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APPENDIX.

THE
FAUNA OF LIVERPOOL.

BY
ISAAC BYERLEY, F.L.S., M.R.C.S.E.

Byerley

A paper accompanying and explanatory of a printed preliminary Fauna of the district was read on the 31st May, 1852, and it was originally intended to have been published in the Proceedings of that Session ; the Author having thought, however, that advantage might arise from delay, the Council determined upon postponing it until the present opportunity.

P R E F A C E .

THE FLORA OF LIVERPOOL having been published by Dr. Dickinson during the year 1851, the animal life of the district was considered by many as equally worthy of attention, and the production of a local FAUNA was thought to be desirable. The zoology of most localities is seldom cultivated by so numerous a train of students as the vegetable kingdom generally commands. The flowers by the wayside rivet the admiring attention even of those who never bestow any scientific criticism upon them; various animals on the contrary, though high in the scale of organisation, excite feelings rather of revolt or disgust than pleasure in certain minds, and, as a consequence, "love at first sight" is a somewhat exceptional occurrence, unless at the uppermost rail of the ladder, and strong prejudice has often to be conquered before many can be induced to touch what they deem "the unclean thing," and examine the beauty that is hidden under a repulsive exterior.

The activity of different species of animals often renders their capture difficult. When marine, the use of the dredge entails a consumption of time such as can rarely be spared by those who have other paramount duties to perform, putting out of account the amount of visceral commotion the unpractised sailor is doomed to endure, and which requires a large zoological profit to compensate, under such circumstances, for the want of pleasure in procuring it. In 1851, by the advice of Mr. R. M'Andrew, several gentlemen subscribed for the purpose of having the shore dredged for specimens, and many trips were taken in the Mersey, along the coast as far as Formby, at the north of the Cheshire peninsula, and up the Dee as far as Dawpool.

These expeditions brought to light several species which were not supposed to have existed in the neighbourhood, and of others (shelled mollusks) which had only been found before in the dead state, living specimens were ascertained to inhabit deeper water.

Still much more might be done by a well conducted and longer continued system of dredging. The Hoylake fishermen have been fertile sources for obtaining specimens, though it is difficult to induce them to take care of what they find. Burnet's fluid was supplied to them, into which, diluted (1 part to 9) with water, they were requested to put captures, but in some instances, when daily visits could not be paid, time, the cat, or the children made sad havoc.

PREFACE.

Much of our zoological literature is scattered through periodicals and other works, which are expensive and not easy of access, and, in consequence, some difficulty is often experienced in classification, and in the determination of species.

These remarks are made as an apology for any short-comings in this first attempt at a Fauna, the materials for which must always be receiving additions, and thus it can never be perfect. Much as I may feel on my own account, I must not dilate upon its imperfections, in justice to several industrious workers who have kindly assisted. Whilst dredging, the Rev. H. H. Higgins, Messrs. Webster, Samuel Archer, Marratt, and Cameron, afforded the greatest help; without their efforts much of the information relative to the creatures in the neighbouring waters could not have been obtained. The last-named gentleman undertook, single-handed, the not over agreeable or safe duty of dredging the Mersey.

The entomologists of the district, almost without exception, especially Messrs. Brockholes, Warrington, Diggles, Almond, and other industrious investigators, have kindly supplied abundant facts with reference to *Lepidoptera*.

This is the only order of *Insecta* which has been classified and named, as yet, for publication: Mr. Cameron, however, has a large supply of local *Coleoptera*, which we hope will be arranged ere long, and a list of them published. The Rev. H. H. Higgins also has commenced researches amongst *Diptera* and *Hymenoptera*, from which we may reasonably hope to have good results.

The labours of Mr. Price, of Birkenhead, cannot be mentioned in terms of sufficient praise; his discoveries, not only locally but elsewhere, have secured him a high reputation; he also has been liberal with information.

The name of Mr. R. Tudor, of Bootle, must always be associated with the zoology of the neighbourhood as the original discoverer of many species.

Mr. W. H. Weightman has been good enough to contribute by his researches amongst *Entomostraca*.

Mr. W. Webster's intimate knowledge of birds, mollusca, &c. has been freely imparted, and of much assistance.

I am much indebted to the talented authors of the "British Nudibranchiate Mollusca;" to Mr. Alder, for correspondence always prompt and valuable; and to Mr. Hancock, for the very faithful drawing of "Antiope Hyalina," a coloured engraving of which, by Mr. Tuffin West, forms part of the volume.

To Drs. Dickinson and Inman, Messrs. Parke, Whitehead, N. Cooke, and others, my thanks are due for useful contributions or advice.

It is a reasonable expectation that further investigations by those gentlemen who have hitherto followed natural history pursuits, may add sufficient for a large appendix to the present instalment at some future time. The physical conditions of a neighbourhood of course modify and determine the character of the animal and vegetable productions on its surface and in its waters. I refer with pleasure to the excellent chapter upon the physical geography of the district, which is suitably placed as a preliminary to Dr. Dickinson's Flora; the remarks therein contained are equally applicable to the present object.

ANIMALIA.

SUB-KINGDOM VERTEBRATA.

CLASS 1.—MAMMALIA.

Order CHEIROPTERA—BATS.

Family VESPERTILIONIDÆ.

Genus VESPERTILIO.

VESPERTILIO NOCTULA—NOCTULE.

Mr. Mather, taxidermist, of Williamson-square, remembers having stuffed specimens, taken from Birkenhead Abbey, many years ago, before the additional building; once or twice also from other localities. If now in the neighbourhood it is very scarce.

VESPERTILIO PIPISTRELLUS. Common Bat, Flitter-mouse, Pipistrelle.

The most common bat of the district. A living specimen was given to me so late in the year as the month of December, 1852.

VESPERTILIO DAUBENTONII. Daubenton's Bat.

Taken by Mr. Nicholas Cooke from a hollow tree in Delamere Forest. He was out with a party of entomologists, and caught nine out of two or three dozen, which were disturbed in their lurking place. A specimen was sent to the British Museum, and there named.

Genus PLECOTUS.

PLECOTUS AURITUS. Long-eared Bat.

Almost equally common during the warm months.

Family RHINOLOPHIDÆ.

Genus RHINOLOPHUS.

RHINOLOPHUS HIPPOSIDEROS. Lesser horse-shoe bat.

One from Storeton quarry, stuffed by Mr. Mather, 20 years ago.

Order INSECTIVORA.

Family ERINACEIDÆ.

Genus ERINACEUS.

ERINACEUS EUROPÆUS. Hedge-hog. Urchin.

Common everywhere in rural districts.

Family TALPIDÆ.

Genus TALPA.

TALPA VULGARIS. Mole. Moldwarp. Want.

Too common.

Family SORICIDÆ.

Genus SOREX.

SOREX ARANEUS. Common Shrew. Shrew-mouse.

Very general.

SOREX FODIENS. Water Shrew.

Taken at Egremont.—*Mr. R Abbott.*

SOREX REMIFER. Oared Shrew.

Caught at Upton by Mr. Webster, 1851.

Order CARNIVORA.

Family URSIDÆ.

Genus MELES.

MELES TAXUS. The Badger.

One killed in a sand-hole at Poole Hall Farm, adjoining Hooton, five years ago.—*Mr. Grace.* I can hear of instances of their capture, many years back, at Oxton Hill, also at Caldy and Moston Hall.

Family MUSTELIDÆ.

Genus LUTRA.

LUTRA VULGARIS. Common Otter.

Has been seen within a few years back in the Chester and Ellesmere Canal, and in Stanney Mill Brook, which is an arm of the Gowey River.—*Mr. Grace.* Also in the Alt, near Sephton, ten or twelve years ago.—*Mr. Mather.*

Genus MUSTELA.

MUSTELA VULGARIS. Common Weasel.

In rural districts everywhere.

MUSTELA ERMINEA. Ermine-Weasel. Stoat.

Common.

MUSTELA PUTORIUS. Fitchet Weasel. Polecat.

Occasionally found in Wirral and Lancashire; formerly common. A specimen was partially tamed by Mr. Grace, of Whitby Hall, and lived with his ferrets.

MUSTELA FURO. The Ferret Weasel.

Kept, where required, for hunting purposes.

Genus MARTES.

MARTES FOINA. Common Marten. Beech Marten.

Twelve or fifteen years ago a "Marten Cat" was killed by John Robinson, one of the Marquis of Westminster's keepers, in the Township of Whitby.—*Mr. Grace*. Another, caught about Hooton, was sent fifteen years ago by the late Sir Thomas Stanley to Mr. Mather for stuffing.

Family FELIDÆ.

Genus FELIS.

FELIS CATUS. (Var. Domestica.) Cat.

Common.

Family CANIDÆ.

Genus CANIS.

CANIS FAMILIARIS. The Dog.

Common.

Genus VULPES.

VULPES VULGARIS. Common Fox.

Not so strictly preserved for hunting as formerly, and therefore not now abundant.

Family PHOCIDÆ.

Genus PHOCA.

PHOCA VITULINA. Common Seal. Sea Calf.

There are instances of their occasional capture in the Dee, Mersey, and neighbouring parts of the coast.

Order RODENTIA.

Family SCIURIDÆ.

Genus SCIURUS.

SCIURUS VULGARIS. Common Squirrel.

Knowsley Park.

Genus MYOXUS.

MYOXUS AVELLANARIUS. Common Dormouse.

Sparingly in the neighbourhood.—*Mr. Mather*. Mr. Brockholes has seen it in Prenton Wood.

Family MURIDÆ.

Genus MUS.

MUS MESSORIUS. Harvest Mouse.

Not unfrequent in wheat stacks, barns, and fields.

MUS SYLVATICUS. Long-tailed Field Mouse. Wood Mouse.

Common.

MUS MUSCULUS. Common Mouse.

Everywhere. Too common.

MUS RATTUS. Black Rat.

Abundant on shipboard; occasional stragglers ashore.

MUS DECUMANUS. Brown Rat. Norway Rat.

Common nuisances.

THE FAUNA OF LIVERPOOL.

Family CASTORIDÆ.

Genus ARVICOLA.

ARVICOLA AMPHIBIUS. Water Vole. Water Rat.

About pits and ditches everywhere.

ARVICOLA AGRESTIS. Short-tailed Field Mouse. Meadow Mouse

Common.

ARVICOLA PRATENSIS? Bank Vole.

Mr. R. Abbott thinks he has seen specimens of this species at Egremont; not captured.

Family LEPORIDÆ.

Genus LEPUS.

LEPUS TIMIDUS. Common Hare.

Common.

LEPUS CUNICULUS. Rabbit. Coney.

Common.

Genus CAVIA.

CAVIA APEREA. Restless Cavy. Guinea Pig.

Occasionally, in captivity.

Order PACHYDERMATA.

Family SUIDÆ.

Genus SUS.

SUS SCROFA. Common Hog.

Common.

Family EQUIDÆ.

Genus EQUUS.

EQUUS CABALLUS. Horse.

Common.

Genus ASINUS.

ASINUS VULGARIS. The Ass.

Common.

Order RUMINANTIA.

Family BOVIDÆ.

Genus BOS.

BOS TAURUS. The Ox.

Common.

Family CAPRIDÆ.

Genus CAPRA.

CAPRA HIRCUS. Common Goat.

Common for domestic use.

Genus OVIS.

OVIS ARIES. Common Sheep.

Common.

Order CETACEA.

Family DELPHINIDÆ.

Genus PHOCÆINA.

PHOCÆINA COMMUNIS. Common Porpoise.

Frequent in shoals during stormy and changeable weather.

Genus HYPEROODON.

HYPEROODON BUTZKOPF. Bottle-head.

One stranded upon East Hoyle Bank, 1850, and exhibited at Tranmere Slip, after which it was cut up at Hoylake, and 140 gallons of oil obtained from its blubber. The stomach contained great numbers of the horny beaks of some species of cuttle. Although these have been found frequently in the stomachs of whales, in this instance the mode of their arrangement was remarkable, as the beaks were inserted one within another, so as to ride, regularly imbricated, in rows of ten, fifteen, or twenty together. I have pulled as many as seven asunder, and the person who took them from the stomach informed me that they formed rows, in some instances, of an inch and a-half in length. Many were so firmly impacted that they required strong traction to separate them, and sometimes they would break rather than come asunder. This curious arrangement must have been brought about by the peristaltic movements of the stomach.

Another specimen was captured at the Little Moels two years ago.

August 25, 1853, a male of this species was stranded upon East Hoyle Bank; its length was 21 feet; from the angle of the mouth to the tip of the snout, 20 inches; from tip of snout to eye, 3 feet 6 inches; eye to spiracle, 2 feet 3 inches. The pectoral fins were 1 foot 9 inches long, and 9 inches broad; tail fin or propeller, 5 feet 6 inches broad, and 2 feet long; the dorsal fin about 10 or 11 feet from the tail; from the vent to the tail, 7 feet 6 inches; orifice of urethra to anal opening, 1 foot 10 inches; the length of the snout was 1 foot 3 inches. I had an opportunity of seeing the stomach opened, and observed great numbers, certainly many hundreds, of the cuttle beaks; many were unattached, but others were placed one within another, as in the foregoing instance.

Another of the same species, probably his female mate, was seen swimming about the same locality for three weeks after his capture, and was driven by three fishing boats upon the same bank, which, however, was covered with sufficient water to enable it to "flounder off."

CLASS II.—AVES.

Order RAPTORES.

Family FALCONIDÆ.

Genus HALLÆETUS.

HALLÆETUS ALBICILLA.

Seen at Leasowe, shot at and wounded.—*Mr. Brockholes*. Both Messrs. Mather and Butterworth have had them from the neighbourhood for stuffing.

Genus PANDION.

PANDION HALLÆETUS. Osprey, Fishing-hawk.

Shot at Formby five years ago, and once since.—*Mr. Mather*.

Genus FALCO.

FALCO PEREGRINUS. Peregrine Falcon.

Seen on the wing at New Brighton by Mr. Price. Mr. Mather has stuffed specimens shot near Liverpool.

FALCO SUBBUTEO. The Hobby.

Specimen shot at Knowsley; in the Derby Museum. One at Crosby.—*Mr. Mather*.

FALCO ÆSALON. The Merlin.

Wirral and Lancashire; in winter rarely. One shot at West Kirby, October, 1853.

FALCO TINNUNCULUS. Kestrel or Windhover.

Very common.

Genus ACCIPITER.

ACCIPITER NISUS. The Sparrow-hawk.

Very general.

Genus BUTEO.

BUTEO VULGARIS. Common Buzzard.

About Wirral and Lancashire, occasionally, but not common.

BUTEO LAGOPUS. Rough-legged Buzzard.

Several, both on this and the Cheshire side of the Mersey.—*Mr. Mather*. Bickerstaff and Knowsley.

Genus PERNIS.

PERNIS APIVORUS. Honey Buzzard.

A dozen at least from about the district of St. Helens, Aintree Race-ground, and elsewhere.—*Mr. Mather*. Rainford, 1835.

Genus CIRCUS.

CIRCUS ÆRUGINOSUS. The Marsh Harrier.

In the rabbit-warrens about Crosby and Formby, and probably on the Cheshire side also.—*Mr. Mather*.

CIRCUS CYANEUS. The Hen-harrier.

Has been shot in many places, but is becoming less plentiful.

CIRCUS MONTAGUI. Montague's Harrier.

One from Bidston Marsh.—*Mr. Mather*.

Family STRIGIDÆ.

Genus OTUS.

OTUS VULGARIS. Long-eared Owl.

Uncommon.

OTUS BRACHYOTUS. Short-eared Owl.

Not uncommon, especially in winter.

Genus STRIX.

STRIX FLAMMEA. The White or Barn Owl.

Equally common with the last species, and breeds in the neighbourhood.

Genus SYRNIUM.

SYRNIUM STRIDULA. The Tawny Owl.

Breeds in Stanley's Wood at Eastham.—*Mr. Mather.*

Order INSESSORES.

First Division.—DENTIROSTRES.

Family LANIADÆ.

Genus LANIUS.

LANIUS EXCUBITOR. Great Grey Shrike.

Whitby Locks.—*Mr. Grace.* Crosby, rare. One caught some years ago striking at a noose set for larks in the winter.

LANIUS COLLURIO. Red-backed Shrike.

Mr. Mather states that he has about one specimen a year for stuffing. Breeds at Bootle.

Family MUSCICAPIDÆ.

Genus MUSCICAPA.

MUSCICAPA GRISOLA. Spotted Fly-catcher.

Common.

Family MERULIDÆ.

Genus TURDUS.

TURDUS VISCIVORUS. The Missel Thrush.

Very general.

TURDUS PILARIS. Field-fare, locally blue-back.

Equally if not more common.

TURDUS MUSICUS. The Song Thrush.

Very common.

TURDUS ILIACUS. The Redwing.

Common.

TURDUS MERULA. The Blackbird.

Very common. White, mottled, and cream-coloured varieties are met with occasionally.

TURDUS TORQUATUS. The Ring Ousel.

Two specimens shot in 1852 at Hoylake—one during the time of the vernal and the other of the autumnal migration. Crosby. Probably not uncommon.

THE FAUNA OF LIVERPOOL.

Family SYLVIADÆ.

Genus ACCENTOR.

ACCENTOR MODULARIS. The Hedge Accentor or Hedge Sparrow.
Everywhere.

Genus ERYTHRACA.

ERYTHRACA RUBECULA. The Redbreast.
Very common.

Genus PHÆNICURA.

PHÆNICURA RUTICILLA. The Redstart.

Occasional in Spring and Autumn. Breeds in the district.

PHÆNICURA TITHYS. The Black Redstart.

One killed near the Dingle in the winter.—*Mr. Butterworth.* A male at Storeton Quarry three years ago.—*Mr. Mather.*

Genus SAXICOLA.

SAXICOLA RUBICOLA. The Stonechat.

Not uncommon on moorish land, some few remaining over the winter.

SAXICOLA RUBETRA. The Whinchat.

Frequent in summer—builds.

SAXICOLA ŒNANTHE. The Wheatear.

Pretty general, but found especially upon the sand hills round the coast.

Genus SALICARIA.

SALICARIA LOCUSTELLA. Grasshopper Warbler.

Seen by *Mr. Price.* Bebbington and Bidston.—*Mr. Brockholes.*

SALICARIA PHRAGMITIS. Sedge Warbler.

Frequent in marshy places and at the borders of ponds.

Genus CURRUCA.

CURRUCA CINEREA. The Common Whitethroat.

Very common.

CURRUCA SYLVIELLA. The Lesser Whitethroat.

Have bred at Egremont, where they have been taken.—*Mr. R. Abbott.*

Genus SYLVIA.

SYLVIA SYLVICOLA. The Wood Warbler.

Seen in Wirral occasionally—scarce.

SYLVIA TROCHILUS. The Willow Warbler.

Common.

SYLVIA HIPPOLAIS. The Chiff-Chaff.

A specimen shot at Upton, 1852. Very scarce.—*Mr. Webster.* More plentiful at New Brighton.—*Mr. R. Abbott.*

Genus REGULUS.

REGULUS CRISTATUS. The Golden-crested Regulus.

Not uncommon—breeds in the neighbourhood now and then. Common in Cloughton firwoods in winter.—*Mr. Brockholes.*

Family PARIDÆ.

Genus PARUS.

PARUS MAJOR. The Great Tit.

Common.

PARUS CÆRULEUS. The Blue Tit.

Very common.

PARUS ATER. The Cole Tit.

Occasional in winter.

PARUS PALUSTRIS. The Marsh Tit.

Not unfrequent—breeds occasionally here.

PARUS CAUDATUS. Long-tailed Tit.

Not uncommon in the winter time, flying generally in families of from eight to twenty—breeds.

Family AMPELIDÆ.

Genus BOMBYCILLA.

BOMBYCILLA GARRULA. Bohemian Waxwing.

Ormskirk, 1851.—*Mr. Butterworth*. Cheshire. Aigburth. Occasional, but rare.

Family MOTACILLIDÆ.

Genus MOTACILLA.

MOTACILLA YARRELLII. The Pied Wagtail.

Very general.

MOTACILLA BOARULA. The Grey Wagtail.

Seen now and then on their passage.

MOTACILLA FLAVA. Ray's Wagtail. Yellow Wagtail.

Common; generally breeding in corn fields.

Family ANTHIDÆ.

Genus ANTHUS.

ANTHUS ARBOREUS. The Tree Pipit.

Not unfrequent—breed about the district.

ANTHUS PRATENSIS. The Meadow Pipit.

Not uncommon, a few staying the winter—breed here.

ANTHUS PETROSUS. The Rock Pipit.

Thinly scattered along the coast.

ANTHUS RICARDI. Richard's Pipit.

The Rev. T. Staniforth kindly communicates that he has a stuffed specimen.

The bird was killed at Crosby.

Second Division.—CONIROSTRES.

Family ALAUDIDÆ.

Genus ALAUDA.

ALAUDA ARVENSIS. The Skylark.

Very common. A drab or cream-coloured variety shot at Newton-cum-Larton.

ALAUDA ARBOREA. The Woodlark.

Plentiful twenty years ago; now never seen—*Mr. Mather*.

Family EMBERIZIDÆ.

Genus PLECTROPHANES.

PLECTROPHANES NIVALIS. The Snow Bunting.

Seen occasionally, especially along the coast, and in hard weather. Often in company with larks.

Genus EMBERIZA.

EMBERIZA MILIARIA. Common Bunting.

Sometimes in summer, more commonly in winter.

EMBERIZA SCHÆNICULUS. Black-headed Bunting.

Very general.

EMBERIZA CITRINELLA. Yellow Bunting. Yellow Ammer.

Common.

Family FRINGILLIDÆ.

Genus FRINGILLA.

FRINGILLA CÆLEBS. The Chaffinch.

Common.

FRINGILLA MONTIFRINGILLA. Mountain Finch, or Bramble Finch.

Mr. Mather informs me that he has specimens now and then, and that it is not uncommon some seasons.

Genus PASSER.

PASSER MONTANUS. The Tree Sparrow.

Several at different times.—*Mr. Mather.*

PASSER DOMESTICUS. The House Sparrow.

Common.

Genus COCCOTHRAUSTES.

COCCOTHRAUSTES CHLORIS. The Greenfinch. Green Grosbeak.

Very common.

Genus CARDUELIS.

CARDUELIS ELEGANS. The Goldfinch.

Not very frequent.

CARDUELIS SPINUS. The Siskin or Aberdevine.

Seen in hard weather, principally frequenting alder trees; often in company with flocks of the lesser Redpole.—*Mr. Webster.*

Genus LINOTA.

LINOTA CANNABINA. Common Linnet.

Not uncommon.

LINOTA LINARIA. The Lesser or Common Redpole.

In flocks in winter. A few breed.—*Mr. Webster.* Also in the summer months about New Brighton.—*Mr. R. Abbott.*

Genus PYRRHULA.

PYRRHULA VULGARIS. The Bullfinch.

A few breed every season.

Genus LOXIA.

LOXIA CURVIROSTRA. Common Crossbill.

Shot in the neighbourhoods of Chester, Bidston, and elsewhere, where there are fir trees.—*Mr. Brockholes.*

Family STURNIDÆ.

Genus STURNUS.

STURNUS VULGARIS. Common Starling.

Very common.

Genus PASTOR.

PASTOR ROSEUS. The Rose-coloured Pastor.

Killed near Liverpool 16 or 17 years ago, and stuffed by Mr. Mather.

Family CORVIDÆ.

Genus FREGILUS.

FREGILUS GRACULUS. The Chough. Red-legged Crow.

Once at Crosby; here very rarely.—*Mr. Mather.*

Genus CORVUS.

CORVUS CORAX. The Raven.

Occasionally in Wirral.

CORVUS CORONE. The Carrion Crow.

Not very abundant.

CORVUS CORNIX. The Hooded Crow, or Royston Crow.

Shore north of Wirral.—*Mrs. Longueville.* Occasionally in winter.

CORVUS FRUGILEGUS. The Rook.

Very common everywhere.

CORVUS MONEDULA. The Jackdaw.

A few about Wirral. Pairs frequent Bebbington, Eastham, and doubtless other country churches.

Genus PICA.

PICA CAUDATA. The Magpie.

Very common.

Genus GARRULUS.

GARRULUS GLANDARIUS. The Jay.

Knowsley Park.—*Mr. S. Archer.* Formerly common in Wirral, but now scarce. Eastham. In a firwood between Rock Ferry and Bebbington.—*Mr. Brockholes.*

Third Division.—SCANSORES.

Family PICIDÆ.

Genus PICUS.

PICUS VIRIDIS. The Green Woodpecker.

One at New Brighton. Rare about the district.

