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1896.

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## P R E F A C E.

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THERE is but little for the Editors to say beyond thanking their contributors and their subscribers for the satisfactory production of the journal and for the gratifying measure of success it attains.

They are pleased to again note the systematic attention paid to Lincolnshire by their contributors, and the numerous valuable papers relating to that county which appear in the present volume.

The Editors would be pleased to welcome and further the publication of papers dealing in like manner with other of the counties included in their scope.

They would also reiterate the request made in the preface to the last volume for papers dealing with geological and biological subjects. The 'Naturalist' is not by any means intended to be devoted solely or even mainly to lists and systematic papers, and it only needs that papers of more general scope and character shall be offered to secure their favourable consideration.

The main requisite, however, is that all papers shall be more or less original, and that they shall be the embodiment of practical observation or direct investigation. But subject to this requirement, the more humanly interesting papers are, the more appreciated they will be.



# THE NATURALIST

For 1896.

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## THREE WEEKS IN THE ISLE OF MAN.

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REV. CYRIL D. ASH, B.A.,

*Skipwith Vicarage, Selby, Yorkshire.*

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A THREE weeks' holiday in August last was spent in the Isle of Man, and as a considerable portion of the time was devoted to entomology, some account of the lepidoptera observed may be useful.

Our head-quarters were in a farm-house a short distance north of Ramsey, and about half a mile from the sea. Here we remained from August 8th till 29th, during which time the lanes, cliffs, and downs in the neighbourhood were pretty closely worked. Of course it was late in the season for much day work, but the ragwort, which was in full bloom, gave plenty of sport at night. During the day *Satyrus semele* and *Lycæna alexis* (2) were swarming along the cliffs and in the gullies leading to the shore, but the former were getting worn, and not one specimen in twenty was worth keeping. *Eubolia mensuraria*, *Gnophos obscurata*, and *Melanippe subtristata* were all abundant, but *Gn. obscurata* was in very bad condition. Along the face of the low cliffs, which are covered with wild flowers, especially *Anthyllis vulneraria* and rest-harrow; *Zygæna filipendulæ* was out in great numbers, but in bad condition. *Cænonympha pamphilus*, *Satyrus janira*, and *Pararge megera*, all swarmed everywhere, as did *Vanessa urticæ*, but only a few *V. cardui* and *V. atalanta* were seen. The larvæ of the former were occasionally met with on wild borage and thistles. Among the rest-harrow at one or two spots close to the beach the larvæ of *Heliothus marginata* were exceedingly plentiful, and in great variety. By searching the ash trees a few nice specimens of *Cirrhædia xerampelina* were taken, and a single specimen of *Boarmia repandata* var. *sodorensium*. Odd specimens of *Melanthia rubiginata*, *M. ocellata*, *Plusia gamma*, and *Satyrus tithonus* make up nearly all the day captures among the macro-lepidoptera in our immediate neighbourhood; but at Point of Ayre (the curious stretch of open sandy moor covered with heather and stunted gorse, which



forms the northern extremity of the island), single specimens of *Agrotis præcox* and *Stilbia anomala* were obtained in the daytime.

Among the micro-lepidoptera the cliffs yielded *Gelechia anthyllidella* in quantities, and also *Pterophorus trigonodactylus* amongst coltsfoot, with a single specimen only of *Pt. acanthodactylus*; in the rough grass fields at the top of the cliffs *Crambus geniculeus*, *C. tristellus*, *C. culmellus*, were all abundant, but the former getting worn. *Stenopteryx hybridalis* was common everywhere near the coast, and on the moor and sandhills at Point of Ayre, *Crambus latistrius* was fairly plentiful but mostly worn; while *Ennychia cingulalis* swarmed in the sunshine. *Scopula lutealis* was common everywhere. The ragwort was worked regularly on most of the favourable evenings, and yielded a large number of specimens. *Noctua xanthographa* reigned supreme in point of numbers and variety; *Agrotis tritici* and *A. nigricans* were both common, but *A. cursoria* scarce; *Triphæna orbona* and *T. pronuba* were plentiful; and of *T. interjecta* about a dozen specimens came to the flowers, but nearly all in hopelessly bad condition. One of the most abundant species was *Miana iiterosa*, but we were just too late to get it in really good condition. All the following visited the flowers, but none were really plentiful:—*Hydræcia micacea*, *Charæas graminis*, *Luperina testacea*, *Apamea oculatea*, *Noctua glareosa*, *N. baja*, *Amphipyra tragopogonis*, *Caradrina cubicularis*, *Miana furuncula*.

Sugar did not prove at all attractive, almost the only visitors being worn *Triphæna pronuba* and *Xylophasia polyodon*.

At light, *Noctua xanthographa*, *Heliophobus popularis*, *Luperina testacea*, *Charæas graminis*, *Cilix spinula*, and *Larentia salicata* turned up in fair numbers.

In the course of rambles on the cliffs near Peel, and in glens on that coast, *Anaitis plagiata* and *Cidaria immanata* were seen in some numbers; the latter were mostly worn, and the high wind prevented the capture of many of the former.

Owing to the distance, it was impossible to visit the locality for *Polia nigrocincta*, but I did not hear of any being taken by the collectors on the spot; and the larvæ would seem to have been scarce in this season.

The following is a complete list of species observed during our stay:

RHOPALOCERA (13).

*Pieris brassicæ.*

*Pieris rapæ.*

*Pieris napi.*

*Vanessa urticæ.*

*Vanessa atalanta.*

*Vanessa cardui.*

*Pararge megæra.*

*Satyrus semele.*

*Satyrus janira.*

*Satyrus tithonus.*

*Cœnonympha pamphilus.*

*Polyommatus phloëas.*

*Lycæna alexis.*



## NOCTURNI (5).

Zygæna filipendulæ.  
 Hepialus sylvinus.  
 Arctia caja.  
 Arctia menthastri.  
 Arctia lubricipeda.

## GEOMETRÆ (15).

Crocallis elinguaris.  
 Boarmia repandata.  
 Gnophos obscurata.  
 Acidalia scutulata.  
 Larentia didymata.  
 Larentia salicata.  
 Hypsipetes elutata.  
 Melanthia rubiginata.  
 Melanthia ocellata.  
 Melanippe subtristata.  
 Melanippe fluctuata.  
 Coremia unidentata.  
 Cidaria immanata.  
 Eubolia mensuraria.  
 Anaitis plagiata.

## CUSPIDATES (1).

Cilix spinula.

## NOCTUÆ (29).

Bryophila perla.  
 Acronycta psi.  
 Nonagria despecta.  
 Hydræcia micacea.  
 Xylophasia polyodon.  
 Heliophobus popularis.  
 Charæas graminis.  
 Luperina testacea.  
 Apamea oculea.  
 Miana literosa.  
 Miana furuncula.  
 Caradrina cubicularis.  
 Agrotis nigricans.  
 Agrotis cursoria.  
 Agrotis tritici.  
 Agrotis aquilina.  
 Agrotis præcox.  
 Triphaena interjecta.  
 Triphaena orbona.  
 Triphaena pronuba.

Noctua glareosa.

Noctua baja.

Noctua xanthographa.

Cirrhœdia xerampelina.

Dianthæcia capsicola.

Heliothis marginatus.

Plusia gamma.

Amphipyra tragopogonis.

Stilbia anomala.

## PYRALES (7).

Pyralis ostrinalis.

Herbula cespitalis.

Ennychia cingulalis.

Scopula lutealis.

Scopula olivalis.

Stenopteryx hybridalis.

Scoparia angustea.

## CRAMBI (4).

Crambus latistrius.

Crambus tristellus.

Crambus geniculeus.

Crambus culmellus.

## TORTRICES (9).

Tortrix rosana.

Tortrix heparana.

Penthina roborana.

Sericoris cespitana.

Grapholitha nigromaculana.

Catoptria ulicetana.

Bactra lanceolana.

Eupœcilia sodaliana.

Xanthosetia zoegana.

## TINEÆ (8).

Depressaria costosa.

Depressaria applanella.

Gelechia desertella.

Gelechia distinctella.

Gelechia anthyllidella.

Endrosis fenestrella.

Œcophora pseudo-spretella.

Gracillaria syringella.

## PTEROPHORI (2).

Pterophorus trigonodactylus.

Pterophorus acanthodactylus.

## NOTES AND NEWS.

Mr. George Masee, F.L.S., has been studying the disease of orchids known as 'Spot,' and has published a paper on it, entitled 'The "Spot" Disease of Orchids,' with a plate, in the Sept., 1895, number of the 'Annals of Botany.' The conclusion arrived at is that the disease is not of parasitic origin, and is due to exceptional meteoric conditions.



## NORTHERN BULLFINCH IN YORKSHIRE: AN ADDITION TO THE BRITISH AVI-FAUNA.

JOHN CORDEAUX, M.B.O.U.,

*Great Cotes House, R.S.O., Lincoln; President of the Yorkshire Naturalists Union.*

At a meeting of the Zoological Society held in London in November this year, Colonel L. Howard Irby exhibited an example of this large northern race (*Pyrrhula major* C. L. Brehm) which he got from Mr. Philip Loten, of Easington. It was shot by Mr. Craggs Clubley, near Kilnsea village, early in November 1894. Subsequently I was fortunate to obtain a second very fine example from Mr. D. Brown, of Filey, who informed me that it was also shot early in November 1894, at Hunmanby. This second example was shown by Colonel Irby at the same meeting, and it is very satisfactory to learn that Lord Lilford has kindly undertaken to publish a likeness in his beautiful 'Illustrations of British Birds.' In the Hunmanby bird the colours are very brilliant—the lower parts a bright vermilion toned with Chinese white; upper parts a pure blue-grey; beak very strong and large; tips of wing-coverts broadly pure white, and not grey as in the English bird *P. europæa*, from which it differs also in being considerably larger. This northern form is found in Scandinavia, East Prussia, Poland, Russia, and all Northern Asia. It has occurred more or less frequently in Heligoland in autumn during a strong migration of eastern species. These two Yorkshire birds exhibited by Col. Irby are the first recorded for Great Britain.

*December 9th, 1895.*

### NOTE—MOSESSES.

**New Yorkshire Moss and another Confirmation of Teesdale's old records.**—During a recent ramble over a portion of Teesdale's classic ground I had the good fortune to find a tiny moss, *Phascum rectum* (Sm.) = *Pottia recta*, previously recorded by him nearly, if not quite a century ago as an East Riding moss, between Market Weighton and Beverley, on the Wolds. Probably owing to the lack of bryological workers it has not been seen again till November last.

On the same day a moss hitherto unknown to Yorkshire was brought to light, viz.: *Barbula brevirostris* (Hook. and Grev.); this was found growing in a gravel-pit in a valley of our Yorkshire Wolds between Market Weighton and Kiplingcotes on the York and Hull line. The pit was opened out at the end of 1889 or beginning of 1890 to supply ballast for the new railway line between Market Weighton and Driffield. The plant was associated with its congeners *B. aloides* (Koch) and *B. stellata* (Schreb.) Schultz, but was not nearly so plentiful. All were found growing on chalky clay spots of the debris of the pit.

Mr. M. B. Slater informs me that there are only two previous British records, one (1824) Parsons Green, Edinburgh, the other (1874) Ashwood Dale, Buxton; there are also American and northern continental stations, but always scarce. It is somewhat singular that the appearance of this moss and that of the *Seligeria* reported last year, should be coincident with the disturbance and removal of soil and rock.—J. J. MARSHALL, Pharmaceutical Chemist, Market Weighton, Dec. 10th, 1895.



## BIRD-NOTES FROM THE HUMBER DISTRICT IN THE AUTUMN OF 1895.

JOHN CORDEAUX, M.B.O.U.,

*Great Cotes House, R.S.O., Lincoln; President of the Yorkshire Naturalists' Union.*

IN forwarding these notes to 'The Naturalist' I have to thank Mr. G. H. Caton Haigh, of Grainsby Hall, Mr. H. Bendelack Hewetson, of Leeds, Mr. Loten, of Easington, and Mr. M. Bailey, of Flamborough, for information conveyed both orally and by letter.

The autumn has been, generally speaking, barren of results to the ornithologist, and few rare visitors to our eastern shores have to be recorded; many regular immigrants also have been very scarce, or absent altogether. Like the autumn of 1894, it has probably been a very favourable season for birds on passage across the north sea, but as regards the collection of facts due to observations of a visible and low-flying migration, brought about by adverse meteorological conditions, the results have been very poor.

**Corvus cornix L. Hooded Crow.** A pair have nested this season in Easington parish and brought off young.

**Motacilla flava L. Blue-headed Yellow Wagtail.** A pair were frequently seen by Mr. Hewetson in June, during the time he was engaged in excavating a tumulus on the coast near Kilnsea beacon. He felt certain that these were a pair of breeding birds having a nest in the vicinity.

**Squatarola helvetica L. Grey Plover.** July 1st. Several at this date on the Humber flats off Kilnsea. Black-breasted.

**Tringa canutus L. Knot.** July 1st. Several at this date on the Humber flats off Kilnsea. Underparts a faded red.

**Numenius phæopus L. Whimbrel.** July 30th. On passage at a great height.

**Saxicola œnanthe L. Wheatear.** July, last week. Large numbers on passage on the Lincolnshire coast and at the Spurn.

**Phylloscopus trochilus (L.). Willow-warbler.** August, first week, an immense migration at Easington and Kilnsea, also large numbers seen during the week in my garden at Great Cotes.

**Falco peregrinus Tunstall. Peregrine.** August 25th. Three came in from the sea, circling over Easington in the sky-depth at such a height that the ascending circles were contained in the



field of the telescope. Large migration of Swallows (*Hirundo rustica*) and Martins (*Chelidon urbica*) at the same date.

**Pratincola rubetra** (L.). **Whinchat.** August 15th. Mr. Haigh saw immense numbers in fields near the sea-bank in Tetney and North Cotes.

**Motacilla raii** (Bonaparte). **Yellow Wagtail.** August 21st. Mr. Haigh saw many between Tetney and Donna Nook, and all young.

**Porzana maruetta** (Leach). **Spotted Crake.** September, 2nd week. One got by C. Clubley at Kilnsea.

**Stercorarius crepidatus** (J. F. Gmelin). **Richardson's Skua.** In September very considerable numbers off the coast of Lincolnshire. Mr. Haigh shot about a dozen between Saltfleet Haven and Tetney. I saw several off the former place in the third week in the month. Mr. Haigh's birds showed an extraordinary variation in plumage, and are distinctly referable to two forms.

Four skins now before me vary as follows :—

No. 1. Almost a uniform rich umber-brown, with a few light brown markings on flexure of wings, under tail coverts barred with same, legs and feet mottled.

No. 2. Uniform dark brown, all the feathers edged with light brown and whitish-brown. The first colour much brighter on wing coverts and quills. Head dark with light brown streaks. Cervix and sides of neck, smoke-grey, like a broad collar, very finely streaked with darker markings, legs and feet mottled.

No. 3. This is smaller than the others, a uniform clove-brown, feathers on back edged with pale grey, and very slightly so on wings. Under parts very finely speckled and barred with grey. First two primaries with white shafts, the next less white, legs and half-feet yellowish. I should have thought this a young Buffon's Skua had it not been that the position of the nostrils is exactly the same as in *S. crepidatus*.

No. 4. This is altogether remarkably light-coloured, the darker feathers on back and wings very broadly edged with pale brown. Under parts very light, the feathers finely edged with pale brown. Head and cervix almost uniform fawn colour, as light as the same parts in an old male marsh harrier. Shafts of several of the primaries white, the upper parts of inner webs of same, pure white. Half of tail mostly a rich buff. Legs and feet mottled.

Great numbers of *S. crepidatus* were seen off Flamborough Head in the autumn, and on one day in September passing in continuous flights to the south.



On October 10th Mr. Haigh saw flights of the Arctic Skua passing inland at Tetney to W. In less than half-an-hour four flocks, containing together about fifty birds; but no more throughout the day. These flocks included many beautiful white-breasted birds, with very long tails.

**Xema sabinii** (Joseph Sabine). **Sabine's Gull.** September 9th. A mature male in perfect summer plumage was shot on this day in Bridlington Bay by a fisherman. This is the finest example of an adult Sabine's Gull I have ever come across on the English coast.

**Regulus cristatus** K. L. Koch. **Gold-crested Wren.** Sep. 28th. Mr. Haigh saw one at North Cotes. A few in my garden here in October and a sprinkling at Flamborough; almost an absolute absence in the district.

**Turdus torquatus** L. **Ring-Ouzel.** Late in September and early in October, a few at Kilnsea and Easington. Some of these undoubtedly belonged to the race known as *T. alpestris* (C. L. Brehm). A farmer said he had 'seen blackbirds with white breasts and very white wings.'

**Puffinus griseus** (J. F. Gmelin). **Sooty Shearwater.** Oct. 1st. Two were shot by Emerson, of Flamborough, from his boat, off the Smithwick sand, south of the headland. His son told me about 20—30 others were observed, along with Manx Shearwaters (*Puffinus anglorum*), Gannet (*Sula bassana*), and large Gulls, beating to and fro over a shoal of herrings.

**Asio accipitrinus** (Pallas). **Short-eared Owl.** September 30th. Mr. Haigh saw one near Donna-nook. A large number in November in the coast districts of Lincolnshire and Yorkshire. and I much regret to say many found their way to the bird-stuffers' shops.

**Corvus cornix** L. **Hooded Crow.** September 30th. A pair seen near Donna-nook. On October 18th, a great flight. I found them all over the marshes at Cotes, very tame and hungry. Some of these had the grey parts much lighter than the ordinary immigrant; many almost white, or a very pale smoke-grey. One had the fourth primary in each wing pure white.

**Alauda arvensis** L. **Sky-Lark.** October 3rd. Young Emerson, of Flamborough, said that early this morning, when with his father at sea off the headland, the weather thick and hazy on the horizon, an enormous flock of Larks extending right and left, further than the eye could see, and about a hundred yards in breadth, closely packed, passed towards the land, shortly followed by another immense flock.



- Procellaria pelagica** L. **Storm Petrel.** Mr. M. Bailey has one which was captured alive on board a fishing-boat in October.
- Emberiza citrinella** L. **Yellow Bunting.** October 4th. Mr. Haigh saw many in turnips at Tetney, and the following day hundreds in coast hedges: also Greenfinches (*Ligurnius chloris*). Thousands of the latter also came in at Easington and Kilnsea.
- Gallinago cœlestis** (Frenzel). **Common Snipe.** October, first week, many.
- Gallinago gallinula** L. **Jack Snipe.** October, first week, some. Mr. Haigh writes: 'October 9th. We had a very strong rush of birds—Lapwings (*Vanellus cristatus*), Larks (*Alauda arvensis*), and Starlings (*Sturnus vulgaris*)—all day going west; also a few flocks of Golden Plover (*Charadrius plumialis*); other birds moving were Greenfinch (*Ligurinus chloris*), Chaffinch (*Fringilla cœlebs*), Yellow Bunting (*Emberiza citrinella*), Linnets (*Linota cannabina*), Blue Tits (*Parus cœruleus*), and one flock of Twites (*Linota flavirostris*), also a few Thrushes (*Turdus musicus*) and Blackbirds (*T. merula*), and one Ring-Ouzel (*T. torquatus*).'
- Tadorna cornuta** (S. G. Gmelin). **Sheld-drake.** Mr. Haigh saw a flock of about fifty on October 10th off the Tetney coast.
- Colymbus septentrionalis** L. **Red-throated Diver.** Oct. 14th. One shot in Bridlington Bay was in adult summer plumage, with chestnut-red throat.
- Parus ater** L. **Coal Tit.** Oct. 10th. Mr. Haigh saw a very light-backed Coal Tit in a hedge near Tetney. On October 17th, at early morning, I saw seven or eight in a shrub close to my library window, I have no doubt they were immigrants from their very bright clean plumage; they had very light grey-blue backs. It has never been common on migration in Heligoland, and in recent years of rare occurrence, in 1847 in small numbers there, but invariably in company with the many great flocks of *P. major* and *P. cœruleus*.
- Totanus fuscus** (L.). **Dusky Redshank.** Stubbs of Tetney pulled his net over a Dusky Redshank which had been seen about some time, but it got through the net just before he reached it.
- Ruticilla phœnicurus** (L.). **Redstart.** October 18th. A late bird seen at Kilnsea. Many very dark-coloured thrushes came in at this time.
- Plectrophenax nivalis** L. **Snow Bunting.** Oct. 25th, a flock on Lincolnshire coast. 26th Oct. Heavy snow from



N.W. Many snow-buntings and a few Shore-larks (*Otocorys alpestris*) on coast at Easington and Kilnsea.

**Scolopax rusticula** L. **Woodcock.** Oct. 9th. A few at Flamborough. Oct. 26th. Easington, Kilnsea, and Spurn a few, and odd birds here and there during the month. Nov. 1st. Great flight both on the Yorkshire and Lincolnshire coast—22 shot in the Spurn district and many more seen.

**Lanius excubitor** L. **Great Grey Shrike.** Very few records of this regular autumn immigrant. On Oct. 18th, Mr. Haigh saw one perched on the telephone-wire at North Cotes. Oct. 19th. One (one wing-bar) shot on sea bank at Tetney. Another, which I saw in the flesh, also with one wing-bar, shot near the lighthouse at Flamborough on Oct. 23rd. And one, set up by Mr. Bailey's assistant, shot at Flamborough about three weeks before this occurrence.

**Turdus pilaris** L. **Fieldfare.** Remarkably scarce during the autumn. On October 26th, wind N.E. and N., a few coming in from sea at Easington. Mr. Haigh told me, writing from his place near the sea in Merionethshire, that on Nov. 18th, Fieldfares were passing south all day in large flocks, and on the 19th also in smaller flocks.

**Saxicola œnanthe** L. **Wheatear.** Oct. 27th. One on Kilnsea Warren.

**Hirundo rustica** L. **Swallow.** Oct. 27th. Last Swallow seen by me when driving through Skeffling. Nov. 9th, two seen by Mr. Hewetson at Easington.

**Acanthis linaria** (L.). **Mealy Redpole.** Nov. 2nd. Mr. Haigh got a Mealy Redpole near the coast. It is surprising how very rare this species is on the Lincolnshire side of the Humber compared with the number often found in the Spurn district.

**Podiceps griseigena** (Boddaert). **Red-necked Grebe.** Nov. 8th. An adult male was taken alive in a stackyard at Skeffling, and subsequently was brought to Mr. P. Loten, of Easington, for preservation. Another, an adult male, was shot at Swine, near Hull, on the same date.

**Passer domesticus** (L.). **House Sparrow.** Nov. 2nd—6th. Thousands on coast. The migration of the Sparrow to the east coast of England from the Continent is a perfectly ascertained fact.

**Buteo lagopus** (J. F. Gmelin). **Rough-legged Buzzard.** Oct. 25th. One on the coast, and on Nov. 9th another was



watched, hovering on the wing like a Kestrel, above the boat-house of Easington, Humber side. A few Common Buzzards (*B. vulgaris*) seen during the autumn.

**Turdus merula** L. **Blackbird.** November 9th. Considerable immigration of Blackbirds both on the Lincolnshire coast and at the Spurn, Kilnsea and Easington; at the latter places during the first week of the month.

**Columba palumbus** L. **Wood Pigeon.** November 12th. Mr. Haigh writes from Grainsby:—Several large flocks passing south, very high. December 5th. Flock high to W. at Cotes.

**Stercorarius pomatorhinus** (Temminck). **Pomatorhine Skua.** The only one I have seen this season was on November 26th, a freshly-killed specimen in immature plumage, the square tips of the central rectrices slightly projecting beyond the rest. The colour of the legs and base of toes in the young of this species is described in Yarrell (4th edition) as yellow. In this those parts were a lovely pale blue—pearl blue—the feet and toes black. When I saw the bird ten days later the blue parts had faded to a dirty slaty-brown, without a trace of the beautiful early colour.

December 9th, 1895.

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#### NOTE—FISHES.

**Lophius piscatorius** off the Isle of Man.—The cutting below appeared in the 'Ulverston Advertiser' of October 26th.—L. PETTY, Nov. 1st, 1895.

'CAPTURE OF A SEA-DEVIL OFF DOUGLAS.—An exciting scene has taken place on board the steam trawler 'Skart.' While fishing off Douglas there became entangled in the net a monster fish known as the sea-devil (*Lophinus Piscatorious*), which was with the greatest difficulty hauled on board. It was two yards in length, and about the same measurement round the head. . . . The fish has been mounted by Mr. R. Coburn, of Douglas.'

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#### NOTE—LEPIDOPTERA.

**Acherontia atropos** in Went Vale: and Query as to Dates of Emergence.—On August 23rd last, I received from a potato garden at Little Smeaton a full fed larva of *Acherontia atropos*, which promptly pupated on being provided with earth; the imago emerged on Nov. 17th, having meanwhile been kept in a warm room. It would perhaps be of interest to others besides myself if some of our local lepidopterists would give their experience as to the month in which *A. atropos* emerges in a state of nature. Stainton says the end of August to October, Newman gives the latter month, while Mr. J. Anderson, Jr., writing in a recent number of the 'Entomologists' Record' (Vol. vii, p. 86,) states 'Some emergences may take place in November, if not the moths will remain in pupa till June or July, unless forcing be adopted.' I had always regarded *A. atropos* as a late autumn species, the few specimens which have passed into my hands being found at rest in October or November; but in the case of such emergences, where could the female lay her eggs to give the young larvæ a reasonable prospect of feeding on potato, upon which plant I believe most larvæ are reported to have been found? —WM. E. BRADY, 1, Queen Street, Barnsley, Dec. 12th, 1895.



## LINCOLNSHIRE NATURALISTS AT MARKET RASEN.

REV. E. ADRIAN WOODRUFFE-PEACOCK, L.Th., F.L.S., F.G.S.,

*Vicar of Cadney; Organising and Botanical Secretary, Lincolnshire Naturalists' Union;  
Curator of the Lincolnshire County Herbarium.*

IN lovely weather the eighth field meeting of the Lincolnshire Union was held on the 23rd of August, at Market Rasen, North Lincolnshire, in the centre of Natural History Division 7. Most of the best workers of the society had returned from their summer holidays, and a large company mustered at the advertised time. Amongst those present were Messrs. F. M. Burton, of Gainsborough (President of the Union); F. Arnold Lees, of Leeds; G. H. Caton Haigh, of Grainsby; J. J. Young, of Claxby; J. J. Baldwin Young, of Sheffield; W. Lewington, of Market Rasen; the Revs. W. Fowler, of Liversedge; G. H. Raynor, of Panton; W. W. Mason, of Bootle, late of Leverton, Boston; C. Wilkinson, of Loft-Newston; H. E. Von Sturmer, of Scotton. The Louth Antiquarian and Naturalists' Society was well represented by Messrs. B. Crow, J. Larder, T. Gelsthorpe, S. F. Clarke, R. W. Goulding, and Mr. and Mrs. S. Gresswell. The locality chosen for investigation is situated in the parishes of Tealby, North Willingham, Linwood, and Rasen—a neighbourhood rich in interest in every department of inquiry, and one that has repaid and will repay the zealous and industrious student. The following is a summary of the reports received from sectional secretaries and active workers.

Mr. F. M. Burton, F.L.S., F.G.S., writes:—Market Rasen stands on the Kimmeridge Clay; but, as all the land round is covered with the Boulder Clay and Blown Sand, very little of this bed can be seen. There are but few localities in the neighbourhood where it can be got at; Hamilton Hill, a conspicuous rounded mass on the east, and a few other places, being the only outcrops. The Oxford Clay comes in at West and Middle Rasen; and, at Tealby, about four miles off on the east, the Neocomian series is well represented; the Spilsby Sandstone lying at the base, followed by the Tealby Clay and Tealby Limestone, and, beyond them, the Carstone, till the chalk is reached.

'In passing over Linwood Warren' Mr. Burton says, he 'picked up several bits of Roman pottery, which had been cast up by rabbits in digging their burrows. This is worth while investigating, for either



the remains come from a place of burial, or else from the refuse heap of an old Roman villa, which would probably be found near.'

Messrs. G. H. Caton Haigh and J. J. Baldwin Young reported the following bird's notes:—Goldcrest, Blue, Great, and Long-tailed Tits, Wood Pigeon, Wren, Redstart, Green Woodpecker, Jay, Carrion Crow, Swallow, Sand Martin, Chaffinch, Yellowhammer, Redpole, Magpie, Rook, and Common Gull. They also found a Starling's nest in a Woodpecker's hole, and the nests of the Waterhen and Woodpecker.

Mr. R. W. Goulding writes on the flora:—A botanist whose collecting is for the most part confined to the chalk wolds, expects to discover in the boggy and peaty ground of our sand warrens many plants which are not characteristic of the locality with which he is most familiar, though he will also find many species common to both districts. The causes of this varying distribution are obscure, and the consideration of such phenomena filled the late Charles Darwin with surprise.\* 'I am never weary,' he once wrote in a letter to Bentham, 'when walking in any new adjoining district or country, of reflecting how absolutely ignorant we are why certain old plants are not there present, and other new ones are, and others in different proportions.' But however obscure the causes may be, yet the facts remain. When, therefore, the Louth Society heard that the Union had arranged for a meeting which should include a visit to Linwood Warren, they decided to join in, thinking that they would have an excellent opportunity of visiting ground new to most of their members, as well as of meeting some of the most experienced botanists connected with the county by birth or residence. With one exception, every one interested in the local distribution of our plants deemed their finds highly satisfactory. The exception was Mr. F. A. Lees, M.R.C.S., who had worked the Market Rasen circuit, a seven-mile radius, during residence there from April 1877 to September 1879, and later on while staying there in 1881, and who now missed several species which were then not uncommon. In his opinion there was an element of sadness in going over old and well-remembered ground and failing to find the good things that had been recorded for it not twenty years ago, and so he was tempted to exclaim: 'Ichabod! the glory has departed!' Yet even he was fain to confess that some good finds had been made.

The Warren, at Linwood, was practically carpeted with our two Heaths (*Erica tetralix* L. and *E. cinerea* L.), and Ling (*Calluna erica* DC.), among which the beautiful deep blue flowers of the Gentian (*G. pneumonanthe* L.) were now and again conspicuous.

\* 'Life and Letters of Ch. Darwin,' vol. 3, p. 24.



Very plentiful was the Marsh Pennywort or White-rot (*Hydrocotyle vulgaris* L.), the round leaves of which completely hid its insignificantly minute flowers. Many leaves of the Marsh Cinquefoil (*Potentilla comarum* Nestl.) and of the Lily-of-the-Valley (*Convallaria majalis* L.) were seen, but it was too late for the blossoms of either. The Lesser Spearwort (*Ranunculus flammula* L.), Sneezewort (*Achillea ptarmica* L.), Gipsywort (*Lycopus europæus* L.), Woodsage (*Teucrium scorodonia* L.), Buckbean (*Menyanthes trifoliata* L.), and Water-pepper (*Polygonum hydropiper* L.) were common. The juice of the last is locally said to cure pimples on the tongue. Other plants noted—merely to give the scientific name—were: *Solidago Virgaurea* L., *Epilobium palustre* L., *Mentha sativa* L., *Sagina apetala* L., *Cnicus pratensis* Willd., *Angelica sylvestris* L., *Viola ericetorum* Schrader (as I suppose we must call our old friend *V. flavicornis* Sm. now), *Rhamnus frangula* L., *Drosera rotundifolia* L., with leaves covered with red viscid hairs ready to allure and entangle small unsuspecting insects to their destruction. To these may be added *Filago minima* Fr., *Scleranthus annuus* L., *Lepigonum rubrum* Fr., now generically called *Buda*, if we are all to follow the new London Catalogue, *Peplis portula* L., *Alisma ranunculoides* L., *Rubus idæus* L., *R. affinis* W. & N., *R. suberectus* Anders., *R. leucostachys* Sm., *Hieracium tridentatum* Fr., *Hypericum pulchrum* L., *Veronica scutellata* L., and its variety *hirsuta* Weber, *Cerastium glomeratum* Thuill., *Viburnum opulus* L., *Polygala depressa* Wend., *Ornithopus perpusillus* L., and *Radiola linoides* Gmel., one of the smallest of British flowering plants. Among the sedges and grass-like plants *Molinia cærulea* Moench., *Calamagrostis epigeios* Roth., *Deschampsia flexuosa* Trin., *Glyceria aquatica* Sm., *Scirpus cæspitosus* L., *S. setaceus* L., *Nardus stricta* L., *Carex pulicaris* L., *C. stellulata* Good., and *Eriophorum angustifolium* Roth., may be added. The best ferns found were *Lastræa oreopteris* Presl., *L. spinulosa* Presl., *Asplenium rhæticum* Roth.

To this already inordinately long list we must add a few first records, rarities, and notes, taken from a *Florula of the Market Rasen 'Circuit,'* by Mr. F. A. Lees, which he has kindly written out since the Rasen meeting, from note-books kept during the time of his residence. The whole will be added to my *Locality Register*, to help in working out the relation of our existing and extinct flora, as far as the latter is recorded, to the geological strata of Lincolnshire, but, as referring to the neighbourhood of the Union's excursion, a short selection cannot fail to interest. The present writer's notes are added in parentheses. *Nasturtium siifolium* Reichb., ditch near Moortop Farm, between



Oswersby and Usselby; *Cardamine flexuosa* With. (an unaccountably rare species, or one often passed over); *Cerastium semidecandrum* L., I find no note of having gathered this species, and yet I seem to recollect it in plenty in sandy ground in spring about Hamilton Hill and Legsby; *Stellaria nemorum* L., damp woods at Tealby (it is one of our very rarest plants); *Medicago denticulata* Willd., a flour-mill refuse casual (the variety *apiculata* Willd., has turned up as a garden casual at Howsham this season); *Cotyledon umbilicus* L., one place, Tealby, an old mossy wall—possibly planted; *Drosera intermedia* Hayne, apparently not there in 1895; *Ænanthe crocata* L., wooded swamp, Willingham (very rare); *Cnicus palustris* × *pratensis*, the hybrid, Linwood Warren, 1878—only one plant; *Vaccinium oxycoccus* L., Linwood, very little in 1877—not found in 1895; *Centunculus minimus* L., once in Sandy Lane, near Osgodby; *Cuscuta epithimum* Musr., Nova Scotia Common, near Osgodby; *Digitalis purpurea* L., Hamilton Hill and Willingham vicinages; *Pinguicula vulgaris* L., looked for but never seen even on Linwood Warren in 1877-79—(the italics are Mr. F. A. Lees' and not mine. It shows that the most carefully kept note-books and best memories fail at times, for I have absolute proof in his handwriting that he did find it there, and I know that it is found at Claxby, a little to the north); *Mentha officinalis* Hull, Holton-le-Moor, and *M. rubra* Sm.? A tall red stemmed mint used to grow in the Rase in several places, but I did not know the mints in 1877-79, and so cannot be positive about it (I have specimens of both from S., verified by Mr. Arthur Bennett); *Euphorbia platyphyllos* L., sandy oat-field once, near Middle Rasen (an alien, I fear); *Elodea canadensis* Mich., this attained its maximum of commonness in 1870; it seems dying out again over large areas now. None of the *Orchideæ* are much in evidence on the Kimmeridge Clay and blown sand about Rasen; *Eriophorum vaginatum* L., in small quantity on the drier parts of Osgodby Common, near Usselby Corner, 1878. (With this splendid record we will stop, leaving Mr. Lees' notes on the remaining genera to appear in their place in the *Critical Catalogue* in due course).

The Rev. G. H. Raynor, M.A., makes the following report for the Entomological Section:—The end of August is rather too late in the season for many imagos to occur during the daytime, and three weeks later would be an undoubtedly better time for collecting larvæ. Add to this the fact that the district round Legsby has been well worked during the last three or four years by Mr. Lewington and myself, and little surprise can be felt that no absolutely new species (among the macros, at any rate) were turned up on our field-day. Eleven species of Diurni (Butterflies) were observed, including



the Silver-washed Fritillary (*Argynnis paphia*) and the Peacock (*Vanessa io*), the latter just emerged and gloriously beautiful. Single representatives only of the Nocturni and Noctuæ were in evidence, these being *Odonestis potatoaria*, a female at rest, and *Plusia gamma*, whilst three common Geometers (*Camptogramma bilineata*, *Melanippe subtristata*, and *Cidaria testata*), one Tortrix (*Penthina capræana*), one Pyrale (*Scopula lutealis*), and an interesting member of the Tineina, viz., *Gracillaria stigmatella*, complete the list of perfect insects. Searching and beating for larvæ proved more profitable, as far as the variety of species was concerned. The Rev. C. Wilkinson got a larva of *Dicranura furcula* off willow, and the writer found a small aspen bush almost stripped of its foliage by three huge *D. vinula* larvæ. The Puss-moth is perhaps one of the best-known, and is certainly one of the most formidable-looking, of British larvæ. Three other species of Prominent larvæ were taken: *Notodonta camelina*, *N. dromedarius*, and *N. ziczac*; whilst the Pepper-Moth (*Amphidasis betularia*) caterpillar was occasionally found upon birch trees. The last available half-hour was devoted to beating the ling for larvæ of the Beautiful Yellow Underwing (*Anarta myrtilli*), six of which were carried away captive. Thus ended a very pleasant day's entomology.

The Rev. W. Fowler, M.A., reports on the Fungi as follows:—About thirty species of fungi were collected, many of them common everywhere on similar ground. The best were *Psilocybe ericæus* Pers., *Gomphidius roseus* Fr., *Boletus bovinus* L., and *B. edulis* Bull.

Mr. J. Larder writes:—Students of cryptogamic botany could hardly expect to make any new finds, at least so far as mosses were concerned, when one considers the long list which the exhaustive investigations of Mr. Lees some years ago in the district enabled him to draw up. Nevertheless, the finds were of an interesting character, and a list of those found during the day, or recorded by Mr. Lees, is appended. Dried specimens of most of them are in the herbarium of the Union. *Sphagnum acutifolium*, *S. cuspidatum* var. *plumosum*, *S. eu-rigidum*, *S. compactum*, *S. subsecundum*, *S. papillosum*, *Dicranum scoparium*, *D. palustre*, *Campylopus flexuosus*, *Leucobryum glaucum*, *Ulota intermedia*, *Webera nutans*, *Bryum erythrocarpum*, *Aulacomnium palustre*, *Polytrichum piliferum*, *P. commune*, *Neckera complanata*, *Thamnum alopecurum*, *Isothecium myurum* (Elinor Wood), *Plagiothecium sylvaticum*, *Hypnum squarrosum*, *Breutelia arcuata*, and *Fontinalis antipyretica*. The only lichens recorded were *Cladonia pyxidata*, *Cl. uncialis*, and *Peltigera canina*.

The usual high-tea and after-meeting finished up a day full of encouragement to all active workers. The thanks of the Union were



voted unanimously to Miss Boucherett, the Right Hon. Edward Heneage, Mr. L. Tennyson D'Eyncourt, Lieut.-Col. F. T. Conway-Gordon, and Mr. R. N. S. Nelthorpe, for freely opening their estates for the expedition. Miss Boucherett was specially thanked for most kindly offering hospitality which the Union, considering the limited time at its disposal, could not avail itself of.

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### NOTE—LICHENS.

**Symbiosis and Mimicry in Lichens.**—One day last summer, whilst hunting for cryptogams in Dentdale, I gathered a *Collema* apparently in full normal fructification. As the plant appeared a stranger to me, I carefully placed it in my vasculum for future investigation. Subsequently, when I came to examine the specimen with my microscope, I was greatly surprised to discover that the normal-looking apothecia were in reality the thalli of an *Endocarpon*, bearing endocarpous fruit. I handed the curiosity over to a botanical friend, who eventually forwarded it to a noted Scotch lichenist, with whom he is slightly acquainted. This gentleman is evidently interested in the dual plant. He has written my friend two or three notes about it, but has not yet arrived at a final decision in the matter. He has, however, in the meantime given the parasite a provisional specific name as a new *Endocarpon*. The most interesting part of the phenomenon to myself, however, is the close resemblance of the parasite to the ordinary fructification of its host, so close as to deceive the most practised botanist without the aid of a microscope.—A. SHACKLETON, Braithwaite, Keighley, December 20th, 1895.

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### NOTES AND NEWS.

We have received from Mr. William Moss, of Ashton-under-Lyne, a reprint of his paper on 'The Value of the Radula as an aid to Classification,' from the 1894 Report of the Manchester Microscopical Society. It is illustrated by a couple of litho plates.

The fourth volume of the 'Transactions of the Rochdale Literary and Scientific Society,' which covers the years 1893—1895, lies before us. Most of the papers are archæological in their scope, and local science is only represented by a paper by Mr. W. Watts, F.G.S., on 'Birds in Piethorn Valley,' one by Mr. S. Sidney Platt, F.G.S., on 'Large Fossil Trees found at Sparth Bottoms, Rochdale,' one by Mr. T. S. Smithson on 'The Recent Cold Weather at Facit during the Winter of 1894-5,' and one by Mr. J. R. Ashworth on 'Rainfall in Rochdale and the Neighbourhood.' But all the papers are sound useful contributions to knowledge, and the volume includes none that is not worth printing. The proceedings show evidence of vitality and progress, and the existence of so useful a Society reflects much honour on the people of Rochdale.

Yorkshire naturalists and archæologists have to mourn the loss of Mr. William Grainge, of Harrogate, the well known local historian, antiquarian, geologist, poet, and nature-lover, who died at Harrogate on the 29th of September last, at the age of 77. He was born at Dishforth near Ripon, on the 25th January, 1818, and his childhood was spent at the ancestral home of his family, a farm called Castiles, in the parish of Kirkby Malzeard. On his father's death in 1845 he removed to Boroughbridge, and in 1860 he commenced business as a bookseller at Harrogate. He was a voluminous and painstaking writer on archæological and topographical subjects, and will ever be held in remembrance for his 'History of Harrogate and the Forest of Knaresborough' published in 1871, a most excellent and useful work. The list of his antiquarian and topographical works is a long one, and he has left in MS. the materials for many more. As a naturalist he published nothing, or next to nothing, but he was nevertheless a well-informed botanist and geologist in his own quiet way, and the extent of his acquirements in these directions is only known to those who have had the enjoyment of his genial companionship on country rambles.



## BIBLIOGRAPHY:

Papers and Records published with respect to the Natural History and Physical Features of the North of England.

## MARINE FISHES, 1889-1892.

THE present instalment has been compiled and edited by  
WM. DENISON ROEBUCK, F.L.S.

The previous instalments of the Biography of Fishes (both freshwater and marine) have appeared as follows:—

For 1884—in 'Naturalist,' June 1885, pp. 253-7.

„ 1885— „ Aug. 1886, „ 242-4.

„ 1886-88— „ Jan. 1891, „ 27-37.

The records for marine and freshwater fishes have hitherto been given together, but will henceforth be separated, and the present instalment includes records of marine fishes for four years.

The counties and vice-counties of which cognizance is taken are the following, as named and numbered in the Watsonian scheme:—

53, Lincoln S.; 54, Lincoln N.; 56, Notts.; 57, Derby; 58, Cheshire; 59, Lancashire S.; 60, Lancashire W.; 61, York S.E.; 62, York N.E.; 63, York S.W.; 64, York Mid-W.; 65, York N.W.; 66, Durham; 67, Northumberland S.; 68, Cheviotland; 69, Westmorland with Furness; 70, Cumberland; 71, Isle of Man.

ANON. [signed 'Caligula'].

Isle of Man.

**Sport with Rod on the Manx Coast** [for Pollack or Lythe, Manx 'Calig' (*Gadus pollachius*), Coalfish or Saithe, Manx 'blochan' (*G. virens*), Red Cod, a local variety of the ordinary Cod (*G. morrhua*), Whiting (*G. merlangus*), Mackerel (*Scomber scomber*), Ballan Wrasse or 'bollan' (Manx) (*Labrus maculatus*), Cuckoo Wrasse or 'doctors' and 'ladies' (*L. mixtus*)]. Field, July 16th, 1887, p. 110.

ANON. [signed 'D. R. C.'].  
Isle of Man.

Isle of Man.

**Sea Fishing at the Isle of Man** [mentioning Rock Cod (*Gadus morrhua* var.), Pont (*Gadus luscus*), Pollack, local name cællog (*G. pollachius*), Mackerel (*Scomber scomber*), Sand Eels (*Ammodytes* sp.), Gurnard (*Trigla gurnardus*), Mullet (*Mugil* sp.), Bream (*Pagellus centrodontus*), Conger (*Conger vulgaris*), and Coalfish, local name Si-hen (*Gadus virens*)]. Land and Water, Sep. 24th, 1887, pp. 233-234.

ANON. [not signed].

Durham.

**Food of the Haddock** [(*Gadus aeglefinus*); in a specimen purchased at Hartlepool were fourteen young Whiting (*G. merlangus*) and a Crab]. Zool., Jan. 1889, p. 36.

ANON. [signed 'W.'].  
Cumberland.

Cumberland.

**A Big Catch of Cod** (*Gadus morrhua*) in the Solway [by a Maryport fisherman; about 50, weighing 25-35 lbs. each]. Field, Jan. 5th, 1889, p. 20.

ANON. [not signed].

York S.E.

**A Large Skate** [(*Raja batis*) taken in the deep sea, 120 miles from Spurn Point, off the Dogger Bank; weight 107 lbs.; 6 ft. 4 in. long, by 4 ft. 8 in. broad]. Field, Aug. 24th, 1889, p. 277.



- ANON. [not signed]. York N.E.  
**Leeds Naturalists' Club and Scientific Association** [Marine Dredging trip off Filey Bay, 20th July, 1889; Turbot (*Rhombus maximus*), Sole (*Solea vulgaris*), Flounder (*Pleuronectes flesus*), Skate (*Raja batis*), Spotted Ray (*Raja maculata*), Gurnard (*Trigla gurnardus*), Haddock (*Gadus aeglefinus*), Herring (*Clupea harengus*), Whiting (*Gadus merlangus*), and *Lophius piscatorius* noted]. Research, Sep. 1889, p. 70.
- ANON. [not signed]. Cheviotland, Northumberland S., York N.E.  
**A Rare Fish** [(*Myliobatis aquila*) in Scotland; former occurrences in Berwick Bay, off Cullercoats, off Scarborough, etc., quoted]. Field, Oct. 19th, 1889, p. 562.
- ANON. [not signed]. Linc. S.  
**Capture of a Large Sun-fish** [(*Orthogoriscus mola*) in the deeps between Lynn, Wisbech and Boston, on the Black Boy Sand;  $7\frac{1}{2}$  ft. from fin to fin,  $5\frac{3}{4}$  ft. long, weight  $7\frac{1}{2}$  cwt.]. Land and Water, Nov. 30th, 1889, p. 697.
- ANON. [not signed]. Lanc. S.  
**Rambles taken during the year 1889. . . . Southport** [July 13th; *Scyllium canicula* (empty egg-case), and *Conger vulgaris* noted as found]. 10th Ann. Rep. Manch. Micr. Soc., for 1889, publ. 1890, pp. 114-116.
- ANON. [not signed]. York N.E.  
**List of . . . Donations to the Museum [at Newcastle] . . . from August 10th, 1888, to July 1st, 1889** [Lesser Spotted Dogfish (*Scyllium canicula*) taken at Redcar (John A. Mather)]. Nat. Hist. Trans. Northumb. Durh. and Newc., Vol. 10, part 2, pub. 1890, p. 314.
- ANON [signed 'W. B.']. Isle of Man.  
**The Term 'Warp'** [as used by Manx fishermen in counting Herrings (*Clupea harengus*)]. Yn Lioar Manninagh, Ap. 1890, p. 167.
- ANON. [not signed]. Cheviotland.  
**A Rare Fish** [recently got in crab-nets about  $1\frac{1}{2}$  mile from Berwick; identified by Mr. Donall, fishery officer, as *Motella tricirrata*]. Land and Water, May 17th, 1890, p. 651.
- ANON. [signed 'Flaneur']. Solway Firth.  
**Anchovies** (*Engraulis encrasicolus*) in the Solway Firth [near Annan, three caught '30th ult.', identified by Dr. Günther and Dr. Traquair; a few details given]. Field, June 7th, 1890, p. 852.
- ANON. [newspaper paragraph]. Solway Firth.  
**The Anchovy** [*Engraulis encrasicolus*] in the Solway [several trawled by an Annan fisherman]. Newcastle Daily Journal, 31st May, 1890; rep. Young Nat., July 1890, p. 132.
- ANON. [signed 'The Doctor']. York N.E.  
**Lythe and Cuddy** [with a passing reference to 'the very black Coalfish (*Gadus virens*) of Scarborough']. Field, Oct. 25th, 1890, p. 623.
- ANON. [newspaper paragraph]. Northumberland S. or Durham.  
**Large Skate** [(*Raja batis*); 7 ft. long  $\times$  5 ft. 6 in. broad, brought in 2nd Feb. and sent to North Shields Fish-market]. Newcastle Weekly Chronicle; rep. Brit. Nat., May 1891, p. 107.
- ANON. [signed 'Blue Dun']. York N.E.  
**Sea Angling in Scarborough Bay** [recording unusual abundance of Mackerel (*Scomber scomber*)]. Field, Sep. 26th, 1891, p. 491.
- F. BOYES. York S.E.  
**Off Flamborough Head** [Oct. 8th, 1887; fishing for Codlings, nearly all caught being the pretty variety called 'rock codling' (*Gadus morrhua* var.)]. Field, Oct. 29th, 1887, p. 654.
- JOHN T. CARRINGTON. York N.E. and S.E.  
**British Sharks** [a gossip article; note of *Lamna cornubica* off Whitby and Bridlington]. Field, Nov. 19th, 1892, p. 764.



- ABEL CHAPMAN. Cheviotland, Northumberland S.  
**Some Notes on the Game-Fish** [of the Borders ; in his book on 'Bird-Life of the Border,' pp. 32-34 ; the Salmon (*Salmo salar*) of Redewater and Coquet, etc. ; Bull Trout (*S. eriox*) ; Cod (*Gadus morrhua*) ; Coal-say (*G. virens*) ; Rock-codling (*G. morrhua* var.) ; Poodlings (*G. virens*) ; and Lythe (*G. pollachius*) referred to as enemies of Smolts].
- A. CHOPIN. Isle of Man.  
**Zoological Notes at Port St. Mary, Isle of Man** [with Complete List ; the only fishes were *Syngnathus anguineus* and *Lepadogaster bimaculatus*]. Journ. of Microsc., Ap. 1890, pp. 126-129.
- WILLIAM J. CLARKE. York N.E.  
**Notes from Scarborough** [anent Abundance of young Whiting (*Gadus merlangus*) about 4 or 5 inches long]. Zool., Nov. 1892, p. 411.
- JOHN CORDEAUX. York S.E.  
**[Oar-fish (*Regalecus banksii*) at Flamborough]**. Migration Report for 1883, p. 58 ; rep. Nat., Sep. 1884, p. 43.
- JOHN CORDEAUX. York N.E. and S.E.  
**Muller's Topknot (*Rhombus punctatus*) off the Yorkshire Coast** [Nov. 4th, 1889 ; reference made also to the Redcar and Bridlington occurrences given by Clarke and Roebuck]. Nat., Dec. 1889, p. 356.
- JOHN CORDEAUX. Linc. N. and York S.E.  
**Occurrence of the Short Sunfish [*Orthogoriscus mola*] and Torpedo [*T. hebetans*]** off the East Coast [the first brought into Grimsby, the second trawled at the Silverpits ; both now in the museum of the Marine Fisheries Society at Cleethorpes]. Nat., Feb. 1890, p. 42.
- J. C. CRELLIN. Isle of Man  
**The Fish of the Isle of Man** [enumerating 46 Marine Fishes, with brief notes on a very few of them]. Trans. I. of Man N.H.S., Vol. 1, 1879-84, publ. 1888, pp. 57-61.
- J. C. CRELLIN. Isle of Man.  
**Notes on Sea Fish** [with a Revised List of 68 species ; introductory remarks discuss fishing, habits and occurrences, local names, etc.]. Trans. I. of Man N.H.S., Vol. 1, 1879-84, publ. 1888, pp. 160-166.
- J. T. CUNNINGHAM. Isle of Man.  
**The Breeding of British Clupeoids** [a lengthy article, in which it is mentioned that at the Isle of Man *Clupea harengus* spawning takes place in October]. Field, Dec. 12th, 1891, p. 892.
- PERCY DAVIS. York N.E.  
**[Marine Fishes observed by] the Yorkshire Naturalists' Union at Robin Hood's Bay** [21st June 1889 ; *Gadus aeglefinus*, *Pleuronectes platessa*, and *Pl. limanda* dredged off Scarborough]. Nat., Aug. 1889, p. 232.
- J. PERCY A. DAVIS. York N.E.  
**Report of the Yorkshire Marine Zoology Committee ; Presented to the Yorkshire Naturalists' Union, Nov. 20th, 1889** [*Gadus aeglefinus*, *Pleuronectes platessa*, *Pl. limanda*, *Raja batis*, taken between Scarborough and Cloughton Wyke ; *Blennius pholis* dredged off Filey ; eggs of *Raja batis*, *Acanthias vulgaris*, *Gobius unipunctatus*, *G. niger*, *Trigla*, *Blennius pholis*, collected on Filey Brig ; *Galeus canis* captured by the fishermen, Sep. 14th ; the last new to Filey, though previously obtained near Scarborough and in Bridlington Quay]. Nat., Jan. 1890, pp. 3-4.
- J. PERCY A. DAVIS. York N.E.  
**[Marine Fishes observed by] the Yorkshire Naturalists' Union at Hayburn Wyke** [on July 11, 1891 ; *Blennius pholis*, *Gobius niger*, and *G. unipunctatus*]. Nat., Oct. 1891, p. 294.



ROBERT GARNER.

Isle of Man.

**Notes on the Natural History of the Isle of Man** [discussing the occurrence of the Blue-striped Wrasse (*Labrus mixtus*, male) and the Red or Three-spotted Wrasse (*Labrus mixtus*, female), the Blue Shark (*Carcharias glaucus*), Angler (*Lophius piscatorius*), Ballan Wrasse (*Labrus maculatus*), and Fifteen-spined Stickleback (*Gasterosteus spinachia*), with localities]. Trans. I. of Man N.H.S., vol 1, 1879-84, pub. 1888, pp. 87-90.

JAMES HARDY.

Cheviotland.

**Report of the meetings of the Berwickshire Naturalists' Club for the year 1889** [with note of capture of *Lamna cornubica* off the Farne Islands, 29th Aug. 1889; and *Bramus centridotus* at North Sunderland, 11th Sept.]. Proc. Berw. Nat. Club for 1889, vol. 12, No. 3, publ. 1890, pp. 499 and 504.

H. S. HARLAND.

York N.E.

**Sea Fishing at Scarborough** [with notes on comparative abundance of and localities for the fish: Mackerel (*Scomber scomber*), Silver Whiting (*Gadus merlangus*), Gurnard (*Trigla gurnadus*), Dab (*Pleuronectes limanda*), Turbot (*Rhombus maximus*), and Rock Codling (*Gadus morrhua* var.) noted]. Land and Water, Sept. 10th, 1887, p. 185.

H. S. HARLAND.

York S.E. and N.E.

**Sea Fishing at Filey** [giving list of species obtainable, viz., Billet (*Gadus virens*), Whiting (*Gadus merlangus*), Pollack (*G. pollachius*), Silver Whiting (*G. merlangus*), Haddock (*G. aeglefinus*), Gurnard (*Trigla gurnardus*), Dab (*Pleuronectes limanda*), and Mackerel (*Scomber scomber*)]. Field, Sept. 8th, 1888, p. 367.

H. S. HARLAND.

York N.E.

**The Short-Spined Sea Bullhead** [(*Cottus scorpius*); one taken about 6th Nov. 1892, at White Nab, two miles S. of Scarborough; ten years since one was previously taken]. Field, Nov. 26th, 1892, p. 803.

ANTHONY HARRIS.

Cheviotland, York N.E.

**Swordfish** [*Xiphias gladius*] off Northumberland [seen 18th August, 1892, about half a mile north of Dunstanborough, a third of a mile from shore; reference made to one killed by F. Windham at Redcar, 1868; details given and editorial remarks]. Field, Oct. 1st, 1892, p. 538.

G. E. HASTINGS.

Northumberland S., Durham.

**Blenny** [(*Zoarces viviparus*) at Tynemouth, 22nd Jan. 1888; details]. N.H.J., April 15th, 1889, p. 52.

W. A. HERDMAN.

Lanc. W.

**Fifth Annual Report of the Liverpool Marine Biological Station now on Puffin Island** [noting that a quart of shrimps were taken out of the stomach of a Skate (*Raja batis*) at Lytham]. Separate Report, 1892, p. 25; reprinted in Trans. Liverp. Biol. Soc., Vol. 6, 1891-2, publ. 1892, p. 32; and in 3rd Vol. of Reports on Fauna of Liverp. Bay, 1892, p. 23.

W. C. HEY.

York N.E.

**Salt Scar** [at Redcar = *Anarrhichas lupus* and *Cyclopterus lumpus* mentioned as having occurred]. Nat., Ap. 1892, p. 118.

H. H. HIGGINS.

Lanc. S., Cheshire.

**Pioneers in Local Biology** [giving bibliographical notes of work done in the investigation of the Fauna of Liverpool Bay]. First Report on the Fauna of Liverpool Bay, 1886, pp. 16-31.

J. J. HORSLEY.

Cheviotland.

**Short Sun-fish** (*Orthogoriscus Mola*) [captured near Craster, Northumberland, 25th Oct. 1889; dimensions given]. Proc. Berw. Nat. Club for 1889, Vol. 12, No. 3, pub. 1890, p. 535.

Northumberland S., Cheviotland, Cumberland, Durham,

RICHARD HOWSE.

York N.E., S.E., Mid W. and N.W.

**A Catalogue of the Fishes of the Rivers and Coast of Northumberland and Durham and the adjacent Sea.** [This most admirable and full catalogue



gives detailed notices as to the distribution, localities, faunal history, vernacular names, etc., of 142 species for the two counties, and an asterisk is used to denote that a local specimen is in the Newcastle Museum; historical summaries and comparisons with the Yorkshire, Berwickshire, and Forth lists also given; preceded by an introduction dealing with bibliography and giving an account of the various orders adopted in the classification; and concluded by index and list of desiderata to the museum]. Nat. Hist. Trans. Northumb. Durh. and Newc., Vol. 10, part 2, publ. 1890, pp. 327-390; also see Review in Young Nat., Dec. 1890, pp. 238-239.

BAKER HUDSON.

York N.E.

**Capture of Sun-fish** [*Orthogoriscus mola*] about 4 miles off Redcar, Sep 13th, 1884; now in Middlesbrough Museum]. Sci. Goss., Jan. 1885, p. 19

J. M. JEFFCOTT.

Isle of Man.

**Address of the Retiring President** [of Isle of Man N.H.S., delivered 27th March, 1890; on the Manx language: Eaast=fish in general, from latin pisces; Gobbag=Dog-fish (*Scyllium* spp.); Bollan=Wrasse (*Labrus* spp.); Sceddán=Herring (*Clupea harengus*); Kelleig=Pollock (*Gadus pollachius*); Boiddagh=Cod-fish (*Gadus morrhua*); Carroo=Bream (*Abramis brama*) or Carp (*Cyprinus carpio*); Crottane=Gurnet (*Trigla gurnardus*) from crottagh, hunchbacked; Kione-trammon=Bullhead (*Cottus* spp.); Gibbin=Sand-eel (*Ammodytes*)]. Yn Lioar Manninagh, Jan.-Ap. 1890, pp. 153-158.

GEORGE JOHNSTON.

Cheviotland.

**Selections from the Correspondence of Dr George Johnston** [noting *Crenilabrus* (not *luscus*, perhaps *rupestris*) taken on Bamborough shore by P. J. Selby (p. 65); *Gymnetrus banksii* at Spittal Point, Berwick, and at the Outer Farne Islands (445-6)].

P. M. C. KERMODE.

Isle of Man.

**Address by the Retiring President . . . Delivered . . . March 11th, 1886** [gives titles of papers on the Manx Fauna]. Bank Trans. I. of Man N.H.S., i., 72; publ. with Yn Lioar Manninagh, Oct. 1889.

H. A. MACPHERSON.

Cumberland.

**The Porbeagle Shark** [*Lamna cornubica*] on the Cumbrian Coast [off St. Bees, Oct. 30th, 1889; some details given]. Nat., Dec. 1889, p. 356.

H. A. MACPHERSON.

Cumberland.

**Occurrence of the Germon** [*Thynnus alalunga*] on the Cumberland Coast [stranded early in Oct. 1889 on Burgh Marsh; determination verified by G. A. Boulenger]. Nat., Jan. 1890, p. 15.

H. A. MACPHERSON.

Cumberland.

**Anchovy** [*Engraulis encrasicolus*] on the Coast of the North-West of England [about twenty captured near Silloth, 27th June, 1890]. Nat., Sept. 1890, p. 258.

H. A. MACPHERSON.

Cumberland.

**The Tope** [*Galeus vulgaris*] on the Coast of Cumberland [one 23rd Sept. 1890; details and remarks]. Nat., Nov. 1890, p. 335.

H. A. MACPHERSON.

Cumberland, Westmorland, and Furness.

**A Vertebrate | Fauna of Lakeland | including Cumberland and Westmorland | with Lancashire North of the Sands | By the | Rev. H. A. Macpherson, M.A. | . . . | . . . | . . . | [figure of Dotterel in down] | David Douglas, Castle Street, Edinburgh | 1892 [8vo, cloth, pp. civ+552+ folding map and 8 plates; the portion devoted to Fishes includes pp. xciii, xcvi-xcix, 466-526, and 532-534; the total number of marine species included is 72, of each of which a full faunal account is given.]**

R. T. MANSON.

Durham, York N.W. and N.E.

**Zig-Zag Ramblings by a Naturalist** [round Darlington; at pp. 137-8 is given an enumeration of twenty 'pisces' found in the Tees and Skerne, to which is added notes as to the occurrence of *Platessa limanda*, *Trachinus draco*, and *Acipenser sturio* in the Tees but not higher than Dinsdale Fishlocks]. Small 8vo., Darlington, 1884.



- THOMAS J. MOORE. Lanc. S., Cheshire.  
**Report on a Successful Attempt to introduce Living Soles** [*Solea vulgaris*] to America [the examples were obtained at the mouth of the Mersey]. Proc. Lit. and Phil. Soc. Liverp., 1885-86, publ. 1886, pp. 185-196.
- J. J. NEALE. York S.E. and N.E.  
**Surface Fishes of the Bristol Channel** [with an incidental reference to the habit of *Myxine glutinosa* clearing out the cod on the fish-lines off the Yorkshire coast]. Trans. Cardiff Nat. Soc., 1889, Vol. 21, part 1, pub. 1890, p. 19.
- T. H. NELSON. York N.E., Durham.  
**Abundance of Haddocks** (*Gadus aeglefinus*) off the coast of Redcar [details given]. Nat., Ap. 1891, p. 124.
- T. H. NELSON. York N.E.  
**The Tadpole Hake** (*Raniceps trifurcus*) at Redcar [one picked up 12th April, 1892]. Nat., May 1892, p. 154.
- T. H. NELSON. York N.E. or Durham.  
**Holibut** (*Hippoglossus vulgaris*) at Redcar [of unusually large size, 304 lbs. weight; dimensions stated]. Nat., Sep. 1892, p. 268.
- J. DE C. PAYNTER. Cheviotland.  
**Short Sunfish** (*Orthogoriscus mola*) on Northumberland Coast [at Craster, 25th Oct., 1889, a large one washed up; dimensions given]. Field, Nov. 2nd, 1889, p. 644.
- W. DENISON ROEBUCK. York N.E.  
**Burbot** (*Lota vulgaris*) off the Cleveland Coast [near Redcar, 26th Dec. 1888; the writer was misled as to the identification, the fish being *Motella mustela*]. Nat., Feb. 1889, p. 52.
- W. DENISON-ROEBUCK. York N.E.  
**Burbot** (*Lota vulgaris*) off the Yorkshire Coast [at Huntcliffe, Dec. 1888; fish wrongly identified; it was *Motella mustela*]. Zool., Feb. 1889, p. 77.
- W. DENISON ROEBUCK. York S.E.  
**Lamprey** (*Petromyzon marinus*) at Flamborough [on the 3rd May 1890; was in the mouth of a Cod (*Gadus morrhua*)]. Nat., June 1890, p. 166.
- WM. SINCLAIR. York S.E.  
**Capture of an Opah** [(*Lampris luna*) washed ashore at Bridlington Quay; described; Editor confirms name and adds that one was taken off Flamborough Head, Feb. 1849]. Field, Aug. 10th, 1889, p. 221.
- T. SOUTHWELL. Linc. S.  
**Greenland Shark** (*Lamargus borealis*) at Lynn [a male, 1½ tons weight, stranded 21st Jan. 1892, on the E. side of the Bulldog Channel]. Zool., Ap. 1892, p. 153.
- THOS. STEPHENSON. York N.E.  
**Anchovies** [*Engraulis encrasicolus*] at Whitby [Oct. 9th, 1889, two captured; the fishermen had had over a dozen during the season]. Nat., Nov. 1889, p. 324.
- THOS. STEPHENSON. York N.E.  
**Three-Bearded Rockling** [*Motella tricirrata*] off Whitby [caught six miles out, 27th June, 1890; measurements, etc., given]. Nat., Sep. 1890, p. 258.
- THOS. STEPHENSON. York N.E.  
**Sting-Ray** [*Trygon pastinaca*] at Whitby [one caught two miles off, 12th August, 1890; now in Whitby Museum; dimensions given]. Nat., Sept. 1890, p. 261.
- THOMAS STEPHENSON. York S.W.  
**Fishes captured off Whitby, Sept.-Oct. 1891** [being detailed notes on the capture and occurrence of *Galeus canis*, *Acanthias vulgaris*, *Clupea finta*, *Cl. alosa*, *Lamna cornubica*, *Belone vulgaris* (this erroneously named, see Nat., Jan. 1892, p. 26), and *Lampris luna*]. Nat., Nov. 1891, pp. 337-338.



THOMAS STEPHENSON.

York N.E.

Fishes captured near Whitby in October, 1891 [giving full particulars as to *Orthogoriscus mola* (with figure), *Labrus maculatus*, *Raniceps trifurcus*, and correcting error of determination of *Scombresox saurus* which was *Belone vulgaris* as recorded in his previous article]. Nat., Jan. 1892, pp. 23 to 26 and figure.

G. SWAINSON.

Isle of Man.

Results of Dredging Excursion to Dalby, Aug., 1888 [enumerated; one fish taken, *Lepadogaster bimaculatus*]. Vannin Lioar, Jan. 1889, p. 15.

EDGAR R. WAITE.

York N.E.

[Fishes observed by] the Yorkshire Naturalists' Union at Hayburn Wyke [on July 11th; Black Goby (*Gobius niger*), One Spotted Goby (*G. minutus*), and Shanny (*Blennius pholis*)]. Nat., Sept. 1891, pp. 286-287.

Cumberland, Westmorland and Furness,  
Lanc. W. and S., Cheshire.

ALFRED O. WALKER.

Destruction of Immature Sea Fish [in the Dee and Mersey, along the Lancashire Coast, in Morecambe Bay and in the Solway, discussed; Plaice (*Pleuronectes platessa*), and Flukes (*Pl. flusus*) mentioned; and opinion expressed that the destruction of young fish is not so great as is often supposed]. Nature, Dec. 24th, 1891, p. 176.

C. H. H. WALKER.

Isle of Man.

Tiding at Eastertide [in the Isle of Man; *Morrhua vulgaris*, *Scyllium canicula*, *Blennius gunnellus*, *B. pholis*, *Syngnathus lumbriciformis*, *S. acus*, and *Lepadogaster bimaculatus* noted]. Young Nat., Nov. and Dec. 1890, pp. 216-222.

ALBERT WATERS.

Linc. S.

The Sun Fish [stated to be probably *Lampris luna*, the Opah] at Wisbech [one, five feet long and seven feet from fin to fin, in Wisbech Deep; first occurrence of Opah in the Wash since 1839; *Orthogoriscus mola* stated to have occurred at Lynn in Nov. 1850 and Oct. 1883]. Young Nat., Ap. 1890, p. 71.

## NOTES AND NEWS.

Our readers will be more especially interested in the fortunes of the Jackson-Harmsworth Polar Expedition in that Mr. Harry Fisher, the well-known Nottinghamshire botanist, is with the Expedition as botanist. Letters from him to his father, to Mr. B. Sturges Dodd, and others, arrived by the 'Windward' in October last, and the Editor of this journal has had a letter from Dr. Reginald Koettlitz, the medical officer, who also is one of the eight men who have been left behind to winter at Elmwood, as the Arctic settlement is named. Elmwood is at the foot of Cape Flora, on Northbrook Island, Franz Josef Land, in lat.  $79^{\circ} 57' 30''$  N. and long.  $49^{\circ} 30' 10''$ . Amongst the notes given in Mr. Fisher's letters home we may give the following, for which we are indebted to Mr. Fisher, senr., and Prof. J. W. Carr, M.A.:—'1st July, 1895.—We have snow every day, but there are several plants in flower. In six weeks winter will be again upon us. . . I have found a rich microscopic flora here; my time is fully occupied in that work now, and will be until the winter sets in again.' '15th April, 1895:—The lowest reading of the thermometer was— $55^{\circ}$  F. in February, which was the coldest month. We have had perpetual light since last Monday (April 8th), and can read indoors at midnight just as well as in the middle of the day in England at this time of year. . . 34 Bears, some Walrus, and hundreds of sea birds have been killed, all of which furnish fresh food for men and dogs. The birds are good eating—'loons,' 'dovekies,' and 'hockies.' . . Everyone of the twenty-nine here have had frost bites except myself. I have not had the semblance of one. . . Summer may be said to consist of two months, June and July, about as warm as the first week in April in England.' It will be of course obvious that we cannot look for any real scientific results till the ultimate return of the Expedition, what we give being such casual notes as might readily be given in private correspondence. They are, however, of interest from the human and personal point of view.



## NOTES AND NEWS.

We are in receipt of the Second Edition of Mr. J. W. Tutt's interesting little book entitled 'Random Recollections of Woodland, Fen, and Hill' (George Gill and Sons, publishers, London, 1895), the first edition of which we had the pleasure of noticing a year or two back. We can only add our congratulations to the author on the popularity which has attended his venture, and a reiteration of the opinions we formed on perusing the first Edition.

## NOTES—ORNITHOLOGY.

**Great Northern Diver on the Lincolnshire Coast.**—One of these fine birds (*Colymbus glacialis*) has been handed in to the secretary of the Louth Museum this week, by Mr. W. F. Taylor, of Theddlethorpe. It was captured on the 8th December by a villager on the shore, who in consequence of its feeble condition, was able to capture it by hand.—J. LARDER, Louth, Dec. 14th, 1895.

**East Yorkshire and other Ornithological Notes.**—

**Hawfinch (*Coccothraustes vulgaris*).**—We have had again this year at Hullbank a brood. I find the young birds keep with the old ones during the autumn and winter. On the 3rd December, a fine old cock Hawfinch flew against the dining-room large plate-glass window, and was so much stunned that I went out and saw it on the ground with its bill open, and quite unconscious. I took it in my hand, and replaced it, giving it the only chance to recover from concussion of the brain. In about twenty minutes it flew away and joined the rest of the brood in the adjoining trees. In the summer of 1893, a young Hawfinch flew against the drawing-room window and died within a few minutes. Many Blackbirds, Thrushes, Chaffinches, etc., fly against these windows and die every year.

**Reed Warbler (*Acrocephalus streperus*).**—We have many nests in the reeds in my large pond at Hullbank. Hornsea Mere is also a very favourite place for their nesting. One year I found a nest about ten feet high in a yew tree overhanging the pond. Another year a pair made their nest and hatched their young in a black-currant bush in my kitchen garden which is about 200 yards from the pond. I have both these nests carefully preserved.

**Cuckoo (*Cuculus canorus*).**—A young Cuckoo was hatched in two consecutive years in a Water Wagtail's nest, situate in the walks between two windows of the library on the ground floor of 'South Leigh,' Havant, Hants. Were the two eggs laid by the same Cuckoo?

**Woodcock (*Scolopax rusticola*).**—Extraordinary experience.—My son, Lieut. Haworth-Booth, R.N., was lately out shooting with his man near Queenstown, Ireland, when they flushed a Woodcock out of a small spinney, but marked it well down about 150 yards off on the edge of a small covert. They went carefully to the spot, and when within about fifty yards of the place a large Hawk, a Peregrine, in splendid plumage, jumped off the ground and flew into a tree and lodged there for a moment. The man called 'mark,' but my son said it was a Hawk and that the 'cock' would be there too. So they advanced, and when within a few yards of the spot marked my son saw on the ground with its tail fanned and wings spread open and head back, a beautiful Woodcock, which, springing forwards, he picked up. It was quite alive with fresh blood on it, and evidently had just been struck by the Hawk, having two marks on it, one on the breast and the other on the wing. The gamekeeper afterwards told my son he had known this Falcon come regularly for the last three years to this place at the same time with the Woodcocks. Well might Grumio say—'O this Woodcock! what an ass it is!'

**Spotted Sandpiper (*Tringoides macularius*)** (Notes, 'Naturalist,' September and November, 1895).—I almost think with Canon Tristram that this very rare American migrant finds its way viâ Iceland and the Farøe Isles to Norway, and thence to the East coast of England, where alone it has been found, in company with the other regular migrants. I should be glad to show my specimen to Mr. J. H. Gurney, or any other well known authority.

—B. B. HAWORTH-BOOTH, Hullbank Hall, near Hull, 19th December, 1895.



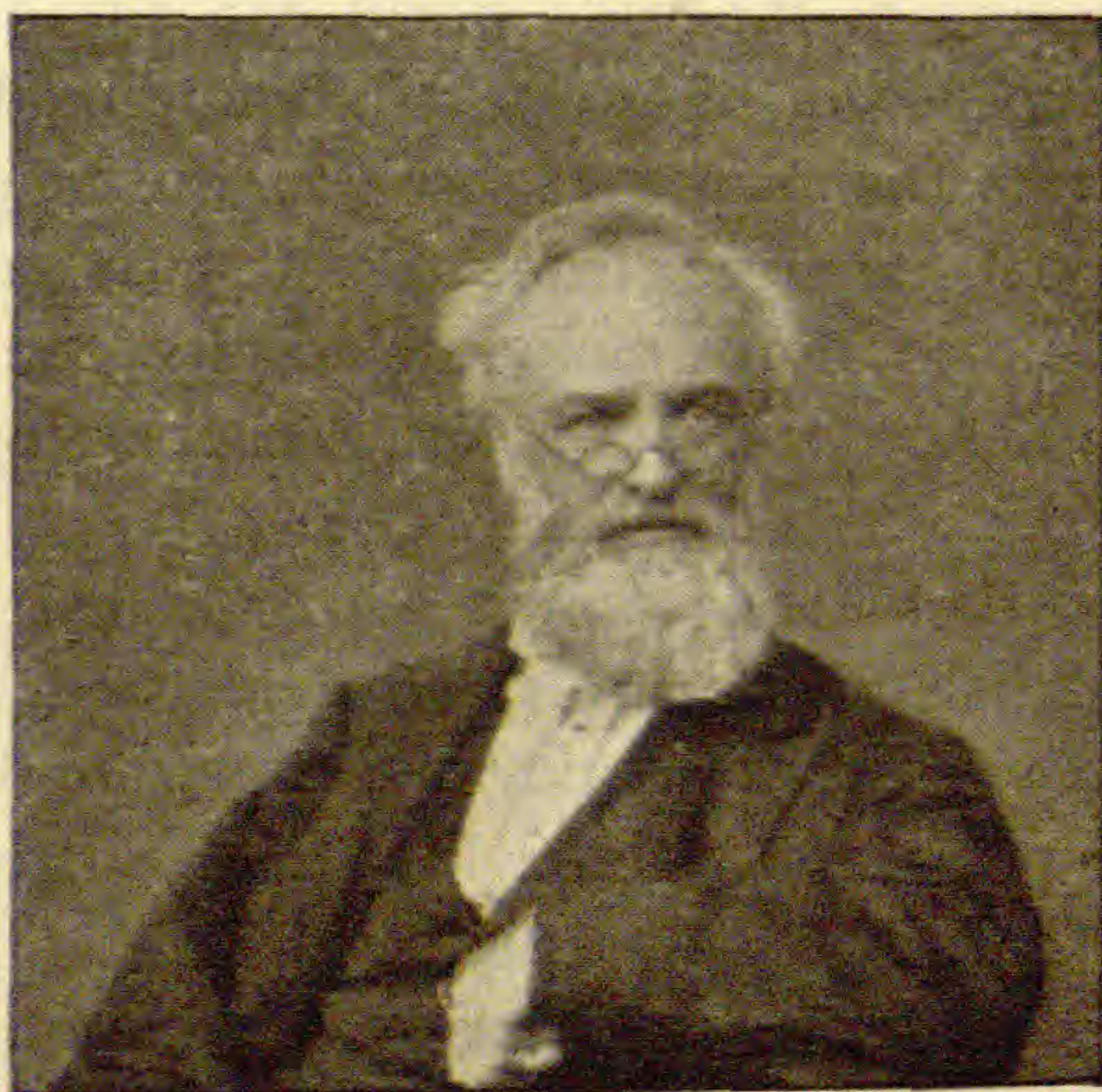
In Memoriam.

WILLIAM CRAWFORD WILLIAMSON,  
LL.D., F.R.S.

B. 24TH NOVEMBER, 1816; D. 23RD JUNE, 1895.

THE first loss from the list of distinguished men of science which constitutes the roll of vice-presidents of the Yorkshire Naturalists' Union took place on the 23rd June, 1895, when William Crawford Williamson passed peacefully away at his own house at Clapham Common.

Our Union has suffered a severe blow, and our great Yorkshire naturalist will be missed wherever natural history, and especially wherever palæobotany is studied, for as a pioneer, an original thinker, and indeed the founder of a school, he was known and valued at home,



*W. C. Williamson*

on the continent of Europe, in our distant colonies, and in the United States. Numerous tributes to his worth and genius have already appeared in leading scientific publications both at home and abroad.

Our distinguished and lamented vice-president was born at Scarborough on the 24th November, 1816. His father was John Williamson, of Scarborough, of whom he was wont to speak in terms of high respect and affection, and whose memory he has filially embalmed in the delightful memoir of him published in the Proceedings of the Yorkshire Geological and Polytechnic Society (new ser., vol. viii, part iii, pp. 295-313), 1894. A gardener by



trade and liking, he was a great lover of plants, a keen observer of animals, and appears to have been, one may almost say, a born geologist. The subject of our memoir, therefore, was by inheritance a lover of nature and of a scientific turn of mind.

John Williamson had several friends like-minded with himself, and his house was often visited by William Smith (the father of English geology) and his talented nephew, John Phillips, the renowned author of the 'Geology of Yorkshire'; by William Bean, the indefatigable marine zoologist and geologist; the Rev. George Young, of Whitby; and John Bird, the artist for Young and Bird's well-known work on the Yorkshire coast. Nor can we doubt that the conversation of these and many other scientific visitors would be eagerly listened to and pondered by the young naturalist and tend to kindle the sacred fire of science which afterwards burned in him so brightly. In his physical surroundings, too, was our subject favourably placed, for where in the wide world can a tyro in geology find a more glorious succession of rocks so abounding in beautiful and instructive fossil remains as are exposed in the magnificent cliffs of the Yorkshire coast, ranging from Bridlington in the south to Saltburn in the north, and including nearly the whole of the mesozoic rocks in almost unbroken series, capped by the interesting glacial and drift deposits of a later age?

This variety of rock succession is accompanied with very varied inland scenery—marsh, river-bank, pool, glen, wood, moorland, sandy shore, and barren upland presenting feeding-ground and shelter for a great variety of plant and animal life; and no mean part of the early education of our friend was derived from the hunting for these specimens, their dissection, preparation for the museum, and the careful study of them in the field and in the laboratory.

In 1829 a Literary and Philosophical Society was formed in Scarborough, and the Museum was built to which John Williamson was appointed keeper, when his collections were purchased for the sum of £75, of which, however, he generously returned £25 as his personal contribution. In this environment, then, was laid the foundation of that plentiful harvest which Dr. Williamson so nobly produced in after years.

In April, 1832, finding that scientific pursuits, however delightful, did not furnish a satisfactory livelihood, he apprenticed himself to Mr. Thomas Weddel, surgeon, of Scarborough, with whom he remained until his removal to Manchester in 1835.

The publication in 1833 of the researches of Witham on the minute structure of Carboniferous plants by means of thin sections, no doubt proved a stimulus to those researches of his which after-



wards became so famous. About this time he contributed many of the drawings of fossil plants which enriched the classical work of Lindley and Hutton, on the 'Fossil Flora of Great Britain,' which was published in 1837.

In 1834, in his 18th year, appeared the first productions of his fertile pen: 'A Notice of the Localities, Habits, Characteristics, and Synonyms of a rare British species of *Mytilus*'; 'On the Distribution of Organic Remains in the Lias Series of Yorkshire, with a view to facilitate its identification by giving the situation of the fossils' and 'A Description of the Tumulus lately opened at Gristhorpe, near Scarborough.'

These papers were quickly followed by others on various subjects; and from this time to 1850, he appears to be preparing himself by general studies for his special life-work. The literature of this period deals with:—The Oolites of the Yorkshire Coast; The Appearance of Rare Birds at Scarborough; The Limestones near Manchester; Undescribed Radiaria (1836); Fossil Coal Measure Fishes; W. Lancashire Carboniferous Strata; Fossil Fish Scales (1837); Fossil Fishes of the Lancashire and Yorkshire Coal Field (1839); Geological Specimens from Syria; Distribution of Organic Remains from Lower Lias to Bath Oolite (1840); Fossils of Yorkshire Coast from the Upper Sandstone to the Oxford Clay; The Origin of Coal (1842); On Microscopical Objects, etc., from the Mud of the Levant (1845); The Real Nature of the Minute Bodies in Flints (1846); Recent British Species of *Lagena*; New British *Campylodiscus* (1848); On Structure and Shell of *Polystomella crispa*; Microscopic Structure of Ganoid and Placoid Scales and Teeth (1849); Structure of the Calcareous Shell of some recent species of Foraminifera (1850). Thus for 15 years what we may call the work of initiation went on: in the use of prepared microscopic sections for the study of fossil fish scales and foraminifera, and in the interest shown in Carboniferous rocks and the origin of Coal, we have the foreshadowing of the great work that was to come.

In 1835 the office of Curator of the Museum of the Manchester Natural History Society, in Peter Street, was accepted. In 1842 he began practice as a medical man in Manchester, and so the naturalist, a Yorkshire man by birth, became a Lancashire man by adoption, to the honour of the two great English counties who may both claim him now as equally theirs. In 1851 he was elected Professor of Natural History and Geology at Owens College, and in that year he published the first palæobotanical paper, which was the forerunner of those splendid memoirs on which his chief fame justly rests; it is entitled 'On the Structure and Affinities of the Plants hitherto known



as *Sternbergiæ*.' However, another 17 years elapsed before he took up fully his life work, and some three years more passed before he published his first classic Royal Society's memoir on the 'Organisation of the Fossil Plants of the Coal Measures.' This period of 20 years may be regarded as one of preparation, during which he wrote many reviews for the magazines ('London Quarterly,' 'Good Words,' etc.), and so improved his style; during which appeared his well known Ray Society's Monograph on the 'British Foraminifera,' and during which a great deal of good microscopical work was carried out, and the structure of *Zamia* (now known as *Williamsonia*) *gigas*, was investigated. The following papers belonging to this time may be cited, as follows: 'On the Structure and Development of the Scales and Bones of Fishes'; 'On *Volvox globator*'; 'On *Sternbergia*' (1851); 'Minute Structure of a species of *Faujasina*'; 'Anatomy of *Melicerta ringens*'; 'Further Elucidations of the Structure of *Volvox globator*' (1853); 'On the Restoration of *Zamites gigas*' (1854).

In 1854 he was elected a Fellow of the Royal Society, so that at his decease he was one of the oldest Fellows of the Society. Papers followed 'On Histology of Dental and Allied Dermal Tissues' (1854-57). Some technical medical papers appeared in 1857; 'The Recent Foraminifera of Great Britain,' a beautifully illustrated work published by the Ray Society, London (1858), whose merits received recognition from the highest authorities at the time of its appearance; 'Histological Features of the Shells of the Crustacea' (1860); 'The Anatomy and Physiology of Foraminifera' (1865); 'On a Cheirotherian Footprint from the Base of the Keuper Sandstone'; 'The Amœba' (1866); 'The Fresh-water Sponge'; 'Contributions towards the History of *Zamia gigas*' (1868); and here commences his first paper of that continuous stream of palæobotanical researches which extended over well nigh thirty years, 'On the Structure of the Woody Zone of an Undescribed Form of Calamite' (1868); followed by a paper 'On the Structure of an Undescribed Type of Calamodendron from the Upper Coal Measures of Lancashire' (1868); 'Additional Note on the Structure of Calamites' (1869); 'Structure and Affinities of some Exogenous Stems from the Coal Measures'; 'What is Bathybius?' (1869); 'On the Organisation of the Stem of Calamites'; 'On the Structure of the Gizzards and Teeth of the Rotifera'; 'On a New Form of Calamitean Strobilus from the Lancashire Coal Measures' (1870); 'On the Organisation of *Volkmannia Dawsoni*'; 'On the Structure of the Dictyoxylons of the Coal Measures'; 'On the Classification of the Vascular Cryptogamia, as affected by Recent Discoveries amongst the Fossil Plants of the Coal Measures'; 'On the Organisation of an Undescribed Verticillate Strobilus from the Lower



Coal Measures of Lancashire'; 'Exogenous Structure amongst the Stems of the Coal Measures' (1871).

It will be seen that 1871 was marked by great intellectual activity, especially in the direction of original research amongst the fossil coal plants provided with microscopical structure. Many circumstances led to this rich efflorescence, the fruit of which is embodied in his now famous Royal Society's Memoirs. In 1872 he resigned the department of Geology at Owens College to Boyd Dawkins. The period of preparation was passed; the man and the hour were ripe, and precisely at this time the rich material of the Ganister-beds of the Lancashire and Yorkshire Coal Fields was poured with unstinted hand into the lap of Professor Williamson. An active band of geologists, headed by that well-known pioneer of palæobotany, John Butterworth, F.R.M.S., of Shaw, near Oldham (who was one of the first to apply successfully the method of sectionising fossil plants to the study of fossil botany), and including generous toilers from Lancashire, workers such as J. Nield, George Wilde, and Isaac Earnshaw, supplemented later by James Lomax (to whose skill the well-known larger sections are due). All these vied with each other in providing precious material for the great work; from Yorkshire, too, came friendly aid, and many valuable and new specimens were placed in the 'professor's' hands by James Spencer and James Binns, due to their untiring energy and perseverance in the collection and study of the Halifax material.

From 1871 to the close of his laborious and useful life, Dr. Williamson issued a continuous series of books and papers which, as a monument of scientific labour and research, may well astonish us. This year saw the appearance of the first part in the Philosophical Transactions of what may be called a set of magnificent monographs 'On the Organisation of the Fossil Plants of the Coal Measures.' This is Part I., 'Calamites,' and was followed by 18 other memoirs in continuation of this remarkable work, supplemented by three more written in connection with Dr. Scott, F.R.S., of the Jodrell Laboratory, Kew, of which, however, the two last are yet in the press. In addition, however, to this herculean work, nearly every year saw the publication of many other papers from the untiring pen of the author, amongst which we may cite 'Notices of Further Researches of the Fossil Plants of the Coal Measures' (1872); 'On the Fern Stems and Petioles of the Coal Measures'; 'On Coal and Coal Plants' (1873); 'Primeval Vegetation in its Relation to the Doctrine of Natural Selection and Evolution' (1874). And now his work became fitly recognised, for in 1874 the Royal Society rewarded him with its gold medal in recognition of his researches. Then



appeared papers 'On the Structure of Stigmaria'; 'On Some Fossil Seeds'; 'Corrections of the Nomenclature of Objects Figured in a Memoir on Objects from the Mud of the Levant' (1875); 'Recent Researches into the Organisation of Some of the Plants of the Coal Measures'; 'On Some of the Physiological and Morphological Features seen in the Plants of the Coal Measures' (1876); 'On the Microscopic Conditions of a Slab from the Mountain Limestone of Bolland'; 'On the Supposed Radiolarians and Diatoms of the Carboniferous Rocks' (1878); and 'On the Botanical Affinities of the Carboniferous Sigillariæ' (1879).

In 1880 he was happily relieved from the Zoological department of his professorship, and enabled to concentrate his energies on Botany alone. 'Episodes in the Life of a Field Geologist' (1880); Preliminary Remarks on the Microscopic Structure of Coal; 'The Evolution of the Palæozoic Vegetation' (1881); 'On *Helophyton Williamsonis*' (1882); 'Les Sigillaires et les Lepidodendries' was written for Les Annales des Sciences Naturelles, 1882, in conjunction with M. Hartog. 'On the Morphology of the Pitcher of *Cephalotus follicularis*'; 'The Present State of our Knowledge of the Vegetation of the Carboniferous Age'; 'On Some Anomalous Oolitic and Palæozoic Forms of Vegetation'; 'Biographical Notice of an Eminent Yorkshire Geologist—John Williamson' (1883).

