EUPHORBIACEÆ.

Euphorbia helioscopia } common.
——— *Peplus*

——— *exigua*—road-sides, &c.; not uncommon.

Mercurialis perennis—hedges, Caistor; but rare.

——— *annua*—in waste places about the town; abundant.

CERATOPHYLLEÆ.

Ceratophyllum submersum } ditches; not uncommon.
——— *demersum* }

AMENTACEÆ.

Betula alba } common.
Alnus glutinosa }

Salix Lambertiana—Bradwell. B. G.

—— *undulata*—ditto. Mr. Borrer and Mr. Turner, 1810.

—— *Forbyana*—ditto. ditto.

—— *triandra* } common.
—— *decipiens* }

—— *Helix*—Ormesby common.

—— *vitellina*—common.

—— *rosmarinifolia*—plantation at Hopton. Mr. Borrer, 1806.

—— *fusca* β. δ.—not uncommon.

—— *ambigua* α. γ.—Hopton. Mr. Borrer, *Br. Fl.*

—— *viminalis*
—— *aquatica*
—— *aurita*
—— *caprea*
Populus alba
——— *canescens*
Quercus Robur
Corylus Avellana } common.

Myrica Gale—Oby, Lound, &c.; not uncommon.

Callitriche verna—abundant.

ENDOGENÆ.

AROIDEÆ.

Arum maculatum—lily-pits, &c.; common.

Acorus Calamus—ditches, beyond Burgh-castle; but rare.

TYPHACEÆ.

Typha latifolia } both common; the latter most so.
——— *angustifolia* }

Sparganium ramosum } common.
——— *simplex* }

——— *natans*—ditch at Oby; rare.

FLUVIALES.

Potamogeton densus—rare; ditch by Filby broad.

——— *pectinatus*—salt marsh ditches; abundant.

——— *pusillus* α. & β.—ditches, Caistor, &c.; common.

——— *gramineus*—ditches, Lound, Oby, &c.; not uncommon.

——— *crispus*
——— *perfoliatus*
——— *lucens*
——— *natans*
} common.

Zostera marina—abundant.

Ruppia maritima } common; ditches, Caistor, Brad-
Zannichellia palustris } well, &c.

PISTIACEÆ.

Lemna trisulca } both abundant, barren, and used to
——— *minor* } flower in ditches at Bradwell; but these being now cleared out every year, the flowers are very rare.

——— *gibba*—abundant; barren.

——— *polyrrhiza*—with *L. minor*, Belton, Oby, &c.; not uncommon.

JUNCAGINEÆ.

Triglochin palustre—fresh marshes; common.

——— *maritimum*—salt ditto; abundant.

ALISMACEÆ.

Alisma ranunculoides—by the broads, &c.; common.

——— *Plantago*—ditches, &c.; common.

Sagittaria sagittifolia—ditches, Runham and Burgh; common.

HYDROCHARIDEÆ.

Stratiotes aloides—ditches, Bradwell, Lound, &c.; com.
Hydrocharis Morsus Ranæ—common.

IRIDEÆ.

Iris Pseud-Acorus—common.

ORCHIDEÆ.

Neottia spiralis—used to grow at Caistor, but the marsh has been ploughed up.
Listera ovata—rather common.
Epipactis patustris—not uncommon; Ormesby common, in plenty.
Orchis mascula
——— *latifolia* } common.
——— *maculata*
——— *Morio*—Belton, &c.; not uncommon.
——— *pyramidalis*—Mautby, Mr. Turner. Marrams, near Winterton, 1834. Mr. G. Cooper.
Gymnadenia conopsea—Ormesby common.
Habenaria bifolia } marshes, Caistor, Mr. Turner.
——— *viridis* } Probably both lost.
Malaxis paludosa—Belton common, Mr. Turner. Ashby warren, abundantly. Rev. G. R. Leathes.

AMARYLLIDEÆ.

Narcissus Pseudo Narcissus—Herringfleet, by the water, Mr. Turner. Thicket, at Oby, Rev. W. Blyth.

ASPHODELEÆ.