PICUS MAJOR. The Great Spotted Woodpecker.

About Ormskirk. Knowsley.

PICUS MINOR. The Lesser Spotted Woodpecker.

Wood near Bromborough Pool.

THE FAUNA OF LIVERPOOL.

Genus YUNX.

YUNX TORQUILLA. The Wryneck.

Very rare in Wirral. Has bred at Saughall-Massie.—*Mr. Webster.*

Family CERTHIADÆ.

Genus CERTHIA.

CERTHIA FAMILIARIS. Common Creeper.

Not common at the north of Wirral. Claughton firwoods.—*Mr. Brockholes.*
Dingle and North Shore.—*Mr. Mather.*

Genus TROGLODYTES.

TROGLODYTES VULGARIS. The Wren.

Common.

Genus UPUPA.

UPUPA EPOPS. The Hoopoe.

Four shot at Knowsley; in the Derby Museum.—*Mr. R. Abbott.* One at Edge Hill. At Formby and elsewhere.—*Mr. Mather.* Hoylake.—*Rev. T. Staniforth.*

Family CUCULIDÆ.

Genus CUCULUS.

CUCULUS CANORUS. The Common Cuckoo.

Common.

Fourth Division.—FISSIROSTRES.

Family MEROPIDÆ.

Genus CORACIAS.

CORACIAS GARRULA. The Roller.

One shot at Knotty Ash was stuffed by *Mr. Mather*, and is now at his house.

Family HALCYONIDÆ.

Genus ALCEDO.

ALCEDO ISPIDA. King-fisher.

Not very uncommon.

Family HIRUNDINIDÆ.

Genus HIRUNDO.

HIRUNDO RUSTICA. The Swallow.

Very common.

HIRUNDO UBBICA. The Martin.

Equally frequent.

HIRUNDO RIPARIA. The Sand Martin, or Bank Martin.

Locally in great numbers.

Genus CYPSELUS.

CYPSELUS APUS. The Common Swift.

General.

CYPSELUS ALPINUS. The Alpine Swift.

One only, killed at the mouth of the Dee many years ago by — *Mostyn, Esq.*
—*Mr. Mather.*

Family CAPRIMULGIDÆ.

Genus CAPRIMULGUS.

CAPRIMULGUS EUROPEUS. The Nightjar.

Generally distributed in heaths and woody places.

Order RASORES.

Family COLUMBIDÆ.

Genus COLUMBA.

COLUMBA PALUMBUS. Ring Dove, or Wood Pigeon. Cushat.

Very common.

COLUMBA TURTUR. The Turtle Dove.

One shot at Bidston-cum-Ford, 1851.—*Mr. Webster.* Several at different times.

Mr. Mather.

Family PHASIANIDÆ.

Genus PHASIANUS.

PHASIANUS COLCHICUS. Common Pheasant.

Common.

Family TETRAONIDÆ.

Genus TETRAO.

TETRAO TETRIX. The Black Grouse.

Has been shot at Kirby Moss.

Genus LAGOPUS.

LAGOPUS SCOTICUS. The Red Grouse.

One shot at West Kirby some years ago by *Mr. Robin.* A pair once in Cloughton firwood. Once at Ormskirk.—*Mr. Mather.*

Genus PERDIX.

PERDIX CINEREA. Common Partridge.

Very common.

Genus COTURNIX.

COTURNIX VULGARIS. Common Quail.

A few every season.

Order GRALLATORES.

Family CHARADRIIDÆ.

Genus ŒDICNEMUS.

ŒDICNEMUS CREPITANS. The Great Plover. Norfolk Plover, or Stone Curlew.

Said to have been seen on the Hoylake shore. Formby. Ormskirk.—*Mr. Mather.*

Genus CHARADRIUS.

CHARADRIUS MORINELLUS. The Dotterell.

A few every spring.

CHARADRIUS HIATICULA. The Ringed Plover.

Very common. Breeds along the shore.

Genus SQUATORALA.

SQUATORALA CINEREA. The Grey Plover.

Abundant in winter.

Genus VANELLUS.

VANELLUS CRISTATUS. Peewitt. Lapwing.

In large flocks.

Genus STREPSELAS.

STREPSELAS INTERPRES. The Turnstone.

Occasionally seen, but not frequent.

Genus CALIDRIS.

CALIDRIS ARENARIA. The Sanderling.

Seen now and then in flocks round the coast.

Genus HÆMATOPUS.

HÆMATOPUS OSTRALEGUS. Oyster Catcher, or Sea Pie.

Very frequent.

Family ARDEIDÆ.

Genus ARDEA.

ARDEA CINEREA. The Common Heron.

Numerous. A heronry at Hooton. A pair bred at Newton-cum-Larton some years ago.

Genus BOTAURUS.

BOTAURUS MINUTUS. The Little Bittern.

Shot at Aigburth, January, 1854.—*Mr. Butterworth.*

BOTAURUS STELLARIS. The Common Bittern.

Shot at Upton, Bidston Marsh, Hoylake, Irby, &c.

Genus NYCTICORAX.

NYCTICORAX GARDENI. The Night Heron.

Near Ormskirk. *Mr. Mather* remembers two or three instances of its having been shot within the last twenty years.

Family SCOLOPACIDÆ.

Genus NUMENIUS.

NUMENIUS ARQUATA. The Common Curlew.

Abundant in winter.

NUMENIUS PHÆOPUS. The Whimbrel.

Frequents the coast in winter and the pasture-fields in spring, before going to its breeding quarters.

Genus TOTANUS.

TOTANUS CALIDRIS. Common Redshank.

Pretty frequent round the coast.

TOTANUS OCHROPUS. Green Sandpiper.

Shot at Cuerdley Marsh, 1851.

TOTANUS GLAREOLA. The Wood Sandpiper.

North Shore.—*Mr. Nicholas Cooke.*

TOTANUS HYPOLEUCOS. Common Sandpiper. Summer Snipe.

A few pairs breed on the banks of most of the streams every year.

TOTANUS MACULARIUS. The Spotted Sandpiper.

Once on Formby Shore.—*Mr. Mather.*

TOTANUS GLOTTIS. The Greenshank.

Not uncommon on the coast.

Genus LIMOSA.

LIMOSA RUFA. The Bar-tailed Godwit.

Pretty frequent.

Genus MACHETES.

MACHETES PUGNAX. The Ruff. Female Reeve.

A Reeve shot at West Kirby, October, 1852. Moss near Kirby.—*Mr. Mather.*

Genus SCOLOPAX.

SCOLOPAX RUSTICOLA. The Woodcock.

Not unfrequent.

SCOLOPAX MAJOR. The Great Snipe.

Twice at Upton, also several times at Hoylake.

SCOLOPAX GALLINAGO. The Common Snipe.

Very abundant.

SCOLOPAX GALLINULA. The Jack Snipe.

Equally common.

Genus TRINGA.

TRINGA SUBARQUATA. The Curlew Sandpiper, or Pigmy Curlew.

Waterloo, Formby, and about the mouth of the Alt.—*Mr. Mather.*

TRINGA CANUTUS. The Knot.

A few flocks may be seen every season along the coast.

TRINGA RUFESCENS. The Buff-breasted Sandpiper.

A stuffed specimen is in the possession of the Rev. Thomas Staniforth, the bird having been killed at Formby, and sent to the Liverpool market among Snipes, 1829. See "Yarrell's British Birds," vol. 3, p. 58.

TRINGA MINUTA. Little Stint.

Seen most years on the Cheshire and Lancashire shores.—*Mr. Mather.*

TRINGA VARIABILIS. The Dunlin.

Abundant round the coast, rarely inland; in flocks during hard weather.

Family RALLIDÆ.

Genus CREX.

CREX PRATENSIS. Landrail, or Corn-crake.

Breeds freely in meadows and clover fields.

CREX PORZANA. The Spotted Crake.

Three specimens shot in the autumn of 1852, at Hoylake. Kirby Moss.

CREX PUSILLA. The Little Crake, or Olivaceous Gallinule.

One specimen from Crosby.—*Mr. Mather.*

THE FAUNA OF LIVERPOOL.

Genus RALLUS.

RALLUS AQUATICUS. The Water Rail.

Pretty common, mostly in winter.

Genus GALLINULA.

GALLINULA CHLOROPUS. Moor Hen. Water Hen.

Very common.

Family LOBIPEDIDÆ.

Genus FULICA.

FULICA ATRA. The Common Coot.

Occasionally met with.

Genus PHALAROPUS.

PHALAROPUS LOBATUS. The Grey Phalarope.

One from Crosby stuffed by Mr. Butterworth. Occasionally shot at the Old Swan and elsewhere.—*Mr. Mather.*

PHALAROPUS HYPERBOREAS. The Red-necked Phalarope.

One specimen from a pit in Cheshire.—*Mr. Mather.*

Order NATATORES.

Family ANATIDÆ.

Genus ANAS.

ANAS SEGETUM. The Bean Goose.

Has been frequently shot.

Genus ANSER.

ANSER BRACHYRHYNCUS. The Pink-footed Goose.

Shot at Ceurdley.

ANSER LEUCOPSIS. The Bernicle Goose.

Very common in winter.

ANSER TORQUATUS. The Brent Goose.

Occasionally seen.

Genus CYGNUS.

CYGNUS FERUS. The Hooper, or Whistling Swan.

Was seen in meadows at Upton, a few years ago. Between Leasowe and the Carr, 1853.—*Mr. Brockholes.*

CYGNUS OLOR. The Mute Swan.

Half domesticated, about ornamental waters.

Genus TADORNA.

TADORNA VULPANSER. The Sheldrake. Burrow Duck.

Not uncommon about the Dee. Breeds occasionally in the rabbit warrens of the coast, and in the Middle Hilbre Island.

Genus ANAS.

ANAS CLYPEATA. The Shoveler. Blue-winged Shoveler, or Broadbill.

Shot at Hoylake.

ANAS ACUTA. The Pintail Duck.

Has been shot several times both at Upton and Hoylake.

ANAS BOSCHAS. The Wild Duck.

Common. Breeds occasionally in the vicinity of ponds. There is a duck decoy at Hale.

ANAS QUERQUEDULA. Garganey Teal.

One specimen at Ormskirk.—*Mr. Mather.*

ANAS CRECCA. The Teal.

Very common.

ANAS PENELOPE. The Wigeon.

Common.

Genus SOMATERIA.

SOMATERIA MOLLISSIMA. The Eider Duck, or St. Cuthbert's Duck.

One killed near the Potteries, three years ago, in stormy November weather.—*Mr. Mather.*

Genus OIDEMIA.

OIDEMIA NIGRA. The Common Scoter.

Very abundant about the sandbanks.

Genus FULIGULA.

FULIGULA FERINA. Pochard, or Dunbird.

Rare, but has been shot near Hoylake in flooded meadows. One caught in a field near Upton and kept amongst ducks.—*Mr. Webster.*

FULIGULA NYROCA. The Ferruginous Duck. The White-eyed Duck.

Shot at Newton-cum-Larton, opposite the New House Farm, November, 1853; also by Mr. Banks at Weston, near Runcorn, January, 1854.

FULIGULA MARILA. The Scaup Duck.

Equally as rare as the Pochard, but shot under the same circumstances.

FULIGULA CRISTATA. The Tufted Duck.

Knowsley, 1847.—*Mr. S. Archer.* Occasional specimens from the neighbourhood stuffed by Mr. Mather.

FULIGULA CLANGULA. The Golden Eye.

Abundant in severe weather about Hoylake and other parts of the coast.

Genus MERGUS.

MERGUS ALBELLUS. The Smew.

Rare in hard weather. One taken at Tranmere. Weston, near Runcorn; shot by Mr. Banks, January, 1854.

MERGUS SERRATOR. The Red-breasted Merganser.

Taken rarely in severe winters.—*Mr. Mather.*

MERGUS MERGANSER. Goosander.

In severe weather occasionally.

Family COLYMBIDÆ.

Genus PODICEPS.

PODICEPS CRISTATUS. The Great-crested Grebe.

Often taken on the river in severe winter seasons.—*Mr. Mather.* Weston, near Runcorn, January 7th, 1854.—*Mr. Banks.*

PODICEPS AURITUS. The Eared Grebe.

A stuffed specimen at Oxton, which had been shot upon the Mersey shore near Tranmere.

PODICEPS MINOR. The Little Grebe. Dabchick.

Occasional. Bootle and elsewhere.

Genus COLYMBUS.

COLYMBUS GLACIALIS. The Great Northern Diver.

Once shot at Hilbre Island.—*R. Barton, Esq.*

COLYMBUS SEPTENTRIONALIS. The Red-throated Diver.

Seen every winter along the coast.

Family ALCIDÆ.

Genus URIA.

URIA TROILE. The Common Guillemot.

By no means uncommon around the coast after the breeding season.

Genus MERGULUS.

MERGULUS MELANOLEUCOS. The Little Auk, or Common Rotche.

In the Mersey.—*Mr. Brockholes*. Garston. Now and then seen in severe October or November weather.—*Mr. Mather*.

Genus FRATERCULA.

FRATERCULA ARCTICA. The Puffin, or Sea Parrot.

Mr. Butterworth has stuffed several; some taken as far up the Mersey as Runcorn.

Genus ALCA.

ALCA TORDA. The Razor Bill.

Rather rare. Shot at Hilbre, and seen everywhere round the shores now and then.

Family PELECANIDÆ.

Genus PHALACROCORAX.

PHALACROCORAX CARBO. The Common Cormorant.

Very numerous upon the sandbanks.

PHALACROCORAX GRACULUS. The Shag, or Green Cormorant.

Met with in several instances at the end of the year, after the breeding season.—*Mr. Mather*.

Genus SULA.

SULA ALBA. The Gannet, or Soland Goose.

Not unfrequent; following shoals of fish.

Family LARIDÆ.

Genus STERNA.

STERNA BOYSII. The Sandwich Tern.

One shot on Bootle shore.—*Mr. Butterworth*. Two at Crosby. Very rare.—*Mr. Mather*.

STERNA HIRUNDO. Common Tern, or Sea Swallow.

Common about the coast.

STERNA MINUTA. The Lesser Tern.

Not uncommon on the Wirral and Lancashire coast.

STERNA FISSIPES. The Black Tern.

Rare. Killed at Bootle. Occasionally seen on their passage.—*Mr. Mather.*

Genus LARUS.

LARUS MINUTUS. The Little Gull.

One killed near New Ferry. Another at Formby. Rare.

LARUS RIDIBUNDUS. The Black-headed Gull.

Pretty frequent.

LARUS TRIDACTYLUS. The Kittiwake Gull.

Very common.

LARUS CANUS. The Common Gull.

Very abundant, frequenting meadows in stormy weather.

LARUS FUSCUS. The Lesser Black-backed Gull.

Rather scarce. A specimen caught upon a cod hook at Hoylake, 1852.

LARUS ARGENTATUS. The Herring Gull.

More common than the foregoing.

LARUS MARINUS. The Great Black-backed Gull.

Crosby.—*Mr. Butterworth.* Rarely shot, though often seen in flocks. *Mr. Mather* has had one about every March for three years.

Genus LESTRIS.

LESTRIS CATARRACTES. The Common Skua.

Seen occasionally. One shot at Bidston-cum-Ford, as he was making an attack upon some chickens.

LESTRIS POMARINUS. The Pomerine Skua.

Shot at Hoylake, September, 1852, by *Mr. H. Crump.*

LESTRIS RICHARDSONI. Richardson's Skua.

Shot in the river Mersey several times.—*Mr. Mather.*

Genus PROCELLARIA.

PROCELLARIA GLACIALIS. The Fulmar Petrel.

At Wallasey, 1854, in stormy weather during the spring.

Genus THALASSIDROMA.

THALASSIDROMA LEACHII. The Forked-tailed Petrel.

Has been often found. Two kept alive for three days by *Mr. Mather.*

THALASSIDROMA PELAGICA. The Storm Petrel.

Seen in stormy weather every winter.

CLASS 3.—REPTILIA.

Order SQUAMATA, (SAURIA.)

Family LACERTADÆ.

Genus LACERTA.

LACERTA AGILIS. Sand Lizard.

On the sand hills from West Kirby to New Brighton. At Seaforth, Crosby, and elsewhere.

Genus ZOOTOCA.

ZOOTOCA VIVIPARA. Viviparous Lizard. Common Lizard.

Bidston hill. Probably general.

Order SQUAMATA, (SAUROPHIDÆ.)

Family ANGUIDÆ.

Genus ANGUIS.

ANGUIS FRAGILIS. Blind Worm. Slow Worm.

At Bidston Hill, and most likely not rare in the district.

Order SQUAMATA, (OPHIDIA.)

Family COLUBRIDÆ.

Genus NATRIX.

NATRIX TORQUATA. Ringed Snake. Common Snake.

Not uncommon, though less frequent in Wirral now than formerly.

Family VIPERADÆ.

Genus PELIAS.

PELIAS BERUS. Common Viper. Adder.

One killed at Leasowe a few years ago.—*Mrs. Longueville.* At Kirby Moss.
—*Mr. Cameron.*

A M P H I B I A .

Order ANOURA.

Family RANADÆ.

Genus RANA.

RANA TEMPORARIA. Common Frog.

Very common.

Family BUFONIDÆ.

Genus BUFO.

BUFO VULGARIS. Common Toad. Paddock.

Everywhere common.

BUFO CALAMITA. Natter-jack Toad.

Bootle. Common. One taken at Oxton Hill, by Mr. Price, 1851, and another between Egremont and New Brighton, this year. In ditches about Leasowe. At Southport, Mr. Cameron informs me, it is more common than the ordinary Toad.

Order URODELA.

Family SALAMANDRADÆ.

Genus TRITON.

TRITON CRISTATUS. Common Warty Newt. Great Water Newt.
Frequently found in the roads after rain. In ponds, ditches, and under stones.

Genus LISSOTRITON.

LISSOTRITON PUNCTATUS. Common Smooth Newt. Small Newt. Eft,
or Evet.

In ponds and ditches; often abundant.

LISSOTRITON PALMIPES. Palmated Smooth Newt.

Three fine specimens of this rare reptile, caught by my children in a clear shallow stream at Upton, in 1851, lived for three months in a glass jar, amongst "Vallisneria Spiralis."

CLASS 4.—PISCES.

Order ACANTHOPTERYGII.

Family PERCIDÆ.

Genus PERCA.

PERCA FLUVIATILIS. The Perch.

In ponds and streams generally.

Genus LABRAX.

LABRAX LUPUS. The Basse. Sea Perch.

In the Dee and round the neighbouring coast.

Genus ACERINA.

ACERINA VULGARIS. The Ruffe, or Pope.

Caught in the Dee above Chester.—*Mr. Brockholes*. Streams in Lancashire which run into the Mersey.—*Mr. N. Cooke*.

Genus TRACHINUS.

TRACHINUS DRACO. Great Weever. Sting-bull.

I have seen a dried specimen hanging in a cottage at Hoylake, but it is not certain that it was taken within our district.

TRACHINUS VIPERA. Lesser Weever. Otter Pike. Sting-fish.

This fish is noted for the mischievous effects to the fishermen which follow punctures inflicted by spines which arise from their dorsal fins and opercula. In volume V. of the Proceedings of the Literary and Philosophical Society, I have endeavoured to describe a true poison apparatus which is lodged in grooves of the spines. Severe pain, often continued for three or four hours, always follows wounds, and in some instances deep seated suppuration takes place, leaving the hand or fingers permanently crippled.

Having urged upon the fishermen the practice of tying a tight ligature above the seat of punctures and sucking the wounds, which is now generally followed, the usual serious effects are less frequently seen.

With Hard Cheeks.

Genus TRIGLA.

TRIGLA CUCULUS. The Red Gurnard. Cuckoo Gurnard.
The least frequent of the three Gurnards taken round our shores.

TRIGLA HIRUNDO. The Sapphirine Gurnard.
Very common.

TRIGLA GURNARDUS. The Grey Gurnard.
About equally common.

Genus COTTUS.

COTTUS GOBIO. River Bullhead. Miller's Thumb.

Mr. Webster has caught them in the Dee, above Chester. Probably in other fresh water streams.

COTTUS BUBALIS. Father Lasher. Long-spined Cottus.
Caught occasionally in the Dee, and at the north of Wirral.

Genus ASPIDOPHORUS.

ASPIDOPHORUS EUROPEUS. Armed Bullhead. Pogge.
Constantly to be seen amongst the shrimpers' captures.

Genus SEBASTES.

SEBASTES NORVEGICUS. The Bergylt. Norway Haddock.

One given to me in 1851. The Hoylake fishermen had not seen the species before.

Genus GASTEROSTEUS.

GASTEROSTEUS TRACHURUS. The Rough-tailed Stickleback.

Waters in the Warrington district.—*Mr. N. Cooke.* In Wallasey Pool, where the water is more than brackish. The specimens from this locality seem to be little inconvenienced by being transposed from salt to fresh water or *vice versa* several times.

GASTEROSTEUS LEIURUS. Smooth-tailed Stickleback.
In ponds, streams, and ditches.

GASTEROSTEUS PUNGITIUS. Ten-spined Stickleback.
Common in ponds and ditches.

GASTEROSTEUS SPINACHIA. Fifteen-spined Stickleback.
Pools amongst rocks at Hilbre. At Caldy Blacks, and round the shores.

Family SPARIDÆ.

Genus PAGELLUS.

PAGELLUS CENTRODONTUS. Common Sea-beam.

This species, caught about our shores, is occasionally seen in the market.

Family SCOMBERIDÆ.

Genus SCOMBER.

SCOMBER SCOMBER. The Mackarel.
At times in considerable numbers.

Genus ZEUS.

ZEUS FABER. The Dory, or Doree.
Not rare.

Genus LAMPRIIS.

LAMPRIIS GUTTATUS. The Opah, or King-fish.

A specimen caught in the Dee in 1839, by a Hoylake fisherman. Mr. Mather informs me that another has been taken.

Family MUGILIDÆ.

Genus MUGIL.

MUGIL CAPITO. The Grey Mullet.

Caught in the Dee, at the north of Wirral, and elsewhere.

Family GOBIADÆ.

Genus MURÆNOIDES.

MURÆNOIDES GUTTATA. The Spotted Gunnell. Butter Fish.

Common in pools at low water, frequently caught in shrimp nets.

Genus GOBIUS.

GOBIUS NIGER. The Black Goby. Rock Goby, or Rock Fish.

I took a specimen in a pool at low ebb at Hilbre Island, 1851. Occasional, but by no means common.

GOBIUS MINUTUS. The Freckled, or Spotted Goby.

Constantly caught in shrimp nets. Plentiful in pools at the sea side.

Genus CALLIONYMUS.

CALLIONYMUS LYRA. The Gemmeous Dragonet.

This very beautiful fish is frequently brought in by the shrimpers of the coast.

Pectoral Fins Feet-Like.

Genus LOPHIUS.

LOPHIUS PISCATORIUS. Fishing Frog. Angler. Sea Devil.

Not uncommon. One of great size caught in the George's Dock in 1852.

A specimen of the red-throated Diver was given to me by a fisherman, who saw it swimming upon the surface of the water and suddenly disappear; immediately afterwards he hooked a "Sea Devil," and found the bird alive in his stomach.

Family LABRIDÆ.

Genus CRENILABRUS.

CRENILABRUS MELOPS. The Gilt Head. Connor. Golden Maid.

Rare. I have a specimen caught off Hoylake, 1850.

Genus SCIÆNA.

SCIÆNA RUPESTRIS. Jago's Goldsinny.

One caught near Hoylake this year.

Order MALACOPTERYGII.

(ABDOMINALES.)

Family CYPRINIDÆ.

CYPRINUS CARPIO. The Common Carp.

In ponds generally, and in the various streams of the district.

CYPRINUS AURATUS. The Gold Carp.

In the ponds of pleasure grounds, &c.

Genus GOBIO.

GOBIO FLUVIATILIS. The Gudgeon.

In the Alt river.—*Mr. Parke.* In the Leeds canal.—*Mr. Brockholes.* Streams in Lancashire which join the Mersey.—*Mr. N. Cooke.*

Genus TINCA.

TINCA VULGARIS. The Tench.

Common in ponds. In the Alt and Weaver rivers.

Genus ABRAMIS.

ABRAMIS BRAMA. The Bream. The Carp Bream.

In the rivers Weaver, Dee, and Alt. Also in ponds in Lancashire.

ABRAMIS BLICCA. The White Bream, or Bream Flat.

Taken in the river Weaver.—*Mr. N. Cooke.*

Genus LEUCISCUS.

LEUCISCUS RUTILUS. The Roach.

The common fish of our ponds, and of most streams in Lancashire and Wirral.