The year 1883 was signalised by the conferring on him of the LL.D. of Edinburgh; then came a paper 'On Undescribed Tracks of Invertebrate Animals from the Yoredale Rocks, etc.' (1885). This year the Royal Academy of Gottingen made him an honorary member. Before referring to the publications of the next decade it may be interesting to refer to Williamson as a lecturer. In 1871 he lectured on the Natural History of Paving-Stones at the Hulme Town Hall, Manchester; in 1874, at the same place, on Earthquakes and Volcanoes; in March 1875, he lectured at the City Hall, Glasgow, on the Dawn of Animal Life; and at the same place, in November of the same year, on Coal and Coal Plants; again, at Manchester in 1876, on the Succession of Life on the Earth; in 1877, at the City Hall, Glasgow, on the Ice Age; and in 1878, on Insectivorous Plants, at the Town Hall, Pendleton. The lectures here enumerated were all published, but a great many of a somewhat less formal character have not been preserved. As a lecturer, Dr. Williamson was one of the most popular of the Gilchrist band; his clearness, vivacity, his hearty, straightforward, racy language, his facile use of the chalk on the blackboard, drew to him large audiences, especially amongst the hard-headed, shrewd toilers of the northern towns. It was at these lectures that some of his co-workers among the coal flora first made



his acquaintance and were fired with the same zeal for scientific work which permeated himself; nor was it among these only that he proved helpful, for he stimulated many others too.

As a man he was genial, cheerful, shrewd, observant, social, and pleasant company; and here I may venture to insert an interesting communication respecting him, for which I am indebted to the kind generosity of H. C. Sorby, LL.D., F.R.S., etc., who writes: 'I first made the acquaintance of Professor Williamson about 45 years ago in a railway carriage, when we were both returning from Scarborough. I afterwards went to spend a day with him during a visit to my cousin, Mr. James Nasmyth, when he was practising as a surgeon at Manchester. He took me to the interesting deposits of limestone at Ardwick, and showed me the microscopical sections he had prepared of the teeth and scales of fossil fishes. He was then also preparing sections of fossil plants. I had never previously seen such sections, and on my return home I prepared some myself, and was very soon led to extend the method to limestones, slates, and other rocks. He was thus largely instrumental in leading me to develop that subject, which has since grown to be so extensive. I think the next time we met was long after, when we were the recipients of the Royal Medals of the Royal Society. Afterwards I occasionally met him in Manchester and London, but we had then progressed in very distinct branches of study, and our conversation was mainly in connection with water-colour landscape drawing and other subjects not directly connected with science.'

The last decade of Professor Williamson's life was marked by unabated scientific enthusiasm and toil; no doubt the happy influences of a peaceful home and the companionship of a lady in every way fitted to minister to his wants were an immense help to him. Dr. Williamson was twice married, and his second wife, then Annie Copley Heaton, the niece of Sir Henry Mitchell, was staying with her uncle during the British Association Meeting held at Bradford in 1873; they there met, where the professor was a guest, and from there were married in 1874. All who have been the guests of Dr. Williamson and his wife will know how very happy that union was, how valuable a helpmeet he found in one who so gracefully directed the charming establishment at Fallowfield, with its botanical gardens and rich stores of scientific material. The professor, too, seems to have been very fortunate in his children: his daughter, a son by the first marriage (practising now as a successful solicitor in Manchester), and a younger son (devoted to art) by his second marriage. We shall never forget the picture presented on the garden at Fallowfield, at an 'At Home,' held during the visit of the British



Association to Manchester, when Dr. Williamson, bright, genial, vivacious, conversed cheerfully with first one and then another of his distinguished callers, amongst whom were prominent the venerable and venerated Dr. Asa Gray, the leading botanist of America, Dr. DeBary, and Count Saporta. Alas! all have since joined the great majority, and he too is now with them.

The last decade was as prolific as ever; one after each other in addition to the 'magnus opus' which dominates all the rest, there appeared papers 'On the Morphology of *Pinites oblongus*' (1886); 'On Goethe as Botanist and Geologist'; 'On the Relation of Calamodendron to Calamites'; and the grand 'Monograph of the Morphology and Histology of *Stigmaria ficoides*' (1887); 'On Some Anomalous Cells Developed Within the Interior of the Vascular and Cellular Tissues of the Fossil Plants of the Coal Measures'; 'On the Fossil Trees of the Coal Measures' (1888); 'On the Present State of the Inquiry into the Microscopic Features of the Coal of the World' (1889).

In 1890 the Geological Society of London awarded him the Wollaston Gold Medal, the answer to which came in the shape of more memoirs and papers: 'On our Present Knowledge of the Vegetation of the Carboniferous Age' (1891); and 'On the Mineralisation of the Minute Tissues of Animals and Plants' (1892). The time had now come when Dr. Williamson began to feel the need of more leisure, and so his connection of 40 years with Owens College came to an end. He removed with his family to London, but not to rest. The scientific fire still burned bright, and in order that he might present his views in the modern terminology of a new school of botany, he associated himself with Dr. Scott, F.R.S., and the result was two or three more of his valuable memoirs. At the request of his valued friend Graf Solms Laubach, he set himself the task of providing an index to his memoirs and published his 'General Morphological and Histological Index to the Author's Collective Memoirs on the Fossil Plants of the Coal Measures' (1891-1894).

During his long career of scientific research, Dr. Williamson accumulated, without doubt, the finest collection of micro-preparations of fossil plants in the world, rendered immensely valuable by the rich series of type specimens which it contains, and numbering nearly 3,000 specimens; perhaps no living man knows this collection nearly so well as Graf Solms Laubach, and the high value he sets upon it may be estimated by his confession that when he began the work for his 'Einleitung in die Palæophytologie,' he soon realised that it was quite impossible to produce such a book without an accurate knowledge of Williamson's collection of sections.



In 1892, another paper appeared written jointly with Sir Wm. Dawson, C.M.G., F.R.S., on 'Sigillaria and Stigmaria,' and one by himself 'On the Genus Sphenophyllum.'

For many years our friend was the honoured President of the Manchester Literary and Philosophical Society, and it was fitting that one of his last papers should be written for them, entitled, 'On the light thrown upon the question of the Growth and Development of the Carboniferous Arborescent Lepidodendron by a study of the details of their organisation.'

Probably the last memoir he wrote was a biographical sketch of his old and valued friend and contemporary co-worker in palæobotany, the Marquis de Saporta—a pathetic finish to a noble life!

His relation to the Yorkshire Naturalists' Union was both pleasant and profitable. His attitude is rightly defined by Mrs. Williamson, who writes us: 'He loved the Society intensely.'

This is neither the time nor place to estimate the full value of Professor Williamson's scientific work, nor does the writer feel himself competent for such a task; but, at least, he was the great pioneer who placed palæobotany on a new and sound basis. A valuable critical estimate of his life's work may be found in Graf Solms Laubach's able notice in 'Nature' of 5th September, 1895.

The visitor to the large geological room at the Owens College Museum may see a mighty specimen of the root or rhizome of Lepidodendron, moved to its present position, with great enthusiasm and carefulness by Dr. Williamson, from the quarry at Clayton, near Bradford, where it was found. It has been suggested that it forms a magnificent monument to the subject of this memoir—for, like it, Professor Williamson

Dying left behind him  
Footprints on the sands of time.

—WILLIAM CASH.

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### NOTES AND NEWS.

Beginning with the number for January this year, 'Lincolnshire Notes and Queries,' which is quarterly, and in its typographical aspect reflects great credit on the Horncastle press, now includes a Natural History Section separately paged and under the editorship of the Rev. E. Adrian Woodruffe-Peacock. The editors of the Antiquarian Section are the Rev. J. Clare Hudson, M.A., and Mr. E. Mansel Simpson, M.A., M.D.

From Messrs. Swann & Co. we have received 'The International Naturalists' Directory' for 1896. It is a little pamphlet of 42 pages, and, as might be expected from the smallness of its size, it is by no means a complete work. The number of societies given numbers no more than 35 for the whole world, whereas, in fact, a single English county actually possesses a greater number. The lists of individuals whose names are included are similarly incomplete, some of the inclusions, as well as of the non-inclusions, being unexpected.



*NOTE—TRICHOPTERA.*

**Abundance of *Halesus guttatipennis* at Pickering.**—When at Pickering last November, I noticed a Trichopteron in large numbers, specimens of which I recently took to my friend Mr. G. T. Porritt to name. He informs me it is the rare *Halesus guttatipennis*, and that previous to my capture there were only three British collections which had the species represented, and then only by single specimens, viz., those of Mr. McLachlan, Mr. Porritt, and the Royal Dublin Society.—G. C. DENNIS, 39, Blossom Street, York, January, 1896.

*NOTE—ORNITHOLOGY.*

**The Cormorant in Yorkshire.**—The stranding of the 'Earl of Beaconsfield' at Kingborough will, no doubt, be remembered by readers of the 'Naturalist.' Part of the vessel still remains with one mast standing. A pair of Cormorants (*Phalacrocorax carbo*) have frequented the vessel for the last four years, and may generally be seen sitting on the yard. This winter there are three, and two more are said to have been shot by a Withernsea man. It seems probable that the local opinion—that they nest in the mast—is correct, though I do not think that anyone has been to the top to see. An attempt was made last year to remove the wreck, but the idea has been abandoned. On May 3rd, I saw three Cormorants on Hornsea Mere, towards Wassand. On being disturbed they settled on the boundary boards, and remained till I was tired of watching.—T. PETCH, Hedon, Hull, Jan. 14th, 1896.

*NOTES—HYMENOPTERA.*

***Sirex gigas* near Hull.**—A female was caught by myself at Hullbank in Sept. 1887. I saw it flopping about with one wing injured, on the river Hull near the bank. According to Donovan, this species was considered rare in England, though common in Germany. I heard of another—also an injured specimen—caught last summer at Hornsea.—B. B. HAWORTH-BOOTH, Hullbank Hall, Hull, 11th Jan. 1896.

**Plague of Wasps near Hull in 1893.**—In the summer of 1893 there was a plague of Wasps, especially in South East Holderness. The Queen Wasps occasionally hibernate under the bark of decayed trees. My gardener took and killed eighteen Queen Wasps which he found under the splitbark of a large Silver Fir which had been struck by lightning in the summer, and cut down in the winter for firewood.—B. B. HAWORTH-BOOTH, Hullbank Hall, Hull, Jan. 11th, 1896.

*NOTE—LEPIDOPTERA.*

**Lepidoptera near Beverley in 1895.**—Mr. James R. Lowther, of Beverley, an enthusiastic lepidopterist, informs me that he has obtained the following specimens of Lepidoptera during the past season in the neighbourhood of Beverley:—*Amphidasis prodromaria* (*strataria*), March 16th, one, bred from dug pupæ. *Dicranura furcula*, May 8th, one at rest. *Cucullia umbratica*, June 1st, one, and *Chelonia plantaginis*, fifty, at Drewton Dale, Yorkshire. *D. furcula*, September 3rd, one larva on willows. *Dasypolia templi*, October 30th, one; November 12th, one; November 23rd, one. The *D. templi* were taken during the daytime, resting on a wall. A specimen of *Pecilocampa populi*, November 23rd. He also notes the capture of one *Sphinx convoluti* in the Cattle Market, Beverley, about the middle of October, which afterwards came into his possession. *Dasypolia templi* is of uncommon occurrence in the East Riding, whilst *Chelonia plantaginis* has this year been very abundant in Drewton Dale.—W. HEWETT, York, January 2nd, 1896.



## THE AVI-FAUNA OF SETTLE AND UPPER RIBBLESDALE.

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THE following notes are from observations and inquiries made by myself in the neighbourhood of Settle during the last ten years.

The extent of my investigations has been limited by the nature of my professional duties, absence during holidays, and athletic pursuits. I should like the paper, therefore, to be considered as intended to give a rough guide to those who take interest in, or mean to study, the ornithology of the district. If it interests any reader of the 'Naturalist' I shall be proud.

The district over which my rambles have extended consists principally of the fell country round Penyghent and Ingleborough to the north, and Malham Tarn to the east, the watershed from which, on this western side, flow the Wenning and the Ribble with their tributary streams. The district is remarkable for being scantily wooded, the chief woods being in the neighbourhood of Clapham and Lawkland. Hedges do not exist, their place being taken by stone walls. Thus our characteristic birds are those that frequent the tarns and streams, or the scars, or the moors and pastures.

Fifty years ago a certain amount of land was ploughed, and roots and oats grown, but now the plough is an obsolete implement.

The Ribble above Settle is for the most part a swift-running stream with a rocky bed, but about two miles below it flows through a flat stretch of land, winding, with many crooks, through alluvial soil, with a deep, slow stream. This part of the river is known as the Deeps, and it continues of this character almost as far as Cow Bridge by Long Preston. Here many water-fowl may be found in winter, and here also may several of the spring migrants be first seen. No trees grow on the banks, and there is nothing to obstruct observation except a few willow bushes; at the same time the dykes give the means of cautious approach.

Besides Malham Tarn there are several small tarns, such as New Houses Tarn above Horton, and the one at the north end of Fountains Fell. I have heard it said that waterfowl are scarcer in this valley since the construction of the lake at Coniston, near Gargrave. Through the kindness of Mr. Tottie, of Coniston Hall, I am able to include some records from there.



I am especially indebted to Mr. John Foster of Horton, who is himself a good ornithologist, and whose father made a collection of the rarer birds of the district, some of which are in Mr. Foster's possession. The collection of birds in Giggleswick School museum is of no local importance, having been collected from various sources by Mr. Clapham, of Austwick, who presented it to the School. I have been much assisted in my inquiries by Mr. Clapham, and Mr. Coulthurst, of Bowerley, and Miss Watkins, of Lawkland; and have received much help in collecting evidence from Mr. D. R. Smith, now headmaster of Richmond Grammar School, and many Giggleswick boys. Nor must I forget to mention the local stuffers, Messrs. Harrison of Clapham, and Hardacre of Giggleswick, and 'Bird Dick' of Austwick.

**Turdus viscivorus. Missel Thrush.** A certain number breed here. Flocks on the higher grounds in autumn.

**Turdus musicus. Song Thrush.** Abundant in the breeding season. Its migration may be clearly marked. Before the leaves begin to fall, as many as twenty at a time may be disturbed from the thorn bushes near the river; by December only a few are left in sheltered gardens; in February and March the return may be noted by their singing, first in gardens, then in more out-lying places, and by the appearance of little bands of four or six here and there, and by their being found on the hills, under shelter of the walls, evidently on their way north. Distinctly later and fewer in 1895.

**Turdus iliacus. Redwing.** Winter visitant; appears in varying numbers, often in company with Fieldfares. More likely to be seen on the lower grounds in January and February.

**Turdus pilaris. Fieldfare.** Winter visitant; more regular in its appearance than the Redwing. By the beginning of November may be looked for on the hills to the north. Was seen as late as May 14th by the Yorkshire Naturalists' Union in 1892.

**Turdus merula. Blackbird.** Abundant. Its departure is not so easily marked as that of the Song Thrush, but very few remain in midwinter. The return is mostly in the latter end of February and in March. I have a note of a dying Blackbird being found on the top of Ingleborough (2,373 feet) on March 12th.

**Turdus torquatus. Ring-Ouzel.** Summer visitant, arriving at the end of March. Nests commonly in suitable places.



- Cinclus aquaticus. Dipper.** Local name, 'Douk.' Abundant wherever there is swift-running water. Numerous on the Ribble in autumn and winter, but seems to retire up the becks and higher streams for the nesting season. Its vigorous singing, even in the coldest weather, is remarkable.
- Saxicola œnanthe. Wheatear.** Local name, 'Stonechat.' Abundant in summer. If watched for in the right places, by March 20th, I believe, some few will be seen. It seems to arrive earlier than farther south.
- Pratincola rubetra. Whinchat.** Local name, 'Grasschat.' Fairly abundant in summer.
- Pratincola rubicola. Stonechat.** The only note I have of its occurrence is of one frequenting High Rigg for several days in March 1886. A Stonechat's nest near Settle, on 19th June, 1890, was reported in the Nat. Hist. Journal, October 15th, 1891, page 131.
- Ruticilla phœnicurus. Redstart.** Numerous in summer, finding suitable nesting-places in the walls near gardens and plantations.
- Erithacus rubecula. Robin.** Fairly abundant. One comes across it sometimes in winter in the stone walls, far from human habitation.
- Sylvia cinerea. Whitethroat.** Fairly abundant in summer.
- Sylvia curruca. Lesser Whitethroat.** I have not come across it myself, but believe it is of rare occurrence on the Lawkland side.
- Sylvia atricapilla. Blackcap.** Summer visitant. Not very common.
- Sylvia hortensis. Garden Warbler.** Summer visitant; regular and more common than the Blackcap, I think.
- Regulus cristatus. Goldcrest.** Some breed here, but it is commoner in winter.
- Phylloscopus rufus. Chiffchaff.** Does not breed here. Mr. Foster has heard it at Lawkland. I heard and saw one in 1894 on September 14th and 23rd, my only note of its occurrence.
- Phylloscopus trochilus. Willow Wren.** Very abundant in summer. The eggs vary much in size, also in the number and size of the spots. I have seen a nest built on the top of a freshly-completed Flycatcher's nest, 4 feet above the ground, in the ivy on a wall.



**Phylloscopus sibilatrix. Wood Wren.** Very regular in certain places in summer—e.g., I hear one every year in the plantation at the back of Giggleswick Grammar School.

**Acrocephalus phragmitis. Sedge Warbler.** Nests here and there near the Ribble, and in marshy, willow-growing places, as on Swarth Moor. Reputed Nightingales, which once brought out crowds of people to Gildersleets, near Settle, and also near Clapham, were perhaps of this species. A local naturalist said they were fools for their pains, for ‘ ’Twas nobbut a Bothering Betty.’

**Locustella nævia. Grasshopper Warbler.** Its eggs have been taken on a moss near Lawkland, where it seems to come regularly in small numbers.

**Accentor modularis. Hedge Sparrow.** Local name, ‘Dicky Dunnock.’ Fairly abundant.

**Acredula rosea. Long-tailed Tit.** Small flocks occur in winter. Nests occasionally, but not regularly.

**Parus major. Great Tit.** Locally called ‘Blackcap.’ Abundant.

**Parus britannicus. Cole Tit.** Does not nest in any numbers. Commoner in winter.

**Parus cæruleus. Blue Tit.** Abundant.

**Certhia familiaris. Creeper.** Not very common, at any rate in summer. Has nested at Lawkland Hall, between a creeping plant and a house wall; I have known one caught in a trap at the foot of a tree.

**Troglodytes parvulus. Wren.** Abundant. Occurs sometimes in the walls on the hills in winter; the only bird perhaps seen for miles. Seems to sing later than other birds in the summer, even into August.

**Motacilla lugubris. Pied Wagtail.** Numerous in spring and summer. Returns very regularly about the second week in March, and it is exceptional to see one after the second week in October.

In March and April many may be seen every day on the banks of the Ribble below Settle, evidently passing on migration.

**Motacilla alba. White Wagtail.** Mr. Foster has seen them at Horton. Doubtless a skilled observer would find some among the migrating birds just mentioned, especially in April.

**Motacilla melanope. Grey Wagtail.** Not uncommon; not quite so regular as *lugubris* in its migration, though on the whole its times are the same. I have notes of seeing it on the Ribble in November and December.



**Motacilla raii.** **Yellow Wagtail.** Abundant in summer on the pastures, returns in the middle of April, and not many are to be seen after September has begun.

**Anthus pratensis.** **Meadow Pipit or Titlark.** Very common in summer. The most frequent victim of the cuckoo. Occurs sometimes in winter on the river-banks, in hard weather.

**Anthus trivialis.** **Tree Pipit.** Locally called 'Woodlark.' Fairly numerous in summer.

**Lanius excubitor.** **Great Grey Shrike.** Mr. Foster remembers one being brought to him, which was shot near Wharfe.

**Lanius collurio.** **Red-backed Shrike.** I have been told that a nest was found near Tosside; which may be correct, as it is recorded in Bowland, 1879, in the 'Birds of Lancashire.' One in Mr. Tottie's collection at Coniston was got in April 1864.

**Ampelis garrulus.** **Waxwing.** Several were shot near Clapham about 1860. Two of these are in the possession of Mr. Burton, of Clapham.

**Muscicapa grisola.** **Spotted Flycatcher.** Common summer visitant.

**Muscicapa atricapilla.** **Pied Flycatcher.** I have no evidence of its occurrence, but as it breeds lower down the Ribble at Gisburne, and again farther north, I expect it may rarely occur.

**Hirundo rustica.** **Swallow.** Abundant in summer. A variety with white wings was seen this year (1895) at Lawkland.

**Chelidon urbica.** **House Martin.** Abundant in summer. Nests under the edges of rock on the face of Malham Cove (Yorkshire Vertebrates).

**Cotyle riparia.** **Sand Martin.** Nests regularly in the river banks by the Deeps; also at Malham Tarn. Arrives about April 1st.

**Carduelis elegans.** **Goldfinch.** Used to be fairly common. Now rare. A few seen near Austwick, October, 1895.

**Chrysomitris spinus.** **Siskin.** One shot with Redpolls in February 1886.

**Ligurinus chloris.** **Greenfinch.** Fairly abundant in the breeding season; does not remain in midwinter.

**Coccothraustes vulgaris.** **Hawfinch.** Has nested at Coniston. It is found also north of us at Kirkby Lonsdale and Appleby.



- Passer domesticus.** House Sparrow. Abundant.
- Fringilla cœlebs.** Chaffinch. Local name, 'Bull-spink.' Numerous in summer; less so in winter, when one rarely sees the female. Begins singing with regularity about February 16th. I have once seen the cock bird sitting on the eggs.
- Linota cannabina.** Linnet. Local name, 'Thorn Linnet.' Is now uncommon; used to breed at Lawkland.
- Linota rufescens.** Lesser Redpoll. Local name, 'Chivey Linnet.' Nests in a few places; occurs in small bands in the winter.
- Linota flavirostris.** Twite. Local name, 'Ling Linnet.' A colony nest on Swarth Moor.
- Pyrrhula europæa.** Bullfinch. Occurs in small bands in winter, and has bred regularly, but is becoming rarer, chiefly owing, no doubt, to its being so much sought after by local bird-fanciers, who teach them to whistle their favourite airs.
- Loxia curvirostra.** Crossbill. Rare winter visitant. Some were shot in January 1888 by Mr. V. Birkbeck.
- Emberiza miliaria.** Common Bunting. Not at all common.
- Emberiza citrinella.** Yellow Bunting. Local name 'Yellow Yowley, and Yowring.' Its rarity or absence in this stone wall country is most marked. Personally I have seen no evidence of it nearer than Bentham in the Wenning valley.
- Emberiza schœniclus.** Reed Bunting. Common; begins to return with regularity early in March.
- Plectrophanes nivalis.** Snow Bunting. Regular winter visitant. May be met with on Ingleborough or Penyghent, or on high ground like Malham Moor. The flocks often consist of young birds, not remarkable for the typical white plumage.
- Alauda arvensis.** Skylark. Though it is said to have decreased, is still numerous in places during the nesting-season.
- Sturnus vulgaris.** Starling. Local name 'Shipster.' Very abundant in summer; breeds in the limestone crags and scars. I hear the first young Starlings in the nest regularly about May 18th in this neighbourhood, yet there are small flocks about at the end of May or beginning of June! A notable number breed in the masonry below the railway-bridge at Giggleswick Station. The Starlings that frequent a house where pigeons are kept at Giggleswick sometimes fly round and round for play, evidently imitating the habit of the pigeons.



- Garrulus glandarius. Jay.** So uncommon, that it is easily kept down by preservers of game.
- Pica rustica.** Common; have seen as many as twenty together in January. Once found five nests in one tree, two with eggs.
- Corvus monedula. Jackdaw.** Numerous; finds very convenient nesting-places in the limestone scars.
- Corvus corone. Carrion Crow.** Local name, 'Ket Crow.' Not uncommon; congregate in winter; have counted as many as 29 together on the hills behind Stackhouse in January. I have a note of a Crow's larder found in the same direction, where remains lay of the eggs of Lapwing, Partridge, Snipe, Sparrowhawk, Blackbird, Thrush, Barn-door Fowl, and the skulls of small Rabbits. A curious ash-coloured variety is in Mr. Coulthurst's collection, killed in October 1885. A pearl grey variety was shot near Coniston in December 1894.
- Corvus cornix. Hooded Crow.** Has occurred at Coniston, e.g., October 1895.
- Corvus frugilegus. Rook.** Numerous. The weather seems to make little or no difference in the date of beginning to nest, judging from observations of a rookery at Beck House, Giggleswick. This rookery (which, by the way, is not 'shot') varies little in the number of nests each year.
- Corvus corax. Raven.** Some few still survive among these north-western hills, and breed if not molested. A keeper from Dentdale told me this autumn that he knew of 11 that roosted at one particular spot. I have seen them in November as near Settle as the Attermire Cliffs, where their barking cries added to the wildness of the scene.
- Cypselus apus. Swift.** Not uncommon; arrives with regularity, I believe, about May 6th.
- Caprimulgus europæus. Nightjar.** Local name, 'Night-hawk.' Not common. The juniper bushes on Moughton are a favourite resort. Their jarring noise is locally called 'hurring.' I hear its flight-call of 'pluck, pluck, pluck,' near Settle in May and June at night. Some of the inhabitants, who do not otherwise know the bird, call it by the name of 'Gabbleratchett.' This seems to be a particular use of the name, though it may also be used in a wider sense, of any birds whose cries, as they pass over at night, are mysterious. In the 'Ornithological Dictionary' it is said 'Mr. Chas. Swainson (Provincial Names of British Birds, p. 98) gives "Gabbleratchett" as a name of the Nightjar, but satisfactory proof of that statement seems to be wanting.' See also Lucas' 'Studies in Nidderdale.'



**Dendrocopus major. Great Spotted Woodpecker.** Used to be known here. I have seen one that was shot in Clapham Woods, but believe it to be very rare now.

**Alcedo ispida. Kingfisher.** Breeds in suitable spots, and seems to have increased somewhat of late years. My notes of its appearance on the Ribble are generally in Oct. and Nov., and again in January.

**Cuculus canorus. Cuckoo.** Common summer visitant. Miss Watkins, who has found many eggs, observes that it never occurs amongst a full clutch, and suggests that the cuckoo tastes one or more of the victim's eggs to test if they are yet incubated.

**Strix flammea. Barn Owl.** Not very common. One has for many years nested under the roof of the Hostel at Giggleswick Grammar School. A fine young bird with slight down covering its plumage, was blown down by a gale on Nov. 7th, 1888.

**Asio otus. Long-eared Owl.** Not common. Has bred at Lawkland.

**Asio brachyotus. Short-eared Owl.** Local name 'Moss-Owl.' Occurs occasionally in autumn on the moors, by the wall-sides; has nested at Malham, and Mr. Hammond's keeper at Arncliffe has a case of the parents and young, taken near there.

**Syrnium aluco. Tawny or Wood Owl.** Fairly common. Miss Watkins has found one at Lawkland, nesting in a rabbit-burrow.

**Buteo vulgaris. Common Buzzard.** Occasionally occurs, especially in winter. Has bred recently in Dentdale. Asking a keeper the other day about this bird, he told me there was one hanging on his door at that moment.

**Astur palumbarius. Goshawk.** Lord Henry Bentinck's keeper at Dee Side, near Dent Station, has a badly preserved specimen, shot by him ten years ago.

**Accipiter nisus. Sparrowhawk.** Fairly common.

**Milvus ictinus. Kite.** Local name 'Glead.' Used to occur not infrequently in the memory of some, especially near Wharfe, and on Greycroft.

**Pandion haliaetus. Osprey.** Reported as seen at Coniston in April 1852.

**Pernis apivorus. Honey Buzzard.** Mr. Foster has one in his collection which was shot by himself on Penyghent.



**Falco peregrinus. Peregrine.** Still breeds among these North Western Hills, if not molested. There are some fine specimens in local collections. A fine young falcon was killed at Stockdale in Dec. 1894. Several landowners of the district luckily do what they can to protect this and other rare birds, as the Raven and Merlin.

**Falco æsalon. Merlin.** Still breeds on several moors, though far from common.

**Tinnunculus alaudarius. Kestrel.** A common bird till recently, the scars affording good nesting-places. A nest was found in 1894 *in a barn* at Rathmel!

**Sula bassana. Gannet.** One was killed on Lawkland Moss within the memory of Mr. Foster.

**Ardea cinerea. Heron.** Local name 'Yony Crony.' One or two pairs are said to have nested in Cockett Wood a few years since. They visit us from south and north. The nearest heronries are at Eshton, near Gargrave, and Browsholme to the south, and Ashton near Lancaster, and near Kirkby Lonsdale to the north. I have a note of 17 being seen together in October.

**Botaurus stellaris. Bittern.** No doubt used to occur formerly. Mr. Burton of Clapham shot one in 1865.

**Anser cinereus. Grey Lag Goose.** Rare winter visitant.

**Anser segetum. Bean Goose.** Rare winter visitant.

**Anser brachyrhynchus. Pink-footed Goose.** Occasional in winter. Mr. Swale, of Ingfield, has one that was shot out of a flock at Lodge several years ago.

**Anser albifrons. White-fronted Goose.** Mr. Coulthurst has one which he shot on the Deeps in January 1891.

**Cygnus musicus. Whooper Swan.** Swans appear occasionally in winter; I have notes of their occurrence at the Deeps, Coniston, and Clapham. A flock of 10 or more, some 'grey,' were on the Deeps for many days in January 1893. I saw a fine adult, belonging to this party, which was shot at Bookilber. It weighed 17 lbs., and measured 7 feet from wing to wing.

**Anas boschas. Mallard.** Common, and breeds.

**Dafila acuta. Pintail.** Mr. Coulthurst has one in his collection of local birds.

**Spatula clypeata. Shoveller.** Occasional in winter on the Deeps, and has occurred at Coniston.



**Querquedula crecca. Teal.** Occurs in winter in varying numbers. Nests at Malham.

**Mareca penelope. Wigeon.** Perhaps the commonest Duck in winter. Rathmell Beck is a favourite place.

**Fuligula ferina. Pochard.** Occasional on the Ribble, and not uncommon at Coniston, and at Malham, where it breeds.

**Fuligula cristata. Tufted Duck.** Occasional on the Ribble in winter; has been shot at Lawkland. May often be seen on Malham Tarn. In 1895 I saw some there in April, June, and October. The fact of its having nested there is recorded in the Yorkshire Vertebrates. Occurs at Coniston.

**Clangula glaucion. Goldeneye.** Occasional in winter on the Ribble, and at Malham and Coniston.

**Tadorna cornuta. Sheldrake.** Occasional at Coniston.

**Ædemia nigra. Common Scoter.** One in the Coniston collection was one of the number captured near Skipton in April 1879.

**Ædemia fusca. Velvet Scoter.** One was shot by Mr. Foster's father in Feb. 1841, on the high lake at Clapham. After having missed it twice with an ordinary charge, he secured it with a wire cartridge!

**Mergus merganser. Goosander.** Not uncommon winter visitant at the Deeps, Malham, and Coniston. Occurs, I believe, with some regularity in February and March. In 1894 several frequented Malham Tarn all March, when I had the rare opportunity of seeing the male in full plumage. I have heard of seven trout being taken from the crop of one of these birds!

**Columba palumbus. Ringdove or Woodpigeon.** Local name 'Cowshut.' Fairly abundant; large flocks frequent the Ings by the Deeps all the early months of the year.

**Columba œnas. Stock Dove.** Locally called 'Rock dove.' Breed regularly on the scars; nest early. I have seen them in January. Mr. Foster maintains that one pair of *Columba livia* once nested in Hull Pot.

**Syrrhaptes paradoxus. Pallas' Sandgrouse.** In the Wesleyan Nat., Oct. 1888, it is stated that a pair were for some time on the moors near Settle, and bred successfully. On July 9th I visited the spot on Cleatop Moor, but saw no signs of the birds, nor remains of shell, and am not aware if it is considered a well-proved case.



**Tetrao urogallus. Capercaillie.** Mr. Foster's father once shot one in the woods about Clapham.

In vol. 3, p. 48, of the last edition of Yarrell it is said 'Mr. Harting states that its bones were found at Settle amongst Roman remains.'

**Phasianus colchicus. Pheasant.** Occasionally wanders from preserves to outlying plantations.

**Perdix cinerea. Partridge.** The 'Yorkshire Vertebrates' says: 'Rare in Upper Ribblesdale,' but, Mr. Foster says, depends upon the season. They frequent certain spots on the higher grasslands, even in fairly hard weather—near Victoria Cave and in Stockdale, for instance.

**Lagopus scoticus. Red Grouse.** There are many moors in the neighbourhood. Above Horton, where the Midland Railway passes between moors, the telegraph-wires are laid in a single row horizontally. Whernside is noted for silver varieties.

**Tetrao tetrix. Black Grouse.** Occurs occasionally, e.g., at Horton, and at Darnbrook in 1893. Mr. Foster says the late Mr. Hammond turned some out near Arncliffe, but without success.

**Rallus aquaticus. Water Rail.** Has occurred at Coniston, Rathmell, and on Austwick Moss, where it has been known to breed.

**Crex pratensis. Corncrake or Landrail.** Local name, 'Dakerhen.' Not uncommon.

**Ortygometra porzana. Spotted Crake.** One in the possession of Mr. Burton, of Clapham, was shot by him near Lawkland Hall in 1880.

**Gallinula chloropus. Moorhen or Waterhen.** Numerous on the Ribble where there are willows, and on swampy places.

**Fulica atra. Coot.** Numerous on Malham Tarn all the year round; have found its nest at New Houses Tarn. Occasional in winter and spring (March) on the Ribble.

**Charadrius pluvialis. Golden Plover.** Breeds numerous on the higher grounds. I have found its nest near the summit of Ingleborough more than once. Flocks pass over sometimes in winter, but as a rule they have left by November, and return in February or early March, though sometimes not dispersing to their breeding-grounds till somewhat later.



**Eudromias morinellus. Dotterel.** Used to be sought for on the hills, about Whitsuntide, by local anglers, for the sake of their feathers; but they say none have been shot for more than five years.

**Vanellus vulgaris. Lapwing.** Local name 'Tewit.' Abundant. Flocks visit the lower grounds in winter, but they return gradually to their breeding-grounds at the end of February. A considerable trade in the eggs is carried on at Settle. Many curious varieties may be seen amongst them. A peculiar variety has a white ground colour, with small black spots, no bigger than a pin's head. Diminutives are less rare than double-yolked eggs.

**Scolopax rusticola. Woodcock.** Winter visitant; and probably breeds, having been seen in April, June, and September, and is recorded as having nested at Whitewell in Bowland in the 'Birds of Lancashire.'

**Gallinago major. Great Snipe.** In Harting's Handbook of British Birds it is recorded that two were shot on high ground, Malham, September 6th, 1862. It is probable that it is of occasional occurrence.

**Gallinago cœlestis. Common Snipe.** Breeds in abundance. In autumn as many as 20 may be flushed together. They are fewer in winter, though I counted 11 together on December 7th. I used to surprise many on muddy spots in the Ribble, in the dry March of 1892, in the day-time, which instead of flying off, crouched and assumed the stock-still position, always lowering the point of the beak to the ground first.

**Limnocyptes gallinula. Jack Snipe.** Winter visitant. February is the best month for them.

**Tringa alpina. Dunlin.** Nests near Malham Tarn, and has nested on much lower ground at Lawkland. I have seen one in winter plumage at Malham in March, and in April have come across them singly on Ingleborough and Fountains Fell. Besides its ordinary cry of 'prill,' it utters a loud scolding note, reminding one of the Whitethroat's noise, and there is no more charming sound than its nesting-song, if one may call it so, which is a long-continued trill like a fisherman's reel, or a whistle with a pea in it.

**Tringa maritima. Purple Sandpiper.** Some were once shot on Camm Fell by Mr. T. T. S. Metcalfe, and are in his possession.



- Totanus calidris. Redshank.** Nests at Malham in some numbers, and sporadically elsewhere in the district. Returns on the Ribble with regularity the second week in March.
- Totanus hypoleucus. Common Sandpiper.** Local name, 'Tillie Little.' Abundant in summer.
- Totanus ochropus. Green Sandpiper.** I see one in winter by the Deeps from the end of October to April, the 14th being the latest date ; has been shot at Lawkland.
- Limosa rufa. Bar-tailed Godwit.** One was shot at Lawkland in August 1892 ; in the possession of Mr. Watkins, of Austwick.
- Numenius arquatus. Curlew.** Breeds numerous, returning early in March. Occasional in winter, e.g., a flock frequented the Deeps for some while after the N.E. gale in November 1893.
- Sterna fluviatilis. Common Tern.** Terns occasionally occur, especially after gales, in autumn. One of this species was picked up in August 1894 at Bleathwaite.
- Larus ridibundus. Black-headed Gull.** Appears occasionally, following the course of the river, generally in March and April, though I have seen them in June.
- Larus tridactylus. Kittiwake.** Occasional in winter and spring.
- Larus canus. Common Gull.** Occasional in winter and spring, especially when the floods are out.
- Larus argentatus. Herring Gull.** Occasional in winter or spring. I have often seen them wheeling over Settle in February, with wind N.W.
- Larus fuscus. Lesser Black-backed Gull.** Occasional in spring, but most often in June, in which month a pair sometimes frequent the Ribble near the Deeps, but do not breed, I think ; I have also seen one at Malham Tarn in June.
- Lestris parasiticus. Richardson's Skua.** One shot near Whelpstones in the autumn of 1889.
- Procellaria pelagica. Stormy Petrel.** Has been picked up on the hills in the memory of Mr. Foster.
- Alca torda. Razorbill.** One picked up at Malham Tarn in March 1894, in the possession of the keeper.
- Colymbus septentrionalis. Red-throated Diver.** Mr. Foster has one, which was shot on Swarth Moor. A Diver, said to be Great Northern (*C. glacialis*), was seen on Coniston Lake in 1867.



**Podiceps cristatus. Great Crested Grebe.** I saw one on Malham Tarn on June 7th, 1895, and heard its guttural *kraw*, but obtained no evidence of its breeding there.

**Podiceps cornutus. Slavonian Grebe.** Mr. Foster has a female obtained near Nether Lodge in Ling Gill Beck, a few years ago.

**Tachybaptus fluviatilis. Little Grebe or Dabchick.** Numerous on the Deeps and on Malham Tarn, at any rate in spring and winter. Nests at Malham, and in 1886 eggs were taken from a deserted Coot's nest at New Houses Tarn. I have several times noticed several in close company on the Ribble in March. Out on Malham Tarn this bird does not behave with its usual shyness, and its ways and noises may be easily observed. Besides its ordinary tinkling call-note of 'Kee, Kee,' it utters a loud whinnying cry.

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### NOTES AND NEWS.

From Mr. J. H. Gurney, F.Z.S., we have received a reprint of his paper in the Norfolk and Norwich Transactions 'On the Recent Abundance of the Little Auk (*Mergulus alle*, Linn.) in Norfolk,' in which he records the occurrence of 285 examples. Much Yorkshire information is also included, especially the observations of Mr. W. J. Clarke near Scarborough, where 'thousands' were seen.

From Prof. Herdman, D.Sc., F.R.S., we have a reprint of his presidential address to the British Association's Zoological Section at Ipswich this year. The sub-titles 'Oceanography,' 'Bionomics,' and 'Aquiculture' indicate to the initiated in technical terms the scope of the paper, which is full of interest, much of it arising from the Professor's own Liverpool Bay observations.

Further notes from the Jackson-Harmsworth Polar Expedition will be of interest. Writing to Mr. B. Sturges Dodd, concerning dredging for marine life, Mr. Harry Fisher mentioned that a couple of dredges had been constructed as suggested, but that 'Dredging will be impossible for some time to come. It will be done from a whale-boat only, probably not before the "Windward" leaves—she will go immediately the ice opens. Until that time we cannot use a whale-boat probably. Besides that we shall have to be cautious in this neighbourhood, the sea-bottom being strewn with boulders large and small.' Mr. Fisher also writes: 'The ice is so very difficult to understand, we have no idea when it will open. A gale of wind from the North might open it after blowing continuously for three days, perhaps less, but no sunshine will open it. We are within half a mile of the spot where the "Eira" went down in 1882, and about fifty miles from the spot where the Austrians abandoned the "Tegetthoff." No other vessels have ever been here. If you receive a letter from me it will be one of the first ever sent from F. J. L. The crews of the "Eira" and "Tegetthoff" both returned in whale-boats by Novaia Zemlya. The botany of this region is as far as I know, rather better than may be supposed, but really I have had no opportunity to investigate it. . . . Our lowest reading of thermometer now in February, viz.—55° F., our highest is to-day + 33 F. Birds abound here, but species are few. Forty Bears have been killed—some Walrus—only one Seal. We cannot expect Seal until the ice opens out. Foxes' tracks we see, but not the animal. I followed one up the cliffs, where she had been, with a very small cub, after the birds. I found her hole, but not the fox. One of the crew saw a family a few weeks ago.'



## In Memoriam.

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### LORD TABLEY AND PROF. CARDALE BABINGTON.

IN December and July of the year just over, Botany has had to deplore the decease of two of its not least eminent Gamaliels of science, whom it was the privilege of the writer to have been brought into contact with. In Lord Tabley (J. B. Leicester Warren) we saw an instance of that dual genius which must ever be rare, the union of the true poet with the accurate scientist. As a poet of deep human sympathies and religious instincts, refined in the Classic crucible (as to form of expression) that distinguished Savage Landor—and in a less degree the elder Darwin—he had attained a wide recognition amongst the cultured; and in no lesser sense, to a generation of field-botanists now in their prime, were the results of his broad views and acute observations in the field, in connection with the Brambles and the neglected Docks, appreciated as specially valuable. So fond or proud was he of the Rosaceæ and Polygonaceæ that his very Book-Plate embodied conventionalised representations of the Blackberry, Rose and Rumex of his native land. It is greatly to be regretted that his long-looked-for Flora of Cheshire, for which he had amassed much detail, has not had the benefit of his final arranging. With Yorkshire his connection was slight enough, but he had visited the Sheffield district with the late Mr. Newbould for bramble study, and to the same end he carefully went over, named and annotated the writer's gatherings of that genus. The result, of value still and for all time, in a broad common-sense view of affinities modified by environment, due to his experience and acumen, may be seen in 'West Yorkshire' and the writer's later 'Flora.'

At no time, either, had I an intimate acquaintance with the Cambridge Professor of Botany, who died at a ripe old age in July last, nor was his tie with the North of England either close or current, yet he, too, visited Sheffield, Whitby and the dales in years long past with eyes open for his 'beloved blackberries,' and his 'British Rubi' (1869), as well as later 'Notes' due to correspondence about them with Gilbert Baker, the writer, Fox Lee, etc., contain many references to the county of broad acres, and testify to his skill and ingenuity as the pioneer-chief of the 'splitting' school. But of late years—though in no unkind spirit is it said—the ageing Professor's prowess in classification, his grasp of those small essentials which confer the ability to name dried specimens of such a critical group as Rubi, at any rate, fell to its nadir. So much so that, friend and whilom disciple, the Hon. J. L. Warren (as he was then) wrote to me in 1876: 'Both Bloxam and Babington are practically out of the field



now as regards getting anything like a bramble name from them; Briggs and Webb are as good as any one, I think, now.' Alas! all the four have alike left us. But I quote for the purpose of fixing a point of transition; a new era in rubiology was beginning, the way of looking at things was altering, until to-day, thanks to contact and concertion with continental observers in their wider field, the brambles are understood more rationally than ever before.

More approachable than Lord Tabley, Prof. Babington's services to young aspirants after a field knowledge of native plants, were such as the votaries of English Flora cannot soon forget. With his 'Manuals' from 1843 onwards, marvels of concise arrangement from the first, the fifth edition specially making 'a new departure,' and his 'Flora of Cambridge' (1860) he may be said to have toed the mark and led off in showing how the spring should be made across the stream of academic formalism to the bank of lowly wild flowers, waiting in beauty on the other side, and taught us how to love them the better for the introduction he gave! His Pythias, his intimate friend and unobtrusive collaborator in this work for the cause of botany, was, for long years, the Rev. W. W. Newbould. My recollection of keenest unalloyed joy, *in res Botanicae*, is of a visit with the two to Wicken Fen to make the acquaintance of *Viola (stagnina)* in her humble home. Another red-letter day was a train trip to Canvey Island to gather the lovely *Lathyrus tuberosus*. The writer's correspondence with him (regrettably, yet naturally) practically ceased with the issue of the West Yorkshire Flora in 1889. F.A.L.

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### NOTES AND NEWS.

The 'Journal of Conchology' for January contains a useful list of the Land and Freshwater Mollusca of the English Lake District, by Captain W. J. Farrer, in which may be noted the discovery of *Vertigo moulinsiana* near Keswick, and a record of the introduction of the non-native *Helix cantiana*.

It is a pleasure to note that the Conchological Society, which flourished so well at Leeds for about twenty years, is increasing rapidly in numbers now that its headquarters are transferred to Manchester, the Lancashire naturalists joining freely now that the Society holds its meetings in their county.

The 'Journal of Conchology,' which is the Society's official organ, resumes its usual aspect, now that the very long paper on Lifu shells has come to an end.

The elaborate and lengthy paper in which Mr. J. Cosmo Melvill, M.A., F.L.S., and Mr. Robert Standen have enumerated the Shells sent from Lifu and Uvea, Loyalty Islands, by the Rev. James and Mrs. Hadfield, has been reprinted from the 'Journal of Conchology' in the form of a Manchester 'Museum Handbook.' It is illustrated by a couple of plates, and on the cover is an excellent sketch map of the Loyalty Islands and New Caledonia. The authors in naming new species and varieties have shown themselves not ungrateful for even the smallest assistance rendered by their Lancashire friends.



## AQUATIC INSECTS.

The Natural History | of | Aquatic Insects | By | Professor L. C. MIALL, F.R.S. | with Illustrations by A. R. HAMMOND. F.L.S. | London | Macmillan and Co. | . . | 1895 | . . [8vo. cloth, pp. xii+395, with illustrations in the text].

THIS is a remarkably interesting and fascinating work, and deals with an astonishing number of forms of aquatic insect life. The details of structure and life-history are multitudinous in their array—and the work is evidently the result of many years' diligent and systematic investigation in the field and in the library, in which the author has been assisted by numerous helpers, of whom three—Messrs. W. F. Baker, T. H. Taylor, and J. J. Wilkinson—are specially thanked in the preface. The scope of the work includes an account of all the different types of aquatic insects, their habits, mode of life, development, and such details of their structure as are found to bear upon the life-history.

The introduction deals with water and its surface-film, and with generalities concerning aquatic insects. The water-beetles are treated of in the first chapter, flies with aquatic larvæ in the second, aquatic hymenoptera in the third, aquatic caterpillars in the fourth, caddis-worms in the fifth, the alder-fly in the sixth, stone-flies in the seventh, may-flies in the eighth, dragon-flies in the ninth, pond-skaters, water-scorpions, and water-boatmen in the tenth, the water springtail in the eleventh, and insects of the sea-shore in the twelfth, while in the last chapter are summarised the contrivances of aquatic insects, their modes of locomotion, of feeding, of respiration, attack and defence, egg-laying, etc.

We shall all sympathise most warmly in the Professor's admiration for the works of the great zoologists of the olden time—Swammerdam, Réaumur, Lyonnet, and De Geer—and in his desire to promote the study of what he calls live natural history; and we are glad to see that in his preface he expressly disclaims any intention to disparage the study of systematic zoology. This in itself is a great advance upon the spirit shown by a few biologists, who appear to think that, because they are not systematic, they may be loose and inaccurate. But Professor Miall gives excellent advice to students in the course of the work. We might, however, take exception to a remark on p. 26 which seems to imply that a student of natural history or anatomy need not be accurate in naming his species. We hold, on the other hand, that it detracts from the value of otherwise good anatomical or life-history work of the subject if it be not accurately and precisely determined, and we can recall as a case in point that Prof. M. Lawson published an account of the anatomy of *Limax*



*maximus*, the mollusc he described being in reality *Arion ater*. It would be an excellent thing if all would-be biologists or anatomists were compelled first to go through a year or two's training in the collection of natural history specimens in the field and their specific determination in the closet, with the object not only of enlarging their mental horizon, but also of impressing on their mind the fundamental value of strict scientific accuracy and precision.

We have, in conclusion, to mention the excellence of the many clear illustrations by Mr. Hammond, which are placed where required in the text, instead of being relegated to the obscurity of plates, and to congratulate the author on the excellence and interest of his work.

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### NOTES AND NEWS.

Some of our readers will be interested to note that—beginning with last November—the Manchester Museum is available for public inspection on Sundays.

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Some interesting observations on the teratology of *Parnassia palustris* have been made in the neighbourhood of Scarborough by Mr. I. H. Burkill, who describes them in the 'Journal of Botany' for January of this year.

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Our valued contributor, the Rev. E. Adrian Woodruffe-Peacock, of Cadney near Brigg, has recently been elected to the Fellowship of both the Linnean and the Geological Societies.

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The ninth volume of the 'Proceedings and Transactions of the Liverpool Biological Society' shows that the Society is in as flourishing a state, and doing as good work as ever, in the investigation of the marine life of the Irish Sea. In addition to revisions of former lists, notes on individual species, and an account of the investigations made in 1894 on the Lancashire Sea-Fisheries Laboratory, there is a report by Mr. Edwd. T. Browne, B.A., on the Medusæ of the district. Some of the plates appear to be an advance upon those of former reports.

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From Mr. John E. Robson, of Hartlepool, we have received for notice 'The Pterophorina of Britain | — | a | Monograph | By | J. W. Tutt, Esq., F.E.S., | . . . | — | Reprinted from "The British Naturalist." | — | To be had from | John E. Robson, Hartlepool.' In this book, which runs to 161 pages in length, we get a full, detailed, and interesting account of what is known of the 'Plume Moths,' in which nothing is overlooked or neglected. Typographically, however, the work is not ideally perfect, and it has two inexcusable faults, that the book is not dated, and that it does not show the original pagination.

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The Syndics of the Cambridge University Press have sent us 'A Text-Book of Zoogeography' by Mr. F. E. Beddard, M.A., which constitutes one of their admirable series of Cambridge Natural Science Manuals. The subject of Zoological Geography is herein handled with much ability by Mr. Beddard, who adopts Mr. Sclater's system of zoological regions, and with the aid of a few very simple maps, and some simple typographical methods of graphic representation, explains the leading phenomena of distribution. We note that Mr. Beddard, as becomes the learned monographer of the Oligochæts, draws many of his illustrations from that group, as well as from the higher and better-known groups.



A CRITICAL CATALOGUE OF LINCOLNSHIRE  
PLANTS:  
FROM ALL KNOWN SOURCES.

REV. E. ADRIAN WOODRUFFE-PEACOCK, L.Th., F.L.S., F.G.S.,  
*Vicar of Cadney, Brigg; Organising and Botanical Secretary of the Lincolnshire Naturalists' Union; Curator of the Lincolnshire County Herbarium.*

SEVENTH PAPER.

See explanations given in the preceding papers.

Nat., 1894, pp. 85-92, 133-140, 213-220, 257-264, 337-344. Nat., 1895, pp. 95-102, 289-301.

PRIMULACEÆ (*continued*).

**Anagallis arvensis** L.† Native. Recorded for all Divisions except 4.6.9.18.

VAR. **pallida** Hooker. Native. Recorded for Divs. 2.7.10.16. Herb. Brit. Mus.

**Anagallis cærulea** Schreb.† Native. Recorded for 2.4.5.7.8.9.11.13.16. 'In addition to the blue variety, I have often found specimens with pink, buff, and cream-coloured flowers.'—Dr. John Lowe in *Science Gossip*, 1867, p. 235. 'In a dry stubble-field I found a specimen with *pale lilac* flowers.'—Rev. E. R. Walker, by letter, 1895.

**Anagallis tenella** L.† Native. Recorded for all Divs. except 3.8.11.12.14.17.18.

**CENTUNCULUS MINIMUS** L. Native, if with us now. Div. 7. Osgodby, once in a sandy lane near, 1877-79; F. A. Lees' MS. *Florula*, in my possession.

**Samolus valerandi** L.† Native. All Divs. except 2.4.15.18.

OLEACEÆ.

**Fraxinus excelsior** L.† A more than doubtful native. All Divs., for it is universally planted as a hedge-row tree. Self-seeding. Sir Joseph Banks says it is found under the peat in our fens. See *Journal of Science and Art*, vol. 2, p. 244. Abraham de la Pryme says, 'The ashes are as soft as earth,' when dug out of the fens, 'and are commonly cut in pieces by the workman's spades; and when exposed to the open air fall away into dust.' See *Phil. Trans.*, No. 275, p. 980. On the other hand, the late W. Marshall says, 'The Ash I have never found in carrs of Fens.' See Miller and Skertchly's *The Fenland*, p. 294. My friend Mr. Alfred Atkinson, of Brigg, engineer to the Ancholme Drainage Commission, has never met



with it. See also the Rev. G. S. Streatfeild's *Lincolnshire and the Danes*, 1884, pp. 70 and 225, concerning place names which may be called after this tree.

**Ligustrum vulgare** L.† Native. All Divs. except 6.9.14.15.17.18.

## APOCYNACEÆ.

**Vinca major** L.† An escape. Divs. 2.8.10.11.13.

**Vinca minor** L.† An escape. Divs. 11.13.15.16.

## GENTIANEÆ.

**Blackstonia perfoliata** Huds.† Native. All Divs. except 2.14.17.18.

**Erythræa Centaurium** Pers.† Native. All Divs. except 6.9.12.17.18.

f. **flore albo.**† Div. 5. Grayingham, in the Foxcover, 1890-94; J. G. Nicholson.

**Erythræa pulchella** Fr.† Native. Divs. 4.9.10.11.

**Gentiana Pneumonanthe** L.† Native. Divs. 2.3.5.6.7.10.13.

**Gentiana Amarella** L.† Native. All Divs. except 1.4.7.12.16.17.18.

VAR. **præcox** Raf.† Native. Div. 15. Grantham to Ancaster, 6.6.1774; Sir John Cullum. Specimens in Sir J. E. Smith's Herb. at the Linnean Society. Verified J. E. Harting, 1894. West Willoughby, old quarry, 1894; Miss S. C. Stow (F.A.L.).

**Gentiana campestris** L.† Native. Divs. 5.13.15. Very rare now.

**Menyanthes trifoliata** L.† Native. Recorded for all Divs. except 8.16.17.18.

**Limnanthemum peltatum** S. P. Gmel.† I do not know what to say of this species. Divs. 15. Grantham to Woolsthorpe, in the Grantham and Nottingham canal, 1860-70; E. M. Browne. But no specimen is known. In Syston Lake† in the Hall park, 30.8.'95; Misses M. O. and S. Craster. Along with *Ranunculus circinatus* Sibth., *Myriophyllum spicatum* L., *Ceratophyllum demersum* L., *Elodea*, and *Chara hispida* L., which I received at the time with it from the same sheet of water.

## POLEMONIACEÆ.

**Polemonium cæruleum** L.† Alien escape. Divs. 2.8.11.15.

## BORAGINEÆ.

**Cynoglossum officinale** L.† Native. Divs. 1.2.3.6.7.9.10.11.13.14.16.

**Asperugo procumbens** L.† Alien with foreign corn seed. Div. 6. Lincoln, 1893; Rev. R. W. Goodall.



**Symphytum officinale** L.† Native. Divs. 3.5.7.8.10-14.16-18.

VAR. **patens** Sibth.† Alien escape from cultivation. Divs. 2.3.14.

**Symphytum tuberosum** L.† Native, but very rare. Div. 5, Blyborough,† 1892; Miss M. G. W. Peacock (Ar. B.). Div. 16. Bourn, in Faulkner's Decoy, 1837, along with *S. officinale* L.; Rev. J. Dodsworth's *Interleaved Flora*, in my possession. He was a most careful and exact botanist.

**Borago officinalis** L.† Alien escape. Divs. 2.5-12.

*ANCHUSA SEMPERVIRENS* L. Alien escape from a garden. Div. 11. Skegness, 6, 1890. Figured from a specimen found there in Miss M. Lane-Claypon's *Paintings*.

**Lycopsis arvensis** L.† Native. Divs. 1-3.5-7.9-11.13.

**Myosotis cæspitosa** F. Schultz.† Native. Divs. 1.5.7.9.11.13.

**Myosotis palustris** Relh.† Native. Divs. 1-8.10-17.

VAR. *STRIGULOSA* Mert. & Koch. Native. Divs. 1.2.7. See Rev. W. Fowler in 'Naturalist,' 1888, p. 111.

**Myosotis repens** G. Don.† Native. Divs. 7.11.13.

**Myosotis sylvatica** Hoffm.† Native. Divs. 7.13.16.

**Myosotis arvensis** Lam.† Native. Divs. 1-14.16.17.

VAR. **umbrosa** Bab.† Native. Div. 3. Howsham! in Poolthorn Cover, and in shady ditches, 1894 (W. F.).

**Myosotis collina** Hoffm.† Native. Divs. 2.3.7.8.10-12.14.15.

**Myosotis versicolor** Reichb.† Native. Divs. 5.7.9.10.12.13.15.

*LITHOSPERMUM PURPUREO-CÆRULEUM* L.? See *Nat.*, 1895, p. 167. The Rev. J. K. Miller's plant may have been an escaped *Collomia*. One with a blue corolla was sent to me to name in 1893.

**Lithospermum officinale** L.† Native. Divs. 2.3.5-7.11-14.16.

**Lithospermum arvense** L.† Native. Divs. 2.3.5-8.10-15.

**Echium vulgare** L.† Native. Divs. 1-3.5-7.9-16.

#### CONVOLVULACEÆ.

**Volvvulus sepium** Junger.† Native. Divs. 1-8.10-17.

**Volvvulus Soldanella** Junger.† Native. Divs. 9.11.

**Convolvulus arvensis** L.† Native. Divs. 1-14.16.17.

**Cuscuta Epithymum** Murr.† Native? Div. 7. Nova Scotia Common, Osgodby, 1877-79; F. A. Lees. Div. 14. Billingham,† 1895; Mrs. Walker. Sleaford,† 1895; J. Larder (Ar. B.).

**Cuscuta Trifolii** Bab.† Alien, with foreign clover seed. Divs. 1.2.7.8.11.13-15.



## SOLANACEÆ.

- Solanum Dulcamara** L.† Native. Divs. 1-5-7-14-16-17.  
**f. flore albo.**† Native. Div. 2. Scunthorpe, in Coneysby Pits, 1895; Lees and Fowler.  
**Solanum nigrum** L.† Native. Divs. 1-2-5-7-10-14-16-18.  
**Lycium barbarum** L.† An escaped African alien. Divs. 1-3-7-9-11-14.  
**Atropa Belladonna** L.† Alien without question. Divs. 6-10-12-16-18.  
**Datura Stramonium** L.† Alien. Divs. 2-5-7-8-11-12-18.  
**Hyoscyamus niger** L.† Native. Divs. 1-17.

## SCROPHULARINÆ.

- Verbascum Thapsus** L.† Native, but more often an escape. Divs. 1-3-5-7-10-14-16.  
**Verbascum Lychnitis** L.† Alien escape. Divs. 5-13. It used to grow on an old wall in Church Lane at Gainsborough, circ. 1850, Dr. John Lowe. Mere, 1895; Miss Pears. 'It is about twenty years, more or less, since I can remember them growing on this spot. All but one plant being *V. nigrum* L.'—A. P.  
**Verbascum nigrum** L.† Alien escape. Divs. 6-12-13-15.  
*VERBASCUM VIRGATUM* Stokes. Recorded in Sir W. J. Hooker's *Flora*, 1835, 3rd ed., as found by John Nicholson, of Lincoln. The locality is given 'near Lincoln.' **N.** or **S.** not recorded. There is no Lincs. specimen, however, in Hooker's Herb. at Kew. H. C. Watson recorded it again in *Supp. to the C.C.B.*, 1872, but I believe it was only the Nicholson-Hooker record reproduced. The collection I believe to be John Nicholson's, which at least contains some of his plants, has a specimen so named, but it is *V. nigrum* L. The collection is in the hands of Mr. Charles Simpson, of Lincoln. In any case this species is a casual or escape.  
**Verbascum Blattaria** L.† Escape or casual. Divs. 3-10-14. Cadney,† 1895; Job Richardson. It has been on this spot many years. West Keal, 1879; Burgess' *Paintings*. Ruskington,† 1895; Rev. W. W. Mason (Ar. B.).  
**Linaria Cymbalaria** Mill.† Escape. Divs. 2-3-5-8-10-11-14-16.  
**Linaria Elatina** Mill.† Native. Divs. 6-8, 10-11-13-16.  
**Linaria spuria** Mill.† Native. Divs. 6-8-14-16.  
**Linaria vulgaris** Mill.† Native. Divs. 1-8-10-16.  
**f. flore pelorio.** Native. Divs. 2-5-6-15. E. M. Browne's Herb. Both the five- and three-spurred form have been found.



- Linaria viscida** Moench.† Native. Divs. 2-5.7-11.13-16. New to the fens and carrs; introduced with ballast from the railway lines, where it is the most frequent casual.
- Antirrhinum majus** L.† A garden escape. Divs. 2.6.8.11.13.
- Antirrhinum Orontium** L. Native, but very rare indeed. Divs. 13(2).14. Stapleford and Thurlby, 1890; H. Fisher's Herb. Brauncewell, circ. 1860; Dr. John Lowe.
- Scrophularia aquatica** L.† Native. Divs. 1-5.7.8.10-14.16.
- Scrophularia nodosa** L.† Native. Divs. 1-3.5-8.10.11.13.14.16.
- Mimulus luteus** L.† Garden escape. Div. 15. Hough, 1864; Rev. R. H. Charters.
- LIMOSELLA AQUATICA* L. Native, if still with us. Divs. 12.16. Skirbeck Hundred, 1856; P. Thompson. Bourn Fen, in pits, 1838; Rev. J. Dodsworth.
- SIBTHORPIA EUROPEÆA* L. Recorded for Div. 15. Honington, by R. Gough, in his edition of Camden's *Britannia*, 1789. But as this is J. Blackstone's *Speci. Bot.*, 1746, locality for *Hydrocotyle* it is no doubt Gough's mistake. It is not an uncommon one. See F. A. Lees' *Outline Flora*.
- Digitalis purpurea** L.† Native, but more often an escape. Divs. 2.3.5-8.10.11.13.15.18.
- Veronica hederæfolia** L.† Native. Divs. 1-4.7.8.11-14.16.17.
- Veronica polita** L.† Native. Divs. 1-3.7.9.11.13.16.
- Veronica agrestis** L.† Native. Divs. 1-7.9-14.16.17.
- Veronica Tournefortii** C. Gmel.† Colonist. Divs. 2.3.5.7.10. 13.14.
- Veronica arvensis** L.† Native. Divs. 1-7.11-14.16.17.
- Veronica serpyllifolia** L.† Native. Divs. 1-3.5-8.11-14.16.17.
- VERONICA SPICATA* L. Escape. Div. 16. Bourn Abbey, gravel walks, 1838; Rev. J. Dodsworth.
- Veronica hybrida** L.† Alien. Div. 14. Billingham, 1895; Mrs. Walker.
- Veronica officinalis** L.† Native. Divs. 1-3.5.7.8.10-13.16.
- Veronica Chamædrys** L.† Native. Divs. 1-5.7-8.10-17.
- Veronica montana** L.! Native. Herb. Brit. Mus. Divs. 2.7.11.
- Veronica scutellata** L.† Native. Divs. 2.6.7.10.11.14.
- VAR. **hirsuta** Weber.† Native. Div. 7. Market Rasen! 1895; Mason and Peacock. Willingham, 1877-79; F. A. Lees' *Florula* in MS.
- Veronica Anagallis** L.† Native. Divs. 1-4.6-18.



- Veronica Beccabunga** L.† Native. Divs. 1-8.10-16.  
**Euphrasia officinalis** L.† Native. Divs. 1-8.10-16.  
**Euphrasia Rostkoviana** Hayne.† Native. Divs. 7.13.  
**Bartsia Odontites** Huds.† Native. Divs. 1-8.10-16.  
 f. *flore albo.*† Divs. 3.15.  
**Pedicularis palustris** L.† Native. Divs. 1.2.4.6-14.16.  
 f. *flore albo.*† Div. 13.  
**Pedicularis sylvatica** L.† Native. Divs. 1.3.5.7.8.10.11.13.16.  
**Rhinanthus Crista-galli** L.† Native. Divs. 1-16.  
**Rhinanthus major** Ehrh.† Native. Divs. 1.2.5-7.9-15.17.18.  
**Melampyrum cristatum** L. Native. Div. 16. Witham-on-the-hill and Awnby, 1837; Rev. J. Dodsworth. Careby Wood, 1885; E. M. Browne's Herb. The Rev. W. Fowler in 1880. Herb. Brit. Mus. Looked for but not found in season 1895.  
*MELAMPYRUM ARVENSE* L. Casual. Div. 4. Scartho, 1868; Rev. W. H. Daubney. 'I found one plant of this species, but never another.'—W.H.D.  
**Melampyrum pratense** L.† Native. Divs. 1.3.5.7.8.10.11.13.15.16.

## OROBANCHACEÆ.

- Orobanche major** L.† Native, but unaccountably rare. Div. 6(2). Morton, by Gainsborough,† circ. 1860-70; Miss Stanwell. On *Ulex*. East of Laughterton Wood,† 1894; Frank Mills. On *Cytisus*. There is a record by the Rev. J. Dodsworth, but the locality is in Rutland.  
**Orobanche elatior** Sutton.† Native, but almost as rare as the last. Divs. 6(2).13. Fillingham, near Summer Castle, before 1805; Rev. J. Dalton's Herb. York Mus. South Carlton Cliff,† 1888; Miss E. M. Paddison (Ar. B.). Potterhanworth,† 1894; Rev. W. W. Mason (Ar. B.). There in 1895!  
**Orobanche minor** Sm.† Native, but sometimes introduced with *Trifolium* seed. Divs. 3.13.16. Barton, 1892; Miss K. G. Firbank. On *T. pratense* L. Heighington,† 1884; J. S. Sneath (Ar. B.). On *Plantago lanceolata* L. Witham-on-the-Hill, circ. 1837; Rev. J. Dodsworth.  
**Lathræa squamaria** L.† Native, but rare. Divs. 2.7.11.15.16.

## LENTIBULARIÆ.

- Utricularia vulgaris** L.† Native. Divs. 1-6.9.11.13.14.16.  
**Utricularia minor** L.† Native, but I fear extinct. Divs. 5.16. Bogs near Laughton, not common; T. V. Wollaston. See



*Phytologist*, vol. 1, p. 522. Bourn.† 'Tunnel bank ditches,' 1838; Rev. J. Dodsworth (Ar. B.).

**Pinguicula vulgaris** L.† Native, but growing rare. Divs. 1-3. 5-7.10.15.16.

## VERBENACEÆ.

**Verbena officinalis** L.† Native. Divs. 2-4.6.8.10.11.14.16.

## LABIATÆ.

**Mentha longifolia** Huds. (i.e. *M. sylvestris* L.)† Native, or very old colonist. '*Menthastrum spicatum folio longiore caudicante.* Found by Mr. M. Lister growing in Burwell Beck, in Lincolnshire, plentifully.' J. Ray's *Catalogue*, 1670, p. 207. It is growing by the side of the same stream to-day. Divs. 1.8.10, 11.16.

**Mentha viridis** L.† A garden escape. Divs. 7.11.

**Mentha officinalis** Hull.† Native. Divs. 7.13. Holton-le-Moor. 1878; F. A. Lees' *Florula* in MS. Doddington, 1862; Rev. R. E. G. Cole (Ar. B.).

**Mentha hirsuta** Huds.† Native. Divs. 1-8.10-14.16.17.

VAR. **subglabra** Baker.† Native. Divs. 7.8.13. (Ar. B.)

f. **subspicata** Whe.† Div. 12. Leverton, 1894; Rev. W. W. Mason (Ar. B.).

**Mentha sativa** L.† Native. Divs. 1.2.7.12.13.16.

VAR. **paludosa** Sole.† Div. 14. Sleaford, 1895; J. Larder (Ar. B.).

**Mentha rubra** Sm.† Native, but rare or overlooked. Divs. 7? 13(2). Rasen, 1877-79; 'A tall red stemmed mint used to grow by the Rase in several places, but I did not know the mints at that time, and so cannot be positive about it'; F. A. Lees' *Florula* in MS. Doddington and Skellingthorpe, 1865; Rev. R. E. G. Cole (Ar. B.).

**Mentha arvensis** L.† Native. Divs. 1-3.7.10.12.13.16.17.

VAR. hybrid between type **arvensis** × **præcox** Sole.† Divs. 10.12. (Ar. B.).

*MENTHA PULEGIUM* L. Div. 12. Skirbeck Hundred, 1856; P. Thompson. No doubt an escape or mistake.

**Lycopus europæus** L.† Native. Divs. 1-3.5.7-14.16.

**Origanum vulgare** L.† Native. Divs. 1.2.8.11.13.15.

f. **flore albo.**† Broughton Woods, 1893, the Hon. Mrs. R. N. Sutton-Nelthorpe.

**Thymus Serpyllum** Fr.† Native. Divs. 1.2.4-8.10.11.13-17.

*THYMUS CHAMÆDRYS* Fr. Div. 10. South Ormsby, 1879; Burgess' *Paintings. Naturalist*, 1893, p. 330.



**Calamintha Clinopodium** Spenn.† Native. Divs. 1.2.5.7.8.10.  
13-16.

**Calamintha arvensis** L.† Native. Divs. 1.2.6.7.10.13-15.

**f. flore albo.**† Native. Divs. 2.13.14.

*CALAMINTHA PARVIFLORA* Lam. This was recorded by Mr. F. A. Lees in his *Outline Flora*, 1892, on the authority of a specimen in the Bogg Herbarium. On the sheet in that Herbarium, which now forms part of the County Herbarium in the Museum at Lincoln Castle, there is a note in Mr. Lees' handwriting, 'No *officinalis*.' This was added after the publication of the *Outline Flora*, just before he sent the specimen for the County Herbarium. The personal mark (!) of verification in the field after the name of this species in the *Outline Flora* seems to have slipped from its place after the next species—*C. officinalis*. It is added again after the verified Bogg specimen, which is never Mr. Lees' custom when he has seen a specimen in the field himself. I have also a further note in the *Locality Register*—Div. 14. Brancewell, circâ 1860; Dr. John Lowe. But I believe this to have been the next also.

**Calamintha officinalis** Mœnch.† Native. Divs. 3.6.8.10.11.14.  
This is a rare species with us.

**Melissa officinalis** L.† Garden escape. Div. 10. Coningsby, 1893; Rev. F. S. Alston.

**Salvia Verbenaca** L.† Native. Divs. 3.5.6.8.10.11.13.15.16.

*SALVIA PRATENSIS* L. Garden escape. Div. 11. Partney, 1888; J. T. Burgess' *Paintings*, from this specimen. *Naturalist*, 1893, p. 331.

**Nepeta cataria** L.† Native. Divs. 1-3.5.8.10.13.15.16.

**Nepeta Glechoma** Benth.† Native. Divs. 1-17.

**Scutellaria galericulata** L.† Native. Divs. 1-16.

*F. FLORE ALBO.* Div. 16. Tongue End, Bourn, 1838; Rev. J. Dodsworth.

**Scutellaria minor** Huds.† Native. Divs. 2.5.7.16.

**Prunella vulgaris** L.† Native. Divs. 1-17.

**f. flore albo.**† Divs. 13.16.

**f. flore roseo.**† Divs. 2.12.

**Marrubium vulgare** L.† Native? Divs. 2.5.6.9-12.14.15.17.

**Stachys Betonica** Benth.† Native. Divs. 1-5.7.8.10.11.13-16.

**f. flore albo.**† Divs. 3.7.15.



## BIBLIOGRAPHY:

Papers and Records published with respect to the Natural History and Physical Features of the North of England.

## PHANEROGAMIC BOTANY, 1890.

THE present instalment has been compiled and arranged by

WM. DENISON ROEBUCK, F.L.S.

Previous instalments of the botanical bibliography have been published as follows:—

For 1884,	in 'Naturalist,'	Sept. 1885,	pp. 331-336.
„ 1885,	„	June 1886,	pp. 174-179.
„ 1886,	„	Dec. 1890,	pp. 359-374.
„ 1887,	„	April-May 1891,	pp. 125-133.
„ 1888,	„	June 1891,	pp. 189-199.
„ 1889,	„	March 1894,	pp. 93-112.

The counties and vice-counties of which cognizance is taken are the following, as named and numbered in the Watsonian scheme:—

53, Lincoln S.; 54, Lincoln N.; 56, Notts.; 57, Derby; 58, Cheshire; 59, Lancashire S.; 60, Lancashire W.; 61, York S.E.; 62, York N.E.; 63, York S.W.; 64, York Mid-W.; 65, York N.W.; 66, Durham; 67, Northumberland S.; 68, Cheviotland; 69, Westmorland with Furness; 70, Cumberland; 71, Isle of Man.

ANON. [signed 'F.W.G.'].  
 Flowers in Bloom [on Nov. 10th, 1883, near Ilkley; *Lychnis flos-cuculi* and *Geranium robertianum*]. Nat. World, Jan. 1884, p. 16.

York Mid W.

ANON. [not signed].

Notts.

A Memorable Tree [noting the fall during a recent gale of the 'Major Oak' or 'Cockspen Tree' near Edwinstowe (*Quercus robur*); dimensions given]. Gard. Chron., Feb. 9th, 1884, p. 182.

ANON. [not signed].

York Mid W.

Excursion to Malham and Gordale Scar [June 22nd; *Actæa*, *Bartsia alpina*, *Primula farinosa*, *Sesleria cærulea*, *Polygonatum officinale*, *Trollius*, *Melica nutans*, *Hippuris vulgaris*, *Potamogeton lucens*, *Polemonium*, *Thlaspi alpestre*, *Orchis bifolia*, and *O. latifolia* noted]. Report of the Lower Mosley Street Schools Nat. Hist. Soc., Oct 1884, p. 10.

ANON. [signed 'R. D.'].  
 A Remarkable Lime Tree [(*Tilia* ?)]; in the grounds of the New Bath Hotel, Matlock; at least 300 years old; measurements given]. Gard. Chron., Aug. 21st, 1886, p. 246.

Derbyshire.

ANON. [signed 'A Regular Subscriber'].  
 "Holiday Jottings in the Isle of Man" [W. B. Hemsley's article severely and justly criticised; notes as to *Rosa*, *Ulex*, and cultivated crops]. Gard. Chron., Nov. 12th, 1887, p. 595.

Isle of Man.

ANON. [not signed].

Notts.

The Dukeries [and their famous Oaks and other trees; account of an excursion of Scottish Arboricultural Society]. Gard. Chron., Aug. 17th, 1889, pp. 181-183.



Anon. [not signed].

Cheshire.

Rambles taken during the year 1889 . . . Gatley [June 1st; *Petasites vulgaris*, 'Goatweed' (? *Aegopodium podagraria*) and *Persicaria* noted].  
10th Ann. Rep. Manch. Micro. Soc., for 1889, publ. 1890, p. 112.

ANON. [not signed].

Lanc. S.

Rambles taken during the year 1889 . . . Stalybridge [Stamford Park, Hurst and Lees, Aug. 24th; *Nuphar lutea*, *Elodea canadensis* noted].  
10th Ann. Rep. Manch. Micr. Soc., for 1889, publ. 1890, pp. 117-118.

ANON. [signed 'Secretary'].

Lanc. S.

Penketh Field Club [*Tussilago* and *Corylus* reported in flower]. N.H.J.,  
March 15th, 1890, p. 29.

ANON. [not signed].

Isle of Man.

Phenological Observations [made in the Isle of Man; Common Chickweed (*Stellaria media*), Jan. 5th; Small Celandine (*Ranunculus ficaria*), Feb. 21st; Barren Strawberry (*Potentilla fragariastrum*), Feb. 16th; Common Coltsfoot (*Tussilago farfara*), Feb. 22nd; Vernal Squill (*Scilla verna*), May 11th; Golden Saxifrage (*Chrysosplenium oppositifolium*), Feb. 3rd; Pansy (*Viola tricolor*), Feb. 4th; Marsh Marigold (*Caltha palustris*), April 12th; Anemone (*A. nemorosa*), April 16th; Primrose (*Primula vulgaris*), Feb. 25th; Sloe, Blackthorn (*Prunus spinosa*), March 23rd; Dog Violet (*Viola canina*), March 31st; *Cardamine pratensis*, April 8th; Great Stitchwort (*Stellaria holostea*), April 8th; Common Wood Sorrell (*Oxalis acetosella*), March 28th; Wild Hyacinth (*Scilla nutans*), April 28th; Larch (*Larix europæa*) in flower, April 3rd; Early Scorpion-grass (*Myosotis collina*), April 7th; Germander Speedwell (*Veronica chamaedrys*), April 22nd; Hemlock Stork's-bill (*Erodium cicutarium*), April 18th; Wild Cherry (*Prunus cerasus*), April 3rd; Silver Birch (*Betula alba*), in flower, April 29th; Ribwort Plantain (*Plantago lanceolata*), April 29th; Field Scorpion-grass (*Myosotis arvensis*), April 7th; Lamb's Lettuce (*Valerianella olitoria*), April 7th; Sea Campion (*Silene maritima*), April 28th; Sea Pink (*Armeria maritima*), April 28th; Common Bugle (*Ajuga reptans*), April 25th; Dove's-foot Geranium (*G. molle*), April 4th; Red Campion (*Lychnis diurna*), April 4th; Common Broom (*Sarothamnus*), May 13th; Bilberry (*Vaccinium myrtillus*), May 1st, fruit May 30th; Eyebright (*Euphrasia officinalis*), May 3rd; Herb Robert (*Geranium robertianum*), April 24th; Common Purple Clover (*Trifolium pratense*), May 27th; Field Madder (*Sherardia arvensis*), April 7th; *Ornithopus perpusillus*, May 5th; Common Fumitory, May 10th; Red Rattle (*Pedicularis sylvatica*), May 3rd; Milkwort (*Polygala vulgaris*), April 14th; *Potentilla tormentilla*, April 22nd; Garlic (*Allium ursinum*), May 25th; Wood Sanicle (*Sanicula europæa*), June 30th; Borage (*Borago officinalis*), April 7th; Hawthorn (*Cratægus oxyacantha*), May 20th; Bog Bean (*Menyanthes*), May 16th; Beaked Parsley (*Anthriscus* ———), May 15th; Silver Weed (*Potentilla anserina*), May 15th; Lady's Fingers (*Anthyllis vulneraria*), May 20th; Bird's Foot Trefoil (*Lotus corniculatus*), April 30th; Mouse-ear Hawkweed (*Hieracium pilosella*), June 6th; Holly (*Ilex aquifolium*), May 22nd; Dutch or White Clover (*Trifolium repens*), May 27th; White Campion (*Lychnis vespertina*), May 16th; Great White Oxeye (*Chrysanthemum leucanthemum*), May 21st; Corn Marigold (*C. segetum*), May 22nd; Yellow Wood-pimpernel (*Lysimachia nemorum*), May 14th; Wild Mignonette, Dyer's Weed (*Reseda luteola*), May 26th; Dewberry (*Rubus cæsius*), June 10th; Ragged Robin (*Lychnis flos-cuculi*), June 13th; Elder (*Sambucus nigra*), June 3rd; Great Common Stinging-Nettle (*Urtica dioica*), May 18th; Great Butterfly Orchis (*Habenaria chlorantha*), June 29th; Raspberry (*Rubus idæus*), June 7th; Scotch Rose (*Rosa spinosissima*), May 27th; Knotted Figwort (*Scrophularia nodosa*), July 10th; Wild Rose (*Rosa canina*), May 23rd; *Orchis maculata*, May 23rd; Scarlet Pimpernel (*Anagallis arvensis*), May 20th; *Comarum palustre*, June 6th; *Galium saxatile*, May 24th; Forget-me-not (*Myosotis palustris*), May 24th; Foxglove (*Digitalis purpurea*), June 4th; *Epilobium montanum*, June 19th; Honeysuckle (*Lonicera periclymenum*), June 18th;



Orpine (*Sedum telephium*), June 20th; Pink Stonecrop (*Sedum anglicum*), June 19th; *Spiræa ulmaria*, July 7th; *Agrimonia eupatoria*, June 26th; *Convolvulus soldanella*, Sea Bindweed, June 26th; Lady's Bedstraw (*Galium verum*), June 22nd; Common Enchanter's Nightshade (*Circea lutetiana*), July 7th; are the earliest dates observed]. Yn Lioar Manninagh, April 1890, pp. 160-163.

ANON. [not signed].

York Mid W.

**A New British Plant** [*Arenaria gothica*, at Ribbleshead.]. *Sci. Goss.*, May 1890, p. 116.

ANON. [not signed].

Cheshire.

**Liverpool Naturalists' Field Club** [on May 8th, 1890, *Viola palustris* and *Lathyrus macrorrhizus* at Bromborough and Raby]. *Research*, June 1890, p. 284.

ANON. [signed 'G.'].

York N.E.

**Spring in North-East Yorkshire** [Rosedale; gossipy references to *Narcissus*, *Primula vulgaris*, *Anemone*, *Myosotis sylvatica*, *Viola hirta*, and *Larix*]. *N.H.J.*, June 15th, 1890, p. 82.

ANON. [not signed].

Derbyshire.

**Penketh** [excursion, 23rd May, to Monsall and Cressbrook Dales; *Thalictrum minus*, *Lepidium smithii*, *Lathræa squamaria*, *Convallaria majalis* obtained]. *N.H.J.*, June 15th, 1890, p. 92.

ANON. [not signed].

Isle of Man.

**Phenological Observations** [made in the Isle of Man; dates given for *Hypericum pulchrum*, *Narthecium ossifragum*, Cushag (?), *Epilobium angustifolium*, *Ononis arvensis*, *Campanula rotundifolia*, *Rubus discolor*, *Galeopsis tetrahit*, *Ep. parviflorum*, *Erythræa centaurium*, *Hyoscyamus niger*, *Atriplex hastata*, *Convolvulus sepium*, *Hypericum elodes*, *Nymphæa*, *Calluna*, *Erica tetralix*, *E. cinerea*, *Pinguicula lusitanica*, *Solidago virgaurea*, *Campanula hederacea*, and *Heidera helix*]. Yn Lioar Manninagh, July 1890, pp. 177-178.

ANON. [signed 'H. E.'].

Cumberland.

**Netherby** [gardens and estate described; the various trees mentioned, also abundance of *Scilla nutans*]. *Gard. Chron.*, July 19th, 1890, pp. 65-66.

Anon. [signed 'H.E.'].

Cumberland.

**Naworth Castle** [with notice of *Quercus* being the prevalent tree in the heavier land, and abundance of *Fagus*]. *Gard. Chron.*, August 9th, 1890, p. 154.

ANON. [signed 'H.E.'].

York Mid W.

**Bolton Abbey** [with notes on its woods of *Quercus*, *Fraxinus* and *Fagus*, on a young Mountain Ash (*Pyrus aucuparia*) clasping a large boulder with its roots; the tree of the country at Appletreewick is *Acer pseudoplatanus*; and *Tilia* common in Yorkshire]. *Gard. Chron.*, Aug. 23rd, 1890, pp. 209-210.

ANON. [not signed].

York N.E.

**York, Mount. Natural History Society** [at Kirkbymoorside; *Habenaria bitolia*, *Neottia nidus-avis*, *Ophrys muscifera*, *Aquilegia*, and *Rosa canina* noted]. *N.H.J.*, Sep. 15th, 1890, p. 111.

ANON. [signed 'H.E.'].

York N.E.

**Castle Howard** [and its gardens described; with references to the timber, *Fagus* planted early last century, Avenues of *Tilia*, and a fine Silver Fir]. *Gard. Chron.*, Sep. 20th, 1890, pp. 321-322.

ANON. [not signed].

Isle of Man.

**Excursions to Dalley** [Sept. 9th, 1886; *Crithmum maritimum*, *Plantago coronopus*, *Thymus serpyllum*, *Armeria maritima*, *Hypericum pulchrum*, *Jasione montana*, *Galium verum*, *Ulex europæus*, and *Nasturtium officinale* noted]. *Back Trans. Isle of Man N.H.S.*, i. 106; publ. with Yn Lioar Manninagh, Oct. 1890.



- ANON. [not signed]. Isle of Man.  
**Plants observed on an Excursion to the Mull Hills** [Isle of Man, 24th May, 1887; *Polygala vulgaris*, *Scilla verna*, *Cochlearia granlandica*, *Jasione montana*, *Luzula pilosa*, *Crithmum maritimum* and *Ulex*]. Back Trans. Isle of Man N.H.J., i. 117; publ. with Yn Lioar Manninagh, Oct. 1890.
- ANON. [not signed]. Isle of Man.  
**[Plants noted at an] Excursion to Druidale** ['on Friday, the 15th,' 'St. Swithin's Day,' 1887; *Fragaria vesca*, *Hypericum elodes*, *Orchis mascula*, *O. maculata*, and *Habenaria bifolia*]. Back Trans. Isle of Man N.H.S., i. 123-125; publ. with Yn Lioar Manninagh, Oct. 1890.
- ANON. [not signed]. Isle of Man.  
**Phenological Observations** [made in the Isle of Man; dates given for *Primula vulgaris*]. Yn Lioar Manninagh, Oct. 1890, p. 198.
- ANON [Editors of N.H.J.]. **Cumberland, York N.E., Mid W., S.W., Lanc. S.**  
**The Floral Calendar** [for 1890; tabulated dates given for *Corylus*, *Primula vulgaris*, *Ficaria*, *Mercurialis perennis*, *Tussilago*, *Viola odorata*, *Anemone*, *Caltha*, *Nepeta glechoma*, *Primula veris*, *Stellaria holostea*, *Cardamine pratensis*, *Prunus spinosa*, *Veronica chamaedrys*, *Lychnis diurna*, *Scilla nutans*, *Plantago lanceolata*, *Ranunculus acris*, *Orchis mascula*, *Ranunculus repens*, *Pyrus malus*, *Polygala vulgaris*, *Sarothamnus*, *Trifolium pratense*, *T. repens*, *Cratægus*, *Lotus corniculatus*, *Myosotis palustris*, *Orchis maculata*, and *Rosa canina*, for Wigton and Bolton, Cumberland, Great Ayton, Thirsk and York, N.E. Yorks, Settle and Rawdon, Mid-West Yorks., Ackworth, S.W. Yorks., Manchester and Penketh, Lanc. S.]. N.H.J., Nov. 15th, 1890, pp. 155-156.
- ANON. [signed 'A.G.W.']. York N.E.  
**[Phragmites found on Strensall Common with long, trailing, green, above-ground stolons, one 13 ft. long, rooting at intervals]**. N.H.J., Nov. 15th, 1890, p. 151.
- ANON. [signed 'Eds']. Lanc. W.  
**Erratum** [*Pyrola rotundifolia* var. *arenaria* (*S. maritima*), and not *P. media*, is the plant referred to at p. 147 of N.H.J., Nov. 15th, 1890, as apparently confined to the sandy sea-shore about Lytham and Southport]. N.H.J., Dec. 15th, 1890, p. 172.
- J. GILBERT BAKER. York N.E. and Mid W.  
**Occurrence of *Carex strigosa* in North Yorkshire** [in Forge Valley, found by W. W. Reeves; occurs also at Hackfall and Studley]. Nat., Jan. 1890, p. 16.
- C. R. BEAUMONT. Lanc. S.  
**A Ramble Round Daisy Nook** [near Oldham; *Myosotis palustris*, *Elodea*, *Callitriche verna*, *Montia fontana*, *Hydrocharis*, three species of *Lemna*, *Hottonia*, all in or about Fitton Ponds, *Anemone* and *Campanula rotundifolia* near Hill Farm House, *Rubus fruticosus* and *Lonicera* by Hollinwood Canal, *Bellis*, *Chrysanthemum leucanthemum*, *Lychnis dioica*, *Caltha*, and *Cardamine pratensis* noted]. Trans. Rochdale Lit. and Phil. Soc., vol. 2, for 1889-90, publ. 1890, pp. 60-77.
- Durham, Derby, Furness, Westmorland, York N.W., Mid W., N.E., S.W.,  
W. H. BEEBY [distributor]. Cumberland, Lanc. W. and S., Linc. N.  
**The Botanical Exchange Club of the British Isles.—Report for 1882** [8vo., 1884, pp. 65-82; notes on numerous plants from the vice-counties named; *Subularia aquatica* (Westmorland) given as a New County Record].  
York N.E., Mid W., Northumberland S., Cheviotland,
- ARTHUR BENNETT [distributor]. Durham, Derbyshire.  
**The Botanical Exchange Club of the British Isles.—Report for 1884** [8vo., publ. 1885; pp. 101-120; notes on numerous plants from the vice-counties above-named; nine new county records for Cheviotland, and one for Durham, given at pp. 118-120].