Allium ursinum—used to grow in small quantities at Caistor, but seems now entirely lost.
Ornithogalum umbellatum—by St. Bennett's Abbey, 1820. Rev. James Layton.
Hyacinthus non scriptus—plentiful.

SMILACEÆ.

Convallaria multiflora—lily-pits, Bradwell; horticulturists having lately discovered it, it is become very rare.

Tamus communis—Fritton, &c.; not uncommon.

BUTOMEÆ.

Butomus umbellatus—ditches, Runham, Burgh, &c.; not uncommon.

JUNCEÆ.

Juncus maritimus—marsh ditch-banks, Caistor, Runham, &c.; common.

——— *glaucus*
——— *conglomeratus*
——— *effusus*
——— *squarrosus*
——— *compressus*
——— *cænosus*
——— *bufonius*
——— *uliginosus*
——— *acutiflorus*
——— *lampocarpus*
——— *obtusiflorus*
Luzula campestris, α. & β.
} common.

CYPERACEÆ.

Rhyncosphora alba—rather rare; Belton bog in plenty.

Blysmus compressus—Flixton marshes. B. G.

Schœnus nigricans—rather rare; Ormesby common, abundant.

Eleocharis palustris
——— *multicaulis*
} common.

——— *acicularis*—by the margins of Ormesby and Filby broads; not uncommon.

——— *cæspitosa*
——— *pauciflora*
} Belton, Lound, &c.; rather common.

Scirpus lacustris
——— *maritimus*
} common.

Eriophorum angustifolium—common.

Cladium Mariscus—borders of Ormesby, Filby, and other broads; common.

Isolepis (Scirpus) setacea—Ormesby common, Bradwell, &c.; not uncommon.

Heliogiton (Eleocharis) fluitans—rather rare; Belton, Oby, &c.

Carex dioica—rather rare; Mautby, Ormesby, &c.

—— *pulicaris* } not uncommon; Belton, &c.
—— *stellulata* }

—— *curta*—Lound and Belton } not uncommon.
—— *ovalis*—North-denes. }

—— *remota*—Blundeston, Mr. Turner.

—— *arenaria*—on the beach, &c.; common.

—— *intermedia*—Mautby, Belton, &c.

—— *divisa*—marshes, by Acle bridge. B. G.

—— *muricata*—Belton, &c.; but rather rare.

—— *divulsa*—rare; hedge-bank, Oby.

—— *vulpina*—abundant.

—— *teretiuscula*—Bradwell, Belton, &c.; not uncommon.

—— *paniculata*—Belton, &c.; very common.

—— *Pseudo Cyperus*—sides of ditches, Mautby, Somerleyton, &c.; rather rare.

—— *limosa*—black boggy spot, at Belton.

—— *flava*—Belton bog, &c.; common.

—— *Œderi*—heathy spots about Belton, &c.; common. Distinguished from the above with great difficulty in many instances.

—— *extensa*—boggy ground, on the North-river bank, by the black-mill.

—— *distans*—Salt-marsh ditch-banks; common.

—— *binervis*—Ashby heath; common. Apparently not distinct from the preceding.

—— *præcox* } Herringfleet & other heaths; comm.
—— *pilulifera* }

—— *panicea* }
—— *recurva* } very common.
—— *cæspitosa* }

Carex stricta } marsh ditches, &c.; but rather rare.
—— *acuta* }
—— *paludosa* } very common.
—— *riparia* }
—— *ampullacea*—Gorleston, Belton, &c.; in plenty.
—— *hirta*—Caister, Filby, &c.; common.
—— *filiformis*—ditch bank, by Lound bog.

GRAMINEÆ.