LEUCISCUS VULGARIS. The Dace, Dare, or Dart.

Ponds about Whitby, Cheshire. River Dee. Rare in the Weaver. *Mr. E. Parke* kindly supplied me with specimens from the river Alt, near Sephton, where they are called "Graining;" they were sent to *Mr. Yarrell*, who at once agreed that they were Dace.

LEUCISCUS LANCASTRIENSIS. The Graining.

Mr. Yarrell, quoting from *Pennant* (*British Fishes*, Vol. 1st, page 406,) gives "the Mersey near Warrington, and the river Alt which runs by Sephton," as the localities for this fish. *Mr. Y.* also remarks that "several streams in Burton Wood and Sankey which flow into the Mersey near Warrington, and others in or near the township of Knowsley which also form the Alt, produce the Graining in great numbers." By the kindness of *Mr. N. Cooke*, I have been put in possession of specimens of the true Graining from the Weaver, which differ much from the Dace (locally Graining) of the Alt, both in size and general appearance, together with other peculiarities which are well laid down in *Mr. Yarrell's* work. They are abundant in the streams about Warrington, whilst the Dace are extremely scarce there. Whether the Graining exists in the streamlets which go to form the Alt or not, I have not determined, but it is unlikely that they would be in the tributaries and not in the river itself. So far as I am able to decide, the Dace is common in the Alt but not in the Weaver, and the Graining is equally abundant in the Weaver though not in the Alt.

LEUCISCUS CEPHALUS. The Chub.

Taken in the Weaver.—*Mr. N. Cooke.*

LEUCISCUS ERYTHROPHthalmus. The Red-eye. Rudd.

Pits at West Derby, from which locality *Mr. N. Cooke* has stored reservoirs in the Warrington district.

LEUCISCUS CÆRULEUS. The Azurine. Blue Roach.

I have had two of this species kindly supplied me by *Mr. Parke* from a pit at Croxteth: they appear to tally more with our Roach (colour excepted) than with the Rudd, which last is a deeper fish in shape, and altogether more stunted and massive.

LEUCISCUS PHOXINUS. The Minnow.

Although generally believed to be in the district, I have never met with any person who has caught specimens.

Genus COBITIS.

COBITIS BARBATULA. Loach, Loche, or Beardie.

Taken in the Alt river; also in the Mersey and Dee.

Family ESOCIDÆ.

Genus ESOX.

ESOX LUCIUS. The Pike, Pickerell, Jack, Luce.

In a large piece of water near Gayton Mill. Alt. Rivers and meres in Lancashire.

Genus BELONE.

BELONE VULGARIS. The Garfish, Sea-pike, Mackerel Guide.

On the Wirral coast and off the Magazines, about the Mackerel season.

Family SALMONIDÆ.

Genus SALMO.

SALMO SALAR. The Salmon.

In the Dee, Mersey, and Alt rivers.

SALMO TRUTTA. The Salmon Trout.

Caught very rarely in the Alt.—*Mr. Parke*. Also in the Weaver.—*Mr. Cooke*.

SALMO FARIO. The Common Trout.

Very rarely in the Alt. Streams which join the Mersey.

Genus OSMERUS.

OSMERUS EPERLANUS. Smelt. Sparling.

Mr. Cameron found many in the Mersey, in the channel between the Garston Docks and the cast iron Church.

Genus THYMALLUS.

THYMALLUS VULGARIS. The Grayling.

Mr. Webster informs me that he has taken this species abundantly in the Dee.

Family CLUPEIDÆ.

Genus CLUPEA.

CLUPEA HARENGUS. The Herring.

Occasionally common.

CLUPEA SPRATTUS. The Sprat.

Common round the coast.

Genus ENGRAULIS.

ENGRAULIS ENCRASICOLUS. The Anchovy.

Fine specimens taken occasionally in the Dee and about the coast.

SUB-BRACHIAL MALACOPTERYGII.

Family GADIDÆ.

Genus MORRHUA.

MORRHUA VULGARIS. The Common Cod.

At times abundant about the Dee and north of Wirral. More rarely in the Mersey.

MORRHUA ÆGLEFINUS. The Haddock.

Common.

MORRHUA LUSCA. The Bib, Pout, or Whiting-pot.

Very frequent. The Hoylake fishermen apply the name of "Miller's Thumb" both to this species and the Pogge.

MORRHUA MINUTA. The Power, or Poor Cod.

Very abundant early in August this year, (1854,) as many as five or six having been seen in a single pool at ebb-tide. They have since increased greatly in numbers, poor persons gathering them in sufficient quantities for food. I have seen them also at Hilbre Island.

Genus MERLANGUS.

MERLANGUS VULGARIS. The Whiting.

Common.

MERLANGUS POLLACHIUS. The Pollack.

Caught, but not frequently, by the Hoylake fishermen.

Genus MERLUCIUS.

MERLUCIUS VULGARIS. The Hake.

Taken occasionally.

Genus LOTA.

LOTA MOLVA. The Ling.

About the coast. Rocks at Runcorn.—*Mr. N. Cooke.*

LOTA VULGARIS. The Burbot. Eelpout.

Caught in the Weaver.—*Mr. N. Cooke.*

Genus MOTELLA.

MOTELLA VULGARIS. The Three-bearded Rockling. Sea-loche. Whistle Fish.

Pretty frequently caught; seen at times in rock pools at low water. Runcorn.—*Mr. N. Cooke.*

MOTELLA QUINQUECIRRATA. The Five-bearded Rockling.

Taken in the Mersey near Hale.—*Mr. S. Archer.* Specimens have been given to me occasionally by the Hoylake fishermen, but they are less common than the last species.

Family PLEURONECTIDÆ.

Genus PLATESSA.

PLATESSA VULGARIS. The Plaice.

Very common on sandy and muddy ground.

PLATESSA FLESUS. The Flounder Flook.

Locally, "White Flook." Not so common: more frequent in brackish water and muddy bottoms. Mersey, Weaver, &c.

PLATESSA LIMANDA. Common Dab.

Pretty abundant, but not so common as Plaice. The fishermen call it "Garvin."

RHOMBUS LÆVIS CORNUBICUS. Lemon Dab. Smooth Dab.

The least common of the flat fishes of the coast. Found in hard, rough ground. It is confined to salt water. Called locally, "Sweet Flook."

PLATESSA LIMANDOIDES. Long Rough Dab.

Locally, "Ganny Flook." Found in about equal numbers with the "Smooth Dab;" rare near the shore, more frequent in deep water.

Genus HIPPOGLOSSUS.

HIPPOGLOSSUS VULGARIS. The Holibut.

The Hoylake fishermen take one or two in a year.

Genus RHOMBUS.

RHOMBUS MAXIMUS. The Turbot. Rawn Flook.

Caught rarely near the land, but frequently at a distance from shore.

RHOMBUS VULGARIS. The Brill. Bret.

Not uncommon.

RHOMBUS PUNCTATUS. Bloch's Topknot.

Two or three given to me in 1851, but the fisherman was not sure of the locality.

RHOMBUS MEGASTOMA. The Whiff. The Carter.

I have had two specimens, caught between the Dee's mouth and the Lightship, in 1851 and in 1853.

RHOMBUS ARNOGLOSSUS. The Scaldfish. Megrin, or Smooth-sole.

Young. One caught at the mouth of the Dee, 1852.

Genus SOLEA.

SOLEA VULGARIS. The Sole.

Very common.

SOLEA VARIEGATA. The Variegated Sole.

Mouth of the Dee, 1852. Specimens now and then.

Family CYCLOPTERIDÆ.

Genus CYCLOPTERUS.

CYCLOPTERUS LUMPUS. The Lump Sucker. Sea Owl, or Cock Paddle.

At Hilbre Island occasionally, and most likely all round the coast where there are patches of rock. "Caligus Mulleri" is parasitic upon it sometimes.

Genus LIPARIS.

LIPARIS VULGARIS. The Unctuous Sucker, or Sea Snail.

Very often taken in shrimp nets, and occasionally in pools at ebb tide.

APODAL MALACOPTERYGII.

Family MURÆNIDÆ.

Genus ANGUILLA.

ANGUILLA ACUTIROSTRIS. The Sharp-nosed Eel.

Common in ponds and streams.

ANGUILLA LATIROSTRIS. The Broad-nosed Eel.

In the same situations as the last species, but less common.

Genus CONGER.

CONGER VULGARIS. The Conger.

Under ledges of rock in the Dee, Mersey, and elsewhere.

Genus LEPTOCEPHALUS

LEPTOCEPHALUS MORRISII. The Anglesey Morris.

Mr. Studley Martin described a fish which he had taken at the Dingle but did not preserve, it appeared to tally exactly with Mr. Yarrell's account of this species. On referring Mr. M. to the figure and description in "British Fishes," he at once recognised the species as that which he had found.

Genus AMMODYTES.

AMMODYTES TOBIANUS. The Sand Eel. Hornels.

Common.

AMMODYTES LANCEA. The Sand Launce. Riggle.

Common.

LOPHOBRANCHII.

Family SYGNATHIDÆ.

Genus SYGNATHUS.

SYGNATHUS ACUS. The Great Pipe-fish.

Dee and north of Wirral. Formby.—*Mr. Cameron.*

SYGNATHUS ÆQUOREUS. Æquoreal Pipe-fish.

In the Dee, but not common.

SYGNATHUS ——— ?

Before making any record of the fishes of the coast I had seen one of the smaller species, which was probably "Typhle."

CHONDROPTERYGII.

Family STURIONIDÆ.

Genus ACIPENSER.

ACIPENSER STURIO. The Common Sturgeon.

Rare captures at the north of Wirral and in the Mersey.

Family SQUALIDÆ.

Genus SCYLLIUM.

SCYLLIUM CANICULA. The Small Spotted Dog-fish.

Frequently taken, to the fishermen's disappointment, upon the lines which are set for cod.

Genus GALEUS.

GALEUS VULGARIS. The Common Tope.

Mostly caught in the same manner as the above.

Genus ACANTHIAS.

ACANTHIAS VULGARIS. The Picked Dog-fish.

Commonly taken upon cod lines.

Genus SQUATINA.

SQUATINA ANGELUS. The Angel-fish. Monk-fish.

One thrown ashore after a storm.—*Mr. Price.*

Family RAIIDÆ.

Genus TORPEDO.

TORPEDO NOBILIANA. The New British Torpedo.

A specimen, which is stuffed and now in the Royal Institution Museum, was given to me in the summer of 1853, by one of the Hoylake fishermen.

Genus RAIJA.

RAIJA BATAIS. The Skate. Blue Skate.

This is the largest sized species, and the most esteemed for food about our coast. Very common, especially in winter, at the back of West Hoyle, and over the North Banks. Called locally "Blueit."

RAIJA MARGINATA. The Bordered Ray.

Liverpool is named as a locality for this fish in "Yarrell's British Fishes," Vol. 2, p. 564. The fishermen who have seen the figure, say that they have noticed this specimen but very rarely.

RAIJA MIRALETUS. The Homelyn Ray. Spotted Ray.

Not unfrequently brought in by the Hoylake men, taken about the entrance of the Dee and at the north of Wirral.

RAIJA CLAVATA. The Thornback.

Very common. Last year two immense specimens of Ray, the largest being nearly eight feet long and almost as broad, were taken at Hoylake. The skin was uniformly roughened by very small spines, having stellated bases. From an examination of a portion of the skin which was sent to Mr. Yarrell, that gentleman formed the opinion that it might belong to a female of "Clavata." The fishermen, who constantly catch Maiden Ray of smaller size, are strongly of opinion as to their being distinct from any of their ordinary captures, and the outline of the fish certainly corresponded more with one of the sharp nosed species. The under surface was whitish, with numerous mucous pores surrounded by dark spots. I should have been more particular in noticing details, had the fish been sent which was promised me.

Besides the species already named, the fishermen, when they have been shewn separately Yarrell's figures, invariably have fixed upon "Oxyrynchus," which they call "Bilner Ray," and "Spinosa," as having been taken, but very rarely.

Genus TRYGON.

TRYGON PASTINACA. Sting Ray. Trygon. Fire-flaire.

One caught near Hilbre, was given to me, 1851. Taken a few times, but rare.

Family PETROMYZIDÆ.

Genus PETROMYZON.

PETROMYZON MARINUS. The Lamprey.

Streams between Warrington and the Mersey.—*Mr. N. Cooke.*

PETROMYZON FLUVIATILIS. Lampern. River Lamprey.

River Dee, not common. In the Alt, scarce.—*Mr. Parke.* Mr. Brockholes saw another species in the Alt, (Planeri?) they were gregarious, twelve or fourteen together in gravelly shoals.

SUB-KINGDOM 2.—INVERTEBRATA.

CLASS MOLLUSCA.

ACEPHALA TUNICATA.

Family ASCIDIADÆ.

Genus ASCIDIA.

ASCIDIA SORDIDA.

Now and then found at Hilbre. Taken once or twice in the dredge. The fishermen bring it in rarely.

ASCIDIA ELLIPTICA.

I have met with it at Hilbre three or four times, attached to stones.

ACEPHALA LAMELLIBRANCHIATA.

Family PHOLADIDÆ.

Genus PHOLAS.

PHOLAS CRISPATA.

Abundant at Hilbre Island imbedded in the sandstone rock; also between Hilbre and Hoylake impacted in clay.

PHOLAS CANDIDA.

Common, burrowing in peat and clay, from Leasowe towards Hoylake. In clay a little north of Egremont slip. Formby shore also.

PHOLAS PAPYRACEA.

Woodside formerly. Locality now destroyed.—*Mr. Marratt.*

Family GASTROCHENIDÆ.

Genus SAXICAVA.

SAXICAVA ARCTICA.

Hilbre Island. Rare. Dredged young in the Channel, between Dove and Hoyle banks. A little east of Hoylake amongst stones, mud, and sea-weed. Also upon oysters at Hoylake.

Family MYADÆ (the Gaper Tribe.)

Genus MYA.

MYA TRUNCATA.

Found plentifully at low ebb opposite Hoylake, and more sparingly along most of the coast at the north of Wirral and up the Dee. Also dredged, small, occasionally in deeper water.

MYA ARENARIA.

Dead valves between Crosby and Formby.—*Mr. S. Archer.*

Family CORBULIDÆ.

Genus CORBULA.

CORBULA NUCLEUS.

Specimens, with a thick brown epidermis, dredged from amongst sandy mud, stones, and sea-weed, in the channel between Dove and Hoyle Banks. Dead valve, off Rock Lighthouse.—*Mr. Cameron.* A large number was given to me by a fisherman, who found them amongst the mud adhering to the "foot-rope" of his net. They differed from our former captures in being scarcely, if at all, covered by epidermis. They were of various colours, some uniformly whitish or lemon yellow, and others had beautiful radiations of a dark crimson or light pink hue upon a whitish ground. They were from the "slutch" of Formby channel.

Family SOLENIDÆ.

Genus SOLEN.

SOLEN SILIQUA.

Formerly found alive on the North Shore about Waterloo; locality destroyed.—*Mr. Cameron.* Dead shells occasionally picked up.

SOLEN ENSIS.

Abundant in the dead state on the North Shore and elsewhere, the valves united by their ligaments, with the epidermis entire, and containing remnants of the animals. Occasionally, in stormy weather, thrown up alive.

SOLEN PELLUCIDUS.

The same remarks apply to this species, but they are very much more rarely met with. Only on the North Shore.

Family SOLECURTIDÆ.

Genus CERATISOLEN.

CERATISOLEN LEGUMEN.

The remarks made respecting "Solen Ensis" are applicable here. Rather less abundant.

Family TELLINIDA.

Genus PSAMMOBIA.

PSAMMOBIA FERROENSIS.

Dead valves, of good colour, and still adherent by ligament; picked up at Formby, and upon other parts of the North Shore.

Genus TELLINA.

TELLINA DONACINA.

Two young specimens, dredged off the mouth of the Dee, August, 1852.—*Mr. Webster.*

TELLINA TENUIS.

Dead on the shores. Dredged in the Mersey off Eastham Wood, and at New Brighton, north of the slip.—*Mr. Cameron.* Alive, in the channel between Leasowe and Hoylake. Opposite the King's Gap, and near the Red Stones. North of Wirral, in sand and mud. Found alive also in Formby channel.

TELLINA FABULA.

Dredged in shelly sand off New Brighton.—*Mr. Cameron.* In sandy ground, north of Dove Bank, between Leasowe and Hoylake.

TELLINA SOLIDULA.

Abundant, in sand and mud, all round the coast.

Genus SYNDOSMYA.

SYNDOSMYA ALBA.

Dredged in shelly sand a little north of New Brighton slip. Also off Waterloo; near Formby Lightship, and close to buoy C 4.—*Mr. Cameron.* Dove Spit, in sandy ground. In sand and mud, opposite the King's Gap, Hoylake. Extremely common.

Genus SCROBICULARIA.

SCROBICULARIA PIPERATA.

In large numbers, imbedded in stiff blue clay, opposite the Royal Hotel, Hoylake; and, in a more scattered condition, along the Dee and Wirral shore. Between Egremont and New Brighton.

Family DONACIDÆ.

Genus DONAX.

DONAX ANATINUS.

A large bed of these shells upon the North Bank. Taken off New Brighton by *Mr. Cameron*; also north of Waterloo. It appears that these, and probably other gregarious Mollusks, after occupying one spot for a few years will remove to another, perhaps two or three miles from the original situation. The Black Duck or Scoter, as well as the different kinds of ray fish, feed upon this species. The presence of the former in large numbers becomes, therefore, a guide for the fishermen to the place where they may expect captures. Dredged in sand and shelly ground.

Family MACTRIDÆ.

Genus MACTRA.

MACTRA SOLIDA.

Along the Dee shore, and north of Wirral. This, and all the other species of Bivalve Mollusks, not sold for edible purposes, are called locally "hen-fish" by the fishermen.

MACTRA SUBTRUNCATA.

Taken, but not abundantly, opposite Hoylake and the Great Meols at low ebbs. Dredged, very scantily, by *Mr. Cameron*, between Hoylake and the Mersey.

MACTRA STULTORUM.

North of New Brighton. Dredged in shelly sand, dead, opposite the Dingle, by *Mr. Cameron.* Dove Spit. Is found alive, buried in the sand, north of Wirral, and up the Dee pretty freely.

Genus LUTRARIA.

LUTRARIA ELLIPTICA.

Dead valves. Crosby shore.

Family VENERIDÆ.

Genus TAPES.

TAPES DECUSSATA.

One or two valves between Leasowe and New Brighton.—*Mr. Marratt.*

TAPES PULLASTRA.

Hilbre Island, sometimes in the substance of the sandstone rock. In mud and clay nearer Hoylake. In these places they are yellowish, chalky, or stained of the clay colour. Variegated specimens sometimes at New Brighton rocks.

Genus VENUS.

VENUS STRIATULA.

May be taken pretty freely in the sand and in pools at low ebbs between Hoylake and Leasowe; mostly of uniform colour. Near Formby.

VENUS FASCIATA.

A dead shell dredged at the entrance of the Dee, 1852.—*Mr. Webster.*

VENUS OVATA.

Two or three dredged off the mouth of the Dee, 1852.

Genus ARTEMIS.

ARTEMIS EXOLETA.

Two, living, found by *Mr. Marratt* between Crosby and Formby.

ARTEMIS LINCTA.

One or two alive, in nearly the same situation as the former; both species washed up after stormy weather.—*Mr. Marratt.*

Genus LUCINOPSIS.

LUCINOPSIS UNDATA.

Valves united by ligament, and occasionally with portions of the animal; not unfrequent between Bootle and Formby boat-house.—*Mr. Cameron.*

Family CYPRINIDÆ.

Genus CYPRINA.

CYPRINA ISLANDICA.

Dead valves occasionally.

Family CARDIADÆ.

Genus CARDIUM.

CARDIUM ECHINATUM.

Frequent, dead, on the Formby shore: alive on the banks. Waterloo, seldom.

CARDIUM EDULE.

Upon sand-banks near Hilbre and along the Dee shore. More or less all round the neighbouring coast.

Family KELLIADÆ.

Genus MONTACUTA.

MONTACUTA FERRUGINOSA.

At Crosby and Formby, both living and dead.

MONTACUTA BIDENTATA.

Two living specimens, dredged in the "swash," between Hoylake and Hilbre.

Family CYCLADIDÆ.

Genus CYCLAS.

CYCLAS RIVICOLA.

In the canal near Liverpool. Also in the Ellesmere and Chester canal.

—*Mr. Cameron.* Very abundant.

CYCLAS CORNEA.

In most ponds. They vary greatly in size and shape in different localities.

The variety described under the name of "Cyclas Citrina," by Captain Brown, has been found in a pit at Upton by Mr. Webster.

CYCLAS CALICULATA.

In ponds near Upton. In a pond at the Carr, near the Tollgate, on the Hoylake road, and many other localities, but much less general than the former species. Pits near Zoological Gardens.

Genus PISIDIUM.

PISIDIUM PUSILLUM.

Not uncommon in ditches and ponds.

PISIDIUM CINEREUM.

In a small pond upon Bidston-hill.—*Messrs. Brockholes and Warrington.*

Bootle. In a pond between Upton and Woodchurch, by the fields.

PISIDIUM PULCHELLUM.

In ponds and ditches generally.

PISIDIUM HENSLOWIANUM.

In a small pit between Upton and Saughall-Massie.—*Mr. Webster.*

Family UNIONIDÆ.

Genus ANODONTA.

ANODONTA CYGNEA.

The variety "Cellensis" of Brown, very common and large in pits.

Variety "Complanata," in a brook below Greasby, Cheshire.

Variety "Avonensis?" in the Ford brook between Bidston Hill and Upton.

Scarce.

Another variety, probably "Ponderosa," but difficult to refer, more common than any others, and found in most of the pits in Wirral. Otterspool, Aigburth, is mentioned also by Brown as a locality for this variety.

Family MYTILIDÆ.

Genus DREISSENA.

DREISSENA POLYMORPHA.

In the Ellesmere, Leeds, and Liverpool Canals.—*Mr. Cameron.*

Genus MYTILUS.

MYTILUS EDULIS.

Large at Hilbre, Caldy Blacks, and the neighbouring rocks. In the Mersey opposite Eastham, both above and below the Old Slip: from opposite the middle of Eastham Wood to near Bromborough Pool, near in shore; the Muscles occupying the middle part of this space are thickly studded with Balani; the rest free. Woodside, opposite the Docks. Close in shore near the Dingle. Opposite Bootle Land-marks and lower down, young. Near Formby light-ship.—*Mr. Cameron.* Thickly set upon the Landing-stage and mooring-chains.

Genus MODIOLA.

MODIOLA MODIOLUS.

Rare at Hilbre, more plentiful between that island and the light-ship.

Genus CRENELLA.

CRENELLA MARMORATA.

Three or four dredged, in the "swash," between Hoylake and Hilbre.

Family ARCADÆ.

Genus NUCULA.

NUCULA NUCLEUS.

Dredged by *Mr. Cameron* near the Formby light-ship, and close to buoy C. 4, in black "slutch." Dead valves picked up round the shores now and then.

NUCULA NITIDA.

Dredged at the North of Wirral, opposite Wallasey Church; ground stony with a little sand.—*Mr. Cameron.*

Family OSTREADÆ.

Genus PECTEN.

PECTEN VARIUS.

Dead valves now and then on the North shore.—*Mr. Marratt.*

PECTEN MAXIMUS.

Single valves have been found round the shores, rarely.

PECTEN OPERCULARIS.

Pretty abundant upon a bank near the light-ship, called by the Hoylake fishermen the "Scallop bed." Taken in the dredge in other places, very scantily.

Genus OSTREA.

OSTREA EDULIS.

Dredged sparingly at the north of the Channel, between Dove Spit and West Hoyle. Hilbre. Hoylake. Small ones washed up by the tide between Formby and Southport.

Genus ANOMIA.

ANOMIA EPHIPIUM.

Found upon oysters on the shore.

GASTEROPODA PROSOBRANCHIATA.

Family CHITONIDÆ.

Genus CHITON.

CHITON CINEREUS.

Adhering to smooth stones in little pools at Hilbre, Caldy Blacks, along the North of Wirral, New Brighton, and Egremont, at ebb tide.

Family PATELLIDÆ.

Genus PATELLA.

PATELLA VULGATA.

Hilbre Island, tolerably plentiful. Sparingly at Woodside slip.

Family DENTALIADÆ.

Genus DENTALIUM.

DENTALIUM ENTALIS.

Dead, upon the North Shore and elsewhere.

Family TROCHIDÆ.

Genus TROCHUS.