- J. G. BAKER. **Cumberland, Westmorland, and Furness.**  
**A Flora of the English | Lake District |** By | J. G. Baker, F.R.S., F.L.S. | [woodcut] | London | George Bell & Sons, York Street | Covent Garden | 1885 [8vo. cloth, pp. viii. + 262; introductory explanations and Bibliography precede the enumeration of 1,371 species, for each of which are given the usual particulars].  
 Also see Review with numerical Summaries, Gard. Chron., May 9, 1885, p. 605.
- W. D. BRAITHWAITE. **Lanc. S.**  
 [Pyrola media is found at Birkdale]. N.H.J., Nov. 15th, 1890, p. 147.
- H. BRIERLY. **Derbyshire, ? Furness.**  
**Penketh School Field Club at [Cressbrook, Monsall and Miller's Dales;** Wood *Ranunculus*, *Lathræa*, *Convallaria*, *Geranium lucidum*, *Trollius*, *Primula farinosa*, and *Viola palustris* noted]. N.H.J., June 15th, 1890, pp. 90-91.
- ROBERT BROWN. **Chesh., Lanc. S.**  
**Botanical Résumé [of plants noted at Liverpool N.F.C. excursions to** Ellesmere Port, Pool Hall, and Hooton Woods, 4th May, 1889 (non-appearance of *Mercurialis perennis*, occurrence of *M. annua*, a *Stellaria*); Parkgate to Heswall, 18th May (*Sagina subulata*, and four other *Saginae*); Barton and Haskayne to Formby (*Utricularia vulgaris*, *U. minor*, *U. intermedia*, *Trifolium foliiforme*), and to Knowsley Park, 21st Sept. (*Elatine hexandra* and *Epipactis latifolia* noted)]. Proc. Liverpool N.F. Club, for 1889, publ. 1890, pp. 31-39.
- F. W. BURBIDGE. **Lincs.**  
**British Epiphytal Orchids [are two in number; one is *Liparis loeselii*,** epiphytal on rushes in the bogs of Cambridge and Lincolnshire]. Gard. Chron., Feb. 2nd, 1884, p. 144.
- C. A. M. CARMICHAEL. **Lincs.**  
**Lincolnshire Dykes [and the presence of Henbane (*Hyoscyamus niger*),** Ragwort (*Senecio jacobæa*), Melilots, Sonchi, Siums, CEnanthes, Epilobiums, Menthas, Sparganiums, *Ranunculus sceleratus*, *R. aquatilis*, Alismas, Forget-me-nots, *Aster tripolium* and Skullcaps]. Gard. Chron., Sep. 6th, 1890, p. 279.
- M. CARR. **Cumberland.**  
**Botany Notes [for Bolton, Cumberland; anent *Primula farinosa*, *Gymna-*** *denia conopsea*, *Habenaria viridis*, *H. chlorantha*, and *Rubus idæus*]. N.H.J., Dec. 15th, 1890, p. 172.
- J. W. CARTER. **York Mid W.**  
**Abnormal Dog-Daisy [(*Chrysanthemum leucanthemum*) gathered at Esholt;** all the ray florets *tubular* instead of *ligulate*]. Young Nat., Nov. 1890, p. 216.
- J. EDMUND CLARK. **York Mid W. and S.E.**  
**The Wind-Rush at York, March 8th, 1890 [with account of damage done** to trees, *Quercus*, *Fraxinus*, *Ulmus*, *Salix*, and *Pyrus malus* near Dringhouses, Fulford and Heslington]. N.H.J., Nov. 15th, 1890, pp. 137-139.
- H. SHORTRIDGE CLARKE. **Isle of Man.**  
**[*Silene maritima* as food plant for] *Dianthæcia capsophila* [in the Isle** of Man]. Young Nat., Nov. 1890, p. 213.
- W. WILFRID CORDEAUX. **Linc. N.**  
**[Great Hawthorns (*Crataegus oxyacantha*) in the East coast districts of** Lincolnshire alluded to in] Notes on the Birds of Cashmere and the Dras District. Ibis, April 1888, p. 218.



WILLIAM CROSS.

Lanc. W.

**Among the Fylde Flowers—The Woodlands** [near Lytham; popularly written paper, referring to *Corylus avellana*, *Fagus*, *Alnus*, *Populus*, *Ulmus*, *Quercus*, *Fraxinus*, *Castanea*, *Eranthis hyemalis*, *Galanthus*, *Palmonaria officinalis*, *Scilla*, *Asperula*, *Oxalis*, *Asarum europæum*, *Hedera*, *Typha*, *Sparganium*, *Butomus umbellatus*, *Alisma plantago*, *A. ranunculoides*, *Solanum dulcamara*, *Valeriana officinalis*, *Epilobium hirsutum*, *Thalictrum flavum*, *Nuphar*, *Hottonia*, *Cardamine pratensis*, *Ranunculus sceleratus*, *Myriophyllum verticillatum*, *Callitriche verna*, *Utricularia vulgaris*, *Potamogeton natans*, *Pinguicula vulgaris*, *Corydalis solida* (introduced), *Fumaria officinalis*, *Ornithogalum nutans*, *Prunus spinosa*, *Pyrus malus*, *P. aucuparia*, *Cratægus*, *Spiræa ulmaria*, *Potentilla anserina*, *Geum urbanum*, *Rubus fruticosus*, *R. idæus*, *Rosa canina*, *R. arvensis*, *Comarum palustre*, *Alchemilla vulgaris*, *A. arvensis*, *Potentilla reptans*, *P. tormentilla*, *Agrimonia eupatoria*, which are treated somewhat indefinitely, with an occasional lapse into precision]. *Journ. of Microsc.*, July 1890, pp. 203-208.

JOSEPH BURTT DAVY.

Linc. N., York S.E.

**Alford Naturalists' Society** [notes on plants observed at Mablethorpe, 6th July, 1889; these included *Asparagus officinalis*, *Lactuca virosa*, *Cynoglossum officinale*, *Senecio jacobæa* (very scarce near Grimsby), *Eryngium maritimum* not noticed, though at Spurn it abounds; at Calceby on 21st August were noticed *Salvia verbenaca*, *Thymus serpyllum*, *Calamintha officinalis*, *Gnaphalium uliginosum*; in Mother-wood, Aby, was noted *Vicia sylvatica*, in Aby village *Saponaria officinalis*, and in Well parish (two stations) *Carduus acaulis*]. *Nat.*, Ap. 1890, p. 116.

JOSEPH BURTT DAVY.

Linc. N.

**Entomological Exhibition at Alford, Lincs.** [and mention of food-plants, *Scabiosa succisa* at Ailby, and *Hippophaë rhamnoides* at Mablethorpe]. *Nat.*, May 1890, p. 150.

J. DENT DENT.

York Mid W.

**Old Trees at Ribston Hall, Wetherby** [with views of the original Ribston Pippin Apple in 1844; article describes effect of gale on a fine *Fagus*, an old flowering Ash (*Ornus europæus*) and a fine Poplar (*Populus alba incana*); extracts from old letters given]. *Gard. Chron.*, Feb. 16th, 1889, p. 213, and woodcut at p. 212.

— DE VIT.

York, N.E.

**Ayton Association.—May 8th** [*Lathræa*, *Gagea* and *Paris* reported]. *N.H.J.*, June 15th, 1890, p. 89.

C. WOLLEY DOD.

Lanc. S.

**Pyrola rotundifolia and Monotropa hypopitys** [on the Lancashire Coast sandhills between Southport and Ainsdale; *Salix repens* and *Erythraea* also noted]. *Gard. Chron.*, Aug. 17th, 1889, p. 195.

Miss DODD.

Isle of Man.

**The Wild Flowers of Mona** [treated of in a popular fashion, and mostly by English names; about forty kinds mentioned with localities]. *Back Trans. I. of Man, N.H.S.*, i. 97-98; publ. with Yn Lioar Manninagh, July 1890.

Derbysh., Cumbd., Westmd., Durham, Northd. S., Cheviotland,  
GEORGE CLARIDGE DRUCE. York N.W., Mid W., Lanc. S. and W.

**The Botanical Exchange Club of the British Isles.—Report for 1888** [8vo. publ. 1889; pp. 197-242; contains notes on numerous plants from the above-named vice-counties, a great many for Derbyshire].

G. CLARIDGE DRUCE.

Lanc. S.

**Spergula pentandra, L. as an Irish Plant** [with a recapitulation of English range; and its occurrence near Liverpool intermixed with *S. arvensis*]. *Ann. of Bot.*, Aug. 1890, pp. 378-383.



T. W. EDMONDSON.

York Mid W.

**Ophrys apifera** Huds. at Skipton [unusually abundant there ; not extinct at Birtwhistle Rocks ; *Viola lutea* between Skipton and Rylstone, a new record for Airedale]. Nat., Aug. 1890, p. 237.

JOHN W. ELLIS.

Lanc. S. and W., Furness, Cheshire.

[Plants mentioned in the] **Lepidopterous Fauna of Lancashire and Cheshire** [are *Cardamine pratensis*, *C. amara*, *Artemisia vulgaris*, *Carlina vulgaris*, *Genista tinctoria*, *Sarothamnus*, *Ulex*, *Anthriscus sylvestris*, *Solanum dulcamara*, *Sedum acre*, *Lotus corniculatus*, *Aster tripolium*, *Angelica sylvestris*, and *Pyrus malus*]. Nat., Feb. and March 1890, pp. 49-86.

JOHN W. ELLIS.

Cheshire.

[Plants mentioned in] **The Coleopterous Fauna of the Liverpool District** [include *Parnassia* (Wallasey), *Rosa spinosissima* (Wallasey), *Galium verum* (Wallasey and Hoylake), *Ononis arvensis* (Wallasey), *Alisma plantago* (Leasowe), *Lythrum salicaria* (Lydiate), and *Sisymbrium officinale* (Wallasey and Leasowe). Proc. Liverp. Biol. Soc., Vol. 2, 1887-88, publ. 1888, p. 190, and Vol. 3, 1888-9, publ. 1889, pp. 57, 63, 68, 71, 72, 73.

F. W. FIERKE.

York S.E.

[**Utricularia vulgaris** recorded as new to Hull district, found in Skidby drain, about a mile from Hull, Sept. 1889]. J. of Conch., July 1890, p. 251.

JANE FISHWICK.

Lanc. S., Notts.

**Crocus nudiflorus** [in flower in the outskirts of Rochdale, where it has not been seen to flower before ; reference also made to its perfect naturalisation about Nottingham]. Sci. Goss., Nov. 1885, p. 263.

W. O. FOCKE.

Derbyshire.

**Notes on English Rubi** [including *R. ? rotundatus* P. J. Muell., Shirley, Derbyshire, Rev. W. R. Linton ; and *R. melanodermis*, or *R. melanoxylon*, Shirley, W. R. Linton]. J. of Bot., May 1890, pp. 129-134.

WILLIAM FOWLER.

Linc. N. and S.

**Lincolnshire Limestone Plants** [enumerated, with a few stations, to the number of 127 species ; several of which are enumerated at the end as also found on alluvial sands]. Nat., June 1890, pp. 169-171.

HILDERIC FRIEND.

Cumberland.

**A Mud-capped Dyke** [in Cumberland ; *Ulex europæus*, *Senecia jacobea*, *Galium mollugo*, *Achillea millefolium*, *Erophila verna*, *Sisymbrium thalianum*, *Geranium molle*, *Alchemilla arvensis*, *Taraxacum*, *Plantago*, *Hieracium*, and *Dactylis glomerata* noted]. Sci. Goss., June 1890, pp. 135-6.

HILDERIC FRIEND.

Cumberland.

**Herb Paris and its Foe** [recording *Paris* and *Bromus asper* at Cummersdale near Carlisle, as host-plants of a new Fungus]. Gard. Chron., Sep. 6th, 1890, pp. 270-271 and woodcuts.

J. H. FRYER.

York Mid W., N.E., S.E., Furness.

**York, Bootham. Natural History Club** [with phenological notes on *Draba verna*, *Carex præcox*, *Salix triandra*, *Veronica triphyllus*, *Caucalis daucoides*, *Menyanthes*, *Paris*, and *Actea* at Poppleton, Acomb, Askham, Kirkham, etc. ; and *Meconopsis*, *Poa rigida* and *Saxifraga stellaris* at Coniston]. N. H. J., June 15th, 1890, p. 92.

SAMUEL GASKING.

Isle of Man.

**Additions to the List of the Plants of the Isle of Man** [141 enumerated as additional ; corrections follow as to *Helianthemum guttatum*, *Silene acaulis*, *Saxifraga oppositifolia*, and *Ulex nanus*]. Research, Feb. 1890, pp. 185-186.

F. J. GEORGE.

Lanc. W. or S.

**Autumn Flowering of *Mercurialis perennis*** [near Preston, for the seventh successive year]. Journ. of Bot., Dec. 1890, p. 376.

March 1896.



- F. J. GEORGE. Lanc. W. or S.  
 [Autumnal flowering form of *Mercurialis perennis* with stems 4 feet in length, found at Preston, Lancs.]. Proc. Linn. Soc., Dec. 4th, 1890, publ. Oct. 1893, p. 3.
- T. GIBBS, JUNR. Derbyshire.  
 Phenological Observations, 1889 [near Burton-on-Trent; dates given for *Galanthus*, *Ficaria*, *Viola odorata*, *Salix caprea*, *Ulmus montana*, *Cardamine pratensis*, *Geranium robertianum*, *Aesculus hippocastanum* and *Rosa canina* at Bretby, *Corylus avellana*, *Caltha*, *Primula vulgaris*, *Scilla nutans*, and *Pyrus malus* at Repton Shrubs, *Potentilla fragariastrum*, *Crataegus oxyacantha*, *Quercus robur*, *Pyrus aucuparia* and *Sambucus nigra* at Ashby Road, *Mercurialis perennis* and *Anemone nemorosa* at Decoy, Bretby, *Tussilago* at Bretby Siding, *Prunus spinosa* at Repton, *Primula veris* at Repton Rocks, and *Fagus* at Foremark]. Ann. Rep. Burton-on-Trent N.H.S., year ending 30th Sep., 1890, pp. 13-15.
- EDWARD GILMAN. York S.W.  
 Shirecliffe Hall, Sheffield [and its gardens; with a note on the dying condition of Oaks (*Quercus robur*) of about 400 or 500 years of age]. Gard. Chron., Oct. 10th, 1885, p. 472.
- JOS. GLAISYER. York N.E.  
 Coxwold, Yorks. [*Primula vulgaris* in flower, Jan. 16th]. N.H.J., Feb. 15th, 1890, p. 13.
- J. G. GOODCHILD. York N.W.  
 Some of the Flowering Plants and of the Ferns of Upper Swaledale [a list of 151 species, with remarks and some localities and altitudes given]. Nat., Aug. 1890, pp. 251-255.
- PERCY H. GRIMSHAW. Cumberland.  
 Notes on the Flora of West Cumberland [being a full list of plants observed in early June 1890 round Seascale, with localities and remarks, including 263 species, and prefaced by lists of 57 species found on the sand-dunes, of 32 found at the mouth of the river Calder, and of 38 found on a single visit to St. Bees Head]. Nat., Nov. 1890, pp. 325-334.
- JAMES GROVES. Durham, Cheviotland, Cheshire, Furness, Cumberland,  
Lanc. S., Derbyshire, York Mid W.  
 The Botanical Exchange Club of the British Isles.—Report for 1885 [8vo., publ. 1886; pp. 121-142; notes on numerous plants for the above-named vice-counties; new county records given at p. 142 for Cheshire and Cheviotland].
- JAMES GROVES. Derbyshire, Cheshire, Lanc. S., York Mid W.,  
Northumb. S.  
 The Botanical Exchange Club of the British Isles.—Report for 1889 [8vo., publ. 1890, pp. 243-279; contains notes on numerous plants from the vice-counties above-named; the Derbyshire records numerous; new county records given for Cheshire, York Mid W., Northumberland S., Lanc. S.].
- FREDERICK JANSON HANBURY. Westmorland, Cumberland, Derbyshire, York N.E.,  
Lanc. S., Cheshire.  
 An | Illustrated Monograph | of the | British Hieracia. | By | Frederick Janson Hanbury, F.L.S. | = | The Drawings chiefly by | Miss G. Lister; | a few by | Mrs. Frederick J. Hanbury. [Part 1, July 1889, folio, pp. 1-8, and plates 1-3; *H. pilosella*, var. *b*, *pilosissimum* Walls. . . In the Dovedale specimens the leaves are narrower, darker green above, and whiter and more densely felted beneath, than in specimens from other parts; . . . It is also found . . . ; in Dovedale, Derbyshire! *H. aurantiacum* L., not a native, . . . found in many places . . . Newlands, near Keswick, Cumberland, C. H. Wright, 1843!—Wilton Woods, Cleveland, North Yorks., J. G. Baker!—Failsworth, four miles north-east of Manchester, in



great abundance, Sm. Engl. Fl.—Near Strines, Cheshire, J. C. Melvill!—Further localities are given in the Floras of West Yorkshire].

[Part 2, Oct. 1889, pp. 9-16, and plates 4-6; *H. auricula* L. recorded by Hudson, Fl. Angl. 1778, as growing 'supra Dalehead non longe a Grassmere in Westmorlandia, sed sparsim' rejected as dubious; *H. dubium* L. also reported by Hudson as 'in monte Fairfield dicta prope Rydall in comitatu Westmorlandica,' and mentioned by Backhouse as 'said to have been found in Cumberland' is also rejected as doubtful; *H. holosericeum* Backh. Cumberland, summit of Glaramara!; Langdale Pikes, and head of Pierce Gill, Seawfell, Backh. Monog.].

[Part 3, March 1890, pp. 17-24, and plates 7 to 9, contains nothing].  
[Part 4, Dec. 1890, contains nothing].

Cumberland, Durham, Westmorland, York N.W.,  
Mid W., S.W.

FREDERICK J. HANBURY.

**The Late James Backhouse** [Memoir of his Life and Career; and references to *Cypripedium calceolus* at Castle Eden Dene in 1803, *Helianthemum marifolium* Mitt. var. *vineale* Pers., *Arenaria verna*, *Dryas octopetala*, *Potentilla fruticosa*, *Saxifraga hirculus* (Baldersdale), *Sedum villosum*, *Epilobium alsinifolium*, *Gentiana verna* in Teesdale, *Saxifraga nivalis* at Highcup Scar, *Veronica triphyllos* near Acomb, York, *Barbarea stricta* on Thorne Moor, *Sax. hirculus* at Knock-ore-Gill, *Hieracium holosericeum* on Glaramara, both Cumberland, *Myosotis alpestris* in Teesdale, *Sax. sternbergii* in Cumberland in 1857, *Viola arenaria* in Teesdale, 1862, and the blue var. of *Polygala amara* var. *uliginosa* there also, *Teesdalia*, *Aquilegia*, and *Lychnis alpina* in Cumberland, *Ajuga pyramidalis*, *Potentilla fruticosa*, and *Dryas* in the Lake District]. J. of Bot., Dec. 1890, pp. 353-356.

G. HAWORTH.

Lanc. S.

**Penketh Boys' Field Club** [notes; *Ranunculus lingua* near Cuerdley Marsh]. N.H.J., Sep. 15th, 1890, p. 110.

R. C. HEDLEY.

Northumberland S.

[Plants growing on the north part of East Hallington Reservoir are *Anemone nemorosa*, *Cardamine pratensis*, *Geum rivale*, *Bartsia odontites*, *Scabiosa succisa*, *Stellaria*, *Ranunculus aquatilis*, *Persicaria*, *Iris pseudacorus*, *Carduus palustris*, *Lychnis flos-cuculi*, *Potentilla tormentilla*, *Caltha*, *Menyanthes*, and *Polygala vulgaris*]. Nat. Hist. Trans. Northumb. Durh. and Newc., Vol. 10, part 2, 1890, p. 399.

W. B. HEMSLEY.

Isle of Man.

**Holiday Jottings in the Isle of Man** [the article is entirely horticultural and meteorological, except a footnote giving a good botanical bibliography]. Gard. Chron., Oct. 15th, 1887, pp. 462-3.

[The second article is also horticultural except a mention of *Rosa tomentosa*, *R. spinosissima*, absence of *R. canina* and *R. arvensis*, presence of *Valeriana officinalis*, *Spiraea ulmaria*, *Senecio jacobaea*, *Digitalis*, *Jasione montana*, *Campanula rotundifolia*, *Lonicera periclymenum*, *Rubus fruticosus*, *Erica cinerea*, *E. tetralix*, *Calluna*, *Orchis maculata*, *O. latifolia*, *Erodium maritimum*, *Scilla verna*]. Gard. Chron., Oct. 22nd, 1887, pp. 491-2.

W. M. HIND.

Derbyshire.

**Arabis albida** naturalised in Derbyshire [on a limestone rock at Matlock Bath]. Journ. of Bot., Sep. 1890, p. 282.

C. P. HOBKIRK.

York S.E.

[Plants observed by] the Yorkshire Naturalists' Union at Lowthorpe near Driffield [26th May, 1890; *Iris pseudacorus*, *Glyceria aquatica*, *Potamogeton crispus*, *P. heterophyllus*, *P. densus*, *Barbarea vulgaris*, *Hypericum quadrangulum*, *Anthyllis vulneraria*, *Onobrychis sativa*, *Geum rivale*, *Potentilla comarum*, *Poterium sanguisorba*, *Hippuris*, *Habenaria viridis*, *Ranunculus pseudo-fluitans*, *Carex paniculata*, and *C. paludosa*; also *Teesdalia* from near Market Weighton]. Nat., July 1890, pp. 207-208.



- H. T. HODGKIN. York N.E.  
 [Living specimen of *Vicia hodgkiniana*, discovered by himself near Ayton, which appears to be a very curious and permanent variety of *V. sepium*]. N.H.J., Oct. 15th, 1890, p. 132.
- J. B. HODGKINSON. Furness.  
 Notes on the Season 1889 [as to Lepidoptera; casual mention of *Epilobium hirsutum* at Windermere]. Ent., April 1890, p. 138.
- J. B. HODGKINSON. Westmorland or Furness.  
 Notes on the Season [for Lepidoptera; noting also food-plants; *Melampyrum arvense* at Windermere]. Ent., Oct. 1890, p. 324.
- WILLIAM HODGSON. Cumberland.  
*Ruppia rostellata* in Cumberland [near Skinburness; full details of habitat given; *Enanthe fistulosa*, *Carex muricata*, *Gentiana amarella*, and *Convolvulus soldanella* also noted there]. Nat., Oct. 1890, p. 304.
- E. HOWARTH. Notts, York N.E., N.W., Mid W. and S.W., Northumb. S.,  
Lincoln N., Durham, Derbyshire, Westmd., Lanc. W.  
 List of Plants, | collected chiefly in the | Neighbourhood of Sheffield |  
 by | Jonathan Salt, | and now in the | Sheffield Public Museum. | = | 1889. |  
 Published by the Sheffield Literary and Philosophical Society. [8vo., sewed,  
 pp. vi. + 57; brief introduction, and notices of 1,512 flowering plants, with  
 localities and dates; the great majority about Sheffield and in Derbyshire].
- THOS. HUNT. Lanc. S.  
 The Roses of Ashworth [are, of Benthamian species, *Rosa villosa*,  
*R. canina*, and *R. arvensis*; of Sir Joseph Hooker's forms, eighteen; of  
 Baker's 30 forms of *R. canina* twelve; synopsis of the Ashworth forms  
 given; and variation discussed]. Trans. Rochdale Lit. and Sci. Soc., Vol. 1,  
 for 1878-1888, publ. 1888, pp. 113-116.
- J. JÄGER. Isle of Man.  
 Notes of the Season . . . Isle of Man [in Aug., 1890; *Brassica  
 monensis* growing plentifully on the ground above the harbour ferry at  
 Ramsey; *Silene maritima* and *Senecio jacobaea* also noted]. Ent. Record,  
 Oct. 15th, 1890, p. 182.
- E. JOLLEY. Lanc. S.  
 Penketh, Girls' N.H.S.—Nov. 25th. [*Lamium album*, *Taraxacum*, etc.,  
 in flower a few days previously]. N.H.J., Dec. 15th, 1890, p. 165.
- P. M. C. KERMODE. Isle of Man.  
 The Antiquities of the Parish of Bride [Isle of Man; with a note of  
*Enanthe crocata*, *Æ. fistulosa*, and *Anagallis tenella* as found at Loughs  
 Cranstall and Pherrick]. Yn Lioar Manninagh, Oct. 1890, p. 183.
- H. WALLIS KEW. Linc. N.  
 Field Notes. No. 1. In the Woods in Spring [near Louth; noting  
*Galanthus* in the Wilderness plantation, *Primula vulgaris*, *Viola canina*,  
*Anemone nemorosa*, *Potentilla fragariastrum*, *Hyacinthus*, *Orchis mascula*,  
*Ranunculus auricomus*, *Stellaria holostea*, *Galeobdolon*, *Paris*, etc., in Jenny,  
 Burwell, Haugham and Muckton Woods, April 3rd, May 6th and 25th, 1885].  
 Nat. World, Jan. 1886, pp. 1-3.
- H. WALLIS KEW. Linc. N.  
 Reminiscences of Ten Summers [at Louth; noting *Artemisia maritima*,  
*Salicornia herbacea*, *Epilobium angustifolium*, *Lathræa squamaria*, *Ophrys  
 apifera*, and *Campanula latifolia*]. Garner, March 1st, 1888, p. 93.
- P. FOX LEE. York S.W.  
*Sparganium ramosum* Huds. var. *microcarpa* Neum. [near Dewsbury;  
 the only record for England; correction of varietal name]. Nat., April 1890,  
 p. 107.



P. F. LEE.

York S.W.

[Plants observed by] The Yorkshire Naturalists' Union at Bretton Park [14th June 1890: *Carex fulva* added to district list; *Barbarea stricta*, *Nasturtium palustre*, *Viola odorata*, *Polygala vulgaris* sub-sp. *depressa*, *Saponaria officinalis*, *Vicia angustifolia* var. *bobartii*, *Hydrocotyle vulgaris*, *Myrrhis*, *Ceanothe crocata*, *Adoxa*, *Campanula latifolia*, *Primula vulgaris*, *Hottonia*, *Myosotis versicolor*, *Lamium album*, *Veronica arvensis*, *Plantago media*, *Salix pentandra*, *Listera ovata*, *Scirpus sylvaticus*, *Acorus colamus*, *Carex muricata*, *C. remota*, *C. glauca*, *C. panicea*, *C. sylvatica*, *C. hirta*, *C. chrysites* (= *C. oderi* of English authors) and *C. flava* var. *cyperoides* noted, some with remarks]. Nat., August 1890, p. 226.

P. FOX LEE.

York S.W.

*Senecio viscosus* L. at Savile Town near Dewsbury [with full details of habitat and range]. Nat., Sep. 1890, p. 277.

B. B. LE TALL, J. H. FRYER.

York N.E.

Scarbro' [season early; *Hedera*, scented Butterbur, *Lychnis diurna*, *Primula vulgaris*, *Tussilago* in flower, *Rubus fruticosus* in fruit, Dec. 22nd-Jan. 2nd]. N.H.J., Feb. 15th, 1890, p. 13.

B. B. L[E].T[ALL].

York Mid W., N.E., Furness.

York, Bootham. Natural History, &c., Club [with notes on *Gentiana acaulis* near York, *Viola canina* (Towton), *Sesleria cœrulea* (Grange), *Helleborus viridis* (Ayton near Scarborough), *Paris*, *Aquilegia* and *Viola hirta* (Towton)]. N.H.J., May 15th, 1890, p. 75.

B. B. LETALL.

York N.E.

['This Half's Finds': *Scirpus fluitans* and *Zannichellia palustris* at Strensall, 8th Sep., 1890]. N.H.J., Oct. 15th, 1890, p. 131.

B. B. LE TALL.

York Mid W., N.E.

[Bird's-nest Orchids (*Neottia nidus-avis*) at Thorp Arch, June 7th; May Lily (*Maianthemum bifolium*), Fly Orchis (*Ophrys muscifera*) and *Trientalis* at Forge Valley, June 12th; *Erica cinerea*, *Erysimum cheiranthoides* and *Salvia verbenaca* on Allerthorpe Common, Sept. 7th and Oct. 8th; *Myriophyllum verticillatum* in the *Zannichellia* pond near Strensall Station, Oct. 15th, 1890]. N. H. J., Nov. 15th, 1890, p. 151.

B. B. L[E]T[ALL].

York N.E., Mid W.

Late Wild Flowers [near York, Marsh Gentian (*Gentiana pneumonanthe*) Oct. 11th; *Sarothamnus*, Oct. 15th, *Myosotis palustris*, *Spiræa ulmaria*, *Lychnis diurna*, *Potentilla reptans*, Oct. 25th; near Malham, *Spiræa ulmaria*, *Sanguisorba officinalis*, *Potentilla fragariastrum* and *Fragaria vesca*]. N. H. J., Nov. 15th, 1890, p. 151.

B. B. LE TALL.

York S.E., S.W., Mid W., N.E.

Another New Record for the East Riding and possibly for Yorkshire [*Hypochaeris glabra*; determination confirmed by A. Bennett; detailed and minute history of the verification, and of authors' statements; collected at Allerthorpe Common, where also occur *Hypericum elodes*, *Radiola linoides*, *Genista anglica*, *Erica tetralix*, *Gentiana pneumonanthe*, *Menyanthes*, *Pedicularis palustris*, *Ornithopus perpusillus*, *Gnaphalium sylvaticum*, *Filago minima*, *Hypericum humifusum*, *Aira caryophyllea*, and *Crepis virens*; criticism of North and West Riding records, for York, Barnsley, Ganthorpe, Thorp Arch]. N. H. J., Dec. 15th, 1890, pp. 170-171.

Furness, Westmorland, Cumberland, York N.E., Mid W., S.E., N.W.,  
EDWARD F. LINTON. Durham, Cheshire, Lanc. S., Cheviotland, Derby.

The Botanical Exchange Club of the British Isles.—Report for 1886 [8vo. publ. 1887, pp. 143-146; notes on numerous plants from the vice-counties above-named; new county record given at p. 165 for Derbyshire (*Eleocharis acicularis* Sm.)].



Cheshire, Lanc. S., York N.W., Mid W., N.E., S.W.,  
EDWARD F. LINTON. Westmd. and Furness, Durham, Derbyshire.

**Fourth Annual Report** | of the | **Watson** | **Botanical Exchange Club**, |  
1887-1888. | — | [8 lines of officers' names] | — | [motto] | York: | . . . |  
1888 [8vo., 15 pages; *Thalictrum flavum* var. *riparium*, *Sisymbrium*  
*pannonicum* from South Lancs.; *Ranunculus* not *floribundus*, *Neslia*  
*paniculata*, *Rubus hemistemon*, *R. leucostachys*, *R. fusco-ater*, *Taraxacum*  
not *palustre*, *Stachys palustris* × *sylvatica*, and *Sparganium ramosum* var.  
*microcarpum* for Yorkshire S.W.; *Fumaria parviflora* for Yorks. N.E.;  
*Rubus ramosus*, *R. pubescens*, *R. carpinifolius* or *gratus*, *R. rosaceus*,  
*R. dumetorum* var. *concinus* or *scabrosus*, *Rosa koscinciana*, *R. canina*  
var. *casia*, *R. subcristata*, *Galium sylvestre* var. *nitidulum*, *Taraxacum*  
*palustre*, *Mentha rubra*, and *Juncus diffusus* for Derbyshire; *Rubus cæsius*  
var. *tenuis*, *Rosa tomentosa* var. *subglobosa*, *R. canina* var. *reuteri*, *R. sub-*  
*cristata*, and *R. watsoni* for York N.W.; *Rubus diversifolius* and *Urtica*  
*dioica* var. for Cheshire; *Cratægus oxyacantha* var. and *Ænanthe phellan-*  
*drium* for York Mid W.; *Circæa alpina* var. *intermedia* and *Juncus supinus*  
at Windermere Lake; *Hieracium cæsius* and *H. gothicum* in Teesdale, co.  
Durham; and *Epipactis latifolia* for Westmorland are noted and discussed].

WM. R. LINTON.

Derbyshire.

**Hieracium holophyllum**, n. sp. [described; it occurs sparingly on limestone  
rocks in Dovedale, Derbyshire, where first noticed 1887, July 6th, by Revs. W.  
H. Purchas, Aug. Ley, and writer]. *J. of Bot.*, Dec. 1890, p. 376.

JAMES M'ANDREW.

Yorkshire.

**Botanical Notes from Wigtownshire and Kirkcudbrightshire** [and a note  
that *Rhynchospora fusca* has been reported from Yorkshire, but not confirmed].  
*Trans. N. H. S. Glasgow, N.S.*, vol. 2, part 2, 1887-8, pub. 1890, p. 210.

P. J. MACLAGAN.

Cheviotland.

**Draba verna** in November [25th, 1889, near Chathill, in flower and with  
completely-formed silicules]. *Nat.*, Jan. 1890, p. 15.

T. MADDISON.

Durham.

[**Helianthemum vulgare** mentioned as abounding on the sea-coast in the  
neighbourhood of Castle Eden]. *Ent. Record*, July 15th, 1890, p. 97.

EDWARD S. MARSHALL.

Derby.

**Epilobium Notes for 1889** [*E. montanum* × *obscurum*, *E. parviflorum* × *roseum*,  
both from Shirley, Derbyshire (by Rev. W. R. Linton), noted]. *J. of Bot.*,  
Jan. 1890, pp. 8-9.

G. MASSEE.

Lanc. W., ? York N.E.

[**Host-Plants for**] **British Pyrenomycetes** [include *Artemisia absinthium*  
at Fleetwood, and *Phragmites communis* at Terrington, but county not  
stated]. *Grevillea*, March 1890, pp. 58-59. [*Typha latifolia* at Terrington  
(county uncertain); and *Sorbus aucuparia* at Manchester]. *Grevillea*, Dec.  
1890, pp. 42-44.

JOAQUIN MILLER.

Notts.

**Nights at Newstead Abbey** [illustrated by a woodcut of the Major Oak,  
Sherwood Forest]. *Harper's New Monthly Mag.*, Oct. 1890, p. 789.

E. C. MORLAND.

York Mid W., N.E.

[**'This Half's Finds'**: *Butomus* out in R. Foss, 9th Aug.; *Anagallis*  
*tenella* at Strensall, 20th Aug.; *Claudianum mariscus* in flower at Askham  
Bog, 23rd Aug.; *Serratula tinctoria* in Skelton Wood, 27th Aug.; curious  
viviparous variety of *Scirpus palustris* (described) on Dunnington Common,  
10th Sep., 1890]. *N.H.J.*, Oct. 15th, 1890, pp. 131-132.

E. C. MORLAND.

York S.E.

[**Calamagrostis lanceolata** in one of the woods towards Kexby,  
Sep. 27th, 1890; abundant in not a few places round York; *Caltha* in full  
flower, Tilmire, Oct. 11th]. *N.H.J.*, Nov. 15th, 1890, p. 151.



JOS. I. NEWTON.

Lanc. S.

**Hawthorn** [*Crataegus oxyacantha*] in Flower [at Ashton Moss, Ashton-under-Lyne, as late as Aug. 16th, 1890: reason suggested]. Sci. Goss., Oct. 1890, p. 235.

Lanc. S., Linc. S., Durham, York Mid W., S.W., S.E.,

GEORGE NICHOLSON [distributor].

Derbyshire, Northumb. S., Cheshire.

**The Botanical Exchange Club of the British Isles.**—Report for 1883 [8vo., 1885, pp. 83-100; notes on numerous plants from the above-named counties; 14 new county records are given for South Lincs. at pp. 99-100].

Derbyshire, Cumberland, Westmorland, Cheshire, Lanc. S. and W.,

GEORGE NICHOLSON.

Northumberland, York Mid W., N.E.

**The Botanical Exchange Club of the British Isles.**—Report for 1887 [8vo., pub. 1888; pp. 167-195; notes on numerous plants from the vice-counties above-named].

J. E. NOWERS.

Derbyshire.

**Phenological Observations, 1889** [in Burton-on-Trent district; dates given for *Tussilago* and *Hordeum vulgare* at Clarence Street, *Caltha* in Dovedale, *Ulmus montana* and *Bunium flexuosum* at Willington, *Prunus spinosa* at Derby Road, *Cardamine pratensis*, *Æsculus hippocastanum* and *Nuphar* at Repton, *Fagus*, *Quercus robur*, and *Æsculus* at Drakelow, *Scilla nutans* at Walton, and *Crataegus* and *Pyrus aucuparia* at Newton Road]. Ann. Rep. Burton-on-Trent N.H.S., year ending 30th Sep., 1890, pp. 13-15.

JNO. PHILIPSON.

Northumberland S., Cheviotland, Durham.

**Address to the . . . Tyneside Naturalists' Field Club, read . . . May 15th, 1889** [with notes of *Viola*, *Primula vulgaris*, *P. veris*, *Cardamine pratensis*, near Hallington Reservoir, May 21st, 1888; *Calamintha clinopodium*, *Digitalis*, Throatwort (*Campanula glomerata* or *C. latifolia*), *Asperula*, *Chrysosplenium oppositifolium*, *Scrophularia*, *Myrrhis*, *Chelidonium*, *Parietaria*, *Linaria vulgaris*, *Hypericum*, and *Berberis* at Brinkburn Priory near Rothbury, 21st June; *Potamogeton densus*, *P. crispus*, *Vaccinium myrtillus*, *V. vitis-idaea*, *Geranium sylvaticum*, *Scrophularia*, *Myriophyllum verticillatum*, *Empetrum nigrum*, *Ligustrum vulgare* and *Drosera rotundifolia* about Whittingham, Aug. 6th, 1888; obliteration of *Convolvulus soldanella*, *Ulex*, etc., at Marsden]. Nat. Hist. Trans. Northumb. Durh. and Newc., Vol. 10, part 2, 1890, pp. 391-409.

A. PICKARD.

Durham.

**Destruction of Rare Plants** [*Primula farinosa* exterminated near Durham and nearly so in Weardale, abundant in Teesdale; *Gentiana verna* occurs in Teesdale; *Hyoscyamus* turned up at Durham in 1848 in fresh dug earth]. Sci. Goss., May 1890, p. 116.

CHARLES B. PLOWRIGHT.

York S.E., Linc. N.

**Æcidium glaucis** [on *Glaux maritima* and *Scirpus maritimus* found on the banks of the Humber a few miles from Hull by Mr. Peake, jun.; *Uromyces maritimæ* on *Scirpus maritimus* found by H. T. Soppitt at Cleethorpes]. Gard. Chron., May 31st, 1890, p. 682.

CHARLES B. PLOWRIGHT.

York S.E.

**The Life-History of Æcidium glaucis** [on *Glaux maritima* and *Uromyces maritimæ* sp. nov. on *Scirpus maritimus* at Paull near Hull, Aug. 1889; full descriptions given]. Gard. Chron., June 14th, 1890, p. 746.

CHARLES B. PLOWRIGHT.

Westmorland.

**British Uredineæ** [noted on *Agrostis vulgaris* on the east side of Lake Windermere]. Gard. Chron., July 12th, 1890, p. 41.

[C. B.] PLOWRIGHT.

York S.E.

**Heteræcismal Fungi** [and notice of *Glaux maritima* and *Scirpus maritimus* on the banks of the Humber, as host-plants for *Uromyces maritimæ*]. Sci. Comm. R. Hort. Soc., July 22nd, 1890; Gard. Chron., Aug. 2nd, 1890, p. 139.



- G. PULLEN. Derbyshire.  
 [*Typha latifolia* grows near Derby at the junction of the Midland and North Staffordshire Railways]. *Young Nat.*, Oct. 1890, p. 200.
- CLEMENT REID. York S. E.  
**Notes on the Geological History of the Recent Flora of Britain** [noting presence of *Quercus* in hill-peats on the Yorkshire moors, *Betula nana* in 'submerged forests' at Bridlington (A. G. Nathorst) and Holmpton (C. Reid), *Primus padus* L., Hornsea and Sand-le-Meer, East Yorkshire (postglacial), *Alnus glutinosa* L., Hornsea and Sand-le-Meer (postglacial), *Corylus avellana* L., Sand-le-Meer (postglacial), *Taxus baccata* L., postglacial, in submerged peats, etc., of the Fenland; *Pinus sylvestris* L., ditto, and *Phragmites communis* L., portions of panicles in a postglacial peaty bed on Kelsey Hill near Hull]. *Ann. of Bot.*, Aug. 1888, pp. 177-199.
- CATHERINE F. RIPLEY. Cheshire, Notts, Yorkshire.  
**The Trees of the Wood. I.—Beech** [(*Fagus sylvatica*) with a passing reference to some at Norton Priory, Cheshire, which measure from 11 ft. to 15 ft. in girth at about 3 ft. from the ground, and to there being fine beeches in the parks and woods of Yorkshire and the Dukeries]. *Journ. of Microsc.*, July 1890, pp. 189-190.
- JOHN E. ROBSON. Durham.  
**Cionus Scrophulariæ on Canterbury Bell** [(*Campanula latifolia*) in Hezleden Dene]. *Young Nat.*, July 1890, p. 135.
- JOHN E. ROBSON. Durham.  
**Cephalanthera ensifolia** [found in Hezleden Dene near Hartlepool, by Rev. J. B. Whyte, 31st May, 1890; reference to Floras, and details of occurrence given]. *Young Nat.*, July 1890, p. 136.
- JOHN E. ROBSON. Northumberland S.  
**Cœnonympha davus** [at Greenleighton Moors, Northumberland, near Simonside hills; *Myrica gale*, *Narthecium ossifragum*, *Drosera rotundifolia*, and *Calluna* also noted, 16th July, 1890]. *Young Nat.*, Aug. 1890, p. 154.
- JOHN E. ROBSON. Durham.  
**Abundance of White Thorn Flowers** [(*Cratægus oxyacantha*) near Hartlepool, where they were also early, out by 20th April]. *Young Nat.*, Aug. 1890, p. 156.
- LISTER ROTHERAY. York Mid W.  
**A New British Plant** [(*Arenaria gothica*) at Ribbleshead; correction of note in *Sci. Goss.* for May]. *Sci. Goss.*, Aug. 1890, p. 188.
- J. H. SALTER and N. NEAVE. Lanc. S.  
**Manchester Notes** [anent *Crocus nudiflorus* in flower]. *N.H.J.*, Ap. 15th, 1890, p. 56.
- J. H. SALTER, N. NEAVE. Derbyshire, Cheshire.  
**On the Derbyshire Border** [of Cheshire, near Macclesfield, were noted *Viola lutea*, *Andromeda*, *Rubus chamaemorus*, *Polypodium dryopteris*, and *P. phegopteris*]. *N.H.J.*, Sep. 15th, 1890, p. 102.
- W. H. SATTERTHWAITHE. Westmorland.  
**[Hieracium gibsoni from Kendal district, sent to B. B. Le Tall].** *N.H.J.*, Nov. 15th, 1890, p. 151.
- W. R. S[HISTON]. York N. E.  
**Mild Winter** [in Forge Valley; *Primula vulgaris* in flower, Dec. 24th, 1883]. *Nat. World*, Feb. 1884, p. 31.
- W. A. SHUFFREY. York Mid W.  
**Geranium phæum** in Littondale, Mid-West Yorkshire [in flower, 20th May, alt. 650 feet; formerly found at Feizor]. *Nat.*, June 1890, p. 166.



- M. B. SLATER. York N.E.  
**The Yorkshire Naturalists' Union at Kildale-in-Cleveland** [12th July, 1890; *Agrimonia odorata*, new to North Yorkshire, found by W. W. Reeves near the old Bleach Mill, is the only plant mentioned of the hundred noted]. Nat., Sep. 1890, p. 273.
- J[OSEPH]. E. S[MITH]. Cheshire, Lanc. S.  
**The Mild Christmas-tide** [about Sale and Chorlton-cum-Hardy; seventeen wild plants noted as in flower in Christmas week]. N.H.J., Feb. 15th, 1890, p. 13.
- JOS. E. SMITH. Lanc S., Cheshire.  
**Manchester Notes, 1890** [anent *Ulex europæus*, *Corylus*, *Daphne*, *Tussilago*, *Mercurialis perennis*, *Ranunculus ficaria*, *Petasites vulgaris*, and *Crocus nudiflorus*; phenological]. N.H.J., March 15th, 1890, p. 34.
- JOS. E. SMITH. Lanc. S., Cheshire.  
**Manchester [Phenological] Notes** [anent *Narcissus pseudo-narcissus*, *Arum*, *Chrysosplenium oppositifolium*, *Cherophyllum sylvestre*, *Montia fontana*, *Saxifraga granulata*, *Galium cruciatum* and *Myrrhis odorata*]. N. H. J., May 15th, 1890, p. 79.
- JOS. E. SMITH. Lanc. S., Derbyshire, Cheshire.  
**Manchester Notes** [*Prunus padus* and *Cardamine amara* in Reddish Vale, *Viola palustris* on Kinderscout, *Orchis morio* near Gatley, *Drosera rotundifolia* on Lindow Common, *Valeriana dioica* in Reddish Vale, *Geum intermedium* and *Lactuca muralis* in Marple Woods, *Linaria cymbalaria* on a wall near the aqueduct, *Orchis latifolia* and *O. maculata* near Styall; *O. pyramidalis* also; *Malva moschata* by the Mersey near Chorlton, *Carex stellulata* on Kinderscout, *Genista tinctoria* and *Campanula latifolia* in Chadkirk Valley, *Typha angustifolia* in Baguley, *Bryonia dioica* in Sale, *Stratiotes aloides* in Dunham Park, *Daucus carota*, *Tamus*, *Dipsacus pilosus* in the Bollin Valley, *Chlora perfoliata*, *Eupatorium cannabinum* and *Hypericum humifusum* near Baguley, and *Crocus nudiflorus* about Withington and Didsbury, in the Mersey Valley; details and dates given]. N. H. J., Dec. 15th, 1890, p. 172.
- H. T. SOPPITT. Westmorland, York N.E.  
**The Lily of the Valley Fungus** [giving results of Experimentation with *Aecidium convallarie* Schm., on *Convallaria majalis* in the Lake district, at Bowness and Scarborough; the uredo and telentospores on *Phalaris arundinacea* at Bowness]. Gard. Chron., May 24th, 1890, p. 643.
- F. P. T[HOMPSON]. York Mid W.  
**Settle** [plants early in flower; *Tussilago*, *Corylus*, *Primula vulgaris* by Jan. 16th, *Rosa canina*, Oct. 26th]. N.H.J., Feb. 15th, 1890, p. 13.
- C. F. THORNEWILL. Derbyshire.  
**Phenological Observations, 1889** [near Burton-on-Trent; dates given for *Galanthus* at Willington, *Ulmus montana* at Repton, *Æsculus hippocastanum* and *Bunium floxuosum* at Burton, and *Geranium robertianum* at Melbourne]. Ann. Rep. Burton-on-Trent N.H.S., for year ending 30th Sep., 1890, pp. 13-15.
- C. F. THORNEWILL. Derbyshire.  
**Calendar of Nature, 1889** [for Burton-on-Trent district; dates given for *Orchis mascula* at Repton Shrubs, for *Saxifraga granulata* at Melbourne, and for *Bellis*, *Fraxinus*, and *Veronica chamaedrys*]. Ann. Rep. Burton-on-Trent N.H.S. for year ending 30th Sep., 1890, p. 21.
- J. R. TUTIN. York Mid W.  
**Wordsworth in Yorkshire** [with note that the 'Prior's Oak' at Bolton, referred to in Canto I. of 'The White Doe of Rylstone,' was felled about 1720 and whereabouts it stood is not now known]. Yorkshire Notes and Queries, April 1890, p. 264.



- A. R. WALLER. Yorkshire, Westmorland.  
**British Plants in Nyman's "Conspectus Floræ Europææ"** [with note of *Thalictrum alpinum* L. in Yorkshire and Westmorland]. *Sci. Goss.*, Jan. 1885, p. 14.
- JAMES G. WELLS. Derbyshire.  
**Report of the Botanical . . . Section, 1889-90** [*Prunus insititia*, Bredon (J. E. Nowers) and Catton (J. G. Wells), *Ribes alpinum*, Dovedale (J. E. Nowers), *Montia fontana*, Bretby (Id.), *Scirpus sylvaticus*, Bretby (Id.)]. *Ann. Rep. Burton-on-Trent N.H.S.*, for year ending 30th Sep. 1890, p. 12.
- J. G. WELLS. Derbyshire.  
**Phenological Observations, 1889** [in Burton-on-Trent district; dates given for *Ulmus montana* at Willington, *Cardamine pratensis* and *Æsculus hippocastanum* at Repton, *Fagus sylvatica* at Foremark, *Geranium robertianum* and *Pyrus aucuparia* at Ashby Road, *Cratægus oxyacantha* at Craythorne, and *Iris pseudacorus*, *Rosa canina*, and *Orchis maculata* at Derby Road]. *Ann. Rep. Burton-on-Trent N.H.S.*, year ending 30th Sep. 1890, pp. 13-15.
- WILLIAM WHITWELL. York Mid W.  
***Arenaria gothica* Fries** [discovered in a new station near Ribbleshead, Aug. 18th, 1890, by Prof. Silvanus and Miss R. F. Thompson]. *J. of Bot.*, Sep. 1890, p. 282.
- WILLIAM WHITWELL. York Mid W.  
**An Additional Station for *Arenaria gothica* in West Yorkshire** [three miles away from Ribbleshead; fears expressed as to extermination of the plant in its original station and an appeal made to collectors to spare it for at least two years]. *Nat.*, Sep. 1890, p. 257.
- WILLIAM WHITWELL. Westmorland, Furness, Cumberland., York N.W.  
**Flowering Plants and Ferns of Upper Swaledale** [criticism of J. G. Goodchild's records of *Picris hieracioides*, *Leontodon hirtus*, *Hypochaeris glabra*, *Sedum rhodiola*, *Galium mollugo*, *Arctostaphylos uva-ursi*, *Melampyrum sylvaticum*, *Veronica spicata*, *Salix herbacea*, and *Symphytum officinale*; reference also made to *Crepis paludosa*, *Leontodon hispidus*, *Hypochaeris radicata*, *Sedum telephium* var. *fabaria*, *Vaccinium vitis-idaea*, *Melampyrum pratense*, *Veronica officinalis*, *V. serpyllifolia*, *Salix repens*, *Borago officinalis*; stations in neighbouring counties given]. *Nat.*, Oct. 1890, pp. 305-306.
- E. M. WOOD. York Mid W., Lanc. S.  
**Botanical Work of the Ingleton, Bolton Abbey, and Ashurst Beacon Excursions** [*Saxifraga umbrosa*, *S. hypnoides*, *Thalictrum minus*, *Aquilegia*, *Trollius*, *Actæa*, three *Geraniums*, *Rubus chamaemorus*, *Sedum villosum*, *Primula farinosa*, *Myrrhis*, *Habenaria viridis*, *H. albida*, *Hypochaeris maculata*, *Antennaria dioica*, *Geum rivale*, *Valeriana dioica*, *Asperula*, *Pinguicula*, *Polygonum bistorta*, *Ophrys muscifera*, *Polygonatum officinale*, *Carex sylvatica*, *Carduus heterophyllus*, *Paris*, *Convallaria*, and *Listera ovata*, noted at Ingleton, 5th June, 1889; *Campanula latifolia*, *Eupatorium cannabinum*, *Thalictrum flexuosum*, *Paris*, *Valeriana officinalis*, *V. dioica*, *Geranium pratense*, *Gymnadenia conopsea*, *Scabiosa arvensis*, *Sanguisorba officinalis*, and *Sambucus nigra* noted about Bolton and Barden, 18th July, *Parietaria officinalis*, *Lamium album*, and *Polygonum persicaria* noted at Ashurst Beacon, South Lancs.]. *Proc. Liverp. Nat. F. Club* for 1889, pub. 1890, pp. 40-43.
- EDWARD WOODTHORPE. Linc. N.  
**[*Cnicus arvensis* at Greenfield, near Alford, 10th July, 1890, in a note on]** *Colias edusa*, *Vanessa cardui*, and other Butterflies near Alford, Lincs. *Nat.*, Feb. 1890, p. 44.
- C. D. YEOMANS. York S.W.  
**Sheffield, Jan. 10th, Hazel** [(*Corylus avellana*) in flower]. *N.H.J.*, Feb. 15th, 1890, p. 13.



## THE SCIENTIFIC STUDY OF WORMS.

A | **Monograph** | of the **Order of** | **Oligochaeta** | By | **FRANK EVERS-BEDDARD** | M.A. (Oxon.), F.R.S. | Prosector to the Zoological Society of London | and Lecturer on Biology at Guy's Hospital | Oxford | At the Clarendon Press | M DCCC XCV. [4to. pp. xii. + 770 + 5 plates ; price 2 guineas net].

THIS magnum opus brings our actual knowledge of the Oligochæta down to the end of the year 1894. Already since its publication one or two papers have appeared dealing with some of the details, but for all practical purposes we have here the results of the study of this long-neglected group of animals brought up to date. Mr. Beddard is an accomplished and conscientious worker. His various monographs have long been recognised as the most authoritative productions on this subject in Great Britain, and he is a worthy rival of the honoured Rosa, Vejdovsky, Vaillant, and Eisen, who are labouring (with some others) abroad to make us better acquainted with these much-despised but wonderful members of the animal kingdom. The volume consists of a preface of four pages' length, table of contents, five plates (in part coloured), a detailed account of the anatomy of the Oligochæta (pp. 1-155), a systematic classification (pp. 155-173), descriptions of genera and species (pp. 174-724), a full and invaluable bibliography (pp. 725-752), and an index of genera and species (pp. 753-769). To deal with a volume of 770 pages as it deserves would require more space and time than can now be commanded. At the outset, however, it may be asserted that this is a model of accurate and scholarly workmanship. The author is not a mere copyist and compiler. The list of his own memoirs dealing with different questions affecting the Oligochæts numbers close upon a hundred, and those who have seen the anatomist in his prosector's office, as I have done, can testify to the practical and careful character of his researches. Worms are sent to Mr. Beddard from all parts of the world, and scarcely a month passes but some new species or genus is received and described. On the other hand, the labours of others receive the most conscientious attention, and are employed as a means of checking, confirming, correcting, modifying, or elucidating his own conclusions.

The author does not attempt everything. For this we are grateful. We have here no allusion to the uses of earthworms from an agricultural standpoint, no attempt to deal with the important branch of the subject opened up to us by Darwin. There is also a deliberate omission of any account of the embryology of oligochæts, save as here and there an allusion is necessary to clear up the meaning of some problematic organ or the like. Professor



Vejdovsky and others have already worked at this branch, and it was therefore, in the author's opinion, unwise to go over the same ground again, when the space could be fully utilised in other ways.

Every one must admire the patience and discrimination which has enabled a busy man to wade through hundreds of papers, collate and correct some thousands of synonyms, and pass a calm judgment where evidence is often most conflicting. The author's frankness is refreshing. He remarks that he has here corrected errors of observation on his own part and that of others, and I may refer to pp. 3, 16, 23, 25, and 30 as illustrations of the way in which this has been done. Nor are we led to suppose that the present work is final. Quite a long list might be drawn up setting forth the subjects which still present problems for future solution. We do not know all we want to know on the questions of oviposition, hybridity, the use of the cœlomic fluid, the meaning of the calciferous glands. We have not yet discovered all the missing links which are needed to make the connections between group and group or genus and genus complete.

A glance at the book before us is sufficient to show how important is the bearing of the study of oligochaets on the problems of evolution. The head-pore of aquatic species is wanting in adult terricoles, yet it is found in the embryonic forms. A curious illustration of the order which prevails among species is supplied by the study of girdle-papillæ in the Lumbrici. Beginning with our own common Red Worm (*L. rubellus*), we find the glands commencing on segment 27, then follow other species whose papillæ begin on 28, 29, 30, and so on respectively. Two years ago I was able to supply one missing link (34) by the discovery in Ireland of the Papillose Worm (*L. papillosus*), and it now remains for some one to complete the chain from 27 to 35 by unearthing a Lumbricus whose glands (*tubercula pubertatis*) extend over segments 32, 33, 34, 35.

It is stated on page 2 to be an invariable rule for the first body segment to be devoid of setæ. Curiously enough I possess a single specimen of an undescribed worm found in fresh water at Chelmsford which breaks this 'invariable rule.' As there must be other specimens in the locality, I have hesitated to publish any account of so unique an oligochaet till duplicates were forthcoming. I regret to say that up till the present I have been able to find no second example. Perhaps the following note may help some one to discover further specimens. The worm—which is aquatic in habit—is about four inches in length, and composed of some 250 segments, the first of which, like all the rest, contained two setæ only.



Modified setæ occur on segments 11 to 14; the head (prostomium) is long and narrow, and the brain ganglion apparently circular in front. For convenience of reference I named it provisionally the curvisetose dichæte (*Dichæta curvisetosa*)—a different name from Diachæte. Now in Chætogaster we have an instance of worms with the dorsal setæ missing, and Beddard reminds us (p. 306) that one species (*Ch. filiformis*) has been figured by Schmarda with 'setæ upon every segment of the body. It comes from Curaca, in South America; I have examined a specimen from Valdivia.' It will be seen that Dichæta, though it has affinities here, differs from every genus recorded by Beddard, and does not fall under any of the groups arranged by him on page 8 in the table of setæ. Indeed, as the author remarks, our knowledge of the aquatic species has not by any means kept pace with that relating to the terricolous forms, and Eisen has predicted that when we come to the careful study of the former we shall find that they number thousands of species. In fact Eisen has just published a further memoir, in which he adds a large number of new species, as well as some new genera, to Beddard's list. When we turn to the descriptions of genera and species in the monograph before us, a sense of bewilderment at their number and variety comes over us, and the day will not be long in dawning when a lifetime will have to be spent in the study of what is now an insignificant genus or group. Mr. Beddard's work will remain for some time the main starting-point in the direction of such researches.

I may be allowed to point out one or two lapses of the pen, and defects in arrangement. The Index is a little puzzling. It jumps from *Æolosoma* to *Anteus*, then comes back to *Allolobophora*. *Lophochæta* is wrongly placed on page 760. Some portion of the Explanation of Plates has been omitted by an oversight. *Anachæta* is given on page 8 as an example, in contradiction of the statements on pp. 5, 11, that it has no setæ. *Chætogaster* should be substituted for *Anachæta*. I think in discussing the use of setæ some reference might be made to the fact that, at any rate in the *Polychæta*, they serve as a protection, just as do the bristles of the Hedgehog and Porcupine. No doubt the same end is also served by the capilliform setæ of the *Tubificids* and others among fresh-water annelids. It would have greatly facilitated reference if we had been supplied with an index to the subject-matter of the first part of the volume. As it is we have no means of knowing where to turn for remarks on the pores, glands, setæ, cœlom, nephridia, and other important matters. We could also wish that the very full and valuable bibliography, including nearly 600 entries, had been made more complete by the



addition, whenever possible, of the year in which each monograph or article appeared. If each author's work had been plotted chronologically it would have been a great advantage, as it would have been an index to his own evolution in the study, as well as a clue to the priority of any given discovery. I regret that by an oversight my researches into the earthworms of Ireland, published in the *Irish Naturalist*, were not brought under Mr. Beddard's notice, as the inclusion of Irish habitats would have been of value in the study of zoogeography. In conclusion, I must express my pleasure that we in England are now abreast of our continental confreres in the matter of a scientific monograph dealing with the oligochæts which will range well with the latest productions of Rosa, Vejdovsky, Eisen, and other front-rank investigators.

Cockermouth.

HILDERIC FRIEND.

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### NOTES AND NEWS.

By the courtesy of the authors, we have received a reprint of a paper 'On the Structure of the Root,' which was read to the Leeds Naturalists' Club on November 1st, 1895, by Messrs. Harold Wager, F.L.S., and Norman Walker, and was afterwards printed in the January number of the 'Journal of Microscopy and Natural Science.' The paper, which is general in its scope, and includes some directions as to technique, is illustrated by a plate, from drawings by Mr. Wager.

We note that the scientific activity for which our Halifax friends have long been noted leads them to found an organ of their own. We have before us the prospectus of 'The Halifax Naturalist, and Record of the Scientific Society,' which it is proposed shall appear bi-monthly, and be strictly confined to the extensive and well-defined ancient parish of Halifax. One feature is to be a separately-paged Flora of the Halifax Parish. The subscription is to be three shillings per annum.

Many of our readers are aware that the Bishop of Wakefield is a man of many accomplishments, and it appears from the October 'Leisure Hour' the ex-President of the Yorkshire Naturalists' Union discovered *Cardamine amara* in the Duddon Woods; the finding of the plant is described on p.762 of the aforementioned magazine. Mr. Petty included the species on the authority of the Rev. F. A. Malleon, in 'Naturalist,' 1893, p. 140.

The Council of the Geological Society has awarded the Murchison Medal for this year to Mr. T. Mellard Reade, C.F., F.G.S., of Liverpool, whose work on the glacial and other geology of Lancashire, Cheshire, and the adjacent counties is well known to our readers. Another contributor to this journal, Mr. A. Smith Woodward, F.G.S., F.L.S., receives the Lyell Medal; while the Balance of the Wollaston Donation Fund and part of the Barlow-Jameson Fund are awarded to Mr. Alfred Harker, one of our Associate Editors.

We are glad to note the activity of the Geological members of the Lincolnshire Naturalists' Union, as manifested by a circular from Mr. John H. Cooke, B.Sc., etc., announcing a series of geological excursions in the neighbourhood of Lincoln. The immediate object is to study systematically and in detail the various formations of the county and to afford members opportunities for taking up special lines of geological research. The work will consist mainly in carefully noting the Stratigraphical and Lithological features of the formations and in collecting the fossils, commencing with the Lias Clays which form one of the most prominent geological features of Lincolnshire.



**ROUGH NOTES ON MARINE ZOOLOGY IN THE  
SCARBOROUGH DISTRICT  
DURING THE LAST TWO YEARS.**

ONLEY GRABHAM, M.A., M.B.O.U.

To the naturalist who turns his steps towards the far stretching paths of Marine Zoology, a vast field for research lies open. We live in the age of specialists, and knowledge has increased, so that no one person can be well versed in all the 'ologies' under the sun; to those who, like myself, pay greater and closer attention to other branches of natural history, but who still take more than a passing interest in the inhabitants of the loud-sounding main, these rough notes may be of some little interest. The man who relies on seeking his specimens from the shore alone, will find that after a time he arrives at a point thus far and no further, and although occasionally, after heavy storms, when the deeper waters have been disturbed, the inhabitants thereof are cast up on the beach, they are comparatively few and far between, and he must look round for other methods if he wishes to gain knowledge and specimens. There are two ways of doing this, either by taking occasional trips on board the trawlers, or by getting hold of some intelligent fisherman to bring in any curiosities that may be dredged up. But it is an extraordinary thing that even the magic words 'I promise to pay, etc.' seem very often to have lost their sway with these men; they consider everything that is uneatable or that will not fetch a ready price in the market as so much rubbish; and many a rare and unique specimen, which would rejoice the heart of the Marine Zoologist, is ruthlessly hove overboard and lost for ever. A bibulous old mariner who occasionally brought me 'them rubbage,' as he termed his treasures, once deposited at my door a huge bucket crammed full of nothing but three or four hundred specimens of the common species of Pecten; there was positively nothing else. It was useless to argue with him; he always brought me the commonest things, and with no stinted hand, but things that I wanted were conspicuous by their absence, so I gave him up in disgust. I only found one man capable and willing to bring me decent specimens, and who was intelligent enough to discriminate between common and uncommon. To begin with the lowest in the scale, only two species of Jelly-fish have come before my notice, the *Æquorea* or *Medusa*, and the *Cydippe pileus*, the Beroë or Egg



Jelly-fish; the former is a beautiful object in the water, gleaming with all the colours of the rainbow, and attains a great size. Out at sea one occasionally comes across huge masses of them, and I remember once when bathing from a boat off Flamborough Head swimming into a regular phalanx and having to beat a hasty retreat, as the effect of their 'nematocysts' or thread cells had the same effect upon my shoulders as if I had been stung with nettles. There are several species of Sea-slug, the Naked-gilled Sea-slug (*Doris ptilota*) being found under the rocks between high and low water. The Anemones are the beautiful large plumed (*Plumaria*), the common *Actinia mesembryanthemum*, the *Bunodes crassicornis*, locally known as 'Scardoodles,' and used by the fishermen for baiting their long lines, and the *Alcyonium digitatum*, a beautiful thing enough in life, but when dead very repulsive looking, and often found washed up on the shore in masses after heavy weather; known to the fishermen as 'cows' paps' or 'dead men's fingers.' Amongst the Echinodermata, of Starfish I have found the following:—*Ophiura texturata* (Sand Star), *Ophiocoma rosula* (Brittle Star), *Uraster rubens* (Common Cross-fish), *Cribella oculata* (Eyed Cribella), *Solaster papposa* (Sun Star), *S. endeca* (Purple Star), *Palmipes membranaceus* (Bird's Foot Sea Star). The Common Cross-fish and the Sun Star are much used as food in the hard weather by the Grey or Hooded Crows (*Corvus cornix*). Of Sea Urchins—*Echinus sphaere* (Common Sea Urchin), *Amphidotus cordatus* (Common Heart Urchin), *Spatangus purpureus* (Purple Heart Urchin). A fisherman who brought me a large specimen of the latter, with all the spines off it, assured me that they were always known to them as 'Monks' eggs,' i.e., the eggs of the Monk or Angel Fish (*Squalus squatina*). Of Vermes—the ubiquitous Lugworm (*Arenicola marina*), found wherever there is sand, and much used for bait; a greenish-coloured creature, known locally as 'a Thirsk,' and in great request amongst cod-fishers, whose exact patronymic I have been unable to find out. *Serpula*, on nearly every large shell, piece of rock, etc. *Terebella*, *Sabella*, and the *Aphrodite aculeata* or Sea Mouse, with its beautiful iridescent hairs. I have only come across one specimen myself, and that was taken out of the stomach of a Codfish. Of Crustacea (1) Cirrhipeds or Barnacles. The autumn of 1894 was remarkable for the quantities of the Ship or Goose Barnacle that were washed up attached in great masses to all manner of flotsam and jetsam, wood, cork, etc., and I had brought to me a hollow glass globe, such as is used at times to ornament the top of a yawl's mast, which had been taken floating in the sea 80 miles off Scarborough, and to which were attached, at the only rough part where a foothold was afforded,



a small cluster of eight or nine *Lepas anatifera* (Ship or Goose Barnacle). The Acorn Barnacle (*Balanus balanoides*) so common on all rocks, submerged piles, etc., is known to everyone. I had brought to me a large specimen of the shell *Fusus antiquus*, on which were a flourishing colony of exceedingly large Acorn Barnacles, one of them measuring five inches in circumference at the base, which must have proved a veritable 'old man of the sea' to the unfortunate *Fusus* if he had to crawl through life with such an incubus on his back. (2) Of Isopods, the swift-footed *Ligea oceanica* is to be found amongst the large boulders in Cayton Bay. (3) Of Decapods, Macrura, the Sand-hopper (*Talitrus locusta*) is to be found in great numbers, and the entrances of its little burrows are to be seen plentifully in the sand. The Shrimp (*Crangon vulgaris*) seems to be getting scarcer every year on the Yorkshire coast, and the Prawn (*Palæmon serratus*) is few and far between. The common Lobster (*Homarus vulgaris*) still seems to keep up its numbers, and the Blue or Spinous Galathea (*Galathea strigosa*) is occasionally caught in the lobster-pots, but when preserved the colours fade, and give one very little idea of its beauty when alive. (4) Of Decapods, Brachyura, *Eupagurus bernhardus* (the Hermit Crab) is to be found everywhere, and of all sizes. The Great Crab (*Cancer pagurus*), the Shore or Dog Crab (*Carcinus mænas*), are common. The Velvet Swimming Crab (*Portunus puber*) and the Masked Crab (*Corystes cassivelaunus*) are rarer, as is also *Hyas araneus* and *Stenorhynchus phalangium* (the Spider Crab). Some fine specimens of the Northern Stone, or King Crab, as the fishermen call it (*Lithodes maia*), are got in the trawl-nets. Of Cephalopods, the Common Calamary (*Loligo vulgaris*), known to the fishermen as 'Squid,' and much used for bait, is the commonest. The Octopus (*Octopus vulgaris*) is the next most common species, and the Cuttle-fish (*Sepia vulgaris*) is the rarest. It is from this last that the true Cuttle-fish bone is obtained which, when ground up, is largely used in the legal profession for rubbing over sheets of parchment to make them easier to write on and retain the ink better. It is then known as 'pounce.' It is also used in some patent foods for caged birds. The Scarborough district is not a good or prolific coast for sea shells, though some of the species that do occur grow to a great size. I have mentioned above a large *Fusus antiquus*. I also had a large *Panopæa norvegica* and a very large *Cyprina islandica* brought to me, the former taken in a trawl-net, and the latter captured on one of the hooks of a long line set for cod; and I have seen some huge Horse Mussels (*Modiola*), covered with the pretty zoophyte *Sertularia filicula*. It is a curious thing that the Common Mussels here only



attain a small size; nearly all those used by the fishermen as bait, come from Holland. Vast quantities of Limpets (*Patella vulgaris*), are gathered by the fishermen and girls; they are locally known as 'flithers'; and it is a picturesque sight, the women from the adjoining villages coming down the cliffs, they are always called 'flither girls,' with their shawls on their heads, and their baskets on their backs, all eager to gather as many limpets as they can before the tide washes over their prey, and drives them back. Various *Pectens*, locally known as 'queens,' are got in the trawls, and I had one very large *Pecten maximus*, which was got in this manner. There is a small species of Diptera, a black fly, called the Sand Fly, which lays its eggs on the seaweed just above high-water mark, and when shore shooting in the early autumn I have often been astonished at the countless thousands of small maggots, extending for miles, and wriggling all over the sand. They form abundant food for the various shore-birds, waders, gulls, etc.

### NOTES—ORNITHOLOGY.

**Flamborough Bird-notes.**—I have nothing of much importance in the way of birds to mention, with the exception of a great many Redpoles (*Linota rufescens*) that I have seen here in December 1895, and January 1896—more than I have seen altogether for the last twenty years; they have been noticed all about the neighbourhood, several people having made inquiries of me respecting them. Also a few Fieldfares (*Turdus pilaris*); you will there find them in the very fields they always resort to every season. The fishermen inform me of large quantities of Guillemots (*Lomvia troile*) coming into the cliffs.—MATTHEW BAILEY, Flamborough, February 17th, 1896.

#### North Lancashire Bird Notes.—

*Buteo vulgaris* Leach. Several pairs formerly to be seen in the Broughton district. In the late eighties and early nineties I often, on going up the Duddon valley, saw them about Bank End and Raven's Crag on Dannerdale Fell. One of my specimens taken on Broughton Moor, 1891; the other in the parish of Thwaites, Cumberland.

No North Lancashire or South Cumberland stations are given in Macpherson's Fauna, pp. 184-5, but it is mentioned as a native of the Lake District.

*Falco peregrinus* Tunst. A pair nested on Dow Crags, Coniston, 1895. Macpherson, pp. 209-12, gives it as seen at Flookborough and Walney, both coast localities.

*Falco aesalon* Tunst. Not often observed now. My specimen was shot on Broughton Moor, 1892, by a gamekeeper. Macpherson, pp. 212-14, gives Coniston Fells and Walney Island.

*Hematopus ostralegus* L. A large flock seen passing over Ulleswater, Aug. 1895. Macpherson mentions no inland locality.

*Colymbus glacialis* L. A female in winter plumage shot on Galloper Pool, near Foxfield, during the great frost of January-February, 1895. The bird is now in my possession. Macpherson gives three shot near Barrow—two in 1890-91, and one, 1876—and one on Windermere, 1888.

—J. W. FAWCITT, Broughton-in-Furness, December 1895.



## THE SEASON OF 1895 AT SKIPWITH: NOTES ON LEPIDOPTERA.

REV. C. D. ASH, B.A.,

*Vicar of Skipwith; President of the Entomological Section of the Yorkshire Naturalists' Union.*

IN many respects the season of 1895 was, in this district, a great improvement upon the preceding one, and may, I think, be reasonably regarded as a fairly good one. Almost all species were much more abundant than last year, and a considerable number put in an appearance which were not included in last year's list. The insects of the year were undoubtedly *Pieris rapæ*, *Vanessa urticæ*, *Cherocampa porcellus*, *Triphæna pronuba*, and *Anchocelis litura*, all of which were exceedingly abundant, the larvæ of the first-named working terrible destruction among garden produce. To these should, perhaps, be added the larvæ of *Diloba cæruleocephala*, hundreds of which might have been gathered from the hawthorn hedges in June. Of species observed here for the first time, the best were about a dozen of a nice dark form of *Tephrosia biundularia*, closely resembling, though apparently not quite identical with, the var. *delamerensis* which is taken near York. These specimens all occurred in one narrow little strip of alder coppice, and were in the proportion of about eight to ten of the type, two extremely pale specimens being taken in the same place. Other uncommon species observed were *Sesia bembeciformis* (1), *Xanthia gilvago* (2), and *Cirrhædia xerampelina* var. *unicolor* (1); the two latter at sugar in September. Among the micro-lepidoptera several fresh species were noticed, including a number of the mines of a *Lithocolletis* in leaves of Mountain Ash, which will, I hope, prove to be *L. sorbi*.

Owing to a severe chill, contracted at the Yorkshire Naturalists' Union and Lincolnshire Naturalists' Union joint excursion to Broughton Woods on June 3rd, my collecting during the rest of that month, and during the very rainy July, was a great deal interrupted, while August was spent in the Isle of Man; consequently, the notes on these months are but fragmentary, which must be my excuse for the comparatively poor list of fresh micro-lepidoptera observed, the best of the *Tortrix* season having been practically lost. One species of this group which was very rare in 1894, viz., *Amphysa gerningana*, absolutely swarmed at the end of July on Skipwith Common, and this was not a bad example of the difference between the two seasons.



Directly the long frost broke up on March 7th, I set to work, and found that the early geometers were well out, both *Hybernia rupicapraria* and *H. progemmaria* being plentiful along the hedges at dusk, a very fair proportion of dark forms occurring amongst the latter. Sugaring was begun on April 8th, and kept up pretty constantly right through the season, except in June and July, when, for reasons mentioned above, I was able to do little night work except in very fine weather. Throughout the season sugar proved fairly attractive, and scarcely a night was absolutely blank; while on some occasions, notably during the last week of May and the first week of June, at the end of July and throughout the greater part of September (an abnormally hot month, by the way), moths swarmed at the trees in a way that I have not seen them do for many a year. The sallows were not really well out till April 16th, but a spell of favourable weather at that time enabled me to make the most of them. All the commoner species of *Tæniocampa* were in abundance, *T. gracilis* and *T. instabilis* being the most numerous, but I was disappointed at not getting either *T. populeti* or *T. leucographa*, and only one *T. opima* turned up. *Trachea piniperda* and *Larentia multistrigaria* were in some numbers, and a good many hibernating species put in an appearance, among them being *Calocampa exoleta*, from which ova were obtained, and the handsome larva reared. The weather that proved favourable for sallows was also good for larva hunting, and a lot of hard work was done, sweeping and searching on Skipwith Common, the results being a few *Scodiona belgiaria*; *Agrotis porphyrea*, *Noctua xanthographa*, *Triphæna pronuba*, and *T. orbona* in abundance, and a good many *Agrotis agathina*, these latter proving, as usual, most difficult to rear.

The fine hot weather at the end of May brought out the Rhododendron blossom, and, with it, *Chærocampa porcellus* in unusual abundance, and fully ten days earlier than last year. Two specimens of *C. elpenor* also visited the flowers, and a host of other species, especially *Plusia gamma*, *Xylophasia rurea*, and *Mamestra brassicæ*. Probably owing to the heat, the flowers were soon over, but their place was taken by Garden Rocket and white Pinks, which attracted numbers of *C. porcellus*, *Plusia iota*, *P. v-aureum*, *P. gamma*, *P. chrysitis*, and *Abrostola urticæ*, though the latter was much less abundant than last year.

Owing to absence during August, and want of time for day work during the first part of September, no autumnal larva-beating was done, but an hour or two's work with the sweeping-net on the Common showed *Eupithecia nanata*, *E. minutata*, and *Agrotis*



*porphyrea* to be plentiful; *Anarta myrtilli* being somewhat scarce as compared with last year.

At sugar during September and the first part of October moths were generally plentiful, *Anchocelis litura* exceptionally so, while all the following were fairly well represented:—*Hydræcia nictitans*, *H. micacea*, *Noctua c-nigrum* (2), *Orthosia lota*, *O. macilenta*, *Anchocelis rufina*, *A. pistacina*, *Scopelosoma satellitia*, *Xanthia ferruginea*, *Polia flavicincta*, *Miselia oxyacanthæ*, including some dozen or so of the var. *capucina*, and *Phlogophora meticulosa*. *Cerastis vaccinii*, and *C. spadicea* were less abundant than usual. A sharp spell of frost in the middle of October put a stop to night work for some days, and from various causes I was not able to resume it.

Appended is a complete list of species observed which were not included in my last year's list:—

## NOCTURNI (4).

*Chærocampa elpenor*. At flowers; Skipwith.

*Sesia bembeciformis*. Skipwith.

*Nola cucullatella*. At light; Skipwith.

*Arctia fuliginosa*. Skipwith Common.

## GEOMETRÆ (5).

*Asthena luteata*. Holly Carrs.

*Emmelesia affinitata*. Skipwith.

*Eupithecia tenuiata*. Skipwith.

*Hypsipetes impluviata*. Holly Carrs.

*Cidaria pyraliata*. Skipwith.

## DREPANULÆ (1).

*Cilix spinula*. Skipwith.

## NOCTUÆ (20).

*Leucania comma*. At sugar; Skipwith.

*Nonagria fulva*. Skipwith.

*Cerigo cytherea*. At sugar; Skipwith.

*Apamea basilinea*. At sugar; Skipwith.

*Miana literosa*. At sugar; Skipwith.

*Rusina tenebrosa*. At sugar; Skipwith.

*Agrotis saucia*. At sugar; Skipwith.

*Triphæna fimbria*. At sugar; Skipwith. Two specimens only.

*Noctua plecta*. At sugar; Skipwith.

*Orthosia suspecta*. At sugar; Skipwith. Eight specimens.



- Anchocelis rufina*. At sugar; Skipwith.  
*Xanthia gilvago*. At sugar; Skipwith. Two specimens.  
*Cirrhœdia xerampelina*. At sugar; Skipwith. One specimen.  
*Polia flavicineta*. At sugar; Skipwith. Fairly common.  
*Hadena adusta*. *H. dentina*. At sugar; Skipwith.  
*Hadena thalassina*. At sugar; Skipwith; and reared from ova.  
*Cucullia umbratica*. At flower of Rhododendron; Skipwith.  
*Abrostola urticæ*. At flower of white Pink; Skipwith.  
*Mania maura*. At sugar; Skipwith.

## PYRALIDES (7).

- Pyralis glaucinalis*. At light; Skipwith.  
*Pyrausta purpuralis*. *P. ostrinalis*. Skipwith Common.  
*Herbula cespitalis*. Skipwith Common.  
*Hydrocampa nymphæalis*. Skipwith Common.  
*Scoparia atomalis*. *S. cratægella*. Skipwith.

## CRAMBITES (3).

- Crambus uliginosellus*. Skipwith Common.  
*Plodia interpunctella*. Skipwith Common.  
*Pempelia palumbella*. Skipwith Common.

## TORTRICES (10).

- Tortrix unifasciana*. Skipwith.  
*Peronea mixtana*. *P. comparana*. Skipwith Common.  
*Peronea hastiana*. Skipwith Common.  
*Aspis udmanniana*. Generally distributed.  
*Phoxopteryx subarcuana*. Skipwith Common.  
*Grapholitha campoliliana*. Skipwith Common.  
*Pædisca corticana*. Skipwith.  
*Retinia pinicolana*. Among Scotch firs; Skipwith Common.  
*Argyrolepis cnicana*. Skipwith Common.

## TINEÆ (25).

- Lemnatophila phryganella*. Holly Carrs; abundant.  
*Tinea semifulvella*. One specimen at sugar; Skipwith.  
*Lampronia rubiella*. Skipwith.  
*Adela fibulella*. Skipwith.  
*Plutella porrectella*. Common amongst garden rocket; Skipwith.



- Cerostoma radiatella*. Skipwith Common.  
*Harpiteryx nemorella*. Larvæ on honeysuckle; Skipwith.  
*Gelechia populella*. *G. desertella*. Skipwith Common.  
*Argyresthia albistria*. *A. retinella*. Skipwith.  
*Ocnerostoma piniariella*. Abundant amongst the Scotch firs on the Common.  
*Ornix guttea*. On apple; Skipwith.  
*Coleophora pyrrhulipennella*. Larvæ on heather; Skipwith Common.  
*Coleophora laricella*. Swarming among larches; Holly Carrs.  
*Coleophora fuscedinella*. Amongst birches; Skipwith Common.  
*Coleophora gryphipennella*. On wild rose everywhere.  
*Coleophora siccifolia*. Skipwith.  
*Lithocolletis faginella*. Escrick Park.  
*Lithocolletis viminetella*. On banks of the Ouse.  
*Lithocolletis emberizæpennella*. In plantations, Skipwith.  
*Nepticula pygmæella*. *N. oxyacanthella*. Escrick Park.  
*Nepticula microtheriella*. *N. angulifasciella*. Skipwith.

## PTEROPHORI (2).

- Pterophorus punctidactylus*. Skipwith Common; rare.  
*Pterophorus pterodactylus*. Generally distributed.

Total Macro-lepidoptera	29	} 66
Micro-lepidoptera	37	

Making the total for the district	{ Macro-lepidoptera	248	} 412.
	{ Micro-lepidoptera	164	

## NOTES AND NEWS.

Those indefatigable gentlemen, the Messrs. Linton, have issued a prospectus of a proposed 'Set of British *Hieracia*,' to consist of four or more fascicles of not less than 25 numbers each. Considering that in the 9th edition (1895) of the London Cat. there are 104 species and 110 varieties, 214 in all, the subscribers to this series will receive more than half this number of specimens. That all the so-called varieties are worth representing is, we suppose, a question to be decided by the support given to this enterprise. Running side by side with Hanbury's splendid 'Monograph' now publishing, this more than puzzling genus will receive ample illustration. To quote the prospectus of these past-masters on critical botany—'Each number will commonly contain a wild and a cultivated specimen; or wild only, if such can be procured to represent the species well; or cultivated only, if wild are not procured in sufficient quantity. We rely on cultivated specimens to illustrate the type since those in nature are frequently aberrant or deformed or deficient in foliage, owing to the struggle for existence; whereas plants grown on suitably poor soil and free from crowding, give specimens such as may be found in nature under favourable circumstances.' The subscription is the 'usual guinea' a fascicle, carriage free. Communications to be addressed to the Rev. W. R. Linton, Shirley Vicarage, Derby.



*NOTE—BOTANY.*

**Habenaria bifolia flore-pleno.**—A beautiful specimen of the 'double flowered' Butterfly Orchis was found by Mr. Edgar Stabler in Brigsteer Wood, near Kendal, Westmorland, on June 16th last. I enclose a flower.—G. STABLER, Levens, Milnthorpe, Westmorland.

Seems to be the fusion of two flowers, not a double flower in the ordinary sense of the term.—J.G.B.

*NOTE—HYMENOPTERA.*

**Sirex gigas and S. juvenicus.**—In reference to Lieut.-Col. Haworth-Booth's note on *Sirex gigas* in 'The Naturalist' for February, I believe I am correct in stating that in 1887, the year he mentions, an unusual number of *Sirex gigas* occurred in East Yorkshire and Lincolnshire. I obtained one specimen at Bridlington and exhibited it at a meeting of the Leeds Naturalists' Club and was then informed that it was the fourteenth specimen recorded by members of that Society during the year. The large cargoes of foreign timber discharged at Hull are probably the medium by which the insect is introduced into this part of England. A somewhat rarer capture was *S. juvenicus*, which I found in an office fireplace in the heart of Leeds. The only specimen recorded in Donovan's day was taken in an equally curious locality—the top window of a room in the Strand.—HENRY B. WILSON, Westfield, Armley, February 4th, 1896.

*NOTE—FISHES.*

**Large Kelt in Lake Lancashire.**—A big Kelt was caught in a stream which afterwards joins the Duddon, weighing 30 lbs. ! which means a 50 lbs. salmon if it had been helped into salter water. Dr. J. W. Fawcitt, of Broughton-in-Furness, has its photo.—S. LISTER PETTY, Ulverston, December 20th, 1895.

*NOTE—MAMMALIA AND MOLLUSCA.*

**Otters Feeding on Freshwater Mussels.**—Mr. F. B. Whitlock has sent me a number of shells of *Anodonta cygnea* which he collected on an island in the river Soar, presumably not far from Beeston, Notts, asking me to note how the edges are bitten by some creature in opening them. He states that he has no doubt that this was the work of Otters (*Lutra lutra*), an animal which inhabits that river, because at the spot where the shells were found the river is deep, the banks dropping sheer down into a depth of four feet of water, so that it seems impossible for Rats to have brought them up and then dragged them to land. Although the evidence is so far purely circumstantial, there can be little doubt that Mr. Whitlock's opinion is correct. My friend Mr. John W. Taylor, F.L.S., who has seen the shells, informs me that the manner in which they are bitten—all round the outer edges—is different from that in which shells of the same species sent him from Nottinghamshire by Mr. C. T. Musson some years were opened by Rats. The Rats had bitten the shells open at one end, and thereby extracted the contents. It would be of interest to confirm by direct ocular observation the correctness of Mr. Whitlock's opinion.—W. DENISON ROEBUCK, Leeds, Feb. 21st.

*NOTES AND NEWS.*

Sympathetic and graphically interesting memoirs of the late Lord De Tabley are published in the Athenæum for November 30th (by Mr. Theodore Watts), and in the Contemporary Review for January (by Mr. Edmund Gosse)—also in the February Journal of Botany, the latter including a list of his deceased lordship's botanical papers, 1869—1877, many of them concerned with the flora of Cheshire.



## FURTHER NOTES ON THE CHEMISTRY OF THE ROSACEÆ.

P. Q. KEEGAN, LL.D.

*Patterdale, Ulleswater.*

As my paper in the January number of this journal (1895, page 23) has not perhaps been fully understood by some readers, I propose here to add a few explanatory remarks relative to the subject matter thereof, followed by a short summary of conclusions. The main reason for investigating by chemical analysis the rosacean plants was as stated, viz., 'to trace a connection between the vivid and powerful pigments exhibited by the flowers, leaves, etc., and the products of metabolism, such as can be referred to the benzene or other series of hydrocarbons noted for their colour-producing properties.' Everyone knows that carbon is the essential element of organic nature, i.e., animals and plants are almost entirely constructed of compounds of carbon. Now the first and most fundamental class of carbon compounds are the hydrocarbons or the combinations of carbon with hydrogen alone, and of these a series of six or seven in number are the most important. Everyone has heard of or seen the magnificent aniline dyes manufactured from coal-tar, and the question naturally arises, to what series of hydrocarbons can these splendid colourations be referred? The answer is, that nearly all organic dye-stuffs are derived from what have been termed respectively the benzene, naphthalene, anthracene, or quinolene series of hydrocarbons. Now, let us direct our attention to the fields, woods, and gardens. Are the brilliant and beautiful pigments of Roses, Bluebells, Hollyhocks, etc., in any way related as respects their origin, etc., to the superb scarlets, blues, yellows, etc., which in these latter days fascinate us in the ball-room or at the ballet or pantomime? Would it not be supremely interesting if someone were to discover that these coal-tar colours put us as it were in possession of the very colours by which nature adorns the flowers? In the year 1869, Dr. Phipson averred that 'in numerous cases the general chemical properties and spectral characters of the flower colours are identical with those of the coal-tar colours' (*Journ. Chem. Soc.*, 1869). This statement has not been borne out, inasmuch as it is certain that most artificial dye-stuffs have no analogue in plants or animals. Nevertheless, chemical researches have established the fact that the colours of flowers are mainly derived from the benzene series of hydrocarbons, which likewise, as aforesaid, gives origin to some of the most telling and brilliant



dye-stuffs—the aniline dyes especially. Now, among the derivatives of benzene which are found contained in the petals, etc., of red and blue flowers, the most frequent, and often the only ones, are tannin and rutin, and there is satisfactory evidence that the production of the floral pigments is due entirely or mainly to these two bodies. The substance which tinges the yellow, orange, and brick-red flowers, fruits, and pollens is carotin, which, it has been conjectured, is a derivative of anthracene—a hydrocarbon which furnishes the basis of some of the most brilliant dye-stuffs of our manufacturers. Thus far only, therefore, merely in this generally related way can a connection be traced between the natural colouration of flowers and the artificial colouration derived from coal-tar. However, in any case, is it not interesting to examine chemically the beautifully painted petal, leaf, or fruit, in order to observe whether tannin or rutin can be detected therein, and if so, then to proceed further with the inquiry and endeavour to discover in what way these almost colourless bodies are transformed in the living plants so as to become actual colouring matters? This last topic cannot, however, be discussed just at present, so let us, by the light of the explanations afforded in the foregoing lines, render a brief summary of the results of the chemical investigation which has been described in the January number of this journal.