Rottbollia incurvata—Breydon bank, and in sandy ground by the river; not uncommon.
Lolium perenne—abundant.
——— *temulentum?*
——— *arvense*—very rare; wheat-field, Hemsby.
Nardus stricta—Belton, &c.; common.
Hordeum murinum }
——— *pratense* } very common.
——— *maritimum* }
Elymus arenarius—along the coast to the North. In some years producing flowers abundantly.
Brachypodium sylvaticum—hedges, &c.; not uncommon.
Triticum repens—abundant.
——— *junceum*—sea-shore; common.
——— *loliaceum*—sandy ground, by the South-pier.
Alopecurus pratensis—very common.
——— *agrestis*—clay-pits, &c.; not uncommon.
——— *bulbosus* } all growing in more or less
——— *geniculatus* } abundance in marshes at Run-
——— *fulvus* } ham, Caistor, &c. The first in the dryest spots, and the latter floating in ditches; and they may be traced into one another by the closest and most regular gradations.
Phalaris canariensis—occasionally naturalized.
Phleum arenarium—loose sandy ground on the Denes.
——— *pratense* } common.
Milium effusum }
Phalaris arundinacea—by the broads, &c.; not uncommon.

Ammophila arundinacea—sandy coast; common.

Agrostis canina
——— *vulgaris* } common.
——— *alba*

Arrhenatherum avenaceum—hedge-banks, &c.

Holcus lanatus
——— *mollis*
Anthoxanthum odoratum } common.
Cynosurus cristatus
Catabrosa aquatica

Melica cærulea—Belton bog, Filby, &c.; in plenty.

Aira canescens—Caistor hills; abundant.

—— *præcox*
—— *caryophyllea*
Avena flavescens
——— *fatua* } common.
Arundo Phragmites
Dactylis glomerata

Triodia decumbens—Belton bog, North-denes, &c.; but rather rare.

Bromus secalinus—corn-fields, Ormesby; rare.

——— *mollis*
——— *racemosus* } common.
——— *asper*
——— *sterilis*

——— *giganteus*—rather rare.

Festuca pratensis
——— *ovina* } common.
——— *duriuscula*

——— *rubra*—sea-shore; abundant.

——— *Myurus*—old walls, North-denes, &c.; common.

Glyceria (Poa) fluitans } common.
Briza media

Sclerochloa (Poa) maritima—muddy salt-marshes; common.

——————— *procumbens*—by the river-side and Breydon marshes; common.

Sclerochloa rigida—walls; abundant.

Hydrochloa (Poa) aquatica } common.
Poa compressa }

——*bulbosa*—broken sandy ground by the gasometer, &c., on the Denes, not uncommon, but not generally producing flowers.

—— *trivialis* }
——*pratensis* }
——*annua* } common.
—— *distans* }

CELLULARES.—*Flowerless Plants.*

FILICES.

Polypodium vulgare—very common.

Aspidium lobatum—hedge-banks, &c.; not uncommon.

——— *Oreopteris*—Bradwell. Mr. Turner.

——— *Thelypteris*—Filby, Ormesby, &c.; abundant.

——— *Filix Mas*—abundant.

Asplenium Ruta Muraria—walls, Caistor; rare. Hemsby church-walls, 1801. Mr. Wigg.

——— *Adiantum nigrum*—Lound, &c.; common.

——— *Filix Fœmina*—By Fritton lake, &c.; but not common.

——— *Trichomanes*—old walls, Thrigby, 1801. Mr. Wigg.

Scolopendrium vulgare—damp hedge-banks, but rare.

Pteris aquilina—abundant.

Blechnum boreale—Lound wood, &c.; common.

Osmunda regalis—Lound, Fritton, Belton, &c.; not uncommon.

Ophioglossum vulgatum—rare; marshes, Mautby.

Lycopodium inundatum—damp heathy spots, Filby, Belton, &c.; not uncommon.

Pilularia globulifera—Filby and Hopton commons. B. G.

Equisetum fluviatile—wet hedge, near Lowestoft. B. G.

——— *arvense*
——— *limosum* } common.
——— *palustre*

MUSCI.

Phascum serratum—Acle wood and fields, &c. at Bradwell. B. G.

——— *subulatum*—dry banks, &c.; common.