TROCHUS ZIZYPHINUS.

Both dead and living, brought in occasionally by the Hoylake fishermen from deep water off the Dee's mouth and North of Wirral. Dead, between Crosby and Formby.—*Mr. Cameron.*

TROCHUS UMBILICATUS.

Once found in the dead state at Hilbre.—*Mr. Marratt.*

TROCHUS CINERARIUS.

Caldy Blacks, Hilbre, and Hoylake shore, sparingly. Dredged rather abundantly off the mouth of the Dee, and in deeper water at the North of Wirral; the shells often occupied by the living Mollusks, or more frequently by Soldier Crabs. New Brighton shore.

Family PALUDINIDÆ.

Genus PALUDINA.

PALUDINA LISTERI.

Moss ditches, Southport.

PALUDINA VIVIPARA.

In the canal from Ellesmere to Chester, near Mollington Bridge.—*Mr. Cameron.*

Genus BITHINIA.

BITHINIA TENTACULATA.

In pits all about the district, and in most of the slow running streams, generally and abundantly distributed.

Genus VALVATA.

VALVATA PISCINALIS.

In ponds, streams, and ditches. Common.

VALVATA CRISTATA.

In deep ditches between Leasowe and the Great Meols. Ditches and ponds in the fields between Upton and Greasby.—*Mr. Webster.* Pond below Noctorum.—*Mr. Cameron.*

Family LITTORINIDÆ.

Genus LITTORINA.

LITTORINA LITTOREA.

Abundant in rocky places.

LITTORINA RUDIS.

New Brighton rocks. Hilbre Island. Shore north of Wirral, near Leasowe Castle.

LITTORINA SAXATILIS.

New Brighton. Upon and about the Rock Lighthouse, amongst Balani and Muscles.

LITTORINA LITTORALIS.

In rocky places amongst Fuci.

Genus LACUNA.

LACUNA VINCTA.

One specimen taken in the dredge at the entrance of the Dee, 1852.—*Mr. Webster.*

LACUNA CRASSIOR.

Numerous specimens of rather small size were dredged north of the Dove Bank. They were invariably attached to "Alcyonidium Hirsutum." One of large size was dredged at the mouth of the Dee by *Mr. Webster.* Taken in the dredge by *Mr. Cameron,* off New Brighton.

Genus RISSOA.

RISSOA ULVÆ.

Very abundant upon the sandy flat between the Dee shore and Hilbre Island. In brackish water, of good size, in Bromborough Pool and other inlets. Everywhere along the North Shore.

RISSOA VITREA.

Has been found between Formby and Southport.—*Mr. Whitehead.*

Family TURRITELLIDÆ.

Genus TURRITELLA.

TURRITELLA COMMUNIS.

Dead, in the middle of the Mersey, opposite the Dingle.—*Mr. Cameron.* North of Wirral.

Family CERITHIADÆ.

Genus APORRHAIIS.

APORRHAIIS PES PELICANI.

A few dead specimens on the North Shore.—*Mr. Cameron.*

Family SCALARIADÆ.

Genus SCALARIA.

SCALARIA TURTONIS.

Dead shells, formerly abundant but now scarce, on the North Shore.—*Mr. Cameron.*

SCALARIA COMMUNIS.

Formerly common on the North Shore, now less so.

Family PYRAMIDELLIDÆ.

Genus EULIMA.

EULIMA SUBULATA.

Picked up occasionally, dead, at Southport and along the North Shore.

EULIMA POLITA.

Dead shells occasionally between Formby and Southport.—*Mr. Marratt.*

Family NATICIDÆ.

Genus NATICA.

NATICA MONILIFERA.

Specimens have often been given to me alive and kept so for a considerable time in sea water. They were taken in trawl nets at the north of Wirral. Along the North Shore.

NATICA NITIDA.

Dead shells found, from time to time, round the neighbouring shores, and taken in the dredge. Living specimens dredged by Mr. Webster between the Dee and the Light-ship.

Family MURICIDÆ.

Genus MUREX.

MUREX ERINACEUS.

Dead shells taken in the dredge occasionally.

Genus PURPURA.

PURPURA LAPILLUS.

Dredged in the Mersey, opposite Eastham Wood, in shelly sand and shingle. Near Bromborough Pool, in stony ground. New Ferry, near the hulks; also on the eastern side of the river near the Dingle.—*Mr. Cameron.* Caldy Blacks. New Brighton. Mr. Brockholes met with banded and imbricated varieties upon the shore near Bromborough.

Genus NASSA.

NASSA RETICULATA. Dead shells in the "Swash."

Rarely on the shore.

Genus BUCCINUM.

BUCCINUM UNDATUM.

In the Mersey, opposite Eastham Wood, off Birkenhead and Woodside Slips, past Bootle Landmark.—*Mr. Cameron.* North of Wirral, opposite Leasowe Castle. Hilbre Island and Caldy Blacks, abundant; ground stony.

Genus FUSUS.

FUSUS ANTIQUUS.

Dead shells and living specimens dredged north of Dove Bank, 1851. Dead shells all along the north shore.

Family CONIDÆ.

Genus MANGELIA.

MANGELIA TURRICOLA.

Dredged amongst seaweeds in rocky ground between the Red Noses and Dove Bank. Moderately abundant.

MANGELIA RUFÆ.

Equally as numerous as the last species, and in the same situations.

Family CYPRÆADÆ.

Genus CYPRÆA.

CYPRÆA EUROPEA.

Dead, once or twice on the north shore.

GASTEROPODA OPISTOBRANCHIATA.

Family BULLIDÆ.

Genus CYLICHNA.

CYLICHNA CYLINDRACEA.

Three or four dead specimens found by Mr. Marratt, near the second Bootle Landmark.

CYLICHNA OBTUSA.

Extremely abundant, burrowing in the sand, over the flat surface between the Dee Shore and Hilbre Islands. Small winding tracks may be seen in the sand, ending with slight elevations, immediately beneath which the animals may be found. Sometimes sparingly at Hilbre. North Shore, especially between Formby and Southport, mostly dead.

Genus TORNATELLA.

TORNATELLA FASCIATA.

Dead shells now and then upon the North Shore.—*Mr. Cameron.*

Genus SCAPHANDER.

SCAPHANDER LIGNARIUS.

Has been found very rarely, dead, upon the North Shore.

Genus PHILINE.

PHILINE APERTA.

Dead shells abundant and in good condition along the shores occasionally. Several living specimens were dredged at the north of Wirral, between Leasowe and Hoylake, in 1852; two were kept alive in sea water for three or four weeks.

Family DORIDIDÆ.

Genus DORIS.

DORIS TUBERCULATA.

This species has been pretty freely met with, sometimes of a lemon yellow colour, and sometimes variously mottled with brown, at Hilbre Island, Caldy Blacks, and the rocks at New Brighton.

DORIS JOHNSTONI.

I met with one specimen at Hilbre, 1851.

DORIS BILAMELLATA.

Rocks at Hilbre Island, where the large brown variety is sometimes plentiful. At New Brighton, also, occasionally. A smaller and lighter coloured variety is abundant on the dock wall at Woodside, and along the Cheshire side of the Mersey.

DORIS DEPRESSA.

I once met with a specimen of this small species at Hilbre Island.

DORIS PROXIMA.

This species was extremely common on the shore between Egremont and New Brighton in August this year. There is an account of it in the "Annals of Natural History," for August, 1854, by Messrs. Alder and Hancock. Mr. Alder, to whom specimens were sent, writes, "it was first discovered on Birkenhead shore by Mr. Price. The Doris is so like 'Aspera' that it requires a critical eye to distinguish it, but when the tongue of each is examined they are quite different." White and yellow varieties are met with. I have taken it freely at Hilbre Island also.

DORIS PILOSA.

At Hilbre Island, Caldy Blacks, and other rocky places round our shores. A deep purplish black variety has been met with at Hilbre, and I believe also on the Mersey shore.

DORIS SUBQUADRATA.

The single specimen from which the figure in Alder and Hancock's work was drawn was taken at Torquay. During a visit to Caldy Blacks, Mr. Webster and myself were fortunate enough to find a second, which was sent to Mr. Alder, by whom the species was confirmed; it was in company with "Doris Pilosa."

Genus POLYCERA.

POLYCERA LESSONI.

One dredged north of Wirral, 1852.—*I. B.*

POLYCERA OCELLATA.

Frequently taken at Hilbre, Egremont, and elsewhere.

Genus ANCULA.

ANCULA CRISTATA.

Taken frequently at Hilbre. Dredged north of Wirral. Estuary of the Mersey.—*Mr. Price.* Egremont shore.

Family TRITONIDÆ.

Genus TRITONIA.

TRITONIA HOMBERGI.

One specimen found at Hilbre by Mr. S. Archer. It has also been met with upon the western shore of the Mersey, near the entrance of the river. Its presence in these localities is rather remarkable, as it is a deep water species.

TRITONIA PLEBEIA.

Taken in the dredge at the north of Wirral.

Family EOLIDIDÆ.

Genus DENDRONOTUS.

DENDRONOTUS ARBORESCENS.

Very common at Hilbre until 1853, when it was seldom found. Plentiful about Woodside slip, and the adjoining stony ground.—*Mr. Price*. Pale yellow, and the more ordinary brown varieties are met with. Taken at New Brighton, 1854. Specimens small.—*Mr. Price*. It is by no means so abundant as in former years.

Genus DOTO.

DOTO CORONATA.

Taken once at Woodside.—*Mr. Price*.

Genus EOLIS.

EOLIS PAPILLOSA.

Rocky places round the neighbouring shores. Hilbre, Caldy Blacks, New Brighton, &c. A small variety, not a third part of the ordinary size, and of lighter colour, taken at Hilbre, and on the Egremont shore, 1854. This was published formerly by Messrs. Alder and Hancock, under the title of "Eolis Obtusalis," "but," Mr. Alder writes, "we have given it up as a species, and have united it with 'Papillosa.'"

EOLIS CORONATA.

Stony ground. Hilbre and elsewhere. Some of the specimens found on the Egremont shore, which were sent to Mr. Alder, were the darkest coloured that he had seen from any locality.

EOLIS DRUMMONDI.

The most common species of Eolis about the neighbourhood. Always to be obtained at Hilbre.

EOLIS LANDSBURGI.

Until 1849, when I was so fortunate as to find one of this species at Hilbre, only a single specimen had been discovered at Saltcoats. In June, 1853, I found, as I considered, another in the same locality, which tallied in every respect with the former, size excepted, being nearly double the length. It was forwarded to Mr. Alder, but did not get into his possession until it was partially decomposed. Mr. Alder writes, "From an examination of the remains and the *tongue* it might be 'E. Landsburgi.'"

EOLIS AURANTIACA.

At Hilbre once or twice. Mr. Price has taken it at Woodside and New Brighton.

EOLIS PICTA.

Found at Hilbre twice or thrice. Egremont shore, 1854.

Genus EMBLETONIA.

EMBLETONIA PALLIDA.

Discovered by Mr. Price upon Birkenhead shore. See "Annals of Natural History," August, 1854, where it is described by Messrs. Alder and Hancock. It differs from other British species in having a double row of papillæ at the sides.

Genus ANTIOPA.

ANTIOPA HYALINA.

In July, 1851, in company with Mr. Price, we each picked up a specimen of this new species at Hilbre Island. One was sent to Mr. Alder, but did not arrive in a living state. In August, this year, I found a very fine one within a few yards of the same locality, which fortunately got into Mr. Alder's possession alive. Messrs. Alder and Hancock's description of the animal, in the "Annals of Natural History," for August, 1854, runs thus, "Pellucid, yellowish, with brown markings down the middle of the back, branchiæ elliptical, tuberculated, hyaline, with the central vessel fulvous; dorsal tentacles obtuse, obscurely laminated, united by a crest; oral tentacles united by a narrow veil." The second specimen, Mr. Alder remarks, "was more mature, and in better condition than the first, and differs from it in the greater length and more pointed character of the dorsal tentacles. The papillæ are much attenuated and elongated above, with the point enlarged and obtuse. The gland is darker and a little branched. The tail is also more produced. Length, $\frac{3}{4}$ -inch." Mr. Hancock has kindly furnished a drawing of the animal with his usual high finish and faithfulness of nature, which, it is hoped, will be engraved for the present volume.

GASTEROPODA PULMONIFERA.

Family LIMACIDÆ.*Genus* ARION.

ARION EMPIRICORUM.

Damp lanes and meadows abundant.

ARION HORTENSES.

In gardens about Upton, and doubtless elsewhere.

Genus LIMAX.

LIMAX AGRESTIS.

Very general and plentiful.

LIMAX CINEREUS.

Not uncommon in gardens, cellars, and damp situations.

LIMAX ARBORUM.

Numerous at Upton in 1852, upon beech trees. They have not been seen since, though tracks have been observed upon the bark of the trees.

LIMAX FLAVUS.

In damp cellars not uncommon. Often found in publican's vaults.—*Mr. Cameron.*

Family HELICIDÆ.*Genus* VITRINA.

VITRINA PELLUCIDA.

Amongst moss, under stones, and at the roots of grass, in woods and hedges. Generally distributed. More readily found in spring.

Genus ZONITES.

ZONITES CELLARIUS.

Common in damp cellars, also amongst decaying wood, leaves, or other rubbish; in fields and hedges where there is moisture. General.



ANTIOPA HYALINA



ZONITES ALLIARIUS.

Under stones, amongst moss, &c. Very common.

ZONITES NITIDULUS.

Common amongst nettles, and in damp situations.

ZONITES RADIATULUS.

Thinly scattered at the roots of damp grass in meadows.

ZONITES NITIDUS.

Sparingly in a boggy ditch between Woodchurch and Noctorum.—*Mr. Webster.*

Also at Oxton Common on a boggy piece of water formerly a mill dam, near Huyton Collieries.—*Mr. Whitehead.*

ZONITES EXCAVATUS.

At the foot of Bidston Park wall.—*Mr. Webster.* Tolerably common in fields and lanes about the Dingle, Aigburth, and Garston.—*Mr. Cameron.*

ZONITES CRYSTALLINUS.

Under stones. Not uncommon.

Genus HELIX.

HELIX ASPERSA.

Very numerous.

HELIX ARBUSTORUM.

Abundant in boggy places between Woodchurch and Noctorum, and along the line of meadows leading by the Ford stream, sometimes, though rarely, in the Upton Road near the Ford Bridge. Near Liscard.—*Mr. S. Archer.* Found numerously in a ditch between Upper and Lower Tranmere.

HELIX NEMORALIS.

Common in hedge-rows. Very numerous upon the sand hills near the shore.

What is now termed a variety, "Hortensis," has been found in two very circumscribed localities, at Higher Tranmere by *Mr. Warrington*, and at Huyton by *Mr. Whitehead*. *Mr. Webster* endeavoured to introduce a colony of the latter in the Upton neighbourhood by placing 30 or 40 fine specimens in a hedge row; not even a vestige of them was ever seen afterwards.

HELIX CAPERATA.

Very common at the Little Meols, between Hoylake and the Dee shore. Local but abundant on the sand hills round the coast, more rarely inland. Good specimens have been found in a lane between the Wavertree Mill and the Church.—*Mr. Cameron.*

HELIX HISPIDA.

The variety "Concinna" of *Turton, Brown*, and others, general and common.

HELIX SERICIA.

Near Chester.

HELIX ACULEATA.

In damp places, amongst moss and leaves, and under stones.

HELIX FULVA.

A few amongst dead leaves and moss; also under stones, mostly in damp situations.

HELIX FUSCA.

On hedge banks, crawling, when damp, upon fern and brambles, or, if dry, at the roots of grass, between Upton and Moreton. Very local. Most commonly found in autumn, and occasionally in spring.

HELIX PULCHELLA.

Common amongst short grass and under stones on sand hills near New Brighton, and generally, though thinly diffused.

The ribbed variety, often described as a distinct species by the name "Crenella," abundant but local, near Saughall-Massie, and found sparingly in other places. Hilbre, Hoylake, &c.

HELIX ROTUNDATA.

Common under stones, and amongst moss or the roots of grass all round the district. The Crystalline white variety, without coloured streaks, was found by Mr. Webster, between Upton and Saughall-Massie.

HELIX PYGMÆA.

Not uncommon under leaves and stones, in damp spots and hedge rows.

Genus BULIMUS.

BULIMUS ACUTUS.

Very local. In a field a little to the west of Leasowe Lighthouse, upon a sandy bank amongst short grass. Less numerous at the Little Meols.

Genus PUPA.

PUPA UMBILICATA.

Common amongst dry leaves, and at the roots of hedge rows. On old walls in dry situations.

PUPA MUSCORUM.

Amongst short grass on the Leasowes and the pastures adjoining.

PUPA EDENTLUA.

Very rare. In a hedge-row between Upton and Saughall-Massie.—*Mr. Webster.*
River bank, New Ferry.—*Mr. Warrington.*

PUPA PYGMÆA.

Not uncommon under stones and broken bricks. In swampy ground near Oxton.—*Mr. Cameron.*

PUPA SUBSTRIATA.

Very rare. A few specimens found in the same situation as "Zonites Nitidus," near Woodchurch.—*Mr. Webster.*

PUPA ANTIVERTIGO.

Found rather more abundantly than the last in similar localities. Near Oxton, in a field on the way to Woodchurch; ground boggy.—*Mr. Cameron.*

Genus BALEA.

BALEA FRAGILIS.

Discovered upon willow trees, in Clifton Park, by Mr. Diggles.

Genus CLAUSILIA.

CLAUSILIA NIGRICANS.

Prenton Wood. Hedge-rows, near Rock Ferry. Bromborough. Park-gate. Most abundant on the clay banks of the Mersey, near New Ferry.

THE FAUNA OF LIVERPOOL.

Genus ZUA.

ZUA LUBRICA.

A common shell, found under stones, amongst damp moss and decaying leaves.

Genus SUCCINEA.

SUCCINEA PUTRIS.

Abundant along the brooks and damp ditches adjoining, crawls generally over surface leaves, more rarely immersed. The variety Pfeifferi, formerly a species, found upon nettles in a damp ditch near the Ford stream.

Family LIMNÆADÆ.

Genus PHYSA.

PHYSA FONTINALIS.

Common in ponds and ditches.

PHYSA HYPNORUM.

Common in ditches where there is generally a slight run of water.

Genus PLANORBIS.

PLANORBIS ALBUS.

General in ponds and ditches.

PLANORBIS GLABER.

Was abundant in 1850, in a ditch near Leasowe.—*Messrs. Cameron and Marratt.*

The district having been flooded by the inroad of salt water during the stormy weather at the latter part of that year, when the embankment was broken through, this species has disappeared.

PLANORBIS NAUTILEUS.

In ponds about Upton, at the Great Meols, and in many other situations.

PLANORBIS CARINATUS.

Very common.

PLANORBIS VORTEX.

Very common everywhere.

PLANORBIS SPIORBIS.

Abundant where it occurs, but more local than the last. In ponds between Upton and Woodchurch.

PLANORBIS CONTORTUS.

In deep ditches between Leasowe and Great Meols. In ponds abundantly between Runcorn Gap and Warrington.

PLANORBIS NITIDUS.

Abundant. Local.

PLANORBIS LACUSTRIS.

Formerly in a pond near Windsor. Doubtful in a pond at Oxtun along with "Planorbis Nitidus."

Genus LIMNÆUS.

LIMNÆUS PEREGER.

All the varieties in different ponds and ditches.

LIMNÆUS AURICULARIUS.

Ponds at Upton. Also at Upper Tranmere.—*Mr. Warrington.*

LIMNÆUS STAGNALIS.

In many ponds and ditches generally distributed.

LIMNÆUS TRUNCATULUS.

Plentiful and general in half dry ditches and water courses.

LIMNÆUS GLABER.

In a ditch between Saughall-Massie and Greasby, by the fields. Higher Tranmere. Formerly in a ditch near St. Clement's Church, Liverpool. Truncated specimens in a pond between Eastham and Willaston.—*Messrs. Cameron and Marratt.*

LIMNÆUS PALUSTRIS.

Not uncommon in pits and ditches.

Genus ANCYLUS.

ANCYLUS FLUVIATILIS.

Common on smooth stones in running water.

ANCYLUS OBLONGUS.

In many ponds adhering to dead flags and sticks. Often attached to the smooth parts of the stems of flags near the roots when pulled out of the water.

Family AURICULIDÆ.

Genus CONOVULUS.

CONOVULUS DENTICULATUS.

Has been found pretty freely at times in Bromborough Pool. It used to be in Wallasey Pool also, before the recent alterations.

Genus CARYCHIUM.

CARYCHIUM MINIMUM.

Common upon dead leaves, especially in shallow drains amongst shady plantations which are always damp.

CEPHALOPODA DIBRANCHIATA.

Family OCTOPODIDÆ.

Genus ELEDONE.

ELEDONE CIRRHOSUS.

Specimens furnished by fishermen from deep water round this coast from time to time.

Family TEUTHIDÆ.

Genus SEPIOLA.

SEPIOLA ATLANTICA.

Very abundant. Constantly brought in by shrimp catchers.

Genus LOLIGO.

LOLIGO MEDIA.

Not unfrequent.

Family SEPIADÆ.

Genus SEPIA.

SEPIA OFFICINALIS.

Mouth of the Dee and elsewhere, specimens taken by the fishermen now and then. Once in the Mersey, near the George's Dock. Ova sometimes found at Hilbre and upon other rocky places.

SUB-KINGDOM 3.—ARTICULATA.

CLASS CRUSTACEA.

DECAPODA.—BRACHYURA.

Family LEPTOPODIADÆ.

Genus STENORYNCHUS.

STENORYNCHUS PHALANGIUM. Long-legged Spider Crab.

Hilbre, New Brighton, and elsewhere. Taken in the dredge in deeper water.

Family MALADÆ.

Genus PISA.

PISA ————?

Mr. Marratt remembers having seen a species of this genus, but cannot determine which.

Genus HYAS.

HYAS ARANEUS.

Not unfrequent in tide pools at Hilbre and elsewhere. Taken also in the dredge.

Family CANCERIDE.

Genus CANCER.

CANCER PAGURUS. Great Crab.

Rather a plentiful species here but seldom of large size. Numerous at Hilbre. August, 1854.

Family PORTUNIDÆ.

Genus CARCINUS.

CARCINUS MÆNAS. Common Shore Crab. Harbour Crab.

Very common upon the shores everywhere.

Genus PORTUNUS.

PORTUNUS PUBER. Velvet Swimming Crab.

I have a specimen given to me by a Hoylake fisherman. Locality not certain.

PORTUNUS DEPURATOR. Cleanser Swimming Crab.

Common both in tide pools and in deeper water.

Family PINNOTHERIDÆ.

Genus PINNOTHERES.

PINNOTHERES PISUM.

Very common in Muscles and Modioli, the females from the latter are often very large.

Family GONOPLACIDÆ.

Genus GONOPLAX.

GONOPLAX ANGULATA. Angular Crab.

Specimens taken rarely in shrimp-nets.

Family CORYSTIDÆ.

Genus CORYSTES.

CORYSTES CASSIVELAUNUS. Masked Crab.

Once taken on the Egremont shore by Mr. A. Higginson. Dredged at the mouth of the Dee.

DECAPODA ANOMOURA.

Family PAGURIDÆ.

Genus PAGURUS.

PAGURUS BERNHARDUS. Hermit, or Soldier Crab.

Very common. In the shells of Buccinum, Littorina and others.

Family PORCELLANADÆ.

Genus PORCELLANA.

PORCELLANA PLATYCHELES. Hairy Porcelain Crab.

Frequently found at Hilbre, and dredged in deeper water. Specimens may be met with, occasionally, in rocky pools at low water. Seems to live for a long time in captivity, even with a small quantity of sea water.

PORCELLANA LONGICORNIS. Minute Porcelain Crab.

More abundant than the latter, and found in similar situations.

Genus GALATHEA.

GALATHEA SQUAMIFERA. Scaly Galathea.

In rocky tide pools occasionally, but more often in deeper water. Specimens mostly small.

DECAPODA MACROURA.

Family ASTICIDÆ.

Genus HOMARUS.

HOMARUS VULGARIS. Lobster.

Many years since one of this species was caught at Hilbre, by Mr. C. Robin. Some of the oldest fishermen remember that they were formerly caught there, but very rarely, as well as many other creatures now no longer found; the ledges between the rocks being more silted up with sand and affording less harbour.

Genus NEPHROPS.

NEPHROPS NORVEGICUS. Norway Lobster.

Three specimens taken by a Hoylake fisherman on the west side of the Dee's mouth, four years ago.

Family CRANGONIDÆ.

Genus CRANGON.