SUMMARY.—It was seen that no tannin was found in the flowers of the Hawthorn, Mountain Ash, or Wild Cherry, hence they are colourless; the rutin which is present in all three not yielding by itself a colouring matter, though doubtless in cases where it coexists with the tannins, it helps these in their tinctorial properties. In the flowers of roses a comparative abundance of tannin and rutin was detected, which are evidently liberally distributed thereto by the leaves, for in the bark, pith, and medullary rays of these plants particular series and layers of conducting cells exist, which are richly charged with tannin, etc.; in Wild Rose petals the tints are comparatively feeble, but in garden Roses, whose petals being less vegetative are therefore more readily the seat of katabolism or strong metabolism, the colouration is developed to the full. The cases of the Blackberry and the Meadow Sweet seem to stand on quite a different footing, for here we have petals rich in tannin and yet devoid of colour. How may this anomaly be explained? Simply in this way, that the pigment is not forthcoming by reason of the coexistence of powerful reducing agencies, e.g., the aldehyde in the Meadow Sweet (contra *Spiræa callosa*, which is red, is odourless), and some strong acid or saccharine matter in the Blackberry; moreover, the flower-buds in these species are not sufficiently developed while



the flower-stalk is still short in growth. It is the other way about in the case of the Great Burnet, and moreover, the structure of its flowers is very peculiar, the petals being as it were almost attached to the stem, and not to any special peduncle. It may be observed in passing that a careful examination of the Silverweed (*Potentilla argentea*) in the autumn disclosed the existence therein of a tannin like that in the Blackberry; hence the statement at page 25 that 'there does not exist any tannin in any part of this plant' must be modified. Moreover, this discovery (not new, it appears) explains the existence of crimson and purple flowers in other allied species of *Potentilla*—in *P. atrosanguinea*, for instance—and might also more or less justify an enterprising name 'splitter' in severing generically these species from others, such as *P. tormentilla*, etc., which contain a different kind of tannin. Finally, it seems pretty certain that the Lady's Mantle, the Avens, the Silverweed, and the Common Tormentil, all of whose petals are tintured by carotin enclosed in homogeneous chromoleucites, do not evoke in their young or wild state a sufficiency of tannin or other red or blue colour—formative material that would ensure a floral decoration more vivid and varied than what we see in their natural condition. In these cases the pigment-forming constituent seems to be used up for the preservation of the roots rather than for the embellishment of the floral organs, which are evidently replete with a highly-active protoplasm. Two general remarks may be appended as a final summary:—(1) It seems certain that the soluble pigments of Rosaceous flowers are derived from a colourless catechin (aldehyde) by a greater or less loss of the elements of water, and (2) the bitter principles of the Rosaceæ are mostly derivatives of phloroglucol, and hence very considerably aid and abet the tannins and glucosides in the formation of phlobaphenes and blue and red colouring matters.

### NOTES—COLEOPTERA.

**Early Appearance of Coleoptera.**—The extremely mild weather of the present year, so far as it has gone, has resulted in the early appearance of several species. A fine specimen of *Coccinella septempunctata* L. was brought to me on the 18th January, and another on the 8th February. A male *Dytiscus marginalis* L., which had been picked up in the yard attached to an hotel, was brought to me on the 13th February. This I kept in confinement for some days before disposing of him finally.—E. G. BAYFORD, Barnsley, February 17th, 1896.

**Gibbium scotias at Barnsley.**—A living specimen of this beetle, not yet recorded from Yorkshire, was brought to me by Mr. W. E. Brady on the 3rd of February. As it was found walking over the breakfast table, there is a probability that it is an imported specimen—how, or with what, is uncertain. However, as this is its first recorded occurrence in the county, it is not without interest. The specimen in question, still alive, was exhibited by me at the meeting of the Barnsley Naturalist and Scientific Society, held the same night as its capture.—E. G. BAYFORD, Barnsley, February 17th, 1896.



## LINCOLNSHIRE NATURALISTS' UNION AT LINCOLN.

THE Lincolnshire Naturalists' Union held its Annual Meeting at Lincoln on the 3rd October last. Excursions had been arranged for the morning in the neighbourhood of Lincoln, for which Mr. M. R. W. Sibthorp and Mr. N. C. Cockburn had most liberally and kindly opened their woods at Canwick and Hartsholme. Owing, however, to the very wretched state of the weather these excursions had to be abandoned.

The great feature of the day was the opening of the Museum, for which rooms in the Gateway of Lincoln Castle had been granted, rent free, by the County Committee. At the founding of the Union in 1893 it was resolved that the formation of a Museum for the county should be one of the first objects of the Union. Since then the Executive has been working for this end, and the successful result of their labours was shown in the proceedings of this day.

After luncheon at two o'clock at the Saracen's Head, the members, who had assembled in considerable force, made their way to the Castle. There was a large attendance of non-members also, and many more would have come, had not the bad state of the weather prevented them.

The Bishop of Lincoln, who has been a member of the Union from the first, and had consented to open the Museum, said that, without pretending to a great knowledge of natural science, he came there, with a real hearty good-will, to show his sympathy with the founding of a Natural History Museum in Lincoln, because he thoroughly appreciated what he ventured to call the scientific spirit, and thought that the cultivation and development of that spirit was at least a part of what a Natural History Museum was intended to accomplish. He inculcated a habit of observation; learning to see things gradually; to see where they differed, and where they corresponded; that which enabled the student to group together things in themselves essentially united was, he said, the real basis of scientific classification. The scientific spirit led to a spirit of reverence and gentleness, and he did not think a person could devote himself to the study of natural history without increasing in reverence and tenderness for the least and most insignificant objects. A man who has some sort of conception of the unity that there is in nature, who could see things not merely as separate units but in their wonderful combinations, does not care whether it is raining or whether it is fine, but works because he has a real



interest in his work, and has no inclination for a listless kind of loafing through life. These, he said, were general platitudes, but, for these general reasons, he had great pleasure in coming there that day to declare the Lincoln Museum open, and might God's blessing be upon it.

The President, in moving a vote of thanks to the Bishop, touched upon the want of funds necessary for the successful carrying out of an adequate museum for the county, of which the start they had made that day was only intended to be a nucleus; and he hoped the antiquaries of Lincolnshire would join the Museum Committee, and aid in collecting the valuable relics and records with which the county abounded. He had, he said, large collections of shells, insects, and other objects which he would gladly transfer to the Museum when proper cases could be found for them.

Canon Fowler seconded this resolution, and said that, when Lincoln got the School of Science and Art, there was a desire to add a Museum; because so many good things, which would have been given to the city, such as the great collection of De Wint's pictures, now the glory of South Kensington Museum; the Franklin relics, which were very important; and other well-known collections had gone elsewhere for want of a proper place to keep them in; and he hoped, now that they had made a small beginning towards a County Museum, they would ultimately attain that object, which they had so sincerely at heart. The vote of thanks was then passed with enthusiasm.

The objects shown in the Museum were of considerable interest. The County Herbarium, consisting of some 10,000 specimens, which, through the untiring energy of the Rev. E. A. Woodruffe-Peacock, and his knowledge of plants, especially in the relation of species to outcrops and soils, had been collected and brought together for years past, and was enclosed in four large cabinets, must be mentioned first. Mr. Peacock has worked unceasingly in this department, and if as good collections are hereafter made of the birds, insects, shells, and fossils of the county, then the Museum will form, what it is intended to be, a most instructive collection not only for students, but for all who come to see it. Mr. Burton had given a case of Whooper Swans, shot the previous winter near Lincoln, and he had also lent a collection of British Land Shells, and of Zoophytes, the latter taken mainly from the Lincolnshire coast. He also showed some Rhoetic and Liassic fossils, and Beavers' teeth found, with other animal remains and pieces of pottery, in the refuse heap of a Roman villa, which was unearthed, some years ago, in making a lake in Thonock Park, near Gainsborough.



A number of birds, very admirably set up, had been most generously given by Mr. Fieldsend, the Hon. Curator of the Union. Mr. Fieldsend is a true artist and student of nature, and the setting up of his cases is not the mere skill of the bird-stuffer, but he aims at the example set by the authorities at South Kensington, not only to present his subjects in correct living attitudes, but to show them as they appear, and as they frequently conceal themselves, in their native haunts; and it is only just praise to say that he succeeds in what he is aiming at. Mr. William Emerson, of Lincoln, gave an excellent collection of birds' eggs taken in the county, containing many rare species, and some of them extinct. Canon Fowler lent cases of British Butterflies and Land Shells.

Mr. J. H. Cooke, now, fortunately for the Union and Museum, located in Lincoln, in connection with the Science and Art Classes of the county, lent some of his Maltese fossils, which are of the highest interest, and which have already made his name known wherever geology and palæontology are cared for. The Mechanics' Institute very kindly lent some valuable Roman pottery, and also the cases in which many of the objects were displayed. British insects and fossils came from the Rev. W. W. Cooper, of West Rasen, Miss Venables, and Mr. Jarvis Rainey, of Spilsby; and a large ammonite from the chalk, near Barton-on-Humber, from Mr. Ball.

At four o'clock the Annual Meeting of the Union was held at the Saracen's Head. The President, who took the chair, read a short report as to the meetings during the year; alluding especially to the one on the 3rd June at Brigg, when the Yorkshire naturalists met those of Lincolnshire, and a joint meeting of the two Unions was held. He alluded also to the successful efforts that had been made, during the past year, in obtaining protection for wild birds on the Lincolnshire coast, through the aid of the Lindsey County Council.

The Hon. Secretary then read his report, showing a satisfactory increase in the number of members; and, after a few words from Mr. Sneath, the auditor, respecting the accounts, which necessarily could not be gone into at that meeting, the Rev. Canon Fowler, F.L.S., F.E.S., Secretary of the Entomological Society of London, of the School House, Lincoln, was, on the motion of Mr. J. Cordeaux, elected President of the Union for the ensuing year. The Rev. E. A. Woodruffe-Peacock was re-elected Hon. Secretary. The Museum Committee was re-appointed, with Mr. Burton as chairman; and the retiring President then delivered his address, 'The Story of the Lincoln Gap,' which has already appeared in these columns; and this very successful meeting came to an end.—F. M. BURTON.



## FURTHER DISCOVERIES OF *ARENARIA* GOTHICA.

LISTER ROTHERAY,  
*Skipton-in-Craven, Yorkshire.*

### SECOND PAPER.

IN 'The Naturalist' for November 1895 I recorded the discovery on August 13th, 1895, of *Arenaria gothica* Fries, on a cart-track in three adjoining pastures near to the head of Sulber Nick, but between that place and Selside, the said cart-track running between the latter place and Crummack Dale and Clapham.

At that time, being dissatisfied, as regards their completeness, with my observations of the plant in the stations above-named and in the cart-track outside the head of the Nick (Mr. Farrer's Station 1), I resolved to visit the place again at the earliest opportunity, in order to explore the track lying further to the south of the latter station as well as also to investigate the moorland on the west, and Sulber Nick itself on the east.

Accordingly with these objects in view, the morning of Sept 16th found me once more in the vicinity of Sulber Nick, but alas! under changed and more unfavourable conditions for the work in hand; for when I reached the precincts of the Nick, I found all the surrounding district enveloped in a thick, sleety fog, which completely hid from view all objects except those within a radius of a few yards, and which seemed to have arisen and settled down in a very short time. This being the case, the task in hand was rendered all the more difficult and uncomfortable by reason of the soaking nature of the grass and blinding sleet, the latter of which being driven by a strong breeze, swept the surface of the ground like a drizzling rain.

However, despite the unpleasant nature of the atmospheric conditions, the task of exploration was commenced with a survey of the precincts of the Nick itself; but although I made a most careful search of its northern side, together with a large portion of its bottom surface, extending some distance towards its southern limit, not a vestige of the *Arenaria* was seen, until the slope bounding the western end was reached. It was whilst here ascending a footpath that, after crossing the Nick, leads up the western slope towards the wicket-gate in the boundary wall outside the head of the Nick, that the first sign of the *Arenaria* was met with.

When near to the top of the sloping side, and within a few yards of the gate itself, one single plant, then two more, and another odd



one were discovered, growing on the sides of the footpath, which at this place consisted of rough stony ground. At the sight of these, my first discovery, I began more carefully and minutely to search the adjoining slope and edges of the ascent on each side of the path, but although I went for above 100 yards in one direction, and between 30 and 40 in the opposite one, not another plant of the *Arenaria* did I see about there. In the evening, however, when returning to the station, a more extended survey of the ground at the base of the slope was made, resulting after a while in the discovery of four more places in which the *Arenaria* grew. The situation of three of these, like the first one, was alongside of the same footpath, two being on one side and one on the other, whilst the fourth one was right in the centre of the track, the distance from first to last being some 300 to 400 yards from the wicket-gate. In point of character these places differed very considerably; the first, on which were about 20 plants, consisting of a large flat piece of limestone rock, partly covered with sandy soil, and bearing one or two juniper bushes, under which the largest plants were found. In the second and third, however, the soil was a mixture of sand and peat, intermixed with small broken pieces of limestone, the place being very moist, as if water had recently lodged there; and in the last one, the ground was more dry and stony. The number of plants in the second and third was 14 and 11 respectively, but in the fourth there were only three.

In the morning, after leaving the precincts of Sulber Nick, my attention was given to the portion of the cart-track lying to the south of Mr. Farrer's Station I., and extending thence to his second station, at the entrance to Clapham Bottoms, a distance of a mile or thereabouts.

On emerging through the gateway out of Sulber pasture, the cart-track enters upon a large tract of open moorland, called Long Scar, and during its entire length from Station I. to Station II. it is wholly confined to this pasture, the course of the track being along the more grassy and nearly level portion, this being bounded on each side (east and west) by rocky limestone ridges rising one above the other, from which I suppose the pasture gains its name. On this pasture Mr. Farrer's two stations are situated, at the northern and southern extremities, Station I. occupying the former and Station II. the latter position, connected by the cart-track which runs from Clapham to Selside.

On entering this pasture, and for about half the distance of its course through it, the cart-track is single, after which it divides into two branches, one of which turns to the right and runs in the



direction of Clapham Bottoms, whilst the other to the left proceeds towards Crummack Dale. When I commenced the survey of this portion of the cart-track I was under the impression that the *Arenaria* was here an absentee, no plants having been seen by Mr. Farrer between his two stations, either at the time of their discovery or since. Imagine, therefore, my surprise when, after proceeding a few yards beyond the spot where I found the first plant on August 13th, I came across three specimens of the *Arenaria* inside the cart-ruts, and three more some 20 yards further south, in the same position, all in full flower. In this manner, with but slight variation in the intervals of distance from each other, I traced the *Arenaria* all the way along the single track, to where it divided into the Crummack Dale and Clapham Bottoms tracks, the plant appearing sometimes singly, and at others in twos and threes, but never in larger numbers, and always in the part between the wheel-ruts, never outside them, the reason being in my opinion that the ground was too grassy for its sustenance.

The discovery and tracing of the *Arenaria* upon the single track up to the point of division gave me hope for the exploration of the two branches, and it was with no small amount of this feeling that I first commenced the Clapham Bottoms track. This had not been followed more than 10 or 12 yards when two plants were met with, but no more were seen for the next 400 yards or so, the track, during nearly the whole of this distance, being scarcely distinguishable on account of the long grass which here formed the covering of the ground over which it ran. At about this distance, however, a change began, and the track here passed over a portion of bare limestone which protrudes above the soil, on which several specimens of the *Arenaria* were found, whilst on some damp stony ground, adjacent to the limestone, were found several other specimens, some seven or ten yards from the track itself. From this point no other plants of the *Arenaria* were seen upon the track until Mr. Farrer's Station 2 was reached, when they again began to appear very sparingly in odd places along the stony portions of it for a distance of perhaps 60 or 70 yards, and then again suddenly disappeared at a point 100 yards or so before the track left the hill side and passed through a gate into an adjoining pasture, and thence into Clapham Bottoms.

With the exploration of the Crummack Dale track, however, far better results in the discovery of the *Arenaria* were obtained. In the first 240 yards of this track, from the point of division, I counted between 30 and 40 specimens of the *Arenaria*, all of which were growing between the cart-wheel ruts, 10 of them



being clustered together at about 87 yards distance from the commencement, the cause of this greater number in so short a space being no doubt the more stony nature of the ground over which this portion of the tract ran. From this point the Crummack Dale track, like the Clapham Bottoms one, also changed its course over a grassy part of the moorland, and no plants were seen for the next quarter of a mile or so, when seven more were met with, not however in the track itself, but in a small hollow some three or four yards outside the left wheel-rut, the companion growth being *Arenaria verna* and *Sagina nodosa*. From here this track was pursued for nearly another half a mile, until it began to gently descend the hill into the dale itself, but no other plants were seen, although both *Arenaria verna* and *Sagina nodosa* appeared frequently upon it.

During the remainder of the afternoon, further explorations for the *Arenaria* were made in both Sulber pastures and Long Scar pasture, as well as on the higher moorland running up to Simon Fell, these resulting in the discovery of the plant in two more places in the former, and one in Long Scar, about 200 yards west of the head of Sulber Nick, and about midway between that and Mr. Farrer's reported station of July 3rd, 1895.

I may add that specimens of the plants from the localities herein noted, together with a sketch map of the district showing the precise stations, and full details of the characteristics of these stations and of the vegetation accompanying the *Arenaria* at each, were forwarded to Mr. Wm. Whitwell immediately after my exploration.

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#### NOTE—BOTANY.

**Hyoscyamus niger in Furness.**—Last year I was much surprised to see an enormous area near Bardsea Mill covered with this species. It was recorded from Bardsea by Aiton in 1843, but I had so far failed to see it. Being so intermittent in its appearance hope was left that some day it would occur. I saw it, one plant only, at Rampside in 1888, and not since.—S. L. PERTY, Ulverston, March 4th, 1896.

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#### NOTE—ORNITHOLOGY.

**Rare Birds at Bridlington.**—The violent gales of November last were instrumental in driving on to the Yorkshire coast some birds of exceptional rarity, and I had the privilege of seeing the following species in the shop of Mr. A. S. Hutchinson, taxidermist, of Derby, on a recent visit. The birds were all captured at Bridlington during the stormy weather of the second week in November, 1895.

Sabine's Gull (*Larus sabinii*). An immature specimen of an 1895 bird. The few known British-killed specimens of this bird are chiefly immature examples.

Little Gull (*Larus minutus*). In winter plumage.

Sooty Shearwater (*Puffinus griseus*). Adult specimen in winter plumage.

Great Shearwater (*Puffinus major*). Adult specimen.

—E. HOWARTH, Museum, Sheffield, March 25th, 1896.

Naturalist,



THE CONSTITUENTS OF  
THE NORTH LANCASHIRE FLORA, 1597(?) - 1893.

LISTER PETTY,

*Ulverston.*

EIGHTH PAPER.

- Ribes nigrum** L. Clarke's First Record, 1660.  
**1874.** Miss E. Hodgson, Angerton Moss; between Bowstead Gates and the Blacking Mill. **1885.** Baker's Flora, 97. Miss Hodgson repeated. Road-side below Gummers How at foot of Windermere, J. G. Baker.
- Hippuris vulgaris** L. C.F.R., 1597.  
**1796.** Withering, ed. iii., 5. Almost everywhere in muddy ditches in north-west of Lancashire, Isaac Hall<sup>1</sup>; and repeated in all subsequent editions. **1830.** Otley, Guide, ed. iv., 140. Grows in the ditches near Cartmel Well. **1834.** Baxter, Phænog. Bot., i., 49. **1834.** Otley, ed. v., 140, repeated, and in all following editions. **1861.** Phytologist, 257. Ditches between Humphrey Head and Cartmel, C. J. Ashfield. **1869.** Aspland's Guide. Within six miles of Grange, A. Mason. **1874.** J. of B., Miss E. Hodgson. Bardsea Mill Pond. **1885.** Baker's Flora, 94. Ashfield and Miss Hodgson repeated.
- Myriophyllum verticillatum** L. C.F.R., 1660.  
 [1861 (1855). Martineau's Guide, 183. Windermere.] **1864.** Linton, Lake Country, 322. 'Common,' no locality. **1885.** Baker's Flora, 94-5. Coniston Lake, Miss S. Beever.
- Myriophyllum spicatum** L. C.F.R., 1640.  
 [1861 (1855). Martineau's Guide, 183, Windermere.] **1864.** Linton, Lake Country, 322. 'Common,' no locality. **1874.** J. of B., Miss E. Hodgson. Urswick Tarn. **1885.** Baker's Flora, 95. Miss E. Hodgson repeated.
- Myriophyllum alterniflorum** DC. C.F.R., 1724.  
**1874.** J. of Bot., Miss E. Hodgson. Urswick Tarn; Cark Beck.

<sup>1</sup> Isaac Hall, of Newton-in-Cartmel; b. 25th Sept., 1756, d. 16th May, 1815. Member of Society of Friends, and buried at their ground at Height, near Newton. Called in their registers 'Flax dealer.' He had the Hill Mill, near Cartmel, for spinning, and also weavers at Newton. Local plant list in Withering, ed. iii., 1796. For biographical particulars I am indebted to Mr. Atkinson, Ulverston; Mr. R. W. Nash, the local Registrar; and Mr. Sharp, the London Registrar of the Society of Friends.



**Callitriche verna** L. C.F.R. (aggregate), 1762.

1874. J. of B., Miss E. Hodgson. Urswick Tarn; Clerks Beck tributary. 1885. Baker's Flora, 95. Low Water, Coniston Old Man.

**Callitriche platycarpa** Kuetz.

1874. J. of B., Miss E. Hodgson. Spring near the Crag, near Ulverston; Plumpton lanes ditches.

**Callitriche hamulata** Kuetz.

1874. J. of B., Miss E. Hodgson. Lightburn, Ulverston; Cartmel Beck.

**Lythrum Salicaria** L. C.F.R., 1548.

*Lysimachia purpurea*, etc. 1680; see 1889.

1843. Jopling, Furness and Cartmel, 262. Near Conishead Priory, Aiton, and Wraysholme Tower, Cartmel. W. Wilson. 1861. Phytologist, 237. Ditches between Humphrey Head and Cartmel, C. J. Ashfield. 1864. Linton, Lake Country, 322. 'Common.' No locality. 1874. J. of B., Miss E. Hodgson. By the river Crake; Urswick Tarn; damp meadows near the south shores, not infrequent. 1885. Baker's Flora, 96. 'Ascending to 250 yards over Coniston.' 1889. Westm. Note-book, 184. Extracts from Lawson's Note-book (circ. 1680) ed. J. A. Martindale. 'Marsh-grainge copiosé,' Lawson.

**Peplis Portula** L. C.F.R., 1632.

1882. J. of B., 347. In Mr. W. F. Miller's 'Lake Lancashire Plants,' but without any locality—name only. 1892. 'Naturalist,' 81. Side of a small tarn on Coniston Moor, 1888, L. Petty. When the latter record was published I was unaware of the earlier, vague though it is, and concluded the species had not been previously chronicled for North Lancashire.

**Epilobium angustifolium** L. C.F.R., 1597.

*Lysimachia speciosa*, quibusdam *Onagra dicta siliquosa*.

1744. Wilson, J., Synop., 191-2. 'In a field a little from Hawkshead, Lancashire.' Marked as found by Wilson himself.<sup>1</sup> 1763. Martyn. Plant. Cantab., 61; locality repeated. 1796. Withering, ed. 3, 366. At Satterthwaite and Brow Edge, in Furness Fells, Jackson; and repeated in all subsequent editions. 1805. Turner and Dillwyn, Bot. Guide, ii., 368. 'Martyn' and Jackson repeated, and in 1834. Baxter Phænog. Bot., i., 14. 1843. Jopling, Furness and Cartmel, 264. Scarce. Around Conishead Priory; Aiton; river side between Cark and Cartmel; W. Wilson. 1874.

<sup>1</sup> John Wilson, of Kendal, died 1751. See Britten and Boulger's Index, 183. The story of his cow is in Pulteney, ii., 265.



J. of B., Miss E. Hodgson. By the beck at Newland, near Ulverston; perhaps an old garden escape. 1885. Baker's Flora, 91. J. Wilson, Aiton, W. Wilson and Miss Hodgson repeated. 1888. Westm. Note-book, 82. J. Wilson repeated in full.

**Epilobium hirsutum** L. C.F.R., 1597.

1874. J. of B., Miss E. Hodgson. Ditch sides at Flookborough; Little Mill Fields near Dalton.

**Epilobium parviflorum** Schreb. C.F.R., 1629.

1874. J. of B., Miss E. Hodgson. Edge of Bardsea Mill Pond; about the Slate Quarries, Walna Scar; near Skathwaite, Penny Bridge. 1885. Baker's Flora, 92. 'Ascending to Walna Scar Slate Quarries.'

**Epilobium montanum** L. C.F.R., 1570.

1843. Jopling, Furness and Cartmel, 264. In the woods around Bardsea, Aiton. 1864. Linton, Lake Country, 322. 'Common,' no locality. 1874. J. of B., Miss E. Hodgson. No locality.

[**Epilobium tetragonum** L.

1874. J. of B., Miss E. Hodgson. No locality. 1885. Baker's Flora, 92. 'Typical *tetragonum* not known,' i.e., within the limits of the Lake District].

**Epilobium obscurum** Schreb. C.F.R., 1856.

1874. J. of B., Miss E. Hodgson. Mansriggs Wood, near Ulverston.

**Epilobium palustre** L. C.F.R., 1660.

1874. J. of B., Miss E. Hodgson. Peat mosses, Ulverston; Newland, by the Blacking Mill. 1885. Baker's Flora, 92. 'Ascending from the shore level in peat mosses at Ulverston.'

**Ænothera biennis** L.

1893. Naturalist, 355. Waste ground in Cart Lane, near Kent's Bank. A garden escape, L. P.

**Circæa lutetiana** L. C.F.R., 1597.

1864. Linton, Lake Country, 322. 'Common,' no locality. 1874. J. of B., Miss E. Hodgson. Banks of the Crake, between Graythwaite and Lake Side.

**Circæa alpina** L. C.F.R., 1762.

1787. Withering, ed. ii., 24. Rocky woods, Lancashire, Westmorland, and Cumberland. Woodward, and repeated in 1796, ed. iii., 11; and in all following editions. 1800. Smith, Fl. Brit., i., 14. In Lancashire, Dawson Turner; in several places by the roadside from Ulverston to Hawkshead, Jas. Crowe.<sup>1</sup> 1802. Smith and Sowerby, Eng. Bot., vol. 15, 1059. Chiefly confined to mountainous

<sup>1</sup> James Crowe. See Britten and Boulger's 'Index,' p. 41.



stony, shady places in Westmorland, Cumberland, and Lancashire.  
**1805.** Turner and Dillwyn, Bot. Guide, ii., 365. Crowe repeated.  
**1828.** Smith, Eng. Flora, ed. ii., I., 16. Turner repeated. **1832.**  
 Smith and Sowerby, Eng. Bot., ed. ii., vol. I., 11. 'Lancashire.'  
**1855.** Watson, New B. G. I., 300. Crowe repeated, but ascribed to  
 'B. G.'; and repeated in 1842. Wordsworth's Scenery, 23. **1843.**  
 Jopling, Furness and Cartmel, 265. About Bardsea Hall, Aiton.  
**1864.** Linton, Lake Country, 322. Crowe's locality repeated.  
**1885.** Baker's Flora, 93-4. Crowe repeated. Shore of Coniston  
 Water and walls by the side of the main road in Coniston village,  
 Miss S. Beever and J. G. Baker. **1892.** Naturalist, 81. Miss  
 Beever's locality repeated.

**Hydrocotyle vulgaris** L. C.F.R., 1562.

*Cotyledon palustris.* Circa 1580; see 1889.

**1864.** Linton, Lake Country, 323. 'Common,' no locality.  
**1874.** J. of B., Miss E. Hodgson. No locality. **1889.** Westm.  
 Note-book, 185. Extracts from Lawson's Note-book, circ. 1680;  
 edit. by J. A. Martindale. 'Marshgrainge, *copiosé.*' Lawson.

**Eryngium maritimum** L. *E. marinum.* C.F.R., 1548.

**1744.** Wilson, Syn. 75. 'On the west shore of the Isle of  
 Walney, opposite North Seale, plentifully. Marked as found by  
 Wilson himself. **1746.** Blackstone, Spec. Bot., 20. Walney, plenti-  
 fully, Mr. Thornbeck.<sup>1</sup> **1763.** Martyn, Plant. Cantab., 61. Locality  
 repeated. **1793.** Milne and Gordon, Indig. Bot., I., 372. J. Wilson  
 repeated. **1843.** Jopling, Furness and Cartmel, 265. On the shore  
 near Quarry Flat, Holker, W. Wilson. **1849.** Otley, Guide, ed. viii.,  
 139. Coast near Flookborough. **1864.** Linton, Lake Country, 323.  
 No locality. **1874.** J. of Bot., Miss E. Hodgson, Roosebeck;  
 Walney. **1885.** Baker's Flora, 105-6. J. Wilson, W. Wilson, and  
 Miss Hodgson repeated. **1888.** Westm. Note-book, 82. J. Wilson  
 repeated in full.

**Sanicula europæa** L. C.F.R., 1548.

**1864.** Linton, Lake Country, 323. 'Common,' no locality.  
**1874.** J. of B., Miss E. Hodgson. No locality.

[**Echinophora spinosa** L.

*Crithmum maritimum spinosum.* C. B. First reported by  
 Lawson to Ray, April 1688.

**1688.** Ray, Fascic., 5. 'Observed by Mr. Lawson at Roosebeck  
 in Low Furness,' and repeated **1690.** Ray, Syn., ed. i., 72. **1695.**  
 Camden, Brit., ed. Gibson, 803. **1696.** Ray, Syn., ed. ii., 114.

<sup>1</sup>Thornbeck was 'a surgeon and expert botanist at Ingleton, Yorks.' Pulteney,  
 Sketches, 1790, ii., 272.



**1718.** Derham, Phil. Lett., 216. Lawson's letter to Ray in full.  
**1724.** Ray, Syn., ed. iii., 320. **1744.** Wilson, Syn., 74. **1762.**  
 Hudson, Fl. Ang., ed. i., 97-8. **1763.** Martyn, Plant. Cantab., 61.  
**1775.** Jenkinson, Desc. Brit. Pl., 45. Lawson repeated, and  
 'Mr. West<sup>1</sup> told me he found it last year in Low Furness.' **1778.**  
 Robson, S. Flora, 205. Lawson repeated, and in 1778. Hudson,  
 Fl. Ang., ed. ii., 112. **1787.** Withering, ed. ii., 268, but ascribed to  
 'Ray.' **1789.** Camden, ed. Gough, 145. **1796.** Withering, ed. iii.,  
 285-6. Lawson repeated, and 'where I searched for it, which has  
 been frequently done by a person resident near that place, but  
 without success,' J. T. Woodward. 'Mr. W. Atkinson lately told  
 me [i.e. Withering] it is not to be found near Roosebeck, but that  
 the *Salsola kali* is found there, and that it is apprehended this was  
 sent to Mr. Ray in a dried state by his sister,<sup>2</sup> who used to collect  
 plants for him. But Ray gives the plant on the authority of  
 Mr. Lawson, so that if there be a mistake, it probably originated  
 with the latter.' **1799.** Dr. Hull, Brit. Fl., 58-9. 'This plant is no  
 longer to be found at Roosebeck . . . See Withering.' **1800.**  
 Smith, Fl. Brit., I., 293-4. 'Not found by any botanist of the  
 present day.' **1801.** Withering, ed. iv., 280. As before; not given  
 in later editions. **1805.** Turner and Dillwyn, Bot. Guide, I., 367.  
 Lawson's locality and Woodward repeated, but for the former 'Ray.'  
**1807.** Miller, Gard. Dict., ed. Martyn,<sup>3</sup> vol. I., pt. 2. Found by Ray  
 on the sea coast of Lancashire. **1808.** Hull, Flora, ed. ii., 78. As  
 before. **1812.** Smith and Sowerby, Eng. Bot., vol. 34, 2413.  
 ' . . . the plant is one of those of which we have been obliged  
 to recur to an exotic specimen, for though there are numerous  
 authorities for its having been formerly found in various and remote  
 parts of the English sea-coast, nobody can meet with it now. Its  
 aspect and characters are too distinct to admit a possibility of any  
 other plant having been mistaken for this.' **1828.** Smith, Eng. Fl.,  
 ed. ii., 37-8. Lawson repeated. **1830.** Hooker, W. J., Brit. Fl.,  
 ed. i., 134-5. 'Found many years ago in Lancashire . . . but  
 now apparently extinct. Now I fear quite lost as a native of  
 Britain; and repeated in 1855. Hooker, ed. iii., 139. **1835.**  
 Watson, N. Bot. Guide, I., 301. 'Roosebeck, Low Furness. Ray  
 (B. G.). Not now found there.' **1836.** Sowerby, Eng. Bot., ed. ii.,

<sup>1</sup>T. West, author of *Antiq. of Furness*, b. 1703, d. 1779; educated at St. Omer; ordained priest, R. C. Sketch biography in Casson's 'Furness Worthies,' 1889, pp. 8-9.

<sup>2</sup>Who was she? I have asked the question in 'Notes and Queries,' 1894, and have had no reply. Did she send the specimen from some other locality?

<sup>3</sup>It should be noticed that in the 8th ed., 1768, the last in Miller's lifetime, the species is given as continental only.



vol. iii., 31. 'A doubtful native at present, though it appears to have been found formerly on the shores of Lancashire and Kent.'  
**1842.** Bab., Man., ed. i., 137. Sandy sea-shores, probably now lost, Lancashire and Kent. **1842.** Hooker, ed. v., 150. As before.  
**1842.** Evans, Furness and Furness Abbey, 24. Lawson repeated.  
**1843.** Jopling, Furness and Cartmel, 265. On the shore at Sand-scale, near Ulverston, Aiton. Near Winder Hall, Cartmel, W. Wilson.  
**1844.** Baxter, Phænog. Bot., 478. Lawson and Woodward repeated.  
**1847.** Steele, Handb., 32. 'Lancashire.' **1847.** Bab., Man., ed. ii., 147; and in **1851, 1856, 1862, 1867, 1874, 1881.** As before.  
**1847.** Watson, Cybele, I., 464. 'Incognit. . . . Said to have been observed by Lawson at Roosebeck, . . . where it was sought unsuccessfully by Woodward. Either the plant has become extinct or some other has been mistaken for it.' **1848.** Ray Corresp., Ray Soc., 197, et seq. Lawson to Ray in full. **1852.** Watson, Cybele, vol. iii., 447. Mr. Aiton records this plant in terms that would seem to imply it had been found by himself (see above, 1843). Could *Eryngium maritimum* have been mistaken for it 'by a botanist who expected to find the latter?'<sup>1</sup> **1850.** Hooker and Arnott, Brit. Fl., ed. vi., 180. As before, and in 1855, ed. vii., 189.  
**1860.** Ed. viii., 189. **1851.** Steele, Handb., ed. ii., 23. As before. (No date, but about 1855.) Miss Pratt, Fl. Pl., iii., 88-9. 'Apparently now lost' in Lancashire and Kent.<sup>2</sup> **1858.** Irvine, Handb. Brit. Pl., 605. 'Not observed since the times of Gerard<sup>3</sup> and Ray.  
**1865.** Eng. Bot., ed. iii., vol. 4, 172-3. 'Now extinct,' and Lawson's locality repeated. **1870.** Watson's Compendium, 518. Lake Lancashire. Extinct casual. **1885.** Baker's Flora, 113. Lawson, Aiton, and W. Wilson repeated. 'Modern confirmation especially wanted,' etc. **1888.** Westm. Note-book, 82. Lawson repeated in Martindale's 'Early Westm. Plant Records.']

**Conium maculatum** L. C.F.R., 1548.

**1864.** Linton, Lake Country, 323. 'Not common,' no locality.  
**1882.** J. of B., 347. Swarthmoor Hall. W. F. Miller.

**Apium graveolens** L. C.F.R., 1548.

*Apium palustre seu officinarum* C. B.

First reported by Lawson to Ray, April **1688.** **1718.** Derham, Phil. Lett., 213. Near Cartmel Medicinal Well, on the marsh

<sup>1</sup>But there is no such record for *Eryngium maritimum* except Otley's. I have *E. maritimum* booked as at Rampside and between Roosebeck and Aldingham, but not on the Ulverston or Winder Hall shores.

<sup>2</sup>Miss Pratt. Like other publications of the R.T.S. this work is undated. Obit. notice in J. of B., 1894, from which the date is taken.

<sup>3</sup>See Herbal, 1633, cap. 154, No. 2. *C. spinosum*. All the localities given are south country.



ditches. Lawson. 1843. Jopling, Furness and Cartmel, 265. Marsh between Old Park and Hag Wood, near Holker. W. Wilson. 1848. Ray Corresp., Ray Soc., 197 et seq. Lawson repeated in full. 1874. J. of B., Miss E. Hodgson. Plumpton Saltmarsh. 1885. Baker's Flora, 106. Lawson, Aiton, Wilson, and Miss Hodgson repeated. About the mouth of Cark Beck, plentiful. J. G. Baker. 1888. Westm. Note-book, 82. Lawson repeated. Note. All these are shore- or salt-marsh stations.

**Apium nodiflorum** Reichb. C.F.R., 1632.

*Sium nodiflorum* L.

1861. Phytologist, 237. Roadside ditches between Humphrey Head and Cartmel. C. J. Ashfield. 1874. J. of B., Miss E. Hodgson. As *Helosciadium*. Not infrequent in brooks. 1885. Baker's Flora, 106-7. Swarthmoor; Newby Bridge; Cartmel.

**Apium inundatum** Reichb. *Sium* L. C.F.R., 1641.

1796. Withering, ed. iii., 300-301. Esthwaite Lake; Rusland Moss. Jackson,<sup>1</sup> and repeated 1801. Ed. iv., 296. 1812. Ed. v., 377. 1818. Ed. vi., 400. 1830. Ed. vii., 381. 1885. Baker's Flora, 107. As *Helosciadium*. Jackson repeated.

**Carum Petroselinum** Benth.

1893. 'Naturalist,' 355. Waste ground at Barrow, 1888; shore near Barrow, 1888; shore-bank, Grange, 1893. All outcast aliens. L. Petty.

**Sium erectum** Huds. C.F.R., 1633.

*S. angustifolium* L.

1864. Linton, Lake Country, 323. 'Common,' no locality. 1874. J. of B., Miss E. Hodgson. No locality. 1885. Baker's Flora, 108. Furness.

**Ægopodium Podagraria** L. C.F.R., 1597.

1874. J. of B., Miss E. Hodgson. In an orchard at Dendron; roadside, Far Lodge Gates, Conishead Priory. 1885. Baker's Flora, 107. Coniston. Note. Ray Syn., ed. ii., 1696, 104, says of it truly enough, '*nec facile exterpari potest.*' Perhaps he had it in his garden at Black Notley, and had tried to get rid of it! He took up his residence there in 1679.

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<sup>1</sup> Rev. Edward Jackson. In answer to a query *ante*, Mr. E. T. Baldwin writes that a portion of this gentleman's herbarium was formerly in the possession of the late Mr. W. Atkinson, of Dalton-in-Furness, and now incorporated with the collection of the late Mr. Cowherd. Mr. Jackson was Incumbent of Rusland 1756-1761; so far my correspondent. From 1762-1789, a man of the same name was Incumbent of Colton, possibly the same individual. See Rural Deanery of Cartmel, 1890, pp. 92 and 118.



- Pimpinella Saxifraga** L. C.F.R., 1568  
 1861. Phytologist, 260. Humphrey Head. Dr. Windsor.  
 1864. Linton, Lake Country, 323. 'Common,' no locality. 1874.  
 J. of B., Miss E. Hodgson. Hampsfell; shore at Roosebeck and  
 Bardsea.
- Conopodium denudatum** Koch. C.F.R., 1548.  
 1864. Linton, Lake Country, 323. As *Bunium flexuosum*.  
 'Common,' no locality. 1874. J. of B., Miss E. Hodgson. No  
 locality.
- Myrrhis odorata** Scop. *Scandex* L. C.F.R., 1777.  
 [1778. Hudson, Fl. Angl., ed. ii., 124. In comit. Westm. Cumb.  
 et Lancs. frequens. 1800. Smith, Fl. Brit., I., 323-4. It is frequent,  
 as Hudson remarks, in Westm., Cumb., and Lancs. 1828. Smith, Eng.  
 Fl., ed. ii., vol. 2, 50. As before. 1835. Watson, New B. G., II., 301.  
 'Frequent, Eng. Fl.'] 1864. Linton, Lake Country, 323. About  
 Coniston Lake and rivers; not common. 1869. Aspland's Guide,  
 Within six miles of Grange, A. Mason. 1874. J. of B., Miss E.  
 Hodgson. Frequent near old halls and farmhouses in Furness.  
 1885. Baker's Flora, 112. Miss Hodgson repeated. By the higher  
 road between Grange and Lindale; road-side near Wray Castle,  
 J. G. Baker.
- Chærophyllum temulum** L. C.F.R., 1633.  
 1874. J. of B., Miss E. Hodgson. No locality.
- [**Anthriscus vulgaris** Pers. C.F.R., 1632.  
 Included by Linton, Lake Country, 1864, without county or  
 locality; and Mr. Baker, who gives only Cumberland stations, says  
 it is 'rare.']]
- Anthriscus sylvestris** Hoffm. C.F.R., 1548.  
 1864. Linton, Lake Country, 323. No locality. Although there  
 are *no printed* records that I can find as definitely in N. Lancs.,  
 I know it is by no means rare, so Linton gets the benefit of the  
 doubt.

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ERRATUM.—I have just been reading these papers through, and I find a statement on p. 58, 1895, for which I can give no excuse. It is there stated that W. Dickinson, the Cumberland botanist, wrote the Windermere list in Martineau's Guide, ed. of 1861. *That* list was written by Mr. Clowes, of Windermere, and the Cumbrian plants by Dickinson. How the mistake slipped me in the proof I do not know, but the real facts were quite well known to me. Therefore, will readers please place Mr. Clowes' name in place of Dickinson's—for instance, in list p. 58 (the foot-note is correct), Feb. 1895, and add the doctor's name under 1855, on p. 121, 1894?



## THE LAND AND FRESHWATER MOLLUSCA OF CHESHIRE.

CHARLES OLDHAM,

*Romiley, Cheshire.*

THE greater part of the county of Chester is an extensive and nearly level plain, which lies between the Mersey and the Dee.

Near Audlem, on the south-eastern border, there is a small patch of the Lower Lias, but, with that exception, the whole plain rests upon the New Red Sandstone, which is frequently covered to a considerable depth by glacial clays, sands, and gravels. East of the great fault, which coincides roughly with a line drawn from Stockport through Congleton to a point on the Shropshire border near Alsager, the ground rises abruptly, and attains an altitude of from 1,800 to 1,900 feet in several places. Except in the cloughs and river valleys, this hill country is bare and treeless, the Permian Rocks of which it is composed being even less suited to the needs of land shells than is the Trias of the plain.

Although a considerable proportion of the British terrestrial species have been recorded from Cheshire, the number of individuals inhabiting any one spot is far smaller than in chalk or limestone districts, and, as might be expected from the absence of these formations, *Helix lapicida*, *Pupa secale*, *Cæcilioides acicula* and *Cyclostoma elegans* have never been taken in the county. Such thick-shelled species as *Helix aspersa*, *nemoralis*, *hortensis* and *arbustorum* are comparatively rare; and the scarcity of *Helix rufescens* is remarkable. In places where the river valleys are well wooded, as at Marple and Romiley on the upper Mersey, and Ashley on the Bollin, some of the smaller *Helices* and various species of *Hyalinia* are plentiful; whilst *Hyalinia excavata*, a rare shell on limestone, so far as my experience goes, is in many places abundant. In Wirral, the hammer-headed peninsula between the Dee and Mersey estuaries, *Helix caperata*, *H. acuta*, and *Pupa muscorum* are found on the coast, but *H. virgata*, if it occurs at all, is very rare. With the exception of *Geomalacus maculosus* and two species of *Testacella*, all the slugs have been taken in Cheshire; though the distribution of several of the species is little known, and the neglect of these interesting creatures by local malacologists is greatly to be deplored.

If the land shells are comparatively scarce, the reverse obtains with the freshwater species. It is true that the streams in the hill



country are too swift to suit the habits of any species but *Ancylus fluviatilis* and the ubiquitous *Limnæa peregra*, and that after reaching the plain, apart from their frequently polluted condition, they flow over stony beds and lack the aquatic vegetation which characterises more sluggish streams. Those canals, however, which are still unpolluted, contain several interesting species; and the many meres, which are such a pleasing feature in the Cheshire landscape, afford a home for others. In addition to the meres and larger pools, the whole plain is studded with small ponds, or 'pits' as they are called locally, whence in former days the farmers obtained marl for manuring their fields. Many of these pits are now choked with vegetation and are well stocked with *Limnæa* and *Planorbis*, whilst in their muddy bottoms various species of *Anodonta*, *Sphærium* and *Pisidium* flourish and abound. There are none of these marl-pits in the hill country, where freshwater shells are as scarce as those inhabiting the land.

*Unio margaritifera* is found in the upper reaches of the Dee, beyond the county border, but, so far as I know, it has never been taken in Cheshire waters. *U. pictorum* and *U. tumidus* are very local, and are absent from many of the meres and larger pools, where one would expect to find them associated with the two species of *Anodonta* which abound in such habitats.

The freshwater Gastropods are well represented; *Amphipeplea glutinosa* and *Neritina fluviatilis* being the only noteworthy absentees. Several of the canals and streams are apparently well suited for the requirements of the latter species, and its absence is curious. *Limnæa involuta*, a doubtful species, which is confined to one Irish station, together with *Planorbis dilatatus* and *Paludestrina jenkinsi* are the only other members of the class which do not occur; and it is not improbable that the two last will before long find their way into some of the Cheshire canals.

Our subject can already boast of a considerable literature, which consists mainly of lists of species which have been taken in various restricted localities. I believe, however, that no attempt has hitherto been made to focus this knowledge into an account of the fauna of the county as a whole.

The following are the principal lists which have come under my notice:—

DAVID DYSON.—'Land and Freshwater Shells of the District around Manchester.' 1850.

ISAAC BYERLEY.—Fauna of Liverpool [Proc. Liverpool Lit. and Phil. Soc., 1853-1854, Appendix].



\*H. J. BELLARS.—‘Illustrated Catalogue of British Land and Freshwater Shells.’ 1858.

JOHN HARDY.—‘British Terrestrial and Fluvial Mollusca, with the localities of the Manchester species.’ [Manchester Scientific Students’ Association Report, 1864, Appendix].

JOHN HARDY.—Appendix to above. 1865.

J. COSMO MELVILL.—Mollusca [British Association Handbook to Manchester]. 1887.

J. G. MILNE AND C. OLDHAM.—‘The Molluscan Fauna of the Bowdon District of Cheshire.’ [Journal of Conchology, vol. vii. 1892-1894.]

In the Proceedings of the Chester Society of Natural Science [No. iii, 1885] is a list of the Land and Freshwater Shells of the Society’s district, by G. W. Shrubsole. The compiler speaks of *H. rufescens* and *H. fulva* as doubtful British species, and records *C. biplicata* and *B. montanus* from localities in North Wales!—statements which render the list too unreliable for serious consideration. The Rev. H. H. Higgins’ account of the Liverpool Land and Freshwater Mollusca (Proc. Liverpool Nat. Field Club, 1890) is little more than a reprint of Byerley’s list.

Apart from the detailed information contained in the lists, there are many scattered records of Cheshire mollusca in ‘The Journal of Conchology,’ ‘The Naturalist,’ ‘The Naturalists’ Scrap-book’ (Liverpool, 1863-1864), Jeffreys’ ‘British Conchology,’ and the ‘Proceedings’ of local scientific societies.

I have examined the local mollusca in the Grosvenor Museum, Chester, which include a collection made by Mr. A. J. Nixon, sometime schoolmaster at Manley.

It remains to acknowledge my indebtedness to Mr. J. B. Tomlin for a list of the species found by him in the neighbourhood of Chester; to Mr. K. H. Jones for notes on a collection made at Disley; to Captain W. J. Farrer for a detailed account of the species collected by him in Wirral in 1890, and to Messrs. L. E. Adams, R. Cairns, E. Collier, J. G. Milne, T. Rogers, R. Standen, and H. Walmsley, whose invaluable assistance in the shape of notes and specimens will be duly indicated by their respective initials. My thanks are due in a special measure to Mr. W. Denison Roebuck for assistance in naming the varieties of the Slugs; to Mr. J. W. Taylor, who from time to time has placed me under many obligations by determining some of the more critical forms in the shelled

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\*Bellars was Hon. Secretary and Curator of the Chester Natural History Society, and his book deals largely with shells found in the vicinity of that city.



species, and to Mr. G. Sheriff Tye for help in naming the varieties of *Unio* and *Anodonta*.

The nomenclature and arrangement I have adopted are, with a few slight modifications, those of the Conchological Society's List of 1892.

## GASTROPODA.

### Fam. *ARIONIDÆ*.

**Arion ater** (L.). Universally distributed and plentiful. I have found this slug crawling on ling at an altitude of over 1,700 ft., on the hills near Macclesfield, and in Longdendale.

**Arion ater** v. **brunnea** Rbk. Not uncommon. Birkenhead (W.J.F.). Disley (K.H.J.). Sale, Northenden, Ringway, Rostherne (Milne and Oldham). Higher Peover, Marple, Romiley, Strines, Whaley Bridge.

**Arion ater** v. **plumbea** Rbk. Marple, Romiley, Whaley Bridge.

**Arion ater** v. **succinea** (Müll.). One specimen, Ringway (Milne and Oldham).

**Arion ater** v. **pallescens** Moq. Plentiful in the neighbourhood of Marple, Romiley and Woodley.

**Arion subfuscus** Drap. Not uncommon. Heatley (L.E.A.). Marston near Northwich (J.G.M.). Bowdon, Sale, Northenden, Ringway (Milne and Oldham). Marple, Romiley, Compstall.

**Arion intermedius** Norm. = **A. minimus** Simroth. Generally distributed and common. Ringway, Rostherne, Northenden, Baguley (Milne and Oldham). Heswall, Kingsley near Frodsham; Bickley near Malpas; Sale, Ashley, Strines, Pickmere, Marple, Romiley, Whaley Bridge.

**Arion hortensis** Fér. Common and universally distributed.

**Arion hortensis** v. **subfusca** C. Pfr. Bollington near Bowdon; Sale (Milne and Oldham).

**Arion circumscriptus** Johnst. Probably generally distributed. Bowdon, Sale, Northenden, Rostherne (Milne and Oldham). Chester (J.B.T.). Marston near Northwich (J.G.M.). Marple, Romiley, Strines, Frodsham, Chelford, Marbury, Bollington near Macclesfield.

**Arion circumscriptus** v. **subfusca** Rbk. One in a lane at Carrington (Milne and Oldham).

### Fam. *LIMACIDÆ*.

**Amalia gagates** (Drap.). The rare type form twice—once at Bowdon and once at Sale (Milne and Oldham).



- Amalia gagates** v. **plumbea** Moq. Disley (K.H.J.). Plentiful in nursery-gardens at Sale.
- Amalia gagates** v. **rava** Wlms. One specimen, Ashton-on-Mersey (Milne and Oldham). Plentiful in nursery-gardens at Sale.
- Amalia sowerbyi** (Fér.). Chester (Bellars). Near Jackson's Boat [Sale], on the Cheshire side of the river (Hardy). Gardens at Sale (Milne and Oldham). Manley (Nixon Coll.).
- Limax maximus** L. This variable slug is widely distributed and common in woods and gardens, and upon old walls. Specimens from Sale are referred by Mr. Roebuck to the true type of the species = v. **vulgaris** of Moquin-Tandon.
- Limax maximus** v. **cinerea** Moq. Two specimens from Bowdon (Milne and Oldham).
- Limax maximus** v. **fasciata** Moq. Bowdon, Baguley (Milne and Oldham). Sale, Marple, Romiley.
- Limax maximus** v. **cellaria** D'Arg. Bowdon, Wythenshawe near Northenden (Milne and Oldham). Sale, Romiley.
- Limax maximus** v. **mülleri** Moq. Several specimens in a nursery-garden at Sale.
- Limax cinereo-niger** Wolf. During the summer of 1895 I took about a dozen examples of this slug in woods at Romiley, Compstall, and Marple.
- Limax cinereo-niger** v. **luctuosa** Moq. In the same localities as the type, and in about equal numbers.
- Limax flavus** L. Not common. Chester (Bellars). Nursery-garden at Sale (Milne and Oldham). Birkenhead (W.J.F.). Manley (Nixon Coll.).
- Limax marginatus** (Müll.). Local, and not as a rule plentiful. Numerous at Upton in 1852, upon beech trees (Byerley). Near Congleton (T. D. A. Cockerell, 'Naturalist,' 1886, p. 58). Mere Park and Bowdon (Milne and Oldham). Marple, Romiley.
- Limax marginatus** v. **nemorosa** Baud. Three examples under the bark of a beech at Capesthorpe.
- Limax marginatus** v. **bettonii** Sordelli. Two on a tree-trunk in the Goyt Valley near Errwood Hall; one, Romiley.
- Limax marginatus** v. **fulva** Norm. Two in the Goyt Valley with the last.
- Agriolimax agrestis** L. This destructive species abounds everywhere.



**Agriolimax agrestis** v. **sylvatica** Moq. Sale, Northenden, Chelford, Marple, Romiley, Bowdon, Bickley near Malpas.

**Agriolimax agrestis** v. **albida** Pic. During the summer of 1895 I found three specimens of this variety; one at Romiley, *in coitu* with a typical specimen; one at Compstall, and one at Strines.

**Agriolimax agrestis** v. **tristis** Moq. Bowdon, Sale, Northenden (Milne and Oldham).

**Agriolimax lævis** Müll. Not uncommon in damp woods, ditches, and on the borders of the meres. Ashley Hall, Butts Clough near Bowdon (Milne and Oldham). Whaley Bridge, Brooklands, Northenden, Strines, Romiley, Marple, Poynton, Northen Etchells, Knutsford, Lymm dam, Pickmere Mere, Bar Mere, Marbury Mere, Capesthorne, Bollington near Macclesfield.

Fam. *TESTACELLIDÆ*.

**Testacella scutulum** Sby. Hoole and Upton near Chester (J. W. Taylor, 'J. of C.,' vol. v., p. 345). Nursery gardens at Sale (Milne and Oldham *vide* T. Rogers).

Fam. *VITRINIDÆ*.

**Vitrina pellucida** (Müll.). Generally distributed. Most plentiful in damp woods.

Fam. *ZONITIDÆ*.

**Hyalinia cellaria** (Müll.). Generally distributed and plentiful.

**Hyalinia cellaria** v. **albina** (Moq.). Disley (K.H.J.). Liverpool Road, Chester (J.B.T.).

**Hyalinia alliaria** (Miller). Generally distributed and plentiful.

**Hyalinia alliaria** v. **viridula** (Jeff.). Bowdon, Ringway, Ashley Hall, Lymm (Milne and Oldham). Disley (K.H.J.).

**Hyalinia glabra** (Stüder). Very local. This species was discovered by Mr. Thomas Rogers at Marple Wood, in 1869. The late Dr. Jeffreys, to whom specimens were sent, believed it to be an addition to the British fauna, and described it as such in the 'Annals and Magazine of Natural History' for May 1870. The shell had, however, been previously noticed by Gray, who believed it to be a variety of *H. alliaria* (*cf.* J. W. Taylor, 'J. of C.,' vol. iv., p. 81). Mr. K. H. Jones has collected it at Disley, and it is plentiful in woods at Romiley and Woodley, but has not been found in any other Cheshire locality.

**Hyalinia glabra** v. **viridans** (Ckll.). Disley (K.H.J.).



**Hyalinia nitidula** (Drap.). Generally distributed, but not so plentiful as *H. cellaria* and *H. alliaria*.

**Hyalinia radiatula** (Alder). Moston near Chester (Bellars). Near Congleton (T. D. A. Cockerell, 'Naturalist,' 1886, pp. 57-58). Ashley Hall, Butt's Clough near Bowdon; Hale, Bollington near Bowdon; Baguley (Milne and Oldham). Eastham, Woodchurch (W.J.F.). Upton near Chester (J.B.T.). Rostherne, Marple, Oakmere, Pickmere.

**Hyalinia pura** (Alder). Generally distributed and not uncommon.

**Hyalina pura** v. **nitidosa** (Fér.). As widely distributed as the type, with which it is generally associated.

**Hyalinia crystallina** (Müll.). Widely distributed and plentiful.

**Hyalinia fulva** (Müll.). Widely distributed, but does not, as a rule, occur in great numbers.

**Hyalinia nitida** (Müll.). Rather local; usually found in very damp situations. Oxton (Byerley). Between Woodchurch and Noctorum (Byerley *vide* Webster). Between Warrington and Knutsford (T. D. A. Cockerell, 'Naturalist,' 1886, p. 56). Millington, Sinderland, Gatley (Milne and Oldham). Chester (J.B.T.). Canal bank, between Romiley and Woodley (R.C.). Marston near Northwich, Pickmere Mere, Marple.

**Hyalinia excavata** (Bean). Not uncommon. Bidston (Byerley *vide* Webster). Ashley, Hale, Rostherne, Dunham, Sale, Sinderland, Wythenshawe, Northenden (Milne and Oldham). Heatley (L.E.A.). Delamere Forest (Nixon Coll.). Eastham (W.J.F. and E.C.). Disley (K.H.J.). Ringway, Romiley, Marple.

**Hyalinia excavata** v. **vitrina** (Fér.). Not usually associated with the type, although at Marple, where the variety is plentiful, a few typical specimens may generally be collected on the same ground. Butt's Clough near Bowdon; Rostherne (Milne and Oldham). Delamere Forest (Nixon Coll.). Eastham (W.J.F. and E.C.). Disley (K.H.J.). Marston near Northwich. Whaley Bridge.

Fam. *HELICIDÆ*.

**Helix rotundata** Müll. Universally distributed and common.

**Helix rotundata** v. **alba** Moq. Single specimens found occasionally with the type. Between Upton and Saughall-Massie (Byerley *vide* Webster). Near Congleton (T. D. A. Cockerell, 'Naturalist,' 1886, p. 58). A specimen labelled 'Cheshire' in the McAndrew collection at Cambridge (A. H. Cooke, 'J. of C.' vol. iii, p. 388). Marston near Northwich (J.G.M.). Marple, Peckforton.



**Helix pygmæa** Drap. Local but generally plentiful where it occurs. Ashley Hall, and in the Bollin Valley at Butt's Clough and Castle Mill (Milne and Oldham). Knutsford (T.R.). Leasowe (W.J.F.). Compstall, Wythenshawe near Northenden.

**Helix aculeata** Müll. In woods, generally plentiful where it occurs. Hooton (F. P. Marrat, 'Naturalist's Scrap-book,' p. 37). Ashley Hall, Butts Clough near Bowdon (Milne and Oldham). Romiley, Compstall, Marple, Wythenshawe near Northenden.

**Helix pulchella** Müll. This species is fairly plentiful on the coast in Wirral (*cf.* Byerley, and F. P. Marrat, 'Naturalist's Scrap-book,' p. 37), but is rare elsewhere. Hale Moss, Bollington near Bowdon (Milne and Oldham). Lower Peover.

**Helix pulchella** v. **costata** Müll. Bellars' figure and description of *H. pulchella* apply to this form. He records it from Delamere Forest, Upton, and Liverpool Road, Chester. Byerley gives as localities—Saughall-Massie, Hilbre, and Hoylake.

**Helix aspersa** Müll. North-east of a line drawn from Runcorn through Northwich to Congleton this species is rare. Dyson and Hardy record it from gardens at Bowdon and Dunham Massey, where it is still to be found. Mr. E. Collier informs me that in 1876 and 1877 it was abundant in a garden at Marple, where it had probably been introduced. Professor T. D. A. Cockerell found one specimen between Knutsford and Chelford ('Naturalist,' 1886, p. 57). Throughout Wirral, and in the remaining part of the county it is fairly plentiful.

**Helix aspersa** v. **flammea** Picard. Mouldsworth (Nixon Coll.).

**Helix nemoralis** L. Dyson, writing in 1850, described this species as plentiful in the part of Cheshire adjoining Manchester. Various causes, including, perhaps, the poisoning of the herbage by smoky rain, and the persistent persecution by gamekeepers of birds of prey, which has resulted in an enormous increase in the numbers of Blackbirds and Thrushes, have, however, almost exterminated it in the north of the county, and it is now an unusual occurrence to find even a single specimen. In Wirral it is plentiful, especially on the coast sandhills, where most of the specimens are of the typical yellow colour with more or less coalescent bands. Throughout the remainder of the county it is found in varying degrees of plenty, but is nowhere as common as in the limestone districts of Derbyshire.



- Helix nemoralis** v. **rubella** Moq. The forms 00000 and 00300 are not uncommon. One, 00345, Bickley near Malpas.
- Helix nemoralis** v. **libellula** (Risso). The forms 00000 and 00300 are about as plentiful as the corresponding forms of the var. *rubella*. Bellars figures 00045 from Chester.
- Helix nemoralis** v. **castanea** Moq. Specimens with the band-formula 00000, Mouldsworth (Nixon Coll.).
- Helix nemoralis** v. **petiveria** Moq. One specimen, 12345, between Chelford and Congleton (T. D. A. Cockerell, 'Naturalist,' 1886, p. 57).
- Helix hortensis** Müll. Very local. Higher Tranmere (Byerley *vide* Warrington). Chester (Bellars). Mouldsworth, Romiley, Woodley, Whaley Bridge.
- Helix hortensis** v. **coalita** Moq. There are specimens with the five bands coalesced from Ashton Heys, near Mouldsworth, in the Nixon Collection.
- Helix hortensis** v. **lutea** Moq. Yellow shells without bands seem to be almost as plentiful as the type. Chester (Bellars). Mouldsworth (Nixon Coll.). Romiley, Whaley Bridge.
- Helix hortensis** v. **incarnata** Moq. Bellars figures a specimen with the band-formula 00000 from Chester.
- Helix arbustorum** L. This species, like *H. nemoralis*, must have decreased of recent years in the neighbourhood of Manchester (*cf.* Dyson and Hardy). At the present time it is local and not, as a rule, abundant. In the Bollin valley at Butts' Clough and Cotterill Clough, and at Gatley Carrs (Milne and Oldham). Woodchurch, Noctorum, Upper and Lower Tranmere (Byerley). Liscard (Byerley *vide* S. Archer); Mouldsworth (Chester Museum Coll.). Winsford (E.C.). It is to be found sparingly in the valley of the Goyt and Mersey from Romiley to Whaley Bridge.
- Helix arbustorum** v. **conoidea** Westl. Whaley Bridge.
- Helix arbustorum** v. **fuscescens** D. and M. Cotterill Clough near Ashley (Milne and Oldham). Romiley.
- Helix rufescens** Penn. Very rare. Bellars, who accurately describes and figures this species, records it from Chester.
- Helix hispida** L. Not common. Bollington near Bowdon; Gatley (Milne and Oldham). Heatley (L.E.A.). Disley (K.H.J.), Upton near Chester (J.B.T.). Strines, Lostock Gralam.
- Helix hispida** v. **hispidosa** Mousson. Generally distributed and plentiful.



**Helix hispida** v. **albida** Jeff. Liverpool Road, Chester (J.B.T.).

**Helix granulata** Alder. Bellars records this species, as *H. sericea*, from Tarvin Road, Chester. The shell which he figures and describes as *H. granulata* is not that species.

**Helix fusca** Mont. Local. Between Upton and Moreton (Byerley). \*Ashley (Melvill *fide* Rogers). Plentiful in woods at Marple, Compstall and Romiley.

**Helix itala** L. Navigation Cop, Chester (Bellars).

**Helix itala** v. **hyalozonata** Ckll. Two specimens, Navigation Cop, Chester (J.B.T.).

**Helix itala** v. **monozona** Pascal. Not uncommon, Navigation Cop, Chester (J.B.T., 'Naturalist,' 1887, p. 20).

**Helix caperata** Mont. Navigation Cop, Chester (Bellars). Meols, Hoylake (Byerley). Leasowe, Oxton (W.J.F.).

**Helix caperata** v. **fulva** Moq. Navigation Cop, Chester (J.B.T., 'Naturalist,' 1887, p. 20).

**Helix caperata** v. **alba** Picard. Navigation Cop, Chester (J.B.T., *loc. cit.*).

**Helix virgata** DaCosta. Hilbre Island (T. S. Marratt *fide* Gregson, 'Naturalist's Scrap-book,' p. 23). When at Hilbre, in 1894, I looked for this species in vain.

**Helix acuta** Müll. Leasowe, Little Meols (Byerley).

**Helix acuta** v. **strigata** (Menke). Captain Farrer and Mr. Standen inform me that this variety is as plentiful as the type at Meols.

Fam. *PUPIDÆ*.

**Buliminus obscurus** (Müll.). Rare. In the Bollin Valley at Cotterill Clough (Milne and Oldham). Near Chester (J.B.T.). Marple Aqueduct and Romiley.

**Pupa anglica** (Fér.). Compstall near Marple (R. Standen, 'J. of C.', vol. vii., p. 89).

**Pupa cylindracea** (DaCosta). Not common. Bellars mentions several stations for this species in the neighbourhood of Chester. New Brighton (Dyson). Cotterill Clough near Ashley; Marple (Hardy). Oxton, Eastham (W.J.F.). Butt's Clough near Bowdon (H. Walmsley). North Rode, Woodley, Romiley.

**Pupa cylindracea** v. **curta** Westl. Eaton Park near Chester (J.B.T.).

\*Cotterill Clough is the exact locality (*cf.* Milne and Oldham).



**Pupa muscorum** (L.). Rare except on the coast. City walls and Navigation Cop, Chester (Bellars). New Brighton (Dyson). Leasowe (Byerley). Meols, West Kirby (W.J.F.). The only inland locality of which I have any record is Marple aqueduct (Hardy), and I can find no trace of the shell there now.

**Vertigo antivertigo** (Drap.). Only recorded from Wirral. Near Oxton, Woodchurch (Byerley *vide* Cameron). Bromborough Wood, Marshy ground at Eastham (F. P. Marrat, 'Naturalist's Scrap-book,' p. 55). Specimens, labelled 'Cheshire,' in the McAndrew Collection at Cambridge are probably from some Wirral locality (*cf.* A. H. Cooke, 'J. of C.,' vol. iii, p. 389).

**Vertigo pygmæa** (Drap.). Swampy ground near Oxton (Byerley *vide* Cameron). Ashley Mill and Ashley Hall (Hardy). Meols, Eastham (W.J.F.).

**Vertigo alpestris** Alder. Two specimens at Meols, beneath stones with *P. muscorum* in 1889 (R.S.).

**Vertigo substriata** (Jeff.). Near Woodchurch (Byerley *vide* Webster). Swampy parts of Bromborough Wood (T. S. Marratt, 'Naturalist's Scrap-book,' p. 55). Specimens, labelled 'Cheshire,' in the McAndrew Collection, are probably from one of these localities (*cf.* A. H. Cooke, 'J. of C.,' vol. iii, p. 389). Butts' Clough, near Bowdon—one in 1888 and one in 1893 (*cf.* Milne and Oldham).

[**Vertigo pusilla** Müll. In the Report of the Manchester Scientific Students' Association for 1864 (p. 15), Marple Wood is given as a locality for this species, on the authority of Hardy; but, as the shell is not included in his list, and as it has never been taken at Marple by any of the Manchester conchologists who have collected there in recent years, there can be no doubt that the record is an erroneous one].

**Vertigo edentula** (Drap.). The commonest species of the genus. Blacon Point, Chester (Bellars). Between Upton and Saughall-Massie (Byerley *vide* Webster). New Ferry (Byerley *vide* Warrington). Eastham (F. P. Marrat, 'Naturalist's Scrap-book,' p. 55); Butt's Clough near Bowdon (Milne and Oldham). Very abundant in woods at Compstall, Romiley, and Marple. I have also taken it at Wythenshawe near Northenden.

**Balea perversa** (L.). Reported only from Chester and localities in Wirral. Water Tower, Chester (Bellars). On willows, Claughton Park (F. P. Marrat, 'Naturalist's Scrap-book,' p. 55). Leasowe (W.J.F.).

**Clausilia perversa** (Pult.). Rather uncommon except in Wirral. Queen's Park and Water Tower, Chester (Bellars). Prenton



Wood, Rock Ferry, Bromborough, Parkgate, New Ferry (Byerley). Dunham Park, Marple, Disley (Hardy). In the Bollin Valley, at Castle Mill and Ashley Mill (Milne and Oldham). Oxton, Woodchurch (W.J.F.). This species is plentiful in the valley of the Goyt and Mersey, from Romiley to Whaley Bridge.

**Clausilia perversa** v. **gracilior** Jeff. Romiley (E.C.).

**Clausilia perversa** v. **tumidula** Jeff. Upton near Chester (J.B.T.).

**Clausilia laminata** (Mont.). Very local. It is fairly plentiful in the valley of the Goyt and Mersey, from Romiley to Whaley Bridge. Hardy records it from Cotterill Clough, in the Bollin valley, where it is rather scarce (*cf.* Milne and Oldham).

Fam. *STENOGYRIDÆ*.

**Azeca tridens** (Pult.). This is one of our most local species. Marple Wood (Melvill *vide* Rogers). Plentiful on the opposite bank of the Mersey at Oakwood, Romiley.

**Cochlicopa lubrica** (Mull.). Generally distributed and plentiful.

**Cochlicopa lubrica** v. **hyalina** Jeff. Hale, Ashley Hall (Milne and Oldham).

Fam. *SUCCINEIDÆ*.

**Succinea putris** (L.). Not uncommon. Queen's Park, Canal, Chester (Bellars). Jackson's Boat, Sale (Dyson). Gatley, Knutsford (Milne and Oldham). Ellesmere Port (Nixon Coll.). Heatley (L.E.A.). Oxton, Bidston, Meols, Moreton (W.J.F.). Adlington, Romiley.

**Succinea elegans** Risso. Not uncommon. Hale Moss, Seaman's Moss (Hardy). Bollington near Bowdon; Ashley Hall (Milne and Oldham). Ellesmere Port (Nixon Coll.). Marple (R.C.). Heatley (L.E.A.). Oxton, Meols, Woodchurch (W.J.F.). Wallasey.

**Succinea elegans** v. **minor** Jeff. Moreton (E.C.).

**Succinea elegans** v. **ochracea** Betta. Meols (W.J.F. and R.S.). Disley (K.H.J.).

Fam. *AURICULIDÆ*.

**Carychium minimum** Müll. Widely distributed and plentiful in woods and damp places.

Fam. *LIMNÆIDÆ*.

**Segmentina nitida** (Müll.). Rare. This species is described and accurately figured by Bellars as *Planorbis nitidus*. He



records it from Tarvin Road and Lache Lane, Chester. Captain Farrer has found it in a ditch at Woodchurch.

**Planorbis fontanus** (Lightfoot). Canal near Hoole Lane Bridge, Chester (Bellars). Ashley Mill, Hale, Ringway, Dunham, Peelcauseway, Millington, Northern Etchells (Milne and Oldham). Alvanley (Nixon Coll.). Birkenhead, Bidston (W.J.F.). Canal, Marple (R.C.). Great Budworth (J.G.M.). Adlington, Handforth, Bramhall.

**Planorbis fontanus** v. **albida** Nelson. Ashley Mill in 1885 (Milne and Oldham).

**Planorbis nautilus** (L.). Upton near Chester (Bellars). Great Meols (Byerley). Ashley, Ringway, Warburton, Hale; specimens from the last locality often scalariform (Milne and Oldham). Manley (Nixon Coll.). Leasowe, Bidston (W.J.F.). Mollington (J.B.T.). High Lane (K.H.J.). Adlington, Knutsford, Woodley.

**Planorbis nautilus** v. **crista** (L.). Ringway, Bow Green near Bowdon; Bowdon Vale (Milne and Oldham).

**Planorbis albus** (L.). Plentiful in canals and ponds everywhere; usually on *Potamogeton*.

**Planorbis parvus** Say. Only recorded from Leasowe. 'Was abundant in 1850, in a ditch near Leasowe. The district having been flooded by the inroad of salt water during stormy weather at the latter part of that year, when the embankment was broken through, this species has disappeared' (Byerley *vide* Cameron and Marratt). Captain Farrer informs me, however, that he obtained one or two specimens at Leasowe in 1890.

**Planorbis spirorbis** Müll. Plentiful and universally distributed.

**Planorbis vortex** (L.). Even more plentiful than the last species.

**Planorbis carinatus** Müll. Blacon Point, Chester (Bellars). Ashley, Hale, Peelcauseway, Rostherne, Millington, Knutsford (Milne and Oldham). Great Budworth (J.G.M.). Oxton (W.J.F.). Bar Mere, Handforth, Peak Forest Canal from Woodley to Marple.

**Planorbis umbilicatus** Müll. Tarvin Road and Queen's Park, Chester (Bellars). Ditches in Sale meadows, Baguley (Milne and Oldham). Helsby Marsh (Nixon Coll.). Marple (R.C.). Rostherne Mere, Knutsford, Brooklands, Quoisley Mere, Ellesmere Canal near Bickley.

**Planorbis umbilicatus** v. **rhombea** (Turt.) Ditch behind the Asylum, Chester (J.B.T.). Canal between Dukinfield and Hyde (R.C.).



- Planorbis corneus** (L.). Hampson's Pit, Baguley, probably introduced (Milne and Oldham). Dukinfield (R.C.). In 1894 I found this species abundant in a ditch in Sale meadows. It was certainly not there a few years since, and has probably been introduced by a dealer.
- Planorbis contortus** (L.). Widely distributed and not uncommon in pits and ditches.
- Planorbis contortus** v. **albida** Jeff. Peak Forest Canal, Marple (Melvill *vide* T. Rogers). Mr. E. Collier informs me that he took ten specimens in this locality in 1876, and Mr. R. Cairns has obtained it there in more recent years.
- Bullinus hypnorum** (L.). Ponds and ditches, but not common. Tarvin Road and Queen's Park, Chester (Bellars). Hale Moss, Partington, Baguley (Milne and Oldham). Mollington (J.B.T.). Oxton, along the coast from Leasowe to West Kirby (W.J.F.). Marston near Northwich; Mobberley, Wallasey.
- Physa fontinalis** (L.). Plentiful and generally distributed. Captain Farrer has shells of a beautiful copper colour from Meols.
- Physa fontinalis** v. **inflata** Moq. Helsby Marsh (Nixon Coll.). Meols, Oxton (W.J.F.).
- Physa fontinalis** v. **albina** Jeff. Birkenhead (Jeffreys *vide* Webster, 'British Conchology,' vol. i, p. 99).
- Limnæa peregra** (Müll.). Universally distributed and abundant, varying greatly in size and form.
- Limnæa peregra** v. **inflata** Kob. Pond, Woodley (E.C.).
- Limnæa peregra** v. **ovata** Drap. This form is common throughout the county.
- Limnæa peregra** v. **lacustris** (Leach). Mr. L. E. Adams has specimens from Poynton which are referred by Mr. J. W. Taylor to this variety.
- Limnæa peregra** v. **maritima** Jeff. Hoylake (W.J.F.).
- Limnæa peregra** v. **candida** Porro. Meols (W.J.F.).
- Limnæa peregra** v. **labiosa** Jeff. Ringway (Milne and Oldham). Bredbury, Romiley.
- Limnæa auricularia** (L.). Widely distributed but not generally found in large numbers. Blacon Point, Chester (Bellars). Upton, Upper Tranmere (Byerley *vide* Warrington). Baguley (Milne and Oldham). Oxton, Moreton, Bidston, Woodchurch (W.J.F.). Peak Forest Canal, Marple (R.C. and E.C.). Marston near Northwich; Adlington, Neston. Very fine and plentiful in ponds at No Man's Heath near Malpas.



**Limnæa auricularia** v. **acuta** Jeff. Gawsworth Fishponds (E.C.).  
Parkgate.

**Limnæa stagnalis** (L.). In canals and ponds throughout the county. Mr. Tomlin has extremely eroded and distorted specimens from ponds at Upton, and I have found similar shells in a shallow pond at Gernet, near Macclesfield. Under favourable conditions this species attains a great size. In 1884 I placed some shells averaging 37 mm. in length in a pit in Baguley, and found that their descendants had attained an average length of 47 mm. by 1890 (*cf.* Milne and Oldham).

**Limnæa stagnalis** v. **lacustris** Stüder. Upton near Chester (J.B.T.).

**Limnea palustris** (Müll.). In ponds and ditches throughout the county.

**Limnæa palustris** m. **decollatum** Jeff. Wilmslow (L.E.A.). High Lane (K.H.J.). Millington near Bowdon. A specimen of this monstrosity, collected by the Rev. H. G. Barnacle at Chester, is figured by Mr. J. W. Taylor ('Monograph of the Land and Freshwater Mollusca of the British Isles,' Part i, p. 30).

**Limnæa truncatula** (Müll.). Plentiful in ditches and swampy places. At Romiley I have taken ventricose specimens with expanded lips.

**Limnæa glabra** (Müll.). Local, but generally plentiful where it occurs. I have always found this species associated with *B. hypnorum*, *P. spirorbis*, and *P. pusillum*. Tarvin Road, Chester (Bellars). Ditch between Saughall-Massie and Greasby, and at Higher Tranmere; truncated specimens in a pond between Eastham and Willaston (Byerley *vide* Cameron and Marratt). Baguley (Milne and Oldham). Pond between Lymm and Thelwall (L.E.A.). Hale Moss (H.W.). Upton near Chester (J.B.T.). Marston near Northwich; Mobberley.

**Ancylus fluviatilis** Müll. In canals and running streams throughout the county.

**Ancylus fluviatilis** v. **gibbosa** Bourg. Woodchurch (W.J.F.); Disley (K.H.J.).

**Ancylus fluviatilis** v. **albida** Jeff. Woodchurch (W.J.F.).

**Velletia lacustris** (L.). On leaves of *Nymphæa*, *Nuphar*, and *Potamogeton* in ponds, canals, and meres. Blacon Point, Chester Canal (Bellars). Ponds at Mere, Cotterill Clough, and Hale (Milne and Oldham). Delamere (Nixon Coll.). Pond, Rostherne (L.E.A.). Canal, Congleton (E.C.). Meols, Leasowe,



Oxton (W.J.F.). Disley (K.H.J.). Poynton, Handforth, Marple Park, Pickmere Mere.

Fam. *ACICULIDÆ*.

**Acicula lineata** (Drap.). Marple; a single shell found in 1866, and another in 1867 (R. Standen, 'J. of C.,' vol. vi, p. 162.).

Fam. *PALUDINIDÆ*.

**Viviparus contectus** (Millet). Very fine in Hampson's Pit, Baguley, whence I have taken specimens 45 mm. in length. The species was introduced some thirty years ago, from the Twenty Pits, Moss Side, Manchester. I have placed shells from Hampson's Pit in other pits in Baguley and Brooklands, in which they have become quite acclimatised (*cf.* Milne and Oldham).

**Viviparus viviparus** (L.). Canal, Chester (Bellars); Canal, Poynton, Peak Forest Canal from Hyde to New Mills, Ellesmere Canal, Bickley near Malpas; Grand Trunk Canal, Marston near Northwich.

**Bythinia tentaculata** (L.). Canals, brooks and ponds in many places. Queen's Park, Blacon Point, and Chester Canal (Bellars). Baguley, Rostherne Brook, Bollington near Bowdon (Milne and Oldham). Meols, Leasowe, Birkenhead (W.J.F.). Canal, Poynton, Peak Forest Canal from Woodley to New Mills; Mouldsworth, Marston near Northwich; Cutting between Pickmere and Budworth Meres; Bar, Quoisley and Marbury Meres.

**Bythinia tentaculata** m. **decollatum** Jeff. Lostock Gralam (J. G. Milne, 'Naturalist,' 1886, p. 78). Chester (J. B. Tomlin, 'Naturalist,' 1886, p. 79).

**Bythinia leachii** (Shepp.). Rare. Blacon Point near Chester (Bellars). Stream near Meols Station (W.J.F.).

Fam. *VALVATIDÆ*.

**Valvata piscinalis** (Müll.). Not uncommon. Blacon Point and Chester Canal (Bellars). Ashley, Rostherne Brook, Brooklands (Milne and Oldham). Meols, Leasowe, Hoylake, West Kirby, Wallasey, Birkenhead (W.J.F.). Adlington, Marston near Northwich; Bar Mere, Ellesmere Canal, Bickley; Cutting between Pickmere and Budworth Meres, Marple.

**Valvata cristata** Müll. Much rarer than the last. Blacon Point, Chester Canal (Bellars). Ditches between Leasowe and the Great Meols, ditches and ponds between Upton and Greasby (Byerley *vide* W. Webster). Pond below Noctorum (Byerley *vide* Cameron). Pond, Oxton (W.J.F.). Budworth Mere.



PELECYPODA.

Fam. *UNIONIDÆ*.

**Unio tumidus** Phil. Rare. Canal, Chester (Chester Museum Coll.). Peak Forest Canal, Disley (K.H.J.). Sparingly in the same canal at Marple; very fine specimens with brown epidermis in Budworth Mere near Northwich.

**Unio pictorum** (L.). Rather more common than the last species. River Weaver near Northwich (Dyson). Canal, Chester (Bellars). Peak Forest Canal, Disley (K.H.J.). Plentiful in the same canal at Marple Locks, which has long been known as a station by Manchester collectors; Bar Mere near Malpas.

**Unio pictorum** v. **curvirostris** Norm. Peak Forest Canal, Disley (K.H.J.). Plentiful in the same canal at Marple.

**Anodonta cygnea** (L.). Plentiful throughout the county in canals, streams, ponds, and meres. In the Chester Museum is a specimen  $8\frac{1}{2}$  inches in length, which was taken from a pond at Mollington in August 1887. I have collected shells from Pickmere Mere which are identical with those from Combermere Mere, figured by Captain Brown ('Illustrations of the Land and Freshwater Conchology of Great Britain and Ireland'), and erroneously referred by him to *A. piscinalis* Nilss.

**Anodonta cygnea** v. **arenaria** (Schröter). Baguley, Over Tabley (Milne and Oldham). Budworth Mere near Northwich.

**Anodonta cygnea** v. **incrassata** (Shepp.). Baguley, Brooklands, Northern Etchels (Milne and Oldham). Lymm dam.

**Anodonta anatina** (L.). Less common than the last species. Canal, Chester (Bellars). Curzon Park, Chester (Chester Museum Coll.). Brook flowing from Rostherne Mere (Milne and Oldham). Peak Forest Canal, Disley (K.H.J.). Plentiful in the same canal at Marple Locks.

**Anodonta anatina** v. **rostrata** Brot. Bar Mere near Malpas.

**Anodonta anatina** v. **elongata** Brot. In the Peak Forest Canal at Marple there occurs with the type a very distinct form which Mr. G. S. Tye refers to this variety, although he does not consider the shells quite typical.

Fam. *SPHÆRIIDÆ*.

**Sphærium corneum** (L.). Very common in canals, ponds and running water.

**Sphærium corneum** v. **pisidioides** Gray. Pond, Rostherne (Milne and Oldham).



- Sphærium corneum** v. **scaldiana** (Norm.). Canal, Congleton (E. Collier, 'J. of C.,' vol. iv, p. 153). Plentiful and very fine in the Peak Forest Canal from Hyde to Whaley Bridge.
- Sphærium corneum** v. **nucleus** (Stüd.). Pond, Oxton (W.J.F.). Pond, Mouldsworth.
- Sphærium corneum** v. **flavescens** (Macgill.). Birkenhead (W.J.F.).
- Sphærium rivicola** (Leach). Fairly plentiful in several canals. Canal, Chester (Bellars). Ellesmere and Chester Canal (Byerley *vide* Cameron). Huddersfield Canal, Staleybridge (Hardy). The same canal at Dukinfield (R.C.). Peak Forest Canal from Hyde to Whaley Bridge.
- Sphærium pallidum** Gray. In canals, very local. It is recorded in the MS. Minute-book of the Manchester Natural History Club that specimens, taken in the Peak Forest Canal at Hatherlow [Marple] Aqueduct on May 13th, 1860, were exhibited at a meeting of the Club in August 1862; and that living specimens from the same canal at Woodley were exhibited at a meeting in August 1864. In July 1885, Mr. E. Collier and I collected one living and one dead example at Woodley, but I have found none since, although I have frequently searched the canal there and elsewhere. Mr. J. B. Tomlin has recently taken specimens in the canal at Stonebridge, Chester, whence it was first recorded by Shrubsole. Mr. R. Cairns has collected it in the canal near Dukinfield Station.
- Sphærium lacustre** (Müll.). Widely distributed but not so common as *S. corneum*. Near the Navigation Cop, Chester (Bellars). Birkenhead, Oxton, Bidston (W.J.F.). Bollington near Bowdon; Dunham, Baguley, Peelcauseway, Sale, Northen Etchells (Milne and Oldham). In ponds at Marston near Northwich; Poynton, Adlington, Bramhall, Plumbley, Kelsall, Bickley near Malpas; Bredbury and Marple; Peak Forest Canal, High Lane; Marbury Mere.
- Sphærium lacustre** v. **ryckholtii** (Norm.). Ashley, Booth Bank near Bowdon (Milne and Oldham). Pond, Bidston (J.W.F.).
- Sphærium lacustre** v. **brochoniana** Bourg. Pond, Baguley (Milne and Oldham).
- Pisidium amnicum** (Müll.). In canals and streams, not uncommon. Canal, Chester, Blacon Point near Chester (Bellars). Most running streams near Chester (J.B.T.). Rostherne Brook, River Birkin, Caldwell Brook, Mobberley, Brooklands (Milne



- and Oldham). Ellesmere Canal, Bickley; Canal, Lostock Gralam; Peak Forest Canal from Hyde to Whaley Bridge.
- Pisidium amnicum** v. **flavescens** Moq. Canal, Congleton (E. Collier, 'J. of C.', vol. iv, p. 153); Peak Forest Canal, New Mills and Woodley.
- Pisidium fontinale** (Drap.). Common and universally distributed. Varies considerably in form and colour.
- Pisidium fontinale** v. **cinerea** Alder. Pond, Bidston Hill (Byerley *vide* Brockholes and Warrington). Manley (Nixon Coll.). Lostock Gralam, Mobberley, Kelsall, Lyme Park.
- Pisidium henslowanum** (Shepp.). Not uncommon in canals and ponds. Pond between Upton and Saughall-Massie (Byerley *vide* W. Webster). Hale Moss (Hardy). Mere, Brooklands, Heyhead near Ringway; Baguley (Milne and Oldham). Handforth, Poynton, Marple Park, Over Tabley, Ellesmere Canal at Bickley, Peak Forest Canal from Woodley to New Mills.
- Pisidium pulchellum** Jemyns. Brownlow Green near Northenden (Milne and Oldham). Curzon Park, Chester (Chester Museum Coll.). Moreton (W.J.F.). Marston near Northwich; Knutsford, Cutting between Pickmere and Budworth Meres.
- Pisidium pusillum** (Gmelin). Abounds everywhere. Varies greatly in size, form and colour.
- Pisidium pusillum** v. **obtusalis** (Lam.). Ditch, Baguley; Oakmere, Cutting between Pickmere and Budworth Meres.
- Pisidium nitidum** Jenyns. In swampy places near Baguley Hall (Milne and Oldham). The hot summer of 1893 dried up these swampy places, and I have been unable to find specimens since then. Elsewhere I have only seen this species from Upton near Chester, whence Mr. J. B. Tomlin has kindly sent me specimens.
- Pisidium milium** Held. The older collectors seem to have overlooked this well-marked species, which is widely distributed and not uncommon. Baguley, Sale, Northen Etchells, Ashley, Mere (Milne and Oldham). Oxton (W.J.F.). Poynton, Adlington, Knutsford, Parkgate, Heswall, Plumbley, Cutting between Pickmere and Budworth Meres, Mouldsworth, No Man's Heath near Malpas; Bredbury, Romiley, Marple Park, Kelsall.

Fam. *MYTILIDÆ*.

- Dreissensia polymorpha** (Pall.). Both Bellars and Byerley record this species from the Ellesmere Canal; Mr. Tomlin states that it swarms in this canal at Chester, 'especially under



bridges.' In 1863, Mr. Leo H. Grindon reported that it was extremely abundant in the lodges of some print-works at Handforth. In October 1887, I could only find dead shells at Handforth, where thousands had existed formerly, and caused great inconvenience by lining the inside of the water-pipes. I have taken specimens in the Grand Trunk Canal at Lostock Gralam, and the Peak Forest Canal at Marple.

TABLE OF GENERA SHOWING RELATION OF CHESHIRE SPECIES TO THOSE OF THE BRITISH ISLANDS.

GENUS.	CHESHIRE SPECIES.	BRITISH SPECIES.
Gastropoda—		
Arion ... ..	5	5
Geomalacus ... ..	0	1
Amalia ... ..	2	2
Limax ... ..	4	4
Agriolimax ... ..	2	2
Testacella ... ..	1	3
Vitrina ... ..	1	1
Hyalinia ... ..	10	11
Helix ... ..	16	25
Buliminus ... ..	1	2
Pupa ... ..	3	4
Vertigo ... ..	5	9
Balea ... ..	1	1
Clausilia ... ..	2	4
Azeca ... ..	1	1
Cochlicopa ... ..	1	1
Cæcilioides ... ..	0	1
Succinea ... ..	2	3
Carychium ... ..	1	1
Segmentina ... ..	1	1
Planorbis ... ..	10	11
Bullinus ... ..	1	1
Physa ... ..	1	1
Amphipeplea ... ..	0	1
Limnæa ... ..	6	7
Ancylus ... ..	1	1
Velletia ... ..	1	1
Cyclostoma ... ..	0	1
Acicula ... ..	1	1
Neritina ... ..	0	1
Viviparus ... ..	2	2
Bythinia ... ..	2	2
Valvata ... ..	2	2
Pelecypoda—		
Unio ... ..	2	3
Anodonta ... ..	2	2
Sphærium ... ..	4	4
Pisidium ... ..	7	7
Dreissensia ... ..	1	1
Total Number of Species ...	102	131



**ORTHOPTERA, NEUROPTERA AND  
TRICHOPTERA OF THE  
ALFORD DISTRICT OF NORTH LINCOLNSHIRE.**

EXTRACTED FROM THE REGISTERS KEPT BY  
JAMES EARDLEY MASON,  
*Late President of the Alford Naturalists' Society.*

[By the kindness of the officers of the Lincolnshire Naturalists, Union, into whose possession the Register-books of the Alford Naturalists' Society have now passed, we are able to give records of such insects of the orders Orthoptera, Neuroptera and Trichoptera as have been ascertained to occur in the district. Mr. Mason was so careful to include no records which had not been submitted to competent authorities, that we can print these extracts from his registers with perfect confidence in their reliability. Each record bears two sets of initials; the first—separated by a semi-colon—is that of the collector; the second—enclosed within parenthesis—is that of the 'determinator' or authenticator. The initials here used are as follows:—

F.A. F. Altoft.  
H.W.K. H. Wallis Kew.  
R.McL. Robert McLachlan.  
J.E.M. James Eardley Mason.  
G.T.P. George T. Porritt.  
E.S. Eland Shaw.  
E.W. Edward Woodthorpe.