Phascum axillare—wet places, North-denes.
——— *patens*—Acle. Mr. Borrer, 1809.
——— *cuspidatum*—banks, Bradwell, &c.
——————— β. *piliferum*—near the oil-houses, South-denes. Mr. Turner.
Sphagnum obtusifolium
——— *squarrosum* } Belton & other bogs; common.
——— *acutifolium*
Gymnostomum viridissimum—fruit trees, always barren.
——————— *truncatulum* } hedge banks,
——————— β. *intermedium* } &c. common.
——— *Heimii*—Breydon wall and marshes.
——————— *conicum*—hedge-bank and field, near Bradwell Sun.
——— *fasciculare*—Belton common. Mr. Turner.
——————— *pyriforme*—ditch-banks, Belton, &c.; com.
Splachnum ampullaceum—Belton bog. B. G.
Encalypta vulgaris—hedge bank, Bradwell, Mr. T. Palgrave; Burgh-castle walls in plenty.
Weissia Starkeana—side of a clay-pit, at Belton. Mr. Borrer. Acle, Mr. Turner.
——— *cirrata*—rails, Ormesby, &c.
——— *curvirostra*—clay-pit, Bradwell. Mr. Turner, 1816.
——— *controversa*—hedge banks; abundant.
Grimmia apocarpa—Burgh-castle; rare.
——— *pulvinata*—common.
Didymodon purpureus—North-denes, &c.; abundant.
Trichostomum canescens—sand-hills, by North battery.
Dicranum bryoides—damp hedges, Lound, &c.
——— *adiantoides*—Belton bog. Mr. T. Palgrave.
——— *glaucum*—Caistor marrams, &c.; barren.
——— *cerviculatum*—Gorleston common, Belton bog, &c.; not uncommon.
——— *flexuosum*—mounds of turf, Belton bog, &c.
——————— β. *nigro-viride*—damp muddy spots; but rare.
——— *crispum*—bank, near Herringfleet-hall, 1810. Mr. Turner.

Dicranum scoparium—Fritton, Belton, &c.

——— *varium*—wheat stubbles, Mr. Palgrave; clay-pit, Belton, in plenty.

——— *heteromallum*—Belton, &c.

Tortula enervis—walls and clay banks, near Yarmouth. *Br. Fl.*

——— *rigida*—clay-pit, by road from Burgh-castle to Belton; in plenty.

——— *muralis*
——— *ruralis* } very common.
——— *subulata*

——— *unguiculata*—clay-pits, &c.; rare.

——— *cuncifolia*—sandy bank, (since destroyed,) at Hopton common. B. G.

——— *fallax*—clay-pits, &c.; common.

Polytrichum undulatum—hedge banks; common.

——— *piliferum*—Caistor marrams, &c.; common.

——— *commune* α. & β.—abundant.

——— *aloides*—banks, by Fritton and other marshes.

——— β. *Dicksoni*—dryer banks, Lound and Fritton.

——— *nanum*—in the same situations as *P. aloides*, and often with it.

Funaria hygrometica—abundant.

Orthotricum cupulatum—Burgh-castle walls.

——— *affine*
——— *diaphanum*
——— *striatum* } trees, &c.; not uncommon.
——— *crispum*

Bryum androgynum—Belton bog, with male flowers, but rare.

——— *palustre*—common.

——— *carneum*—marsh at Gorleston. Mr. T. Palgrave. ditch-banks, Bradwell. Mr. Turner.

——— *argenteum*—walls, &c.; common.

——— *capillare*—clayey banks, Burgh, &c.

——— *cæspititium*—hedge-banks; abundant.

Bryum cæspititium β.—Gorleston. B. G. hedge-bank, Belton, near the bog.

——— *turbinatum*—Belton and other marshes; not uncommon.

——— *nutans* } ditto.
——— *ventricosum* }

——— *ligulatum*—lily-pits and damp hedges, rather rare; and very seldom bearing fruit.

——— *punctatum*—Belton bog; barren. Mr. Palgrave.

——— *hornum*—abundant.

——— *cuspidatum*—ditto, but barren.

Bartramia pomiformis—hedge-bank, Bluudeston.

——— *fontana*—Belton bog, in soft mud.

Leucodon sciuroides—Burgh-castle walls }
Anomodon curtipendulum—Burgh church-yd. wall } barren.
——— *viticulosum*—Denes; abundant }

Daltonia heteromalla—trees about Yarmouth; common. B. G.