CRANGON VULGARIS. Common Shrimp.

Abundant.

Family PALÆMONIDÆ.

Genus HIPPOLYTE.

HIPPOLYTE SPINUS. Sowerby's Hippolyte.

One of this species, which is rare, was given to me by a fisherman, August, 1854.

HIPPOLYTE VARIANS. Varying Hippolyte.

In tide pools on the Egremont shore.

Genus PANDALUS.

PANDALUS ANNULICORNIS. Æsop Shrimp.

This species, which is the plentiful edible prawn (or locally "sprawn,") of our district, has often been mistaken for the young condition of the true one.

Genus PALÆMON.

PALÆMON SERRATUS. The Common Prawn.

By no means common. Sometimes the fishermen may bring in from twelve to twenty amongst a hamper full of the former species.

Family PENÆADÆ.

Genus PASIPHÆA.

PASIPHÆA SIVADO.

This, which appears to be a rare British species, has been given to me by a Dee fisherman. All the Hoylake men know it, and say that they may, on an average, meet with one in a week. The specimen is in the Royal Institution Museum.

DIVISION ENTOMOSTRACA.

LEGION BRANCHIOPODA.

Order CLADOCERA.

Family DAPHNIADÆ.

Sub-Family DAPHNINA.

Genus DAPHNIA.

DAPHNIA PULEX.

In various ponds and ditches; sometimes, when of a red colour and very numerous, giving the water quite a blood-like tinge.

DAPHNIA VETULA.

Occasionally met with both in Wirral and Lancashire. In ponds at Litherland and Scarisbrick.—*Mr. Weightman.*

DAPHNIA RETICULATA.

In a pond near Eastham, June, 1852.—*Mr. Weightman.*

DAPHNIA ROTUNDA.

Ponds in Lancashire.—*Mr. Weightman.* Also in Wirral.

Genus BOSMINA.

BOSMINA LONGIROSTRIS.

In the brook that divides Seaforth from Litherland.—*Mr. Weightman.*

Family LYNCEIDÆ.

Genus EURYCERCUS.

EURYCERCUS LAMELLATUS.

Ponds at Spital and Bromborough. May, 1852.—*Mr. Weightman.*

THE FAUNA OF LIVERPOOL.

Genus CHYDORUS.

CHYDORUS SPHÆRICUS.

Pond near Woodchurch, June, 1852. Has bred freely in my Vallisneria jar.—
Pond at Roby.—*Mr. Weightman.*

Genus ACROPERUS.

ACROPERUS NANUS.

Mr. Weightman met with one specimen at Aintree bearing most resemblance to this species, but larger than it is described in Baird's work.

Genus ALONA.

ALONA QUADRANGULARIS.

In the Litherland neighbourhood.—*Mr. Weightman.*

Genus PLEUROXUS.

PLEUROXUS TRIGONELLUS.

Tolerably plentiful in the same pond with the last species, but none of the specimens were striated as in the figures of Baird's "British Entomostraca."

Genus PERACANTHA.

PERACANTHA TRUNCATA.

Waterloo, October, 1851.—*Mr. Weightman.*

LEGION LOPHYROPODA.

Order OSTRACODA.

Family CYPRIDÆ.

Genus CYPRIS.

CYPRIS TRISTRIATA.

Frequent in ditches and ponds.

CYPRIS MONACHA.

Waterloo.—*Mr. Weightman.* Ponds and streams in Wirral.

CYPRIS FUSCA.

Ponds in Cheshire.

CYPRIS COMPRESSA.

Taken by Mr. Weightman. Locality forgotten.

CYPRIS MINUTA.

Roby, August, 1851.—*Mr. Weightman.*

CYPRIS ELLIPTICA.

Ponds in Lancashire.

CYPRIS ——— ?

Waste ground in the neighbourhood of Liverpool. October, 1851.

Genus CANDONA.

CANDONA REPTANS.

Found at Scarisbrick. August, 1851.—*Mr. Weightman.*

Family CYTHERIDÆ.

Genus CYTHERE.

CYTHERE AURANTIA.

In tide pools round the shores.

CYTHERE ——— ?

A species found by Mr. Weightman in May 1852, which he cannot refer to any described in Baird's Work.

Order COPEPODA.

Family CYCLOPIDÆ.

Genus CYCLOPS.

CYCLOPS QUADRICORNIS.

Common in most ponds and ditches; all the varieties are met with.

Genus CANTHOCAMPTUS.

CANTHOCAMPTUS MINUTUS.

Cheshire. Seaforth.—*Mr. Weightman.*

CANTHOCAMPTUS STROMII ?

New Brighton, in tide-pools, 1852.—*Mr. Weightman.*

CANTHOCAMPTUS FURCATUS.

Hilbre, and in pools amongst seaweeds round the coast.

Genus ARPACTICUS.

ARPACTICUS CHELIFER.

Not uncommon upon the shores of Wirral.

Genus ALTEUTHA.

ALTEUTHA DEPRESSA.

Found occasionally in the pools upon the shores.

Family DIAPTOMIDÆ.

Genus DIAPTOMUS.

DIAPTOMUS CASTOR.

In a pond between Eastham and Rock Ferry, May, 1852. Mr. Weightman met with specimens of a green variety at Roby, in August and September, 1851; and a male of a very large green variety from a ditch near Seaforth: it was very distinct from that caught at Roby, and much more beautiful.

LEGION PÆCILOPODA.

Order SIPHONOSTOMA.

Tribe PELTOCEPHALA.

Family CALIGIDÆ.

Genus CALIGUS.

CALIGUS RAPAX.

Parasitic upon the Sapphirine Gurnard.

CALIGUS MÜLLERI.

Attached in great numbers to a specimen of "Cyclopterus Lumpus," and upon a very large Thornback.

THE FAUNA OF LIVERPOOL.

Having no work of reference to the following division of the Crustacea, the twelve species below, which I have seen on the shores, are placed without arrangement.

ARCTURUS LONGICORNIS.

Dredged at the entrance of the Dee.

COROPHIUM LONGICORNIS.

In tide pools.

————— ?

Three specimens (unnamed) of a Crustacean with long antennæ, and about an inch and a-half in length, taken at Hilbre, September, 1854.

TALITRUS LOCUSTA.

Abundant in tide pools and everywhere round the coast.

GAMMARUS PULEX.

In fresh water streams and ponds.

————— ?

A small, dark coloured, very active species, mostly swimming on its back, often plentiful in sea water.

CAPRELLA PHASMA.

Very plentiful amongst sea weeds, zoophytes and sponge at Hilbre, and elsewhere.

LIGIA OCEANICA.

Sparingly at Hilbre and Egremont.

LIGIA ————— ?

Three specimens taken at Hilbre, August, 1854. Name not determined.

LIMNORIA TEREBRANS.

The wooden piles of the Rock lighthouse are completely drilled by this species.

NYMPHON GRACILE.

In most rocky pools at Hilbre, New Brighton, &c.

PYCNOGONUM LITTORALE.

Is often abundant amongst seaweed and zoophytes, where there are patches of rock.

DIVISION CIRRIPIEDIA.

Family LEPADIDÆ.—PEDUNCULATED CIRRIPEDES.

Genus LEPAS.

LEPAS ANATIFERA.

Genus CONCHODERMA.

CONCHODERMA AURITA.

CONCHODERMA VIRGATA.

The three foregoing species seen on ships' bottoms in the Graving Docks occasionally. Always of foreign origin.

SESSILE CIRRIPEDES.

Family BALANIDÆ.

Genus BALANUS.

BALANUS SCOTICUS.

Mostly attached to Modioli.

BALANUS RUGOSUS.

Very abundant, attached to seaweed, shells, sea walls, &c. Thickly set upon the Rock Lighthouse.

BALANUS CLAVATUS.

Not so common. In the clefts of the wooden piles about piers, &c.

BALANUS COMMUNIS.

Upon Buccinum and other shells.—*Mr. Marratt.*

BALANUS BALANOIDES.

Attached to smooth stones, pieces of slate, &c., upon the shores.

CLASS INSECTA.

Order LEPIDOPTERA.

RHOPALOCERA.

Genus PIERIS.

PIERIS BRASSICÆ.

Very common.

PIERIS RAPÆ.

Plentiful.

PIERIS NAPI.

Very common. *Mr. Almond* found a Crysalis upon the stem of a snow-drop, early in February.

Genus ANTHOCARIS.

ANTHOCARIS CARDAMINES.

Female much less common than the male: she may frequently be mistaken for one of the smaller whites.

Genus COLIAS.

COLIAS EDUSA.

One taken at Upton.—*Mr. Webster.* Has been found at New Brighton. South Lancashire, occasionally. As this insect is exceedingly rare, and generally found where clover grows, it is probably imported in forma ovi, amongst clover seeds. Seldom on the following year in the same locality.

Genus THECLA.

THECLA RUBI.

Jackson's Wood, Claughton; rare. One specimen only reported to have been taken.

Genus CHRYSOPHANUS.

CHRYSOPHANUS PHLÆAS.

Very general.

Genus POLYOMMATUS.

POLYOMMATUS ÆGON.

Has been found in Jackson's Wood, but principally upon the northern part of Bidston Hill, where it is plentiful.

POLYOMMATUS ALEXIS.

Very common everywhere.

Genus ARGYNNIS.

ARGYNNIS AGLAJA.

Stated to have been taken upon the sand-hills at New Brighton.

ARGYNNIS SELENE.

Said to have been found at Eastham.

Genus MELITÆA.

MELITÆA ARTEMIS.

Fields at Eastham.—*Mr. Samuel Archer.* In the district between Crosby and Lydiate.

Genus VANESSA.

VANESSA CARDUI.

Plentiful during some seasons, and scarce at others.

VANESSA ATALANTA.

Occasionally plentiful.

VANESSA IO.

Very general; much more common some seasons than others.

VANESSA URTICÆ.

Very common.

VANESSA POLYCHLOROS.

In Brunswick-road, Liverpool, a few years ago.—*Mr. Benjamin Cooke.*

VANESSA C. ALBUM.

One specimen taken at Tranmere.—*Mr. Diggles.*

Genus SATYRUS.

SATYRUS SEMELE.

Local, but plentiful at New Brighton and Bidston Heath. Waterloo and Crosby, common.

SATYRUS JANIRA.

Common in grass fields.

SATYRUS TITHONUS.

Abundant.

SATYRUS MEGÆRA.

Very common.

SATYRUS ÆGERIA.

Not common. Occasionally found in woody places.

SATYRUS DAVUS.

Has been taken in a damp moor at Simon's Wood.

SATYRUS PAMPHILUS.

Common everywhere.

Genus STEROPES.

STEROPES PANISCUS.

Said to have been found beyond New Ferry.

THE FAUNA OF LIVERPOOL.

Genus PAMPHILA.

PAMPHILA LINEA.

Eastham. Near Bidston. Very rare.

PAMPHILA SYLVANUS.

Rock Ferry.—*Mr. S. Archer.*

Genus THANAOS.

THANAOS TAGES.

Rock Ferry. Prenton Wood.—*Mr. Almond.*

HETEROCERA.

SPHINGES.

Genus TROCHILIUM.

TROCHILIUM TIPULIFORMIS.

Taken at West Derby.—*Mr. N. Cooke.*

Genus ÆGERIA.

ÆGERIA BEMBICIFORMIS.

Common where poplars abound.

Genus SESIA.

SEZIA FUCIFORMIS.

Has been taken at New Brighton. Rare.

Genus MACROGLOSSA.

MACROGLOSSA STELLATARUM.

Occasional specimens found upon sand hills, principally where the "yellow bed straw" grows.

Genus CHÆROCAMPA.

CHÆROCAMPA PORCELLUS.

Plentiful, especially in the larva state at New Brighton. More rarely inland.

CHÆROCAMPA ELPENOR.

About Bidston. Larvæ in moderate plenty, and where "Epilobium Hirsutum" grows abundantly.

Genus DEILEPHILA.

DEILEPHILA EUPHORBIAE.

One taken at Formby in the larva state.

DEILEPHILA GALII.

In the neighbourhood of Liverpool.—*Mr. N. Cooke.*

DEILEPHILA LINEATA.

Near Liverpool.—*Mr. N. Cooke.*

Genus SPHINX.

SPHINX CONVULVULI.

Rare: occasional specimens found in various localities.

THE FAUNA OF LIVERPOOL.

Genus ACHERONTIA.

ACHERONTIA ATROPOS.

Not uncommon in the larva state, but difficult to rear. In potato fields.

Genus SMERINTHUS.

SMERINTHUS OCELLATUS.

Common upon willows, as a larva; seldom taken in the perfect state.

SMERINTHUS POPULI.

Common both in the larva and imago condition.

Genus ANTHROCERA.

ANTHROCERA FILIPENDULÆ.

Common everywhere.

ANTHROCERA LONICERÆ.

New Brighton.—*Mr. N. Cooke.*

ANTHROCERA TRIFOLII.

Said to be taken at Hale; in some plenty. Bidston Marsh.—*Mr. N. Cooke.*

BOMBYCES.

Genus EUHELIA.

EUHELIA JACOBÆ.

Common on the New Brighton and Crosby sand-hills.

Genus LITHOSIA.

LITHOSIA COMPLANA.

One specimen taken at Tranmere by Mr. Diggles.

LITHOSIA COMPLANULA.

Taken at Bromborough and Eastham.

LITHOSIA MESOMELLA.

Rixton Moss.—*Mr. N. Cooke.*

Genus NUDARIA.

NUDARIA MUNDANA.

Tranmere. In hedges where "Linaria Communis" abounds, but not frequent.

Genus EUTHEMONIA.

EUTHEMONIA PLANTAGINIS.

A single specimen captured at Oxton.

Genus ARCTIA.

ARCTIA VILICA.

Two larvæ, believed by Mr. Diggles to be of this species, were captured at Landican a few years ago.

ARCTIA CAJA.

Very common.

Genus PHRAGMATOBIA.

PHRAGMATOBIA FULIGINOSA.

Generally distributed; larvæ plentiful; perfect insect seldom taken.

THE FAUNA OF LIVERPOOL.

PHRAGMATOBIA LUBRICEPEDA.

Very frequent.

PHRAGMATOBIA MENTHRASTI.

Everywhere.

PHRAGMATOBIA MENDICA.

One specimen taken at Tranmere.—*Mr. Diggles.*

Genus LIPARIS.

LIPARIS SALICIS.

Plentiful at Bidston, about willows. New Brighton.—*Mr. Brockholes.*

LIPARIS AURIFLUA.

Everywhere; about hedges.—*Mr. N. Cooke.*

LIPARIS CHRYSORRHŒA.

Everywhere.

Genus ORYGIA.

ORYGIA PUDIBUNDA.

Very general.

ORYGIA FASCELINA.

New Brighton. Moreton.—*Mr. Brockholes.* Crosby; very common. They have been found abundantly as larvæ, but seldom as perfect insects.

ORYGIA ANTIQUA.

Very general, and abundant.

Genus CLYSIOCAMPA.

CLYSIOCAMPA NEUSTRIA.

Between Moreton and Upton. Larvæ.

Genus ERIOGASTER.

ERIOGASTER LANESTRIS.

Upton and elsewhere; generally distributed. Larvæ.

Genus PÆCILOCAMPA.

PÆCILOCAMPA POPULI.

Bidston, Claughton. Principally taken at light; female very rare.

Genus LASIOCAMPA.

LASIOCAMPA RUBI.

Plentiful as larvæ everywhere; insect occasionally taken flying.

LASIOCAMPA QUERCUS.

Similar to the former.

LASIOCAMPA ROBORIS.

Considered to be a variety of Quercus, and found under similar circumstances.

LASIOCAMPA TRIFOLII.

New Brighton. Plentiful as larvæ.

Genus ODONESTIS.

ODONESTIS POTATORII.

Very common.

THE FAUNA OF LIVERPOOL.

Genus SATURNIA.

SATURNIA CARPINI.

Generally distributed, especially upon heathy places.

Genus COSSUS.

COSSUS LIGNIPERDA.

Larvæ abundant, but very difficult to rear. Perfect insect consequently scarce.

Genus HEPIALUS.

HEPIALUS HUMULI.

Very common.

HEPIALUS VELLEDA.

Eastham.—*Mr. Diggles.* Bromborough.—*Mr. Warrington.*

HEPIALUS SYLVINUS.

Common.

HEPIALUS LUPULINUS.

Very general.

HEPIALUS HECTUS.

Bromborough, plentiful.

Genus CILIX.

CILIX SPINULA.

Generally distributed.

Genus PLATYPTERYX.

PLATYPTERYX FALCULA.

Rixton Moss.—*Mr. N. Cooke.*

Genus CERURA.

CERURA FURCULA.

On this side of Warrington.—*Mr. N. Cooke.*

CERURA BIFIDA.

Tranmere, Prenton, New Brighton, Birkenhead, and elsewhere.

CERURA VINULA.

Common upon poplars and willows.

Genus PETASIA.

PETASIA CASSINEA.

On this side of Warrington.—*Mr. N. Cooke.*

Genus NOTODONTA.

NOTODONTA CAMELINA.

Tranmere, Rock Ferry, and Bidston. Two or three specimens found in a season.

NOTODONTA DICTÆA.

Not uncommon in the Birkenhead district. Wallasey.—*Mr. Brockholes.*

NOTODONTA DICTÆOIDES.

Bidston. Rare as larvæ upon birches. Two perfect insects taken by Mr. Almond.

NOTODONTA DROMEDARIUS.

One specimen captured in Jackson's Wood, Claughton.—*Mr. Diggles.* Bidston Plantation.

NOTODONTA ZICZAC.

Taken at light, and occasionally bred from larvæ.

NOTODONTA CHAONIA.

Eastham Wood.—*Mr. N. Cooke.*

Genus DILOBA.

DILOBA CÆRULEOCEPHALA.

Tranmere, taken at lamps. Not common. At Bidston Lighthouse several have been taken by Messrs. Almond and Brockholes.

Genus PYGÆRA.

PYGÆRA BUCEPHALA.

Very plentiful in the larva, but less so in the perfect state.

NOCTUÆ.

Genus SEMAPHORA.

SEMAPHORA PSI.

Very frequent.

SEMAPHORA TRIDENS.

Near Warrington.—*Mr. N. Cooke.*

Genus APATELA.

APATELA LEPORINA.

Oxton. Two larvæ captured by Mr. Diggles, one was bred.

Genus ACRONYCTA.

ACRONYCTA ALNI.

On this side Warrington.—*Mr. N. Cooke.*

ACRONYCTA MENYANTHIDIS.

On the mosses.—*Mr. N. Cooke.*

ACRONYCTA MEGACEPHALA.

Not unfrequent.

ACRONYCTA RUMICIS.

Common.

ACRONYCTA SALICIS.

On this side Warrington.—*Mr. N. Cooke.*

Genus DIPHTHERA.

DIPHTHERA ORION.

Eastham. Two specimens.

Genus CEROPACHA.

CEROPACHA RIDENS.

Dunham Park.—*Mr. N. Cooke.*

CEROPACHA FLAVICORNIS.

Bidston.

CEROPACHA DILUTA.

Tranmere. One specimen.—*Mr. Diggles.*

THE FAUNA OF LIVERPOOL.

CEROPACHA DUPLARIS.

Prenton, Rock Ferry. Not common.

Genus BRYOPHILA.

BRYOPHILA PERLA.

Common on mossy walls.

Genus CARADRINA.

CARADRINA MORPHEUS.

Generally distributed, but far from common. Plentiful at New Brighton.—

Mr. Brockholes.

CARADRINA CUBICULARIS.

Very plentiful.

CARADRINA BLANDA.

Not unfrequent on Ragwort flowers. At New Brighton, and probably along the coast. Captured at syrup also.

Genus GRAMMESIA.

GRAMMESIA TRILINEA.

Taken plentifully at sugar.

Genus LEUCANIA.

LEUCANIA LITHARGYRIA.

Taken occasionally attracted by syrup, also flying over heath.

LEUCANIA CONIGERA.

A single specimen at Rock Ferry.—*Mr. Almond.*

LEUCANIA PUDORINA.

Reputed to be taken on Bidston Marsh.

LEUCANIA COMMA.

Taken at syrup, at Rock Ferry, Bidston, and New Brighton. Pretty plentiful.

LEUCANIA LITTORALIS.

Confined to sand hills. May be bred freely from larvæ, but the perfect insects are hidden in the melgrass. May be taken at night when flying.

LEUCANIA IMPURA.

Exceedingly common.

LEUCANIA PALLENS.

Equally common with the former.

LEUCANIA CRASSICORNIS.

Occurs freely upon the flowers of "Arundo Phragmitis."

Genus NONAGRIA.

NONAGRIA FULVA.

Taken occasionally about ponds. Not scarce.

NONAGRIA TYPHÆ.

Common amongst bulrushes.

Genus GORTYNA.

GORTYNA FLAVAGO.

In some seasons it is taken plentifully at light.

THE FAUNA OF LIVERPOOL.

Genus HYDRÆCIA.

HYDRÆCIA MICACEA.

Taken under the same circumstances as the former, perhaps more plentifully.

HYDRÆCIA NICTITANS.

Claughton, one specimen.—*Mr. Brockholes.*

Genus MIANA.

MIANA LITEROSA.

Tolerably plentiful upon Ragwort flowers at New Brighton, Bidston Marsh, and elsewhere.

MIANA FURUNCULA.

Plentiful upon the New Brighton sand hills. Bidston Marsh.

MIANA F'ASCIUNCULA.

Common, subject to great variation of colour.

MIANA STRIGILIS.

This, like the former, is a common and very variable insect.

MIANA ARCUOSA.

Bidston Marsh. Rather rare.

Genus APAMEA.

APAMEA DIDYMA.

Very plentiful.

APAMEA UNANIMIS.

Rare. New Brighton, Tranmere, and Bidston Marsh.

APAMEA GEMINA.

Pretty general.

Genus LUPERNIA.

LUPERNIA CESPITIS.

Rare. New Brighton.—*Mr. Almond.*

LUPERNIA TESTACEA.

Very common.

LUPERNIA BASILINEA.

Very general.

LUPERNIA INFESTA.

Scarce. New Brighton. A few specimens taken in 1853 and 1854, by Messrs. Brockholes, Warrington, and Almond.

LUPERNIA ABJECTA.

One specimen at New Brighton.—*Mr. Almond.* Two taken in Jackson's Wood at syrup.—*Messrs. Almond and Warrington.*

LUPERNIA ALBICOLON.

Common on the New Brighton sand hills.

Genus CRYMODES.

CRYMODES TEMPLI.

One specimen taken by Mr. Brockholes at the Bidston Lighthouse.

THE FAUNA OF LIVERPOOL.

Genus XYLOPHASIA.

XYLOPHASIA RUREA.

Very plentiful everywhere.

XYLOPHASIA LITHOXYLEA.

Not uncommon.

XYLOPHASIA POLYODON.

In great profusion.

Genus TRIPHÆNA.

TRIPHÆNA PRONUBA.

Equally abundant with the former.

TRIPHÆNA ORBONA.

Plentiful and general.

TRIPHÆNA FIMBRIA.

New Brighton. Claughton. Not very frequent.

TRIPHÆNA JANTHINA.

Pretty general, but not abundant.

TRIPHÆNA INTERJECTA.

Tranmere. New Brighton. Rather rare.

Genus CERIGO.

CERIGO CYTHEREA.

Rock Ferry. Claughton. Bidston Marsh. Occurring plentifully, but seldom taken in perfection.

Genus SEGETIA.

SEGETIA XANTHOGRAPHA.

Excessively common.

Genus RUSINA.

RUSINA TENEBROSA.

One specimen taken flying at Bidston. Two at New Brighton at syrup.—
Mr. Brockholes. 1854.

Genus NOCTUA.

NOCTUA UMBROSA.

Very plentiful at Bidston, and generally distributed. At Ragwort flowers.

NOCTUA BELLA.

A common insect, found under the same circumstances as the former.

NOCTUA BAJA.

Not common in the neighbourhood. Several specimens reared from larvæ taken at Tranmere by Messrs. Brockholes and Almond. Common at New Brighton in 1853.

NOCTUA FESTIVA.

Common, especially in heathy places.

NOCTUA BRUNNEA.

Dacre Park, Rock Ferry. Not a common insect.

NOCTUA C. NIGRUM.

In various localities, but not abundant. Principally taken at lamps. Freely at syrup, in June, 1854, at New Brighton.—*Mr. Brockholes.*

Genus CHERSOTIS.

CHERSOTIS PLECTA.

Very abundant, especially about brambles.

CHERSOTIS PORPHYRÆA.

Jackson's Wood, Claughton. Common on heath.