The number of species we are able to record here for North Lincolnshire is as follows:—Orthoptera, 10; Neuroptera, 20; Trichoptera, 9].

**ORTHOPTERA.**

*FORFICULIDÆ.*

**Labia minor** (L.). Alford, one at The Sycamores, August 8th, 1888; J.E.M. (G.T.P.). One at the Chauntry, April 22nd, 1889; J.E.M. (G.T.P.).

**Forficula auricularia** L. Earwig. Local name, 'Battle-twig.'

*BLATTIDÆ.*

**Periplaneta orientalis** (L.). Cockroach. Alford, at The Sycamores. Bilsby, abundant at the Vicarage, January 1889.

*ACRIDIDÆ.*

**Stenobothrus viridulus** (L.). Mumby Chapel, sandhills, two, August 1887; J.E.M. (G.T.P.).



- Stenobothrus elegans** Charp. Mumby Chapel, sandhills, one, August 1887; J.E.M. (G.T.P.). Well Vale, one, August 16th, 1888; J.E.M. (G.T.P.). Mablethorpe; H.W.K. (E.S.).
- Stenobothrus parallelus** Ztt. Well Vale, two, August 16th, 1888; J.E.M. (G.T.P.).
- Stenobothrus bicolor** Charp. Mumby Chapel, sandhills, one, August 1887; J.E.M. (G.T.P.). Mablethorpe, sandhills, one, August 18th, 1888; J.E.M. (G.T.P.). Well Vale, one, August 16th, 1888; J.E.M. (G.T.P.).
- Pachytylus migratorius** (L.). Withern, one, female, October 1886; H.W.K. (E.S.—see Nat., 1886, p. 348).
- Tetrix bipunctatus** (L.). Mumby Chapel, sandhills, one, August 1887; J.E.M. (G.T.P.). Greenfield Wood, one, March 22nd, 1890; Edwd. Woodthorpe (E.S.).
- Platycleis brevipennis** Charp. = **roesellii** Hag. Trusthorpe, August 1888; H.W.K. (E.S.).

## PSEUDO-NEUROPTERA.

## PSOCIDÆ.

- Elipsocus unipunctatus** (Müll.). Alford, burial ground, on elm; The Sycamores, abundant on sycamore, June 29th, 1889; J.E.M. (R.McL.).

## PERLIDÆ.

- Nemoura variegata** Ol. Aby-with-Greenfield parish, one in Greenfield Wood, June 6th, 1887; J.E.M. (G.T.P.) Well, one, May 21st, and three, June 25th, 1888; J.E.M. (G.T.P.).
- Nemoura cinerea** Ol. Well, two, June 25th, 1888; J.E.M. (G.T.P.).

## ODONATA.

## LIBELLULIDÆ.

- Sympetrum striolatum** (Charp.). Muckton Wood, one, August 3rd, 1886; J.E.M. (G.T.P.).

## ÆSHNIDÆ.

- Æshna juncea** (L.). Alford, one in Joseph Stephenson's shop, July 20th, 1886; J.E.M. (G.T.P.).

## AGRIONIDÆ.

- Ischnura elegans** (Lind.). Mumby Chapel, Chapel Sea Bank Point, one, July 26th, 1886, and another July 31st, 1888; J.E.M. (G.T.P.).



## NEUROPTERA-PLANIPENNIA.

*SIALIDÆ.*

- Sialis lutaria** (L.). Well, one, May 21st, 1888; J.E.M. (G.T.P.).  
Farlesthorpe, one, May 25th, 1887; J.E.M. (G.T.P.).

*HEMEROBIIDÆ.*

- Micromus paganus** (L.). Alford, one, June 20th, 1888; J.E.M. (G.T.P.).
- Hemerobius micans** Ol. Well, one, June 3rd, and June 25th, 1888; J.E.M. (G.T.P.).
- Hemerobius humuli** L. Well, one, June 25th, 1888; J.E.M. (G.T.P.).
- Hemerobius subnebulosus** St. Alford, one, May 20th, 1887; J.E.M. (G.T.P.).
- Hemerobius nervosus** Fab. Alford, at The Sycamores, 1886; J.E.M. (G.T.P.).

*CHRYSOPIDÆ.*

- Chrysopa alba** (L.). Greenfield Wood, one, June 8th, 1887; J.E.M. (G.T.P.).
- Chrysopa flavifrons** Brau. Greenfield, July 3rd, 1889; F.A. (G.T.P.).
- Chrysopa septempunctata** Wesm. Alford, one, August 8th, and two, June 22nd, 1888; J.E.M. (G.T.P.). Greenfield, July 3rd, 1889; F.A. (G.T.P.).
- Chrysopa perla** (L.). Greenfield, July 3rd, 1889; F.A. (G.T.P.).
- Nothochrysa fulviceps** (Steph.). Aythorpe, June 26th, 1889; F.A. (I found this specimen, a very fine one, when looking over Mr. Mason's Lincolnshire captures—placed for the time in the hands of Mr. S. L. Mosley of Huddersfield—at the beginning of the present year. No specimen had been recorded in Britain for many years, and Mr. McLachlan had almost regarded it as extinct in this country. Mr. McLachlan, when staying with me in June last, also examined the specimen. See E.M.M., April 1895, p. 101. G. T. Porritt.)
- Nothochrysa capitata** (Fab.). Tothill Wood, June 14th, 1890; J.E.M. (G.T.P. and R. McL. Recorded E.M.M., April 1895, p. 101).

*PANORPIDÆ.*

- Panorpa communis** L. Greenfield, July 3rd, 1889; F.A. (G.T.P.).
- Panorpa germanica** L. Well, one, June 25th, 1888; J.E.M. (G.T.P.). Greenfield, July 3rd, 1889; F.A. (G.T.P.).



## TRICHOPTERA.

## LIMNEPHILIDÆ.

- Colpotaulius incisus** (Curt.). Bilsby, one, May 25th, 1888; J.E.M. (G.T.P.).
- Grammotaulius atomarius** (Fab.). Alford, The Sycamores, 1886; J.E.M. (G.T.P.). Sutton-le-Marsh, one, June 1st, 1888; J.E.M. (G.T.P.).
- Glyphotælius pellucidus** (Ol.). Well, one, June 16th, 1888; J.E.M. (G.T.P.).
- Limnephilus rhombicus** (L.). Alford, one, August 2nd, 1888; J.E.M. (G.T.P.).
- Limnephilus lunatus** Curt. Alford, one, October 9th, 1888; J.E.M. (G.T.P.).
- Limnephilus vittatus** (Fab.). Authorpe, one, July 7th, 1888; J.E.M. (G.T.P.). Haugh, one, June 3rd, 1889; J.E.M. (G.T.P.).
- Limnephilus sparsus** Curt. Alford, one, June 20th, 1888; J.E.M. (G.T.P.).
- Stenophylax lateralis** (St.). Greenfield, July 3rd, 1889; F.A. (G.T.P.).
- Chætopteryx tuberculosa** (Pict.). Well, two, October 18th, 1888; J.E.M. (G.T.P.).

## NOTES—ORNITHOLOGY.

**Little Bustard in Holderness.**—Mr. Darby has now in his possession a very fine specimen of *Otis tetrax*, a female in splendid condition; shot by Mr. Binnington Holmes in the last week of December, 1895, in a turnip field at Burton Pidsea, Holderness.—B. B. HAWORTH-BOOTH, Hullbank Hall, nr. Hull, 17th March, 1896.

**Flamborough Notes—Arrival of Summer Visitants.**—Early in March the Field Wagtail (*Motacilla lugubris*) made its appearance on the Headland, then again early in April the Wheatear (*Saxicola oenanthe*). April 17th being a very wet and stormy day, wind south-east with a strong mist or fog, brought over several birds, amongst which came the Turtle Dove (*Turtur turtur*). I saw one all but exhausted, which nearly flew into my hands. Last week the Cuckoo (*Cuculus canorus*) was both heard and seen on the Headland. Yesterday, 19th, and to-day, 20th, Swallows (*Hirundo rustica*) have been arriving.—M. BAILEY, Flamborough, April 20th, 1896.

## NOTES AND NEWS.

The Journal of Botany for April contains a memoir of Mr. Thomas Hughes Buffham, the well-known algologist. He was a Lincolnshire man, born at Long Sutton, Dec. 24th, 1840, and died at Walthamstow, Feb. 9th, 1896.

A new species of Copepod Crustacean is named after Mr. W. I. Beaumont by Messrs. T. and A. Scott, in the Annals and Magazine of Natural History for last November, and described and figured as *Enterocola beaumonti*. It was found at Valentia, Ireland.



## ON THE HEPATICÆ AND MUSCI OF WESTMORLAND.

GEORGE STABLER,  
*Levens, Milnthorpe.*

### SECOND PAPER.

(*First Paper, see 'The Naturalist,' Oct. 1888, p. 320.*)

IN connection with this, however, it is perhaps desirable that the history of Westmorland bryology and hepaticology should be reviewed as a whole.

The earliest record of a moss of our district is one by Thomas Lawson, the father of Westmorland botany, who was Vicar of Rampside, and afterwards, in 1653, became the famous Quaker schoolmaster of Great Strickland, near Penrith. In a manuscript commenced in the year 1670 this 'skilful and diligent botanist,' as Ray calls him, notes the beautiful *Hylocomium splendens* from Swarthmoor, near Ulverston, not far from the border of Westmorland.

Passing on we come to John Ray, whom Haller designated 'the greatest botanist in the memory of man,' and whom Sir J. E. Smith eulogises as 'the most accurate in observation, the most philosophical in contemplation, and the most faithful in description amongst all the botanists of our own or perhaps any other time.'

It is to this botanist we owe, strictly, the first record of a Westmorland moss. As has been previously noted, this was *Polytrichum commune*, a giant among the acrocarpous mosses. Ray was a personal friend of Lawson, and visited him at Great Strickland. He made three journeys into the north of England—the first in 1661, the second in 1668, and he was last in Cumberland and Westmorland, when he was 62 years of age, in 1690. Since writing the earlier part of this paper, I have ascertained, by the kind assistance of Mr. Masee, of the Royal Herbarium, Kew, that the moss is recorded in the *first* edition of Ray's Synopsis (1690).

From this date there is a wide gap of 72 years (1690–1762) before we meet with the next announcement of a Westmorland moss. It was during this period that the transition from the old style of nomenclature to that of the Linnæan or binomial took place, and it is almost entirely within these two dates that Dillenius lived (1685–1747). In 1741 Dillenius published his 'Historia Muscorum,' a work far in advance of anything hitherto attempted, yet in it I do not find mention of a single moss from the English Lake District.



The next additions to our moss flora were made by Wm. Hudson (1730-1793), who was born in the White Lion Inn, Kendal, and educated at the Grammar School of that town. As an apothecary's apprentice in London he took the Apothecaries' Hall prize, which was Ray's *Synopsis*.

I remarked previously in this paper that I suspected that the four species mentioned by Robson were taken from the first edition (1762) of Hudson's *Flora Anglica*. I have since ascertained that this is the case.

Another enthusiastic botanist, and native of Kendal, John Wilson, attained celebrity by his *Synopsis of British Plants* (1744). It is said that he left in manuscript a second volume of the Gramineæ and Cryptogamic plants.

About ten years before Hudson's death and probably induced by that botanist's '*Flora*,' Sir J. E. Smith visited Westmorland (1782) and confirmed some of Hudson's records, and also added *Seligeria recurvata* and *Hylocomium loreum* to those already known. The next year he returned, when 24 years of age, and found *Cinclidotus fontinaloides*, *Anomodon viticulosus*, and *Neckera crispa* at Kirkby Lonsdale.

Almost exactly contemporaneous with Sir J. E. Smith, lived John Gough of Kendal, the blind mathematician and botanist, who, in Withering's '*Arrangement*' (1796) is credited with finding *Philonotis fontana*. There is also a Kendal specimen of *Frullania Tamarisci* from John Gough in John Dalton's herbarium.

In the same year that Sir J. E. Smith collected mosses at Kirkby Lonsdale, the afterwards famous Dr. John Dalton became a school teacher at Kendal and by his acquaintance with John Gough greatly improved himself in mathematics, classics and botany. In Dalton's herbarium, now in the Owens College Museum, Manchester, are Westmorland specimens of the two large foliaceous liverworts, *Marchantia polymorpha* and *Conocephalus conicus*. The title page of the collection runs as follows:—'*Hortus siccus seu Plantarum diversarum in agris Kendal vicinis sponte nascentiam specimina opere et studio Johannis Dalton collecta et secundum classes et ordines disposita 1790.*'

It may thus be seen that up to the end of the century only about a dozen mosses and hepatics were recorded for the county. At the end of the first decade of the 19th century (September 1810) Mr. W. Borrer of Henfield, Sussex, collected *Webera elongata* on Helvellyn.

Sir William J. Hooker in his '*British Jungermanniæ*' (1812-16) mentions five hepatics, gathered in Westmorland by Mr. Charles



Lyell, a Scotchman, distinguished as a botanist and translator of Dante, and the father of Sir Charles Lyell, the eminent geologist. Amongst Mr. Lyell's discoveries we find *Nardia hyalina* (Lyell) from Stock Ghyll, Ambleside, found when he was there in July 1813. It is well to note that as Lyell is the authority for the species, the Stock Ghyll plant may be considered as the type. By the way, it may be mentioned that the same botanist found the very rare *Lejeunea calyptrifolia* intermixed with *Lejeunea hamatifolia* on wet rocks at Lowdore. About this time, one of our most beautiful mosses (*Hypnum crista-castrensis*) was found in Mardale by the Rev. James Dalton, rector of Croft, in Yorkshire. This is recorded in 'Muscologia Britannica' 1818, which work was dedicated to him by Hooker, as was also the beautiful genus *Daltonia*, and adding at the same time that he was 'as much distinguished by his botanical as by his classical acquirements, a lover no less of science than of the fine arts.'

Mr. John Just, of Natland, another Westmorland botanist, who, in 1848, was appointed Professor of Botany to the Royal Manchester Institution, gave some attention to mosses, and in the herbarium of the Kendal Museum are found about a dozen specimens collected by him near Natland. They will be mentioned in their proper place in this list.

In July of the year 1838 we find that exact and thorough bryologist, Mr. William Wilson, of Warrington, collecting *Hypnum incurvatum* near Kendal, and *Ulota crispula* near Ambleside.

Among other eminent botanists who have taken part in botanising our county must be included my highly-esteemed friend the late Dr. Richard Spruce, who whilst exploring the botany of Teesdale in 1843, just touched the eastern side of Westmorland at Caldron Snout and Maize Beck, and added eleven species to those already known.

In 1845, Mr. Joseph Sidebotham, of Manchester, gave in the 'Phytologist' a list of mosses he had found, fifteen of which were additions, and Mr. Borrer in the same year added seven species, which were published in the 'Phytologist' the following year, *Mnium subglobosum* being one of them.

*Scapania undulata* was found on Meldon Fell in 1851, by Mr. John Gilbert Baker, F.R.S., of the Royal Herbarium, Kew.

The introduction to this list has already attained greater length than I had intended; I must therefore condense what I still have to say as much as possible.

It was my privilege to have the friendship of the late Dr. Thos. Gough, of Kendal, a student of many branches of natural history,



and son of the before-mentioned John Gough. His herbarium, as well as that of his father, have been at my service for the purpose of reference. From this source it appears that Longsleddale and the district immediately around Kendal were Dr. Gough's chief hunting-grounds. His specimens are mostly without dates, as are those of the late Dr. Frederick Clowes, of Bowness, who kindly presented to me his mosses and some of his botanical correspondence. This latter gentleman collected mosses in 1854 and 1855 chiefly near Windermere and the adjoining hills to the north and east. Dr. Gough's mosses were gathered between 1848 and 1855.

About 1867 the late Mr. G. E. Hunt, of Manchester, an ardent, devoted, and promising bryologist, a veritable Nimrod among British Mosses, visited the English Lake District.

Amongst the resident bryologists must be included Mr. John Atkinson, of Bowness, now dead. He collected during several years, and was at work in the early 'sixties,' but I know little about his plants.

This list, so far as the *Musci* are concerned, owes not a little of its comprehensiveness to the labours of my dear friend and neighbour, the late Mr. J. M. Barnes. He and my friend, Mr. J. A. Martindale, of Staveley, were for several years my most frequent companions in botanical rambles. By the use of Mr. Barnes' collections I have been enabled to incorporate much of his work into this list. He was the first to find *Sphagnum Austinii* in England, and his discovery of *Amblystegium confervoides* at Barrow Field was the second known habitat in Britain. But more than this, he was the discoverer of *Bryum Barnesii*, a species new to science.

I have still another important worker to include, in the person of the Rev. C. H. Binstead, a quondam resident, but now of Eardisley, Herefordshire. Whilst working at our mosses generally he devoted his attention more particularly to some of the more difficult genera, especially to that of *Grimmia*, and his great perseverance, combined with keenness of perception, has produced good results.

Many others, mostly non-resident, have taken part in the work, not least among them being the amiable and acute working-man Lancashire and Yorkshire botanist, John Nowell, of Todmorden, the first to discover *Habrodon Notarisii* in this country, beside Rydal Lake, where it may still be found. I must be content to mention the names of several others, merely giving as far as I am able the dates of their visits, viz. :—Dr. J. B. Wood, Broughton, Manchester (1868); George E. Davies, Brighton (1871); Dr. R. Braithwaite, London; Henry Boswell, M.A., Oxford (1870-73-76); J. Cash,



Manchester (1878); M. B. Slater, F.L.S., Malton (1853, 1878); Wm. West, sen., Bradford (1881); Rev. A. Ley (1880); Rev. C. H. Waddell, Saintfield, co. Down (1884-1887); Dr. B. Carrington, Eccles (1884); Wm. H. Pearson, Manchester (1884); W. Mitten and Bishop Hannington (1885); W. B. Waterfall, Bristol (1886 and 1887); E. M. Holmes, F.L.S., Sevenoaks, Kent (1891); E. Marquand, Guernsey (1885); Rev. H. G. Jameson, Eastbourne (1889); H. N. Dixon, Northampton (1891).

The only foreigner, that I know of to be included here, is Herr Peter Dreesen, of Anvers, Belgium, who found *Fissidens rufulus* in the River Lune at Rigmaden Park (1873).

The writer here takes the opportunity of acknowledging the assistance of many of his correspondents, both British and Foreign, foremost among whom was the late Dr. Spruce, who was ever ready when health permitted, to discuss difficulties, to offer suggestions, and to give advice. To the late Professor S. O. Lindberg, of Helsingfors, in years gone by, I owe much, and Herr Warnstorf, of Neu Ruppin, Berlin, has my best thanks for his valuable assistance in the determination of many of the varieties and forms of the species of *Sphagnum*, on which genus he is so great an authority.

In this paper will be found, placed in brackets, a few species which have not yet been recognised within the limits of the county, but have been found a short distance from the boundary, and several of them will eventually, I think, be found in the near future within the county. For the sake of brevity, the surnames only of persons are as a rule used. For most of the commoner species a few representative habitats have been selected. The writer is responsible for the habitats which are given without the collector's name.

This I am aware is but an imperfect attempt at a history of Westmorland bryology and hepaticology, and the same may be said of the following list of species. It would be presumption on my part to think that nearly all the Westmorland species were yet discovered.

Apart from others, this paper places on record to some extent, so far as the writer is concerned, the result of many pleasant rambles at all seasons of the year, and of many pleasant hours spent at the microscope. If the effort prove of interest and use to kindred spirits it has attained its object.

In the acrocarpous mosses the classification of Dr. Braithwaite's 'British Moss Flora' has been followed, and in the pleurocarps that of Schimper's 'Synopsis,' Ed. II. The arrangement of the *Hepaticæ* is one sanctioned by Dr. Spruce.



## Order MUSCI.

## MUSCI ACROCARPI.

## Sect. I.—SCHISTOCARPI.

## Fam. I.—ANDREÆACEÆ.

1. **Andreæa petrophila** Ehrh., *A. rupestris* Hedw. & Bry. Brit. Helvellyn (Sidebotham, 1845); Red Screes (Clowes); Long Stile, Mardale (1870); Swindale (Barnes, 1870); Wildboar Fell (1888); Red Tarn, Helvellyn (1886).  
 VAR. **gracilis** Schpr. Kentmere (Rev. C. H. Binstead, 1885). [Styehead Pass, Borrowdale (Hunt, 1871).]  
 VAR. **sparsifolia** (Zelt.) Lindb. Helvellyn (C. H. Waddell, 1883).
2. **Andreæa alpina** (Dill.) Sm. Helvellyn (Sidebotham, 1845); Easedale (Baker); Red Screes (Clowes); Swindale (Barnes); Kentmere (1868). Harter Fell (1869); Rainsborrow Crag.
3. **Andreæa crassinervia** Bruch. Grisedale (Baker).  
 [VAR. **Huntii** (Limpt.). Buttermere and Borrowdale (Hunt, 1871); Stye Head Pass and Sca Fell (Baker, 1879)].
4. **Andreæa Rothii** Web. Mohr., *A. rupestris* Huds. Helvellyn (Sidebotham, 1845); Caldron Snout (Baker); Red Screes (Clowes); Nab Scar (1867); Kentmere (Barnes and Stabler); Long Stile, Mardale (1870).  
 VAR. **falcata** (Schpr.) Lindb. *A. falcata* Sch. Synop. Grasmere (Boswell, 1870). [Styebarrow Crag and Sca Fell Pike (Baker, 1867); Styehead Pass (Hunt)].

## Fam. GEORGIACEÆ.

5. **Georgia pellucida** (L.) Rabenh. *Tetraphis pellucida* (L.) Brigsteer Wood (1868); Naddle Forest, Mardale (Barnes and Stabler, c.fr., 1869); Kentmere Hall Plantation (Barnes and Stabler, 1869); Scandale (1887).
6. **Georgia Brownii** (Dicks.) C. Muell, *Tetradontium Brownianum* (Dicks.) Schwaegr. Caldron Snout (Spruce, 1843); Dungeon Ghyll, Langdale (Binstead, 1893). [Trough Brook Ghyll, Clougha, near Lancaster (1881); Ennerdale (Waterfall, 1886); Aspatria (Binstead, 1888).]

## Fam. POLYTRICHACEÆ.

7. **Catharinea undulata** (L.) Web. Mohr., *Atrichum undulatum* (L.). Windermere (Clowes); Heversham Head and Hill Bell (1867); Barrow Field (Barnes and Stabler, 1868); Whitbarrow (1871); Naddle Forest (1871); Rigmaden Park (1880).



8. **Oligotrichum incurvum** (Huds.) Lindb., *Oligotrichum hercynicum* De Cand. Blea Tarn (Clowes); Helvellyn (Rev. Dr. Cookson, 1862); Hill Bell (1868); Mardale (1869). [Sca Fell Pike (Barnes, 1880).]
9. **Polytrichum subrotundum** Huds., *Pogonatum nanum* P. Beauv. Brant Fell, Windermere (Barnes, 1868); Sizergh Fell (Barnes, 1870); Whitbarrow (1871); Staveley (1872).
10. **Polytrichum aloides** Hedw., *Pogonatum aloides* P. Beauv. Bowness (Clowes); Staveley (1867); Grayrigg Fell (Barnes and Stabler, 1868); Crosby Ravensworth (1869).
11. **Polytrichum urnigerum** L., *Pogonatum urnigerum* P. Beauv. Bowness (Clowes); Rydal Mount (1867); Crook (Barnes, 1868).
12. **Polytrichum alpinum** L., *Pogonatum alpinum* Roth. Swindale (Barnes, 1867); Mardale (Barnes, 1868); Grayrigg Forest (1868); Hill Bell (1869); Wildboar Fell (1888). [Sca Fell (Gough).]
13. **Polytrichum gracile** Dicks. Ulpha Moss, Foulshaw (Barnes, 1868).
14. **Polytrichum attenuatum** Menz. *Polytrichum formosum* Hedw. Swindale (1867); [Dent (Barnes, 1867)].
15. **Polytrichum piliferum** Schreb. Kentmere (1868); Witherslack (Barnes, 1868); Staveley (1869); Wildboar Fell (1888).
16. **Polytrichum juniperinum** Willd. Bowness (Clowes); Ulpha and Foulshaw (1868); Langdale (Barnes, 1871).
17. **Polytrichum strictum** Banks. Blea Water, Mardale (Barnes, 1869); Witherslack (Boswell and Stabler); male, Fairfield (W. West, 1882).
18. **Polytrichum commune** L. 'Westmorlandicis' (Ray, 1690); Foulshaw Moss (Barnes and Stabler); Kentmere (1868); Naddle Forest, Mardale (1887).

Fam. *FISSIDENTACEÆ.*

19. **Fissidens exilis** Hedw. Bowness (Atkinson); Yewbarrow, Witherslack (Barnes); Levens Park (Stabler, 1881); Hay Fell, Kendal (Binstead, 1886).
  20. **Fissidens minutulus** Sulliv. Levens (Dr. J. B. Wood).
  21. **Fissidens viridulus** (Swartz.) Wahl. Levens Park (Barnes, Wood, and Stabler); Whitbarrow (1868).
  22. **Fissidens incurvus** Starke. *Fissidens Bambergeri* Schpr. Brigsteer Brow (Barnes, 1868); Foulshaw (Barnes, 1870).
- VAR. **tamarindifolius** Donn. On ant hills, Arnside Tower, with *Pottia bryoides* and *Ephemerum serratum* (Barnes, 1870).



23. **Fissidens bryoides** (L.) Hedw. Dodding Green, Kendal (T. Gough); The Moss, Levens (Barnes, 1868); Bowness (T. Hartley, 1868); Sizergh and Ulpha (1869); Rigmaden, (1880).
24. **Fissidens fontanus** Schpr. *Fissidens crassipes* Wils. By the river Kent, Nether Levens (Barnes, 1870).
25. **Fissidens rufulus** Schpr. Rigmaden Park (Peter Dreesen, 1873).
26. **Fissidens osmundoides** (Swartz) Hedw. Caldron Snout (J. G. Baker); Grayrigg Forest (1868). [Dent (Barnes, 1868); Woodside Moor, Ulverston (Barnes and Stabler, 1868).]
27. **Fissidens taxifolius** (L.) Hedw. Windermere (Clowes); Foulshaw and Whitbarrow Lodge (Barnes and Stabler, 1868); banks of the river Gilpin, Levens (1880); Barrow Field (1881).
28. **Fissidens cristatus** Wils., *Fissidens decipiens* DeNot. On wall, Rayrigg Wood, Windermere (Barnes, 1868); male, Brigsteer Wood (Barnes, 1869); male, Barrow Field (1881); Levens Park; Whitbarrow.
29. **Fissidens adiantoides** (L.) Hedw. Scar Foot Mill (Gough); Windermere (Clowes); Ambleside (1867); Low Gill Junction Barnes (1868); Harter Fell (1869); Staveley (Barnes, 1873); Barrow Field, Helsington (1881); Barbon Fell (1885).

Fam. *LEUCOBRYACEÆ*.

30. **Leucobryum glaucum** (L.) Schpr. c. fr. ! Ulpha Moss, Foulshaw. Found fruiting there by Mr. Barnes in 1868. I have since gathered it with fruit at the same place. Barrow Field (1870); Stock Ghyll, Ambleside (1869); Naddle Low Forest (1887); Outh Ghyll, Mallerstang (1888). This species is plentiful in the English Lake District.

Fam. *DICRANACEÆ*.

31. **Archidium alternifolium** (Dicks.) Schpr. *Archidium phascoides* Bry. Brit. On a damp path on the top of Whitbarrow (Barnes and Stabler, 1872); Brigsteer Wood (1877).
32. **Pleuridium axillare** (Dicks.) Lindb., *Phascum nitidum* Hedw. and Bry. Brit. On old mole hills, Low Borrow Bridge (Barnes and Stabler, 1868); Moss End, Milnthorpe (Barnes, 1868); near Kendal (Binstead, 1885).
33. **Pleuridium subulatum** (Huds.) Rabenh. Windermere (Clowes and Barnes); Whitbarrow (Barnes); Levens (1868); Staveley; Mardale; Sedgwick.



## NEW AND LITTLE-KNOWN OLIGOCHÆTS.

REV. HILDERIC FRIEND,  
*Cockermouth.*

THE worms are divided into two orders, and are known as Oligochæta and Polychæta. The setæ form the basis of classification. In some worms the setæ are numerous, whence the name Polychæta. In addition to other characters the Polychæts are, for all practical purposes, marine. The other worms possess few bristles, and live on land or in fresh water. The line between the two groups, so far as the number of bristles is concerned, is not hard and fast, for there are Oligochæts with many bristles and Polychæts with few. Further, the many-bristled Oligochæts are chiefly aquatic, and so form a close connecting link between the marine worms on the one hand and the terrestrial on the other. With the Polychæts we have for the present no concern.

The Oligochæts again fall into two great and well-marked groups, and are known as the terrestrial and the limicolous. True, some of the terrestrial group prefer the water, and many of those which fall into the aquatic section live on land, but on the whole the distinctive features of the groups are strong and clear. In the British fauna the earthworms belong entirely to one family, the Lumbriculidæ, and to three genera only, namely, *Lumbricus*, *Allolobophora*, and *Allurus*. With these we are already familiar. For three years no new species has been added to the list, so that our terrestrial species may be said to number about a quarter of a hundred. Of the limicoline species, on the other hand, we may be said to be in total ignorance. Doubtless they may be numbered not by scores but by hundreds, yet it is doubtful whether at present we know, by actual printed descriptions, more than a score. Bousfield has dealt with *Dero*, Beddard with *Æolosoma*, Benham with *Nais*, *Stylodrilus* and *Sparganophilus*, and there, roughly speaking, the matter ends. On the Continents of Europe and America much has been done, in comparison with the little done at home, and thanks to the labours of Rosa, Vejdovsky, Stolč, Ude, Eisen, Smith and others, we have a mass of material at hand to guide us and spur us on. Every month witnesses the publication of some new memoir, now dealing with old species and genera which have been revised, now treating of new species and genera; so that it becomes a serious business to keep pace with all the new arrangements and discoveries.

Thanks to the publication of Beddard's Monograph (see supra, p. 77-80), we now have a well-defined starting point, and it should be comparatively easy henceforth to record and tabulate the results



of our investigations. Having been for some years engaged in collecting specimens from various parts of the United Kingdom, and being now in possession of much valuable information relating to the limicolous Oligochæts of Great Britain, I propose to issue from time to time such reports on the species found within the field of operations which comes under the purview of 'The Naturalist' as I shall be able to prepare. I shall begin with a selection of such worms as are already known to occur in this country. The species in my possession which have only been described as Continental or are new to science will be dealt with later.

It will be well to preface my first description with a few remarks respecting the scientific characters of this group of Oligochæts. As Beddard has summed up the results of earlier modes of classification, I shall not refer to them. It may suffice to note that the Limicolæ differ from the Terricolæ mainly in the following particulars:—'The ova of the former 'are of large size and full of yolk . . . the egg-sacs are of large size and extend through several segments; both they and the sperm-sacs are very thin walled, and their interior is entirely undivided by trabeculæ; in all, or at least very nearly all, of the aquatic Oligochæta there is a head-pore, a structure which is, so far as our knowledge at present goes, quite unrepresented in the terrestrial Oligochæta' (Beddard, 'Monograph of Oligochæta,' p. 157). 'The presence of the head-pore in the embryo of certain terrestrial forms is a point of special interest for the evolutionist. 'Besides these resemblances, all the aquatic Oligochæta agree in a number of structural features, which would, if it were not for the family Moniligastridæ, distinguish them from all the terrestrial Oligochæta. These are:—

1. The clitellum is only a single layer of cells thick.
2. It has a very anterior position, more so than in any terrestrial
3. The male pores are also far forward. [form.
4. The sperm duct traverses only two segments.

If we add the family Moniligastridæ, it seems to me that a perfectly natural group of Oligochæta will be the result; this group will be capable of the following definition:—

'Oligochæta with a clitellum commencing not later than the tenth or eleventh segment, and consisting of only a single layer of cells; sperm ducts only occupy two segments, the external pore being on the segment following that into which the funnel opens; male pore situated in front of the female pore; eggs generally large, always provided with abundant yolk; egg-sacs large; spermiducal glands, when present, possess a muscular layer interposed between the inner epithelium and the glandular layer; sexual maturity at



a fixed period' (loc. cit.). Omitting the anomalous *Æolosoma* we have the following seven families under the Limicolæ or Microdrili:— (1) Phreoryctidæ, (2) Moniligastridæ, (3) Lumbriculidæ, (4) Eclipidrilidæ, (5) Tubificidæ, (6) Naidomorpha, (7) Enchytræidæ. The reasons for the arrangement will be found in Beddard.

In 1865 there was printed, by order of the Trustees, A Catalogue of the Non-Parasitic Worms in the Collection of the British Museum, compiled by Dr. George Johnston, in which we have what may be regarded as the first attempt to deal systematically with the indigenous Helmintha. He divides them into two groups:— (1) The Apodous, including the leeches, planarian worms, and other achætous or bristleless worms, and (2) the Polypodous. This second group was made up of the Orders Scoloces and Annelides. The Annelides were the equivalents of our modern Polychæta, while the Scoloces corresponded with the Oligochæta. The following summary of that Order may be helpful.

### Order SCOLOCES.

#### Tribe I.—LUMBRICINA.

#### Tribe II.—NAIDINA.

##### Family I.—LUMBRICIDÆ.

##### Family III.—NAIDES.

Genera { 1. Lumbricus. 11 species  
          recorded.  
          2. Enchytræus. 1 species.  
          3. Sænuris. 4 species.

Genera { 6. Proto. 1 species.  
          7. Stylaria. 1 species.  
          8. Serpentina. 1 species.  
          9. Nais. 2 species.  
          10. Chaetogaster. 1 species.

##### Family II.—LITTORELES.

Genera { 4. Clitellio. 1 species.  
          5. Valla. 1 species.

The entire number of species, therefore, was:—Terrestrial, 11; limicolous, 13; a total of 24. What has been done since Johnston's day is carefully recorded by Beddard, and it now remains for us to carry on the work, till our Limicolæ are as well known as are the Terricolæ.

**I. Stylodrilus vej dovskyi** Benham. Turning to Beddard's third family (Lumbriculidæ) we find (p. 221) an account of the genus Stylodrilus, under which are ranged three species. The genus was founded by Claparède, and has been further elucidated by Vej dovsky, Benham and Ratzel. The following is Beddard's generic definition: 'Setæ bifid; clitellum x-xii.; spermathecæ, a pair in ix.; a pair of non-retractile penes present on segment x., perforated by sperm-ducts; spermiducal gland pear-shaped with long duct.' The first species (*St. heringianus* Clap.) was described by Claparède in 1862. Twenty-one years later, in 1883, Vej dovsky described a second species (*St. gabretæ*). Finally, in 1891, Benham found a third species in this country to which he gave the name which



stands at the head of this notice. He says (Q. J. M. Sc., xxxiii. p. 209): 'In a gathering made July 17th, just below Goring-on-Thames, I found a few small red worms, about one-third the size of an ordinary *Tubifex* [?], namely, about an inch in length. . . . The specific characters are as follows: Prostomium conical, two and a half times as long as the buccal segment, and differing in shape from both of the previous species. The segments, after the first three, are biannulated, the smaller annulus being anterior. This annulus is very small in anterior segments, but behind the clitellum it is a third as large as the posterior annulus. . . . All the chætæ are notched; and, like those of *Lumbriculus*, have the distal or upper tooth much smaller than the lower. The dorsal vessel is not dilated in any segment; the sperm-sacs are paired, and have the normal arrangement, extending as far back as segment xvi. The spermatheca lies in segment ix. entirely. The characteristic penis differs from that of both the previous species in shape and size. It has a length just a little greater than half the width of the body. It is not so narrow relatively as that of *St. gabretæ*; it is not so pointed as in *St. heringianus*. In normal position its free end is on a level with the chætæ of segment xi. . . . The length is about an inch: none of my specimens exceeded this length. In colour they are bright red, with a tendency to orange; but the colour is much less marked anteriorly and posteriorly, where it is dull pale yellow. They are very active little worms.' Thus far Benham. I have omitted his account of the nephridia, as not being essential to my purpose.

And now for my own researches. This pretty, active worm is found in the rivers Cocker and Derwent around Cockermouth, among the ooze on the margins of the streams; also in mud on the sides of ponds, and among the soft earth on the shores of Derwentwater, near Lodore. I have gathered it repeatedly during the past six months, and could not fail to identify it with Benham's species. I have queried one remark in the foregoing description, which, as it affects the length of *Tubifex* rather than that of *Stylodrilus*, will be considered later. I find among my notes and observations the following entries:—The worms to the naked eye exactly resemble *Tubifex* as found in the North of England. They may, however, usually be distinguished by the fact that while *Stylodrilus* attempts to scuttle away from observation, *Tubifex* forms itself into a coil or ball. They are frequently found in each other's company. Examined under the microscope, the absence of the hair-like setæ which characterise *Tubifex*, at once serves as a prominent mark of distinction. The setæ are in pairs, four couples being found on each segment, sigmoid in shape. Œsophagus beginning immediately behind the septum of



segment vi. and distinguished by the dark chloragogen cells. First nephridium in segment vii. The arrangement of the bloodvessels can be well studied in the living worm on account of the light colour and transparent character of the anterior portion of the body, contrasted with the bright red colour of the blood. I cannot agree with Dr. Benham that the spermathecæ lie entirely in segment ix. Before I had seen his description I had figured a specimen from Lodore in which they extend, as in *St. gabretæ*, right into segment x. The dorsal vessel is seen to pulsate in segment vi. As no allusion is made to the brain by either Benham or Beddard I give a diagrammatic figure, together with copies of Benham's drawings to represent the head and the girdle segments with the penes. I do not find the head so pointed as Benham represents.

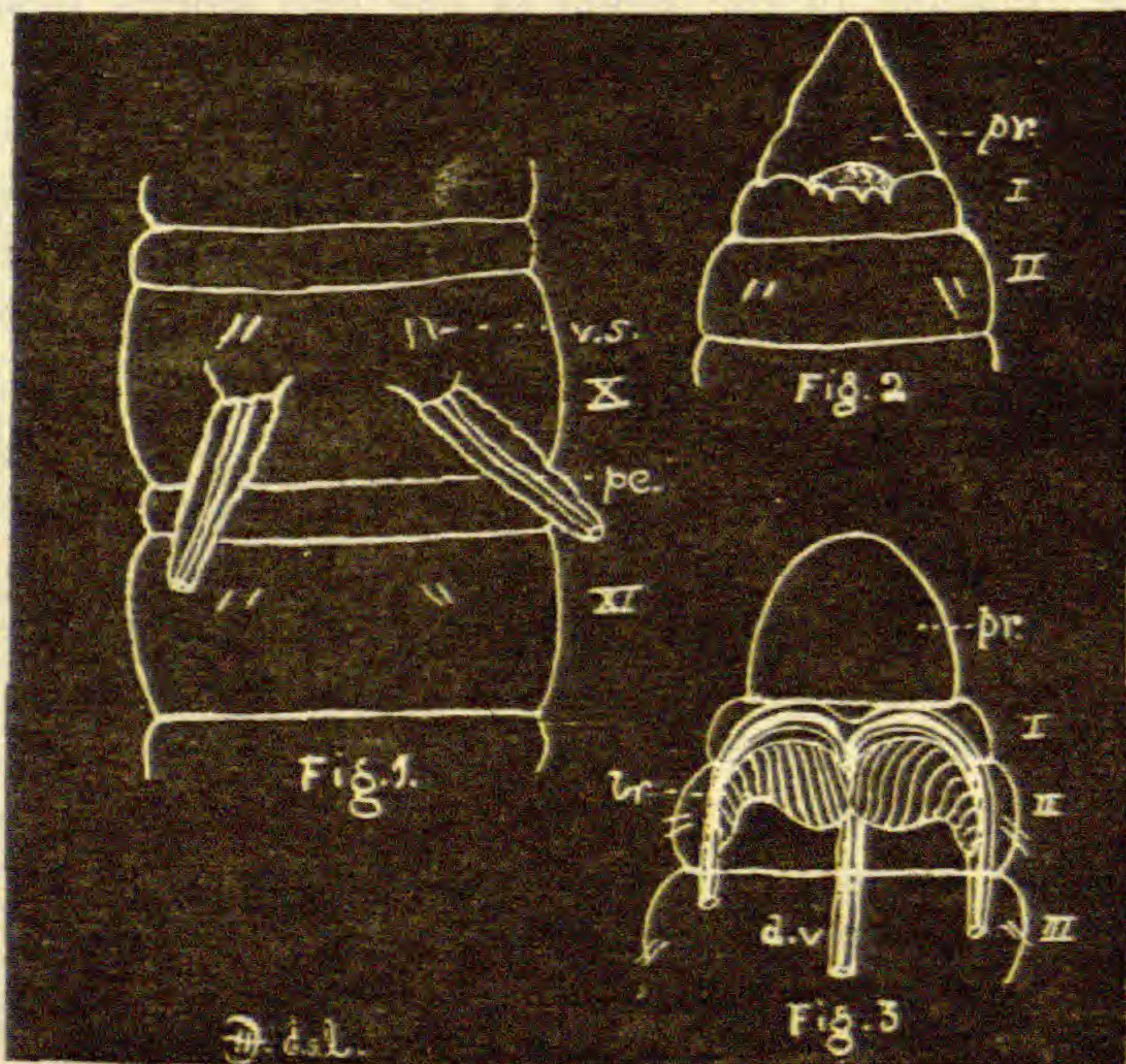


Fig. 1. *Stylo-drilus vej dovskyi*. Segments X-XI., ventral surface, showing ventral setæ (*v.s.*) and penes (*pe.*).

Fig. 2. Head of same, ventral surface, showing prostomium, with mouth, buccal segment or peristomium and first setigerous segment, after Benham.

Fig. 3. Dorsal view of same, showing brain (*br.*) and dorsal blood vessel (*d.v.*), from camera lucida drawing.

2. **Tubifex rivulorum** Lamarck. What *Lumbricus terrestris* has long been among the terrestrial forms, such is *Tubifex* among the limicolæ. Any earthworm was formerly put down under the old name, and we have only now, after years of debate, come to a clear understanding respecting the real characters of *L. terrestris*. But we are still in the clouds respecting *Tubifex*. Is it one worm or many, and is it a *Tubifex* at all? It has been described as *Lumbricus*, *Nais*, *Sænuris*, *Blanonais* and *Strephuris*, and its synonyms run



well into the teens. One sentence quoted above from Benham is very puzzling. He says that *Stylodrilus* is one inch in length, or 'about one-third the size of an ordinary *Tubifex*.' This would make *Tubifex* three inches in length. Beddard gives no hint as to the length, but a second species (*T. blanchardi*) is said to be about 25 mm., i.e. one inch in length, while Johnston says the length is nearly one inch. Claparède states that *T. bonneti* Clap. (which Beddard regards as identical with our species) is 3 to 3½ cm. long, or a little upwards of an inch. There are three possible views of Dr. Benham's expression. (1) It may be a slip of the pen for *Lumbriculus*, which does average three times the size of *Stylodrilus*. (2) He may mean that *Stylodrilus* is one-third larger than an ordinary *Tubifex*, which is also true. Or, what is also possible, he may (3) be thinking of the larger of the two worms described by MacIntosh from the lakes of Scotland, which Beddard thinks is certainly *Tubifex rivulorum*. My own specimens, collected in Cumberland, Yorkshire, and Sussex, have never much exceeded one inch, while the Cumbrian examples are usually under that length.

Beddard has pointed out the confused state of our knowledge at the present time, and allows two well defined species. Now that they have been monographed we may hope to be able to get a clearer idea of the subject. For the present I shall assume that all the material which I have examined is to be referred to the older species (*T. rivulorum* Lam.), and shall now proceed to describe the worm, combining the published accounts with my own.

I have collected the worm in the same localities as recorded for *Stylodrilus*, namely on the banks of the Cocker and Derwent in Cumberland, by the gas-works at Greengates near Apperley Bridge, Yorkshire, as well as at Dallington in Sussex. The worm is usually about an inch in length, of a bright red colour with straw-coloured extremities. As Johnston accurately remarks, 'the skin is pellucid, and permits us to trace easily the course of the dorsal vessel and of the intestine, running tortuously from one end to the other, and making a twist in every segment.' In the 8th segment there are dilating hearts which form a prominent characteristic in several species. In addition to the shorter forked setæ there are a varying number of capilliform or hair-shaped bristles in the dorsal bundles of most of the anterior segments, which give the worm a most graceful and striking appearance when seen for the first time under a low power of the microscope. Beddard following Vejdovsky says that the brain is concave in front with well marked lateral lobes. There are no penial setæ. The nervous system still needs examination, and the whole of our British material should be carefully revised.



## BIBLIOGRAPHY:

Papers and Records published with respect to the Natural History and Physical Features of the North of England.

## BIRDS, 1892.

THE present instalment has been compiled and arranged by  
WM. DENISON ROEBUCK, F.L.S.

The previous instalments of the Bibliography of Birds have appeared as follows:—

For 1884—	in 'Naturalist,'	March and April	1885,	pp. 185-200.
			continued in May	1885, ,, 223-227.
„ 1885—	„	September	1886,	„ 260-272.
„ 1886—	„	May and June	1889,	„ 145-175.
„ 1887—	„	August and Sept.	1889,	„ 249-270.
„ 1888—	„	June and July	1890,	„ 177-198.
„ 1889—	„	{ April and May	1892,	„ 121-136.
		{ Sept. and Oct.	1892,	„ 281-291.
„ 1890—	„	April and May	1893,	„ 115-137.
„ 1891—	„	June and July	1894,	„ 177-199.

The counties and vice-counties of which cognizance is taken are the following, as named and numbered in the Watsonian scheme:—

53, Lincoln S. ; 54, Lincoln N. ; 56, Notts ; 57, Derby ; 58, Cheshire ; 59, Lancashire S. ; 60, Lancashire W. ; 61, York S.E. ; 62, York N.E. ; 63, York S.W. ; 64, York Mid W. ; 65, York N.W. ; 66, Durham ; 67, Northumberland S. ; 68, Cheviotland ; 69, Westmorland with Furness ; 70, Cumberland ; and 71, Isle of Man.

The remarks prefixed to the Bird-Bibliography for 1886 (published in the 'Naturalist' for May 1889, p. 145) are equally applicable to the present instalment.

ANON. [signed 'T. E. D.']. 'Yorkshire Moor.'

**A Ramble on a Yorkshire Moor** [not specified, evidently Rombalds Moor; notes anent *Alauda arvensis*, *Cuculus*, *Turdus torquatus*, *Fringilla montifringilla*, *Tinnunculus*, *Vanellus*, *Charadrius pluvialis*, *Lagopus scoticus*, *Corvus corone*, *Numenius arquata*, *Gallinago caelestis*, *Turdus viscivorus*, *Anas boschas*, *Ardea cinerea*, *Motacilla melanope*]. Nat. World, July 1887, pp. 119-122.

ANON. [not signed]. Notts.

**The New Irruption of *Syrnhaptes paradoxus*** [in Notts, etc.]. Ibis, July 1888, p. 379.

ANON. [not signed]. Cumberland, York S.E.

**Parliamentary Report on the British Museum** [records acquisition of Flamborough examples of *Alca torda* and *Lomvia troile*, and the Cumberland specimen of *Saxicola isabellina*]. Ibis, Oct. 1889, p. 581.



- ANON. [signed 'H. E.']. Cumberland.  
**Netherby** [gardens described, with incidental notes of *Turdus merula*, *T. musicus*, *Alcedo*, *Cinclus*, and *Sylvia curruca*, which last also occurs near Naworth Castle]. *Gard. Chron.*, July 19th, 1890, pp. 65-66.
- ANON. [not signed]. Notts or Linc. N., York Mid W.  
**Occurrence of the Yellowshank** [(*Totanus flavipes*) in Devon; also noting previous records for Misson, 1854-55 (Yarrell) and Tadcaster, Oct. 1858 (*Zoologist*)]. *Land and Water*, Aug. 16th, 1890, p. 202.
- ANON. [signed 'L.']. York S.W.  
**Pale Variety of the Grouse** [(*Lagopus scoticus*) shot on the moors on the borders of Derbyshire, between Moscar and Stanage, by Bernard Firth; description given]. *Land and Water*, Aug. 30th, 1890, p. 259.
- ANON. [signed 'Shore-Shooter?']. Cheshire.  
**The Cuckoo** [(*Cuculus canorus*); one shot on the 1st day of August, 1888, on a marsh near the Cheshire coast]. *Land and Water*, Oct. 25th, 1890, p. 471.
- ANON. [not signed]. Northumberland S.  
**Obituary. John Hancock** [with mention of *Phylloscopus superciliosus* at Hartley, 26th Sep., 1838]. *Ibis*, Jan. 1891, pp. 153-156.
- ANON. [not signed]. York S.E.  
**Value of Wildfowl in the 16th Century** [at Hull, A.D. 1560, the prices were fixed as under: A mallerde (*Anas boschas*), iiijd. ; a teal (*Querquedula crecca*), ijd. ; a snype (*Gallinago gallinago*), id. ; a wodcoke (*Scolopax rusticola*), ijdob. ; a plower (*Charadrius pluvialis*), ijd. ; a basterd plover (*Vanellus vanellus*), jdob. ; a Courlewe (*Numenius arquata*), vjd. ; a curlewe knave (*Tringa subarquata*), iiijd. ; larkes (*Alauda arvensis*), per dozen, iiijd. ; stintes (*Tringa* and *Totani*) per dozen, iiijd. ; penalties for deviation imposed]. *Land and Water*, 17th Jan., 1891, p. 54.
- ANON. [signed 'H. I. H.']. York N.E.  
**Rare Birds Shot near Scarborough during the Winter** (*Anser albifrons*, *Larus glaucus*, *Cygnus ferus*, *Podiceps rubricollis* (six), *Ædemia fusca*, and *Mergulus alle* (one picked up alive)]. *Land and Water*, 7th Feb., 1891, p. 145.
- ANON. [not signed]. Linc. S.  
**The Sparrow** [*Passer domesticus*] **Pest in Lincolnshire** [so serious that near Sleaford a man is employed to kill them; they do damage to fully 3s. an acre]. *Land and Water*, 21st Feb., 1891, p. 244.
- ANON. [signed 'H. E.']. Lanc. S. or Cheshire, Isle of Man.  
**The Winter of 1890-91, and the Birds** [discussed; notes of *Cygnus ferus* in the Isle of Man, and *Botaurus stellaris* at Warrington]. *Gard. Chron.*, Aug. 22nd, 1891, p. 213.
- ANON. [not signed]. York Mid W., Lanc. W.  
**Eagles in Lancashire** [and in Yorkshire, on the moors between Slaidburn and Lancaster; a pair, supposed to be *Aquila chrysaetos* from their attacking a sheep-dog]. *Land and Water*, Oct. 3rd, 1891, p. 395.
- ANON. [not signed]. Derbyshire.  
**Golden Eagle** [*Aquila chrysaetos*] shot in Derbyshire [on Brookfield Manor Moors, near Hathersage]. *Land and Water*, Nov. 7th, 1891, p. 543.
- ANON. [not signed]. York N.E.  
**[Birds noted on walk from Eston Nab to Ayton, Nov. 3rd, 1891; *Turdus pilaris*, *Gallinago major*, and *Corvus cornix*].** *N.H.J.*, Dec. 15th, 1891, p. 168.
- ANON. [signed 'E. H. C. (Penrith)']. Cumberland.  
**Bittern** [*Botaurus stellaris*] in Cumberland [one shot on the Petteril 'last week']. *Field*, Jan. 23rd, 1892, p. 116.



York S.E., N.E., S.W., Notts, Linc. N., Lanc. S.,  
Derbyshire.

ANON. [not signed].

**Belated Swallows** [giving Nov. and Dec. dates for *Hirundo* at Holderness (Cordeaux), Redcar (T. H. Nelson), Retford (L. Buttress) in 1891; Nov. dates for *Chelidon* at Sheffield (E. D. Doncaster), Retford (L. Buttress), and Redcar (T. H. Nelson) in same year; and Sep. and Oct. dates for *Cypselus* at Caistor, Lincs. (T. Ford), Spurn Lighthouse (Cordeaux), Scampston Hall, Yorks. (W. H. St. Quintin), Liverpool (A. Shuttleworth), Easington, Yorks. (H. B. Hewetson), and Higher Buxton, Derbyshire (J. J. Dodgson), and discussing the whole question at length]. Field, Jan. 30th, 1892, p. 133.

ANON. [signed 'R. B. S. (Haughton, Darlington)']. Durham.

**Large Flocks of Magpies** [(*Pica pica*) near Haughton, Darlington, fifty and twenty noted]. Field, March 5th, 1892, p. 313.

ANON. [not signed]. Cheviotland.

**Occurrence of the Hen Harrier** [*Circus cyaneus*] in Northumberland [one trapped on Alnwick Moor; *Buteo vulgaris* also seen there]. Alnwick Guardian; rep. Land and Water, March 12th, 1892, p. 300.

ANON. [not signed]. Cumberland.

**Birds noted at Wigton, attracted to building in very severe weather, Feb. 1892; *Turdus musicus*, *T. merula*, *Erithacus*, *Parus major*, and *P. caeruleus*.** N. H. J., March 15th, 1892, p. 29.

ANON. [signed 'M. E. C.']. Lanc. S.

**A Quail** [*Coturnix communis*], alive but exhausted, was picked up the other day near Bury, Lancashire. N. H. J., March 15th, 1892, p. 32.

ANON. [signed 'T. D.']. York N.E.

**Rook** [*Corvus frugilegus*]'s Nest on Church Spire [at Heworth Church, for some years past]. Field, March 19th, 1892, p. 393; repeated Field, June 11th, 1892, p. 861.

ANON. [not signed]. Isle of Man.

**Excursion to Ballaugh** [June 7th, 1888; *Tachybaptus* and *Hirundo* noted]. Back Trans. Isle of Man N. H. S., p. 150; publ. with Yn Lioar Manninagh, No. 10, Jan.-April 1892.

ANON. [signed 'W. S.']. Lanc. S.

**Migration of Woodpigeons** [(*Columba palumbus*) in the neighbourhood of Leyland, near Preston, Lancashire, where there was a considerable increase up to Feb. 21st, 1892]. Field, April 2nd, 1892, p. 486.

ANON. [not signed]. Northumberland S.

**The Dipper** [*Cinclus aquaticus*] as an Early Nester [near Morpeth; dates given for 1889, 1890, 1891, and 1892]. Land and Water, April 9th, 1892, p. 390.

ANON. [not signed]. York N.E.

**[Nest of Rock Dove** (*Columba livia*) on summit of Roseberry Topping, 1st April, 1892]. N. H. J., April 15th, 1892, p. 45.

ANON. [not signed]. York Mid W.

**Lord Walsingham** [and his remarkable bag of 1,086 driven grouse (*Lagopus scoticus*) on Blubberhouses Moor, 30th Aug., 1888]. Land and Water, May 14th, 1892, p. 523.

ANON. [not signed]. York S.E.

**[Birds noted by] York, The Mount.—N.H.S.** [at Stamford Bridge, 14th May, 1892, *Cuculus* and *Crex*]. N.H.J., June 15th, 1892, p. 75.

ANON. [not signed]. York N.E.

**[Notes made by] Ayton** [scholars in Black Forest, May 10th, *Asio otus*]. N.H.J., June 15th, 1892, p. 77.



- ANON. [signed 'O.'] York S.E.  
**Foxes and Wild Ducks** [(*Anas boschas*) breeding in close contiguity at Bracken Stick Coverts, Holderness country, with freedom from molestation]. Field, June 18th, 1892, p. 904.
- ANON. [signed 'C. C. B.'] Lincolnshire, Notts.  
**The Cuckoo** [(*Cuculus canorus*) inquiry as to its earliest date, and remarking that in Lincolnshire and Notts the writer has never seen it before the last week of April]. Notes and Queries, June 18th, 1892, p. 493.
- ANON. [signed 'J. F. W.']. Lanc. S.  
**Swallow** [*Hirundo rustica*?] killed by taking Wasps [between Chorley and Preston, Aug. 6th, 1892; details given]. Field, Aug. 13th, 1892, p. 287.
- ANON. [newspaper paragraph]. Durham.  
**Cormorant** [*Phalacrocorax carbo*] Poaching [on the Shafto estate at Witton-le-Wear; on being shot a 6-inch trout dropped from its beak]. Field, Sep. 24th, 1892, p. 482.
- ANON. [not signed]. York S.W.  
**The Dusky Petrel** [record of a bird found in a loaded fish-van from the North of Scotland by the Midland Railway porters at Sheffield, last week; stated by a 'Standard' correspondent to be a Manx Shearwater (*Puffinus anglorum*)]. Illust. London News, Sep. 24th, 1892, p. 391.
- ANON. [signed 'Eds.']. Cumberland, Lincs.  
**[Editorial addendum to note on] Ruddy Shield Ducks** (*Tadorna casarca*, L.) in the Moray Firth [to the effect that the species has also occurred in Cumberland, Lincolnshire, etc.]. Ann. of Scott. Nat. Hist., Oct. 1892, p. 270.
- ANON. [signed 'A.']. Derbyshire.  
**Quail** [*Coturnix coturnix*] nesting in Derbyshire [a vague mention of 'several well-authenticated accounts' and of an unsuccessful attempt at introduction]. Field, Oct. 8th, 1892, p. 574.
- ANON. [not signed]. Lanc. S.  
**[Phenological notes by] Penketh Boys' Field Club** [anent *Hirundo*, *Corvus frugilegus*, *Vanellus*, *Sturnus*, and *Passer domesticus*]. N. H. J., Oct. 15th, 1892, p. 109.
- ANON. [signed 'T.D. (York).'] York.  
**Ringdove** [*Columba palumbus*] nesting in October [18th, 1892, at York]. Field, Oct. 22nd, 1892, p. 613.
- ANON. [not signed]. Northumberland S.  
**A Belated Swift** [(*Cypselus apus*) seen at Tynemouth, 10th inst., 1892; report concludes with note that a Swift in 'mid-September' is a rarity]. Newc. Chron.; rep. Land and Water, Oct. 29th, 1892, p. 461.
- ANON. [not signed]. York S.W.  
**Wild Swans** [(*Cygnus musicus*) in Sheffield [two picked up alive on 21st inst. (October)]. Land and Water, Oct. 29th, 1892, p. 461.
- ANON. [not signed]. ? Derbyshire.  
**The Gallinaceous Quail** [in game preserves at Grange-wood and elsewhere round Burton-on-Trent]. Sci. Goss., Nov. 1892, p. 260.
- ANON. [not signed]. Lanc. W. and S., Furness.  
**[Review of] The Birds of Lancashire** [by F. S. Mitchell; 2nd edition; noting that *Ardea purpurea*, *Vanellus gregarius*, *Pelagodroma marina*, *Oceanites oceanicus*, and *Podiceps nigricollis*, are additional to 1st edition]. Land and Water, Nov. 5th, 1892, p. 487.
- ANON. [not signed]. Derbyshire.  
**Any Port in a Storm!** [at Bonsall near Matlock Bath, *Passer domesticus* pursued by *Accipiter nisus*, took refuge in a grocer's shop, where the hawk followed]. Land and Water, Nov. 19th, 1892, p. 539.



- ANON. [signed 'E. L. K.']. Linc. N. and S.  
**Traditional Ballads: 'The Three Ravens'** [given, as noted down at Northorpe, Linc. N., in 1859, and dating back at least to about 1800]. Notes and Queries, Nov. 26th, 1892, p. 437.
- ANON. [signed 'Lepus Hibernicus']. Cumberland, Linc. N.  
**The Recent Visitation of Ruddy Sheldrakes** [*Tadorna casarca*] to Great Britain [giving the details in full; the North-country occurrences were in Cumberland, July 20th, on Humberstone Fitties, Sep. 1st, and at Croston, near Wigton, Cumberland, Sep. 26th]. Land and Water, Nov. 26th, 1892, pp. 566-567.
- ANON. [signed 'C. E. E. (York)']. York Mid W.  
**Hérons** [*Ardea cinerea*] and **Trout** [in the Nidd near Pateley Bridge; a pretty tale of the heron fishing for trout with its own feathers]. Field, Dec. 10th, 1892, p. 918.
- ANON. [not signed]. Lanc. S.  
**Penketh Boys' Field Club** [*Motacilla lugubris* seen on the playground]. N.H.J., Dec. 15th, 1892, p. 144.
- ANON. [signed 'L. P.']. York N.W.  
**Red Grouse** [*Lagopus scoticus*] perching on Trees [between Bellerby and Redmire, in Wensleydale; often noted on hawthorns]. Field, Dec. 31st, 1892, p. 1003.
- O. V. APLIN. Cumberland.  
**Ornithology in Relation to Agriculture and Horticulture. . . The Rook** [*Corvus frugilegus*]; with reference to its destroying flights of locusts years ago in Craven, and caterpillars on Skiddaw in 1830]. Gard. Chron., Dec. 20th, 1890, p. 717.
- O. V. APLIN. Notts.  
**Further remarks upon Grey Shrikes** [with a passing allusion to *L. major* near Nottingham]. Zool., March 1892, p. 112.  
 York N.W., S.W., N.E., Notts, Lanc. S., Cheshire, Linc. N., Derbyshire.
- O. V. APLIN. Linc. N., Derbyshire.  
**On the Distribution of the Cirl Bunting** [*Emberiza cirlus*] in Great Britain [giving detailed records compiled from various sources for the counties specified above]. Zool., April 1892, pp. 121-128.  
 Cheviotland, Durham, Cumberland, Lanc. W. and S., York N.E., Notts, Derbyshire.
- O. V. APLIN. York N.E., Notts, Derbyshire.  
**The Status of the Woodchat, *Lanius rufus*, in Great Britain** [discussed, and notes on the examples recorded, county by county]. Zool., Oct. 1892, pp. 345-352.
- J. ARKLE. Cheshire.  
**Notes on the Early Moths** [of Chester district, with casual references to *Pica pica*, *Garrulus glandarius*, and *Acredula rosea* in Delamere Forest, Feb. 13th, 1892]. Ent., May 1892, p. 122.
- J. J. ARMISTEAD. Cumberland.  
**Sheldrakes** [*Tadorna cornuta*] on the Solway [increasing in numbers]. Nat., May 1892, p. 140.
- JOHN AVERY. Cheviotland.  
**Bird Notes from the North** [of Northumberland, Chathill district; arrival of *Columba palumbus*, *Turdus pilaris*, *Scolopax rusticola*, *Fuligula ferina*, and occurrence of *Rallus aquaticus*]. Newc. Weekly Chron.; rep. Land and Water, Jan. 2nd, 1892, p. 27.
- WILLIAM E. A. AXON. York Mid W., Lanc. S.  
**A Lancashire Naturalist—Thomas Garnett** [with his notes on *Troglodytes*, *Motacilla sulphurea*, *M. flava*, *Mecistura longicaudata*, *Helodromas*, *Parus*



- palustris*, *Certhia*, *Turdus musicus*, *T. merula*, *Fringilla cœlebs*, *Erithacus*, *Parus major*, *P. cœruleus*, *Regulus cristatus*, *Corvus frugilegus*, *Acrocephalus phragmitis*, and *Cinclus*]. *Sci. Goss.*, Aug. 1892, pp. 169-170.
- J. BACKHOUSE. York S.E.  
**Gadwall** [*Chanlelasmus streperus*] in Yorkshire [a fine female shot, Feb. 1892 at East Cottingwith near York]. *Nat.*, Ap. 1892, p. 116.
- J. BACKHOUSE. York Mid W.  
**Nesting of the Chiffchaff** [(*Phylloscopus rufus*) in garden at Holgate, York, in Austrian Pine at least 9 feet from ground]. *Zool.*, Ap. 1892, p. 150.
- J. BACKHOUSE. York S.E.  
**Baillon's Crake** [*Porzana bailloni*] near Pocklington, and White Varieties of the Jay [*Garrulus glandarius*] near York [with particulars]. *Nat.*, Oct. 1892, p. 308.
- J. C. BACON. Isle of Man.  
**Albino Starling** [*Sturnus vulgaris*] in the Isle of Man [shot near Colby, 3rd Oct. ; a *Procellaria pelagica* found dead on Port Erin shore, October 1891]. *Nat.*, Jan. 1892, p. 3.
- MATTHEW BAILEY. York S.E.  
**Flamborough Bird-Notes** [anent non-arrival of the two *Ruticilla*, and lateness of *Hirundo*, *Cuculus*, and *Turdus torquatus*]. *Nat.*, June 1892, p. 186. [Anent arrival or occurrence of *Sylvia sylvia*, *Eudromias*, *Turtur*, *Cypselus*, and *Phalacrocorax graculus*, the latter an unprecedented occurrence of a nesting pair]. *Nat.*, July 1892, p. 215. [Anent migration or occurrence of *Cypselus*, *Sula*, *Rissa*, *Larus*, *Sterna*, *Scolopax rusticola*, *Lanius excubitor*, *Alauda arvensis*, *Turdus merula*, *T. musicus*, *T. iliacus*, and *Regulus cristatus*]. *Nat.*, Nov. 1892, p. 326. [Anent departure of *Hirundo*, *Saxicola*, *Ruticilla phœnicurus*, an albino *Hirundo*, a pied *Turdus merula*, late appearance of *Cypselus*, and occurrence of *Lanius excubitor*, *Chenalopez ægyptiacus*, and *Xema sabinii*]. *Nat.*, Nov. 1892, p. 326.
- SAMUEL BARBER. Cumberland, Westmoreland.  
**Beneath | Helvellyn's Shade. | Notes and Sketches | in the Valley of Wythburn | . . | . . | . . |** [4 lines of poetry] | London : | Elliot Stock . . | 1892 [small 8vo., pp. x. + 166 ; noting *Buteo vulgaris*, *Ardea cinerea* and *Anas boschas* as the most noticeable birds, the former occurrence of *Corvus corax*, the presence of *Tinnunculus*, *Cuculus*, the 'stone-chat' (probably *Saxicola ænanthe*), *Troglodytes*, *Fringilla cœlebs*, *Phylloscopus trochilus*, *Acrocephalus phragmitis*, *Anthus trivialis*, *Pratincola rubetra*, *Cypselus*, *Chelidon*, *Cotile*, *Hirundo*, *Turdus musicus*, and *T. merula*, and absence of *Sylvia atricapilla* and *S. hortensis* ; comparative abundances of birds noted at pp. 50-53].
- MAJOR BELL. York N.W.  
**Solitary Snipe** [*Gallinago major*] in Yorkshire [one weighing 8 oz. shot near Bedale, Oct. 4th, 1892]. *Field*, Oct. 15th, 1892, p. 607.
- W. P. BLACKBURNE-MAZE. Lanc. S.  
**Swan's Eggs** [a nest of *Cygnus olor* with 17 eggs at Cuerden Hall, Preston, Lancs.]. *Field*, Oct. 1st, 1892, p. 537.
- GEORGE BOLAM. Cheviotland, York S.E., Cumberland.  
**Occurrence of the Snow Goose** [*Chen hyperboreus*] in Northumberland during the winter of 1890-91 [given in detail ; the birds were seen at Holy Island, 2nd January, 1891 ; reference also made to the species being synchronously noted at Beverley and at Allonby on Solway]. *Nat.*, Jan. 1892, pp. 1-3.
- GEO. BOLAM. Northumberland.  
**Notes on 'The Supposed Inter-Breeding of the Merlin** [*Falco aesalon*] and Kestrel [*Tinnunculus alaudarius*] in Northumberland in 1886' [discussed, in reply to F. B. Whitlock, and confirming him by collateral evidence as to *Eudromias* and *Ægialitis hiaticula* given on the same doubtful authority]. *Nat.*, Dec. 1892, pp. 369-370.



- T. G. B[ONNEY?] York Mid W.  
**Walling the Cuckoo** [*Cuculus canorus*] in a Field [a standing joke against the people of a Yorkshire village (Austwick)]. Notes and Queries, Nov. 12th, 1892, p. 388.
- E. B. H[AWORTH]. B[OOOTH]. York S.E.  
**Reed Warbler** [*Acrocephalus streperus*] Nesting at a distance from Water [the reeds being backward, the birds nested 300 yards away from pond, in a black currant bush; and some years ago in a yew tree near the pond; both at Hullbank, Inver Hull, East Yorkshire]. Field, June 27th, 1885, p. 843.
- HARRY B. BOOTH. York Mid W. and S.W.  
**Notes from West Yorkshire** [anent occurrence of *Colymbus arcticus* and *Podiceps rubricollis* at Manywells reservoir, breeding of *Parus ater* near Bradford, nesting of *Coccothraustes vulgaris* and *Fringilla coelebs* at Boston Spa, and of *Cinclus* and *Motacilla 'flaveola'* (Ray's Wagtail) up Wharfedale, and commonness of *Tringoides* there]. Garner, Sep. 1st, 1888, pp. 188-9.
- HARRY B. BOOTH. York Mid W. or S.W.  
**Notes from West Yorkshire** [anent occurrence of *Chelidon urbica* near Bradford with white-tipped wings]. Garner, Nov. 1st, 1888, p. 31.
- F. BOYES. York S.E.  
**Rooks** [*Corvus frugilegus*] abandoning Rookery [near Beverley, in consequence of attacks by *C. corone*]. Field, April 30th, 1892, p. 625.
- F. BOYES. York S.E.  
**Nesting Habits of the Lapwing** [(*Vanellus vanellus*) near Beverley; these vary according to circumstances]. Field, May 7th, 1892, p. 666.
- HENRY S. BOYNTON. York S.E.  
**Protection for Rare Birds** [recording the flushing of a *Botaurus stellaris* twice on 16th Jan., 1891, but not shooting it, while covert-shooting in the East Riding]. Field, Jan. 31st, 1891, p. 162.
- CHARLES R. BROWN. Lanc. S.  
**Leach's Petrel** [*Procellaria leucorrhoea*] on the Lancashire Coast [one shot at Ainsdale, near Southport, December 6th, 1892; also a young female *Clangula glaucion*]. Land and Water, Dec. 24th, 1892, p. 676.
- FRANK BROWNSWORD. Lanc. W.  
**Persistent Brooding of the Ringed Plover** [(*Ægialitis hiaticula*) as noted in 1891 on the beach at St. Anne's-on-the-Sea; details and dates given]. Zool., Jan. 1892, p. 31; rep. Land and Water, Jan. 16th, 1892, p. 81.
- F. BROWNSWORD. Lanc. W.  
**Black Redstart** [*Ruticilla tithys*] in Lancashire [one seen between Lytham and St. Anne's, Oct. 25th, 1891]. Zool., March 1892, p. 115.
- THOMAS BUNKER. York S.W.  
**[Birds observed by] the Yorkshire Naturalists' Union at Penistone and Dunford Bridge** [on July 9th, 1892; *Turdus viscivorus*, *T. merula*, *T. torquatus*, *Phylloscopus trochilus*, *Troglodytes*, *Motacilla lugubris*, *Anthus pratensis*, *Hirundo*, *Chelidon*, *Passer domesticus*, *Fringilla coelebs*, *Emberiza citrinella*, *Sturnus*, *Tinnunculus*, *Lagopus scoticus*, and *Tringoides*]. Nat., Aug. 1892, p. 256.
- L. BUTTRESS. Notts.  
**Puffin** [*Fratercula arctica*] Inland in Notts. [one obtained at Bottomsall, autumn 1889]. Zool., March 1892, p. 115.
- L. BUTTRESS. Notts.  
**Mimicry in the Starling** [(*Sturnus vulgaris*), which at Grove Rectory, near Retford, imitated a hen's cackle]. Field, May 7th, 1892, p. 666.



- LEONARD BUTTRESS. Notts.  
**Tufted Duck** [*Fuligula fuligula*] in Notts. [on Clumber Lake, 6th May, 1892, forty seen]. Nat., June 1892, p. 186.
- A. ST. CLAIR CARNEGIE. Linc. N., York Mid W.  
**Reeves Pheasant** [*Phasianus reevesi*] in Lincolnshire [suggesting that the one recorded by John Cordeaux may be one turned out by John Harrison in Wilstrop Wood some time ago]. Field, June 27th, 1891, p. 981.
- M. N. C[ARR]. Cumberland.  
**Notes from the Solway** [at Salta Moss; breeding-place of *Larus ridibundus*; *L. argentatus* also noted; also *Numenius phaeopus* near Allonby, and *Saxicola isabellina* in Nov. 1887]. N.H.J., June 15th, 1892, pp. 72-73.
- JAMES CARTER. York N.W.  
**Chiffchaff** [*Phylloscopus rufus*] Nesting at a Height from the Ground [at Masham, where it arrived 20th Mar., 1892]. Field, Mch. 26th, 1892, p. 432.
- JAMES CARTER. York N.W.  
**Nesting Habits of the Lapwing** [*Vanellus vanellus*] as observed at Masham, described]. Field, April 30th, 1892, p. 625.
- J. CHALONER. York Mid W.  
**Parus cæruleus** [quite yellow in colour] at Newton Kyme. Nat., July 1892, p. 215.
- E. CHAPMAN. York N.W.  
**Pomerine Skua** [*Stercorarius pomarinus*] in Wensleydale, North Yorkshire [one, in first year's plumage, shot on moors above Carperby]. Nat., Nov. 1892, p. 326.
- H. SHORTRIDGE CLARKE. Isle of Man.  
**Magpies** [*Pica pica*] Congregating [to the number of 40, at East Baldwin, Oct. 15th, 1891; editor mentions a similar case near Sulby]. Yn Lioar Manninagh, April 1892, p. 359.
- WM. EAGLE CLARKE. York S.E.  
**[Saxicola deserti shot between Easington and Kilnsea, Oct. 17th, 1885; young female; first English occurrence].** Ibis, Jan. 1886, p. 100.
- WILLIAM J. CLARKE. York N.E.  
**Bernacle Goose** [*Bernicla leucopsis*] at Scarborough [a large flock in September; 29 at Low Fields Farm, Brompton, on the 19th]. Zool., Jan. 1892, p. 33.
- WILLIAM J. CLARKE. York N.E.  
**Ornithological Notes from Scarborough** [anent *Somateria mollissima* shot at Castle Fort, Dec. 19th, 1891, *Buteo lagopus*, female, shot at Scalby, Jan. 18th, 1892, *Podiceps auritus* shot on the North Shore, Jan. 20th; and many Swans observed]. Zool., April 1892, p. 144.
- WILLIAM J. CLARKE. York N.E.  
**Notes from Scarborough** [anent occurrence or movements of *Tringa subarquata*, *Tr. minuta*, *Totanus canescens*, *Falco peregrinus*, *Corvus monedula*, *Falco æsalon*, *Ruticilla titys*, *Phalaropus hyperboreus*, *Stercorarius pomarinus*, *Sterna fluviatilis*, and *Sula*; dates range from 1892, Aug. 19th]. Zool., Nov. 1892, pp. 410-1.
- H. S. CLAYE. Cheshire.  
**Little Crane** [*Porzana parva*] in Cheshire [one killed Oct. 3rd, 1891, by telephone-wires running under Bosley Cloud, Staffordshire border of Cheshire]. Field, Oct. 17th, 1891, p. 582.
- F. CLEMESHA. Lanc. W. or S.  
**[Turdus torquatus reported as seen at Preston in the winter].** N.H.J., March 15th, 1892, p. 28.



- WALTER COLLINS. Westmorland.  
**Red-throated Diver** [*Colymbus septentrionalis*] at Windermere [a female shot Jan. 14th, 1892]. *Field*, Jan. 30th, 1892, p. 133.
- JOHN CORDEAUX. Linc. N.  
**[Occurrence of *Coracias indicus* at Muckton, near Louth, where an adult was shot Oct. 27th, 1883; details given and occurrence discussed].** *Ibis*, Jan. 1891, pp. 147-8.
- JOHN CORDEAUX. York S.E., Linc. N.  
**Large Raptorial Birds in the Humber District** [being notes on the occurrence of *Archibuteo lagopus* near Grimsby, at Easington and at Hull, of *Circus cyaneus* at Easington, and of a larger Eagle (possibly *Haliaëtus albicilla*) seen at Kilnsea; all in November 1891]. *Nat.*, Jan. 1892, p. 3.
- J. CORDEAUX. Linc. N.  
**The Approaching Extinction of the Lapwing** [(*Vanellus vanellus*) denied, so far as regards the North Lincolnshire Wolds; as given in evidence before Select Committee on Wild Birds' Protection]. *Sci. Goss.*, April 1892, p. 89.
- JOHN CORDEAUX. York S.E., Linc. N.  
**Bird-notes from the Humber District. Spring of 1892** [anent *Larus ridibundus* nesting at Twigmoor, *Crex*, *Ruticilla tithys*, *R. phœnicurus*, *Lanius excubitor*, *Regulus cristatus*, *Sylvia atricapilla*, *Squatarola*, *Tringa alpina*, *Calidris*, *Tringa canutus*, *Sterna minuta*, *Haliaëtus albicilla*, *Larus glaucus*, *Turtur*, all in Holderness, and the *Haliaëtus* and *Eudromias*, near Grimsby and Great Cotes; dates and details given]. *Nat.*, July 1892, pp. 217-218.
- JOHN CORDEAUX. Cheviotland, York S.E.  
**A Recent Visit to the Farne Islands** [which are described; *Sterna macrura*, *Rissa*, *Uria grylle*, *Lomvia troile*, *Alca torda*, *Fratercula*, *Phalacrocorax graculus*, *Sterna fluviatilis*, *S. cantiaca*, *Sula*, *Somateria mollissima*, *Sterna dougalli*, *S. minuta*, *Larus fuscus*, *L. argentatus*, *Columba livia*, *Hematopus*, *Anthus obscurus*; with note of the Ringed or Silver-eyed Guillemot (*Lomvia troile* var.) on the Bempton Cliffs]. *Zool.*, Aug. 1892, pp. 293-302.
- JOHN CORDEAUX. Linc. N., York S.E.  
**September Woodcocks** [(*Scolopax rusticola*) in the Humber district; a considerable immigration on September 24th, also of *Asio accipitrinus* and *Regulus cristatus*]. *Field*, Oct. 8th, 1892, p. 574.
- JOHN CORDEAUX. York S.E., Linc. N.  
**On the Migration of the Yellow Wagtail** [(*Motacilla raii*), discussed; with notes on its movements at Spurn and in North Lincolnshire]. *Zool.*, Nov. 1892, pp. 389-391.
- JOHN CORDEAUX. York S.E.  
**Barred Warbler** [*Sylvia nisoria*] in Holderness [shot at Easington, Oct. 19th, 1892; bird of the year; now in Edinburgh Museum]. *Zool.*, Dec. 1892, p. 424.
- JOHN CORDEAUX. York S.E.  
**Rare Wheatear** [either *Saxicola stapanina*, *S. deserti* or *S. melanoleuca*] seen near Spurn [on Sep. 18th, 1892; not shot, but seen by H. B. Hewetson]. *Zool.*, Dec. 1892, p. 424.
- JOHN CORDEAUX. York S.E.  
**Garganey** [*Querquedula querquedula*] in Holderness [young male shot near Easington, Sep. 19th, 1892; date afterwards corrected to Sep. 2nd (see *Zool.* 1893)]. *Zool.*, Dec. 1892, p. 424.
- JOHN CORDEAUX. York S.E., Linc. N.  
**Migration in the Humber District in the Autumn of 1892** [noting two great rushes, Sep. 20-21, and Oct. 14-16; and movements of *Ruticilla*



*phœnicurus*, *Sylvia cinerea*, *Erithacus* (in swarms), both *Muscicapæ*, *Saxicola œnanthe*, *Accentor*, *Parus cœruleus*, *Cyanecula*, *Anthus obscurus*, *Scolopax rusticola*, *Regulus cristatus* (great swarms), *Reg. ignicapillus*, *Lanius excubitor*, *Archibuteo*, *Asio otus*, *A. brachyotus*, *Corvus frugilegus*, *Sturnus*, *Alauda arvensis*, *Turdus torquatus*, *T. merula*, *T. iliacus*, *T. musicus*, *T. pilaris*, *Plectrophanes nivalis*, *Phylloscopus trochilus*, *Pratincola rubicola*, *Gallinago cœlestis*, *Limnocyptes*, and *Corvus cornix*]. *Zool.*, Dec. 1892, pp. 417-420.

R. C. H. COTTON.

Derbyshire.

Reeve [*Machetes pugnax*] in Derbyshire [shot on the Burton-on-Trent Sewage Farm; a few days previously were observed there *Hæmatopus*, *Totanus calidris*, *Ægialitis hiaticula*, and Sand Snipe]. *Field*, Oct. 15th, 1892, p. 607.

J. H. CROSLAND.

York S.W.

Migrant Table, No. 16, 1892 [giving Cleckheaton dates for *Saxicola*, *Phylloscopus trochilus*, *Hirundo*, *Anthus trivialis*, *Motacilla raii*, *Chelidon*, *Cuculus*, *Pratincola rubetra*, *Ruticilla phœnicurus*, *Sylvia sylvia*, *S. curruca*, *Acrocephalus phragmitis*, both *Muscicapæ*, and *Crex*]. *N.H.J.*, Nov. 15th, 1892, p. 135.

F. CURTIS.

Lanc. S. or W.

Migrant Table, No. 16, 1892 [giving Preston dates for *Saxicola*, *Phylloscopus rufus*, *P. trochilus*, *Hirundo*, *Turdus torquatus*, *Cotile*, *Anthus trivialis*, *Motacilla raii*, *Sylvia atricapilla*, *Pratincola rubetra*, *Ruticilla phœnicurus*, and *Tringoides*]. *N.H.J.*, Nov. 15th, 1892, p. 135.

A. N. CURZON.

Derbyshire.

White Landrail [*Crex crex*] in Derbyshire [one obtained at Kedleston, Sep. 6th, 1892]. *Field*, Sep. 24th, 1892, p. 473.

J. BURTT DAVY.

Linc. N.

[Birds observed by] Lincolnshire Naturalists at Gibraltar Point [on Aug. 15th, 1891; *Turdus musicus*, *T. merula*, *Ruticilla phœnicurus*, *Motacilla lugubris*, *Anthus pratensis*, *Hirundo*, *Chelidon*, *Cotile*, *Passer domesticus*, *Linota cannabina*, *Emberiza miliaria*, *E. citrinella*, *Sturnus*, *Corvus frugilegus*, *C. corone*, *Alauda arvensis*, *Cypselus*, *Ardea cinerea*, *Gallinula chloropus*, *Ægialitis hiaticula*, *Tringoides*, *Totanus calidris*, *T. canescens*, both *Numeni*, *Sterna fluviatilis*, *S. minuta* and *Larus minutus* noted by J. E. Mason; several vernacular names given]. *Nat.*, Feb. 1892, pp. 47-48.

CHARLES DIXON.

Notts, Derbyshire, York S.W., Cheviotland.

The | Birds of our Rambles | A Companion for the Country | By | [six lines of author] | with illustrations by A. T. Elwes. | London: Chapman and Hall, | Limited. | 1891 | . . . [8vo cloth, pp. xi. + 249 + 8 plates; notes anent *Hirundo* in Yorkshire and Derbyshire as bringing good luck (p. 17). *Locustella naevia* between Heeley and Norton, Sheffield (p. 56), *Phylloscopus rufus* in March in the Dukeries, Notts (p. 92), *Falcon æsalon* on the Peak, Derbyshire (p. 151), *Eudromias morinellus* on migration in the Peak (p. 174), *Plectrophanes nivalis* in the Wash, and shot perching in Endcliffe Woods, Sheffield, winter 1879-80 (p. 177), and *Somateria mollissima* at the Ferne Islands (p. 223)].

Linc. N. and S., Cheviotland, Notts,

CHARLES DIXON.

York S.E. and S.W.

The | Migration of Birds | an Attempt to Reduce Avian Season-Flight to Law | by Charles Dixon | [seven lines of titles] | [three lines of quotation] | London: Chapman and Hall, Ld. | 1892 | . . . [8vo cloth, pp. xvi. + 300; the only Northern references are: *Regulus cristatus* and *Turdus musicus* in the Humber and up the Don, Sheaf and Trent, *Corvus cornix* in the Wash and along the Witham and Welland, *Regulus* and *Linota cannabina* in the Lincolnshire salt marshes (pp. 244-245); *Turdus pilaris* at the Farnes and at the Dudgeon Light-vessel off the Wash, *T. merula* along the entire coast, etc. (p. 255)].



- G. DOBSON. Furness.  
**A Strange Place for a Bird's Nest** [at Urswick, 31st May, 1887, in a pump; *Sturnus vulgaris*]. Nat. World, July 1887, p. 130.
- C. WOLLEY DOD. Cheshire.  
**Cuckoo** [*Cuculus canorus*]'s Egg in a Swallow [*Hirundo rustica*]'s Nest [at Edge Hall, Malpas; where it is also in a nest of *Motacilla lugubris*]. Field, July 2nd, 1892, p. 39.
- CHARLES WOLLEY-DOD. Cheshire.  
**On a Case of a Cuckoo** [*Cuculus canorus*] and a Swallow [*Hirundo rustica*] being reared in the same Nest [at Edge Hall, Malpas, Cheshire, in 1892; there also breed *Motacilla lugubris*, *Muscicapa grisola*, *Hirundo*, *Turdus merula*; detailed particulars of the occurrence given]. Ibis, Oct. 1892, pp. 524-530.
- E. D. DONCASTER. York S.W.  
**Manx Shearwater** [*Puffinus anglorum*] at Sheffield [found in a fish-van from Glasgow, at the Midland Station, Sep. 8th; at first incorrectly identified as *Puffinus obscurus*]. Field, Sep. 24th, 1892, p. 473.
- L. DONCASTER. York S.W.  
**Migrant Table, No. 16, 1892** [giving Sheffield dates for *Anthus trivialis*, *Sylvia atricapilla*, *S. sylvia*, *S. curruca*, *Chelidon*, *Cuculus*, *Ruticilla phœnicurus*, *Locustella*, and *Phylloscopus sibilatrix*]. N. H. J., Nov. 15th, 1892, p. 135.
- H. E. DRESSER. York S.E.  
**[Repetition of record of *Sylvia nisoria* shot by H. H. Slater on the Yorkshire Coast, 28th Aug., 1884].** Ibis., Oct. 1885, p. 453.
- ALEX. DURY. York Mid W.  
**Jackdaws** [*Corvus monedula*] killing young birds [of *Phasianus colchicus* and *Perdix cinerea*, at Swarcliffe near Ripley, Yorkshire, this year]. Field, July 23rd, 1892, p. 163.
- S. A. ELLERSHAW, Sec. Lanc. S.  
**[Birds noted by] Penketh Girls' N. H. Society** [*Alcedo* by Sankey Brook, *Turdus musicus* and *Ligurinus* at Penketh School]. N. H. J., May 15th, 1892, p. 58.
- CHAS. E. ELMHIRST. York S.W.  
**Magpie** [*Pica pica*] attacking Pigeon [at Round Green, Barnsley]. Field, Nov. 5th, 1892, p. 707.
- C. J. EVANS [and 4 others]. York S.W.  
**Migrant Table, No. 16, 1892** [giving Ackworth dates for *Saxicola*, *Phylloscopus rufus*, *P. trochilus*, *Hirundo*, *Cotile*, *Anthus trivialis*, *Motacilla raii*, *Sylvia atricapilla*, *S. sylvia*, *Chelidon*, *Cuculus*, *Daulias*, *Ruticilla phœnicurus*, *Acrocephalus phragmitis*, *Locustella*, *Crex*, *Cypselus*, and *Muscicapa grisola*]. N. H. J., Nov. 15th, 1892, p. 135.
- WILLIAM EVANS. Cheviotland.  
**Notes on Pallas's Sand-grouse** (*Syrrhaptes paradoxus*) in Scotland during the recent great westward movement of the species [including notices of specimens in Berwick Museum, shot 2 or 3 miles S. of Berwick, 5th June, 1888]. Proc. R. Phys. Soc. Edinb., vol. 10, pt. 1, 1888-89, pub. 1889, p. 108.
- C. FIDLER. Derbyshire.  
**The Peak under Snow** [in Feb. 1888; *Lagopus scoticus* driven to approach houses for food]. Garner, April 1st, 1888, p. III.
- F. R. FITZGERALD. York Mid W.  
**Blackbird** [*Turdus merula*] laying in Song Thrush [*T. musicus*]'s Nest [at Harrogate and in Nidderdale]. Garner, Jan. 1st, 1887, p. 6a.