Fontinalis antipyretica—margins of several of the broads.

Hypnum trichomanoides—trees, Oby. Mr. T. Palgrave.

——— *complanatum*—trees, Burgh-castle, Caistor, &c.

——— *riparium*—quay-heads at Reedham, &c.

——— *denticulatum*—trees, Gorleston, Belton, &c.

——— *tenellum*—Burgh-castle wall; Clippesby church.

——— *serpens*—hedge-banks; common.

——— *stramineum*—amongst Sphagna, on Belton bog. Always barren.

——— *purum*—marrams, &c.

——— *piliferum*—Bradwell, Burgh, &c.; barren.

——— *sericeum*—trees, walls, &c.; common.

——— *lutescens*—North-denes, marrams, &c.

——— *nitens*—Acle-marshes, near the wood. Mr Turner.

——— *albicans*—North-denes, &c.

——— *alopecurum*—Burgh-castle.

——— *dendroides*—North-denes, very rarely bearing fruit.

——— *curvatum*—trees. Mr. T. Palgrave.

Hypnum splendens—marrams, &c.; common.
——— *proliferum*
——— *prælongum* } common.
——— *rutabulum*
——— *velutinum*
——— *ruscifolium*—mill-flushes. Mr. T. Palgrave.
——— *striatum*
——— *confertum* } common.
——— *cuspidatum*
——— *cordifolium*—Belton, Lonnd, &c.; not uncommon.
——— *stellatum*—rotten muddy spots, Belton bog.
——— *polymorphum*—turf mounds ditto. Mr. Palgrave.
——— *triquetrum* } common.
——— *squarrosum*
——— *filicinum* } Belton bog, barren; rather rare.
——— *palustre*
——— *aduncum*
——— *uncinatum* } Belton bog, &c.; not uncommon.
——— *scorpioides*
——— *cupressiforme*—abundant.
——— *molluscum*—Belton bog. Mr. T. Palgrave.

HEPATICÆ.

Riccia crystallina—common.
——— *fluitans*—ditches, Hopton and Heigham. B. G.
Sphærocarpus terrestris—turnip and clover fields, and hedge-banks, Caistor and Bradwell.
Jungermannia Sphagni—among Sphagna on Belton bog; abundant; but barren.
——— *crenulata*—Herringfleet, 1811. Rev. G. R. Leathes.
——— *excisa*—bogs near Yarmouth. Dr. Hooker.
——— *bicuspidata*—damp-banks, &c.; common.
——— *connivens*—among Sphagna, Belton bog.
——— *pusilla*—Herringfleet, 1811. Rev. G. R. Leathes.
——— *undulata*—Belton heath.

Jungermannia resupinata—on the ground, Herringfleet.
——— *complanata*—trunks of trees, Caistor, &c.
——— *scalaris*—Ashby warren. Mr. Turner.
——— *viticulosa*—among Sphagna, common.
——— *Trichomanis*—Belton bog and Gorleston common.
——— *bidentata*—among hypna, Lound, &c.
——— *setacea*—near Ashby decoy, 1811. Mr. Turner.
——— *platyphylla*—Burgh-castle walls.
——— *dilatata*—trees, Burgh, Caistor, &c.
——— *pinguis*—Belton bog, &c.
——— *multifida*—among Sphagna, Belton, &c.
——— *epiphylla*—Belton bog, Ashby, &c.

LICHENES.

Bæomyces rufus } common.
Calicium sessile }
——— *microcephalum*—Caistor rails.
——— *tympanellum* } very common on old posts.
——— *clavellum* }
——— *hyperellum*—Acle.
——— *curtum* } common.
——— *debile* }
Opegrapha lyncea—trees, at Herringfleet decoy.
——— *epipasta* }
——— *rubella* }
——— *rufescens* } on birch and other trees, at Lound, &c.
——— *atra* }
——— *vulgata* }
——— *betulina* }
——— *varia* }
——— *saxatilis*—old walls, &c.
——— *scripta*—trees; not uncommon.
Verrucaria nitida }
——— *punctiformis* } trunks of trees; common.
——— *olivacea* }
——— *gemmata* }