CHERSOTIS HAWORTHI.

Mosses on this side Warrington.—*Mr. N. Cooke.*

CHERSOTIS AGATHINA.

In the same situations.—*Mr. N. Cooke.*

Genus SPÆLOTIS.

SPÆLOTIS AUGUR.

Common.

SPÆLOTIS PRÆCOX.

New Brighton sand hills. Somewhat rare.

Genus AGROTIS.

AGROTIS SAUCIA.

Bidston. Jackson's Wood. Very rare.

AGROTIS SUFFUSA.

Very plentiful in some seasons.

AGROTIS SEGETUM.

Common at all times.

AGROTIS CORTICEA.

Oxton. Rare. New Brighton.—*Mr. Brockholes.*

AGROTIS EXCLAMATIONIS.

General and abundant.

AGROTIS FUMOSA.

New Brighton. Bred from larvæ by *Mr. Diggles.*

AGROTIS TRITICI.

Very common. New Brighton sand hills.

AGROTIS AQUELINA.

Has been captured very rarely at New Brighton.

AGROTIS CURSORIA.

Found in company with "Tritici" and the following on the New Brighton sand hills in plenty.

AGROTIS VALLIGERA.

Common on Ragwort flowers. New Brighton.

AGROTIS CINEREA.

New Brighton.—*Mr. N. Cooke.*

AGROTIS PUTA.

New Brighton.—*Mr. N. Cooke.*

AGROTIS PUTRIS.

Generally distributed. Common.

THE FAUNA OF LIVERPOOL.

Genus CERAPTERYX.

CERAPTERYX GRAMINIS?

New Brighton.

Genus HELIOPHOBUS.

HELIOPHOBUS POPULARIS.

Taken for the first time in some plenty, at light (1852) in Clifton Park.

Genus TRACHEA.

TRACHEA PINIPERDA.

Storeton. Jackson's Wood. Upon Scotch Fir not uncommon. Also at Bidston.

Genus TÆNIOCAMPA.

TÆNIOCAMPA GOTHICA.

Very general on Sallow blossoms.

TÆNIOCAMPA RUBRICOZA.

Taken pretty freely upon Sallow blossoms.

TÆNIOCAMPA OPIMA.

Rare. Several specimens taken this spring by Mr. Almond. At Bidston and Leasowe in 1854.—*Mr. Brockholes.*

TÆNIOCAMPA INSTABILIS.

Very common at light.

TÆNIOCAMPA STABILIS.

Very plentiful upon Sallow blossoms.

TÆNIOCAMPA MUNDA.

Rare. One specimen taken for the first time at Eastham Wood by Mr. Almond.

TÆNIOCAMPA GRACILIS.

Rare. In the same situations. A few specimens in various localities.

TÆNIOCAMPA CRUDA.

Bidston.—*Mr. Almond.* On sallows, Eastham Wood.

Genus ORTHOSIA.

ORTHOSIA YPSILON.

Bidston. Rare. Eighteen specimens taken at New Brighton by Mr. Brockholes in 1853.

ORTHOSIA LOTA.

Not common. Pretty generally distributed.

ORTHOSIA MACILENTA.

Bidston.—*Mr. Almond.* Rock Ferry.—*Mr. Brockholes.* Very rare.

Genus ANTHOCELIS.

ANTHOCELIS LUNOSA.

Common some seasons.

ANTHOCELIS LITURA.

Tolerably abundant everywhere.

ANTHOCELIS PISTACINA.

In some seasons extremely plentiful.

THE FAUNA OF LIVERPOOL.

Genus SCOLIOPTERYX.

SCOLIOPTERYX LIBATRIX.

Not common, but generally distributed in Wirral.

Genus TETHEA.

TETHEA RETUSA.

Upton.—*Mr. Webster.*

TETHEA SUBTUSA.

General amongst Poplars, but not plentiful.

Genus EUPERIA.

EUPERIA TAPETZINA.

Jackson's Wood and Claughton. Not common.

Genus XANTHIA.

XANTHIA FERRUGINEA.

Very abundant.

XANTHIA RUFINA.

Bidston Plantation. Not common.—*Mr. Almond.*

XANTHIA SILAGO.

Tolerably frequent upon Reed flowers at Bidston.

XANTHIA CERAGO.

Occurs even more plentifully than the last upon Ragwort flowers.

XANTHIA CITRAGO.

Oxton. Rock Ferry. Rather scarce.

Genus GLÆA.

GLÆA SPADICEA.

Common everywhere.

GLÆA VACCINII.

Frequent in Bidston Plantation, also at Eastham Wood.—*Mr. Brockholes.*

Genus SCOPELOSOMA.

SCOPELOSOMA SATELLITIA.

Bidston, Eastham Wood, and elsewhere plentiful.

Genus MISELIA.

MISELIA OXYACANTHÆ.

In some seasons very plentiful.

Genus CHARIPTERA.

CHARIPTERA APRILINA.

Bidston, Rock Ferry, and elsewhere tolerably frequent.

Genus DIANTHÆCIA.

DIANTHÆCIA CONSPERSA.

On this side of Warrington.—*Mr. N. Cooke.*

DIANTHÆCIA CAPSINCOLA.

Not common. Specimens found at Tranmere.

DIANTHÆCIA CUCUBALI.

On this side Warrington.—*Mr. N. Cooke.*

THE FAUNA OF LIVERPOOL.

Genus POLIA.

POLIA CHI.

Some seasons plentiful upon walls and trunks of trees.

Genus EPUNDA.

EPUNDA LICHENEA.

New Brighton. Particularly upon dead thorn hedges at night by the aid of a lantern. Larvæ feed almost exclusively upon a species of "Sedum." One may be found occasionally at a Fox-glove root.

Genus HADENA.

HADENA LUTULENTA.

Rock Ferry.—*Mr. Almond.* Claughton.—*Mr. Diggles.* A very rare insect.

HADENA PERSICARIÆ.

On this side of Warrington.—*Mr. N. Cooke.*

HADENA BRASSICÆ.

Very general.

HADENA ADUSTA.

Tranmere. Rare. One specimen taken by *Mr. Diggles.*

HADENA SUASA.

Taken in the neighbourhood of Bidston, but not plentifully.—*Mr. Diggles.*

HADENA OLERACEA.

One of our common insects.

HADENA PISI.

Seldom taken in the perfect state. Plentiful as larvæ from which they are easily reared.

HADENA THALASSINA.

Generally distributed, and moderately plentiful.

HADENA DENTINA.

Common.

HADENA GLAUCA.

Mosses about Warrington.—*Mr. N. Cooke.*

HADENA PROTEA.

Commonly taken at sugar.

Genus APLECTA.

APLECTA NEBULOSA.

Plentiful at Bromborough. One specimen found at Claughton.

APLECTA OCCULTA.

One specimen of this rare and beautiful moth taken by *Mr. Brockholes* at Claughton.

Genus PHLOGOPHORA.

PHLOGOPHORA METICULOSA.

Very common.

Genus EUPLEXIA.

EUPLEXIA LUCIPARA.

Moderately plentiful, and generally distributed.

Genus THYATIRA.

THYATIRA BATIS.

Has been found at Eastham, where it is probably plentiful.

THYATIRA DERASA.

Taken abundantly in various localities.

Genus CALOCAMPA.

CALOCAMPA VETUSTA.

One or two specimens taken in the neighbourhood of Bidston by Mr. Almond and Mr. Brockholes.

CALOCAMPA EXOLETA.

Abundant.

Genus CUCULLIA.

CUCULLIA CHAMOMILLÆ.

At Penketh, and on this side of Warrington.—*Mr. N. Cooke.*

CUCULLIA UMBRATICA.

Generally found sitting upon old palings of similar colour to themselves. Not uncommon.

Genus XYLOCAMPA.

XYLOCAMPA LITHORIZA.

Common upon trunks of trees and palings.

Genus HELIOTHIS.

HELIOTHIS MARGINATA.

New Brighton. Very rare.—*Messrs. Cooke and Almond.* Three specimens in 1854.—*Mr. Brockholes.*

Genus ANARTA.

ANARTA MYRTILLI.

Bidston Heath. Common.

Genus HELIODES.

HELIODES HELIACA.

Not uncommon flying in the sunshine.

Genus PLUSIA.

PLUSIA GAMMA.

Very abundant.

PLUSIA IOTA.

Pretty general.

PLUSIA INSCRIPTA.

Equally plentiful with the former.

PLUSIA FESTUCÆ.

Taken in pits, on Reeds. Not uncommon.

PLUSIA CHRYSITIS.

Common where Nettles abound.

THE FAUNA OF LIVERPOOL.

Genus ABROSTOLA.

ABROSTOLA URTICÆ.

Near Liverpool.—*Mr. N. Cooke.*

ABROSTOLA TRIPLASIA.

Tranmere. Rare. One specimen taken by Mr. Brockholes. New Brighton.

Genus NÆNIA.

NÆNIA TYPICA.

Common.

Genus MANIA.

MANIA MAURA.

Tranmere, Claughton, and elsewhere common.

Genus PHILOPYRA.

PHILOPYRA TRAGOPOGONIS.

Common.

Genus CATOCALA.

CATOCALA FRAXINI.

Very uncommon. Two specimens taken at Bidston.

Genus EUCLIDIA.

EUCLIDIA MI.

Mosses on this side Warrington.—*Mr. N. Cooke*

EUCLIDIA GLYPHICA.

Near Neston.—*Mr. Almond.*

Genus PHYTOMETRA.

PHYTOMETRA ÆNEA.

Mosses near Warrington.—*Mr. N. Cooke.*

PYRALES.

Genus PYRAUSTA.

PYRAUSTA CINGULALIS.

New Brighton sand hills. Plentiful.

PYRAUSTA PURPURALIS.

Tranmere. One specimen taken by Mr. Diggles. Several taken upon New Brighton sand hills, where probably there are two or three broods in a season. 1852.

PYRAUSTA OSTRINALIS.

New Brighton. Abundant.

PYRAUSTA PUNICEALIS.

New Brighton.

PYRAUSTA CESPITALIS.

Common.

Genus RHODARIA.

RHODARIA SANGUINALIS.

Not uncommon at New Brighton, to which locality the insect seems to be peculiar.

THE FAUNA OF LIVERPOOL.

Genus PYRALIS.

PYRALIS FARINALIS.

Common where corn is stored.

Genus AGLOSSA.

AGLOSSA PINGUINALIS.

Common about stables and outhouses.

Genus HYDROCAMPA.

HYDROCAMPA LEMNALIS.

Common in pits.

HYDROCAMPA STRATIOTALIS.

Not very common. On Bidston Marsh and at New Brighton.—*Mr. Brockholes.*

HYDROCAMPA NYMPHÆALIS.

Common in the same localities as the last.

HYDROCAMPA POTOMOGALIS.

Equally abundant in the same situations.

Genus EBULEA.

EBULEA SAMBUCALIS.

Common about hedges where Elder abounds.

Genus SCOPULA.

SCOPULA PRUNALIS.

Abundant.

SCOPULA OLIVALIS.

Very general.

SCOPULA ETIALIS.

Common like the former about hedges.

SCOPULA FERRUGALIS.

Mosses and gardens near Warrington.—*Mr. N. Cooke.*

Genus PIONEA.

PIONEA FORFICALIS.

Plentiful.

Genus SPILODES.

SPILODES STICTICALIS.

New Brighton.—*Mr. N. Cooke.*

Genus BOTYS.

BOTYS FUSCALIS.

Rock Ferry. One specimen.—*Mr. Diggles.* One at New Brighton, in June, 1854.—*Mr. Brockholes.*

BOTYS URTICALIS.

Common amongst nettles.

Genus STENOPTERYX.

STENOPTERYX HYBRIDALIS.

Found abundantly in damp situations.

THE FAUNA OF LIVERPOOL.

Genus POLYPOGON.

POLYPOGON GRISEALIS.

Various places, but not frequent. Near woods.

Genus HYPENA.

HYPENA PROBOSCIDALIS.

Common.

Genus HYPENODES.

HYPENODES ALBISTRIGALIS.

Near Seacombe.—*Mr. N. Cooke.*

HYPENODES COSTÆSTRIGALIS.

Bidston and Jackson's Wood rarely, but plentifully in Storeton Wood.

HYPENODES HUMIDALIS.

Though Delamere forest is slightly beyond the limits of our district, I introduce this new species, which was found there, in a wet boggy place, upon the authority of *Mr. N. Cooke*, the discoverer of the insect.

Genus NOLA.

NOLA CUCULLALIS.

Tranmere.—*Mr. Diggles.* New Brighton.—*Mr. Warrington.*

GEOMETRÆ.

Genus GEOMETRA.

GEOMETRA PAPILIONARIA.

Bidston and other places in Cheshire, but rare.

Genus HEMITHEA.

HEMITHEA CYTHISARIA.

Common in Jackson's Wood, also in Storeton Wood.

Genus CHLOROCHROMA.

CHLOROCHROMA ÆRUGINARIA.

Common in hedges.

CHLOROCHROMA ÆSTIVARIA.

Not so common as the former.

Genus METROCAMPA.

METROCAMPA MARGARITARIA.

Pretty generally distributed.

Genus ELLOPIA.

ELLOPIA FASCIARIA.

Storeton Wood, where it is moderately plentiful; less so in Jackson's Wood, Claughton.

Genus OURAPTERYX.

OURAPTERYX SAMBUCARIA.

Common everywhere.

Genus RUMIA.

RUMIA CRATÆGARIA.

Very common.

Genus EURYMENE.

EURYMENE DOLOBRARIA.

Rock Ferry. Two specimens taken by Mr. Brockholes.

Genus EPIONE.

EPIONE APICIARA.

Not uncommon.

EPIONE PARALELLARIA.

New Brighton. A specimen captured by the late Mr. Robson.

Genus ENNOMOS.

ENNOMOS ILLUNARIA.

Common.

ENNOMOS EROSARIA.

Met with in several places, but not common.

ENNOMOS TILIARIA.

Common in Clifton Park. Taken principally at light.

Genus ODONTOPERA.

ODONTOPERA BIDENTARIA.

Common.

Genus CROCALLIS.

CROCALLIS ELINGUARIA.

Not so common as the former.

Genus HIMERA.

HIMERA PENNARIA.

Clifton Park. Rare. Four or five specimens have been seen or taken by Mr. Diggles and Mr. Almond.

Genus MÆSIA.

MÆSIA FAVILLACEARIA.

Bidston Heath, where it should be abundant.—*Mr. Diggles.*

Genus MACARIA.

MACARIA LITURARIA.

Jackson's Wood and Storeton Wood, but by no means plentiful.

Genus HALIA.

HALIA WAVARIA.

Common.

Genus NUMERIA.

NUMERIA PULVERARIA.

Various places, but uncommon.

Genus FIDONIA.

FIDONIA ATOMARIA.

Bidston Heath.

FIDONIA PLUMARIA.

On mosses, near Warrington.—*Mr. N. Cooke.*

FIDONIA PINIARIA.

Storeton Wood.—*Mr. Brockholes.*

THE FAUNA OF LIVERPOOL.

Genus ANISOPTERYX.

ANISOPTERYX ÆSCULARIA.

Common. Taken on thorn twigs with a lantern at night.

Genus HIBERNIA.

HIBERNIA LEUCOPHÆRIA.

Eastham, where it is not uncommon.

HIBERNIA RUPICAPRARIA.

Common. Taken as "Anisopterix Æscularia."

HIBERNIA PROGEMMARIA.

Very abundant.

HIBERNIA AURANTIARIA.

Oxton. Rare. A specimen bred from a larva captured there by Mr. Edmondson.

HIBERNIA DEFOLIARIA.

Upton.—*Mr. Webster.* One specimen, a female.

Genus PHIGALIA.

PHIGALIA PILOSARIA.

Two specimens taken in Clifton Park.—*Mr. Diggles.* Reported to have been taken in Jackson's Wood, Claughton.

Genus NYSSIA.

NYSSIA HISPIDARIA.

Dunham Park.—*Mr. N. Cooke.*

NYSSIA ZONARIA.

New Brighton, where it is very common, and where it was first discovered. A straggler found at Bidston by *Mr. Webster.*

Genus BISTON.

BISTON PRODROMARIA.

Knowsley. Dunham, on oaks.—*Mr. N. Cooke.*

BISTON BETULARIA.

Tranmere.

Genus BOARMIA.

BOARMIA REPANDARIA.

Very abundant.

BOARMIA ROBORARIA.

Dunham, on oaks.—*Mr. N. Cooke.*

BOARMIA RHOMBOIDARIA.

Common.

Genus HEMEROPHILA.

HEMEROPHILA ABRUPTARIA.

Rock Ferry and Tranmere, a few specimens only.

Genus CLEORA.

CLEORA LICHENARIA.

Prenton Wood. Pientiful in the larvæ state.

THE FAUNA OF LIVERPOOL.

Genus GNOPHOS.

GNOPHOS PULLARIA.

Not uncommon. Principally in Prenton-lane and Trammere, Cheshire.

Genus PHASIANE.

PHASIANE PALUMBARIA.

Common in Jackson's and Storeton Woods, Cheshire.

Genus LOZOGRAMMA.

LOZOGRAMMA PETRARIA.

Prenton.—*Mr. Warrington.* Somewhat rare.

LOZOGRAMMA LINEOLARIA.

New Brighton. Local but plentiful.

Genus ANAITIS.

ANAITIS IMBUTARIA.

On the mosses, about Warrington.—*Mr. N. Cooke.*

Genus EUBOLIA.

EUBOLIA CERVINARIA.

Clifton Park. Taken at light, but not commonly.

EUBOLIA MENSURARIA.

Very general.

EUBOLIA MULTISTRIGARIA.

Not uncommon. More particularly at New Brighton.

Genus COREMIA.

COREMIA DIDYMARIA.

Plentiful and general.

COREMIA UNIDENTARIA.

Common everywhere.

COREMIA PECTINITARIA.

Not so common as the last.

COREMIA MONTANARIA.

Very plentiful everywhere.

COREMIA FLUCTUARIA.

Equally abundant.

COREMIA PROPUGNARIA.

Less common.

Genus THERA.

THERA FIRMARIA.

Jackson's Wood, near Birkenhead. Not common. Also Storeton Wood, plentifully.—*Mr. Warrington.*

THERA SIMULARIA.

Jackson's Wood, near Birkenhead. Very common in firwoods.

THE FAUNA OF LIVERPOOL.

Genus ANTICLEA.

ANTICLEA DERIVARIA.

Generally distributed, but not common anywhere.

ANTICLEA BADIARIA.

Plentiful and general.

Genus STEGANOLOPHIA.

STEGANOLOPHIA RIBESIARIA.

Found at Hale.

Genus HARPALYCE.

HARPALYCE SUFFUMARIA.

Common in most places.

HARPALYCE OCELLARIA.

Far from plentiful, but widely distributed.

HARPALYCE GALIARIA.

Common at New Brighton; rarely taken elsewhere.

HARPALYCE FULVARIA.

Common.

HARPALYCE CHENOPODIARIA.

By no means plentiful, but has been found in various places.

HARPALYCE MARMORARIA.

Rather rare.

HARPALYCE PYRALIARIA.

Two specimens taken in Clifton Park, Birkenhead, by Mr. Diggles, 1851.

HARPALYCE POPULARIA.

Nowhere common.

HARPALYCE ACHATINARIA.

Abundant.

HARPALYCE RUSSARIA.

Very general.

HARPALYCE IMMANARIA.

Very plentiful.

Genus YPSIPETES.

YPSIPETES ELUTARIA.

Exceedingly common.

YPSIPETES IMPLUVIARIA.

Pretty generally distributed, but not in great numbers.

Genus PHÆSYLE.

PHÆSYLE CÆSIARIA.

Rock Ferry.—*Mr. Diggles.*

PHÆSYLE MIARIA.

Claughton. Rare.

Genus CHEIMATOBIA.

CHEIMATOBIA DILUTARIA.

Common about oaks. Rather difficult to capture.

CHEIMATOBIA BOREARIA.

Bidston. Rare.

CHEIMATOBIA BRUMARIA.

Common.

Genus TRIPHOSA.

TRIPHOSA DUBITARIA.

By no means uncommon.

Genus PHIBALAPTERYX.

PHIBALAPTERYX LIGNARIA.

Claughton. Very rare. One specimen taken by Mr. Diggles upon a lamp.

Genus CAMPTOGRAMMA.

CAMPTOGRAMMA BILINEARIA.

Common in every hedge.

Genus MELANIPPE.

MELANIPPE ALCHEMILIARIA.

Common.

MELANIPPE AMNICULARIA.

Not uncommon in various localities.

Genus EMMELESIA.

EMMELESIA RIVULARIA.

Common.

EMMELESIA HYDRARIA.

Scarce. Walker's-lane, Tranmere.

EMMELESIA DECOLORARIA.

Abundant.

EMMELESIA ALBULARIA.

Found commonly in damp situations.

EMMELESIA BIFASCIARIA.

Tranmere. Rare. One specimen taken by Mr. Almond, and several by Mr. Diggles, in Walker's-lane, Tranmere.

Genus ZERENE.

ZERENE RUBIGINARIA.

Tranmere. Rare. A single specimen taken three or four years ago by Mr. Diggles.

Genus ABRAXAS.

ABRAXAS GROSSULARIA.

Very common indeed.

ABRAXAS ULMARIA.

Eastham. Not common. Also at Rock Ferry.

Genus CABERA.

CABERA PUSARIA.

A very common insect.

CABERA EXANTHEMARIA.

As abundant as the former.

Genus EPHYRA.

EPHYRA PUNCTARIA.

Rare; one specimen taken by Mr. Warrington, at Rock Ferry.

Genus EUPITHECIA.

EUPITHECIA LINARIA.

Several specimens of this beautiful insect taken at Bidston, by Messrs. Almond, Warrington, and Brockholes.

EUPITHECIA PULCHELLARIA.

Generally distributed, but far from common.

EUPITHECIA RECTANGULARIA.

Occasionally met with.

EUPITHECIA MINUTARIA.

Common.

EUPITHECIA ELONGARIA.

Not uncommon.

EUPITHECIA NANARIA.

Found now and then.

EUPITHECIA EXIGUARIA.

This species is taken plentifully in the district.

EUPITHECIA ABBREVIARIA.

Plentiful.

EUPITHECIA INNOTARIA.

Hedges about Warrington, and elsewhere.—*Mr. N. Cooke.*

EUPITHECIA LANCEOLARIA.

Common.

EUPITHECIA CASTIGARIA.

In the mosses of the district, and in other places plentiful.

EUPITHECIA AUSTRARIA.

Abundant.

EUPITHECIA CALLUNARIA.

Common.

EUPITHECIA CENTAUREA.

Several specimens taken in a season.

EUPITHECIA SUCCENTURARIA.

Taken rather plentifully at New Brighton:

EUPITHECIA SUBFULVARIA.

Not uncommon on Ragwort flowers.—*Mr. N. Cooke.*

EUPITHECIA SUBNOTARIA.

Rare; three specimens only have been taken, at Tranmere.

EUPITHECIA PUMILARIA.

Found upon fir trees.—*Mr. N. Cooke.*

EUPITHECIA RUFIFASCIARIA.

Common in Fir wood.

EUPITHECIA PALUSTRARIA.

Rare. One specimen taken by Mr. Diggles at Claughton.

Genus DOSITHEA.

DOSITHEA VIRGULARIA.

Common.

DOSITHEA SCUTULARIA.

Rather scarce. Specimens have been taken from time to time at Wallasey, Tranmere, and elsewhere.

DOSITHEA REVERSARIA.

Very common.

Genus ACIDALIA.

ACIDALIA PEROCHRARIA.

Taken at Bidston.—*Mr. N. Cooke.*

ACIDALIA LUTEARIA.

Caught in woods.—*Mr. N. Cooke.*

ACIDALIA NITIDARIA.

Caught about the mosses of the district.—*Mr. N. Cooke.*

ACIDALIA SUBSERICEARIA.

Rare. Dacre Park, Rock Ferry.—*Mr. Diggles.* Jackson's Wood, Claughton. Bidston plantation.—*Mr. Warrington.*

ACIDALIA REMUTARIA.

Common.

ACIDALIA AVERSARIA.

Taken in 1852 in some plenty at Prenton Wood. More rarely at Rock Ferry. Near Warrington, about hedges. *Mr. N. Cooke.*

Genus PÆCILOPHASIA.

PÆCILOPHASIA, MARGINARIA.

Plentiful everywhere.

Genus TIMANDRA.

TIMANDRA IMITARIA.

Generally distributed. Common.

Genus BRADYEPETES.

BRADYEPETES AMATARIA.