- F. R. FITZGERALD. York Mid W.  
**Late Nesting of the Swallow** [*Hirundo rustica*] at Starbeck, latter end of October 1884; nest of *Chelidon* with young, at Pateley, Oct. 8th; *Hirundo* seen at Harrogate as late as Oct. 23rd in 1887]. Garner, Jan. 1st, 1887, p. 64.
- F. R. FITZGERALD. York Mid W. and S. E.  
**A Brief Account of Pallas's Sand Grouse** (*Syrrhaptes paradoxus*) and its Habits [giving details of occurrences in Holderness, at Leeds, Norton-le-Clay, Beaver Dyke, Darley, Staveley, Goldsborough, Withernsea, etc.]. Garner, Oct. 1st, 1888, pp. 1-4.
- JOHNNIE FORREST. Lanc. S.  
**Birds and Weather Forecasts** [as noted at Formby, Lanc., in the case of Wild Geese, *Vanellus*, *Charadrius pluvialis*, *Mareca*, *Anas boschas*, *Limnocryptes gallinula*, etc., and their unerring indications of coming weather]. Field, Dec. 31st, 1892, p. 1003.
- RILEY FORTUNE. Cheviotland, Northumberland S., Westmorland.  
**Strange Nesting Places** [in Northumberland: *Erithacus* in a tin can; *Turdus merula* under a sleeper near Lucker railway station; *Acredula rosea* in an old squirrel's 'dray' at Gosforth Park; *Gallinula chloropus* in a fir tree at least 12 feet from the ground, also in Gosforth Park; *Troglodytes* in old stable lantern at Kendal, Westmorland]. Garner, Jan. 1st, 1887, p. 64.
- RILEY FORTUNE. Northumberland.  
**A Chapter on Bird Curiosities** [including a record of a double egg of *Anas boschas* in Northumberland, and an adventure there with *Phylloscopus trochilus* and nest]. Garner, Feb. 1st, 1887, p. 84.
- RILEY FORTUNE. York Mid W.  
**Harrogate Bird Notes** [in Jan. 1887; anent abundance of *Dendrocopus major* and occurrence of *Sula* (Crimple Viaduct), *Anser brachyrhynchus*, *Lanius excubitor* (Harlow Moor), *Coccothraustes vulgaris*, *Mergus merganser*, at Killinghall Bridge, Jan. 20th, 1887, and at Ripley Lake, Feb. 26th, 1886; *Tachybaptus*, *Bernicla bernicla* near Harlow Moor, *Gallinago gallinago*, *Motacilla lugubris*, *M. melanope*, *Linota linaria*]. Garner, April 1st, 1887, p. 112.
- RILEY FORTUNE. York Mid W.  
**The Birds of Harrogate and District** [enumerated with localities, local names, etc., and introductory remarks; the present instalment includes 32 species, from *Turdus* to *Sitta*]. Garner, May 1st, 1887, pp. 123-126. [Continuation, gives 42 species, from *Troglodytes* to *Alauda*]. Garner, June 1st, 1887, pp. 141-3. [Third instalment has 33 species from *Alauda* to *Botaurus*]. Garner, July 1st, 1887, pp. 164-6. [Fourth instalment gives 39 species, from *Chenalopex* to *Scolopax*]. Garner, Aug. 1st, 1887, pp. 179-181. [Fifth and concluding instalment brings up the total to 170 species, from *Gallinago* to *Rhodostethia*, and includes additional notes on 6 species]. Garner, Sep. 1st, 1887, pp. 199-200.
- R. FORTUNE. Northumberland, Durham, York Mid W.  
**Ornithology in Relation to Agriculture and Horticulture**. . . . The Starling [*Sturnus vulgaris*] with notice of their increase in Northumberland and near Sunderland]. Gard. Chron., Jan. 3rd, 1891, p. 11. [Habits in their nesting sites at Harrogate]. Gard. Chron., Jan. 10th, 1891, p. 45.
- RILEY FORTUNE. York Mid W.  
**Curious Death of a Young Blackbird** [*Turdus merula*] caught by the throat on a rose-prick, at Harrogate]. Nat., Jan. 1892, p. 22.
- R. FORTUNE. York Mid W.  
**Great Grey Shrike** [*Lanius excubitor*] at Harrogate [one seen in Barbers' Coppice, 27th Jan., 1892]. Nat., Apl. 1892, p. 116.



RILEY FORTUNE.

York Mid W.

**Nesting Habits of Lapwing** [(*Vanellus vanellus*) described, as observed presumably near Harrogate]. *Field*, April 23rd, 1892, p. 585.

RILEY FORTUNE.

York Mid W.

[**Birds observed by**] The Yorkshire Naturalists' Union at Horton-in-Ribblesdale [14th May, 1892; *Turdus musicus*, *T. viscivorus*, *T. merula*, *T. pilaris*, *T. torquatus*, *Saxicola*, *Pratincola rubetra*, *Ruticilla phœnicurus*, *Sylvia sylvia*, *Phylloscopus trochilus*, *Acrocephalus phragmitis*, *Erithacus*, *Accentor*, *Cinclus*, *Parus cœruleus*, *Troglodytes*, *Motacilla lugubris*, *M. melanope*, *M. raii*, *Anthus pratensis*, *A. trivialis*, *Passer domesticus*, *Fringilla cœlebs*, *Linota flavirostris*, *Emberiza schoeniclus*, *Sturnus*, *Pica*, *Corvus monedula*, *C. corone*, *C. frugilegus*, *C. corax*, *Alauda arvensis*, *Hirundo*, *Chelidon*, *Cotile*, *Cypselus*, *Cuculus*, *Accipiter nisus*, *Falco peregrinus*, *Tinnunculus*, *Ardea cinerea*, *Anas boschas*, *Lagopus scoticus*, *Perdix cinerea*, *Gallinula chloropus*, *Charadrius pluvialis*, *Vanellus*, *Gallinago gallinago*, *Numenius arquata*, *Tringoides*, and *Larus argentatus* noted; with some annotations]. *Nat.*, June 1892, pp. 179-180.

RILEY FORTUNE.

York N.E.

[**Birds observed by**] the Yorkshire Naturalists' Union at Coxwold and Byland [Sep. 1892; *Turdus viscivorus*, *T. musicus*, *T. merula*, *Erithacus*, *Regulus cristatus*, *Accentor*, *Acredula rosea*, *Parus major*, *P. cœruleus*, *Troglodytes*, *Motacilla lugubris*, *Anthus pratensis*, *Hirundo*, *Chelidon*, *Ligurinus*, *Passer domesticus*, *Fringilla cœlebs*, *Linota cannabina*, *Emberiza citrinella*, *Sturnus*, *Corvus monedula*, *C. frugilegus*, *Alauda arvensis*, *Accipiter nisus*, *Tinnunculus*, *Anas boschas*, *Columba palumbus*, *C. œnas*, *Phasianus*, *Perdix cinerea*, *Gallinula chloropus*, *Fulica*, and *Vanellus*]. *Nat.*, Nov. 1892, pp. 345-6.

J. H. F[RYER, Sec.].

York Mid W., S.E., and N.E.

[**Notes made by**] York, Bootham, N.H. Club [on *Gallinago gallinago* (Askham), *Corvus frugilegus*, *Columba palumbus*, *Muscicapa grisola*, *Pica* (Askham), *Corvus cornix*, *Gallinago gallinago*, and *Charadrius pluvialis* (by the Derwent), *Emberiza miliaria*, *Vanellus*, *Larus ridibundus* (Tilmire), and *Turdus pilaris*, all near York where not specified]. *N.H.J.*, June 15th, 1892, p. 76.

J. H. FRYER [and 5 others].

'York.'

**Migrant Table, No. 16, 1892** [giving York dates for *Saxicola*, *Phylloscopus rufus*, *P. trochilus*, *Hirundo*, *Cotile*, *Anthus trivialis*, *Motacilla raii*, *Sylvia atricapilla*, *S. cinerea*, *S. sylvia*, *S. hortensis*, *Chelidon*, *Cuculus*, *Pratincola rubetra*, *Ruticilla phœnicurus*, *Acrocephalus phragmitis*, *Locustella*, *Tringoides*, *Crex*, *Cypselus*, and *Muscicapa grisola*]. *N. H. J.*, Nov. 15th, 1892, p. 135.

F. J. GEORGE.

? Lanc. S.

**Cuckoo** [(*Cuculus canorus*); note on its call, as heard presumably at Chorley, Lanc. S.]. *Sci. Goss.*, Feb. 1888, p. 43.

W. R. OGILVIE-GRANT.

Northumb. S., Chesh., York Mid W.

**On the Sexual Differences in Plumage of the Common Partridge** [(*Perdix perdix*); discussed at length, with mention of a chestnut variety which has occurred from time to time chiefly in Northumberland, near Widdrington and Ulgham, of a hybrid between *Perdix perdix* and *Lagopus scoticus* shot on Blubberhouses Moor by Lord Walsingham, and of Latham's description of the 'Cheshire Partridge.']. *Field*, April 9th, 1892, p. 508.

H. GRANT.

York S.E.

**Scolopax major** [repeating from Cordeaux's *Birds of Humber District* a record of one killed on the Hull which weighed 8 oz. 2 drs.]. *Land and Water*, Nov. 7th, 1891, p. 520.



- W. GREGORY. Notts.  
**Our Summer Visitants** [at West Bridgford, Notts; dates given for *Phylloscopus rufus* in 1883 and 1887; and in 1887 for *Anthus trivialis*, *Hirundo*, *Cuculus*, *Sylvia sylvia*, *Pratincola rubetra*, *Crex*, and *Cypselus*]. Nat. World, Aug. 1887, p. 148.
- J. H. GURNEY, Jun. York Mid W.  
**On the Occasional Assumption of the Male Plumage by Female Birds** [in the case of *Fringilla cœlebs* at Chapeltown, Leeds, 16th May, 1887, and *Ruticilla phœnicurus* at Wike near Leeds, June 1886; full details given]. Ibis, April 1888, pp. 226-230.
- J. H. GURNEY, Jun. Cheviotland, York S.E.  
**[Occurrence of Adams' Diver (*Colymbus adamsi*) at Embleton, Northumberland, Dec. 1829; and of *Sturnus unicolor* at Howden].** Ibis, Oct. 1889, pp. 573-4.
- G. H. CATON HAIGH. Linc. N.  
**Ruddy Sheldrake** [*Tadorna casarca*] in Lincolnshire [one killed Sep. 1st, on Humberstone fitties]. Zool., Oct. 1892, p. 360.
- G. H. CATON HAIGH. Linc. N.  
**Yellow-browed Warbler** [*Phylloscopus superciliosus*] in Lincolnshire [on Oct. 7th, 1892, at North Cotes; details given; arrival of *Plectrophanes nivalis* previous day, noted.] Zool., Nov. 1892, p. 413.
- J. E. HALL and J. H. FRYER. York N.E.  
**Migrant Table, No. 16, 1892** [giving dates at Thirsk for *Saxicola*, *Phylloscopus rufus*, *P. trochilus*, *Hirundo*, *Turdus torquatus*, *Cotile*, *Anthus trivialis*, *Motacilla raii*, *Sylvia atricapilla*, *S. sylvia*, *Chelidon*, *Cuculus*, *Pratincola rubetra*, *Acrocephalus phragmitis*, *Tringoides*, *Crex*, and *Cypselus*]. N.H.J., Nov. 15th, 1892, p. 135.
- P. C. HALL. York S.W.  
**Landrail** [*Crex crex*] in a Drawing Room [at Purstone Hall, near Pontefract, June 27th, 1892]. Field, July 2nd, 1892, p. 39.
- C. C. HANSON. York S.W.  
**Sparrows** [*Passer domesticus*] Feeding on Larvæ [of a Sawfly at Greetland, near Halifax]. Nat., July 1892, p. 215.
- H. S. HARLAND. York N.E.  
**Iceland Gull** [*Larus leucopterus*] near Scarborough [one, immature, shot Nov. 8th, 1892, about two miles North]. Field, Nov. 12th, 1892, p. 726.
- J. W. HARRISON. Linc. N.  
**Ruff** [*Machetes pugnax*] in North Lincolnshire [one shot at Goxhill, Oct. 7th, 1891; was in company with *Tringa alpina* and *Ægialitis hiaticula*]. Nat., Jan. 1892, p. 26.
- J. E. HARTING. Durham.  
**[Bones of Great Auk (*Alca impennis*) found in Caves at Whitburn Lizard in 1879].** Zool., April 1892, p. 134.
- J. E. HARTING. Isle of Man.  
**Manx Shearwater** [*Puffinus anglorum*] in Middlesex [with a note of Willughby having stated it to be very common in the Isle of Man, when describing it as a British bird]. Field, Sep. 10, 1892, p. 433.
- J. E. HARTING [not signed]. Furness.  
**[Review of] A Vertebrate Fauna of Lakeland . . . By . . . H. A. Macpherson** [with notes as to *Saxicola isabellina* and *Pelagodroma marina*, the latter found washed up dead by tide on Walney Island]. Zool., Dec. 1892, pp. 436-8.



- JOHN HESLOP. York S.E.  
**Quail** [*Coturnix coturnix*] in East Yorkshire [two shot at Hornsea 'last week']. *Field*, Oct. 8th, 1892, p. 574.
- H. B. HEWETSON. York S.E., Linc. N.  
**Plovers** [*Vanellus vanellus*] Incubating in the Snow [at Warren Farm, Kilnsea, 'Lincolnshire' (surely Yorkshire?) Good Friday, 1892]. *Field*, April 30th, 1892, p. 625.
- THOS. HEWETSON. Westmorland.  
**Ornithological Voracity** [at Weasdale, near Ravenstonedale; dead *Alcedo* found choked by *Cottus gobio*, Nov. 28th, 1887]. *Sci. Goss.*, Feb. 1888, p. 43.
- WILLIAM HEWETT. York S.E. and N.E.  
**Woodcock** [*Scolopax rusticola*] Breeding in South-East Yorkshire; also noted near York [the latter at Sandburn, June 1884; the former 18th May, 1889]. *Nat.*, Nov. 1892, p. 326.
- W. C. HEY. York N.E.  
**A Real Summer's Day.** West Ayton, June 9th, 1892 [with an allusion to *Hirundo rustica*]. *Nat.*, Oct. 1892, p. 292.
- HORACE HILDYARD. Durham.  
**Quail** [*Coturnix coturnix*] in Durham [at Sedgefield, near Ferryhill, Oct. 1st and 5th, 1892]. *Field*, Oct. 8th, 1892, p. 574.
- J. F. HILLS [and 6 others]. Lanc. S.  
**Migrant Table, No. 16, 1892** [giving Penketh dates for *Saxicola*, *Phylloscopus rufus*, *P. trochilus*, *Hirundo*, *Anthus trivialis*, *Motacilla raii*, *Chelidon*, *Cuculus*, *Ruticilla phoenicurus*, *Acrocephalus phragmitis*, *Tringoides*, *Crex*, and *Cypselus*]. *N.H.J.*, Nov. 15th, 1892, p. 135.
- ARTHUR HOLLIS [and] A. A. SHAW. Uncertain.  
**Some Persecuted Birds. No. III. The Heron** [(*Ardea cinerea*) discussed, with a locality note which we reproduce verbatim et punctuatum: 'among the most notable are those at Newton Hall, Maldon, Yorks. Rawcliffe Hall, Lancashire. Babingly Bush, Norfolk. Cobden Park, Kent. Harewood Park; and Eshton Hall, Yorks. Walton Hall, the seat of the late Charles Waterton, Esq, and many other in various parts of the country;']  
 . . . ]. *Garner*, Nov. 1st, 1888, p. 31.
- RICHARD HOWSE. Northumb. S.  
**Note on the Nesting of the Peewit** [(*Vanellus vanellus*) discussing in detail the question] in what time does the Peewit lay her clutch of four eggs? [in the light of observations made in Redesdale]. *Nat.*, May 1892, pp. 137-139.
- RICHARD HOWSE. York N.E., Linc. N.  
**Macqueen's Bustard** [*Otis macqueeni* J. G. Gray] near Marske [shot 5th October, 1892; now in Newcastle Museum; allusion made to the Lincs. example of Oct. 1847, now in York Museum]. *Nat.*, Dec. 1892, p. 373.
- PETER INCHBALD. York S.E.  
**Snow Bunting** [*Plectrophanes nivalis*] and **Shore Larks** [*Otocorys alpestris*] at Spurn [some hundreds and a few flights respectively noted but no dates given]. *Field*, Jan. 30th, 1892, p. 133.
- F. P. JOHNSON. Cumberland.  
**Weight of Grouse** [*Lagopus scoticus*] in Cumberland [one in 1868 and another in 1873, killed at Brampton, weighed 28½ oz.]. *Field*, Nov. 26th, 1892, p. 803.
- P. M. C. KERMODE. Isle of Man.  
**List of Birds of the Isle of Man** [enumerating 127 species, with localities and dates, and a table showing faunistic position of the various groups]. *Trans. I. of Man N. H. S.*, vol. 1, 1879-84, pub. 1888, pp. 15-23.



- P. M. C. KERMODE [not signed]. Isle of Man.  
**Phenological Observations** [giving Manx dates for *Scolopax rusticola*, *Turdus iliacus*, *Corvus frugilegus*, *Alauda arvensis*, *Saxicola œnanthe*, *Hirundo*, and *Vanellus*]. Yn Lioar Manninagh, April 1892, pp. 349-350.
- H. WALLIS KEW. Linc. N.  
**Field Notes. No. 1. In the Woods** [near Louth] in Spring [noting nest of *Certhia* at Aby, May 6th, 1885]. Nat. World, Jan. 1886, p. 1.
- CHAS. KIRKBY. York Mid W.  
**Hawfinch** [*Coccothraustes vulgaris*] at Headingley, Leeds [one seen 25th Nov. 1891]. Nat., March 1892, p. 95.
- E. P. KNUBLEY. York Mid W.  
**Kittiwake** [*Rissa tridactyla*] Inland [at Staveley near Boroughbridge] and Great Grey Shrike [*Lanius excubitor*] near Knaresborough [on Feb. 20th and Jan. 26th respectively]. Nat., April 1892, p. 116.
- E. P. KNUBLEY. York S.E., Linc. N.  
**Destruction of Wild Birds' Eggs** [referring to the harrying of *Sterna minuta* at Spurn and on the Lincolnshire Coast, and the disappearance at both places of *S. arctica* and *Hæmatopus*]. Nature, Sept. 1892, p. 434.
- E. P. KNUBLEY. York S.E., Linc. N.  
**Is Legislative Protection required for Wild Birds' Eggs?** [the question discussed, with incidental mention of *Sterna macrura* and *Hæmatopus ostralegus* and *Ægialitis hiaticula* having practically ceased to exist or become much scarcer as breeding species on the Yorkshire and Lincolnshire coasts]. Ann. of Scott. Nat. Hist., Oct. 1892, p. 215.
- ROBT. LEE. York N.E.  
**Notes from Thirsk** [anent habits of wild birds kept in captivity; also reporting a 'Lesser Kestrel' (*Tinnunculus cenchris*) shot near Thirsk, April 12th, and asking if anyone had lost one from confinement; also that two White-tailed Eagles (*Haliaëtus albicilla*) were seen by James Boden at Bushy Stoop brickponds, April 14th, 1892]. Field, April 23rd, 1892, p. 585.
- PAUL LEVERKÜHN. Cheviotland, Cumberland, York Mid W. and S.W.  
**Fremde Eier im Nest. | Ein Beitrag zur Biologie der Vögel | von | Paul Leverkühn. | Nebst einer bibliographischen notiz über Lottinger. | Motto: [three lines] | 1891. | [Six lines of publishers' names]. [8vo, paper, xii. + 212 + 4 pages; references to *Corvus frugilegus* at Lofthouse, Yorkshire (p. 5), *Perdix perdix* at Eslington Park (p. 8), *Totanus calidris* and *Vanellus* in Cumberland (p. 97), *Turdus merula* and *T. musicus* at Harrogate and in Nidderdale (p. 103), *Parus coruleus* and *Accentor modularis* in Cumberland (p. 107), and a Cumberland reference at p. 126].**
- G. E. LODGE. Linc. N. or S.  
**[Former Nesting of *Milvus iclinus* and *Buteo vulgaris* near Lincoln, fide G. Adrian and J. Wolley, mentioned in a note on]:** e Martin in Surrey and Lincolnshire. Zool., May 1892, p. 191.
- T. A. LOFTHOUSE. York N.E.  
**Arrival of Summer Birds** [at Saltburn, *Phylloscopus rufus*, April 5th]. Field, April 9th, 1892, p. 508.
- R. LYDEKKER. York N.E., N.W., Durham, Lincs.  
**On British Fossil Birds** [noting as found in Kirkdale Cave remains of *Alauda arvensis*, *Corvus corax*, *Pyrrhocorax graculus*, *Bernicla bernicla*, *Perdix perdix*, *Scolopax gallinago*, also of a small *Anas* and of a large *Columba*; series of bones of *Tetrao urogallus* in a cave near Teesdale, Yorkshire (see last edition of Yarrell); remains of *Alca impennis* in superficial deposits in the Cleadon Hills, Durham; and former abundance of *Podiceps cristatus* in the Lincolnshire fens alluded to; the former existence of the Chough in Yorkshire is thus proved]. Ibis, July 1891, pp. 381-410.







- J. F. MANSERGH. Cumberland.  
**Walling the Cuckoo** [*Cuculus canorus*] in a Field [as practised by the wise men of Gotham; also attributed to the people of Borrowdale, Cumberland; another note to same effect by C. A. White]. Notes and Queries, Dec. 17th, 1892, p. 497.
- JAS. EARDLEY MASON. Linc. N.  
**[Ornithological] Notes from North Lincolnshire** [anent *Ampelis garrulus* at Tealby Manor, 29th Feb., *Archibuteo lagopus* at Saltfleetby, 4th Dec., and *Falco peregrinus* at Great Carlton, 9th Jan.]. Nat., April 1892, p. 118.
- F. S. MITCHELL, HOWARD SAUNDERS, Lanc. S. and W., Furness,  
 and R. J. HOWARD. Chesh., Yorkshire.  
**The Birds of Lancashire** | By F. S. Mitchell | . . . | Second Edition | revised and annotated by | Howard Saunders, F.L.S., F.Z.S., &c. | with additions by R. J. Howard, M.B.O.U., | and other local authorities | illustrated by G. E. Lodge, Victor Prout, &c. | [monogram] | London: | Gurney & Jackson, 1, Paternoster Row. | . . . | MDCCCXCII. [8vo. cloth, pp. xxvi. + 271 + 4 of advertisements + map + plates; 259 species are treated of, with full details of local names, distribution, etc.; the additions are distinguished by being within brackets [ ]; the illustrations are 13 in number].
- C. B. MOFFAT. Cheshire.  
**Migrants and Hibernants; 1891** [at Oxton, Cheshire, *Cypselus apus* numerous and ubiquitous till Sep. 5th]. Sci. Goss., Feb. 1892, p. 47.
- C. B. MOFFAT. Isle of Man.  
**Birds of the Isle of Man** [mentioned as Additions to the Lists by Kermode and Ralfe; *Phylloscopus rufus*, *Parus cæruleus*, *Pyrrhula*, *Alcedo*, *Linota flavirostris*, *Charadrius pluvialis*, *Saxicola œnanthe*, *Anas boschas*, *Motacilla lugubris*, *Regulus cristatus*, *Troglodytes*, *Sturnus*, *Phylloscopus trochilus*, *Sylvia sylvia*, *Cuculus*, and *Crex*, with full details of occurrences]. Zool., April 1892, p. 146.
- A. G. MORE. Westmorland.  
**The Alleged Former Nesting of the Osprey** [*Pandion haliaëtus*] in the English Lake District [disputed, and the statements of the authorities usually quoted examined and discussed; the writer holds that *Aquila chrysaëtus* and *Haliaëtus albicilla*, not *Pandion* at all, are the species referred to]. Zool., Jan. 1892, pp. 1-3.
- S. L. MOSLEY. York N.W.  
**Ortolan Bunting** [*Emberiza hortulana*] near Bedale [recording one bought from James Varley's Executors and labelled 'Bedale, Yorks., July 9, 1882']. Nat., Jan. 1892, p. 3.
- S. L. MOSLEY. York S.W.  
**Peculiar Nests of Missel Thrush** [(*Turdus viscivorus*) in S.W. Yorkshire]. Nat., Aug. 1892, p. 246.
- N. NEAVE. Cheshire.  
**Migrant Table, No. 16, 1892** [giving dates at Rainow near Macclesfield for *Saxicola*, *Phylloscopus trochilus*, *Hirundo*, *Turdus torquatus*, *Anthus trivialis*, *Chelidon*, *Cuculus*, *Sylvia sylvia*, *Tringoides*, and *Cypselus*]. N.H.J., Nov. 15th, 1892, p. 135.
- NEWMAN NEAVE. Cheshire.  
**A Fork-tailed Petrel** [(*Procellaria leucorrhœa*) picked up on Oct. 11th, 1892, at Macclesfield; named by J. H. Salter]. Nature, Nov. 10th, 1892, p. 31.
- NEWMAN NEAVE. Cheshire.  
**Fork-tailed Petrel** [*Procellaria leucorrhœa*] near Macclesfield [one picked up Oct. 11th, 1892]. Zool., Dec. 1892, p. 429.



- T. H. NELSON. Northumberland and Durham, York N.E.  
**Ornithology in Relation to Agriculture and Horticulture** . . . Wood-pigeons [(*Columba palumbus*); notes anent increase in Northumberland and Durham (Hancock, 1874); immigration of this and *C. anas* at Redcar in 1884; etc.]. Gard. Chron., Dec. 27th, 1890, pp. 748-750.
- THOMAS H. NELSON. York N.E., Durham, Cheviotland.  
**Ornithological Notes from Redcar for 1891-92** [anent *Charadrius plumbeus*, *Columba palumbus*, *Saxicola ananthe*, *Pratincola rubetra*, *Motacilla lugubris*, *Podiceps griseigena*, *Colymbus septentrionalis*, *Phalacrocorax carbo*, *Scolopax rusticola*, *Fratercula*, *Lomvia troile*, *Otocorys*, *Hirundo*, *Chelidon*, *Cotile*, *Turdus torquatus*, *Crex*, *Ægialitis hiaticula*, *Totanus calidris*, *Acrocephalus phragmitis*, *Sterna macrura*, *Numenius phæopus*, *Fulmarus glacialis*, *Numenius arquata*, *Tringa canutus*, *Calidris*, *Strepsilas*, *Totanus canescens*, *Limosa lapponica*, *Tringa subarquata*, *Sterna cantiaca*, *Stercorarius crepidatus*, *Edemia fusca*, *Oceanodroma leucorhoa*, *Alauda arvensis*, *Asio accipitrinus*, *Vanellus*, *Corvus cornix*, *Turdus musicus*, *T. iliacus*, *T. pilaris*, *Fringilla coelebs*, *Plectrophanes nivalis*, *Podiceps fluviatilis*, *Machetes*, *Phalaropus hyperboreus*, *Lanius excubitor*, *Anthus pratensis*, *Sula*, *Tringa maritima*, *Porzana marueta* (co. Durham), *Somateria mollissima* (its increase at the Farnes also noted), *Colymbus glacialis*, *Larus canus*, *L. glaucus*, *Phalaropus fulicarius*, *Rissa*, and *Podiceps cristatus* noted in chronological order]. Nat., May 1892, pp. 141-144.
- T. H. NELSON. York N.E., Linc. N.  
**Macqueen's Bustard** [*Otis macqueeni* J. G. Gray] near Redcar; An Addition to the Yorkshire Avifauna [shot 5th Oct., 1892; reference made to the Lincolnshire example shot 7th Oct., 1847]. Nat., Dec. 1892, p. 373.
- T. H. NELSON. York N.E.  
**Arrival of Summer Birds** [at Redcar; *Saxicola ananthe*, March 30th; and at Whitby, *Motacilla melanope*, Mar. 19th]. Field, Apl. 9th, 1892, p. 508.
- T. H. NELSON. York N.E.  
**MacQueen's Bustard** [*Otis macqueeni*] near Redcar [adult male shot Oct. 5th, 1892; now in Newcastle Museum]. Field, Dec. 17th, 1892, p. 942.
- ALFRED NEWTON. York Mid W. and N.W.  
**The British Example of Bulwer's Petrel** [(*Bulweria columbina*) is now in the possession of W. Eagle Clarke; full details of the history of the specimen]. Nat., May 1888, p. 156.
- ALFRED NEWTON. York N.W. and Mid W.  
**Bulwer's Petrel** [(*Bulweria columbina*); history of the Yorkshire specimen found at Tanfield, and of its re-discovery by W. Eagle Clarke]. P.Z.S.; rep. Zool., June 1888, p. 230.
- G. C. NORMAN. Northumb. S.  
**Note on the Geographical Distribution of the Crested Cuckoos** (*Coccyzus*). [repeating record of *C. glandarius* near Bellingham, Northumberland, Aug. 5th, 1870 (E. Charlton, Zool., s.s., 2344)]. Ibis, Oct. 1888, p. 398.
- F. MENTEITH OGILVIE. Cumberland, Linc. N.  
**On the Recent Occurrence in the British Islands of the Ruddy Sheldrake** [(*Tadorna casarca*); occurrences collected from various sources and classified; two Cumberland and one Lincolnshire example recorded, with particulars]. Zool., Nov. 1892, pp. 392-8.
- CHARLES OLDHAM. Derbyshire.  
**Great Snipe** [*Gallinago major*] in Derbyshire [shot 12th Oct., 1892, at Bolsover]. Nat., Nov. 1892, p. 326.
- CHAS. OLDHAM. Derbyshire.  
**Common Buzzard** [*Buteo vulgaris*] in Derbyshire [a female shot 28th Sep., 1892, on the Derwent Moors, near Ashopton]. Nat., Nov. 1892, p. 326.



- CHAS. OLDHAM. Lanc. S., Cheshire.  
**Supposed Occurrence of the Purple Heron** [*Ardea purpurea*] in Lancashire [Alderley Edge, the locality, is in Cheshire]. Zool., Dec. 1892, p. 428.
- R. PADEN. ? Lanc. S. or Cheshire.  
 [Bittern (*Botaurus stellaris*) shot 'in the neighbourhood']. Proc. Liverp. Biol. Soc., vol. 6, 1891-92, publ. 1892, p. xiii.
- A. J. PALETHORPE. Notts.  
**Protection of Birds' Eggs** [with newspaper extract anent nest and eggs of *Erithacus* at New Annesley, Notts, on 12th Jan., 1892]. Nottingham Evening Post, Jan. 13th, 1892; Yn Lioar Manninagh, April 1892, p. 357.
- H. A. PAYNTER [Hon. Sec.]. Cheviotland.  
**Protection of Birds on the Farne Islands** [being report on the season of 1891; increase in *Somateria mollissima*, *Larus fuscus*, *Sterna cantiaca*, *Fratercula*, *Aegialitis hiaticula*, *Lomvia*, *Rissa*, etc.; *Sterna macrura* all deserted their young, and none reached maturity, it is supposed from scarcity of proper food]. Field, May 7th, 1892, p. 666.
- E. PEAKE. York Mid W.  
**Giggleswick Bird Calendar** [small square 8vo, 12 pages in paper cover, dated Feb. 1890; giving dates of arrival, nesting, etc., a list of birds that breed in the district, and of birds that may be seen in winter; 77 species mentioned].
- SAML. PEEL. York S.E.  
**Hooded Crow** [(*Corvus cornix*) common in the East Riding, especially about Driffeld and the Wolds; locally called 'Wetwang Greyback']. Nat. World, Jan. 1886, p. 19.
- J. W. PEILE and J. J. WILLIAMSON. Cumberland.  
**Migrant Table, No. 16, 1892** [giving dates of arrival of *Phylloscopus rufus*, *P. trochilus*, *Hirundo*, *Cotile*, *Anthus trivialis*, *Motacilla raii*, *Sylvia atricapilla*, *Chelidon*, *Cuculus*, *Pratincola rubetra*, *Ruticilla phoenicurus*, *Sylvia sylvia*, *Acrocephalus phragmitis*, *Tringoides*, *Muscicapa atricapilla*, *Crex*, *Cypselus*, and *Sylvia hortensis* at Wigton, Cumberland]. N.H.J., Nov. 15th, 1892, p. 135.
- JNO. PERCIVAL. York N.W.  
 [Coccythraustes vulgaris, Hawfinch, caught in a mill at Preston-Brook]. N.H.J., March 15th, 1892, p. 26.
- LISTER PETTY. Notts.  
**The Nightingale** [*Daulias luscinia*] in Nottinghamshire [stating that he once—and once only—heard it in the neighbourhood of Worksop, in his school days, about 1871 or 1872]. Nat., March 1892, p. 95.
- J. F. PICKARD. York Mid W.  
**Migrant Table, No. 16, 1892** [giving Newton-in-Bolland dates for *Saxicola*, *Phylloscopus rufus*, *P. trochilus*, *P. sibilatrix*, *Hirundo*, *Turdus torquatus*, *Cotile*, *Pratincola rubicola*, *P. rubetra*, *Anthus trivialis*, *Motacilla raii*, *Sylvia atricapilla*, *S. sylvia*, *S. curruca*, *Chelidon*, *Cuculus*, *Ruticilla phoenicurus*, *Acrocephalus phragmitis*, *Caprimulgus*, *Tringoides*, both *Muscicapa*, *Crex*, and *Cypselus*]. N.H.J., Nov. 15th, 1892, p. 135.
- T. DIGBY PIGOTT. Cheviotland.  
**The Birds of the Outer Farnes** [describing a visit paid on June 14th, and noting the breeding or presence of *Lomvia troile*, *Fratercula*, *Larus fuscus*, *L. argentatus*, *Rissa*, *Somateria mollissima*, *Aegialitis hiaticula*, *Anthus obscurus*, *Sterna fluviatilis*, *S. macrura*, *S. dougalli*, *S. cantiaca*, and *Phalacrocorax carbo*]. Contemporary Review, Aug. 1888, pp. 182-191.
- G. PULLEN. Derbyshire.  
**Quail** [*Coturnix coturnix*] Nesting in Derbyshire [on the Burton Sewage Farm at Egginton; nine eggs; this season]. Field, Oct. 1st, 1892, p. 537.



- G. PULLEN. Derbyshire.  
**Breeding of the Quail** [(*Coturnix coturnix*) in Derbyshire, at the Burton Sewage-farm; nine eggs]. Brit. Nat., Dec. 1892, p. 268.
- WALTER RAINE. York N.E., Mid W., N.W.  
**Bird Nesting** | in | North-West Canada | by | Walter Raine. | — | Illustrated. | — | Toronto: | Printed by Hunter, Rose and Company. | 1892 [8vo, cloth, ix. + 197 pages + 6 coloured plates + 28 tinted plates; references made to nesting of *Gallinago gallinago* on Strensall Common (p. 37), of *Pica pica* at Fewston, Yorkshire (p. 116), of *Falco æsalon* on Ilkley Moor (p. 118), of *Corvus corax* and *Falco peregrinus* at Sedbergh (p. 130), and of *Linota rufescens* round York (p. 143)].
- P. RALFE. Isle of Man.  
**Petrels and Phalarope in the Isle of Man** [two Petrels—uncertain whether *Procellaria pēlagica* or *P. leucorrhœa*—noted at Peel, 27th Sep., 1891; and a *Phalaropus fulicarius* 'telegraphed' on the railway near Union Mills, November]. Zool., Jan. 1892, p. 28.
- P. RALFE. Isle of Man.  
**Birds of the Isle of Man** [being an Annotated List of 55 species, preceded by a brief reference to previously published lists, and on certain birds which are absent from the Manx fauna]. Zool., March 1892, pp. 93-100.
- P. G. RALFE. Isle of Man.  
**[Birds mentioned in] Notes on Manx Plants** [*Ardea cinerea* and *Tringoides*]. Sci. Goss., May 1892, p. 111.
- DAVID RICE. York Mid W.  
**The Cuckoo.** (*Cuculus canorus*.) [giving a gossiping account of its natural history and folk-lore; with notes from Yorkshire (R. Fortune)]. Garner, June 1st, 1887, pp. 145-148.
- B. ROSE. Notts.  
**A Buff-coloured Woodcock** [(*Scolopax rusticola*) killed at Bestwood]. Field, Feb. 6th, 1892, p. 177.
- JOHN S. ROWNTREE. York N.E.  
**Belated House Martins** [(*Chelidon urbica*) about Mount Villas, York, November 11th, 1891]. N.H.J., Dec. 15th, 1891, p. 175.
- W. H. ST. QUINTIN. York S.E.  
**Malformed Bill of Rook** [(*Corvus frugilegus*) at Scampston, near Rillington, Yorkshire; malformation editorially described]. Field, Mar. 5th, 1892, p. 313.
- THOMAS SCOTT. Northumb. S.  
**Pheasant** [*Phasianus colchicus*]'s Nest 20 ft. up a Tree [at Matfen Hall, near Newcastle-on-Tyne, May 1892]. Field, June 11th, 1892, p. 861.
- HENRY SEEBOHM. York S.E.  
**Remarks on Brandt's Siberian Bunting** (*Emberiza cioides*) [and its occurrence at Flamborough, Oct. 1887]. Ibis, July 1889, pp. 295-296.
- H. SEEBOHM [not signed]. York N.E.  
**Turtur orientalis in Great Britain** [one shot near Scarborough, 23rd Oct., 1889]. Ibis, July 1890, p. 388.
- HENRY SEEBOHM. York S.E., Cheviotland.  
**On Some Recent Additions to the List of Irish Birds** [and references to occurrence of *Sylvia nisoria* in Yorkshire in 1884, and of *Muscicapa parva* at Berwick-on-Tweed in 1883]. Ibis, Oct. 1891, p. 585.
- R. H. SIKES. York Mid W. and N.E.  
**[Extracts] from an Ornithological Diary** [kept at York; *Motacilla raii*, *Emberiza schœniclus*, and *M. lugubris* by the Foss; *Accipiter nisus*, *Cinclus*, *Alcedo*, and *Sylvia atricapilla* at Knaresborough; *Parus major* and *Phyllo-*



- scopus rufus* at Skelton and Overton Woods; *Acrocephalus phragmitis*, *Passer montanus*, *Phylloscopus trochilus*, and *Troglodytes* by the Foss; all being phenological notes for 1889]. N.H.J., Dec. 15th, 1891, p. 176.
- J. CHAS. SMITH. Cumberland.  
**Albino House Sparrows** [*Passer domesticus*] in Cumberland [presumably near Penrith; a few years since]. Nat., March 1892, p. 95.
- JNO. E. SMITH [Sec.]. Lanc. S.  
**[Phenological Notes by] Penketh Boys' Field Club** [upon *Sturnus*, *Turdus musicus*, *Charadrius pluvialis*, *Tinnunculus*, *Columba palumbus*, *Corvus frugilegus*, and *Passer domesticus*]. N.H.J., March 15th, 1892, p. 26.
- J. E. S[MITH]. and T. Y[OUDE]. Lanc. S.  
**[Birds noted by] Penketh Boys' Field Club** [*Numenius arquata*, *Motacilla sulphurea*, and *Chrysomitris* near Penketh, *Corvus frugilegus* in Bold Woods, and *Saxicola* at Widnes; dates given]. N.H.J., May 15th, 1892, p. 57.
- J. E. S[MITH]. and T. Y[OUDE]. Cheshire, Lanc. S.  
**[Birds noted by] Penketh Boys' Field Club** [*Ruticilla phœnicurus* at Moore in Cheshire, *Linota rufescens* at Sankey, *Syrnium aluco* on Chat Moss, and *Crex* at Penketh]. N.H.J., June 15th, 1892, p. 74.
- TOM SPEEDY. Yorkshire, Derbyshire.  
**Weight of Grouse** [(*Lagopus scoticus*) in various districts; 26 to 28 oz. in Yorkshire and Derbyshire]. Land and Water, Nov. 19th, 1892, p. 538.
- THOMAS STEPHENSON. York N.E.  
**Bird-Notes from Whitby, Sept. 1890—Oct. 1891** [anent the occurrence of *Larus minutus*, *Pernis*, *Botaurus stellaris*, *Fuligula fuligula*, *F. marila*, *Picus major*, *Clangula glaucion*, *Bernicla bernicla*, *Limosa lapponica*, *Lanius collurio*, and *Hæmatopus ostralegus*, with localities, dates, and other details]. Nat., Jan. 1892, pp. 21-22.
- DOUGLAS STUART STEUART. Lanc. S.  
**A Brood of Pied Blackbirds** [(*Turdus merula*) at Fallowfield, Manchester]. Zool., Oct. 1892, p. 358.
- C. E. STOTT. Lanc. S.  
**Spotted Crake** [*Porzana maruetta*] in S.W. Lancashire [several instances, with localities and dates, etc., given]. Zool., Oct. 1892, p. 361.
- R. A. SUMMERFIELD. York Mid W.  
**Birds near Ripon** [being notes on *Coccothraustes vulgaris*, *Carduelis elegans*, and *Chelidon* (second brood) at North Stainley]. Nat., April 1892, p. 116.
- JAMES SUTTON. Durham.  
**Pied Rooks** [(*Corvus frugilegus*) and **Pied Daw** (*C. monedula*) near Durham; the former observable nearly every season]. Zool., June 1892, p. 228.
- M. TAIT. York S.W.  
**Walton Hall** [and Charles Waterton's protection of birds; mentioning *Chenalopex aegyptiacus*, *Bernicla canadensis*, *Anas boschas*, *Querquedula crecca*, *Mareca*, *Fuligula ferina*, *F. fuligula*, *Clangula*, *Spatula*, *Fulica*, *Gallinula chloropus*, *Ardea cinerea* and *Strix*]. Yorkshire: Scenes, Lore and Legends [Leeds, 1888], p. 59.
- J. THEOBOLD. Westmorland or Furness.  
**Food of Wild Pheasants** [*Phasianus colchicus*] in the English Lake District [acorns, and *Polypodium vulgare* found in their crops in autumn and winter]. Field, March 26th, 1892, p. 463.
- J. T. THOMPSON. York N.E.  
**Migrant Table, No. 16, 1892** [giving dates at Great Ayton for *Phylloscopus rufus*, *P. trochilus*, *P. sibilatrix*, *Hirundo*, *Turdus torquatus*, *Cotile*, *Motacilla raii*, *Chelidon*, *Cuculus*, *Pratincola rubetra*, *Ruticilla phœnicurus*, *Sylvia sylvia*, *S. curruca*, *S. hortensis*, *Tringoides*, *Crex*, *Cypselus*, and *Muscicapa grisola*]. N.H.J., Nov. 15th, 1892, p. 135.



- D. LORT THORPE. Cumberland.  
**Imitative Powers of the Starling** [*(Sturnus vulgaris)* as noted near Carlisle; notes of the Oystercatcher, Curlew, Landrail, and Common Sandpiper imitated]. Zool., May 1892, p. 192.
- JOHN E. TINKLER. York N.W.  
**[List of] the Avi-fauna of Arkengarthdale, Swaledale, and the New Forest** [enumerating and fully annotating 122 species; good topographical introduction; local names, faunistic position, localities, stated for each bird]. Nat., Oct. and Nov. 1892, pp. 309-325.
- H. B. TRISTRAM. York S.E.  
**Note on *Emberiza cioides*, Brandt** [and its occurrence at Flamborough, Oct. 1887]. Ibis, July 1889, pp. 293-4, and plate 10.
- EDGAR R. WAITE. York Mid W.  
**Smews** [*Mergus albellus*] at Newton Kyme near Tadcaster [a female, Jan. 19th, 1892, and a male also; first since one killed winter of 1829-30]. Nat., Feb. 1892, p. 34.
- EDGAR R. WAITE. York N.W., Durham.  
**[Birds observed by] the Yorkshire Naturalists' Union at Rokeby** [on June 6th; *Turdus viscivorus*, *T. musicus*, *T. merula*, *Saxicola*, *Pratincola rubetra*, *Ruticilla phaniceus*, *Erithacus*, *Sylvia cinerea*, *S. atricapilla*, *S. hortensis*, *Regulus cristatus*, *Phylloscopus trochilus*, *Ph. rufus*, *Ph. sibilatrix*, *Acrocephalus phragmitis*, *Accentor*, *Cinclus*, *Parus major*, *P. caeruleus*, *P. britannicus*, *Troglodytes*, *Motacilla lugubris*, *M. raii*, *Anthus pratensis*, *Muscicapa grisola*, *Hirundo*, *Chelidon*, *Cotile*, *Certhia*, *Ligurinus*, *Passer* (both), *Fringilla coelebs*, *Emberiza miliaria*, *E. citrinella*, *Sturnus*, *Pica*, *Corvus monedula*, *C. corone*, *C. frugilegus*, *Alauda arvensis*, *Cypselus*, *Accipiter nisus*, *Columba palumbus*, *C. œnas*, *Phasianus*, *Perdix*, *Crex*, *Gallinula chloropus*, and *Vanellus*; the *Cypselus* in Barnard Castle town, co. Durham]. Nat., July 1892, pp. 208-209.
- EDGAR R. WAITE. York Mid W.  
**'Escapes,' with a Note on the Magellanic Goose** [*Bernicla magellanica*] in Yorkshire [a pair at Bishopthorpe, near York; the 'Escapes' are *Larus argentatus* at Headingley and Calverley, an Australian Quail and a Golden Pheasant, at Leeds]. Nat., Aug. 1892, pp. 251-253.
- H. S. WARD. York Mid W.  
**The Mild Season** [noting on Rombalds Moor, Jan. 20th, 1884, a flight of 300 'Plovers'; also an *Ardea cinerea* and *Anas boschas* on Lanshaw Dam]. Nat. World, Feb. 1884, p. 27.
- ROBERT WARREN. Cheviotland.  
**Birds on the Farne Islands** [inquiring if Mr. Paynter is quite certain that the Terns which deserted their young and eggs were the Arctic (*Sterna macrura*) and not the Common Tern (*S. fluviatilis*)]. Field, May 21st, 1892, p. 741.
- C. S. WATSON. Cumberland.  
**'Two Swallows** [*Hirundo rustica*] **do not make a Summer'** [two seen 19th March, 1892, at Broughton, near Cockermouth]. N.H.J., April 15th, 1892, p. 48.
- C. S. WATSON. Cumberland.  
**[Birds noted near] Carlisle** [*Tringoides*, *Phylloscopus rufus*, *Ph. trochilus*, *Saxicola*, 20th April, at Cote House Island]. N.H.J., May 15th, 1892, p. 63.
- E. G. WHELER. Cheviotland.  
**Marked Woodcocks** [*Scolopax rusticola*]; in spring 1891 six young ones were caught in Hulne Parke, Alnwick, and marked 'N 91': one of these was shot in the Park, Oct. 31st]. Field, Nov. 19th, 1892, p. 764; Zool., Dec. 1892, p. 427.



- J. WHITAKER. Notts.  
**Emus' Feathers in Sparrows'** [*Passer domesticus*] Nests [at Rainworth; the Sparrows would have  $1\frac{1}{2}$  miles to go for them; nest of *Turdus merula* also lined with them]. Field, Feb. 13th, 1892, p. 206.
- J. WHITAKER. Notts.  
**Curious Habitat for Little Grebe** [(*Tachybaptus fluviatilis*); one stayed nine days on a small pond without any cover, on the high-road, at Rainworth]. Field, Feb. 13th, 1892, p. 206.
- J. WHITAKER. Notts.  
**Hen Harrier** [*Circus cyaneus*] in Notts. [a pair about Rainworth all the winter]. Field, Feb. 13th, 1892, p. 206.
- J. WHITAKER. Notts.  
**Arrival of Summer Birds** [at Rainworth, Notts; *Phylloscopus rufus*, March 26th]. Field, April 9th, 1892, p. 508.
- Cheshire, Derbyshire, Lanc. W.,  
Cumberland, York Mid W.
- JOSEPH WHITAKER.  
**[Birds mentioned in] a Descriptive List of the Deer-Parks and Paddocks of England** . . . London . . . 1892 [at p. 30 *Anas boschas*, *Querquedula crecca*, *Mareca*, *Fuligula fuligula*, *Fuligula marila*, *Tadorna tadorna*, *Mergus merganser*, *Podiceps* mentioned as frequenting Doddington Park, Cheshire, *Phasianus* in Cumberland (p. 36), Heronry of *Ardea cinerea* and Rookery of *Corvus frugilegus* in Kedleston Park, Derbyshire, at p. 41 *Phasianus* in Derbyshire, at p. 88 *Ardea cinerea* in Ashton Park, Lancashire, at p. 164-5 *Phasianus*, *Perdix perdix*, and *Anas boschas* in Westmorland, at p. 165 a heronry of *Ardea cinerea* at Dallam Tower in that county, *Anas boschas*, *Ardea cinerea*, *Querquedula crecca*, *Gallinago caelestis*, *Mergus merganser* in Ripley Park, Yorkshire (p. 183), and heronry of *Ardea cinerea* in Crofton Park, Cumberland (p. 191)]. Review [mentioning the Heronries at Dallam Tower and Crofton] in Nat., May 1894, p. 160.
- J. WHITAKER. Notts.  
**Ruff** [*Machetes pugnax*] in Nottinghamshire [shot at Mansfield Reservoir Aug. 17th; a former occurrence at Clipstone noted]. Zool., Dec. 1892, p. 423.
- W. WHITE. Westmorland.  
**Arrival of Summer Birds** [at Ambleside; *Anthus trivialis*, March 26th]. Field, April 9th, 1892, p. 508.
- F. B. WHITLOCK. Notts.  
**Food of the Tree Sparrow** [(*Passer montanus*) at Beeston, Notts; various insects mentioned, as well as seeds and grain]. Nat., Jan. 1892, p. 22.
- F. B. WHITLOCK. Notts.  
**The Nightingale** [*Daulias lusciniæ*] in Nottinghamshire [treated of at length; mention also made of *Acrocephalus palustris* as a Notts bird]. Nat., Jan. 1892, pp. 27-28.
- F. B. WHITLOCK. Notts.  
**Pallas's Grey Shrike** [*Lanius major*] in Notts and Leicestershire [in Notts at Chilwell, near Beeston, one shot January]. Zool., Feb. 1892, p. 76.
- F. B. WHITLOCK. Notts.  
**Pallas' and Great Grey Shrikes** [*Lanius major* and *L. excubitor*] in Notts [killed near Chilwell on 2nd Jan., and at Bingham, end of Feb. 1892, respectively]. Nat., April 1892, p. 116.
- F. B. WHITLOCK. Notts.  
**The Nightingale** [*Daulias lusciniæ*] in Notts [at Sherwood Forest, etc., note in rejoinder to Lister Petty]. Nat., April 1892, p. 118.
- F. B. WHITLOCK. Notts.  
**Notes on the Great Crested Grebe** [(*Podiceps cristatus*) in Notts; its swimming habits described]. Nat., May 1892, p. 140.



- F. B. WHITLOCK. Notts, Linc. S.  
**Notes from Norfolk in 1891** [including notices of *Parus britannicus* or *ater* in Notts, and of *Chelidon* crossing the Wash from Lincolnshire on the 20th October]. Zool., May 1892, pp. 195-6.
- F. B. WHITLOCK. Derbyshire.  
**Birds of Derbyshire** [an appeal for information]. Nat., Aug. 1892, p. 246; Field, Aug. 27th, 1892, p. 329.
- F. B. WHITLOCK. Derbyshire.  
**Birds of Derbyshire** [an appeal for information and assistance in preparation of a book; Editor gives titles of various articles on the subject]. Zool., Sep. 1892, p. 331.
- F. B. WHITLOCK. Notts.  
**The Marsh Warbler** [*Acrocephalus palustris*] in Notts [midway between Beeston and Attenborough, heard three years ago; *Acrocephalus phragmitis* also]. Zool., Sep. 1892, p. 332.
- F. B. WHITLOCK. Northumb. S.  
**The Supposed Inter-breeding of the Merlin** [*Falco aesalon*] and Kestrel [*F. tinnunculus*] in Northumberland, in 1886 [at Linnshiels Loch, near Harbottle; doubts expressed and evidence offered in disproof]. Nat., Nov. 1892, pp. 341-2.
- W. W[ITWELL]. York N.E. and Mid W.  
**School Natural History at York** [reviewed, with mention of *Parus caeruleus*, *Passer montanus*, *Turdus viscivorus*, and *Columba palumbus* nesting at Bootham, York, and of a literary nest of *Parus britannicus* at Hob Moor]. Nat., Sep. 1892, p. 279.
- THOMAS WILLIAMSON. Cumberland.  
**Migrant Table, No. 16, 1892** [giving dates at Allonby, Cumberland, for *Saxicola*, *Phylloscopus rufus*, *P. trochilus*, *Hirundo*, *Cotile*, *Pratincola rubicola*, *P. rubetra*, *Anthus trivialis*, *Motacilla raii*, *Chelidon*, *Cuculus*, *Ruticilla phoenicurus*, *Sylvia sylvia*, *Numenius phaeopus*, *Phylloscopus sibilatrix*, *Muscicapa* (both), *Crex*, *Cypselus*, *Sylvia hortensis*, and *Lanius excubitor*]. N.H.J., Nov. 15th, 1892, p. 135.
- A. WILSON. York N.W.  
**Supposed Nesting of Jack Snipe** [*Lymnocyptes gallinula*] in Yorkshire [about six miles from Sedbergh; evidence not quite satisfactory; see editorial remarks]. Field, Oct. 1st, 1892, p. 538.
- HERBERT WOOD. York S.E.  
**The Ruff** [*Machetes pugnax*] in Yorkshire [one shot at Hornsea, also a couple of *Calidris arenaria*, 30th Aug., 1892]. Field, Sep. 17th, 1892, p. 470.
- JOHN WRIGLEY. Lanc. S.  
**Bittern** [*Botaurus stellaris*] and **Tufted Duck** [*Fuligula fuligula*] in Lancashire [killed at Formby, near Liverpool, Jan. 21st and 16th respectively; also an *Anas boschas* on the 16th, which weighed as much as 3 lb. 2½ oz.] Field, Jan. 30th, 1892, p. 133.
- [LORD] YARBOROUGH. Linc. N.  
**A White Woodcock** [(*Scolopax rusticola*) in Manby Woods, North Lincolnshire; has now a nest there with four young ones, all of the usual colour]. Field, July 2nd, 1892, p. 39.
- J. BALDWIN YOUNG. Lanc. W.  
**Unusual Site for Wagtail** [*Motacilla lugubris*]'s Nest [at Stonyhurst, Lancs., 3rd June, 1888, in an old Yew hedge]. Field, June 2nd, 1892, p. 39.



## ILLUSTRATIONS OF BRITISH LEPIDOPTERA.

British and European | Butterflies and Moths | (Macrolepidoptera). | By | A. W. KAPPEL, F.L.S., F.E.S. | (Assistant Librarian, Linnean Society), | and | W. EGMONT KIRBY, L.S.A., | Authors of "Beetles, Butterflies, Moths, and other Insects." | With thirty coloured plates | by | H. Deuchert and S. Slocombe. | London: | Ernest Nister. | New York: | E. P. Dutton & Co. | Printed in Bavaria. [Quarto, no date, xvi. + 273 pages and 30 coloured plates.]

THE chief excellence of this work lies in the really superb execution of the coloured figures, whereby the ready identification of most of the larger species of lepidoptera is rendered a comparatively easy task for even the entomological tyro, and this volume will constitute a most useful companion to such books on our lepidoptera as the plain edition of Barrett's work now in progress. The figures are nearly all so good that we cannot single out any for special mention, and they will bear comparison with those of the majority of even expensive works.

The text is subsidiary and may be considered as merely an accompaniment to the plates. Many of the insects are not described at all, that is, where the figure is sufficient for identification, in which cases a brief account of the insect, its habits, metamorphoses, etc., is given. In other cases diagnoses are also given.

A brief introduction gives an account of the anatomy of lepidoptera, a brief paragraph or two on development, and notes on collecting both perfect insects and larvæ, rearing, setting, etc.

The preface lays stress on the British species having all English names assigned to them, but we trust the authors did not find it necessary to invent any. A curious feature of the work is that the measurements of the species are given in the index instead of with the description, where it ought to be; and a very bad feature is that the book is nowhere dated. However the excellence of the coloured figures will serve to atone for the defects of the letter-press, and in its whole execution and get-up the book is worthy of the fame of the Bavarian lithographer with whose Christmas cards many of us are familiar.

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### NOTES AND NEWS.

We are pleased to see that the University of Durham has conferred an honorary M.A. degree upon Mr. Richard Howse, the able and distinguished naturalist who is at present curator of the Natural History Museum at Newcastle-on-Tyne. We hope some time to hear of the Victoria University showing a similar appreciation of the sound work which numerous naturalists in Lancashire and Yorkshire are and have been doing for many years past.

At the same convocation of the Durham University the honorary D.C.L. degree was conferred upon the Rev. W. H. Dallinger.

Mr. Henry J. Pearson gives in 'The Ibis' for April 1896 an interesting account of the cruise of the 'Saxon,' with notes on birds observed in Russian Lapland, Kolguev, and Novaya Zemlya in 1895.



**COUCH'S WHITING AT WHITBY:  
AN ADDITION TO THE YORKSHIRE FAUNA.**

THOS. STEPHENSON.

It gives me great pleasure to be able to make a communication respecting what, I consider, is not only a great rarity but also an addition to the Yorkshire Fauna, as I have never heard of one instance of its being seen or procured on the North East Coast previously, and no such record is to be found in Clarke and Roebuck's Handbook of Yorkshire Vertebrata.

Yesterday (Jan. 13th, 1896), Pounder Robinson, jun., brought to me a small fish which he had found on the previous day (Sunday), washed up on the sand; on close comparison with the cut, and description by Mr. Couch, contained in Yarrell, vol. 2, pp. 247-248, I have no hesitation in pronouncing it to be a small specimen of Couch's Whiting (*Gadus poutassou*). It is about  $6\frac{1}{2}$  inches long; eyes large and slightly oval; the under jaw the longest; general form of the body resembles that of the Whiting but more slender; teeth similar to those of the Whiting; on the roof of the mouth a pair of prominent, sharp, incurved teeth; the body ends arrow-shaped at the caudal fin; first and second dorsal fins are about the same size and of triangular form; third dorsal fin terminates near the caudal fin; the caudal fin (slightly damaged) appears similar to but less than that of the Whiting; two pectoral and two ventral fins, the latter small and slender; first anal fin long; second anal fin (damaged) appears to be little more than one-third the length of first anal fin and terminates closer to the caudal fin than the third dorsal fin does. Flesh rather soft. Colour of the fish approaching that of the Sand Eel (*Ammodytes lanceolatus*), but less green.

I have had the fish placed in spirit, it being too delicate for any other method of preservation.

**NOTE—MOSESSES.**

**A New Yorkshire Dicranum.**—I have recently gathered in two heathy Fir woods, near Holme-on-Spalding-Moor, *Dicranum undulatum* Ehrh., the waved-leaved fork-moss, a species for which there is no previous Yorkshire station. On submitting it to Mr. M. B. Slater for verification, he informs me that there are only two British stations where it has been observed, firstly, on moorland near Woolford, Stour Valley, Warwickshire, gathered by Mr. Bagnall, May 30th, 1887, and secondly, in Dupplin and Woodhead Woods, near Perth, by R. H. Meldrum, 1891. It appears to be abundant all over the European continent, and fairly plentiful in North America. The plants were sterile and not in great quantity, growing with *D. spurium*, *Hypnum Schreberi*, *Polytricha*, and other ericetal plants. I am hoping to find fruit during the summer, as it is usually found in that condition during July and August.—J. J. MARSHALL, Pharmaceutical Chemist, Market Weighton.



### NOTES—ORNITHOLOGY.

**Flamborough Notes.—Arrivals of Migrants.**—Several more of our summer visitants have arrived, and I do not remember a more favourable time for migratory birds, taking this month on the whole. The wind has been from the north-east nearly every day during the month ever since May came in. May 2nd, the first occurrence of the Whitethroat (*Sylvia sylvia*); May 4th, Black-headed Bunting (*Emberiza schoeniclus*); May 6th, I saw several Redstarts (*Ruticilla phoenicurus*), some splendid old birds amongst them. I have not this season seen one Blackstart (*R. tithys*), though I have been observing the birds for days.—MATTHEW BAILEY, Flamborough, May 18th, 1896.

**Birds and Galls.**—Last year the crop of spangle galls (*Neuroterus lenticularis*), borne upon the leaves of the oak trees was very large in these parts. In autumn, when leaves fell, the galls became loosened, and were thickly scattered on the ground below the trees. So thickly did they fall upon a certain rocky knoll near Ambleside, that the autumn rains washed them into little heaps within the crevices. Just at this spot, I one day (Nov. 25) startled a few chaffinches (*Fringilla coelebs*), up from the ground, and on examining it, found that many of the minute round flat galls had been neatly picked open and the larvæ abstracted, so that only the vegetable shell remained. This small white grub, by the way, appeared then to have lately passed into the pupa stage (the juices of the tree being no longer at its service) and though of a size scarcely comprehensible by the naked eye, made seemingly dainty food for the chaffinch. After this I was interested to note what raids were made upon it by the bird. A nomad flock of perhaps thirty to forty birds would arrive, and pitch into the top boughs of the group of bare oaks, much as bramblings will when seeking food, then, waiting till all was quiet, they would, at a signal, drop to the ground, where they all ran lightly about, seeking and picking. They came again and again, making apparently a regular beat of this ground, till galls became scarcer and scarcer, and by the end of January hardly a sound one was to be discovered. The flies therefore that will emerge in spring to lay eggs in the swelling buds will be comparatively few. That the marsh tit (*Parus palustris*), loves the larger grub of the cherry gall is certain, for it ranges our coppices when these galls are abundant, breaking open and eating; and it seems to be the great tit (*P. major*) that splits open the marble gall for the same purpose. But that the chaffinch finds food also in the gall was new to me, and may be possibly so to others.—MARY L. ARMITT, Ambleside, March 16th, 1896.

### NOTE—MOLLUSCA.

**Lincolnshire Notes.**—During a recent visit to Louth (District No. 8 S. of the Lincolnshire Naturalists' Union scheme), I found two species of *Helix* which I had overlooked when collecting in the neighbourhood of that town, somewhat frequently, during the years 1886-7; the one, *Helix aculeata*, occurred among holly leaves on the borders of Maltby Wood, and the other, *Helix lapicida*, under a piece of bark in Grisel-bottom, in Burwell Wood. In both these woods *Clausilia rolfii* was again found in the spots from which it was reported in the Journal of Conchology in 1887. I may mention, also, that in District No. 3 S.W., while walking from Barton-on-Humber to South Ferriby—for the purpose of visiting Reed's Island and its rats—I collected, on the chalky road-side banks, *Helix cantiana* and *Helix virgata*, two snails which appear to be altogether absent from the Louth neighbourhood.—H. W. KEW, March 23rd, 1896.

### NOTES AND NEWS.

We have received the first number of 'The Halifax Naturalist,' a journal which is to appear every two months, and to be exclusively devoted to the natural history and antiquities of the very extensive ancient parish of Halifax. The number before us deserves every commendation, and is well printed, with an admirable geological folding map of the parish, and a tastefully-designed pictorial wrapper.



## SOME DIPTERA OF THE ALFORD DISTRICT, NORTH LINCOLNSHIRE.

EXTRACTED FROM A REGISTER KEPT BY  
JAMES EARDLEY MASON,  
*While President of the Alford Naturalists' Society.*

The record-books kept by the Alford Naturalists' Society during the years 1885 to 1891 are now in the possession of the Lincolnshire Naturalists' Union. They contain a considerable number of valuable (because thoroughly authenticated and therefore reliable) records of insects belonging to the 'neglected orders,' and by the kind permission of the officers of the Union we are permitted to reproduce them as contributions towards the working out of the Lincolnshire fauna.

We therefore have pleasure in publishing the records of Diptera, which have been all verified by Mr. G. H. Verrall or Mr. E. Brunetti, to whom Mr. Mason had been in the habit of submitting specimens.

The arrangement and nomenclature used in the Record Books, and adopted here, are those of Mr. G. H. Verrall's List of British Diptera, 1888.

Great care was always exercised by Mr. Mason in his work, and the records are doubly initialed. The first initials—separated by a semicolon from the records—are those of the collector. The second initials—within parentheses—are those of the 'determinator' by whom the specimens were examined and identified.

The initials used in this paper are as follows:—

E.B.	E. Brunetti.
H.W.K.	Harry Wallis Kew.
J.E.M.	James Eardley Mason.
G.H.V.	G. H. Verrall.
C.O.W.	Charles O. Waterhouse.

Mr. Waterhouse's records are not precisely localised in the register, but were all taken within the Alford Society's district, which was defined as the square between Mablethorpe, Mumby Chapel, Skendleby, and South Ormesby.

Fam. *CECIDOMYIDÆ*.

**Cecidomyia destructor** Say. Has been noted at Alford, Bilsby, Rigsby-with-Ailby, Well, Willoughby, etc. (J.E.M.).

Fam. *MYCETOPHILIDÆ*.

**Acnemia nitidicollis** Mg. Alford, one, female, August 3rd, 1888;  
J.E.M. (G.H.V.).



**Macrocera fasciata** Mg. Well, one, June 25th, 1888; J.E.M. (G.H.V.).

Fam. *CHIRONOMIDÆ*.

**Ceratopogon bipunctatus** L. Mumby Chapel, one, female, July 31st, 1888; J.E.M. (G.H.V.). Mablethorpe, one, female, August 12th, 1888; J.E.M. (G.H.V.).

Fam. *PTYCHOPTERIDÆ*.

**Ptychoptera contaminata** L. Rigsby, August 3rd, 1887; J.E.M. (E.B.).

**Ptychoptera albimana** F. Well, one, October 20th, 1888; J.E.M. (G.H.V.).

Fam. *LIMNOBIDÆ*.

**Limnobia flavipes** F. Greenfield, two, June 8th, 1887; J.E.M. (E.B.).

**Limnobia tripunctata** F. Well, both sexes, June 27th, 1888; J.E.M. (G.H.V.).

**Rhypholophus lineatus** Mg. Noted as *Eriothrix lineata* for Alford District (C.O.W.).

**Trichocera regelationis** L. Alford, December 2nd, 1887; J.E.M. (E.B.).

Fam. *TIPULIDÆ*.

**Pachyrrhina histrio** F. Alford, one, August 8th, 1888; J.E.M. (G.H.V.).

**Pachyrrhina quadrifaria** Mg. Alford, one, August 8th, 1888; J.E.M. (G.H.V.).

**Tipula gigantea** Schrk. Well, June 1887; J.E.M. (E.B.).

**Tipula lutescens** F. Alford, one male, June 23rd, 1888; J.E.M. (G.H.V.).

Fam. *STRATIOMYIDÆ*.

**Sargus cuprarius** L. Claythorpe, July 6th, 1887; J.E.M. (E.B.). Mumby Chapel, two, July 1887; J.E.M. (E.B.).

**Chloromyia formosa** Scop. Mumby Chapel, July 1885, and July 5th, 1888; J.E.M. (E.B.).

**Microchrysa polita** L. Alford, two, Well, one, June 1887; J.E.M. (E.B.).

**Actina tibialis** Mg. Alford district, two (C.O.W.).

Fam. *TABANIDÆ*.

**Hæmatopota pluvialis** L. Alford, one, July 1887; J.E.M. (E.B.). Well, one, July 3rd, 1887; J.E.M. (E.B.).

**Chrysops cæcutiens** L. Alford, J.E.M. (E.B.).

**Leptis tringaria** L. Well, one, August 12th, 1888; J.E.M. (G.H.V.). Alford district, one (C.O.W.).



Fam. *ASILIDÆ*.

- Philonicus albiceps** Mg. Mumby Chapel, one, female, July 31st, 1888; J.E.M. (G.H.V.).
- Eutolmus rufibarbis** Mg. Mumby Chapel, July 12th, 1886; J.E.M. (E.B.).
- Dysmachus trigonus** Mg. Mablethorpe, June 1887; H.W.K. (G.H.V.).

Fam. *THEREVIDÆ*.

- Thereva annulata** F. Mumby Chapel, July 19th, 1886; J.E.M. (E.B.).

Fam. *EMPIDÆ*.

- Empis borealis** L. Well, June 6th, 1885; J.E.M. (E.B.).
- Empis tessellata** F. Well, one, June 16th, 1888; J.E.M. (G.H.V.).
- Empis stercorea** L. Well, one, female, June 25th, 1888; J.E.M. (G.H.V.).
- Tachypeza nubila** Mg. Mumby Chapel, one female, July 23rd, 1888; J.E.M. (G.H.V.).
- Tachista arrogans** L. Mumby Chapel, one female, July 23rd, 1888; no initials given.
- Tachydromia bicolor** F. Well, one male, June 16th, 1888, and one female, August 23rd, 1888; J.E.M. (G.H.V.).

Fam. *DOLICHOPODIDÆ*.

- Dolichopus trivialis** Hal. Well, one male, June 25th, 1888; J.E.M. (G.H.V.).
- Argyra argyria** Mg. Mumby Chapel, one male, July 31st, 1888; J.E.M. (G.H.V.).

Fam. *SYRPHIDÆ*.

- Chilosia œstracea** L. Chapel, July 26th, 1885; J.E.M. (E.B.).
- Chilosia flavimana** Mg. Well, June 16th, 1888; J.E.M. (G.H.V.).
- Leucozona lucorum** L. Mumby Chapel, one, July 31st, 1888; J.E.M. (G.H.V.). Well, two, June 10th and 16th, 1888; J.E.M. (G.H.V.).
- Platychirus clypeatus** Mg. Mumby Chapel, August 1887; J.E.M. (E.B.).
- Platychirus manicatus** Mg. Alford, one female, June 1888; J.E.M. (G.H.V.).
- Syrphus ribesii** L. Mumby Chapel, July 25th, 1887; J.E.M. (E.B.). Alford, June 27th, 1887; J.E.M. (E.B.). Well, June 5th, 1887; J.E.M. (E.B.). Mablethorpe, male, August 18th, 1888; J.E.M. (G.H.V.).



- Syrphus bifasciatus** F. Well, two, June 10th and 16th, 1888 ;  
J.E.M. (G.H.V.).
- Syrphus balteatus** Deg. Alford district, eleven (C.O.W.).
- Baccha obscuripennis** Mg. Rigsby, September 13th, 1886 ;  
J.E.M. (E.B.).
- Rhingia campestris** Mg. Well, June 5th, 1887 ; J.E.M. (E.B.).
- Volucella pellucens** Geoff. Claythorpe, July 6th, 1887 ; J.E.M.  
(E.B.).
- Volucella bombylans** L. Well, one, June 10th, 1888 ; J.E.M.  
(G.H.V.).
- Eristalis tenax** L. Greenfield, three, June 8th, 1887 ; J.E.M.  
(E.B.). Alford, September—December, 1886 ; J.E.M. (E.B.).  
Alford district, one (C.O.W.).
- Eristalis arbustorum** L. Rigsby, September 13th, 1886 ; J.E.M.  
(E.B.). Mumby Chapel, August 1887 ; J.E.M. (E.B.).
- Eristalis intricarius** L. Mumby Chapel, both sexes, July 31st,  
1888 ; J.E.M. (G.H.V.).
- Helophilus pendulus** L. Mumby Chapel, August 1887 ; J.E.M.  
(no authenticator's initials).
- Xylota segnis** L. Greenfield, June 8th, 1887 ; J.E.M. (E.B.).
- Syritta pipiens** L. Alford, September 1st, 1887 ; J.E.M. (E.B.).  
Well, two, June 10th and 16th, 1888 ; J.E.M. (G.H.V.). Alford  
district, one (C.O.W.).

Fam. *DEXIDÆ*.

- Thelaira leucozona** Pz. Mablethorpe ? one, August 18th, 1888 ;  
J.E.M. (G.H.V.).

Fam. *SARCOPHAGIDÆ*.

- Sarcophaga carnaria** L. Alford, one, August 28th, 1888 ; J.E.M.  
(G.H.V.).

Fam. *MUSCIDÆ*.

- Calliphora erythrocephala** Mg. Mumby Chapel, one, July  
31st, 1888 ; J.E.M. (G.H.V.).
- Pollenia rudis** F. Rigsby, two, April 3rd, 1887 ; J.E.M. (E.B.).  
Alford, December 29th, 1886 ; J.E.M. (E.B.). Claythorpe, July  
6th, 1887 ; J.E.M. (E.B.). Well, one, June 16th, 1888 ; J.E.M.  
(G.H.V.).
- Musca corvina** F. Chapel, August 1887 ; J.E.M. (E.B.).
- Morellia hortorum** Fln. Mumby Chapel, May 26th, 1885 ;  
J.E.M. (E.B.).



- Cyrtoneura stabulans** Fln. Alford, February 28th, 1887 ;  
J.E.M. (E.B.).
- Stomoxys calcitrans** L. Alford, one female, June 1888 ;  
J.E.M. (G.H.V.).
- Dasyphora cyanella** Mg. Alford district, locality not given, two,  
1887 ; J.E.M. (E.B.). This is probably = *Pyrellia lasiophthalma*  
Mcq. (G.H.V.).

Fam. *ANTHOMYIDÆ*.

- Hyetodesia flaveola** Fln. Well, one, June 25th, 1888 ; J.E.M.  
(G.H.V.).
- Hyetodesia basalis** Ztt. Alford district, two females (C.O.W.).
- Spilogaster communis** Dsv. Well, June 1887 ; J.E.M. (E.B.).
- Hylemyia coarctata** Fln. Cumberworth, larvæ and pupæ  
abundant in wheat-stems, May 1889 ; imagos, July 1889 ;  
(J.E.M.).
- Hylemyia strigosa** F. Alford district, one (C.O.W.).
- Anthomyia radicum** L. Mumby Chapel, one male, July 31st,  
1888 ; J.E.M. (G.H.V.).
- Homalomyia canicularis** L. Mablethorpe, one female, August  
26th, 1888 ; J.E.M. (G.H.V.).
- Lispe tentaculata** Deg. Mumby Chapel, one, July 31st, 1888 ;  
J.E.M. (G.H.V.).

Fam. *CORDYLURIDÆ*.

- Scatophaga stercoraria** L. Mumby Chapel, July 26th, 1885,  
and August 9th, 1886 ; J.E.M. (E.B.). Well, June, 1887 ;  
J.E.M. (E.B.). Alford district, three females and two males  
(C.O.W.).

Fam. *SCIOMYZIDÆ*.

- Sciomyza albicostata** Fln. Well, one ; June 16th, 1888 ; J.E.M.  
(G.H.V.).
- Tetanocera punctulata** Scop. Well, one, June 25th, 1888 ;  
J.E.M. (G.H.V.).
- Limnia marginata** F. Sutton-le-Marsh, three, August 5th, 1885 ;  
J.E.M. (E.B.). Mumby Chapel, one, August 1887 ; J.E.M.  
(E.B.).

Fam. *MICROPEZIDÆ*.

- Micropeza corrigiolata** L. Well, June 6th, 1885 ; J.E.M. (E.B.).



Fam. *ORTALIDÆ*.

- Ptilonota centralis** F. Well, one, June 16th, 1888; J.E.M. (G.H.V.).
- Platystoma seminationis** F. Well, June 27th, 1886; J.E.M. (E.B.); and June 16th, 1888; J.E.M. (G.H.V.).
- Seoptera vibrans** L. Alford, one, July 5th, 1888; J.E.M. (G.H.V.).

Fam. *TRYPETIDÆ*.

- Acidia heraclei** L. S.-with-Thoresthorpe, one, June 4th, 1888; J.E.M. (G.H.V.).
- Spilographa zoë** Mg. Well, one male, June 10th, 1888; J.E.M. (G.H.V.). Alford, one female, June 10th, 1888; J.E.M. (G.H.V.).
- Trypeta cornuta** Alford district, one (C.O.W.).

Fam. *LONCHÆIDÆ*.

- Palloptera arcuata** Fln. Well, June 1887; J.E.M. (E.B.).

Fam. *SAPROMYZIDÆ*.

- Sapromyza rorida** Fln. Alford district, two (C.O.W.).
- Lauxania ænea** Fln. Alford district, two (C.O.W.).

Fam. *OPOMYZIDÆ*.

- Opomyza germinationis** L. Claythorpe, July 6th, 1887; J.E.M. (E.B.). Alford district, one (C.O.W.).

Fam. *SEPSIDÆ*.

- Sepsis cynipsea** L. Well, Sept. 22nd, 1886; J.E.M. (E.B.). Claythorpe, July 6th, 1887; J.E.M. (E.B.). Alford district, two (C.O.W.).
- Sepsis nigripes** Mg. Ailby, one female, Oct. 17th, 1888; J.E.M. (G.H.V.).
- Cheligaster putris**. Well, June, 1887; J.E.M. (E.B.).

Fam. *CHLOROPIDÆ*.

- Chlorops tæniopus** Mg. Alford, Well, Willoughby-with-Sloothby, larvæ, pupæ, imagines, bred June-July, 1889 (J.E.M.).

Fam. *PHORIDÆ*.

- Phora rufipes** Mg. Alford, Jan. 1887; J.E.M. (E.B.).



# A CRITICAL CATALOGUE OF LINCOLNSHIRE PLANTS:

## FROM ALL KNOWN SOURCES.

REV. E. ADRIAN WOODRUFFE-PEACOCK, L.Th., F.L.S., F.G.S.,

*Vicar of Cadney, Brigg; Organising and Botanical Secretary of the Lincolnshire Naturalists Union; Curator of the Lincolnshire County Herbarium.*

### EIGHTH PAPER.

See explanations given in the preceding papers.

Nat., 1894, pp. 85-92, 133-140, 213-220, 257-264, 337-344. Nat., 1895, pp. 95-102, 289-301.  
Nat., 1896, pp. 53-60.

### LABIATÆ (*continued*).

*STACHYS GERMANICA* L. Extinct native, I suppose, if it were ever with us. Div. 15. 'Four miles south of Grantham, opposite Easton. A common weed in fields and hedges, a little wide of Colsterworth. In profusion in the years 1794 and 1796, on the left-hand side of the road.'—Turner and Dillwyn's *Botanist's Guide*, 1805. Div. 16. Between Thurlby and Dickey Wood, half way up the road, north side, 5.8.1840; Rev. J. Dodsworth's *Interleaved Flora*. I know of no specimen taken in this county, but I have not yet had time to examine the Herbaria of W. Hudson, E. Forster, and D. Turner.

*Stachys palustris* L.† Native. Divs. 1-16.

*Stachys palustris* × *sylvatica*, the hybrid. Divs. 5.16. (Ar. B.)

*Stachys sylvatica* L.† Native. Divs. 1-14.16.17.

*Stachys arvensis* L.† Native, Divs. 3.7.8.10.11.13.15.

*Galeopsis angustifolia* Ehrh.† Native. Divs. 2.3.5.7.10.11.13.14.16.

*Galeopsis ochroleuca* Lam. A colonist at most. Div. 2. In a sandy field, Twigmoor, 1877; Rev. W. Fowler. Herb. Brit. Mus. Div. 16. Bourn, in a stack-yard, 1838; Rev. J. Dodsworth.

*Galeopsis versicolor* Curt.† Native. Divs. 1-3.5-7.10-18.

*Galeopsis Tetrahit* L.† Native, but the type is rare. I have only seen it once or twice. The common Lincolnshire plant is the variety *G. bifida* Boenn. Divs. 1-4.6-8.10-16.

f. *flore albo*.† I have seen this form of both type and variety.

f. *Brewsterii* Peacock.† Div. 3. Pelham Pillar Wood, 1892; Miss Jenny Brewster. Flowers large white, with pink spots on the lower lip, upper lip tinged with yellow on the outer surface, nearer the shape of *G. versicolor*, but not quite so large. Perhaps of hybrid strain.

*Leonurus cardiaca* L.† Garden escape. Divs. 7.9.11.12.



**Lamium amplexicaule** L.† Native. Divs. 2.3.5.7.8.10.11.13.14.17.

**Lamium hybridum** Vill.† Native. Divs. 2.3.5.13.17.

**Lamium purpureum** L.† Native. Divs. 1-5.7-14.16.17.

f. **flore albo.**† Div. 11. *Naturalist*, 1893, p. 331.

var. **decipiens** Souder.† Div. 3. Saxby, 1890; Miss Wylie.

*LAMIUM MACULATUM* L. Garden escape. Divs. 2.7.8.

**Lamium album** L.† Native. Divs. 1-14.16.17.

**Lamium Galeobdolon** Crantz.† Native. Divs. 1-3.5-8.10.11.  
13.15.16.

**Ballota nigra** L.† Native. Divs. 1-16.

f. **flore albo.**† Div. 13. Five Mile Station, 1893; Rev. W. Fowler.

**Tencrium Scordium** L.† Native, dying and thrust out through drainage and stronger growing species. Divs. 12.13. East Fen, 1790; Sir J. Banks in his Herb. Brit. Mus. Washingborough Fen, dyke side, 1870; F. A. Lees. It may be extinct now.

**Tencrium Chamædryas.**† Denizen. Divs. 2.7. Broughton† 1870-95; Rev. W. Fowler. Near Rasen, 1877; F. A. Lees.

**Tencrium Scorodonia** L.† Native. Divs. 1.2.5.7.10.13.

**Ajuga reptans** L.† Native. Divs. 1-3.6-8.11-16.

f. **flore albo.**† Divs. 2.5.7.8.10.11.

#### PLANTAGINEÆ.

**Plantago major** L.† Native. Divs. 1-17. Div. 18 has not yet been worked.

**Plantago media** L.† Native. Divs. 1-7.9-16.

**Plantago lanceolata** L.† Native. Divs. 1-17.

**Plantago maritima** L.† Native. Divs. 2.4.9.11.12.17.

**Plantago coronopus** L.† Native. Divs. 1-5.9-13.17.

**Littorella juncea** Berg. Native, but very rare. Div. 5. Laughton Common, 1840-2; Rev. J. K. Miller. Scotton Common, 1876; Rev. W. Fowler. Herb. Brit. Mus.

#### ILLECEBRACEÆ.

*ILLECEBRUM VERTICILLATUM* L. A mistake. This species is recorded in the Grantham-Anderson *List*, 1847. The specimen so named in Dr. Grantham's Herb. is *Glaux maritima* L.

**Herniaria glabra** L.† Native, or old colonist now quite established and spreading. Divs. 14.15. About Quarrington, Wilsford, and Ancaster. See *Nat.*, 1895, p. 315.

VAR. **subciliata** Bab.† Div. 15. West Willoughby, 1893; Miss S. C. Stow (F.A.L.).



**Herniaria hirsuta** L.† Alien. Div. 9. Mablethorpe, in a barley field, 1893; Miss Mackinder. 'Always introduced with foreign barley seed, I believe.'—Harry Fisher.

**Scleranthus annuus** L.† Native. Divs. 1-3.5-7.10.11.13.

## CHENOPODIACEÆ.

**Chenopodium polyspermum** L.† Native. Divs. 7.10-14.16.

VAR. **spicatum** Moq. Divs. 3.11.12.14.

VAR. **cymosum** Moq. Divs. 7.14.

*CHENOPODIUM VULVARIA* L. Recorded in H. C. Watson's *Suppl. Cyb. Brit.*, 1872, for **N.** on T. W. Bogg's authority. It has never been sent to me, and Mr. F. A. Lees and Rev. W. Fowler have never seen it. There is no specimen in the Bogg Herb.

**Chenopodium album** L.† Native. Divs. 1-4.7.10-13.16.17.

VAR. **incanum** Moq. Divs. 4.10.13.

VAR. **viride** Syme. Divs. 1.2.4.13.

VAR. **viridescens** St. Am. Divs. 2.3.11.13.

**Chenopodium murale** L.† Div. 12. Boston, 1885; L. Gibbs (Ar. B.).

*CHENOPODIUM HYBRIDUM* L. Div. 7. Sturton Glebe, 1890; Mrs. Jarvis. Stixwould, 1892; Miss M. Lane-Claypon's *Paintings*.

*CHENOPODIUM URBICUM* L. Div. 16. Bourn, Millbank, and Wellhead, 1839; Rev. J. Dodsworth's *Note-book*. As he took *C. rubrum* at the same place and time he can hardly have confounded them.

**Chenopodium rubrum** L.† Native. Divs. 1-3.5.9.10.13.16.

*CHENOPODIUM BOTRYODES* Sm. Div. 11. Opposite the White House, Ingoldmells, on the sand-bank, July 21st, 1861; Rev. J. Dodsworth. It was too early in the season, I fear, to certainly identify this species. It may have been the form *pseudobotryoides* H. C. Watson, of *C. rubrum*. Dodsworth was an experienced and accurate observer.

**Chenopodium Bonus-Henricus** L. A doubtful native wherever I have seen it. Divs. 3.5.8.10-13.16.

*BETA MARITIMA* L. Div. 18. Sutton Bridge; W. H. Beeby, *J. of B.*, 1884, p. 17. A seedling Mangel-wurzel, as I know from personal experience, is often mistaken for the true *B. maritima*, but if the root is examined the cultivated plant betrays itself.

**Atriplex littoralis** L.† Native. Divs. 3.4.9.11.12.17.18.

VAR. **serrata** Moq.† Divs. 3.4.9.12.



- Atriplex patula** L.† Native. Divs. 1.3.5-8.10-12.14.16.17.  
 VAR. **erecta** Huds.† Divs. 3.5.7.12.14.17.  
 VAR. **angustifolia** Sm.† Divs. 3.6-8.10-12.  
**Atriplex hastata** L.† Native. Divs. 4.7.10.14.  
**Atriplex deltoidea** Bab.† Native. Divs. 12.16.17.  
 VAR. *PROSTRATA* Bab. Divs. 3.17.  
**Atriplex Babingtonii** Woods.† Native. Divs. 4.9.11.  
**Atriplex laciniata** L. Native. Divs. 9(3).12(2). H. C. Watson's  
 Herb., Kew.  
**Atriplex portulacoides** L.† Native. Divs. 4.9.11.12.17.18.  
**Atriplex pedunculata** L. Native. Divs. 11.12. Buddle and  
 Banks Herbs., Brit. Mus. Burgess' *Paintings*.  
**Salicornia herbacea** L.† Native. Divs. 4.9.11.12.17.18. This  
 is constantly pickled in Lincolnshire, and is called Samphire, in  
 books Marsh Samphire. The confusion in the English names  
 led Dr. W. Stukeley (*Itinerarium Curiosum*, 1724, p. 32) to  
 report *Crithmum maritimum* for this county.  
*SALICORNIA PROCUMBENS* Moq. Div. 11. Gibraltar Point, before  
 1847; in Grantham-Anderson *List*.  
*SUÆDA FRUTICOSA* Forsk. Division 12 or 17. Boston Marshes;  
 Rev. J. Dodsworth. As he knew the next two species he can  
 hardly have been mistaken. It grows in East and West  
 Norfolk, and may have come as an impermanent ballast casual  
 from there. It could hardly continue on the Boston silt.  
**Suæda maritima** Dum.† Native. Divs. 3.4.9.11.12.17.18.  
**Salsola Kali** L.† Native. Divs. 9.11.12.

## POLYGONACEÆ.

- Polygonum Convolvulus** L.† Native. Divs. 1-5.7.8.10-17.  
 VAR. **subalatum** V. Hall.† Native. Divs. 2.3.7.13.17.  
**Polygonum aviculare** L.† Native. Divs. 1-9.11-14.16.17.  
 VAR. **arenastrum** Bor.† Native. Divs. 3.7.  
*POLYGONUM RAILI* Bab. Div. 11. Gibraltar Point sands; F. A.  
 Lees. But Britten's *List*, 1872, on the authority of Rev. G.  
 Streatfield's *Notes* was the original notice of it. Not in H. C.  
 Watson's *Top. Bot.*, 2nd ed.  
**Polygonum Hydropiper** L.† Native. Divs. 1.5.7.10.11.13.14.  
**Polygonum Persicaria** L.† Native. Divs. 2.3.5.7-14.16.17.  
**Polygonum lapathifolium** L.† Native. Divs. 2.3.5-7.9.10.11.  
 13.14.17.



**Polygonum maculatum** Trim. & Dyer.† Native. Divs. 3.5.  
Cadney! 1893. Gainsborough, circâ 1875; Rev. R. H.  
Charters.

**Polygonum amphibium** L.† Native. Divs. 1-7.9-14.16-18.

VAR. **terrestre** Leers.† Native. Divs. 6.7.9.11 (Ar. B.).

VAR. **hirtulum** Van. Bise. Div. 13. Court Leys, 1894; Miss  
S. C. Stow (Ar. B.).

**Polygonum Bistorta** L.† Native. Divs. 2.3.5.6.8.10.12-14.16.

*POLYGONUM VIVIPARUM* L. Div. 13. Lincoln Heath, before  
1746; Hill-Blackstone *List*. 'Error of Hill's.'—F. A. Lees.

**Fagopyrum esculentum** Moench. Sown alien. Divs. 2.3.5.7.  
12.13.

**Rumex conglomeratus** Murr.† Native. Divs. 1-5.7.9.11.14.  
16.17.

**Rumex sanguineus** L.† Native. Divs. 1-4.7-9.14.16.

VAR. **viridis** Sibth.† Divs. 1.2.4.7.8.14.16.

**Rumex maritimus** L.† Native. Divs. 3.5.7.10.12-14.16.17.

Often mistaken for the next species—which personally I con-  
sider but a trifling variety of this.

**Rumex limosus** Thuill.† Native. Divs. 2.3.12-14.16-18.

*RUMEX PULCHER* L. Native, I should say, for I have seen it  
myself, but have no note and cannot say where. Divs. 3.17.  
Ferriby, 1893; Miss Firbank. Wigtoft, 6/9/1838; Rev. J.  
Dodsworth. He adds: 'In a dry place near a pond.'  
H. C. Watson saw it in 13 in 1851.

**Rumex obtusifolius** L.† Native. Divs. 1-5.7-9.11.12.14.16.17.

**Rumex crispus** L.† Native. Divs. 2-4.7-9.11.13.16.17.

*RUMEX CRISPUS* × *OBTUSIFOLIUS* L. Div. 13. Doddington, 1893;  
Rev. R. E. G. Cole. But I have seen no specimen.

**Rumex Hydrolapathum** Huds.† Native. Divs. 1.4.5.10-14.16.

VAR. *latifolius* Borr. Recorded for Div. 16, by Mr. W. H. Beeby,  
in *J. of B.*, 1884, p. 20, but he writes to me as follows: 'This is  
most certainly an error; at all events, I cannot now definitely  
name the plant so from my early specimen, and therefore wish  
to withdraw the record. It appears to be a form with sub-  
cordate leaves—this is not uncommon.' 12/2/1894.