Verrucaria biformis
——— *aphanes* } trunks of trees; common.
——— *leucocephala*
——— *viridula*—Gorleston churchyard, and other walls.
——— *muralis* } old walls; common.
——— *nigrescens*
Endocarpon fuscellum—Gorleston church wall, &c.
Pertusaria communis—abundant.
——— *fallax*—trunks of trees; not uncommon.
Lepraria viridis } very common.
——— *murorum*
——— *ochracea*—on old trees; not rare.
——— *flava*
——— *alba*
——— *virescens* } common.
——— *nigra*
Spiloma microscopicum
——— *murale*—Burgh church wall.
——— *dispersum* } not uncommon.
——— *nigrum*, α. β. γ.
——— *fuliginosum*—Belton and Blundestone, on trees,
——— *decolorans* } common.
——— *gregarium*
Variolaria Vitiligo
——— *conspurcata*—Gorleston and other church-walls.
——— *discoidea* } trees; common.
——— *faginea*
——— *aspergilla*—pales at Herringfleet.
——— *argena* } common.
——— *agelæa*
Urceolaria scruposa
——— *calcarea*
——— *cinerea* } Gorleston and other church-walls; more or less common.
——— *Acharii*
——— *rufescens*
Lecidea lapicida—very common on old walls.
——— *parasema*—abundant.

Lecidea pinicola } common.
——— *dubia* }
——— *Griffithsii*—birches, Fritton and Ashby.
——— *aromatica* } church walls, &c.; not rare.
——— *scabrosa* }
——— *uliginosa*—Bradwell and Lound heaths.
——— *abietina*—old oaks, Hopton and Herringfleet.
——— *albo-atra*—Pakefield church wall.
——— *quernea* } common.
——— *sulphurea* }
——— *expallens* }
——— *quadricolor*—Lound and Corton heaths.
——— *coronata*—sand-hills, Hemsby.
——— *anomala*—trunks of trees; common.
——— *rupestris*—Pakefield church.
——— *vernalis*—elms, Caistor, Bradwell, &c.
——— *pineti*—trees, Bradwell and Somerleyton.
——— *icmadophila*—common.
——— *Ehrhartiana*—old-barn door, Acle.
——— *ulmicola*—old trees, Acle.
——— *aurantiaca*—trees, Haddiscoe, &c.
Lecanora atra—church walls, &c. } very common.
——— *exigua*—old pales, &c. }
——— *coarctata*—Gorleston and other church walls.
——— *sophodes*—old trees; not uncommon.
——— *subfusca*—common.
——— *Hæmatomma*—on the north and east wall of Gorleston churchyard and on St. Olave's bridge.
——— *varia*—old paling, &c. } not uncommon.
——— *albella*—trees, &c. }
——— *Turneri*—park pales, &c.; common, but barren.
——— *citrina* } common.
——— *vitellina* }
Psora scalaris—boat-house, Herringfleet.
Squamaria hypnorum—marrams, Hemsby; hedge-bank, Lound heath.
——— *candelaria*—common.

Squamaria murorum—common.
——— *cæsia*—Burgh and other churches.
——— *elæina*—trees; not uncommon.
Placodium canescens—common.
Parmelia caperata—Caistor rails, &c.
——— *saxatilis*
——— *perlata*
——— *olivacea*
——— *pulverulenta*
——— *pityrea*
——— *stellaris*
——— *cycloselis*
——— *virella*
} more or less common.
——— *aleuritis*—pound at Toft-Monks.
——— *parietina*
——— *physodes*
Collema cristatum
} common.
——— *palmatum*—sand-hills, Hemsby, Corton, &c.
——— *nigrescens*
——— *crispum*
} common.
——— *sinuatum*—Burgh-castle walls.
——— *lacerum*
——— *subtile*
} common.
——— *tenuissimum*—hedges, not uncommon; but almost always barren.
——— *Schraderi*—not uncommon.
——— *muscicola*—moss on Hemsby sand-hills.
Peltidea canina—among moss on the Denes, &c.; abundant.
——— *spuria*
——— *rufescens*
——— *polydactala*
} damp-banks, Gorleston, &c. among hypna; common.
Cetraria sepincola—Caistor rails.
Borrera ciliaris
——— *tenella*
——— *furfuracea*
Evernia prunastri
} trees, rails, &c.; common.