Rare. Oxton. A single specimen taken a few years ago.—*Mr. Wilson.*

Genus STRENIA.

STRENIA CLATHRARIA.

One specimen taken at Claughton by Mr. Almond.

Genus HYRIA.

HYRIA AURORARIA.

Mosses of the district.—*Mr. N. Cooke.*

TORTRICES.

Genus HALIAS.

HALIAS PRASINANA.

Though a common insect throughout the country, only one specimen has been taken hitherto in this neighbourhood, by Mr. Diggles.

THE FAUNA OF LIVERPOOL.

Genus TORTRIX.

TORTRIX PYRASTRANA.

Common.

TORTRIX XYLOSTEANA.

Not common. Taken at Upton by Mr. Webster.

TORTRIX SORBIANA.

Gardens about Warrington.—*Mr. N. Cooke.*

TORTRIX ROSANA.

Common.

TORTRIX HEPARANA.

Common.

TORTRIX RIBEANA.

Common.

TORTRIX CORYLANA.

Far from common. Generally distributed.

TORTRIX UNIFASCIANA.

Common.

TORTRIX SPECTRANA.

Uncommon. Prenton.

TORTRIX VIBURNANA.

Taken principally in the larva state, feeding upon "*Centaurea Nigra.*" Very seldom taken flying.

TORTRIX ICTERANA.

Mosses in the district.—*Mr. N. Cooke.*

TORTRIX VIRIDANA.

Very common. Near oaks.

TORTRIX MINISTRANA.

Not uncommon in hedges.

TORTRIX ADJUNCTANA.

Pretty general in similar situations to the former.

Genus DICHELIA.

DICHELIA GROTIANA.

About the mosses.—*Mr. N. Cooke.*

Genus AMPHYSA.

AMPHYSA GERNINGANA.

Taken in some plenty in 1852, in Jackson's Wood, Claughton.

Genus LEPTOGRAMMA.

LEPTOGRAMMA LITERANA.

Very rare. Specimens have been found generally one at a time, at Bromborough, Oxton, and Eastham.

Genus PERONEA.

PERONEA FAVILLACEANA.

Common in Dacre Park, Rock Ferry.—*Messrs. Diggles and Warrington.*

THE FAUNA OF LIVERPOOL.

PERONEA MIXTANA.

Common amongst heath, at Bidston, Storeton, Heswell, and elsewhere; requires active search to capture.

PERONEA SCHALLERIANA.

One specimen found in Clifton Park by Mr. Diggles, in 1850.

PERONEA COMPARANA.

Very common.

PERONEA CALEDONIANA.

Mosses.—*Mr. N. Cooke.*

PERONEA ABILDGAARDANA.

Equally common.

PERONEA PERMUTANA.

Local. Sometimes more plentiful than others at New Brighton.

PERONEA HASTIANA.

A few specimens only have been taken at Rock Ferry.—*Mr. Diggles.* Tranmere.

PERONEA FERRUGANA.

Rare. New Brighton.

PERONEA TRISTANA.

About Sallows near Warrington.—*Mr. N. Cooke.*

PERONEA ASPERSANA.

New Brighton.—*Mr. N. Cooke.* Taken there plentifully, 1853.—*Mr. Warrington.*

Genus TERAS.

TERAS EFFRACTANA.

Common. Claughton, Rock Ferry, and elsewhere.

TERAS CAUDANA.

Somewhat rare. New Park, Claughton.—*Mr. Diggles.* In a small plantation at Bidston.—*Mr. Warrington.*

Genus DICTYOPTERYX.

DICTYOPTERYX CONTAMINANA.

A very common insect.

DICTYOPTERYX LÆFLINGIANA.

Not uncommon about oaks.

DICTYOPTERYX HOLMIANA.

Has been found plentifully in Tranmere.

DICTYOPTERYX BERGMANNIANA.

Abundant amongst wild roses. New Brighton sand hills and elsewhere.

DICTYOPTERYX FORSKALEANA.

New Brighton, but far from common.

Genus ARGYROTOZA.

ARGYROTOZA CONWAYANA.

Common. Dacre Park, Bidston, &c.

Genus PTYCHOLOMA.

PTYCHOLOMA LECHEANA.

Scarce. Prenton. One specimen.—*Mr. Warrington.* Three or four in various parts of Wirral.—*Mr. Diggles.*

THE FAUNA OF LIVERPOOL.

Genus DITULA.

DITULA SEMIPASCIANA.

Found on the mosses.—*Mr. N. Cooke.*

Genus PENTHINA.

PENTHINA PICANA.

Prenton. Rare.—*Mr. Warrington.*

PENTHINA PRUNIANA.

Common.

PENTHINA CYNOSBANA.

Abundant.

PENTHINA OCHROMELANA.

Not so plentiful as the former.

Genus SPILONOTA.

SPILONOTA OCELLANA.

By no means scarce. Birkenhead. Dacre Park. Probably general.

SPILONOTA ACERIANA.

Common at New Brighton.

SPILONOTA NEGLECTANA.

Common everywhere.

SPILONOTA AMENANA.

New Brighton. Rather scarce. In 1853 plentiful and general—*Mr. Warrington.*

SPILONOTA SUFFUSANA.

Common and general.

SPILONOTA ROSECOLANA.

Rare. Tranmere sparingly.—*Mr. Diggles.*

SPILONOTA ROBORANA.

Common in hedges.

Genus PARDIA.

PARDIA TRIPUNCTANA.

Very abundant everywhere.

Genus NATOCELIA.

NATOCELIA UDMANNIANA.

Common about brambles.

Genus SIDERIA.

SIDERIA ACHATANA.

On the Mosses, and in gardens.—*Mr. N. Cooke.*

Genus SERICORIS.

SERICORIS CESPITANA.

New Brighton.—*Mr. N. Cooke.*

SERICORIS LACUNANA.

Common.

SERICORIS URTICANA.

Very common about nettles.

Genus MIXODIA.

MIXODIA SCHULZIANA.

About the mosses.—*Mr. N. Cooke.*

Genus ORTHOTÆNIA.

ORTHOTÆNIA ANTIQUANA.

Two specimens taken at Claughton by *Mr. Diggles.*

ORTHOTÆNIA TRIFOLIANA.

One at Claughton.—*Mr. Diggles.*

ORTHOTÆNIA STRIANA.

A few specimens taken on Bidston Marsh by Messrs. Brockholes and Warrington.

Genus CNEPHASIA.

CNEPHASIA LEPIDANA.

Upon firs on the mosses.—*Mr. N. Cooke.*

CNEPHASIA MUSCULANA.

Common and general.

Genus SCIAPHILA.

SCIAPHILA SUBJECTANA.

Very common everywhere.

SCIAPHILA HYBRIDANA.

Common.

Genus SPHALEROPTERA.

SPHALEROPTERA ICTERICANA.

Not plentiful, but general.

Genus CLEPSIS.

CLEPSIS RUSTICANA.

On the mosses of the district.—*Mr. N. Cooke.*

Genus BACTRA.

BACTRA LANCEOLANA.

Common about ponds.

Genus PHOXOPTERYX.

PHOXOPTERYX UNGUICANA.

On the mosses.—*Mr. N. Cooke.*

PHOXOPTERYX UNCANA.

Also on moors.—*Mr. N. Cooke.*

PHOXOPTERYX COMPTANA.

On moors or mosses.—*Mr. N. Cooke.*

PHOXOPTERYX BIARCUANA.

Rare. A few specimens taken occasionally in various places, particularly Dacre Park.

PHOXOPTERYX LUNDANA.

Very common.

THE FAUNA OF LIVERPOOL.

PHOXOPTERYX MITTERBACHERIANA.

Common everywhere.—*Mr. N. Cooke.*

Genus GRAPHOLITA.

GRAPHOLITA PAYKULLIANA.

One specimen caught at Bidston by Mr. Warrington.

GRAPHOLITA NISANA.

Taken at Clifton Park in some plenty.

GRAPHOLITA NIGROMACULANA.

Plentiful.

GRAPHOLITA CAMPOLILIANA.

Abundant.

GRAPHOLITA TRIMACULANA.

Common.

GRAPHOLITA PENKLERIANA.

Not uncommon.

GRAPHOLITA NÆVANA.

Taken occasionally in Clifton Park.

Genus PHLÆODES.

PHLÆODES FRUTETANA.

Pretty plentiful in hedges.

PHLÆODES IMMUNDANA.

Common.—*Mr. N. Cooke.*

Genus HYPERMECIA.

HYPERMECIA ANGUSTANA.

Taken in the neighbourhood of Birkenhead.

Genus BATODES.

BATODES ANGUSTIORANA.

Not common. Found where yew trees grow.

Genus PÆDISCA.

PÆDISCA BILUNANA.

Rare. Caught in Dacre Park.

PÆDISCA CORTICANA.

Taken off fir trees at Claughton.

PÆDISCA OPHTHALMICANA.

Not uncommon some seasons. Dacre Park, Tranmere, &c.

PÆDISCA OCCULTANA.

Not plentiful. Has been caught in Jackson's Wood, Claughton.

PÆDISCA SOLANDRIANA.

Common in Dacre Park.

PÆDISCA SORDIDANA.

Clifton Park.—*Mr. Diggles.* Tranmere.—*Mr. Warrington.*

Genus EPHIPPIPHORA.

EPHIPPIPHORA SCUTULANA.

By no means scarce, especially in Prenton Wood and Dacre Park.

THE FAUNA OF LIVERPOOL.

EPHIPPIPHORA DISSIMILANA.

A specimen taken by Mr. Diggles in Oxton Road, 1850.

EPHIPPIPHORA BRUNNICHIANA.

Plentiful and general.

EPHIPPIPHORA FÆNEANA.

Said to be taken at Bidston.

EPHIPPIPHORA TRIGEMINANA.

Common.

Genus OLINDA.

OLINDA ULMANA.

Taken in woods.—*Mr. N. Cooke.*

Genus COCCYX.

COCCYX STROBILANA.

A specimen found by Mr. Diggles in Wirral, but the exact locality is not remembered.

COCCYX SPLENDIDULANA.

Hedges about Warrington.—*Mr. N. Cooke.*

Genus RETINIA.

RETINIA PINICOLANA.

This and the following insects are found in firwoods.

RETINIA BUOLIANA.

Upon firs on the mosses.—*Mr. N. Cooke.*

RETINIA PINIVORANA.

About firs in Claughton.

Genus STIGMONOTA.

STIGMONOTA CONIFERANA.

Rare. Has been taken occasionally in Jackson's Wood, Claughton.

STIGMONOTA FLORICOLANA?

A few of this insect (doubtfully named) were taken near Poulton, probably a new species. A few are in Mr. Warrington's collection.

STIGMONOTA TRAUNIANA?

Doubtful at present.

STIGMONOTA GERMARANA.

It has been taken abundantly in Prenton-lane, Tranmere, and Higher Bebington.—*Messrs. Diggles and Warrington.*

Genus DICRORAMPHA.

DICRORAMPHA PETIVERANA.

Scarce. Upton road.—*Mr. Diggles.* Tranmere.—*Mr. Warrington.*

DICRORAMPHA SATURNANA.

Rare. One specimen taken by Mr. Diggles. Locality forgotten.

DICRORAMPHA PLUMBAGANA.

Rare. Taken at Tranmere.—*Mr. Warrington.*

THE FAUNA OF LIVERPOOL.

DICRORAMPHA ARTEMISIANA.

Not uncommon about heath and gorse.

Genus PYRODES.

PYRODES RHEEDIANA.

Rare. Several specimens taken in 1852.

Genus CATOPTRIA.

CATOPTRIA ULICTEANA.

Exceedingly plentiful amongst gorse.

CATOPTRIA NIMBANA.

Taken upon oaks at Penketh.—*Mr. N. Cooke.*

CATOPTRIA HYPERICANA.

Found amongst gorse, but not very common. Jackson's Wood.

CATOPTRIA HOHENWARTHIANA.

Abundant in fields, generally distributed.

Genus TRYCHERIS.

TRYCHERIS MEDIANA.

Upon flowers near Warrington.—*Mr. N. Cooke.*

Genus SIMAETHIS.

SIMAETHIS FABRICIANA.

Common where nettles abound.

Genus EUPÆCILIA.

EUPÆCILIA DUBITANA.

Doubtfully named. Not uncommonly taken by beating hedges.

EUPÆCILIA MACULOSANA.

Rather scarce. Hedges in fields near Flaybrick hill. At Tranmere also.

EUPÆCILIA ANGUSTANA.

Common in Jackson's Wood.

EUPÆCILIA UDANA.

Local. Wallasey Pool in some plenty. In a brook near the copper works.

EUPÆCILIA HUMIDANA.

Rare.

EUPÆCILIA ROSEANA.

Rare. Bred from larvæ found in Teazle heads, by Mr. Brockholes.

Genus XANTHOSETIA.

XANTHOSETIA ZÆGANA.

Rather common.

XANTHOSETIA HAMANA.

Common.

Genus COCHYLIS.

COCHYLIS SMEATHMANNIANA.

Marshy ground. Penketh.—*Mr. N. Cooke.*

COCHYLIS STRAMINEANA.

Not uncommon, generally distributed.

Genus APHELIA.

APHELIA PRATANA.

Common on Bidston Marsh.

Genus TORTRICODES.

TORTRICODES HYEMANA.

Plentiful in Prenton and Eastham Woods.

TINEIDÆ.

Genus CHILO.

CHILO PHRAGMATELLUS.

Rare. Bidston Marsh.

CHILO FORFICELLUS.

Rare. Bidston Marsh.

Genus CRAMBUS.

CRAMBUS HAMELLUS.

New Brighton. Rare.

CRAMBUS DUMETELLUS.

Common at New Brighton.

CRAMBUS PRATELLUS.

Very common everywhere.

CRAMBUS PASCUELLUS.

Common.

CRAMBUS HORTUELLUS.

Common.

CRAMBUS LATISTRIUS.

Formerly by no means rare at one spot in Jackson's Wood. Only three were taken 1853, as the locality is partly destroyed.

CRAMBUS CULMELLUS.

Plentiful.

CRAMBUS GENICULEUS.

Common at New Brighton.

CRAMBUS TRISTELLUS.

Common.

CRAMBUS PERLELLUS.

Plentiful on Bidston Marsh.

Genus EUDOREA.

EUDOREA AMBIGUALIS.

Common.

EUDOREA PYRALELLA?

Common.

EUDOREA FREQUENTELLA.

Common.

EUDOREA DELUNELLA.

Plentiful about fir trees.

THE FAUNA OF LIVERPOOL.

EUDOREA MURANA.

Rare. In Mr. Brockholes' cabinet. Taken in the district.

EUDOREA COARCTATA.

Rare in the neighbourhood. Is in Mr. Brockholes' cabinet.

EUDOREA PALLIDA.

Not common.

Genus ACHROEA.

ACHROEA GRISELLA.

Uncommon.

Genus PEMPELIA.

PEMPELIA CARBONARIELLA.

Plentiful in Jackson's Wood.

PEMPELIA PALUMBELLA.

Not rare. Has been taken in Jackson's Wood.

Genus ANERASTIA.

ANERASTIA LOTELLA

Common. New Brighton.

Genus EPHESTIA.

EPHESTIA ELUTELLA.

Rare.

EPHESTIA INTERPUNCTELLA.

Rare.

Genus HOMŒOSOMA.

HOMŒOSOMA NIMBELLA.

Not rare at New Brighton in 1853, to which locality it seems to be confined.—

Mr. Warrington.

HOMŒOSOMA ELUVIELLA.

Not common.

Genus CHIMABACCHE.

CHIMABACCHE PHRYGANELLA.

Rare.

CHIMABACCHE FAGELLA.

Very common.

Genus SEMIOSCOPIS.

SEMIOSCOPIS AVELLANELLA.

Rare. Caught in Jackson's Wood.

SEMIOSCOPIS STEINKELLNERIANA.

Not very common. Tranmere and elsewhere.

Genus TALŒOPORIA.

TALŒOPORIA PSEUDO-BOMBYCILLA.

Found in 1853 sparingly at Bidston Hill.—*Mr. Warrington.*

Genus TINEA.

TINEA MASCULELLA.

Common.

THE FAUNA OF LIVERPOOL.

TINEA RUSTICELLA.

Common.

TINEA TAPETIELLA.

Common.

TINEA GRANELLA.

Common.

TINEA CORTICELLA.

Rare in hedges.

TINEA KNOCHIELLA.

Rather common at Tranmere.—*Mr. Warrington.* Female Apterous.

TINEA BISELLIELLA.

Very common. Usually called "Destructor."

TINEA GANOMELLA.

In hedges. Not common.

TINEA CÆSIELLA.

Very common.

TINEA OXYACANTHELLA.

Upon thorn hedges. Plentiful.

TINEA CERASIELLA.

Common.

Genus OCHSENHEIMERIA.

OCHSENHEIMERIA BISONTELLA.

Common.

Genus MICROPTERYX.

MICROPTERYX CALTHELLA

Common.

MICROPTERYX SEPELLA.

Common.

MICROPTERYX PURPURELLA.

Common.

Genus NEMATOPOGON.

NEMATOPOGON SWAMMERDAMMELUS.

Eastham.

NEMATOPOGON SCHWARZIELLUS.

Common and general.

Genus ADELA.

ADELA VIRIDELLA.

Common at Prenton and Eastham.

Genus PLUTELLA.

PLUTELLA CRUCIFERARUM.

Very common, but more so at some times than others. In some seasons it may be said to be rare.

PLUTELLA FISSELLA.

Not common.

PLUTELLA COSTELLA.

Rarely found, but generally distributed.

THE FAUNA OF LIVERPOOL.

PLUTELLA HARPELLA.

Very common.

Genus ANCHINIA.

ANCHINIA BICOSTELLA.

Common in Jackson's Wood.

Genus ŒCOPHORA.

ŒCOPHORA SULPHURELLA.

Plentiful.

ŒCOPHORA SUBAQUILEA.

Common on Bidston Hill.

ŒCOPHORA PSEUDOSPRETILLA.

New Brighton and elsewhere.

ŒCOPHORA FUSCESCENS.

Not uncommon.

ŒCOPHORA LACTEELLA.

The common clothes moth, everywhere.

ŒCOPHORA GRANDIPENNIS.

Not very common. Found where gorse abounds.

ŒCOPHORA CURTISELLA.

Common.

Genus HYPONOMEUTA.

HYPONOMEUTA PADELLUS.

Generally distributed. Common in Birkenhead Park.

HYPONOMEUTA COGNATELLUS.

Common also in Birkenhead Park.

Genus ORTHOTÆLIA.

ORTHOTÆLIA SPARGANIELLA.

Not common. Found in pits where bur reed grows.

Genus DEPRESSARIA.

DEPRESSARIA COSTOSA.

Common.

DEPRESSARIA LITURELLA.

Common at Bidston, New Brighton, and elsewhere.

DEPRESSARIA ULICITELLA.

Common amongst gorse bushes.

DEPRESSARIA ARENELLA.

Rare. Found at Tranmere.

DEPRESSARIA PROPINQUELLA.

Common.

DEPRESSARIA SUB-PROPINQUELLA.

Rare at Tranmere. Three specimens 1853.—*Mr. Warrington.*

DEPRESSARIA ALSTRÆMERIANA.

Not uncommon, especially at New Brighton.

DEPRESSARIA PURPUREA.

Not rare. New Brighton.

THE FAUNA OF LIVERPOOL.

DEPRESSARIA CONTERMINELLA.

Rare. New Brighton. Eight taken in 1853.—*Mr. Warrington.*

DEPRESSARIA CHARACTERELLA.

Common.

DEPRESSARIA YEATIANA.

Common. Storeton.

DEPRESSARIA APPLANA.

Very common.

DEPRESSARIA CILIELLA.

Common.

DEPRESSARIA NERVOSA.

Common about gorse bushes.

DEPRESSARIA PASTINACELLA.

Rare. Bidston Hill.—*Mr. Warrington.*

DEPRESSARIA HERACLEANA.

Common.

Genus CARCINA.

CARCINA FAGANA.

Common about oaks.

Genus GELECHIA.

GELECHIA POPULELLA.

Common. New Brighton.

GELECHIA ISABELLA.

Abundant at New Brighton and elsewhere. Not common at Tranmere in 1853.
Mr. Warrington.

GELECHIA GALLINELLA

Common.

GELECHIA TRICOLORELLA.

Common.

GELECHIA MARMOREA. .

Local. Not uncommon at New Brighton.

GELECHIA DOMESTICA.

Common everywhere.

GELECHIA TERRELLA.

Common.

GELECHIA DESERTELLA.

Not plentiful. New Brighton.

GELECHIA DIFFINIS.

Local, but common at New Brighton.

GELECHIA PROXIMELLA.

Common and generally distributed.

GELECHIA LIGULELLA.

Tranmere and New Brighton. Rare.

GELECHIA ANTHYLLIDELLA.

Local, but plentiful at New Brighton.

THE FAUNA OF LIVERPOOL.

GELECHIA AFFINIS.

Common at New Brighton. Local.

GELECHIA MUNDELLA.

New Brighton. Not very abundant.

GELECHIA DODECELLA.

Not very common.

GELECHIA VULGELLA.

Not plentiful.

GELECHIA LUCULELLA.

Common.

GELECHIA CONSCRIPTELLA.

Not rare about nut bushes.

GELECHIA LAPPELLA.

Two specimens at Dacre Park, in 1853.—*Mr. Warrington.*

Genus RÖSLERSTAMMIA.

RÖSLERSTAMMIA FUSCOVIRIDELLA.

Very common.

Genus GLYPHIPTERYX.

GLYPHIPTERYX VARIELLA.

Rare. Larva found in the neighbourhood of Birkenhead, bred by *Mr. Almond*, 1853.

Genus ÆCHMIA.

ÆCHMIA THRASONELLA.

Common in damp places.

ÆCHMIA EQUITELLA.

Abundant everywhere.

ÆCHMIA SERICIELLA.

Not very common.

Genus ARGYRESTHIA.

ARGYRESTHIA NITIDELLA.

Common.

ARGYRESTHIA SEMITESTACELLA.

Uncommon; taken at Bidston.

ARGYRESTHIA ALBISTRIA.

Common.

ARGYRESTHIA CONJUGELLA.

Taken at Bidston; not common.

ARGYRESTHIA RETINELLA.

Common.

ARGYRESTHIA CURVELLA.

Common.

ARGYRESTHIA PYGMÆELLA.

Common.

ARGYRESTHIA GOEDARTELLA.

Not common.

ARGYRESTHIA BROOKEELIA.

Common.

ARGYRESTHIA FARINATELLA.

Not rare; generally distributed.

Genus OCNEROSTOMA.

OCNEROSTOMA PINIARIELLA.

Common in fir woods.

Genus COLEOPHORA.

COLEOPHORA SPISSICORNIS.

Rare; one specimen taken by Mr. Almond.

COLEOPHORA ALCYONIPENNELLA.

Not uncommon.

COLEOPHORA OCHREA.

Specimens taken by Messrs. Almond, Warrington, and Brockholes, 1853.

COLEOPHORA ALBICOSTA.

Very common.

COLEOPHORA TILIELLA.

Caught at Bidston. Not uncommon.

COLEOPHORA CURRUCIPENNELLA.

Common.

COLEOPHORA CÆSPITITIELLA.

Common.

COLEOPHORA ALTICOLELLA.

Common.

COLEOPHORA JUNCICOLELLA.

Common.

COLEOPHORA LUTAREA.

Common.

Genus GRACILARIA.

GRACILARIA FRANCKELLA.

Common.

GRACILARIA STIGMATELLA.

Rare. Found at Storeton by Mr. Warrington.

GRACILARIA INCONSTANS.

A specimen found by Mr. Warrington at Storeton, April, 1853.

GRACILARIA ELONGELLA.

Common at Tranmere.

GRACILARIA SYRINGELLA.

Common.

Genus ORNIX.

ORNIX MELEAGRIPENELLA.

Rare at Dacre Park.—*Mr. Diggles.* Tranmere.—*Mr. Warrington.*

ORNIX ANGLICELLA.

Common.

ORNIX SCOTICELLA.

Common.

ORNIX GUTTEA.

Not common. Taken at Tranmere and elsewhere.

Genus ELACHISTA.

ELACHISTA TESTACELLA.

Common.

ELACHISTA ATRA.

Tranmere.

ELACHISTA LINNÆELLA.

Rare ; one specimen taken by Mr. Brockholes in Tranmere ; others at Tranmere by Mr. Warrington.

ELACHISTA FLAVICAPUT.

Common.

ELACHISTA FESTALIELLA.

Common.

ELACHISTA MODESTELLA.