**Rumex Acetosa** L.† Native. Divs. 1-5.7.8.10-13.15.16.

**Rumex Acetosella** L.† Native. Divs. 1-3.5.7.8.10-14.16.

#### ARISTOLOCHIACEÆ.

**Aristolochia Clematitis** L.† Alien escape from medicine-gardens.

Divs. 2.10.15. When once introduced it is not very easily  
destroyed.



## THYMELÆACEÆ.

- Daphne Mezereum** L.† Bird-sown from gardens. Divs. 10.15.  
**Daphne Laureola** L.† Alien? Divs. 2-4.6-8.11.12.14.16. If introduced into a garden, it is so soon sown in the neighbouring hedges and woods that it becomes impossible to say certainly where it is a native. Rev. W. Fowler says: 'No doubt native in many places.'

## ELÆAGNACEÆ.

- Hippophae rhamnoides** L.† Native on sea sand-hills—planted inland. Divs. 5.9.11.  
**Viscum album** L.† Alien, but now I understand sometimes bird-sown. Divs. 2.3.11.16.

## SANTALACEÆ.

- Thesium humifusum** DC.† Native. Div. 13. Leadenham, 1865; G. W. Burtt. Potterhanworth! 1894; Rev. W. W. Mason.

## EUPHORBIACEÆ.

- Euphorbia Helioscopia** L.† Native. Divs. 1-3.5.7-14.16.17.  
*EUPHORBIA PLATYPHYLLOS* L.† Native. Div. 7. Sandy oat-field once, near Middle Rasen, 1877-79; F. A. Lees' *MS. Florula*, p. 18.  
**Euphorbia amygdaloides** L.† Native. Div. 16(3). In woods only.  
**Euphorbia Peplus** L.† Native. Divs. 1.3-7.9-14.16.17.  
**Euphorbia exigua** L.† Native. Divs. 1-3.6-14.16.  
**Euphorbia Lathyris** L.† Alien escape. Divs. 2.7.12.15.  
*BUXUS SEMPERVIRENS* L. Always planted, and so I have made no notes. Divs. 2, 3, etc.  
**Mercurialis perennis** L.† Native. Divs. 1-3.5-8.10.11.13.14.16.  
**Mercurialis annua** L.† Garden escape? Div. 10(3).

## URTICACEÆ.

- Ulmus montana** Stokes.† Native? Divs. 1-4.7.16. Not often noted; it is universally planted, I believe. It is never found in our carrs and fens in 'rooting.'  
**Ulmus surculosa** Stokes.† Alien at first. Divs. 1-3.6.7.10.12.16. Never found under our turf bogs.  
**Humulus Lupulus** L.† Alien at first. Divs. 1-3.5-7.10-16.  
**Urtica dioica** L.† Native. Divs. 1-18.  
 VAR. **microphylla** Hans. forma **subinermis** Hans.† Native on carrs. Divs. 3.7 (Ar. B.).



*URTICA PILULIFERA* L. Alien. Div. 7. Bardney, 1640; John Parkinson's *Theat. Bot.* 'It groweth also in the streete of Bardney in Lincolnshire.'

*Urtica urens* L.† Native. Divs. 1-5.7.9-14.16.17.

*Parietaria officinalis* L.† Native. Divs. 1.3.5-12.14.16.

## MYRICACEÆ.

*Myrica Gale* L.† Native. Divs. 1.2.5.7.10.13.14.

## CUPULIFERÆ.

*Betula verrucosa* Ehrh.† Native. Divs. 1-4.7.8.11-14. Found below the turf in fens, carrs, and bogs, but rare. 'It comes up wherever Scotch Fir (*P. sylvestris* L.) is cut down.'—Rev. R. E. G. Cole. See Sir J. Banks, *Phil. Trans.*, vol. 89 (1796), p. 145, and *Jour. Science and Art*, vol. 2, p. 244. For place-names after this tree see Rev. G. S. Streatfeild's *Lincs. and the Danes*, 1884, p. 228.

*Betula pubescens* Ehrh.† Alien, I imagine. Divs. 7.11.12.

*Alnus glutinosa* Medic.† Native. Divs. 1-3.7.8.10-14.17. Rarely found under the turf of fens. See L. Edwards' *Survey of the Witham*, 1769. For place-names after this tree see Rev. G. S. Streatfeild's *Lincs. and the Danes*, p. 229.

*Carpinus Betulus* L.† Alien. Divs. 7.12.13.

*Corylus Avellana* L.† Native. Divs. 1-3.5.7.10-13.15.16. Hazel-nuts are found in our bogs, fens, and carrs. In sinking the tubes on which the Trent Bridge rests at Keadby, nuts were taken (!) from a stratum of peat a distance below the bed of the stream in mid-water. See Sir J. Banks in *Jour. of Science and Art*, vol. 2, p. 244.

*Quercus pedunculata* Ehrh.† Native. Divs. 1-8.10-13.16-18. Found in bogs, fens, and carrs. Very large trees indeed—far larger as a rule than any now to be found. They flourished most wherever the soil on which they grew was stiff and tenacious. Whenever they stood on sand they tap-rooted into the clay below. See A. Stark's *Lea*, 1841, p. 7; J. C. De Serra, *Phil. Trans.*, 1797, p. 145; Sir J. Banks, *Jour. of Scien. and Art*, vol. 2, p. 244; L. Edwards' *Witham*, 1769; G. S. Streatfeild's *Lincs. and Danes*, 1884, pp. 226 and 251.

*QUERCUS SESSILIFLORA* Salisb. Div. 7. Willingham, 1877-79; F. A. Lees' *Outline Flora*.

*Castanea sativa* Mill.† Planted alien. Divs. 1.2.10-13.



**Fagus sylvatica** L.† Native, I believe. Divs. 1-5.7.8.10-13.  
 'In bogs, fens, and carrs.'—Sir J. Banks, *Jour. of Science and Art*, vol. 2, p. 244. But I personally have not seen it or heard of its being found in peat. See G. S. Streatfeild's *Lincs. and the Danes*, 1884, pp. 227 and 251.

## SALICINEÆ.

This order has not been worked systematically throughout the county. Casual notes made by half a dozen of our best workers are all the material I have to put together for this list. The specimens to hand are not named, for being a poor and unrepresentative collection I have not cared to send them to a specialist.

*Salices* are found rarely in the peat of our fens, but the species, I believe, have never been determined. See E. Oldfield's *Wainfleet*, 1829, p. 5 of Appendix; J. C. De Serra, *Phil. Trans.*, 1797, p. 145; Sir J. Banks, *Journ. of Science and Art*, vol. 2, p. 244. I have not a particle of evidence that any species of *Populus* has ever been found in peat.

**Salix triandra** L.† Native. Divs. 8.15. Herb. Brit. Mus.

**Salix pentandra** L.† Native. Divs. 1-4.8.11.

*SALIX FRAGILIS* L. Native. Divs. 1.6.7.9.12.13. 'In many places; general though occasional.'—F. A. Lees.

**Salix alba** L.† Native. Divs. 1.4.6-8.12.14. In Div. 14, Haverholme Priory Park, the largest known tree in England of this species grows. See J. Whitaker's *Deer Parks*, 1892, p. 95.

**Salix cinerea** L.† Native. Divs. 1-4.6-9.12.13.

VAR. *AQUATICA* Sm. Div. 12. Skirbeck Hundred, 1856; P. Thompson.

**Salix aurita** L.† Native. Divs. 2.3.7.10.11.13.

**Salix Caprea** L.† Native. Divs. 2.3.7.8.10-12.16.17.

**Salix repens** L.† Native. Divs. 1.2.5.7.10.12.13.

forma **prostrata** Sm. Div. 7.

forma **ascendens** Sm. Divs. 5.10.

forma **argentea** Sm. Divs. 2.5.7.10.13.

**Salix repens** × **aurita**. Div. 7. Lane near firwood, adjoining Nova Scotia Common, near Market Rasen, 1877; F. A. Lees in B.R.C. (*S. ambigua* Ehrh.).

**Salix viminalis** L.† Native. Divs. 1.2.4.5.7-9.12.16.

**Salix viminalis** × **Caprea**. Native. Divs. 1.12.15. Herb. Brit. Mus.

VAR. *ACUMINATA* Sm. Div. 15. Rev. W. Fowler's MS.

*SALIX GLAUCA* Sm. Div. 1. Isle of Axholme, 1815; W. Peck. A mistake, I believe.



## YORKSHIRE NATURALISTS AT HACKFALL AND TANFIELD.

B. M. SMITH,

*Hon. Secretary of the Ripon Naturalists' Club and Scientific Association.*

THE opening excursion of 1896 was made to Hackfall, Tanfield, and along the banks of the river Ure to Ripon. The excursion was decidedly a very great success.

Saturday morning, April 18th, found the quiet little railway station at Ripon inundated by disciples of the hammer, vasculum, net, and camera. Though comparatively early in the day, a very good muster assembled. As the train steamed out of Ripon station attention was directed to the most recent of the many curious circular subsidences which abound for many miles on each side of the river Ure. Only a passing glance could be obtained of this 'freak of nature,' and a mental note made to visit it upon the first opportunity.

A more charming day could not have been chosen for seeing this picturesque locality in the early spring. Though far too early in the year to find many of the most interesting species which the district possesses, yet enough was seen to tempt a closer acquaintance with it later on in the year. Sycamores were resplendent in foliage; so also was mountain ash, while oaks and beech were just beginning to bud.

Upon arriving at Tanfield some of the visitors, intent upon seeing Hackfall, at once began the five-miles tramp, while the remainder diverged to an old disused quarry north of the river, where *Ranunculus auricomus* and *Viola hirta*, with a few more botanical tit-bits, soon rewarded their industry. Returning from this quarry, a move was made to the old church and churchyard of Tanfield, in the walls of which could be seen *Saxifraga tridactylites*, *Linaria cymbalaria*, and *Sedum dasyphyllum*, along with *Asplenium ruta-muraria*.

It was necessary to walk up the village, with the lovely little gardens just beginning to show what they can do under the combination of sunshine and shower, and the botanists were not slow to note *Sedum cruciata*, and near to the railway bridge the banksides with displays of *Helleborus viridis* and *Vinca minor*.

A little higher up the road and into the pastures, where was seen a sight such as many had never seen before. The hedge-bottom was one mass of *Helleborus viridis*, strong healthy plants in full



flower, with other kindred spirits like *Mercurialis perennis* and *Vinca minor*, and the field boundaries were covered with the graceful, drooping flowers.

Mr. T. C. Heslington now conducted a party by the river-side, where vasculums were often in request to receive one of the many plants so profusely scattered on the banks.

Additions were made to the party when the noon train arrived, and a few stragglers who had been 'all round the village' helped to make up a party of thirty, which now commenced to walk to Ripon by the banks of the Ure. *Myosotis palustris*, *Viola canina*, *Primula veris*, *P. elatior*, *Adoxa moschatellina*, *Bryonia dioica*, etc., were now to be seen in abundance, while in the river-side pasture and orchard belonging to Mrs. Hammond and son, as well as on the side of the mill-stream, were tufts of *Helleborus foetidus*, *Aconitum napellus*, and *Narcissus pseudo-narcissus*. It was a pleasure to see that these plants were not carelessly or ruthlessly plucked, but left to bloom, a kind of admiration which is highly commendable. Over the little two-plank bridge connecting the two river-banks, and made especially for the convenience of the mill proprietors, the whole party now proceeded, noting a Tree Creeper (*Certhia familiaris*) en route, as well as an abundant profusion of primroses.

The walk to Ripon was over the meadows, cornfields, or pastures which skirt the river, and now and again a sandy willow garth, where were found *Helix itala* and other shells, but all dead, as well as a Waterhen on her nest. After some two hours' walk the party came to the red marly cliffs which hang abruptly by the Ure side, and in which were curiously twisted and contorted bands of fibrous gypsum. A camera now came into requisition, while the remaining members of the party journeyed on to examine other similar gypsum sections, which all occur within a length of about one hundred yards on the exposed face of the river-bank.

The plantations seemed as though covered with snow, so plentiful were the blossoms of *Prunus spinosa*, while the ground and feathered game manifested their dislike to being disturbed.

The heat and toil of the long march necessitated pushing forward to Ripon by the shortest possible route, and getting on to the high-road near the Bishop's Palace the party were soon making the best of their way into the North road, whence an easy walk brought them to the Market Square and the Studley Royal Hotel.

The party to Hackfall had the pleasure of a delightful walk over the field path to Mickley, where there is one approach to the grounds of Hackfall, to which Lord Ripon had kindly granted free admission to members of the Yorkshire Naturalists' Union.



Wild flowers were growing in luxuriant profusion, especially *Viola canina*, white variety, *Anemone nemorosa*, *Primula veris*, *Myosotis palustris*, and many of the ferns were just pushing themselves into notice.

Geologists observed the parallel terraces on the banks of the river, and compared notes as to the probable cause and length of time since the formation.

Three-thirty p.m. came all too soon and the conveyance was waiting, so entering it, with the exception of one who came to the place of rendezvous too late and had to tramp the entire road to Ripon, all gladly availed themselves of the welcome lift to the city of one thousand years' history.

A divergence was made on the road home at Ripon Parks, to view the beds of gypsum before mentioned.

The cathedral clock was on the stroke of 5 p.m. before all assembled at the Studley Royal Hotel for a welcome tea, a part of the day's proceedings most heartily enjoyed.

After tea, the members adjourned to the Museum in Park Street, the home of the Ripon Naturalists' Club, where, in the grounds under the shadow of mighty old oaks and beech, the sectional meetings were held.

The general meeting was held in the lecture room of the Museum, for the cold eastern breeze reminded us that April was still present.

Mr. H. Crowther, F.R.M.S., President of the Conchological Section, occupied the chair. The minutes of the last meeting were taken as read, and the roll having been called, it was found that the following fifteen societies were represented, viz., Liversedge, Bradford, Leeds (4), Malton, Halifax, Ripon, Darlington, Harrogate, Thirsk, Scarborough (2), and Huddersfield.

The following new members were also elected:—Mr. F. N. Priestley and Rev. H. N. Hind, M.A., both of Liversedge, Mr. Arthur Crabtree, of Halifax, Mr. J. E. Crowther, of Elland, and Rev. H. J. Riddlesdell, M.A., of Leeds.

Thanks were then voted to Lord Ripon, and the other landowners and farmers, for kindly granting permission to walk over their land. Rev. E. P. Knubley, M.A., in proposing the vote, referred to the absence of Mr. Farrah owing to the serious illness of his wife, and also of Mr. Pratt, M.R.C.V.S., from ill-health, with a suggestion that the sympathy of the meeting be conveyed to them. Mr. J. W. Addyman, B.A., seconded, and referred to the kindness shown during the day to all by Mr. T. C. Heslington, who, despite his three score years and ten, had nevertheless walked the whole day,



pointing out everything of interest, and putting himself to an amount of physical exertion that would have taxed many a younger man.

The sections were then called upon to report the result of the day's work.

For the Vertebrate Section, its President, Mr. T. H. Nelson, M.B.O.U., reported that observations were made along the walk from Tanfield to Ripon by himself and the Rev. E. P. Knubley, M.A., assisted by Col. I'Anson of Howe, and his two sons. Thirty species of birds were noted.

The Residents noted were 25, as follows, those marked \* being nesting :—

*Missel Thrush.	Long-tailed Tit.	*Rook.
*Song Thrush.	Pied Wagtail.	Jackdaw.
*Blackbird.	Skylark.	*Magpie.
Hedge Accentor.	Yellow Bunting.	Ring-dove.
*Redbreast.	*Chaffinch.	Pheasant.
Wren.	House Sparrow.	Partridge.
Tree Creeper.	Greenfinch.	*Lapwing.
Great Tit.	*Starling.	*Waterhen.
	*Carrion Crow.	

One Winter Migrant was noted, the Fieldfare. A small flock was seen near the mill at Tanfield; and on the following day Mr. Nelson saw a large flock of nearly two hundred birds in a field on Col. I'Anson's property, at Howe, between Ripon and Thirsk.

It was too early for many summer visitants, but four were recorded, the Chiff Chaff, Martin, Sand Martin, and Common Sandpiper.

Of mammals were noted the Hare, Rabbit, Hedgehog, and Mole; and of Fishes, the Stickleback, Roach, and Grayling.

The Conchological Section was reported for by its President, Mr. Henry Crowther, F.R.M.S. Other conchologists present were John Braim, W. C. Clarkson, Wm. Cash, F.G.S., James Ingleby, B. M. Smith, and W. Denison Roebuck, F.L.S. A fair day's work had been done, *Helix lamellata* being observed in abundance in Mickley Woods. The species noted were 7 slugs, 20 land and 3 freshwater forms, viz. :—*Arion ater*, *A. subfuscus*, *A. hortensis*, *Limax maximus*, *L. marginatus* (*arborum*), *Agriolimax agrestis*, *A. lævis*, *Vitrina*, *Hyalinia alliaria*, *H. nitidula*, *H. fulva*, *H. crystallina*, *Bulimus obscurus*, *Pupa cylindracea*, *Clausilia bidentata* (*rugosa*), *Cl. laminata*, *Helix nemoralis*, *H. hortensis*, *H. lamellata*, *H. arbustorum*, *H. aspersa*, *H. cantiana*, *H. granulata*, *H. rufescens*, *H. concinna*, *H. rotundata*, *H. itala*, *Limnæa truncatula*, *Neritina fluviatilis* (Yore at Hackfall), and *Pisidium amnicum* (do.).



Mr. Leonard Hawkesworth, who represented the Entomological Section, furnishes the following:—The Entomological Section was not adequately represented; much good work might have been done in spite of the early date, which was the excuse put forth, had more workers been on the ground. Two Butterflies only were seen (*Vanessa urticae* and *Pieris rapae*) and one Moth (*Eupithecia abbreviata*). The writer noted a few Beetles. *Byrrhus pilula* was seen on the surface of a pond near Mickley, and four specimens of *Geotrupes stercorarius* were observed on the wing at the same place, in brilliant sunshine at noon. The following list calls for no further remarks:—

<i>Carabus violaceus</i> L.	<i>Aphodius fimetarius</i> L.
<i>Nebria brevicollis</i> F.	<i>Aphodius punctato sulcatus</i> S.
<i>Pterostichus niger</i> Schall.	<i>Aphodius contaminatus</i> Herbst.
<i>Pterostichus vulgaris</i> L.	<i>Aphodius rufipes</i> L.
<i>Pterostichus strenuus</i> Daws.	<i>Aphodius ater</i> DG.
<i>Calathus cisteloides</i> Pz.	<i>Geotrupes spiniger</i> Marsh.
<i>Anchomenus dorsalis</i> Müll.	<i>Geotrupes stercorarius</i> L.
<i>Leistus spinibarbis</i> F.	<i>Geotrupes sylvaticus</i> Pz.
<i>Bembidium littorale</i> Ol.	<i>Sericosomus brunneus</i> L.
<i>Ocypus olens</i> Müll.	<i>Rhagium bifasciatum</i> F.
<i>Silpha rugosa</i> L.	<i>Chrysomela polita</i> L.
<i>Silpha atrata</i> L.	<i>Otiorhynchus sulcatus</i> F.
<i>Byrrhus pilula</i> L.	

Mr. A. H. Pawson, who acted as Secretary of the Botanical Section in the unavoidable absence of Mr. Farrah, reported as follows:—The country around Tanfield is very rich in spring flowers. It is an early district. The slight elevation (below 150 ft.) is favourable, and the shattered limestone rocks and light porous soil part easily with the chilling moisture which often retards vegetation on low ground. It was also a very forward season. The Sweet Violets—which flourish exuberantly on these sandy banks, in every shade from deepest blue to purest white, filling the air with fragrance—were almost over. *Gagea lutea*, too, was only to be distinguished by its withering leaves. This uncommon and little known flower is found in frugal sufficiency on the banks of the river and streams in this neighbourhood, usually about the flood-level; it blooms about the end of March, before folks are much afield. Like the early buttercup, which it somewhat resembles, provident of its pollen and used to rough weather, it only opens its little umbel of flowers in the sunshine. The perianth is green on the outside, and when closed quite conceals to an unobservant eye any semblance of a flower. These floral leaves persist, turn quite green, and then assist in ripening the fruit by performing the functions of foliage-leaves, with which the plant is otherwise ill



provided. It is interesting to note that *Gagea* and the rare *Lloydia*, two interesting genera of the *Tulipeæ*, although they grow so sparingly with us and are so abundant in the Alps and other regions, both take from British botanists the names by which they are universally known. The plants which made the great display at this time were Wood Anemones, the Lesser Celandine, and Primroses, a trio unsurpassed for delicate beauty, glorious colour, and gentle sweetness. *Caltha*, too, was glowing by every streamlet. The Hawthorn bushes, in welcome contrast to last spring, gave great promise of bloom, which has since been amply fulfilled. The tall, lax panicles of the sub-dioecious Butterbur were very conspicuous in some places on the river-banks. This plant is practically dioecious, as the male head, although it contains a few pistillate flowers, seldom produces seed. Similarly the female seems to make little use of the few staminate flowers in the centre of its disk, and probably needs the pollen of the other plant to perfect its seed. The Butterbur is ordinarily increased by its creeping rootstock, as the pistillate form is far from common. This is easily recognised by its smaller heads and filiform florets. It elongates greatly both in stem and pedicels after flowering, as it has other work to do, while the spike of the barren plant (which is stouter with larger heads and tubular florets) withers away as the corollas fade. Just outside the village of Tanfield, along the hedge-rows on each side of a deep lane, the Green Hellebore is thoroughly naturalised. It was in its perfection of bloom, and its fine digitate leaves and curious green flowers, crowded with sulphur anthers and furnished with horns of nectar, could not fail to attract attention. Here again we have a persistent perianth which, having enclosed and protected the organs of fertilisation, continues to shield and nourish the fruit. The Hellebore can hardly be considered native in this station, but it is thoroughly established and evidently spreading rapidly. It was formerly used as a cattle-drench, and was cultivated for the purpose. The most remarkable plant of the expedition was *Hutchinsia petraea*, of which some dwarf specimens were found by Mr. Moss, of Halifax. This little mountain herb is at home on the limestone rocks about Aysgarth, and its discovery here is, as Mr. Arnold Lees observes, 'an extension of its downward range, though clearly adventive, the seeds washed down from some Wensleydale ridge; another object lesson on the dispersion of plant life by rain.' There are patches of snowdrops on land below the flood-level of the Ure, but I fear that they must not be held to be indigenous. Near the Hellebore, *Vinca minor* was also established, and *Helleborus fœtidus*, the relict of an old garden, was sowing itself freely, as also the



Spurge Laurel. *Sedum dasyphyllum* also grows on a wall which does not enclose a garden. Indeed, the many aliens which were making themselves at home on the hospitable soil of this favoured spot was a subject of general remark. I add a list of the less common plants:—

Ranunculus auricomus.

Erophila vulgaris.

Cochlearia officinalis.

Viola hirta.

Stellaria nemorum.

Hypericum hirsutum.

Prunus cerasus.

Prunus padus.

Pyrus malus.

Chrysosplenium alternifolium.

Pimpinella magna.

Campanula latifolia.

Hottonia palustris.

Ligustrum vulgare.

Symphytum officinale.

Myosotis sylvatica.

Echium vulgare.

Lathræa squamaria.

Verbascum thapsus.

Narcissus pseudo-narcissus.

Orchis mascula.

Carex acuta.

Asplenium ruta-muraria.

For the Cryptogamia Mr. M. B. Slater, F.L.S., the President of the Botanical Section, reported that Mr. Llewellyn J. Cocks, of Harrogate, collected the following 25 species during the excursion:—

*Cinclidotus fontinaloides* Hedw. in the River Ure near Mickley; *Mnium marginatum* Dicks. = *M. serratum* Schrad., Hackfall; *M. seligeri* Juratz, sterile, at Hackfall; *Seligeria setacea* Hedw., Hackfall; *S. doniana* Sm., Hackfall; *Glyphomitrium saxicola* (W.&M.) Mitt., Hackfall; *Swartzia montana* (Lamk.) Lindb. = *Distichium capillaceum* B.&S., Hackfall; *Dichodontium pellucidum* (Stefs.) L., Hackfall; *Pottia erecta* (With.) Mitt., in limestone quarry near Tanfield station (North-west Yorkshire); also *Georgia brownii*, *Fissidens adiantoides*, *Dicranum fuscescens*, *Grimmia apocarpa* var. *rivularis*, *Pohlia albicans*, *Philonotis fontana*, *Bryum pallens*, *Anomodon viticulosus*, *Climacium dendroides*, *Eurhynchium myosuroides*, *Hypnum commutatum*, *Plagiothecium undulatum*, *Hylocomium splendens*, *H. loreum*, *Homalia trichomanoides*, and *Pterygophyllum lucens*. All these species with two exceptions are previously known as West Riding Mosses, but the two are new records. *Campylostelium saxicola* is mentioned by F. Arnold Lees (Flora of West Yorkshire) from Ramsden Clough, but the sole station for it there is in Lancashire. This gathering at Hackfall brings the species into the West Riding list; it is a very minute plant, and may probably have been overlooked, for it is known from several localities in the North Riding. The other species, *Mnium seligeri* Juratz, was only got in a sterile state, but it agrees so well with *M. seligeri* by its leaf-characters that we may venture to include it as an addition. It should be again looked for and obtained in a more perfect state with fruit.



On behalf of the Geological Section one of its Secretaries, Rev. W. Lower Carter, M.A., F.G.S., reported that the geological party, under the guidance of Mr. Kirkby, of Ripon, after inspecting the ancient church of Tanfield, with its interesting monuments and Marmion's Tower, started by the field path for Hackfall. The path gave very picturesque views of the gorge of the Ure, which is beautifully wooded, and the wood anemones, celandines, and other wild flowers made the wood gay with their delicate blooms. Very little geological investigation was attempted, but the lessons of denudation exhibited in the excavation were noted. Old river terraces were noted, and at one point, near Mickley, where a little stream joins the Ure, the parallel terraces of this tributary were very plain. The bedding of the Third Grits exhibited in the gorge was fairly horizontal, and the finer flaggy beds exposed in a quarry were found to be very micaceous and false bedded. Banks of coarse detritus were exposed at several bends of the river, which were probably glacial deposits. On the return journey to Ripon a detour was taken to the banks of the Ure, where extensive deposits of gypseous marls had been dissected by the river. Several sections are shown with the marls and interbedded seams of fibrous gypsum contorted in the most violent way. The way in which bands of gypsum, widely separated, in a few feet run together at a sharp angle was very interesting, and the whole problem of the contortion of these beds is difficult of solution. Distant glimpses were also obtained of some of the pits of subsidence which lie parallel to the river course, and which are probably due to the solution of portions of the underlying Magnesian Limestone.

A vote of thanks to the chairman was then passed, on the motion of the Rev. W. Fowler, M.A., in replying to which Mr. Crowther read an interesting short paper on the study of natural history in the field.

### NOTES—ORNITHOLOGY.

**Barred Warbler in East Yorkshire.**—A fine adult female of *Sylvia nisoria* was shot last summer at Skirlaugh in Holderness, by Mr. Darley, Taxidermist, Hull. It is now in the York Museum. I understand that two or three years ago another of these very rare migrants was shot near Patrington in South Holderness. Gätke considers this species the rarest of the German warblers visiting Heligoland. In England he states that this bird has not been met with up to the date of his work. However, four or five instances have occurred.—B. B. HAWORTH-BOOTH, Hullbank Hall, near Hull, 9th March, 1896.

The date of this interesting occurrence would be valuable.—ED.

**Flamborough Bird-Notes.**—Dotterels (*Eudromias morinellus*) are very scarce this season. Mr. D. Atkinson informs me that he has only seen twenty Dotterels in a flock this year in the neighbourhood of Arram Hill. The first Swift (*Cypselus apus*) that I have seen this season was on June 1st, 1896. A Black Guillemot, or Puffin, has been seen by the fishermen here on the coast, and makes them nearly wild to know what sort of a bird it is. I imagine it is the Black Guillemot (*Uria grylle*).—MATTHEW BAILEY, Flamborough, June 20th, 1896.



THE CONSTITUENTS OF  
THE NORTH LANCASHIRE FLORA, 1597(?) - 1893.

LISTER PETTY,

*Ulverston.*

NINTH PAPER.

**Crithmum maritimum** L. Clarke's First Record, 1548.

Circâ 1680; see 1889.

1744. Wilson, Syn. 71. On Dunnerholme rocks, in Furness, Lawson. And repeated 1763. Martyn, Plant. Cantab., 60. 1796. Withering, ed. iii., 295. On the rocks at Dunnerholme, and above Cartmel Wells, on the sea shore, growing out of the crevices of the rocks and difficult to get at, Atkinson; and repeated in all following editions. 1805. West. Antiq. ed. Close, 377. 1839. Baxter, Phænog. Bot. iv., 267. 1842. Evans, Furness and Furness Abbey, 24. 1843. Jopling, Furness and Cartmel, 265. Lawson and Atkinson's localities repeated. 1857. Phytologist, 257. Humphrey Head, seen in 1805. Dr. Windsor. (Humphrey Head and Cartmel Wells are the same locality). 1869. Aspland's Guide. Within six miles of Grange, A. Mason. 1885. Baker's Flora, 110. Lawson and Atkinson repeated. 1889. Westm. Note-book, 185. Extracts from Lawson's Note-book, circâ 1680, ed. J. A. Martindale. Dunnerholme rocks and Harlside rocks, Lawson.

NOTE.—Harlside is near Barrow-in-Furness.

**Ænanthe fistulosa** L. C.F.R., 1597.

*Ænanthe aquatica* R.

1744. Wilson, Syn. 67. 'Close by Marshgrange' (and a locality in West Lancs.), Lawson. 1885. Baker's Flora, 108. Lawson repeated. 1888. Westm. Note-book, 83. Lawson's record repeated.

**Ænanthe Lachenalii** Gmel. C.F.R., 1690.

1874. J. of B., Miss E. Hodgson. Humphrey Head Marsh. 1885. Baker's Flora, 108-9. Miss Hodgson repeated. Plentiful about Cark and Flookborough, J. G. Baker. Saltmarsh at Ulverston, Rev. A. Ley. Saltmarsh east side of Walney Island, F. A. Lees.

NOTE.—Mr. Baker's locality is Sandgate Marsh, and Rev. A. Ley's Plumpton Marsh.

**Ænanthe crocata** L. C.F.R., 1548.

[1830. Otley, Guide, ed. iv., 140. Grows in the Brathay and other places, and repeated in all subsequent editions. But query Lancashire side of the river?]. 1861. Phytologist, 237. Ditches between Humphrey Head and Cartmel, C. J. Ashfield. 1874.



J. of B., Miss E. Hodgson. In brooks, frequent. 1885. Baker's Flora, 109. Furness.

**Meum Athamanticum** Jacq. C.F.R., 1548.

*Meum vulgatius* Park.

[1640. Parkinson, Theatre, 888. Groweth in many places wild in the north counties of this land, as in Lancashire and Yorkshire, yet it is planted also in gardens. 1762 and 1778. Hudson, Fl. Ang., eds. i.-ii., pp. 661 and 115. Lancashire frequent. 1775. Jenkinson, Brit. Pl., 118, repeated. Probably none of these in North Lancs.] 1796. Withering, ed. iii., 305. In Coniston, Furness Fells, Jackson; and repeated in all subsequent editions. 1811. Smith and Sowerby. Eng. Bot., vol. xxxii., 2249. Native of mountainous pastures in Westm., Lancashire and Cumb. 1828. Smith, Eng. Flor., ed. ii., vol. ii., 84-5. In Lancashire. 1839. Baxter, Phænog. Bot., iv., 314. Jackson repeated. 1885. Baker's Flora, 110, Jackson repeated.

**Angelica sylvestris** L. C.F.R., 1568.

1864. Linton, Lake Country, 323. 'Common,' no locality. 1874. J. of B., Miss E. Hodgson. No locality. 1885. Baker's Flora, 110. Ascending from the shore marshes at Flookborough, J. G. Baker.

**Peucedanum palustre** Mœnch. *Selenium* L. C.F.R., 1778.

1787. Withering, ed. ii., 281-2. 'Found in 1779 or 1780 by Mr. Seatle, at Cannon Winder, near Flookborough, Lancs., in the ditches near the sand-side not very plentiful; and I have found it round the sides of Ayside Tarn, three miles north of Cartmel,' I. Hall. 'Brought to me and Mr. Crowe, when in Lancashire in 1781, by the Rev. Mr. Jackson,' J. T. Woodward. 1796. Withering, ed. iii., 293. Hall and Woodward repeated. 1800. Smith, Fl. Brit., I., 303. In Lancashire, 1801. 1805. Turner and Dillwyn, Bot. Guide, II., 367. Hall repeated. 1812. Withering, ed. v., 367-8. As before and in all following editions except 1830, ed. vii., 371-2, Hall only. 1828. Smith, Eng. Fl., ed. ii., vol. 2, 97. In several parts of . . . Lancashire. 1830. Hooker, Brit. Fl., ed. i., 118. Lancashire. 1835. Hooker, ed. iii., 134-5. 1835. Watson, New B. G., I., 301. Seatle and Hall repeated, but ascribed to 'B. G.'; several parts of the county, 'Eng. Fl.' 1842. Hooker, ed. 5, 146. As before. 1850. Hooker and Arnott, ed. vi., 172; and in 1855, ed. vii., 181. 1860. Ed. viii., 181. All as before. 1885. Baker's Flora, 110. Hall and Woodward repeated. 'Modern confirmation wanted.'

NOTE.—Watson, Cybele, 1847, I., 452-3, says that *Ænanthe Lachenalii* Gm. is often mistaken for this. Can it have been the case here?



**Heracleum Sphondylium** L. C.F.R., 1548.

1864. Linton, Lake Country, 323. 'Common,' no locality.

1874. J. of B., Miss E. Hodgson. No locality. 1885. Baker's Flora, 111. Var. *dissecta*, hedges near Allithwaite (? J.G.B.).

**Daucus Carota** L. C.F.R., 1562.

1874. J. of B., Miss E. Hodgson. Type included without locality. Var. *maritimus* With. Plumpton shore-cliff. 1878.

J. of B., 88. Mr. James Britten writes that the specimen in Miss Hodgson's herbarium in Herb. B. M. is 'not the true plant.'

1885. Baker's Flora, 111. 'A form with fleshy leaves, which is the *D. maritimus* of Miss Hodgson's catalogue, is abundant on the Furness shore at Kent's Bank, Flookborough and Plumpton.'

**Caucalis Anthriscus** Huds. C.F.R., 1632.

1864. Linton, Lake Country, 323. No locality (as *Torilis* L.).

1874. J. of B., Miss E. Hodgson. No locality.

**Hedera Helix** L. C.F.R., 1538.

1864. Linton, Lake Country, 324. 'Common,' no locality.

1874. J. of Bot., Miss E. Hodgson. No locality. 1885. Baker's Flora, 105. 'Ascending to the limestone pavement of Yewbarrow,' J. G. Baker.

**Adoxa Moschatellina** L. C.F.R., 1570.

1843. Jopling, Furness and Cartmel, 324. Common in moist, shady places in Furness and Cartmel, Aiton and W. Wilson. 1864.

Linton, Lake Country, 324. 'Common,' no locality. 1869. Aspland's Guide. Within six miles of Grange, A. Mason.

1874. J. of B., Miss E. Hodgson. Not infrequent. With two terminal flowers near Soutergate, Kirkby-in-Furness. 1885.

Baker's Flora, 104. Miss Hodgson repeated.

**Sambucus nigra** L. C.F.R., 1538.

1864. Linton, Lake Country, 324. No locality. 1874. J. of B.,

Miss E. Hodgson. Woods and hedges, frequent. 1885. Baker's Flora, 113-114. Truly wild in the limestone woods about Grange-over-Sands. J. G. Baker.

The local name Bortree evidently allied to Scotch Bourtree.

**Sambucus Ebulus** L. C.F.R., 1548.

1796. Withering, ed. iii., 316. On Goosegreen, near Dalton-in-Furness. W. Atkinson; and repeated in all subsequent editions,

and in 1805. Turner and Dillwyn, Bot. Guide, ii., 367. 1805. West, Antiq., ed. Close, 379. 1835. Baxter, Phænog. Bot., ii., 122.

1842. Evans, F. and F. Abbey, 23. 1843. Jopling, Furness and Cartmel, 265. Near Bardsea, Aiton; near Flookborough, W. Wilson;

and Atkinson's locality repeated. 1869. Aspland's Guide, within six



miles of Grange. A. Mason. 1885. Baker's Flora, 114. Atkinson, Aiton, and W. Wilson repeated.

**Viburnum Opulus** L. C.F.R., 1570.

1874. J. of B., Miss E. Hodgson. Woods and hedges, frequent.

1885. Baker's Flora, 114. 'Ascends to 300 yards over Coniston.'

**Lonicera Periclymenum** L. C.F.R., 1548.

1861. Phytologist, 237. Hedges on roadside between Humphrey Head and Cartmel. C. J. Ashfield. 1864. Linton, Lake Country, 324. No locality. 1874. J. of B., Miss E. Hodgson. No locality.

**Lonicera Xylosteum** L.<sup>1</sup>

1843. Jopling, Furness and Cartmel, 265. Near Conishead Priory and Plumpton Woods, Aiton. 1885. Baker's Flora, 115. Head of Coniston Lake near Waterhead, J. G. Baker; Windermere Islands and near the Ferry, W. Foggitt; and Aiton repeated. 1892. Naturalist, 84. In a wood near Lindale, a fine specimen. L. Petty.

**Galium boreale** L. C.F.R., 1670.

1796. Withering, ed. iii., 192. Near the low end of Windermere, opposite Fell Foot, Jackson; near the Ferry, Windermere, Woodward; and repeated in all subsequent editions. 1864. Linton, Lake Country, 324. 'Common,' no locality. 1885. Baker's Flora, 117. Shore of Coniston Lake at Waterhead, etc. Miss Susan Beever.

**Galium Cruciata** Scop. C.F.R., 1597.

1843. Jopling, Furness and Cartmel, 265. In hedges around Bardsea, Aiton. 1864. Linton, Lake Country, 324. 'Common,' no locality. 1874. J. of B., Miss E. Hodgson. No locality. 1885. Baker's Flora, 115. 'Ascending from Furness shore at Flookborough.' J. G. Baker.

**Galium verum** L. C.F.R., 1548.

1843. Jopling, Furness and Cartmel, 265. Shore near Bardsea, Aiton. 1864. Linton, Lake Country, 324. 'Common,' no locality. 1874. J. of B., Miss E. Hodgson. No locality. 1885. Baker's Flora, 115. Ascending from the coast at Bardsea and Flookborough. J. G. Baker.

**Galium Mollugo** L. C.F.R., 1576.

1874. J. of B., Miss E. Hodgson. No locality. 1885. Baker's Flora, 116. In the grounds near the railway at Grange-over-Sands. J. G. Baker.

<sup>1</sup> Withering says that the plant was included in 1st ed. of his Botanical arrangement on the authority of J. Wallis—'Nat. Hist. and Antiq. of Northumberland,' 2 vols. 4to, 1769—who found the plant under the Roman wall W. side of Shewing Sheels. Is it the first record?



[VAR. *G. insubricum* Gaud.

1842. Bab. Man., ed. i., 143. Windermere, Rev. C. A. Stevens; and repeated 1847. Ed. ii., 154. 1851. Ed. iii., 153. 1856. Ed. iv., 158. 1850. Hooker and Arnott, Brit. Fl., ed. vi., 188-9. 1885. Baker's Flora, 116. Stevens repeated. But is this locality in Lancashire?—'Windermere' is very vague.]

*Galium saxatile* L. C.F.R., 1634.

1864. Linton, Lake Country, 324. 'Common,' no locality.

1874. J. of B., Miss E. Hodgson. No locality.

*Galium sylvestre* Poll. C.F.R., 1762.

*G. pusillum* Sm.

1775. Jenkinson, Desc. Brit. Plant, 14. On many mountains in the north of Lancashire. 1778. Robson, S., Flora, 151; repeated without acknowledgment. 1805. Turner and Dillwyn, Bot. Guide, ii., 365. 'Common in the county, Woodward.' 1812. Withering, ed. v., 245-6. Lancashire and Cumb., Woodward and Withering (*fil.*). 1818. Withering, ed. vi., 268. 1830. Ed. vii., 223. 1835. Watson, New B. G., I., 301. 'Common, B. G.' 1850. Hooker and Arnott, ed. vi., 187. County of Lancaster. 1857. Phytologist, 257. As *G. montanum*. Top of Humphrey Head, Dr. Windsor. 1861. Phytologist, 259, Dr. Windsor repeated. 1862. Phytologist, 259. It occurred in one place on rocky ground as I approached Humphrey Head, Dr. Windsor. 1869. Aspland's Guide. Within six miles of Grange, A. Mason. 1874. J. of B., Miss E. Hodgson. Hampsfell. 1885. Baker's Flora, 116. Dr. Windsor's 1857 locality repeated. Miss Hodgson repeated. 1892. Haviland, Distrib. Disease, 377. No locality.

*Galium palustre* L. C.F.R., 1632.

1874. J. of B., Miss E. Hodgson. No locality.

VAR. *Witheringii* Sm.

1874. J. of B., Miss E. Hodgson. No locality.

*Galium Aparine* L. C.F.R., 1538.

1864. Linton, Lake Country, 324. 'Common,' no locality.

1874. J. of B., Miss E. Hodgson. No locality.

*Asperula odorata* L. C.F.R., 1568.

1843. Jopling, Furness and Cartmel, 265. Sea Wood, Bardsea, Aiton. 1864. Linton, Lake Country, 324. 'Common,' no locality.

1874. J. of B., Miss E. Hodgson. No locality.

*Asperula cynanchica* L. C.F.R., 1632.

1843. Jopling, Furness and Cartmel, 365. On the rocks at Copse Head and Humphrey Head, W. Wilson. 1857. Phytologist, 257. Dr. Windsor states he found this species on Humphrey Head in 1805. 1860. 257. Dr. Windsor repeated. 1869. Aspland,



Guide. Within six miles of Grange, A. Mason. 1874. J. of B., Miss E. Hodgson. Hampsfell. 1885. Baker's Flora, 117-18. Wilson, Dr. Windsor, and Miss Hodgson repeated. Yewbarrow-over-Grange, and wood between Grange and Lindale, T. J. Foggitt<sup>1</sup> and J. G. Baker. 1892. Naturalist, 81. Miss Hodgson repeated. Reeke Hill, Cartmel, L. Petty. 1892. Haviland, Distrib. Disease, 377. No locality.

**Sherardia arvensis** L. C.F.R., 1548.

1864. Linton, Lake Country, 324. Fields about Hawkshead. 1874. J. of B., Miss E. Hodgson. No locality.

**Valeriana dioica** L. C.F.R., 1597.

1874. J. of B., Miss E. Hodgson. Damp woods and swampy ground; not infrequent.

**Valeriana officinalis** L. C.F.R., 1548.

1843. Jopling, Furness and Cartmel, 266. Moist woods; frequent in Furness and Cartmel, Aiton and Wilson. 1861. Phytologist, 237. Road-side ditches between Humphrey Head and Cartmel. C. J. Ashfield. 1864. Linton, Lake Country, 324. 'Common,' no locality. 1874. J. of B., Miss E. Hodgson. No locality. 1885. Baker's Flora, 118. 'Ascending from the shore level in Low Furness.'

**Centranthus ruber** DC.

1885. Baker's Flora, 118. Roadside near Cark station, J. G. Baker.

**Valerianella olitoria** Poll. C.F.R., 1570.

1869. Aspland's Guide, as *Fedia*. Within six miles of Grange, A. Mason. 1874. J. of B., Miss E. Hodgson. Furness shores, not infrequent. 1885. Baker's Flora, 118-19. Miss Hodgson repeated. A form with hairy fruit at Humphrey Head, Chas. Bailey.

**Valerianella dentata** Poll. C.F.R., 1804.

1874. J. of B., Miss E. Hodgson. Cultivated fields in Furness. 1885. Baker's Flora, 119. Miss Hodgson repeated.

**Dipsacus sylvestris** L. C.F.R., 1538.

1843. Jopling, Furness and Cartmel, 266. About Ulverston, Aiton. 1874. J. of B., Miss E. Hodgson. White Ghyll Wood, near Ulverston, the Misses Ashburner. 1885. Baker's Flora, 119. Aiton and Misses Ashburner repeated.

<sup>1</sup> Thos. J. Foggitt, b. Jan. 10th, 1810, at Eaglescliffe, Durham, d. Dec. 29th, 1895, at Thirsk; buried Sowerby, Yorks. Chemist, first at Yarm, later at Thirsk. Biographical sketch in *Thirsk West. Meth. Ch. Record*, Jan. 7th, 1895, by his son, W. Foggitt. Besides the notes in Baker's *Flora*, contributions from him are in 'several local floras' (op. cit.); and by the kindness of Mr. W. Foggitt I hold some unpublished localities in N. Lancs.



**Scabiosa succisa** L. C.F.R., 1568.

1843. Jopling, Furness and Cartmel, 266. In moist lands in Furness and Cartmel, Aiton and Wilson. 1864. Linton, Lake Country, 324. 'Common,' no locality. 1874. J. of B., Miss E. Hodgson. With white flowers on the Ulverston mosses. 1885. Baker's Flora, 119. Miss Hodgson repeated.

**Scabiosa Columbaria** L. C.F.R., 1629.

1874. J. of B., Miss E. Hodgson. No locality. 1885. Baker's Flora, 120. Rocks of Yewbarrow at Grange. W. Foggitt and J. G. Baker. 1892. Haviland, Distrib. Disease, 377. No locality.

**Scabiosa arvensis** L. C.F.R., 1568.

1864. Linton, Lake Country, 324. As *Knautia*, 'common,' no locality. 1874. J. of B., Miss E. Hodgson. No locality. 1885. Baker's Flora, 120. 'Ascending to 300 yards over Coniston by the road up the Old Man.'

**Eupatorium cannabinum** L. C.F.R., 1548.

1830. Otley, Guide, ed. iv., 140. Near Low Wood Inn, and repeated 1834. Ed. v., 144. 1837. Ed. vi., 149. 1844. Ed. vii., 148. 1849. Ed. viii., 138. 1843. Jopling, Furness and Cartmel, 266. Old Park, Holker, W. Wilson. 1864. Linton, Lake Country, 325. Common at Coniston, but not elsewhere. 1869. Aspland, Guide. Within six miles of Grange. A. Mason. 1874. J. of B., Miss E. Hodgson. No locality. Linton's statement not to be taken too rigidly, as he lived close to the side of the lake. No doubt he saw more at Coniston than elsewhere, but it is common in suitable places.

**Solidago Virgaurea** L. C.F.R., 1570.

*Virga Aurea.*

1700. Leigh, Nat. Hist. Lanc. and Cumb., 95. Sea coasts in Furness. 1842. Evans, F. and F. Abbey, 23. Leigh's locality repeated, without reference. 1843. Jopling, Furness and Cartmel, 266. Hagg Wood, Cartmel; Wilson. 1861. Phytologist, 238. Humphrey Head; C. J. Ashfield. 1864. Linton, Lake Country, 325. 'Common,' no locality. 1874. J. of B., Miss E. Hodgson. Woods, frequent; Caw Rocks, Dunnerdale Fells. 1885. Baker's Flora, 136. 'Ascends to 600 yards, Coniston Old Man.'

**Bellis perennis** L. C.F.R., 1538.

1864. Linton, Lake Country, 325. 'Common,' no locality. 1874. J. of B., Miss E. Hodgson. No locality.



**Aster Tripolium** L.

C.F.R., 1570

*Tripolium*. First reported by Lawson to Ray, April, 1688.

**1718**. Derham, Phil. Lett., 222. Isle of Walney, Lawson.  
**1796**. Withering, ed. iii., 727. West side of Walney Island, Atkinson, and repeated in all subsequent editions; also in **1805**, West, Antiq., ed. Close, 376. **1842**. Evans, Furness and Furness Abbey, 23. **1843**. Jopling, Furness and Cartmel, 266. Near Bardsea, Aiton, who repeats, too, Lawson's locality. **1848**. Ray's Corresp. Ray Soc., 197, et seq., Lawson to Ray in full. **1874**. J. of B., Miss E. Hodgson. Foxfield Marsh; Dunnerholme; Greenodd. **1885**. Baker's Flora, 139. Abundant all along the Morecambe estuary from Walney Island and Bardsea past Cark and Flookborough to Grange. First recorded by Lawson. **1888**. Westm. Note-book, 84. Lawson repeated in Martindale's Early Westm. Plant Records.

**Aster Linosyris** Bernh. *L. vulgaris*.

C.F.R., 1813.

**1869**. Aspland's Guide. Within six miles of Grange, A. Mason.  
**1885**. Baker's Flora, 248. 'Postscript. Through the kindness of Prof. Babington I have seen a specimen gathered near Hampsfield [i.e. Hampsfell] by Mr. W. Nixon,<sup>1</sup> of Eccleriggs,' J. G. Baker.  
**1892**. J. of B., 309. 'Found in the neighbourhood of Humphrey Head. A specimen sent to Nat. Hist Mus., Cromwell Road,' W. C. Worsdel. **1893**. Atkinson's Guide. Included on the authority of Worsdel's record.

**Erigeron canadense** L.

**1885**. Baker's Flora, 136. On Yewbarrow, over Grange, 1872. I. Hindson.

**Filago germanica** L.

C.F.R., 1562.

**1869**. Aspland's Guide (as *Diotis* by mistake). Within six miles of Grange. A. Mason. **1874**. J. of B., Miss E. Hodgson. Jacklands,<sup>2</sup> Low Furness, abundant; Roosebeck. Miss M. A. Ashburner. **1885**. Baker's Flora, 248. Postscript. 'The plant recorded as *Diotis* proves to be *Filago germanica*.' J. G. Baker.

**Filago minima** Fr.

C.F.R., 1632.

**1874**. J. of B., Miss E. Hodgson. Foxfield Marsh; wall tops N. and S. of Ulverston. **1885**. Baker's Flora, 135. Miss Hodgson repeated.

<sup>1</sup> William Nixon, d. 1889; buried Bardsea-in-Furness. Contributed to 8vo ed. of Nature Printed Ferns, Linton's Ferns of Lake District, ed. ii., and Baker's Flora. For many years gardener to Viscount Cross, at Eccleriggs, near Broughton-in-Furness. He seems to have been much above the average gardener, being interested in many subjects beyond his duties.

<sup>2</sup> For this locality see above under *Iberis*.



## WORK FOR LINCOLNSHIRE GEOLOGISTS.

JOHN H. COOKE, F.G.S., F.L.S.,

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Lincolnshire Naturalists' Union.*

To within a comparatively recent period but little attention of a systematic character has been given to the study of the natural history of Lincolnshire. The bibliography of the subject indicates that individuals have, from time to time, done valuable though fragmentary work, but the object seems to have been for the purpose of assisting in the clearing up of problems in connection with phenomena of adjoining counties rather than the furnishing of material for a systematic and complete account of the natural history of Lincolnshire. The first serious attempt to carry out a thorough, scientific investigation of the county's rocks was made in 1885 by the Geological Survey, and since then the work has been supplemented by the efforts of several distinguished members of the Lincolnshire Naturalists' Union in the botany, entomology and conchology of the district. Already the influence of the Union is making itself felt, for there are now but few townships in the county that have not organised classes for the methodical study of one or more branches of natural history. Geology, especially, is being enthusiastically taken up; and at Lincoln, Grimsby, Grantham, Sedgbrook, and Bourne flourishing classes have been formed that are doing useful work both in the field and in the laboratory.

I have upon occasions been appealed to by those who, having mastered the elements of the study of rocks, desired to apply their knowledge in some practical form to the geological phenomena of the districts in which they dwell; and it is to assist these would-be workers that I now propose briefly to indicate how they might utilise their energies to the best advantage by gathering material for the working out of some of the problems in the geology of the county.

But before proceeding to indicate the nature of the problems I would observe that it is not necessary to go far afield to put one's knowledge in practice, for applications of the main principles of geological science are to be found at our very doors embodied in the most common associations and surroundings of every-day life.

The rain-gullies in the Wolds and Lowlands, the sand-hills, the way-side ditches, the very stones with which our streets are paved—all afford observational data sufficient to enable us to deduce some of the loftiest generalisations of the science. An examination of the escarps along the valley sides, the quarry faces, and the drains will



show that the greater part of the rock of which they are composed is made up of the fossilized remains of creatures of a most varied character. In the marine beds are to be found the remains of cephalopods, corals and shell-fish intermingled with the bones and teeth of sea-monsters such as could only have existed in the waters of salt-oceans of considerable extent; and they offer both in the creatures entombed in them, as well as in their structural peculiarities, unequivocal evidences of their origin, and of the physical conditions under which they were formed.

And then passing on to the integument of Boulder Clays, agglomerates, breccias, loams and old river-gravel with which many parts of the surface of the county are covered, we see in their fauna or the physical features that they exhibit, evidences of the vicissitudes of changes in climate, in topography and in animal life which Lincolnshire has undergone in what are, geologically speaking, comparatively recent times. But to pass on from the general to the particular. The problems, on which I now propose to dwell, admit of a threefold classification, viz., structural, genetic, and correlative.

The first of these have to do with the stratigraphy of the region; and they are therefore the most important. In most parts of the county no difficulty will be experienced in making out the order of succession of the rocks; and the work will be greatly facilitated, too, by the entire absence of the complex foldings which are so common a feature in the rocks of neighbouring counties. This order has, in most cases, been made out and satisfactorily explained in the Survey memoirs; but there still remains much that requires investigation and explanation. For example, in Dorsetshire and other parts of England where the Kimmeridge and the Oxford Clays are largely developed, these two beds are separated by a series of grits and limestones, known as the Corallian. In Lincolnshire this series appears to have no representative in the northern portions of the county, as around Brigg and Wrawby the Upper and the Lower Oolites are found merging the one into the other; but the evidences do not appear to be so conclusive in the sections that occur from Bardney to Horncastle.

The determination of the line of demarcation between these two formations is rendered the more interesting by reason of the marked absence of any lithological differences between them; and therefore in most cases lithology has to be ignored and dependence placed on the two oysters *Ostrea deltoidea* and *Gryphæa dilatata*, which respectively serve as the characteristic fossils of the two formations.

This is a most interesting point, and further researches in other parts of the county would no doubt help to throw more light upon it.



Another problem, similar to the preceding, is the determination of the line of demarcation between the Kellaways Rock and the Cornbrash.

In the adjoining counties these beds are separated by Shales or by Clays. In Lincolnshire the dividing line has been traced, but the character of the argillaceous beds that occur at that horizon has not been ascertained. The sections in the neighbourhood of Sudbrooke Holme, Metherringham, Bishops Norton, and Brigg afford an opportunity for the investigation of this point. The origin of the Upper Sands, and of the Carstone and its fossils, offer themselves as interesting problems. These beds are well developed in the cutting at Donington, and along the Wolds from Claxby to Cawkwell. Are the materials and the contained fossils derivative or indigenous? and if the former, whence were the materials and fossils derived?

The Spilsby sandstone and the determination of its derived fossils, as well as the tracing out of sections shewing the nodule bed which invariably occurs at its base, leave much to be desired. Good work, too, might be done around Gainsborough in distinguishing between, and mapping out, the estuarine and the eolian sands that occur so plentifully in the alluvium of the Trent valley; and in the north of the county in studying the lithology and fossil contents of the superficial clays of the Ancholme Valley, for the purpose of determining whether they be true Oxfordian or of Glacial origin. But there may be many members who have neither the time to devote to, nor the opportunities for, the carrying out methodical work such as the satisfactory solving of problems like the preceding would necessitate. They, however, might be the means of greatly assisting others by the careful recording of the geological details of any new drains, wells, or quarries that may be opened in their neighbourhoods. It is of the greatest importance that such records should be made, both for the scientific value attached to them, as well as for the practical benefits which may possibly accrue. These records might include notes on the character of the strata traversed, and on the contained fossils, as well as accurate measurements of the thickness of each layer.

The scientific value of such observations is evident, for not only do they furnish direct and positive knowledge of the serial order of the strata, as well as explanations of many of the subsidiary phenomena of the district, but they also serve as guides in the antecedent study of proposed wells and mineral borings.

The value of fossils in the determination and the correlation of rocks is now universally recognised. Palæontology, or the study of fossils, has not inaptly been described as being the handmaid of



Geology; and it is evident that but for the assistance it has afforded, Geology could never have attained to the dignity of a science.

How essential fossil-knowledge is, many a capitalist has discovered to his cost. In Lincolnshire alone, thousands of pounds have been wasted in fruitless search for minerals in rocks, the very fossils of which indicated that such minerals were non-existent. And it is not so many years ago that the discovery of the bituminous-shales of the Kimmeridge led ill-informed speculators to spend their money in vain attempts to find the beds of the Coal Measures. A knowledge of fossil-lore would have indicated to them not only where coal might have been found, but also where it could not possibly exist. What Lincolnshire is lacking at the present time is a full and representative collection of the fossils of its rocks; and all help that may tend to the getting together of such a collection will be gladly welcomed. The fossils of the Cornbrash, a formation which is well developed along the eastern side of the cliffs near Scopwick, Potter Hanworth, Cherry Willoughton and Sudbrook, are most numerous and interesting; and, as they have not yet been systematically gathered, good work would be well repaid.

The collection and careful recording of the Lias exposures in and around Fillingham, Helmswell, Willoughton and Glentworth would be productive of valuable results, not only by adding to our knowledge of the fauna of the Lias formation, but also in assisting in the correlation of horizons in the different localities, and in the tracing out of the at present very obscure line of demarcation between the Middle and the Lower Lias.

Our knowledge of the Middle Lias of North Lincolnshire, in the vicinity of Winterton, Appleby and Barnetby, is not all that could be desired; one point in particular, having reference to the absence of the characteristic fossil *Ammonites margaritatus*, calls for special investigation.

In the Lincolnshire Kimmeridge Clays the fossil collector has still much work to do. Of their reptilian fauna but little is known, while the collection of their molluscs and cephalopods would be valuable, as it would assist in the more exact determination of the nature and position of the line of junction between this formation and the subjacent Oxfordian.

In the Pleistocene fauna of the river gravels much work remains to be done. The molars of *Elephas primigenius* have been found at Coningsby in the gravels of the Bain; and the Witham gravels at Langworth have yielded *Cervus elaphus* and *Bos primigenius*; but the deposits in the basins of these, as well as of other Lincolnshire



rivers, are practically virgin ground, and valuable results might be achieved by those who would undertake the investigation of them.

In the problems of the second class, which I shall call genetic, there is ample scope for the energies of the chemist and the microscopist.

The prosperity of Lincolnshire depends more upon agriculture than on any other factor, and yet no attempts seem to have been made to examine or to develop the very valuable beds of phosphates with which the rocks of the county abound. Patient work, chemical and microscopical, on these, as well as on the iron-bearing beds, the clays, the chalk and flints, and the Fuller's earths would all lead to the acquisition of valuable commercial and scientific results. The flints which are so characteristic a feature of our Wolds offer material sufficient for the study of a life-time. A satisfactory explanation of the natural processes whereby those beautiful agate flints, with their variously-coloured concentric bandings of silica, have been formed, has yet to be offered to the scientific world.

The nature, constitution, and chemical composition of Lincolnshire soils is a subject of which we, at present, know nothing. And yet there is no branch of science which so closely affects the well-being of the county's inhabitants as does this. The dependence of the health of the animal and the vegetable kingdoms upon the character of the soils and subsoils upon which they exist, is so evident to all, that there is no necessity for me to further enlarge upon the value of accumulating statistics relating to, and chemical analyses of, the soils from all parts of the county. To the botanist too, such statistics would be specially valuable.

The inter-relations that exist between the flora and the soils of a district is an interesting and a difficult theme, upon which the chemical geologist and the botanist must join forces if results having any pretensions to exactness are to be accomplished.

The origin of the colouring matter from which the Red and the Pink chalks of our Wolds take their names is an important and interesting question of which we, at present, possess very little information. It has been suggested that this colouring matter, which is a peroxide of iron, has been carried into the originally grey chalk by water that had first percolated through a seam of nodular iron. But there are others who take the opposite view, and say that the colouring has not been due to the introduction of iron, but that the colour was imparted to the calcic-carbonate at the time that the chalk was deposited. The point is a debatable one, and it awaits the accumulation of further data before it can be satisfactorily explained.



And lastly I might allude to the dearth of knowledge appertaining to the nature and distribution of the Lincolnshire relics of the Glacial Period known as erratics. In Yorkshire the systematic study of this valuable phase of geological history has been carried on for some years; in Lincolnshire it is but just being initiated.

On the broader questions of the correlation of the Lincolnshire rocks with the rocks of other districts I do not now propose to dwell. The data at present available for such comparisons are insufficient for utilisation with any degree of accuracy. Such questions as the synonymy of the Lincoln Carstone and the Norfolk (Hunstanton) Limestones must be allowed to remain in abeyance until all available evidences bearing upon their lithology, palæontology and stratigraphy have been collected. By the collection and systematic arrangement of definitely ascertained facts, such as these that I have just indicated, our local geologists might be of real service to the cause of Natural History. But while urging them to give their assistance to this work, I would at the same time point out that records of this kind should not be their ultimate aim and objects. They should make themselves *en rapport* with the philosophy of their subject, and endeavour to keep themselves in touch with all new discoveries and theories appertaining to it.

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#### NOTES—COLEOPTERA.

**Pyrochroa serraticornis near Ripley.**—A specimen of this insect taken at Markington, near Ripley (Yorks.), by Miss Roebuck on June 1st, has been forwarded to me. I find according to Fowler that there is no record of its occurrence from Ireland or Scotland, but that it is common in the midlands and south. Does any reader of the 'Naturalist' know whether it has been taken further north than the present record?—LEONARD HAWKESWORTH, Bolton Woods, Bradford, June 13th, 1896.

**Acanthocinus ædilis near Barnsley.**—A very fine female of this species was sent to me alive on the 1st May from one of our collieries, and an equally fine male, also alive, was received from the same source on the 1st June. The former possessed the power of stridulation in a very marked degree, but I was unable to induce the male to display it if he possessed it. The means by which stridulation is produced in this species is by rubbing the bases of the thorax and elytra against each other.—E. G. BAYFORD, 2, Rockingham Street, Barnsley, June 4th, 1896.

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#### NOTE—MOSSES.

**Bryum murale Wils. in the East Riding.**—I have lately discovered this interesting moss near Goodmanham, growing on a clay bank. The site is different from that usually given in the text books, viz., in mortar of old walls. There is some doubt as to whether it has been recorded for Yorkshire before. Mr. Slater has the impression that it was gathered by Mr. Hobkirk in the Malham district. It is certainly new for this Riding, and I have added it to Dr. Parsons' list. It is closely allied to *Bryum erythrocarpum*, and in Schimper's synopsis is given as var. *murorum* of that plant. It is widely distributed in Britain, for besides several stations in the midland and western counties, there are Scotch and Welsh records, and it has also been found at Killarney.—J. J. MARSHALL, Pharmaceutical Chemist, Market Weighton.



## BIBLIOGRAPHY:

Papers and Records published with respect to the Natural History and Physical Features of the North of England.

## LEPIDOPTERA, 1892.

THE present instalment is compiled and edited by

WM. DENISON ROEBUCK, F.L.S.

The previous instalments of the Bibliography of Lepidoptera have appeared as follows:—

- |                            |                |                 |                    |
|----------------------------|----------------|-----------------|--------------------|
| For 1884, in 'Naturalist,' | July and Aug., | 1885,           | pp. 285-292.       |
| „ 1885, 6, 7,              | „              | Feb. and March, | 1888, pp. 58-78.   |
| „ 1888,                    | „              | Sept. and Oct., | 1890, pp. 279-299. |
| „ 1889,                    | „              | May and June,   | 1891, pp. 157-165. |
| „ 1890,                    | „              | June and July,  | 1893, pp. 177-202. |
| „ 1891,                    | „              | Oct. and Nov.,  | 1894, pp. 305-325. |

The counties and vice-counties of which cognizance is taken are the following, as named and numbered in the Watsonian scheme:—

53, Lincoln S. ; 54, Lincoln N. ; 56, Notts ; 57, Derby ; 58, Cheshire ; 59, Lancashire S. ; 60, Lancashire W. ; 61, York S.E. ; 62, York N.E. ; 63, York S.W. ; 64, York Mid W. ; 65, York N.W. ; 66, Durham ; 67, Northumberland S. ; 68, Cheviotland ; 69, Westmorland with Furness ; 70, Cumberland ; and 71, Isle of Man.

ANON. [not signed].

Notts.

**Birmingham Entomological Society** [s excursion to Sherwood Forest, June 4th to 7th, 1892; captures included *Euperia fulvago* (many larvæ), *Notodonta trepida*, and *Eurymene dolabraria*]. *Midl. Nat.*, July 1892, p. 167.

ANON. [not signed].

York S.W.

**Naturalists of the Day.—VII.—George Taylor Porritt, F.L.S., F.E.S.,** etc. [and his captures at Huddersfield of *Cidaria suffumata* var. *porrittii*, dark race of *Arctia mendica*, a black form of *Boarmia repandata*, and a black *Polia flavicincta*]. *Brit. Nat.*, Aug. 1892, p. 173.

ANON. [Editor of Field ; not signed].

York.

**To Correspondents.** . . . T. D. [stating that a photograph is undoubtedly *Aporia cratægi*, but doubting its alleged occurrence in the garden of the Retreat, York]. *Field*, Aug. 20th, 1892, p. 289.

ANON. [not signed].

Lanc. S.

[Notes by] **Penketh Boys' Field Club** [anent unusual abundance of *Vanessa io* and *V. atalanta*, and occurrence of *Colias edusa*]. *N.H.J.*, Oct. 15th, 1892, p. 109.

ANON. [signed 'E. C. W.']

York S.E. and N.E.

**Colias Edusa** [at Langwith Wood, Sep. 13th, and at Bootham, Sep. 16th]. *N.H.J.*, Oct. 15th, 1892, p. 120.

T. ACTON.

Cheshire.

**Aplecta nebulosa** var. *robsoni* [eight bred this year, presumably near Warrington]. *Ent. Rec.*, Aug. 15th, 1892, p. 178.



ROBERT ADKIN.

York N.E. and S.W.

On the Recent Abundance of *Plusia gamma* and *Vanessa cardui* [at Rotherham, Scarborough, and numerous other localities, discussed]. Ent., July 1892, pp. 159-162.

J. ARKLE.

Cheshire.

*Arctia caja* [detailed account of experiments in breeding from Chester larvæ]. Ent., March 1892, pp. 57-62.

J. ARKLE.

Cheshire.

Notes on the Early Moths [near Chester; captures of *Phigalia*, *Hybernia rupicapraria*, *Nyssia hispidaria*, *Orgyia antiqua*, *Cloantha solidaginis*, *Hybernia leucophæaria* (several varieties described), and *H. progemmaria*, some at Delamere Forest, given in detail]. Ent., May 1892, pp. 122-123.

J. ARKLE.

Cheshire.

[Detailed] Notes on the Early Moths [about Chester and Delamere Forest; dates given as to *Hybernia leucophæaria*, *H. progemmaria*, *Anisopteryx æscularia*, *Nyssia hispidaria*, *Phigalia*, *Tortricodes hyemana*, *Brephos parthenias* (first record for Delamere), *Laentia multistrigaria*, *Asphalia flavicornis*, *Arctia caja*, *Pieris rapæ*, *Tephrosia biundularia* var. *delamerensis*, *Tæniocampa instabilis*, *T. opima*, *T. gothica*, *Nyssia zonaria*, and *Diurnea jagella*, from March 15th to April 21st]. Ent., June 1892, pp. 145-7.

J. ARKLE.

Cheshire.

*Plusia gamma* and *Vanessa cardui* at Chester [extraordinarily abundant in 1892]. Ent., July 1892, p. 164.

J. ARKLE.

Cheshire.

Delamere Forest Forms of *Hybernia leucophæaria* [one named by R. South as 1, typical; 2, var. *marmorinaria* Esp.; 3, intermediate; and 4, parallel to var. *fusca* of *H. progemmaria*]. Ent., July 1892, p. 164.

J. ARKLE.

Cheshire.

Whit-Monday [6th June, 1892] in Delamere Forest [with captures of *Thecla rubi*, *Saturnia carpini*, *Anarta myrtilli*, *Geometra papilionaria*, *Heliodes arbuti*, and *Plusia gamma*]. Ent., July 1892, p. 169.

J. ARKLE.

Cheshire.

Larvæ of *Vanessa cardui* at Chester [first time noticed as larvæ]. Ent., Sep. 1892, p. 221.

J. ARKLE.

Cheshire.

Abundance of *Uropteryx sambucaria* and *Timandra amataria* [near Chester]. Ent., Sep. 1892, p. 222.

J. ARKLE.

Cheshire.

Sugar at Chester [at Curzon Park, July 4th and 11th, 1892; moths taken included *Agrotis exclamationis*, *Noctua augur*, *Triphæna pronuba*, *T. orbona*, *Xylophasia polyodon*, *X. hepatica*, *Mamestra furva* (?), *Caradrina blanda*, *Acronycta rumicis*, *A. psi*, *Spilosoma lubricipeda*, *Miana strigilis* (type and three forms of var. *æthiops*), *M. furuncula*, *Hadena oleracea*, *H. pisi*, *Xylophasia lithoxylea*, *Noctua plecta*, *N. festiva*, *Mania typica*, *Tortrix corylana*, *Acidalia aversata*, *Xanthosetia zægana*, *Leucania conigera*, *N. c-nigrum*, *N. triangulum*, and *Camptogramma bilineata*]. Ent., Oct. 1892, p. 248.

J. ARKLE.

Cheshire.

*Colias edusa* . . . in England . . . Cheshire [at Delamere Forest; also *Vanessa atalanta*, *Plusia gamma*, and *Hadena protea*, Sep. 17th, 1892]. Ent., Nov. 1892, p. 276.

J. ARKLE.

Westmorland and Furness.

Notes from the North-West Counties [*Vanessa urticae*, *Epinephile janira*, *Lycæna alexis*, and *Eubolia mensuraria* abundant along the river embankment between Grange and Witherslack, July 23rd, 1892; *Tortrix rufana*,

Naturalist,



*Gnophos obscurata*, *Anaitis plagiata*, *Crambus falsellus*, *C. inquinatellus*, *C. selasellus*, an *Argynnis* (probably *aglaia*), *Eupithecia pulchellata*, *Tanagra chærophyllata*, *Euthemonia russula*, *Nemeophila plantaginis*, *Anarta myrtilli*, *Hyria auroraria*, *Acidalia fumata*, *Carsia imbutata*, *Phycis carbonariella*, *Mixodia schulziana*, *Cænonympha typhon*, *Ematurga atomaria*, *Crambus margaritellus*, *Eupithecia constrictata*, *Lycæna agestis* v. *salmacis*, and *Vanessa io*, at Witherslack]. Ent., Dec. 1892, pp. 317-8.

J. ARKLE.

Cheshire.

**Male versus Female Moths at Light** [at Chester gas-lamps; comparative numbers of the sexes in *Pecilocampa populi*, *Neuronia popularis*, *Asteroscopus sphinx* (*cassinea*), *Ennomos tiliaria*, and *Himera pennaria*; males far outnumber females]. Ent., Dec. 1892, p. 320.

J. ARKLE.

Cheshire.

**Arctia caia: Second Brood of Larvæ** [at Bumper's Lane, near Chester, June 21st, 1892]. Ent., Dec. 1892, p. 320.

ALFRED E. BACKHOUSE.

Cheviotland.

**Clouded Yellow** (*Colias Edusa*) [one caught at Bamboro', August 1892]. N.H.J., Oct. 15th, 1892, p. 120.

J. W. BALDWIN.

Lanc. S. or W.

**Vanessa cardui** [larvæ in abundance on the 'West coast' of Lancashire]. Brit. Nat., Aug. 1892, p. 175.

CHAS. G. BARRETT.

Notts.

**Hesperia lineola** in Nottinghamshire [one in coll. J. N. Young was taken by him in 1880 on the Clumber Estate]. E.M.M., Oct. 1886, p. 267.

C. G. B[ARRETT].

Derbyshire, Lanc. S.

**Amphidasis betularia**, var. **Doubledayaria** [has its special home in the hill districts of Derbyshire, Lancashire, and the adjoining counties, where it steadily increases in proportionate numbers]. E.M.M., Feb. 1892, p. 48.

C. G. BARRETT.

Cumberland.

[**Exhibition of Melitæa aurinia** (*artemis*) from various counties, including Cumberland]. Proc. Ent. Soc. Lond., May 11th, publ. June 1892, p. xx.; E.M.M., June 1892, p. 168; Ent., June 1892, p. 148; Brit. Nat., June 1892, p. 130.

C. G. BARRETT.

York S.W.

**Exhibition of Sheffield forms of Polia chi**. South Lond. Ent. Soc., Oct. 13th, 1892; Brit. Nat., Nov. 1892, p. 238; Ent., Nov. 1892, p. 296; E.M.M., Dec. 1892, p. 314.

C. G. BARRETT.

Lanc. S. or Cheshire.

[**Exhibition of dark varieties of Acronycta leporina**, bred by J. Collins, of Warrington]. Proc. Ent. Soc. Lond., Nov. 2nd, publ. Dec. 1892, p. xxx.; also Ent. Rec., Nov. 15th, 1892, p. 268; Ent., Dec. 1892, p. 323; Brit. Nat., Dec. 1892, p. 260; E.M.M., Dec. 1892, p. 315.

South Lond. Ent. Soc., Nov. 24th, 1892; Ent. Rec., Dec. 15th, 1892, p. 312.

HOLMES BAXTER.

Lanc. W.

**Notes of the Season.**— . . . **St. Anne's-on-Sea** [anent occurrence of *Taniocampa gracilis*, *T. opima*, *T. gothica*, *T. stabilis*, *T. instabilis*, *Pachnobia rubricosa*, *Calocampa exoleta*, *Agrotis suffusa*, *Dicranura vinula*, *Bombyx callunæ*, *B. rubi*, and *Arctia fuliginosa*]. Ent. Rec., June 15th, 1892, p. 130.

H. A. BEADLE.

Cumberland.

**A Day on the Cumberland Mountains** [from Vale of Borrowdale, 21st June, 1892; *Iodis lactearia*, *Vanessa atalanta*, *Argynnis euphrosyne*, *Scoparia basistrigalis*, *Erebia cassiope* (eighty taken, 2,200 ft. alt.), *Mixodia schulziana*, *Crambus furcatellus*, *C. pratellus*, *Melanippe fluctuata*, *Emmelesia minorata*, *Nemeophila plantaginis*, *Crambus perllellus*, *C. hortuellus*, *C. mar-*



- garitellus*, *Ennychia cingulalis* mentioned as captured, with details]. Ent., Sept. 1892, p. 219; abstract as to *E. cassiope*, Ent. Rec., Sep. 15th, p. 196.
- G. BOOTH. Furness.  
**Attractiveness of Flowers to Moths** [as observed at Grange-over-Sands; Spur valerian found the most attractive, having attracted *Cherocampa porcellus*, *Urapteryx*, *Rumia*, *Odontopera*, *Boarmia repandata*, *B. rhomboidaria*, *Acidalia bisetata*, *Ligdia adustata*, *Larentia didymata*, *Hypsipetes elutata*, *Melanippe sociata*, *M. montanata*, *Scotosia dubitata*, *Cidaria russata*, *C. immanata*, *Anaitis plagiata*, *Leucania comma*, *L. pallens*, *Xylophasia rurea*, *X. lithoxylea*, *X. polyodon*, *Mamestra brassicæ*, *Apamea basilinea*, *A. oculatea*, *Miana strigilis*, *Caradrina cubicularis*, *Agrotis segetum*, *A. exclamationis*, *A. corticea*, *Triphaena janthina*, *T. orbona*, *T. pronuba*, *Noctua triangulum*, *N. xanthographa*, *Polia chi*, *Euplexia*, *Hadena dentina*, *H. oleracea*, *H. pisi*, *Cucullia umbratica*, *Plusia chrysitis*, *P. iota*, *P. v-aureum*, *P. gamma*, and *Amphipyra tragopogonis*]. Ent. Rec., Jan. 15th, 1892, p. 17.
- GEO. A. BOOTH. Westmorland and Furness.  
**Notes of the Season.**— . . . **Grange-over-Sands** [*Colias edusa* in numbers, *Cynthia cardui* very abundant]. Ent. Rec., Oct. 15th, 1892, p. 237.
- GEO. A. BOOTH. Furness and Lanc. W.  
**Colias edusa** . . . in England in 1892 . . . Lancashire [upwards of 60 at Grange, and many at Arnside; *Vanessa cardui* also very common]. Ent., Nov. 1892, p. 280.
- HARRY B. BOOTH. York Mid W. or S.W.  
**Notes from West Yorkshire** [anent commonness of *Vanessa cardui* and *Thecla rubi*]. Garner, Sep. 1st, 1888, p. 189.
- J. W. BOULT. York S.E.  
**Notes of the Season of 1891** . . . Hull [mentioning capture of *Agrotis ravidata* at sugar by Mr. Hame]. Ent. Record, Feb. 15th, 1892, p. 35.
- L. S. BRADY. Durham.  
**The Sallows at Castle Eden Dene** [and Horden Dene produced *Teniocampa stabilis*, *T. gothica*, *T. instabilis*, *T. rubricosa*, *Anticlea badiata*, *T. gracilis*, and *T. cruda*]. Brit. Nat., May 1892, p. 104.
- WM. E. BRADY. York S.W.  
**Pale variety of Melanippe fluctuata** near Barnsley [described; taken 23rd May, 1892]. Nat., July 1892, p. 216.
- WM. BROOKS. York S.W.  
**Phigalia pilosaria** [has emerged earlier at Rotherham this year 1892; dates given for 1889-1892 inclusive]. Brit. Nat., March 1892, p. 57.
- W. BROOKS. York S.W.  
**Black var. of Phigalia pilosaria** [near Rotherham, March 7th, 1892]. Brit. Nat., April 1892, p. 79.
- [F. J.] BUCKELL. ? Cheshire or Lanc. S.  
**[Acidalia immutata is on record from Warrington]**. City of Lond. Ent. Soc., Sep. 1st., 1892; Ent. Rec., Sep. 15th, 1892, p. 215; Brit. Nat., Oct. 1892, p. 217.
- WILLIAM BUCKLER. York S.W., Cumberland, Durham, Isle of Man,  
Cheshire, Notts, Linc. N.  
**The Larvæ | of the | British Butterflies | and | Moths. | By | (the late) |**  
 William Buckler, | edited by | H. T. Stainton, F.R.S. | Vol. I. | (The  
 Butterflies.) | London: | Printed for the Ray Society. | — | MDCCCLXXXVI.  
 8vo, cloth, xvi. + 202 pages + 17 plates + 30 pages prospectus of Ray Society;  
 the descriptions include *Erebia cassiope*, captured June 29th, 1874, on the  
 top of Green Gable Mountain at head of Buttermere (p. 33); *Cænonympha*  
*davus* near Epworth (p. 35), probably Thorne Waste; *Polyommatus agestis*,  
*P. salmactis*, and *P. artaxerxes* in one batch near Hartlepool, 1877 (p. 117)].



Vol. II. | (The Sphinges or Hawk-Moths and part of the Bombyces.) | . . . | — | MDCCCLXXXVII. [8vo, cloth, xii. + 172 pages + plates 18-35 + 30 pages prospectus of Ray Society; with notes on *Trochilium philanthiforme* from the Isle of Man, June and August, 1879 (p. 50); *Hepialus hectus* and *H. velleda* from Joseph Steele, of Congleton, presumably taken there (pages 52 and 54); *Procris geryon* from Hartlepool (p. 91); and *Notodonta ziczac* received in egg-state from G. Gascoyne, of Newark, 1857, presumably taken there (p. 152)].

Vol. III. | (The Concluding Portion of the Bombyces) | . . . | . . . | — | MDCCCLXXXIX. [8vo, cloth, contains no North of England references].

Vol. IV. | (The First Portion of the Noctuæ.) | . . . | . . . | — | MDCCCXCI. [8vo, cloth, xii. + 116 pages + plates 54-69 + 31 pages prospectus of Ray Society; notes on *Cymatophora fluctuosa* sent by James Batty, of Sheffield, presumably taken there, 1873 (p. 2); *Nonagria fulva* sent by John Sang, and presumably taken near Darlington (p. 36); *Hydræcia nictitans* from Mr. Hydes, 1862, presumably taken near Sheffield (p. 48); *H. micacea* sent by J. Steele and presumably taken near Congleton in 1866 (p. 52); *Xylophasia scolopacina* sent by James Batty and presumably taken near Sheffield (p. 59); *Neuria saponariæ* sent by James Batty in 1866, presumably taken near Sheffield (p. 67); *Miana literosa* and *M. expolita*, both sent by J. Gardner, and presumably taken near Hartlepool (pp. 101 and 103); *M. arcuosa* and *Celæna haworthii* sent by James Batty, 1870, presumably taken near Sheffield (pp. 106 and 107); *Nonagria elymi* from Cleethorpes, May 16th, 1871 (Expl. of pl. 60, fig. 5)].

S. J. CAPPER [not signed].

Cheshire.

President's Address [noting *Notodonta trepida* in Petty Pool Wood, *Corycia temerata*, *Himera pennaria*, and *Cheimatobia boreata* taken at Delamere by N. Cooke]. 9th Ann. Rep. Lanc. and Chesh. Ent. Soc., for 1885, publ. 1886, p. 7.

J. W. CARR.

Notts.

*Colias edusa* . . . in England in 1892 [many round Nottingham, and two males near Edwinstowe, Aug. 25th and 26th]. Ent., Nov. 1892, p. 282.

W. D. CARR.

Linc. S.

Late Sugaring in the Lincoln district [at Hartsholme Wood, near Lincoln, were taken *Calocampa vetusta*, *C. exoleta*, *Phlogophora meticulosa*, *Anchocelis pistacina*, *Scopelosoma satellitia*, *Cerastis vaccinii*, *C. spadicea*, *Miselia oxyacanthæ*, *Orthosia lota*, *O. macilentæ*, *Cymatophora flavicornis*, *Hybernia leucophæaria*, *Phigalia*, and *Anaitis plagiata*; full details given of captures in Oct. to Dec., 1891, and Mar. 1892]. E.M.M., May 1892, p. 133.

W. D. CARR.

Notts.

*Cosmia paleacea* [*Euperia fulvago*] in Sherwood Forest [three specimens only, all worn, obtained at sugar 25th Aug., 1892]. Ent., Oct. 1892, p. 244.

W. D. CARR.

Notts, Linc. N.

*Colias edusa* . . . in England in 1892 . . . Lincolnshire [near Lincoln and Market Rasen, also near Mansfield; *Vanessa cardui* and *V. atalanta* common near Mansfield]. Ent., Nov. 1892, p. 281.

JOHN T. CARRINGTON.

Derbyshire, Yorkshire.

A "Clouded-Yellow" Year [in 1892; in 1877 *Colias edusa* occurred in Derbyshire and Yorkshire]. Field, Aug. 20th, 1892, p. 324.

JOHN T. CARRINGTON.

'York.'

A Clouded Yellow [*Colias edusa*] Year [at York and elsewhere] Field, Sep. 17th, 1892, p. 470.

J. W. CARTER.

York S.W.

*Acherontia atropos* near Bradford [one taken in Aug. 1892, at Heaton]. Nat., Oct. 1892, p. 300.



- J. A. CLARK. York N.E.  
**A Melanic Race of *Liparis monacha*** [bred from parents said to have been captured near Scarborough, July 1891]. Ent. Rec., Oct. 15th, 1892, pp. 222-4; also City of Lond. Ent. Soc., Sep. 15th, 1892; Ent. Rec., Oct. 15th, 1892, p. 246; Brit. Nat., Oct. 1892, p. 217.  
 [Turns out to be an error, the specimens not being Scarborough ones]. Ent. Rec., Nov. 15th, 1892, p. 257.
- J. A. CLARK. York N.E.  
**Explanations as to *Liparis monacha*** [erroneously reported as taken near Scarborough]. Ent. Rec., Dec. 15th, 1892, p. 305.
- H. S. CLARK. Isle of Man.  
**[*Chærocampa celerio* taken at Douglas, summer of 1891].** Lanc. and Chesh. Ent. Soc., Dec. 14th, 1891; E.M.M., Jan. 1892, p. 27; Ent., Jan. 1892, p. 24; Brit. Nat., Jan. 1892, p. 14.
- HENRY SHORTRIDGE CLARKE. Isle of Man.  
**[List of] the Heterocera of the Isle of Man** [being a list with annotations; the present instalment enumerates 13 *Geometræ*, 3 *Pseudo-Bombyces*, and 55 *Noctuæ*]. Brit. Nat., Jan. 1892, p. 24; and Feb., pp. 25-27; reprinted in Yn Lioar Manninagh, April 1882, pp. 319-323. [Continuation; 67 species of *Noctuæ* enumerated]. Brit. Nat., April 1892, pp. 67-70.
- H. SHORTRIDGE CLARKE. Isle of Man.  
**A Night with the Moths** [at Lezayre, described; *Lycæna alexis* and *Vanessa atalanta* noted]. Yn Lioar Manninagh, April 1892, pp. 326-331.
- H. S. C[LARKE]. Isle of Man.  
**Phenological Observations** [giving localities and Manx dates for *Gonoptera libatrix*, *Tæniocampa stabilis*, and *Xylocampa lithorhiza*]. Yn Lioar Manninagh, April 1892, p. 350.
- H. SHORTRIDGE CLARKE. Isle of Man.  
**Spring Notes.**— . . . Isle of Man [recording captures of *Tæniocampa gothica*, *T. instabilis*, *T. stabilis*, and *Anticlea badiata*]. Ent. Rec., May 16th, 1892, p. 115.
- H. SHORTRIDGE CLARKE. Isle of Man.  
**White Variety of *Rumia cratægata*** [bred from larvæ collected at Douglas, Isle of Man]. Ent. Rec., July 15th, 1892, p. 155.
- H. SHORTRIDGE CLARKE. Isle of Man.  
**Notes of the Season.**— . . . Isle of Man [*Colias edusa* in plenty, Castletown, Sulby, etc.]. Ent. Rec., Nov. 11th, 1892, p. 262.
- H. SHORTRIDGE CLARKE. Isle of Man.  
***Sphinx convolvuli* in the Isle of Man** [one by J. C. Bacon at Seafield, Santon, Sep. 1892; the insect occurs in the island every year]. Brit. Nat., Dec. 1892, p. 267.
- H. SHORTRIDGE-CLARKE. Isle of Man.  
**C[irrœdia]. *xerampelina*** [in the Isle of Man; also var. *unicolor* doubtfully; and dark *Tæniocampa gothica*]. Brit. Nat., Dec. 1892, p. 268.
- H. SHORTRIDGE CLARKE. Isle of Man.  
**Notes of the Season.**— . . . Isle of Man [*Sphinx convolvuli* taken at Seafield, Santon, Sep. 1892]. Ent. Rec., Dec. 15th, 1892, p. 292.
- WILLIAM J. CLARKE. York N.E.  
***Acherontia atropos* at Scarborough** [four from various localities near]. Nat., Nov. 1892, p. 339.
- J. COLLINS. Lanc. S.  
**[Exhibition of *Lithosia sericea* taken in the Manchester district].** City of Lond. Ent. Soc., Dec. 17th, 1891; Brit. Nat., Jan. 1892, p. 13; Ent. Rec., Jan. 15th, 1892, p. 21.