Ramalina fraxinea
——— *fastigiata*
——— *farinacea* } trees, rails, &c.; common.
——— *pollinaria*
Usnea florida

Cornicularia aculeata—on the Denes.

Isidium lutescens—trees, Acle wood.

——— *coccodes*—pales at Burgh.

Cladonia uncialis
——— *rangiferina* } heaths, &c.; very common.
——— *furcata*

Scyphophorus endivifolius—sand-hills, Hemsby, &c.

——— *pyxidatus*
——— *fimbriatus*
——— *radiatus* } more or less common.
——— *cornutus*
——— *cocciferus*

Pycnothalia Papillaria—Lound and Belton heaths.

CHARACEA.

Chara translucens—Browston, in a turf-pit near the water. *Prof. Hooker.*

—— *flexilis*—ditch, on Lound bogs } in plenty.
—— *vulgaris*—Gorleston common, &c.

—— *hispida*—common; by no means generally incrusted.

ALGŒ.

Sargassum vulgare—a few fragments once found by Mr. Mason.

Cystoseira granulata—a single specimen found by Mr. J. Boulter.

——— *fibrosa*—abundant in the winter of 1798; a single specimen December, 1831.

Halidrys siliquosa } very common.
Fucus vesiculosus

—— *ceranoides*—very sparingly in 1806. Mr. Turner.

—— *serratus* } very common.
—— *nodosus*

Fucus canaliculatus—once found by Mr. Wigg.

Himanthalia lorea } very common in winter.
Laminaria saccharina }

——— *Phyllitis*—on the larger species in winter; rare.

Desmarestia ligulata } In some summers abundant, in
Dichloria viridis } others very rare; they generally appear together.

Sporochnus pedunculatus }
——— *villosus* } very rare; summer.
——— *flagelliformis* }

Chorda Filum—common; autumn and winter.

Punctaria plantaginea—rather rare; summer.

Dictyota dichotoma } not uncommon in some summers.
——— *atomaria* }

Cutleria multifida—rare; July, August.

Furcellaria fastigiata } common; autumn and winter.
Polyides rotundus }

Delesseria sanguinea—abundant in most summers; rarely with fruit in January.

——— *sinuosa*—not uncommon.

——— *Hypoglossum*—sometimes common in July and August, and more rarely, very large specimens in October.

——— *ruscifolius*—not uncommon in January and February, and more rarely in summer.

Nitophyllum Gmelini—in summer; sometimes not uncommon.

——— *laceratum*—generally abundant, and in almost all seasons.

Rhodomenia bifida α. β.—both very generally found in summer.

——— *laciniata*—more rare than the preceding, in the same season.

——— *Palmetta* δ.—not uncommon at various times.

——— *ciliata*—abundant in most summers.

Plocamium coccineum } abundant almost always.
Rhodomela sufusca }

Rhodomela scorpioides—a small quantity found 1830.
Bonnemaisonia asparagoides—summer; very rare.
Laurencia dasyphylla—some summers not uncommon.
——— *pinnatifida*—at times in plenty.
Chylocladia clavellosa—not uncommon, but irregular in its appearance.
——— *ovalis* } in winter on *Himanthalia lorea;*
——— *articulata* } but rare.
Gigartina purpurascens
——— *confervoides* } very generally common.
——— *plicata*
Chondrus crispus
——— *membranifolius* } common at various times.
——— *rubens*
Chætosphora Wigghii } summer; extremely rare.
Halymenia furcellata
——— *ligulata*—ditto, generally not uncommon.
Porphyra laciniata
——— *vulgaris*
Ulva Lactuca } more or less common at all times.
—— *latissima*
—— *Linza*—rather rare. Mr. F. K. Eagle, August, 1834.
Enteromorpha Cornucopiæ } at various times on the
——— *intestinalis* } beach, and in salt ditches,
——— *compressa* } &c.
Bryopsis plumosa—on the beach in summer; very rare.
Vaucheria dichotoma—pools, &c.; common.
——— *terrestris* } damp ground; common.
——— *Dillwynnii*
——— *ornithocephala*—ditches, by the cinder ovens.
——— *geminata* } common.
——— *cæspitosa*
Cladostephus verticillatus } on the beach, usually in
——— *spongiosus* } summer; common.
Sphacelaria scoparia—in autumn and winter; ditto.
——— *cirrhosa* } on the large fuci, in winter.
——— *velutina*