Not common ; specimens taken at Tranmere.

ELACHISTA ALBIFRONTILLA.

Common.

ELACHISTA LUTICOMELLA.

Common.

ELACHISTA BEDELLELLA.

Common.

ELACHISTA PFEIFFERELLA.

Rare ; taken by Mr. Diggles ; locality forgotten.

ELACHISTA ALBINELLA.

Common at Tranmere.—*Mr. Warrington.*

ELACHISTA CERUSSELLA.

Not common.

ELACHISTA RUFOCINEREA.

Common.

ELACHISTA CYGNIFENNELLA.

Common.

Genus LYONETIA.

LYONETIA CLERKELLA.

Rather rare. Jackson's Wood.

Genus PHYLLOCNISTIS.

PHYLLOCNISTIS SUFFUSELLA.

Tranmere. Rare.—*Mr. Warrington.*

Genus CEMIOSTOMA.

CEMIOSTOMA SPARTIFOLIELLA.

Common amongst broom.

CEMIOSTOMA SCITELLA.

Common.

THE FAUNA OF LIVERPOOL.

Genus BUCCULATRIX.

BUCCULATRIX CRATÆGI.

Rare. Dacre Park.

BUCCULATRIX BAYERELLA.

Dacre Park. Rare.

Genus NEPTICULA.

NEPTICULA PYGMÆELLA.

Common.

NEPTICULA AURELLA.

Taken at Claughton about oaks. Not common.

NEPTICULA GRATIOSELLA.

Common.

Genus TISCHERIA.

TISCHERIA COMPLANELLA.

Common.

TISCHERIA MARGINEA.

Common.

Genus LITHOCOLLETIS.

LITHOCOLLETIS QUINQUEGUTTELLA.

New Brighton.

LITHOCOLLETIS POMIFOLIELLA.

Common, and generally distributed.

LITHOCOLLETIS POMONELLA.

Common.

LITHOCOLLETIS QUERCIFOLIELLA.

Common.

LITHOCOLLETIS CORYLIFOLIELLA.

Common.

LITHOCOLLETIS ALNIFOLIELLA.

Common.

LITHOCOLLETIS CRAMERELLA.

Common.

LITHOCOLLETIS SYLVELLA.

Not uncommon.

LITHOCOLLETIS FROLICHIELLA.

Rare. Taken at Tranmere.

LITHOCOLLETIS KLEEMANNELLA.

Taken at Tranmere. Not rare.

LITHOCOLLETIS TRISTRIGELLA.

Not very common. General.

LITHOCOLLETIS TRIFASCIELLA.

Rather scarce. Tranmere and Dacre Park.

Genus PTEROPHORUS.

PTEROPHORUS OCHRODACTYLUS.

Rare. One specimen taken by Mr. Diggles.

THE FAUNA OF LIVERPOOL.

PTEROPHORUS TRIGONODACTYLUS.

Not common. Occasionally taken in localities wide apart.

PTEROPHORUS PARVIDACTYLUS.

Taken but seldom, amongst gorse.

PTEROPHORUS BIPUNCTIDACTYLUS.

Common. New Brighton.

PTEROPHORUS FUSCUS.

New Brighton. Not common.

PTEROPHORUS PTERODACTYLUS.

Common.

PTEROPHORUS PENTADACTYLUS.

Common.

Genus ALUCITINA.

ALUCITINA POLYDACTYLA.

Common.

CLASS ANNELIDES.

Not having any systematic work of reference to the Annelides, I put the list of species hitherto found on the coast without arrangement.

TEREBELLA CONCHILEGA.

General about the shore.

TEREBELLA NEBULOSA.

Hilbre.

AMPHITRITE AURICOMA.

Very fine specimens forming a perfect garden, at Hilbre. Smaller at Egremont and New Brighton.

SABELLARIA ALVEOLATA.

New Brighton, Caldy Blacks, and Hilbre, very abundant.

SABELLARIA UNISPIRA.

Hilbre.

NAIS FILIFORMIS.

Abundant in many fresh water ditches, forming blood-like patches, which suddenly disappear when irritated.

NAIS PELLUCIDA?

Not tubular, in a ditch near Upton.

NEREIS MARGARITACEA.

Common on the shores.

NEREIS VIRIDIS.

Not uncommon.

NEMERTES OCTOCULATA.

Found upon oysters.—*Mr. Weightman.*

BORLASIA NIGRA.

Dr. Edwards gave me a specimen which he took at New Brighton.

ARENICOLA PISCATORUM.

Very abundant, and used as bait.

APHRODITA ACULEATA.

Once at Leasowe, and rarely on other parts of the shore.

THE FAUNA OF LIVERPOOL.

MYRIANDRIDA FASCIATA.

Hilbre.

NEPHTHYS HOMBERGII.

Hilbre.

POLYNOE CIRRATA.

Hilbre, New Brighton. On other places in rocky pools.

POLYNOE SQUAMATA.

Found as the former.

PHYLLODOCE VIRIDIS.

A beautiful worm, lives well in captivity. Not very uncommon.

SYLLIS ARMARILLIS.

Not common.

OPHELIA ————— ?

Not common.

SPIRORBIS LUCIDA.

Parasitic upon "Sertularia Abietina."

SPIRORBIS NAUTILOIDES.

Parasitic upon "Fucus."

SPIRORBIS RUGOSA.

Variously parasitic.—*Mr. Murratt.*

PONTOBELLA MURICATA.

A suctorial Annelide, attached to Rays and other large fishes.

HÆMOPIS SANQUISORBA.

Very common.

LUMBRICUS TERRESTRIS.

Very common.

NEPHELIS ELEGANS.

A fresh water suctorial Annelide. Found in a running stream near Saughall Massie.

CLEPSINE ————— ?

Two or three species taken in the same locality.

PLANARIA FUSCA.

Abundant in ponds and ditches.

PLAGARIA NIGRA.

Abundant in ponds and ditches.

A large, extremely thin, transparent, broad, marine planaroid was taken at Hilbre Island. It lived about two months afterwards in sea water; after having been three weeks in captivity, a slight notch formed in the thin edge of one side which gradually extended across the middle of the animal, and in about a week, the head and tail ends had quite separated from each other; the vitality and activity of each portion remaining as before, and continuing for a month afterwards; the head division lived longer than the other, but both gradually lost substance, the active movements of the remnants being persistent as long as could be observed.

A marine suctorial species, found between the branchial leaflets of "Pholas Crispata."

SERPULA MULLERI.

Attached to stones, shells, &c.

SERPULA VERMICULARIS.

Upon shells and stones.

VERMILIA TRIQUETRA.

One species from Hilbre Island was sent to Dr. Williams, of Swansea, who pronounced it to be "new," but it has not been named.

SUB-KINGDOM 4.—RADIATA.

CLASS ACALEPHÆ.

Order DISCOPHORÆ.

PULMOGRADA.

STEGANOPHTHALMATA. EYES COVERED.

Genus AURELIA.

AURELIA AURITA.

Mr. Price, who has paid great attention to this beautiful tribe of animals, finds this species most abundantly about the month of May every year.

CHRYSAORA HYOSCELLA.

Rare. Seen mostly during the months of July and August.

Genus RHIZOSTOMA.

RHIZOSTOMA PULMO.

This large species may be considered rare in the district. Mr. Price informs me that he has commonly observed about three or four in a year. Mostly seen in the month of September and later in the year.

Genus CYANÆA.

CYANÆA CAPILLATA.

A very common species. Appears on our shores from July to October. Mr. Price has observed a yellow Medusa very like this species, during the May month.

GYMNOPHTHALMATA. NAKED-EYED MEDUSÆ.

Family OCEANIDÆ.

Genus TURRIS.

TURRIS NEGLECTA.

Has been taken rarely in the Mersey by Mr. Price.

Family GERYONIADÆ.

Genus THAUMANTIAS.

THAUMANTIAS PUNCTATA.

Rare in the Mersey.—*Mr. Price.*

Family SARSIADÆ.

Genus SARSIA.

SARSIA TUBULOSA.

Caught in the Mersey. Rare.—*Mr. Price.*

THE FAUNA OF LIVERPOOL.

Genus LIZZIA.

LIZZIA OCTOPUNCTATA.

Taken, by Mr. Price, in the river. Other minute Medusoids have been observed, which, not having been referred to any published species, are probably the protei of zoophytes, &c.

Order CILIOGRADA.

Genus CYDIPPE.

CYDIPPE PILEUS.

Found mostly early in April, but also, more sparingly, at other times.

CYDIPPE POMIFORMIS.

Very rare. Appears at no certain periods of the year.—*Mr. Price.*

Genus BEROE.

BEROE OVATA.

Irregular in the time of its appearance, but sometimes as early as "Cydippe Pileus."

Genus NOCTILUCA.

NOCTILUCA MILIARIS.

In the Mersey in myriads. It is this species chiefly which imparts a phosphorescent appearance to the water at nights, as may be proved at any time by taking some of the river water containing them into a perfectly dark room, and splashing it about with any hard body to irritate them. They may be seen as little hyaline-globules about the size of a pin's head. Three or four years ago, in company with Mr. Price, we saw millions of them collected together at Hilbre Island, in a little pool, when they tinged a portion of the water, about two yards in circumference, with a deep pink colour. The individuals in this collection were of a light pink hue under the microscope; those from the river are colourless. The men upon the ferry steamers state that the phosphorescent appearance of the water is much more noticed some years than others. They associate its presence with southwardly winds.

CLASS ECINODERMATA.

OPHIURIDÆ.

Family OPHIURÆ.

Genus OPHIURA.

OPHIURA TEXTURATA. Common Sand-star.

Taken at Hilbre. Dredged round the coast.

OPHIURA ALBIDA. Lesser Sand-star.

Dredged about the mouth of the Dee, and north of Wirral.

Genus OPHIOCOMA.

OPHIOCOMA NEGLECTA. Gray Brittle Star.

Taken among sea-weed and sponge at Hilbre Island.

THE FAUNA OF LIVERPOOL.

OPHIOCOMA ROSULA. Common Brittle Star.

Taken plentifully under the same circumstances as the former.

ASTERIADÆ.

Family URASTERIÆ.

Genus URASTER.

URASTER RUBENS. Common Cross Fish.

The most common species of the coast. It may be seen everywhere upon the shores.

Family SOLASTERIÆ.

Genus SOLASTER.

SOLASTER PAPPOSA. Common Sun-star.

Not uncommon at Hilbre Island, Caldy Blacks, New Brighton, and other parts of the coast. Mr. Price was good enough to forward me drawings of an animal which he caught in the Mersey. He observes, "It is of a yellowish transparent colour. The essential organs seem very lightly put together, but are secured and protected by two ample membraneous cloaks, one dorsal and the other ventral, with two long posterior feelers, bulbed and coloured, extremely flexible and busy, and causing strong ciliary currents in the water of their vicinity. Form varies greatly with position. The anterior portion of the body is furnished with three stunted "fingers," which are roughened at their extremity and adhesive, enabling the creature to move as a cœphalopod, by all three. Swims slowly, as by "cilia." It is very small, perhaps the size of a small Cypris. It has a contracted stomach in the centre of the animal, having the shape of a Florence flask, with a broad infundibuliform mouth, from the sides of the body proceed six apparently tubular projections. Professor Forbes, who saw the drawings, pronounced the animal to be a Proteus of some species of Star-fish.

ECHINIDÆ.

Family CIRADITES.

Genus ECHINUS.

ECHINUS SPHÆRA. Common Egg Urchin.

Mr. Marratt has taken one or two specimens which have been thrown upon the shore.

ECHINUS MILIARIS.

Taken sparingly in the dredge at the entrance of the Dee.

Family CLYPEASTERIÆ.

Genus ECHINOCYAMUS.

ECHINOCYAMUS PUSILLUS. Green Pea Urchin.

Several taken by dredging.

Family SPATANGACEÆ.

Genus AMPHIDOTUS.

AMPHIDOTUS CORDATUS. Common Heart Urchin.

Living specimens dredged; dead shells commonly scattered about our shores.

HOLOTHURIADÆ.

Family PENTACTÆ.

Genus CUCUMARIA.

CUCUMARIA COMMUNIS. Common Sea Cucumber.

Very rare; one specimen only has been given to me by a fisherman at Hoylake, who was much surprised at its appearance.

CLASS ZOOPHYTA.

ANTHOZOA HYDROIDA.

TUBULARINA.

Family CORYNIDÆ.

Genus CLAVA.

CLAVA MULTICORNIS.

Abundant upon loose and floating Fuci washed into the Mersey.—*Mr. Price.*

Genus HYDRACTINIA.

HYDRACTINIA ECHINATA.

Parasitic upon dead shells. Not uncommon.

Genus CORYNE.

CORYNE PUSILLA.

Found by *Mr. Price* upon the Dingle rocks. *Mr. Tudor* has taken it at Bootle.

Family TUBULARIADÆ.

Genus EUDENDRIUM.

EUDENDRIUM RAMEUM.

Shores near Liverpool.—*Thos. G. R. Rylands.* "Johnston's British Zoophytes."
(p. 45.) About the North Shore; not common.

EUDENDRIUM RAMOSUM.

Bootle Shore; not unfrequent.—*Mr. Marratt.*

Genus TUBULARIA.

TUBULARIA INDIVISA.

Very abundant at Hilbre Island, New Brighton, and upon the Mersey shore generally.

TUBULARIA LARYNX.

Very common round the coast, variously parasitic.

SERTULARINA.

Family SERTULARIADÆ.

Genus HALECIUM.

HALECIUM HALECINUM.

General and abundant upon rocks in tide-pools, at the verge of low water mark, and drifted on shore.

Genus SERTULARIA.

SERTULARIA POLYZONIAS.

Not uncommon among drift seaweeds. Seldom or ever found with living Polyyps.

SERTULARIA RUGOSA.

Parasitic mostly upon "Flustra Foliacea." Frequently found.

SERTULARIA ROSACEA.

Found rarely at New Brighton and elsewhere; most commonly attached to "Plumularia Falcata."

SERTULARIA PUMILA.

Not common. Found by Mr. Marratt growing upon "Fucus Serratus" on a large stone between Seacombe and Egremont. Dead in other places amongst sea weed and zoophytes.

SERTULARIA MARGARITA.

Mouth of the Mersey,—*Mr. R. A. Tudor.* Amongst drifted sea weed at New Brighton.—*Mr. Marratt.*

SERTULARIA TAMARISCA.

Bootle coast.—*Mr. Tudor.* Sparingly but generally on both shores.

SERTULARIA ABIETINA.

Common upon the coast.

SERTULARIA FILICULA.

A general but not very abundant species.

SERTULARIA OPERCULATA.

Pretty general, without Polyyps.—*Mr. Marratt.*

SERTULARIA ARGENTEA.

Very common.

SERTULARIA CUPRESSINA.

Not quite so common as the former.

Genus THUIARIA.

THUIARIA ARTICULATA.

Hilbre, New Brighton, and elsewhere.

Genus ANTENNULARIA.

ANTENNULARIA ANTENNINA.

Picked up frequently, without Polyyps.

ANTENNULARIA RAMOSA.

Equally as common as the last species.

Genus PLUMULARIA.

PLUMULARIA FALCATA.

In rocks, &c., in pools at low water, frequent.

PLUMULARIA CRISTATA.

On the Bootle coast. Rare.—*Mr. Tudor.* Frequently found with Polyyps alive parasitic upon "Halidrys Siliquosa."—*Mr. Marratt.*

PLUMULARIA SETACEA.

Not common. Found mostly at Bootle, also at New Brighton.

PLUMULARIA MYRIOPHYLLUM.

Very rare. Found once at Waterloo and again between Seacombe and Egremont, drifted ashore.—*Mr. Marratt.*

Family CAMPANULARIADÆ.

Genus LAOMEDEA.

LAOMEDEA DICHOTOMA.

Growing in small tide pools.

LAOMEDEA GENICULATA.

Very abundant upon Algæ, dead shells, &c.

LAOMEDEA GELATINOSA.

About equally common, and attached in the same manner.

Genus CAMPANULARIA.

CAMPANULARIA VOLUBILIS.

Adhering to shells and Fuci in pools on the shores.

CAMPANULARIA SYRINGA.

In the same situations, but less frequent.

CAMPANULARIA VERTICILLATA.

Very common.

CAMPANULARIA DUMOSA.

Common, parasitic upon zoophytes, &c. Drifted ashore dead.

HYDRINA.

Family HYDRAIDÆ.

Genus HYDRA.

HYDRA VIRIDIS.

In various ponds and ditches. Somewhat local.

HYDRA VULGARIS.

In ponds; perhaps rather more common than the last.

ANTHOZOA ASTEROIDA.

Family ALCYONIDÆ.

Genus ALCYONIUM.

ALCYONIUM DIGITATUM.

Found very abundantly at Hilbre Island at low ebbs; deep orange and pure white varieties. May be seen also at New Brighton, and in pools at Egremont, where the specimens are very small.

ANTHOZOA HELIANTHOIDA.

Family ACTININA.

Genus ACTINIA.

ACTINIA MESEMBRYANTHEMUM.

Mr. Price states that he met once with this species upon our shore. I have a specimen now alive which I took at Hilbre. Rare on this coast until this year, when several have been taken.

ACTINIA TROGLODITES.

Has been found in pretty good numbers upon the Leasowe shore and near Egremont slip. I have kept as many as eight or ten together for upwards of six weeks. They were often very ill used for want of a fresh supply of sea water, but seemed to be most tolerant under the infliction. It was seldom until after having been kept for ten or twelve days in the same water, that they began to droop considerably, and they were speedily restored by a change. No food was given at any time. At first they threw off a great number of germs or ova, which, before they were extruded, could be plainly seen through the external envelope, and especially at the bases of those specimens which had not attached themselves, and could be turned over for examination. It appeared quite clear to me that these germs, young actinæ, (or whatever they may properly be called,) made their exit through breaches of continuity in the outer envelope, near its junction with the basal disk, and sometimes through ragged apertures in the base itself; in fact, I have hooked out the germs which were just on the point of emerging with a blunt probe, which was delicately used, and *did not make* the opening. The germs were about the size of a pin's head, and perfectly globular; they showed, by careful watching, a very sluggish motion. Three or four were put into a wide-necked 1½ oz. bottle, having a ground glass stopper, with some sea water, and were intended for a microscopic inspection in the evening; they were quite forgotten, however, and at the expiration of two months one was found to have become developed into a perfect but very small actinia, the oral disk with the tentacles being fully and beautifully expanded. It is now (after six months) alive, but has never increased in size; it continues closely shut up, when there is a fresh supply of water, for some days, but after a week, and from that to a fortnight, fully expands again. For this reason the water has not been changed more than six times since it has been in my possession. No pabulum of any kind has ever been given. It seems to make no difference whether the stopper is kept in the bottle or not, so far as the animal's health is concerned. These creatures were shy of expanding during the day, and then were as flat as a coin. I used always to pay them a visit before bedtime, knowing that I should be repaid by a view of their full-blown expansion during the previous darkness; the stimulus of candlelight used to set their tentacula in active motion, without making them "retire for the night."

ACTINIA CORIACEA.

By far the most common actinæ of the shores, greatly varied in size and colour.

At Hilbre Island rich brown spotted specimens, with white tentacula, are found, which Mr. Alder thinks to be the fry of this species.

Some time ago, whilst examining the contents of the tubular organs in the compartments between the septa of this species, the field of the microscope was covered with numerous transparent spicula, very much like the raphides of "Lemna," but truncated at each end; some of these were observed to form the anterior part of what I suppose to be spermatozoa. The posterior portion of each spiculum had a very slight but sufficiently obvious attachment to a wavy neck, a small cilium being placed at each undulation; the rest of the body tapered off as in the spermatozoa of other creatures: they were living and moving. It was remarkable to see so many of the crystalline

heads floating freely in the field, and so few attached in a perfect condition; this must have arisen from the looseness of adhesion between the neck and head admitting of their being severed by the most light-handed manipulation, in placing them under the microscope.

ACTINIA CRASSICORNIS.

Mr. Price states that he has seen this species at New Brighton.

ACTINIA DIANTHUS.

Hilbre Island, at low ebbs; some specimens pure white, and others of a deep buff colour. The white variety plentiful at the Dingle shore.

POLYZOA INFUNDIBULATA.

Family TUBULIPORINA.

Genus TUBULIPORA.

TUBULIPORA SERPENS.

Parasitic upon "Plumularia Falcata;" rather rare; found dead between Seacombe and Egremont.

Family CRISIADÆ.

Genus CRISIA.

CRISIA EBURNEA.

Very common. Parasitical on Algæ, &c.

CRISIA DENTICULATA.

Found at Leasowe, without Polyps, by the Rev. H. H. Higgins.

CELLEPORINA.

Family EUCRATIADÆ.

Genus GEMELLARIA.

GEMELLARIA LORICULATA.

Not uncommon, either in tide pools or by the dredge.

Family CELLEPORIDÆ.

Genus CELLEPORA.

CELLEPORA PUMICOSA.

Not rare upon the stems of zoophytes and sea weeds.

Genus MEMBRANIPORA.

MEMBRANIPORA PILOSA.

Diffused over the surface of stones, dead shells, Fuci, &c.

MEMBRANIPORA MEMBRANACEA.

Found under the same circumstances as the former species, rather less frequently.

Family ESCHARIDÆ.

Genus CELLULARIA.

CELLULARIA CILIATA.

Attached to zoophytes. Not common.

CELLULARIA SCRUPOSA.

Found mostly upon "Flustra Foliacea." Not an uncommon species.

CELLULARIA REPTANS.

Parasitic upon various species of zoophytes. The most common species of the genus here.

CELLULARIA AVICULARIA.

Met with occasionally at Hilbre, and sparingly round the coast.

CELLULARIA NERITINA.

Coast of Cheshire, found by Miss Blackburne. "Johnston's British Zoophytes."

CELLULARIA PLUMOSA.

Found on the Bootle shore by Mr. Marratt.

Genus FLUSTRA.

FLUSTRA FOLIACEA.

Very plentiful.

FLUSTRA CHARTACEA.

Very scarce. Taken near Hilbre.

FLUSTRA AVICULARIS.

Parasitic upon "Flustra Foliacea" at low water, Cheshire shore near Seacombe. Is becoming scarce.—*Mr. Marratt.*

Genus SALICORNARIA.

SALICORNARIA FARCIMINOIDES.

Loose pieces without Polyps taken on the shores occasionally.

HALCYONELLEA.

Genus ALCYONIDIUM.

ALCYONIDIUM GELATINOSUM.

Taken abundantly all round the coast.

ALCYONIDIUM HIRSUTUM.

Plentiful in tide-pools, and taken in the dredge.

ALCYONIDIUM PARASITICUM.

Parasitical upon "Sertularia."

Genus CYCLOUM.

CYCLOUM PAPILLOSUM.

Parasitic on "Fucus Serratus."

VESICULARINA.

Family VESICULARIADÆ.

Genus SERIALARIA.

SERIALARIA LENDIGERA.

Not very rare; found parasitically mostly upon "Halidrys Siliquosa".—*Mr. Marratt.*

Genus VESICULARIA.

VESICULARIA SPINOSA.

In tide pools alive. Also amongst tufts of other drift zoopytes on the shore. Common.

Genus VALKERIA.

VALKERIA CUSCUTA.

Parasitic upon Fuci ; very uncommon.

Genus BOWERBANKIA.

BOWERBANKIA IMBRICATA.

I found this species spread over the surface of dead Flustra, at Hilbre, in a single layer, as it is described in "Johnston's Zoophytes," (p. 397,) under the name of "Bowerbankia Densa." A beautiful specimen, in its confervoid condition, at Hilbre, August, 1854. Mr. Price has met with it very rarely.

POLYZOA HYPOCREPIA.

Family CRISTATELLIDÆ.

Genus CRISTATELLA.

CRISTATELLA MUCEDO.

Mr. Price informs me that he has taken this species in a pond amongst yellow water lillies. The animals were mostly attached to the under surface of those leaves which were becoming yellow by age.

Class SPONGIA.

AMORPHOZOA.

Genus HALICHONDRIA.

HALICHONDRIA OCULATA.

At Hilbre, New Brighton, &c., on rocky places.

HALICHONDRIA PANICEA.

Most abundant, especially at Hilbre Island, Caldy Blacks, and New Brighton.

HALICHONDRIA FUCORUM.

Found occasionally investing "Sertulariæ."

HALICHONDRIA CELATA,

Burrowing in the shells of "Fusus," "Ostrea," &c.

HALICHONDRIA SUBERIA.

Shells encrusted with this species, and taken by the fishermen not far from the coast, have been given to me occasionally.

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