Ectocarpus littoralis—on the large fuci; common.
——— *siliculosus*—ditto, more rarely.
——— *tomentosus*—ditto; not uncommon.
——— *Mertensii*—on the beach in summer, but very rare.
Polysiphonia stricta—on the beach; rare.
——— *urceolata*
——— *atro-rubescens*
——— *nigrescens*
——— *furcellata*
——— *elongata*
——— *byssoides*
Dasya coccinea
} at different seasons on the beach; common.
Ceramium rubrum—common on the beach in summer.
——— *diaphanum*—common on the beach.
Griffithsia equisetifolia—in some summers common, very rarely bearing the fruit, which was first discovered by the Rev. G. R. Leathes, and is exactly as described by Mr. Dillwynn.
Griffithsia setacea
Calithamnion Plumula
——— *Turneri*
} some summers not uncommon on the beach.
——— *roseum*—on timber and piling in the river; very common.
——— *tetricum*—on the beach; common.
——— *fasciculatum*
——— *Borreri*
——— *thuyoides*
} ditto. Mr. Borrer; very rare.
——— *Rothii*
——— *repens*
} common.
Bulbochæte setigera
Conferva bombycina
} ditches, Bradwell and Hopton. Mr. Turner.
——— *ericetorum*—on most of the heaths.
——— *zonata*—on pebbles by Lound run. Mr. Turner.
——— *rivularis*
——— *capillaris*
——— *Linum*
} ditches by Breydon, &c.

Conferva crassa } ditches by Breydon, &c.
——— *tortuosa* }
——— *ærea*—on the beach; rare. Dr. Hooker.
——— *collabens*—floating piece of timber. Dr. Hooker.
——— *Youngana*—piles of the jetty, pier, &c.
——— *flacca* }
——— *fucicola* } on the large fuci; not uncommon.
——— *scutulata* }
——— *flavescens* }
——— *fracta* α. β. } salt ditches; not uncommon.
——— *glomerata* }
——— *pellucida* } beach; common.
——— *rupestris* }
——— *arcta*—beach, Nov. 1809. Mr. Borrer.
——— *riparia*—salt-pools. Mr. Dillwynn.
Mougeotia genuflexa }
Tyndaridea cruciata }
——— *pectinata* } pools and ditches; common.
Zygnema nitidum }
——— *deciminum* }
——— *quininum* }
Calothrix confervicola—very common.
——— *scopulorum*—on timber, &c.
——— *distorta*—ditch on Lound heath. Mr. Turner.
Lingbya muralis—walls; common.
Oscillatoria limosa }
——— *tenuis* }
——— *decorticans* }
——— *fontinalis* } common.
——— *nigra* }
——— *autumnalis* }
——— *ochracea* }
Chroolepus lichenicolus } on mosses and lichens; not
——— *Orthotrichi* } uncommon.
Batrachospermum moniliforme—rivulet on Hopton common. B. G.
Draparnaldia plumosa—Acle. Mr. Turner.

Draparnaldia glomerata—reeds, Hopton, Belton, &c. B. G.
——————— *tenuis*—Browston, Lound, &c. Mr. Turner.
Rivularia atra—jetty piles; common.
Palmella cruenta—under water spouts, &c.; common.
Nostoc commune—common.
——— *sphæricum*—salt marsh ditches. B. G.
Fragilaria pectinalis—ditches, Lound. Mr. Turner and Dr. Hooker.
Meloseira nummuloides—common.
Schizonema comoides—stones by the north battery. Mr. Turner and Mr. Borrer.

THE END.

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