- [J.] COLLINS. Lanc. S.  
 [Exhibition of four *Deilephila galii* bred from 22 larvæ on *Epilobium angustifolium* at Warrington in 1889]. Lanc. and Chesh. Ent. Soc., Feb. 8th, 1892; E.M.M., March 1892, p. 66; Ent., March 1892, p. 75; Brit. Nat., March 1892, p. 53; Ent. Record, March 15th, 1892, p. 71.
- J. COLLINS. ? Lanc. S.  
 Var. of *Noctua festiva* [taken presumably near Warrington; description given]. Ent. Record, March 15th, 1892, p. 58.
- J. COLLINS. ? Lanc. S., York S.W.  
*Hybernia progemmaria* var. *fuscata* [at Warrington; Editor notes that they are as dark as Barnsley males, but not so dark as Porritt's Huddersfield females]. Ent. Record, March 15th, 1892, p. 57.
- J. COLLINS. Westmorland, York S.W., Lanc. S. and W.  
*Hyria auroraria* [pink] var. [near Warrington, where it is typical of the species; Editor adds a note about his specimens from Witherslack, Heysham, and Thorne Moor]. Ent. Rec., June 15th, 1892, p. 125.
- J. COLLINS. Lanc. S. or Cheshire.  
 Variation of Lepidoptera [*Hadena pisi* and *H. adusta*] at Warrington [described]. Ent. Rec., June 15th, 1892, p. 125.
- JOS. COLLINS. Cheshire.  
*Nyssia zonaria* at Frodshaw [? m] Marsh [found abundantly as larvæ on 23rd July, 1892]. Brit. Nat., Sep. 1892, p. 201.
- J. COLLINS. ? Lanc. S.  
*Aplecta nebulosa* var. *Robsoni* [several bred at Warrington]. Brit. Nat., Oct. 1892, p. 219.
- J. COLLINS. ? Lanc. S.  
*Lithosia sericea* [at Warrington; out, but very scarce]. Brit. Nat., Oct. 1892, p. 219.
- J. COLLINS. ? Lanc. S.  
*Cynthia Cardui* and [Vanessa] *Atalanta* [larvæ unusually plentiful about Warrington this year]. Brit. Nat., Oct. 1892, p. 219.
- JOSEPH COLLINS. Cheshire.  
 Notes of the Season. . . . Warrington [*Eupithecia minutata*, *E. nanata*, *E. absynthiata* and *E. virgaureata* at Delamere; *E. valerianata* and *E. pulchellata*, presumably at same place]. Ent. Rec., Nov. 15th, 1892, p. 267.
- [J. A.] COOPER. York S.W.  
 [Exhibition of Black Forms of *Boarmia repandata* from Sheffield]. City of Lond. Ent. Soc., Dec. 17th, 1891; Brit. Nat., Jan. 1892, p. 13; Ent. Rec., Jan. 15th, 1892, p. 20.
- JAMES COOPER. York N.E.  
 A "Clouded-Yellow" Year [recording *Colias edusa* as seen at Killerby and Cayton, August 1892]. Field, August 27th, 1892, p. 329.
- H. H. CORBETT. York S.W.  
 Notes of the Season. . . . Doncaster [*Neuria saponaria*, *Xylophasia monoglypha*, *Phisia chrysitis*, *Pl. iota*, *Hecatera serena*, *Colias edusa*, *Cerostoma costella*, *Pædisca solandriana*, *Laverna raschkiella*, and *Sophronia parenthesesella* noted]. Ent. Rec., Aug. 15th, 1892, p. 179 [*Noctua xanthographa*, *Pæcilia nivea*, *Pædisca corticana*, *Calymnia diffinis*, *Polia chi*, *Bryophila perla*, *Cidaria russata*, *Scoparia angustea*, *S. mercurella*, *Pyralis glaucinalis* (new for Doncaster), *Abraxas sylvata*, and *Asychna terminella*]. Ent. Rec., Oct. 15th, 1892, p. 231.
- JOHN CORDEAUX. York S.E., Notts.  
 A Clouded Yellow Year [two *Colias edusa* at Spurn, Aug. 11th; common there Aug. 23rd; one or two seen near Retford]. Field, Sep. 3rd, p. 368.



- B. H. CRABTREE. Lanc. S.  
**Notes of the Season.**— . . . Manchester [*Colias edusa* near Levenshulme, Aug. 26th; also in 1877 with var. *helice* also]. Ent. Rec., Sep. 15th, 1892, p. 208.
- B. H. CRABTREE. Lanc. S.  
*Colias edusa* . . . in England in 1892 . . . Lancashire [near Levenshulme, a female on Aug. 26th, 1892; two type and one var. *helice* in 1877]. Ent., Nov. 1892, p. 280.
- J. H. CROSLAND. Westmorland.  
**York, Bootham, Natural History, &c., Club** [noting at Sand-side, Morecambe Bay, *Lycæna agestis*, 'Common Skipper,' and *Euthemonia russula*]. N.H.J., Sept. 15th, 1890, p. 112.
- C. W. DALE. Cheviotland, Lanc. S. and W., Cumberland, Notts, Derby, Durham, Cheshire, Linc. N., York N.E., S.W., and S.E.  
**The History of our British Hawk-Moths** [continued; noting *Deilephila galii*, at Carlisle (Heysham), Manchester, Twizel (H. and W., 1843), Crown Wheaton, Cumberland, Southport (1858), Cheshire Coast, Darlington (1859), Wallasey Sandhills, Northumberland (1870), South Shields, Derby, Scarborough, Lancashire, Sowerby Bridge (1889), near Chester, etc.; dates and details given]. App. to Brit. Nat., Feb. 1892, pp. 57-63. [*Cherocampa celerio* noted at Manchester (H. and W., 1843), at Huddersfield and Hull in 1846, in Cumberland in 1848 and 1849, at Bolton, 4th Dec., 1857, at Newark and Gainsborough in 1859, at Matlock, Nottingham, Wakefield, and Darlington in 1860, at York in 1862, at Lytham in 1870 (pp. 73-74); *Deilephila livornica* noted as at Hull in 1829, at Charlton, Lancashire, in 1844, at Preston and Carlisle in 1846, at Hale, Lancashire, in 1848; at Taylor Hill, near Huddersfield, in 1859, in Yorkshire in Sep. 1865 (pp. 66-67); *Cherocampa nerii* at Sheffield in 1867, at Hartlepool July 23rd, 1885, p. 70]. App. to Brit. Nat., July 1892, pp. 66, 67, and 70.
- THOS. DARLEY. 'York.'  
**Large Emperor Moth** [*Saturnia pavonia major*] in England [taken at York a few years ago; editorial note reminds us that the species is often bred in Britain from Continental eggs]. Field, Feb. 20th, 1892, p. 248.
- THOS. DARLEY. York.  
**Black-veined White Butterfly** [(*Aporia crataegi*); noting that Robt. Baker, jun., of York, has one in his collection 'which he captured here the summer before last'; editorial note suggests a mistake of locality]. Field, July 30th, 1892, p. 204.
- G. C. DENNIS. Lanc. W.  
**[Exhibition of *Agrotis corticea*, *A. tritici*, *A. præcox*, and *A. vestigialis* from St. Anne's-on-the-Sea].** Ent., Oct. 1892, p. 252.
- G. C. DENNIS. York N.E.  
**[Lepidoptera noted by] the Yorkshire Naturalists' Union at Coxwold and Byland** [Sep. 1892; *Hadena protea*, *Xanthia silago*, *Peronea comparana*, *P. sponsana*, *Teras caudana*, *Chelaria hübnereilla*]. Nat., Nov. 1892, p. 349.
- CHARLES DIXON. Linc. N.  
**Friskney and its Wildfowl** [with passing references to drainage causing disappearance of *Papilio machaon* and *Polyommatus hippothoe*, but no authority given for referring it to this locality]. Leisure Hour, Oct. 1889, p. 669.
- C. W. DOD. Cheshire, Derbyshire.  
**Early Butterflies** [with notes of *Vanessa c-album* locally abundant near Malpas, *Polyommatus argiolus* and *Thecla rubi* at Matlock; dates given]. Field, April 30th, 1892, p. 625.



- R. DUTTON. 'York' and York S.W.  
[Exhibition of pale form (bred) of *Abraxas ulmata* from Doncaster and bred varieties of *A. grossulariata* from York]. York F. Nat. Soc., Aug. 10th, 1892; Ent., Oct. 1892, p. 251.
- R. DUTTON. York Mid W.  
[Exhibition of *Geometra papilionaria* taken early in August 1892, at Askham Bogs]. York F. Nat. Soc., Sep. 14th, 1892; Ent., Oct. 1892, p. 252.
- R. DUTTON. York Mid W.  
Notes of the Season.— . . . York [at Askham Bog, *Dyschorista suspecta* only sparingly, *Geometra papilionaria* common, *Plusia gamma* abundant]. Ent. Rec., Oct. 15th, 1892, p. 234.
- W. DUTTON. Isle of Man.  
[Exhibition of *Arctia fuliginosa* from Isle of Man]. York F. Nat. Soc., Oct. 13th; Ent., Nov. 1892, p. 298.
- C. EALES. Cumberland.  
Spring Notes. . . Carlisle [anent captures of *Nyssia hispidaria* (new to district), *Calocampa exoleta*, *Larentia multistrigaria*, and *Tortricodes hyemana*]. Ent. Rec., May 16th, 1892, p. 115.
- JOHN W. ELLIS [Hon. Sec.]. Lanc. S.  
Secretary's Report [for 1885; noting *Cherocampa celerio* at Crosby (G. A. Harker)]. 9th Ann. Rep. Lanc. and Chesh. Ent. Soc., for 1885, publ. 1886, p. 10.
- E. C. EVANS. 'York.'  
[Phenological observations made by the] Mount, York.—Nat. Hist. Society [*Vanessa urticæ* seen]. N.H.J., May 15th, 1892, p. 59.
- W. FARREN. York N.E.  
Notes of the Season of 1891.—Scarborough [mentioning *Peronea schalleriana* var. *latifasciana*, *P. variegana* and v. *cinana*, *P. comparana*, *Cidaria immanata*, *Cuspidia leporina*, *Heliothis marginata*, *Larentia didymata*, *Plutella cruciferarum*, *Scopula lutealis*, and *Platyptilia gonodactyla*, with locality and details]. Ent. Rec., Jan. 15th, 1892, p. 14.
- W. FARREN. York N.E.  
[Exhibition of *Peronea variegana* var. *cirrana* and *P. schalleriana* var. *latifasciana* from Scarborough, taken Sep. 1891]. Proc. Ent. Soc. Lond., Feb. 10th, publ. March 1892, p. ii.; E.M.M., March 1892, p. 87; Ent., March, p. 73; Brit. Nat., March 1892, p. 47; Zool., March 1892, p. 120; Ent. Record, March 15th, 1892, p. 66.  
South Lond. Ent. Soc., Jan. 18th, 1892; E.M.M., March 1892, p. 86; Ent., March, p. 74; Brit. Nat., March 1892, p. 50; Nature, March 3rd, 1892, p. 430.
- W. A. B. FERRIS. Notts.  
Abundance of *Cosmia paleacea* (*Euperia fulvago*) in Sherwood Forest [in 1892; *Agriopsis aprilina* noted also]. Ent., Sep. 1892, p. 222.
- FRED. W. FIERKE. York S.E.  
*Colias edusa* in Holderness [at Kilnsea, Aug. 25th, 1892]. Nat., Oct. 1892, p. 300.
- JOHN FINLAY. Northumberland S.  
Variation. . . *Bombyx quercus* var. *callunæ* [on the moors near Meldon Park, Morpeth; takes two years to pass through transformations]. Ent. Record, Jan. 15th, 1892, p. 7.
- J. FINLAY. Northumberland S.  
Single-brooded Species in the North of England [at Meldon Park, Morpeth; *Cidaria silaceata* and *Selenia illunaria*; details given]. Ent. Record, March 15th, 1892, p. 63.



- J. FINLAY. Northumberland S.  
**Times of Flight** [of *Celæna haworthii* on the moors near Morpeth].  
 Ent. Rec., Aug. 15th, 1892, p. 186.  
 [Of *Saturnia carpini* as observed at Morpeth]. Ent. Rec., Sep. 15th,  
 1892, p. 213.
- JOHN FINLAY. Northumberland S.  
**Acherontia atropos** in Northumberland [taken near Morpeth, July 27th,  
 1892]. Ent. Rec., Sep. 15th, 1892, p. 212.
- J. FINLAY. Northumberland S.  
**Notes of the Season.**— . . . Morpeth [*Xylophasia polyodon*, *Triphæna  
 pronuba*, *Noctua glareosa*, and *Larentia cæsiata*; protective resemblance  
 noted in the last-named]. Ent. Rec., Oct. 15th, 1892, p. 238.
- [W. W.] FOWLER. Linc.  
**[Occurrence of *Carterocephalus palæmon* (= *Hesperia paniscus*) in certain  
 woods in Lincolnshire].** Proc. Ent. Soc. Lond., Dec. 7th, publ. Dec. 1892,  
 p. xxxv.; Brit. Nat., Jan. 1893, p. 11.
- W. A. GAIN. Notts.  
***Colias edusa*** [at Tuxford, one seen 8th Sep., 1892, the first since 1877].  
 Brit. Nat., Oct. 1892, p. 219.
- JOHN GARDNER. Durham.  
***Deilephila galii*** at Hartlepool [on the 13th July, 1892]. Brit. Nat., Aug.  
 1892, p. 175; rep. Ent. Rec., Aug. 15th, 1892, p. 177.
- J. GARDNER. Durham.  
**Note on *Abraxas ulmata*** [larvæ resorting to beech on the defoliation of  
 elms, at Hesleden Dene, co. Durham, Oct. 29th, 1892]. E.M.M., Dec.  
 1892, p. 308.
- C. F. GEORGE. ? Linc. N.  
***Convolvulus Hawk Moth*** [(*Sphinx convolvuli*) taken alive Aug. 31st,  
 1887; locality not stated, but evidently Kirton-in-Lindsey]. Sci. Goss.,  
 Feb. 1888, p. 43.
- W. HOWARD GOULTY. Westmorland.  
**Captures in Lancashire** [i.e., Westmorland] and Cornwall [noting  
*Canonympha typhon* and *Hyria auroraria* at Witherslack, July 1891]. Ent.,  
 Jan. 1892, p. 19.
- JOHN GRASSHAM. York Mid W.  
**Death's Head Moth** [(*Achirontia atropos*); one flew into a house near  
 Brunswick Brewery, Leeds, Sep. 4th, 1883; child sick, mother terrified at  
 evil omen]. Nat. World, Jan. 1884, p. 16.
- C. S. GREGSON. Cheshire.  
***Hybernia leucophæaria*** [on Feb. 13th, 1892, at Eastham Wood, near  
 Liverpool]. Brit. Nat., April 1892, p. 79.
- C. S. GREGSON. Lanc. S.  
***Bombyx trifolii*** [has been plentiful this year on the Liverpool sandhills].  
 Brit. Nat., Nov. 1892, p. 245.
- C. S. GREGSON. Lanc. S.  
***Colias edusa*** at Liverpool [plentiful at Altcar and Crosby sandhills; also  
 var. *helice*]. Brit. Nat., Nov. 1892, p. 245.
- A. E. HALL. York N.E. and S.W.  
**Lepidoptera in Yorkshire: A Correction** [that it was *Selenia illunaria*  
 (not *illustraria*) that was captured near Cloughton, and in Edlington and  
 Wadworth Woods]. Nat., March 1892, p. 90.



- A. E. HALL. York N.W.  
 [Lepidoptera observed by] the Yorkshire Naturalists' Union at Rokeby [on 6th June, 1892 : *Xanthia ferruginea*, *X. gilvago*, *Hybernia progemma*, *H. defoliaria*, *Cheimatobia brumata* (all in larval state), *Pieris brassicae*, *P. rapae*, *P. napi*, *Anthocharis*, *Chortobius pamphilus*, *Hepialus hectus*, *Emmelesia affinitata*, *E. albulata*, *Eupithecia minutata*, *Melanippe montanata*, *Cidaria suffumata*, *Acronycta rumicis*, *Plusia gamma*, *Stenopteryx hybridalis*, *Crambus pratellus*, *Tortrix ministrana*, *Sericoris lacunana*, *Cnephasia musculana*, *Bactra lanceolana*, *Ephippiphora cirsiana*, *E. turbidana*, and *Plutella cruciferarum*]. Nat., July 1892, pp. 210-211.
- A. E. HALL. York S.W.  
*Boarmia repandata* [and its variation near Sheffield and Huddersfield in 1892]. E.M.M., Oct. 1892, p. 267.
- EDWARD HALLIDAY. York S.W.  
*Chærocampa Celerio* at Halifax [one taken in the town, Oct. 1st, 1892]. Brit. Nat., Nov. 1892, p. 244; Nat., Nov. 1892, p. 339; Ent. Rec., Nov. 15th, 1892, p. 267.
- G. A. HARKER. Lanc. S.  
 Time of Flight of *Celæna haworthii* [at Simonswood Moss]. Ent. Rec., Jan. 15th, 1892, p. 16.
- GEO. A. HARKER. ? Lanc. S.  
 Abundance of Larvæ [of *Cuspidia leporina*, *Notodonta camelina*, *N. dromedarius*, *Drepana falcula*, and *N. dictæoides* on the mosses, and of *N. ziczac*, *N. dictæa*, and *Smerinthus ocellatus* on the sandhills near Liverpool]. Ent. Rec., Jan. 15th, 1892, p. 17.
- G. A. HARKER. ? Lanc. S.  
 Times of Flight of the Species in the genus *Crambus* [presumably near Liverpool? *C. margaritellus*, *C. inquinatellus*, and *C. culmellus* noted in detail]. Ent. Rec., Jan. 15th, 1892, p. 17.
- GEO. A. HARKER. Lanc. S. or Cheshire.  
*Acronycta (Cuspidia) leporina* [and *Orgyia antiqua* in the Liverpool district; their food-preferences and variation]. Ent. Record, March 15th, 1892, p. 60.
- GEO. A. HARKER. Cheshire, Lanc. S.  
 The Sallows at Liverpool [have produced *Taniocampa gracilis* and *T. opima*; while *Mesotype lineolata* and *Nyssia zonaria* have been common at Wallasey]. Brit. Nat., May 1892, p. 104.
- G. A. HARKER. Cheshire, Lanc. S.  
 Notes of the Season.— . . . Liverpool [*Colias edusa* (also at Wallasey), *Agrotis præcox*, *A. cursoria*, *A. valligera*, *A. tritici*, *Vanessa atalanta*, *V. cardui*, and *Macroglossa stellatarum*], Ent. Rec., Sep. 15th, 1892, p. 209. [*Celæna haworthii* flying freely, *Tapinostola fulva*, *Ennomos tiliaria*, and larvæ of *Notodonta dromedarius*, *N. camelina*, *N. dictæoides*, *Drepana falcula*, *Asphalia flavicornis*, and *Cuspidia leporina*, all at Simmonswood Moss]. Ent. Rec., Nov. 15th, 1892, p. 267.
- [G. A.] HARKER. Lanc. S.  
 [*Colias edusa* from Crosby exhibited]. Lanc. and Chesh. Ent. Soc., Sep. 12th, 1892; Brit. Nat., Oct. 1892, p. 218; E.M.M., Oct. 1892, p. 270; Ent., Oct. 1892, p. 251; Ent. Rec., Oct. 15th, 1892, p. 248.
- C. ALEX. HARRIS. York N.W.  
*Colias edusa* . . . in England in 1892; additional records . . . Yorkshire [one near Hawes, 1892; one at Richmond in 1875]. Ent., Dec. 1892, p. 312.



- J. T. HARRIS and PHILIP B. MASON. Derbyshire.  
**The Lepidoptera of Burton-on-Trent and Neighbourhood. Part II.**—  
 Micro-Lepidoptera [of which 415 species are enumerated, the localities being partly in Derbyshire and partly in Staffordshire]. *Trans. Burton-on-Trent Nat. Hist. and Arch. Soc.*, vol. xi. pp. 1-14, 1892.
- J. HARRISON. York S.W.  
**Black Phigalia pedaria (= pilosaria)** [taken near Barnsley, Feb. 12th, 1892, and Feb. 27th, 1886]. *Ent.*, March 1892, p. 71.
- J. HARRISON [per S. STEVENS]. York S.W., Linc. N.  
 [Notes on rearing of var. *radiata* of *Arctia lubricipeda* (Barnsley and Lincolnshire) and of *A. mendica* (Huddersfield)]. *Proc. Ent. Soc. Lond.*, Nov. 2nd, publ. Dec. 1892, p. xxix.; *Zool.*, Dec. 1892, p. 434; *E.M.M.*, Dec. 1892, p. 315; *Ent.*, Dec. 1892, p. 323; *Brit. Nat.*, Dec. 1892, p. 260; *Ent. Rec.*, Nov. 15th, 1892, p. 268.
- J. HAWKINS. 'York.'  
 [Exhibition of *Bupalus piniarius* with ground colour yellow instead of white, and larvæ of *Acronycta leporina*, *A. menyanthidis*, *Eriogaster*, *Spilosoma menthastri*, *Panolis piniperda*, and *Acidalia renutata*, all from York]. *York Nat. Soc.*, Aug. 10th, 1892; *Ent.*, Oct. 1892, p. 251.
- H. W. HEAD. York N.E.  
 Explanations as to *Liparis monacha* [erroneously stated to have been taken at Scarborough]. *Ent. Rec.*, Dec. 15th, 1892, p. 304.
- H. BENDELACK HEWETSON. York S.E. and Mid W.  
*Colias edusa* in Holderness and at Leeds [in large numbers, and a few of var. *helice*, about Kilnsea, and one at Leeds, during 1892]. *Nat.*, Nov. 1892, p. 339.
- [W.] HEWETT. York.  
 [*Orthosia suspecta* unusually common in the York district in 1891]. *Ent.*, March 1892, p. 70.
- W. HEWETT. 'York.'  
 Usually Common Moths scarce in 1891 [near York; *Himera pennaria* quite absent, and both *Cheimatobia*, *Hybernia aurantiaria*, *H. defoliaria*, and *Oporabia dilutata* very scarce]. *Ent.*, May 1892, p. 124.
- W. HEWETT. York N.E.  
 Late Specimen of *Epione vespertaria* [on Oct. 3rd, 1891, at Strensall Common; larvæ of *Bombyx rubi* and *Spilosoma fuliginosa* also taken]. *Ent.*, May 1892, p. 124.
- W. HEWETT. York N.E.  
*Amphidasis prodromaria* and *Hybernia leucophæaria* near York [at Sandburn Wood, 28th March; the var. *marmorinaria* of the latter also obtained]. *Nat.*, May 1892, p. 139.
- W. HEWETT. York Mid W.  
 Var. of *Noctua rubi* [taken at Askham Bog, near York, described as a pale yellowish ochreous form, occurring with type]. *Ent. Rec.*, June 15th, 1892, p. 126.
- WILLIAM HEWETT. ? York.  
 Assembling in Lepidoptera [near York? as observed in *Melanthia rubiginata* and *Hepialus hectus*]. *Ent.*, July 1892, p. 163.
- WILLIAM HEWETT. 'York.'  
 Early Lepidoptera in Yorkshire [discussing variation and occurrence about York of *Hybernia rupicaprararia*, *H. progemmaria* and var. *fuscata*, *H. leucophæaria* and var. *marmorinaria* Esp., *Larentia multistrigaria* and *Anisopteryx æscularia*]. *Ent.*, July 1892, p. 164.



- WILLIAM HEWETT. York N.E.  
**Sallows in Yorkshire: Season 1892** [near York, yielded *Cerastis vaccinii*, *Scopelosoma satellitia*, *Pachnobia leucographa*, *P. rubricosa*, *Tæniocampa gothica*, *T. instabilis*, *T. populeti*, *T. stabilis*, *T. cruda*, *Calocampa exoleta*, *Anticlea badiata*, *Hybernia progemmaria*; at Strensall, *T. stabilis*, *T. gothica*, *Larentia multistrigaria*, *Anisopteryx æscularia*, *Hyb. progemmaria*, *Asphalia flavicornis*; near York, *Anticlea badiata*, *Diurnea fagella*, *T. opima*, *Selenia illunaria*, vars. *pallida* and *brunnea* of *T. gothica*, vars. *atra*, *carulescens*, *trigutta*, and *virgata-brunnea* of *T. instabilis*, vars. *obliqua* and *pallida* of *T. stabilis*]. Ent., July 1892, pp. 170-172.
- W. HEWETT. York S.E., S.W., Mid. W., Lincs.  
**[Lepidoptera shown to] York and District Field Naturalists' Society.**— July 13th [*Nemeophila plantaginis* from Lincoln, very dark; *Tephrosia brundulasia* var. *delamerensis* from Doncaster, Sledmere, Selby, and York; *Epione advenaria*, *Asthena blomeri*, *Venusia cambricaria*, and variety of *Odontopera* from Doncaster]. Ent., Aug. 1892, p. 200.
- W. HEWETT. York S.E., N.E.  
**[Exhibition of a peculiar variety of *Asthena blomeri*** from Sledmere, *Larentia cæsiata* from Coxwold, pink-bordered variety of *Epione vespertaria*, *Zygæna lonicera* var. *semilutescens* and two specimens with the five spots confluent, and *Spilosoma fuliginosa* var. *borealis*, all from York]. York Field Nat. Soc., Aug. 10th, 1892; Ent., Oct. 1892, p. 251.
- W. HEWETT. York N.E., Durham, Cumberland, Northumberland S.  
**[Exhibition of *Geometra papilionaria*** from Sandburn Common, *Epione apiciaria* from York, *Hydræcia petasitis* from pupæ dug at Greatham near Hartlepool, *Miana expolita* from Hartlepool, *Aplecta tincta* from Keswick, *Erebia cassiope* from Borrowdale, and *Canonympha davus* from Greenleighton Moss, Northumberland]. York Field Nat. Soc., Sep. 14th, 1892; Ent., Oct. 1892, p. 252.
- WILLIAM HEWETT. Notts, Durham, York Mid W., S.E., and N.E.  
**[Exhibition of very dark *Agriopsis aprilina*** from Durham, fine forms of *Xanthia cerago* from Bishop's Wood near Selby, *Polia chi* and varieties *olivacea* and *obscura* from Durham, Nottingham, Kirkham Abbey, Horsforth, and York]. York F. Nat. Soc., Oct. 13th; Ent., Nov. 1892, p. 298.
- WILLIAM HEWETT. 'York.'  
***Colias edusa* . . . &c., in England in 1892; additional records** . . . Yorkshire [several near York, Sep. 1892; *Vanessa atalanta* and *V. cardui* have been common]. Ent., Dec. 1892, p. 312.
- THOS. HEY. Derbyshire.  
**A Derbyshire Ramble** [at Little Eaton, June 23rd, 1888; captures of *Polyommatus phlæas*, *Anthocharis*, *Pieris brassicæ*, *P. rapæ*, *Eupithecia nanata*, *E. lariciata*, *Asthena luteata*, *Eupisteria heparata*, *Macaria liturata*, *Cabera pusaria*, *C. exanthemaria*, *Panagra petraria*, *Odontopera*, *Amphidasis betularia*, *Abraxas ulmata*, *Epunda viminalis*, *Fidonia piniaria*, *Pygæra*, *Arctia menthastri*, *Melanippe montanata*, *Mamestra brassicæ*, *Tortrix viridana* and larvæ of *Liparis auriflua*; and record of attempt to reintroduce *Saturnia carpini*]. Garner, Sep. 1st, 1888, pp. 193-4.
- W. C. HEY. York N.E.  
**A Real Summer's Day.** West Ayton, June 9th, 1892 [with brief allusion to *Vanessa cardui*]. Nat., Oct. 1892, p. 292.
- [ALBERT J.] HODGES. Durham.  
**[Exhibition of fine banded forms of *Agriopsis aprilina*** from Durham]. City of Lond. Ent. Soc., March 17th, 1892; Brit. Nat., April 1892, p. 88; Ent. Rec., April 15th, 1892, p. 94.
- J. B. HODGKINSON. Lanc. S. or W.  
***Coleophora metallicella*, n.s.** [described; locality not given, but appears likely to be Ashton-on-Ribble]. Ent., Feb. 1892, p. 44.



- J. B. HODGKINSON. Cumberland.  
**Micropteryx Sangii** and **M. Caledoniella** [near Carlisle, with *M. semi-purpurella*, *M. purpurella*, and *M. sparmanniella*; all determined by C. G. Barrett]. Ent., March 1892, p. 71.
- J. B. HODGKINSON. Cumberland.  
**Pselnophorus brachydactylus** [the second specimen was taken at Carlisle with *Platyptilia pallidactyla*, and is now in coll. H. Burney]. Ent. Record, March 15th, 1892, p. 63.
- J. B. HODGKINSON. Westmorland.  
**Platyptilia pallidactyla** [at Witherslack]. Ent. Rec., Aug. 15th, 1892, p. 186.
- PETER INCHBALD. York S.E., Cumberland.  
**Deilephila livornica** [taken at rest on a lettuce at Hornsea, 30th July, 1892; editor adds note of one taken near Carlisle on June 10th this season]. Field, Aug. 6th, 1892, p. 247.
- PETER INCHBALD. York S.E.  
**Humming-Bird Hawk Moth** [(*Macroglossa stellatarum*) in Holderness (doubtless Hornsea); account of rearing of larvæ from eggs deposited 29th July, 1892, and emergence of imagos Nov. 1st and following days]. Field, Nov. 12th, 1892, p. 726.
- J. A. IVES. York S.W.  
**Mild Season** [and appearance of *Pieris brassicæ* at Windhill, near Bradford, Jan. 20th, 1884]. Nat. World, March 1884, p. 45.
- GEORGE JACKSON. 'York.'  
**[Exhibition of fine varieties of *Abraxas grossulariata* bred from York larvæ]**. York F. Nat. Soc., Oct. 13th, 1892; Ent., Nov. 1892, p. 297.
- GEORGE JOHNSTON. Cheviotland.  
**Selections from the Correspondence of Dr George Johnston** [with notes of *Deilephila galii* at Twizell and Berwick (p. 40), and *Acherontia* at Berwick (401)].
- H. B. JONES. Cheshire.  
**[Exhibition of *Phycis splendidella* captured at Wallasey, July 1891]**. Lanc. and Chesh. Ent. Soc., Jan. 11th, 1892; E.M.M., Feb. 1892, p. 54; Ent., Feb. 1892, p. 50; Ent. Rec., Jan. 15th, 1892, p. 24; Brit. Nat., Feb. 1892, p. 35.
- G. H. KENRICK. Notts.  
**[*Euperia fulvago* from Sherwood, exhibited]**. Birm. Ent. Soc., Sep. 12th, 1892; E.M.M., Oct. 1892, p. 270; Ent., Oct. 1892, p. 250; Midl. Nat., Oct. 1892, p. 240; Ent. Rec., Sep. 15th, 1892, p. 248.
- H. WALLIS KEW. Linc. N.  
**Reminiscences of Ten Summers** [at Louth; noting occurrence of *Colias edusa* (1877) and *Sphinx convolvuli*]. Garner, March 1st, 1888, p. 93.
- C. E. LAMB. York Mid W.  
**Abundance of *Erebia blandina*** [in grass woods, Upper Wharfedale, Aug. 16th and 18th; *Colias edusa* on the road between Wheldrake and York a fortnight later]. Ent., Nov. 1892, p. 288.
- P. FOX LEE. Linc. N.  
**[*Euchelia jacobææ* at Skegness noted in an article on] Additions to the North Lincolnshire Flora.** Nat., March 1892, p. 76.
- W. LEWINGTON. Linc. N.  
***Colias edusa*** . . . in England in 1892 [thirty or forty near Market Rasen since 22nd Aug., including var. *helice*]. Ent., Nov. 1892, p. 281.



- F. C. LUKIS. 'Yorkshire.'  
*Callimorpha Hera* [and its introduction into Yorkshire, 'through large districts' of which it spread; but see under Porritt for correction]. Le Lievre's Guernsey Guide, 1863, p. 166 : rep. E.M.M., Jan. 1892, pp. 21-22.
- H. McDOWALL. Cheshire.  
*Phigalia pilosaria* [a fine black variety bred from a Delamere Forest larva]. Ent., June 1892, p. 145.
- J. C. MACKONCHIE. Not Lancs.  
*Carsia imbutata* and *Cidaria populata* in Lancashire [erroneous; Lanarkshire meant, as internal evidence shows]. Ent., Oct. 1892, p. 245.
- T. MADDISON. York N.E., Durham.  
 Notes of the Season.— . . . Saltburn and Durham Coast [*Agrotis ravidata* at Saltburn; *Phothes des captiuncula* near Hartlepool; habits of latter stated]. Ent. Rec., Oct. 15th, 1892, p. 234.
- L. E. MAINWARING. Cheshire.  
 Larva of Goat Moth [(*Cossus cossus*) doing great damage to old oaks at Plover Hall, Knutsford; name of larva supplied editorially]. Land and Water, 6th Dec., 1890, p. 650.
- WILLIAM MANSBRIDGE. York Mid W.  
 Abundance of *Pachnobia leucographa* at Bishop's Wood [in spring of 1892; *Teniocampa gothica* and *T. stabilis* also noted; full meteorological details given]. Nat., July 1892, p. 216.
- WILLIAM MANSBRIDGE. York Mid W.  
 Variation in *Diurnea fagella* at Bishop's Wood [and about Leeds; increase of melanism]. Nat., July 1892, p. 216.
- W. A. MAW. York N.E.  
 [Male *Hepialus humuli*, 7th June, *Abraxas ulmata*, *Hepialus hectus*, and 'Pine Moths' in or near Forge Valley, 12th June]. N.H.J., Nov. 15th, 1890, p. 151.
- EDWARD MEAD. 'Lincoln' N. or S.  
 Breeding *Notodonta dictæoides* [from larvæ taken near Lincoln; discussed at length]. Ent., March 1892, p. 71.  
 Cumberland, Notts, Furness, Isle of Man, Linc. S., Lanc. W., York S.W.
- S. L. MOSLEY. York S.W.  
 Illustrated Handbooks on | British Natural History. | — | Part I. Sept., 1890. With 6 plates. Price 2s. 6d. post free. | — | A History | of | British Lepidoptera. | By S. L. Mosley, F.E.S. | [Woodcut.] | — | Vol. I. Butterflies & Sphinges. | — | With Figures of the Transformations of every species, | drawn by the author, | and coloured to nature by hand by | Miss Florence Mosley. | — | Huddersfield: | Published by the Author, Beaumont Park Museum. [8vo., 20 plates and 6 plates in paper cover; notes given anent *Papilio machaon* formerly extending to Yorkshire and Cumberland; *Gonepteryx rhamni* in Sherwood Forest, and ♂ var. near Rotherham; *Colias edusa* as far as Yorkshire in 1877, and at Grange in 1889; *Pieris brassicæ* and *P. napi* near Huddersfield; *Anthocharis cardamines* at Bretton near Barnsley, 1 in. 3 lines in expanse, and Isle of Man; *Leucophasia sinapis* at Grange; *Satyrus megara* near Bourne, Isle of Man, and coast of North Lancashire, at Fleetwood, etc.; this is the only part seen].
- S. L. MOSLEY. York S.W.  
*Melanippe tristata* and *Chelonia plantaginis* near Huddersfield [in Harden Clough, June 15th, 1892]. Nat., Aug. 1892, p. 236.
- [A. M.] MOSS. Westmorland or Furness.  
 [Lepidoptera from Windermere exhibited to Cambridge Ent. Soc., April 29th, 1892; varieties of *Teniocampa stabilis* and *T. instabilis*, *Hybernia progemmaria* var. *perfusca* and *Venusia cambricaria*]. Ent., July 1892, p. 176; E.M.M., Aug. 1892, p. 223.



- A. M. MOSS. Westmorland or Furness.  
**Notes on the Season: Windermere** [the captures included *Thyatira batis*, *Cymatophora duplaris*, *Acronycta ligustri*, *A. rumicis*, *Leucania lithargyria*, *L. comma*, *L. impura*, *L. pallens*, *Xylophasia rurea*, *X. lithoxylea*, *X. polyodon*, *Apamea basilinea*, *A. gemina*, *A. didyma*, *Miana strigilis*, *Grammesia trigrammica* (not so far N. before), *Rusina tenebrosa*, *Agrotis corticea*, *A. exclamatoris*, *Triphæna comes*, *T. pronuba*, *Noctua augur*, *N. plecta*, *N. c-nigrum*, *N. triangulum*, *N. brunnea*, *N. festiva*, *N. baja*, *Calymnia trapezina*, *Euplexia lucipara*, *Aplecta prasina*, *A. nebulosa*, *A. tinctoria*, *Hadena dentina*, *H. oleracea*, *H. thalassina*, *H. rectilinea*, *Gonoptera libatrix*, *Mania typica*, *Bryophila perla*, *Hydræcia nictitans*, *Neuronia popularis*, *Charæas graminis*, *Noctua glareosa*, *N. xanthographa*, *N. dahlii*, *Polia chi*, *Cleoceris viminalis*, *Habrostola triplasia*, *Plusia chrysitis*, *P. iota*, *P. pulchrina*, *P. gamma*, *P. interrogationis*, *Amphipyra tragopogonis*, *Uropteryx*, *Ellopiæ prosapiaria*, *Selenia illunaria*, *Odontopera*, *Crocallis*, *Boarmia repandata*, *B. rhomboidaria*, *Macaria liturata*, *Halia vauaria*, *Lomaspidis marginata*, *Larentia diâymata*, *Melanthia albicillata*, *Coremia munitata*, *C. designata*, *C. ferrugata*, *C. unidentata*, *Cidaria truncata*, *C. prunata*, *C. testata*, *C. populata*, *C. fulvata*, *C. dotata*, *Anaitis plagiata*, and *Tanagra atrata*]. Ent., Oct. 1892, pp. 245-6.
- [A. M.] MOSS. Westmorland or Furness.  
**[Life-history of *Cidaria reticulata* at Windermere noted]**. Cambridge Ent. Soc., Oct. 28th, 1892; E.M.M., Dec. 1892, p. 313; Ent., Dec. 1892, p. 327; Ent. Rec., Dec. 15th, 1892, p. 313.
- H. MURRAY. Lanc. W.  
***Dianthæcia carpophaga* and *D. capsophila*** [and their specific value; one of them at Carnforth]. Ent. Rec., Jan. 15th, 1892, p. 8.
- J. P. MUTCH. Northumberland S.  
**Notes of the Season.**— . . Aberdeenshire [with mention also of the capture of *Charæas graminis* (red form), *Polia chi* and var. *olivacea*, and *Neuria popularis* at Morpeth]. Ent. Rec., Nov. 15th, 1892, p. 260.
- HARRY NELSON. York Mid W.  
***Macroglossa stellatarum* at Crossgates, near Leeds** [on July 3rd, 1892]. Nat., Aug. 1892, p. 253.
- WILLIAM G. NELSON. Notts.  
***Colias edusa* . . in England in 1892 . . Notts.** [a male at Cotham near Newark, Aug. 21st]. Ent., Nov. 1892, p. 282.
- E. B. NEVINSON. Westmorland.  
**Captures in Westmoreland, 1891** [mentioning dates but not localities, for *Photheses captiuncula*, *Thera simulata*, *Erebia epiphron*, *E. æthiops*, *Cænonympha typhon*, *Argynnis adippe*, *Carsia paludata*, *Nemeophila russula*, *N. plantaginis*, *Hepialus velleda*, *Notodonta dictæa*, *N. dictæoides*, *Lophopteryx camelina*, *Xylophasia sublustris*, *X. monoglypha*, *Mamestra abjecta*, *M. furva*, *Agrotis lucernea*, *Xanthia fulvago*, *Hyria muricata*, *Larentia salicata*, *L. olivata*, *Eupithecia venosata*, *E. sobrinata*, *Coremia munitata*, *Mixodia schulziana*, *Dianthæcia capsicola*, *D. cucubali*, *D. carpophaga*, *Notodonta ziczac*, *Asphalia flavicornis*, *Acronycta menyanthidis*, *Panolis piniperda*, *Hadena glauca*, *Plusia chrysitis*, *Anarta myrtilli*]. Ent., June 1892, p. 144.
- [R.] NEWSTEAD. Cheshire.  
**[Record of *Polyommatus bætica* captured at Heswall in 1886 or 1887 by Master McFee]**. Lanc. and Chesh. Ent. Soc., Oct. 10th, 1892; E.M.M., Nov. 1892, p. 292; Ent., Nov. 1892, p. 297; Brit. Nat., Nov. 1892, p. 239; Ent. Rec., Nov. 15th, 1892, p. 271.  
**[Exhibition of the Specimen]**. Lancashire and Cheshire Entomological Society; Nov. 14th, 1892; E.M.M., Dec. 1892, p. 314; Ent., Dec. 1892, p. 327; Brit. Nat., Dec. 1892, p. 264; Ent. Rec., Dec. 15th, 1892, p. 313.



W. T. PEARCE.

*Deiopeia pulchella* in 1892: Additional Records [one taken at Grange, May 29th, 1892, by T. H. Larcom]. Ent., Aug. 1892, p. 181; rep. Ent. Rec., Aug. 15th, 1892, p. 178.

DOUGLAS H. PEARSON.

Notts.

*Colias edusa* . . in England in 1892 . . Notts. [one at Chilwell, Aug. 28th; first since 1877 when they were plentiful]. Ent., Nov. 1892, p. 282.

G. T. PORRITT.

York S.W.

Melanic var. of *Polia chi* [captured 1890 and 1891, at Huddersfield]. Ent. Rec., Jan. 15th, 1892, p. 7.

GEO. T. PORRITT.

'Yorkshire.'

*Callimorpha Hera* not a Yorkshire insect [in correction of the statement by F. C. Lukis; which see]. E.M.M., Feb. 1892, p. 47.

G. T. PORRITT.

York S.W.

[Exhibition of Melanic and other *Polia chi* from Huddersfield]. Proc. Ent. Soc. Lond., Feb. 10th, 1892, publ. March 1892, p. ii.; Zool., March 1892, p. 120; Ent., March 1892, p. 73; Brit. Nat., March 1892, p. 49; Nature, March 3rd, 1892, p. 430; Ent. Rec., March 15th, 1892, p. 65.

GEO. T. PORRITT.

York Mid W.

[Lepidoptera observed by] the Yorkshire Naturalists' Union at Horton-in-Ribblesdale [14th May 1892; *Tæniocampa rubricosa*, a *Scoparia*, probably *muralis* or *coarctalis* (*angustalis*), and a *Gelechia*, probably *confinella*]. Nat., June 1892, p. 181.

GEO. T. PORRITT.

York Mid W.

Lepidoptera at Horton-in-Ribblesdale [the larvæ turned out as anticipated, *Scoparia muralis* and *Gelechia confinella*; *Xylophasia ruvea* var. *combusta* bred from a pupa]. Nat., Aug. 1892, p. 236.

G. T. PORRITT.

York S.W.

[Lepidoptera observed by] the Yorkshire Naturalists' Union at Penistone and Dunford Bridge [on 9th July, 1892; *Venusia cambricaria*, *Larentia casjata*, *L. pectinataria*, *Melanippe galiata*, and *M. montanata*]. Nat., Aug. 1892, p. 257.

GEO. T. PORRITT.

Lanc. W.

*Colias edusa* at St. Anne's-on-Sea [a male caught 19th August, 1892; T. Baxter saw several in the early summer]. Nat., Sep. 1892, p. 278.

GEO. T. PORRITT.

Lanc. W.

*Colias Edusa* on the Lancashire Coast [one on the sandhills at St. Anne's-on-Sea, 19th Aug., 1892]. E.M.M., Sep. 1892, p. 245.

GEO. T. PORRITT.

Lanc. W.

Notes on a Probably Hitherto Undescribed Form of the Larva of *Plusia gamma* [with a comparison of the resultant imagines with some netted on the Lancashire coast (St. Anne's-on-Sea)]. E.M.M., Oct. 1892, p. 256.

G. T. PORRITT.

York N.E., Lanc. W.

[Exhibition of fine varieties of *Abraxas grossulariata* bred from York larvæ, a small dark form of *Orgyia antiqua*, which had occurred in some numbers at Longridge near Preston, and a dubious *Noctua* from St. Anne's-on-Sea, which was a melanism of either *Agrotis cursoria* or *Caradrina cubicularis*, taken 20th Aug., 1892]. Proc. Ent. Soc. Lond., Oct. 5th, publ. Nov. 1892, p. xxvii.; Zool., Nov. 1872, p. 146; E.M.M., Nov. 1892, p. 296; Ent., Nov. 1892, p. 294; Brit. Nat., Nov. 1892, p. 236; Ent. Rec., Oct. 15th, 1892, p. 245.

GEO. T. PORRITT.

York S.W.

[Exhibition of varieties of *Arctia mendica* from Grimescar, Huddersfield, *A. lubricipeda* from York, olive-banded *Bombyx quercus* from Crosland Moor, Huddersfield, and melanic *Boarmia repandata* from Netherton Wood, Huddersfield]. Yorksh. Nat. Union; Ent. Rec., Dec. 15th, 1892, p. 309.



- J. PORTER. York N.E.  
 [Lepidoptera observed by] the Yorkshire Naturalists' Union at Withernsea [on Aug. 1st, 1892; *Pieris rapæ*, *Hipparchia hyperanthus*, *Epinephile janira*, *Vanessa urticae*, *Lycæna icarus*, *Pyrameis atalanta*, *P. cardui*, *Dicranura vinula*, *Sesia bembeciformis*, *Zygæna filipendulae*, *Notodonta ziczac*, *Orgyia antiqua*, *Plusia gamma*, *Gonoptera libatrix*, and *Eubolia mensuraria*]. Nat., Oct. 1892, p. 297.
- E. G. POTTER. York S.W.  
*Colias edusa* near Doncaster [a female, May 29th, 1892, in Edlington Wood]. Nat., Oct. 1892, p. 300.
- E. G. POTTER. York N.W.  
 Lepidoptera at Greta Bridge [June 6th, 1892; *Selenia lunaria* and *Epunda viminalis*]. Nat., Oct. 1892, p. 300.
- E. G. POTTER. York S.W.  
*Colias edusa* . . . in England in 1892: additional records . . . Yorkshire [a fine ♀ in Edlington Wood, Doncaster, 29th May, 1892]. Ent., Dec. 1892, p. 312.
- PRINCE. Cheshire.  
 [*Colias edusa* nearly the var. *helice* captured at Wallasey]. Lanc. and Chesh. Ent. Soc., Sep. 12th, 1892; Brit. Nat., Oct. 1892, p. 218; E.M.M., Oct. 1892, p. 70; Ent., Oct. 1892, p. 251; Ent. Rec., Oct. 15th, 1892, p. 248.
- G. H. RAYNOR. Linc. N.  
*Macroglossa bombylifomis* in Lincolnshire [in a wood near Wragby; *M. fuciformis* and *Hesperia paniscus* there also]. Ent., Aug. 1892, p. 195.
- G. H. RAYNOR. Linc. N.  
 Notes of the Season. . . . Lincolnshire [noting *Colias edusa* taken between East Barkwith and Panton, and another at Toft near Market Rasen]. Ent., Rec., Sep. 15th, 1892, p. 205.
- G. H. RAYNOR. Linc. N.  
*Sphinx convolvuli* in Lincolnshire [one at Panton near Wragby, Aug. 20th, 1892]. Ent. Rec., Sep. 15th, 1892, p. 212.
- G. H. RAYNOR. Linc. N.  
*Emmelesia albulata* Double-brooded [at Panton Rectory, Wragby]. Ent., Nov. 1892, p. 289.
- G. H. RAYNOR. Linc. N.  
 Early Appearance of *Pœcilocampa populi* [on Oct. 21st, 1892, at East Barkwith Railway Station]. Ent. Rec., Dec. 15th, 1892, p. 301.
- G. RENSHAW. Lanc. W.  
 A Correction [the Insect taken at Lytham in 1891 was not *Lycæna adonis*, but a ♂ var. of *L. alexis* with barred fringes to the wings; cf. Ent., 1891, p. 267]. Ent., July 1892, p. 173.
- S. RENSHAW. Lanc. S.  
*Vanessidæ* in Lancashire [*V. cardui* and *V. atalanta* have both been common this year; no locality given but note dated from Stretford]. Ent., Oct. 1892, p. 243.
- S. RENSHAW. Cheshire.  
*Colias edusa* . . . in England in 1892 . . . Cheshire [one, with neither place nor date stated]. Ent., Nov. 1892, p. 276.
- JOHN E. ROBSON. Durham, Cheshire.  
 The Shape of the Wing in *Noctua festiva* [as observed in Wallasey and Hartlepool and Sang's moorland examples]. Brit. Nat., Jan. 1892, p. 18.



- [J. E.] ROBSON. Durham.  
 [Exhibition of varieties from Hartlepool of *Dianthæcia conspersa*]. City of Lond. Ent. Soc., Feb. 18th, 1892; Ent. Record, March 15th, 1892, p. 68.
- JOHN E. ROBSON. Durham.  
 Sallows at Hartlepool [at Hezleden Dene; *Teniocampa gracilis* and named varieties, *T. rubricosa*, *T. gothica*, *T. stabilis*, *T. instabilis*, noted]. Brit. Nat., May 1892, p. 103.
- JOHN E. ROBSON. ? Cheshire or Lanc. S.  
 Nyssia zonaria at Liverpool [on the 11th April, 1892, commonly at some locality unnamed]. Brit. Nat., May 1892, p. 104.
- J. E. ROBSON. Durham.  
 The Genus Hepialus [and its habits and life-history discussed at length and in detail; partly based on author's Durham experience]. Ent. Rec., Mar. 15th, April 15th, and May 16th, 1892, pp. 52-56, 77-79, and 100-101.
- J. E. ROBSON. Lanc. S.  
 Spring Notes.—Liverpool [black *Diurnea fagella* at Knowsley and *Nyssia zonaria* abundant at Crosby, Ap. 10th and 11th]. Ent. Rec., May 16th, 1892, p. 115.
- JOHN E. ROBSON. ? Durham.  
 Variety of *Arctia mendica* [bred at Hartlepool by Mr. Lumsden; description given]. Brit. Nat., June 1892, p. 125.
- JOHN E. ROBSON. Durham.  
 Random Notes on British Lepidoptera [including one on *Emmelesia albulata* and its habits, presumably near Hartlepool]. Brit. Nat., Aug. 1892, p. 167.
- JOHN E. ROBSON. ? Durham.  
*Polyommatus Artaxerxes* with Four White Spots [taken in district (? Hartlepool) by John Sang]. Brit. Nat., Nov. 1892, p. 240.
- C. E. ROCKETT. York S.E.  
 Black-Veined White Butterfly [particulars of the capture of two larvæ in May 1885, and afterwards six pupæ of supposed *Aporia cratægi* near Sewerby, Hull, with a supposition as to their possible introduction]. Sci. Goss., Jan. 1892, p. 21.
- W. D[ENISON] ROEBUCK. York Mid W.  
 Moths on Lamps at Pateley Bridge [taken by Wm. Storey, named by A. Denny; *Hybernia defoliaria*, *H. aurantiaria*, both *Cheimatobia*, *Pacilocampa*, *Phlogophora meticulosa*, *Plusia gamma*, *Himera*, and *Oporabia dilutata*; date about 3rd November, 1883]. Nat. World, Jan. 1884, p. 16.
- MARY G. ROUTLEDGE. Cumberland.  
*Deilephila livornica* near Carlisle [one at Headsnook, Carlisle, June 10th, 1892]. Ent., July 1892, p. 169; rep. Ent. Rec., July 15th, 1892, p. 155.
- J. H. SALTER. York N.E.  
 The Clouded Yellow [and a note of observing *Vanessa urtica* and *V. atalanta* making out to sea from the end of Filey Brigg]. N.H.J., Oct. 15th, 1892, p. 120.
- W. SALVAGE. York N.E.  
 Explanations as to *Liparis monacha* [erroneously reported as taken near Scarborough]. Ent. Rec., Dec. 15th, 1892, p. 304.
- EDWARD SELF. York Mid W.  
*Colias edusa*, . . . &c., in England in 1892 [two males near Aberford, 21st August]. Ent., Sep. 1892, p. 211.
- EDWARD SELF. York Mid W.  
*Colias edusa* at Aberford, Yorkshire [two males taken Aug. 21st, 1892]. Nat., Sep. 1892, p. 278.



[W. G.] SHELDON.

Derbyshire.

[Derbyshire series of *Tephrosia biundularia* exhibited, with note of a curious variety melanic on right side]. Proc. South Lond. Ent. Soc., Nov. 10th, 1887, publ. 1888, p. 87.

[W. G.] SHELDON.

Derbyshire.

[*Xanthia fulvago* and var. *flavescens* from a valley in Derbyshire which alone of all the district produces melanic specimens, as, e.g. of *Tephrosia biundularia*, *Thera variata*, etc.]. Proc. South Lond. Ent. Soc., Sep. 22nd, 1887, publ. 1888, p. 73.

— SIMES.

Isle of Man.

[Exhibition of *Dianthæcia carpophaga* from the Isle of Man]. City of Lond. Ent. Soc., May 5th, 1892; Ent. Rec., May 16th, 1892, p. 120.

Cumb., Lanc. S., York N.E., S.W.,  
Chesh., Durham.

GEORGE E. SIMMS.

**Butterfly | and | Moth | Collecting : | Where to search, and | what to do.** | By George E. Simms. | — | Illustrated. | — | London : L. Upcott Gill, 170, Strand, W.C [not dated, published in 1892; paper covers, small 8vo. iv. + 116 pages; note at p. 91 of *Satyrus semele* near Durham, South Shields, Castle Eden Dene, Birkenhead, etc., at p. 100 of *Nemeobius lucina* at Melton Wood, near 'Sanbeck Park, Tukhill', Yorkshire, and Carlisle; at p. 102 of *Argynnis euphrosyne* at Buttercrombe Moor near Stamford Bridge, Yorkshire; and at p. 111 of *Polyommatus agestis* and *salmacis* at Manchester and Castle Eden Dene].

C. B. SMITH.

Lake District.

[Exhibition of *Melanippe fluctuata* from the Lake District]. City of Lond. Ent. Soc., Jan. 21st, 1892; Brit. Nat., Feb. 1892, p. 34; Ent. Record, Feb. 15th, 1892, p. 40.

[C. B.] SMITH.

Lake District.

[Exhibition of prettily-marked forms of *Hadena pisi* from the Lake District]. City of Lond. Ent. Soc., June 16th, 1892; Brit. Nat., July 1892, p. 149; Ent. Rec., July 15th, 1892, p. 166.

RICHARD SOUTH.

York S.W.

Notes on British Lepidoptera [including *Noctua brunnea* from Rotherham (Young); variation discussed]. Ent., Feb. 1882, pp. 29-30.

RICHARD SOUTH.

Notts.

Larva of *Apamea ophiogramma* in Notts. [sent by Mr. Pearson of Chilwell, near Nottingham; discussed at length]. Ent., March 1892, p. 69.

RICHARD SOUTH.

York S.W.

The Genus *Melanippe* [discussed in detail; Yorkshire examples (from Porritt) of *M. galiata* described and Haworth's *unilobata*, also from Yorkshire, supposed to be the same]. Ent., June 1892, p. 135.

RICHARD SOUTH.

Derbyshire, Lanc. S., York N.E.

*Deiopeia pulchella* in England [the earliest known British specimen was taken in Yorkshire, but the exact date is not known; Manchester is recorded in Stainton's Manual, 1857; in June 1870, one was taken at Scarborough; and in 1874 one occurred in Derbyshire]. Ent., July 1892, pp. 153-154.

GEORGE STABLES [sic].

Westmorland.

[*Acherontia atropos* taken in Lyth; exhibited to] Kendal Natural History Society [Oct. 11th, 1889]. Gard. Chron., Oct. 19th, 1889, p. 444.

DOUGLAS STUART STEUART.

Lanc. S.

The Electric Light [as an attractor of Moths at Old Trafford, Manchester; *Triphaena* (all but *ianthina* and *interjecta*), *Xylophasia polyodon*, *Leucania pallens*, *L. conigera*, *L. lithargyria*, *Mamestra brassicae*, *Apamea gemina*, *Caradrina morpheus*, *Agrotis nigricans*, *Noctua umbrosa*, *N. xanthographa* and *Plusia gamma* were all very abundant on 19th August, 1892]. Ent., Oct. 1892, p. 247.



- DOUGLAS STUART STEUART. Lanc. S.  
**Effect of Darkness during Day on Night-flying Moths** [at Prestwich, Manchester, during a thunderstorm at 2 p.m. on Aug. 10th, 1892, *Xylophasia polyodon*, *Leucania pallens*, *Mamestra brassicæ* and *Melanippe fluctuata* were observed on the wing]. Ent. Rec., Oct. 15th, 1892, p. 242.
- R. TAIT, JUN. Cheshire.  
**Notes of the Season.**— . . . Wallasey [anent exceeding abundance of *Nyssia zonaria*, and occurrence of *Mesotype lineolata* and *Dicranura vinula*, '23rd inst.']. Ent. Rec., June 15th, 1892, p. 132.
- R. TAIT, JNR. Cheshire.  
**Aplecta nebulosa var. robsoni** [bred from a Delamere Forest larva]. Ent. Rec., Aug. 15th, 1892, p. 178.
- [B.] BLAYDES THOMPSON. York S.E. and S.W.  
**[Chærocampa celerio from Halifax and Deilephila livornica from Peter Inchbald, of Hornsea, exhibited].** City of Lond. Ent. Soc., Nov. 3rd, 1892; Brit. Nat., Dec. 1892, p. 262; Ent. Rec., Nov. 15th, 1892, p. 271.
- C. F. THORNEWILL. ? Derbyshire.  
**[Sphinx convolvuli taken at Burton-on-Trent, September 30th, 1892].** Birmingham Ent. Soc., Nov. 16th, 1891; E.M.M., Jan. 1892, p. 26; Ent., Jan. 1892, p. 24.
- C. F. THORNEWILL. Derbyshire.  
**Notes of the Season.**— . . . Bakewell [*Procris geryon* abundant, *Melanippe tristata* generally distributed, *Habrostola urticæ* fairly common, *Scotosia certata* abundant]. Ent. Rec., Oct. 15th, 1892, p. 237.  
 [*Polia chi* in striking abundance]. Ent. Rec., Dec. 15th, 1892, p. 291.
- E. CLARIBEL TOMLIN. Cheshire.  
**Brephos parthenias at Delamere Forest** [two or three captures cited in disproof of Arkle's idea that his was a first record]. Ent., July 1892, p. 163.
- [W. H.] TUGWELL. Yorkshire.  
**[Exhibition of bred Spilosoma lubricipeda var. radiata with the Yorkshire parents].** South Lond. Ent. Soc., Sep. 8th, 1892; Ent., Oct. 1892, p. 250; E.M.M., Nov. 1892, p. 294; Ent. Rec., Sep. 15th, 1892, p. 216.
- [W. H.] TUGWELL. Durham.  
**[Exhibition of a Pale Series of Hypsipetes ruberata Frr., from Hartlepool].** South Lond. Ent. Soc., Oct. 13th, 1892; Brit. Nat., Nov. 1892, p. 238; Ent., Nov. 1892, p. 296; E.M.M., Dec. 1892, p. 314.
- [J. W.] TUTT. Lanc. S.  
**[Exhibition of Varietal Series of Hadenæ pisi, H. dissimilis, Panolis piniperda, and a melanic Eup. fraxinata, all taken or bred near Warrington by Mr. Tunstall].** Proc. Ent. Soc. Lond., Feb. 10th, publ. March 1892, p. ii.; Brit. Nat., March 1892, p. 49; Zool., March 1892, p. 120; E.M.M., March 1892, p. 87; Ent., March, p. 73; Ent. Rec., March 15th, 1892, p. 65.  
 Also City of Lond. Ent. Soc., Feb. 4th, 1892; Ent. Record, March 15th, 1892, p. 67.
- J. W. TUTT. York S.W.  
**The Pterophorina** [with a reference to the capture of *Trichoptilus paludum* in Yorkshire in 1891, and inquiring if this can possibly be the allied *siceliota*]. Ent. Record, Feb. 15th, 1892, pp. 32-35.
- J. W. TUTT. Derbyshire, Westmorland, Lanc. S., York S.W.  
**The Pterophorina of Britain** [anent variation of *Mimæseoptilus bipunctidactylus* in the Lake District, etc.]. Brit. Nat., Ap. 1892, pp. 61-63.  
 [*Mimæseoptilus bipunctidactylus* at Huddersfield, Porritt's want of success in finding the larvæ there (p. 109); its occurrence at Witherslack and near Burton-on-Trent (p. 110); at Lepton Great Wood near Huddersfield (p. 111); *Mimæseoptilus zophodactylus* (= *loewii* and incl. *hodgkinsoni*) the occurrence of the *hodgkinsoni* form at Witherslack given in detail, and of the *loewii* form at Southport (pp. 112-113)]. Brit. Nat., June 1892, pp. 109-113.



- J. W. TUTT. Cheshire.  
Retrospect of a Lepidopterist for 1892 [noting *Bombyx trifolii* maintaining its ground at Wallasey, and *Lithosia sericea* taken by the Warrington collectors]. Ent. Rec., Dec. 15th, 1892, p. 281.
- COLBRAN J. WAINWRIGHT, Hon. Sec. Notts.  
[Lepidoptera noted by the] Birmingham Entomological Society[’s excursion to Sherwood Forest, June 4th-7th, 1892; *Euperia fulvago*, *Notodonta trepida*, and *Eurymene dolabraria*]. Ent., July 1892, p. 176; E.M.M., July 1892, p. 195; Ent. Rec., July 15th, 1892, p. 168.
- EDGAR R. WAITE. York Mid W.  
*Sphinx convolvuli* at Newton Kyme near Tadcaster [two noticed in Aug. 1891]. Nat., Feb. 1892, p. 54.
- S. WALKER. ‘York.’  
Egg laying of *Timandra amataria* [as noted in one taken near York] Ent. Rec., Oct. 1892, p. 239.
- S. WALKER. Durham, York N.E., N.W.  
[Exhibition of *Acronycta menyanthidis* from Darlington and Strensall (one very dark), *Cleoceris viminalis* bred from Rokeby larvæ, *Luperina cespitis* from Strensall Common, and varieties (described) of *Lobophora lobulata* and *L. hexapterata* taken near York]. York F. Nat. Soc., Sept. 14th, 1892; Ent., Oct. 1892, pp. 251-2.
- H. C. WALLIS. York S.E. and N.E.  
[Lepidoptera noted by] York, Bootham.—N. H. Club [included *Vanessa atalanta* at Langwith, *V. cardui*, *Polyommatus phlaeas*, and *Colias edusa*; latter also at Bootham]. N.H.J., Nov. 15th, 1892, p. 130.
- JOHN WEBSTER. Cumberland.  
*Colias Edusa*, . . . &c., in England in 1892 [several at St. Bees—erroneously stated by Editor as in ‘Lancashire’—*Vanessa cardui* several, *V. atalanta* two, *Plusia gamma* common]. Ent., Sep. 1892, p. 208.
- JOHN WEBSTER. Cumberland.  
*Colias edusa* . . . in England in 1892 . . . Lancashire [mistake for Cumberland; one in August at How Hall, Ennerdale, and several with one var. *helice*, at St. Bees, in Sept.]. Ent., Nov. 1892, p. 280.
- H. WILDE. York Mid W.  
*Erebia æthiops* at Arncliffe [Yorkshire, alt. about 1,000 feet; fairly abundant but in bad condition, 20th Aug., 1892; *Charæas graminis* also fairly plentiful]. Ent., Oct. 1892, p. 244.
- G. W. WYNN. Notts.  
[Lepidoptera from Sherwood Forest exhibited; *Hadena contigua*, *Acronycta leporina*, and *Agrotis suffusa*]. Birmingham Ent. Soc., July 11th, 1892; E.M.M., Aug. 1892, p. 222; Ent., Aug. 1892, p. 199; Midl. Nat., Aug. 1892, p. 191; Ent. Rec., Aug. 15th, 1892, p. 192.

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### NOTE—FUNGI.

**Morel and Wood-Betony Blight in Cumberland.**—A fine specimen of this fungus (*Morchella semilibera* DC.) was sent me in May 1896 from Seaton, near Workington, in Cumberland. As so little is known of the distribution of the rarer cryptogams in this district, I think it well to place this on record. I was able to take an excellent photograph of this specimen, which was five or six inches in height. I may also add that the Wood Betony Blight (*Puccinia betonicae* DC.) is plentiful in a lane near Brandlingill, Cockermouth, where it recurs every year.—HILDERIC FRIEND, Cockermouth, 16th June, 1896.



## NATURAL HISTORY NOTES FROM WHITBY.

MAY 1894 TO MAY 1896.

THOMAS STEPHENSON,

*Whitby.*

## MAMMALIA.

- 1894, October 28th.—A young Otter (*Lutra lutra*) of about 5 lbs. weight got into a cellar at the Muriate Works, Whitehall Shipyards, and was killed.
- 1895, March 16th.—A fine full-grown female Badger (*Meles meles*) weighing 18 lbs., was caught in the neighbourhood of Whitby and sent to Mr. J. H. Wilson, Baxtergate, to be preserved.
- April 18th.—A fine full-grown male Badger (*Meles meles*) was captured at Mulgrave and sent to Mr. J. H. Wilson for preservation.
- May 17th.—A fine female Badger (*Meles meles*) weighing 24 lbs., has been captured at Folkton near Scarborough.—Whitby Gazette, May 17th, 1895.
- September 19th.—A Seal (*Phoca vitulina*) was seen several times this day about 100 yards north of the West Pier, by Mr. Pickard, Fish Salesman.
- December 11th.—A fine young Seal was captured in Barmston Drain, Bridlington. It measured nearly 4 feet in length and weighed about 5½ stones.—Whitby Gazette, Dec. 13th, 1895.
- December 11th.—An Otter (*Lutra lutra*) was twice seen on one day last week in the Woodlands.—Whitby Gazette, Dec. 13th, 1895.
- December 24th.—A Grampus (*Orca gladiator*) was washed up on the Scaur, near the rocket post at Robin Hood's Bay, on the 24th ult. It measured 8 feet 6 inches, and weighed about half a ton.—Whitby Gazette, January 3rd, 1896.
- December 30th.—A Seal (*Phoca vitulina*) was this day killed at Saltwick by John Peacock, Henrietta Street; it weighed between 4 and 5 stones.
- 1896, January 18th.—A bitch Otter (*Lutra lutra*) was killed on Saturday by Mr. Roberts of Glaisdale. It weighed 14 lbs., and measured 43 inches in length, and 16 inches in girth.—Whitby Gazette, January 24th, 1896.
- May 20th.—Noctule Bat (*Vesperugo noctula*) captured at Golden Grove near Whitby.



## BIRDS.

- 1894, May 16th and 17th.—A Lesser Black-backed Gull (*Larus fuscus*) was in the harbour.
- May 19th and 21st.—Black-headed Gulls (*Larus ridibundus*) were observed in the harbour, and remained this month.
- May.—A Woodcock (*Scolopax rusticola*)'s nest has been discovered in a wood at Skiplam Rigg.—Whitby Gazette, June 1st, 1894.
- Mr. John Frank, Chemist, Whitby, informs me that a Woodcock's nest containing 4 eggs was taken this spring in Coulton Pele Wood near Gilling, one of which eggs is in the possession of his son.
- September 17th.—A Roseate Tern (*Sterna dougalli*) was seen at sea by Mr. John Henry Wilson.
- October 28th.—A Long-eared Owl (*Asio otus*) was shot at Glaisdale.
- 1895, January 3rd.—Little Auk (*Mergulus alle*) picked up.
- January 16th.—A great number of Curlews (*Numenius arquata*) and Lapwings (*Vanellus vanellus*) were in the large field between the Cemetery and Larpool Hall. I was informed that several hundreds of them had frequented the same place for some days.
- January 16th.—Little Auk (*Mergulus alle*) picked up in St. Hilda's Terrace.
- January 22nd.—Little Auk (*Mergulus alle*) taken in the harbour.
- January 23rd.—Little Auk (*Mergulus alle*) captured near Stainsacre.
- January 23rd.—A Shag (male) (*Phalacrocorax graculus*) shot N.W. of the West Pier; preserved by George Kitching for the Museum.
- January 29th.—A young (male) Tufted Duck (*Fuligula fuligula*) captured in the harbour; preserved by J. H. Wilson.
- January 29th.—Little Auk (*Mergulus alle*) captured in Waterstead Lane.
- January 30th.—Bramble Finch (*Fringilla montifringilla*) captured at UGGLEBARNBY.
- January 31st.—Little Auk (*Mergulus alle*) captured on the beach.
- January 31st.—Mallard (*Anas boschas*) got at Sleights.
- January 31st.—A Cormorant (*Phalacrocorax carbo*) seen in the harbour.
- February 1st.—Three Cormorants (*Phalacrocorax carbo*) observed in the harbour.



Eight Little Auks (*Mergulus alle*) picked up on the sands out of more than a hundred, by George Kitching, all the others being so damaged as to be useless for preservation.

1895, February 2nd.—Young Scaup Duck (*Fuligula marila*) captured on the beach.

A very large number (some hundreds) of Common Gulls (*Larus canus*), Herring Gulls (*Larus argentatus*), Black-headed Gulls (*Larus ridibundus*), Kittiwakes (*Rissa tridactyla*), etc., frequented the harbour during the severe weather in January and February, and were fed by the inhabitants of Whitby.

February 28th.—Golden-eye Duck (*Clangula glaucion*) shot at Grosmont.

March 12th.—Little Auk (*Mergulus alle*) received from Danby by Mr. J. H. Wilson for preservation.

April 2nd.—A score or more Black-headed Gulls (*Larus ridibundus*) were observed in the harbour.

Common Buzzard (*Buteo vulgaris*), male, was trapped at Mulgrave.

April 20th.—Corncrake (*Crex crex*) heard at Straggleton.—Whitby Gazette, April 26th, 1895.

Cuckoo (*Cuculus canorus*) heard at Sleights.—Whitby Gazette, April 26th, 1895.

April 25th.—Saw Swallows (*Hirundo rustica*) on Ruswarp Carrs.

May 5th.—Pair of Redstarts (*Ruticilla phoenicurus*) seen in Factory fields by Mr. J. H. Wilson.

May 9th.—Whinchat (*Pratincola rubetra*) seen in Factory fields.

May 9th.—Sandpiper (*Totanus hypoleucus*), male, captured on Ruswarp Dam.

May 9th.—Tufted Duck (*Fuligula fuligula*), male, captured on Ruswarp Dam.

May 15th.—Puffin (*Fratercula arctica*) a fine specimen was washed up and caught on the sands by two lads—windy weather and rough sea.

May 15th.—Black-headed Gull (*Larus ridibundus*) seen in the harbour.

May 17th.—J. Kitching informed me that he this day saw a Tern (*Sterna fluviatilis*) and six Lesser Black-backed Gulls (*Larus fuscus*).

May 18th.—Herring Gulls (*Larus argentatus*), Black-headed Gulls (*Larus ridibundus*), and Cormorant (*Phalacrocorax carbo*), seen in the harbour.



1895, May 19th.—Six Black-headed Gulls, several Herring Gulls and a Cormorant in the harbour—wild weather, rough sea. They have also been constantly observed during the three following months.

May 19th.—A Shag (*Phalacrocorax graculus*) apparently a wounded bird, was seen in the harbour.

May 24th.—Four Cormorants and Black-headed Gulls in the harbour.

July 11th.—Lesser Black-backed Gull (*Larus fuscus*) was seen here.

September 6th.—Turnstone (*Streptilas interpres*) shot on the sand.

October 3rd.—Several Swallows (*Hirundo rustica*) were seen in Whitby apparently on the point of migration; weather very cold and wet. Wind W. by S.

October 26th.—Two Guillemots (*Lomvia troile*) were taken on the sands.

October 27th.—A Puffin (*Fratercula arctica*) picked up on the sand.

October 29th.—Common Guillemot (*Lomvia troile*) in the harbour; it was in such an exhausted state that a boy in a boat picked it up from the water.

December 6th.—A fine large female Sparrow Hawk (*Accipter nisus*) was shot near the town.

A Storm Petrel (*Procellaria peiagica*) was captured at Bilsdale last week by Mr. R. B. Brotton.—Whitby Gazette, 20th December, 1895.

December 13th.—Merlin (*Falco aesalon*), female, was taken in Goathland.

A rara avis in the shape of a White Robin (*Erithacus rubecula*) was captured in Chubb-hill gardens three weeks ago by Mr. Bulmer, a well known local bird fancier.—Whitby Times, 10th January, 1896.

1896, January 24th.—Three Dunlin (*Tringa alpina*) were seen near the piers.

February 1st.—A flock of about 200 Scaup Ducks (*Fuligula marila*) were observed in the broken water on Whitby Rock, and frequented that place more or less till the middle of March, when they disappeared.

February 11th.—A Mealy Redpoll (*Linota linaria*) was caught at Newholme, near Whitby.

April 7th.—An Oystercatcher (*Hæmatopus ostralegus*) observed on Whitby sand.

April 8th.—Five Cormorants (*Phalacrocorax carbo*), a Red-throated Diver (*Colymbus septentrionalis*) and Herring Gulls (*Larus argentatus*) in Saltwick Bay, near Whitby.



1896, May 18th.—The notes of the Quail (*Coturnix coturnix*) were heard at Sleights, on Monday, 18th.—Whitby Gazette, 22nd May, 1896.

May 27th.—A fine specimen of the Puffin (*Fratercula arctica*) was washed up on Whitby sands.

## FISHES.

1894, May 10th.—The fishing boat 'Christina' of Hartlepool, landed at Whitby 9,000 Herrings caught the previous night.

May 24th.—A fine Salmon (*Salmo salar*) was caught in a clasp net from the Pier side on Thursday; the net was baited with herring.—Whitby Gazette, May 25th, 1894.

June 22nd.—A large Salmon (*Salmo salar*) weighing 27½ lbs. was caught in the nets and brought into Whitby.

July 28th.—A Flying Fish (*Exocetus exiliens*) was picked up on the Scarr South of the East Pier (recorded in the 'Naturalist' with particulars).

September 19th.—A large Garfish (*Belone vulgaris*) was brought into Whitby, and preserved by Mr. J. H. Wilson for the Museum.

September 25th.—A Common Tope (*Galeus canis*) was caught off Whitby.

October 12th.—Two Picked Dog-fish (*Acanthias vulgaris*) were caught off here.

October 29th.—A Ballan Wrasse (*Labrus maculatus*) brought into Whitby.

November 2nd.—Another Ballan Wrasse was brought in.

A young Basse (*Labrax lupus*) was caught from Andrew's Steps, Marine Parade, with rod and line and hook, baited with mussel.

November 14th.—Another Ballan Wrasse brought in.

November 15th.—A Sea Bream (*Pagellus centrodontus*) was caught off and brought into Whitby.

November 19th.—A Tadpole Hake (*Raniceps trifurcus*) was caught off here and brought in by Jameson Colley's coble. A larger specimen of this fish, I was informed, had been brought into Whitby the previous week.

1895, January 9th.—Fifteen-spined Stickleback (*Gasterosteus spinachia*) caught in a clasp-net from the Marine Parade.

March 14th.—Several Viviparous Blennies (*Zoarces viviparus*) were taken in the Harbour during the week; one a gravid female, which came into my possession, on being opened was found to



contain 59 living young ones, averaging about 2 inches in length, perfectly developed, which on being transferred to a basin of water swam about in a most lively and natural manner.

1895, April 2nd.—About 50 Wolf-fish (*Anarrhichas lupus*) were brought in by the fishing cobles this day.

April 17th.—Great Pipe-fish (*Syngnathus acus*) was washed up on the sand.

April 18th.—Rockling, caught in the harbour.

April 27th.—Gemmeous Dragonet (*Callionymus lyra*) caught and brought to Whitby by one of the fishing cobles.

April 29th.—First catch of Herrings (*Clupea harengus*); 2,500 landed here by the 'Christina,' of Hartlepool.

June 19th.—A Salmon (*Salmo salar*), weighing 26 lbs., was caught (netted) off and brought into Whitby.

July 4th.—Small-spotted Dog-fish (*Scyllium canicula*) brought into Whitby.

July 11th.—A Salmon, of 21 lbs., was caught (netted) by Hutchinson and brought in.

July 22nd.—A Grey Mullet (*Mugil chelo*) caught off and brought into Whitby.

July 31st.—A Salmon, weighing 22½ lbs., was netted off Whitby.

August 3rd.—A fine specimen of Lumpsucker (*Cyclopterus lumpus*) was caught off here.

August 5th.—Æquoreal Pipe-fish (*Nerophis æquoreus*), female, with spawn, was brought in here.

August 14th.—Red Gurnard (*Trigla cuculus*) caught off Whitby.

August 15th.—Common Sea Bream (*Pagellus centrodontus*) brought into Whitby.

October 3rd.—A Salmon (*Salmo salar*), weighing 21 lbs., was caught in the Esk by Mr. A. Rhodes. Another weighing 26½ lbs. was caught in the Esk by Mr. Calvert, of Lealholm. Both were captured with rod and line.

October 26th.—A Flounder (*Pleuronectes flesus*) was captured this day in Whitby Harbour from the fish-quay, which exhibited two peculiarities—it was not only coloured the same (dark brown) on both sides, but the dorsal fin, instead of extending to and joining the head, terminated a short distance from it, being separated therefrom by a nearly semi-circular hollow, with a slightly rounded projection next the fin, rather approaching the formation, in that part, of the *Aspidophorus quadricornis*, a fish taken on the coast of Kamtschatka.



- November 7th.—A good specimen of Lump-sucker (*Cyclopterus lumpus*) brought in by one of the fishing cobles.
- November 9th.—Mr. Frank Snowdon informed me he saw a Ray's Sea Bream (*Brama raii*) stranded on the beach near Sunley's Cottage, between Whitby and East Row.
- 1896, January 12th.—A Couch's Whiting (*Gadus poutassou*) was washed up on the sand (described in the 'Naturalist' of June, 1896).
- January 29th.—Small-spotted Dog-fish (*Scyllium canicula*) caught by W. Harrison, fisherman, and brought in here.
- March 12th.—Unctuous Sucker (*Liparis vulgaris*) taken in a Lobster trap on Whitby Rock.
- March 20th.—Another Unctuous Sucker captured.
- April 13th.—Red Gurnard (*Trigla cuculus*) caught off here and brought in.
- April 16th.—Five-bearded Rockling (*Motella mustela*) 12½ inches long, was caught at sea by J. H. Hodgson on a hook baited with sand-worm. This refutes Mr. Low's statement that 'they are never caught at a hook' in Yarrell's Fishes, vol. 2, p. 279.

## MOLLUSCA.

- 1894, June 29th.—An Octopus was caught by Mr. Eglon, in a lobster trap.

## CRUSTACEA.

- 1894, May 31st.—A large Lobster (*Astacus gammarus*) weighing 6 lbs. was caught off Whitby. This is the largest but one (which raised the weights at 7 lbs.) remembered to have been caught by local fishermen.—Whitby Gazette, 1st June, 1894.
- 1895, April 22nd.—An edible Crab (*Cancer pagurus*) having four nippers on one of the claws was brought into Whitby and presented by Mr. Edward Turner to the Whitby Literary and Philosophical Society, and is now in the Museum.
- 1896, January 14th.—Large Lobster, weighing 5 lbs., caught by W. Harland.
- May.—Large prickly Spider-crab caught by Mr. Moat.
- May 28th.—A Lobster weighing 2 lbs. 10 oz. was brought into Whitby having the peculiarity of both large claws being alike, viz., knobbed or numb claws, instead of one knobbed or numb claw, and the other serrated or cutting claw. The fishermen at Whitby call the Lobster's claws the 'knife and fork' by way of distinction, from the fact that the Lobster holds anything by the knobbed claw or fork, and cuts it with the serrated one or knife.



## NOTES—ORNITHOLOGY.

**Sea Gulls and Moths.**—I was unaware until the other day that sea gulls would catch insects on the wing. On June 18th, I was walking, about 9.45 p.m., in the neighbourhood of Ulverston, North Lancashire, and to my surprise saw a number of sea gulls flitting to and fro in the twilight over a field of standing hay grass. They flew close to the tops of the grass, and were obviously catching the moths and other insects as they emerged from the stalks. It is possible that the continuous dry weather has had some effect on the sea birds' natural supplies of food.—E. T. BALDWIN, London, July 10th, 1896.

**Alleged Breeding of the Dartford Warbler in North Yorkshire.**—In 'The Ornithologist' for April last, p. 35, is an account signed by Mr. H. Kirke Swann of the breeding of what purports to be the Dartford Warbler (*Melizophilus undatus*), near Middlesbrough. The particulars therein given are as follows:—On the 1st of June, 1895, Mr. Charles Milburn, of the town above mentioned, found a nest in the neighbourhood built 'in a large furze brake.' The nest contained three eggs, and of these the finder took one. He 'recognised the birds to be Dartford Warblers' from specimens in the Museum, but 'they seemed to be brighter coloured than the Museum ones.' The egg was afterwards submitted to Mr. Jeffreys, a taxidermist, of Tenby, and its identification was agreed to by him; it is now in the possession of Mr. P. V. Ford, an egg-dealer, of Sudbury, Suffolk. I have made application for further details, but the replies received have not contained any of importance. I have also without avail invited Mr. Ford to allow me to submit the egg to some competent authority for examination. The record, as will shortly appear, is an important one, but at present it is impossible not to entertain doubt as to the proper authentication of the occurrence.

The recognition of the Dartford Warbler in Britain was first made known by Dr. Latham in a communication to Pennant in 1773 (see 'British Zoology,' 1776, 8vo, i. p. 389). It is a resident species, breeding probably in every English county bordering on the Channel, and also 'sparingly in the valley of the Thames; perhaps in some of the Midland counties, and, on the sole authority of Mr. C. Dixon [Seebohm, Brit. B., i., p. 415] in the Rivelin valley, in the extreme south of Yorkshire.' (Saunders.—the italics are the present writer's.) Mr. Howard Saunders is of opinion that the species has extended its northern range, but he has not, perhaps, sufficiently allowed for the increased attention paid to British ornithology since the discovery of the bird, and it seems not improbable that it has been overlooked on account of its skulking habits. Mr. Dresser ('Birds of Europe,' ii., p. 441) does not think it breeds north of the Thames except in Middlesex.—W. RUSKIN BUTTERFIELD, St. Leonard's-on-Sea.

We entirely concur with Mr. Butterfield's remarks. As yet there is no satisfactory evidence that this bird has occurred in Yorkshire.—EDS.

## NOTES AND NEWS.

The paper on 'Limnæa peregra' which was read before the Leeds Branch of the Conchological Society last October, has been printed in the Journal of Microscopy and Natural Science for April 1896, and a reprint lies before us. Mr. Nelson gives a well-rounded off account of the species, and the numerous practical notes he includes show the work of a keen and experienced field-naturalist. The illustrations consist of a series of figures of some leading varieties, lent by Mr. John W. Taylor.

Further evidence of the activity with which Mr. Edgar R. Waite, F.L.S., is throwing himself into the investigation of the zoology of Australia is afforded by a reprint of an article by him on the 'Muridæ' or Mice of the McDonnell Ranges in Central Australia, which originally appeared in the Report of the Horn Expedition to Central Australia, Part 2, Zoology, Feb. 1896, pp. 393-409, with plates 25 and 26 from Mr. Waite's pencil. Half a dozen species are noted, mostly new, but one is a familiar friend, the common house mouse (*Mus musculus*), which has managed somehow to reach Central Australia and there spread.



## MOSSES OF SOUTH LINCOLNSHIRE.

REV. WILLIAM FOWLER, M.A.,

*Vicar of Liversedge, Yorkshire; President of the Botanical Section of the  
Lincolnshire Naturalists' Union.*

IN the Botanical Locality Record Club Report for 1878, a list of North Lincolnshire mosses is given, and in the Report for 1879 and 1880 four more species are added to the preceding list for Vice-County 54, making in all 135. The present list for South Lincolnshire, Vice-County 53, contains only 67 species, or about half the number for North. There were, however, three or four observers who collected records for the North Lincolnshire list, while the following list is the result of a visit paid by the writer in 1880. It must be remembered, too, that there are even fewer hunting-grounds for mosses in South Lincolnshire than in North, the bogs and fens of olden times being transformed into 'smiling cornfields,' and the moorlands into pastures for cows and sheep. Still, more than 67 species (most of them common everywhere) are doubtless to be found by any willing to look for them, and the writer will be glad to receive specimens of any so found, for the formation of a supplementary list, to be published at some future time. With regard to elevation, the highest point in the county is near Caistor (in the Northern Division), 549 feet, but the whole of the Southern Division is of considerably less elevation, and the greater part of it is nearly on a dead level, so that many species which are found on the Yorkshire hills cannot be expected to occur. The names in the present list are in the order of 'The London Catalogue of British Mosses and Hepatics,' 1881. The numbers and letters prefixed to the localities are those of the Natural History Divisions of the County (see Map in Nat., Oct. 1895).

- Sphagnum acutifolium* Ehrh. 13 E. Nocton.  
*Sphagnum subsecundum* Nees. 13 W. South Moor.  
*Sphagnum papillosum* Lindb. 13 E. Nocton.  
*Dicranella heteromalla* Hedw. 13 E. Nocton. 16 N. Bourn.  
*Dicranum scoparium* L. 13 E. Nocton. 13 W. South Moor.  
*Dicranum majus* Turn. 16 N. Bourn Wood.  
*Campylopus pyriformis* Brid. 13 W. South Moor.  
*Leucobryum glaucum* Hamp. 13 E. Nocton.  
*Phascum cuspidatum* Schreb. 13 W. Beckingham.  
*Trichostomum tophaceum* Brid. 15 S. Morkery Wood.



- Barbula ambigua* B. & S. 15 N. Ancaster.  
*Barbula muralis* L. 13 E. Nocton.  
*Barbula unguiculata* Dill. 13 E. Nocton.  
*Barbula fallax* Hedw. 15 N. Ancaster. 15 S. Witham.  
*Barbula convoluta* Hedw. 15 N. Ancaster.  
*Barbula tortuosa* L. 15 N. Ancaster. 15 S. Corby.  
*Barbula lævipila* Brid. 16 N. Rippingale.  
*Barbula ruralis* L. 16 N. Rippingale.  
*Barbula intermedia* Brid. 15 S. Bytham.  
*Ceratodon purpureus* L. 16 S.E. Deeping. 15 N. Ancaster.  
*Encalypta streptocarpa* Hedw. 15 N. Ancaster.  
*Grimmia apocarpa* L. 16 N. Aslackby Wood.  
*Grimmia pulvinata* Dill. 16 N. Rippingale.  
*Orthotrichum affine* Schrad. 16 S.E. Deeping.  
*Philonotis calcarea* B. & S. 13 E. Nocton.  
*Webera nutans* Schreb. 13 E. Nocton. 13 W. South Moor.  
*Bryum cæspiticiu*m L. 15 S. Bytham.  
*Bryum argenteu*m L. 15 N. Ancaster. 16 N. Aslackby.  
*Bryum capillare* L. 16 N. Rippingale.  
*Bryum pseudotriquetru*m Hedw. 16 S.E. Deeping.  
*Mnium undulatu*m Hedw. 13 E. Nocton. 13 W. South Moor.  
*Mnium rostratu*m Schrad. 13 W. South Moor.  
*Mnium hornu*m L. 13 E. Nocton.  
*Mnium serratu*m Schrad. 13 W. South Moor.  
*Atrichum undulatu*m L. 13 E. Nocton.  
*Polytrichum formosu*m Hedw. 13 W. South Moor.  
*Polytrichum juniperinu*m Willd. 13 E. Nocton. 13 W. South Moor.  
*Polytrichum commu*ne L. 13 E. Nocton.  
*Fissidens adiantoides* Hedw. 15 N. Ancaster.  
*Fissidens taxifolius* L. 14 W. Aswarby. 16 N. Bourn Wood.  
*Fontinalis antipyretica* L. 16 S.E. Deeping.  
*Leucodon sciuroides* L. 16 S.E. Deeping. 15 N. Grantham.  
*Neckera crispa* L. 14 W. Aswarby. 13 E. Nocton. 15 S. Corby. 16 N. Bourn Wood.  
*Thuidium tamariscinu*m Hedw. 13 E. Nocton.  
*Climacium dendroides* L. 15 N. Grantham.



- Homalothecium sericeum* L. 15 N. Ancaster. 16 N. Bourn.  
16 S.E. Deeping.
- Camptothecium lutescens* Huds. 15 S. Witham Wood.
- Eurhynchium striatum* Schreb. 15 S. Witham. 13 W. South  
Moor.
- Eurhynchium crassinervium* Tayl. 15 S. Bytham.
- Eurhynchium piliferum* Schreb. 13 E. Nocton.
- Eurhynchium Swartzii* Turn. 16 S.E. Deeping.
- Eurhynchium prælongum* Dill. 13 W. South Moor. 16 N.  
Bourn Wood.
- Rhynchostegium ruscifolium* Neck. 13 E. Nocton. 14 W.  
Sleaford.
- Plagiothecium denticulatum* L. 16 S.E. Deeping.
- Plagiothecium sylvaticum* L. 13 W. South Moor.
- Amblystegium serpens* L. 16 S.E. Deeping. 16 N. Aslackby.
- Amblystegium fluviatile* Swartz. 13 E. Nocton. 14 W.  
Sleaford.
- Amblystegium riparium*. 16 S.E. Deeping.
- Hypnum filicinum* L. 15 N. Grantham.
- Hypnum cupressiforme* L. 13 E. Nocton. 13 W. South  
Moor.
- Hypnum molluscum* Hedw. 15 N. Ancaster.
- Hypnum cuspidatum* L. 15 S. Witham Wood. 16 N. Bourn.
- Hypnum Schreberi* Ehrh. 13 W. South Moor.
- Hypnum purum* L. 13 W. South Moor.
- Hylocomium splendens* Dill. 13 W. South Moor.
- Hylocomium squarrosum* L. 13 E. Nocton.
- Hylocomium triquetrum* L. 16 N. Bourn Wood.

February 25th, 1896.

### NOTES AND NEWS.

In the *Annals of Botany* for March 1896, Prof. R. J. Harvey Gibson, of Liverpool, publishes a paper, illustrated by a plate, entitled 'Contributions towards a Knowledge of the Anatomy of the genus *Selaginella*, Spr.'

'A Museum Enemy—Dust' is the title of a paper in the *Records of the Australian Museum*, No. 7 of Vol. 2, Jan. 1896, by Mr. Edgar R. Waite, F.L.S. In it Mr. Waite gives an account of experiments carried out by himself, both at the Leeds Museum and at Sydney, the initiative being in the first instance due to Mr. T. Pridgin Teale, F.R.S., of Leeds. But the result of the further trials at Sydney of an idea of Mr. Waite's own proved much more successful than those made at Leeds, and the flexible oiled silk diaphragm after fifteen months' trial kept out all dust, under conditions more trying than ordinarily.

Aug. 1896.



*NOTE—HEMIPTERA.*

**Mussel Scale at Wigton, Cumberland.**—On June 2nd I received the following letter from a gentleman at Wigton, Cumberland:—‘I enclose herewith small twig of plum tree infested by the deposit of some insect, which is causing great destruction here, mostly of the plum trees, but it is also found on both the apple and rose trees. If you open the brown globes attached to the stems, and empty the powder-like contents on to a slide and examine under the microscope, you will find them to be beautiful eggs (apparently) in large numbers. Perhaps they are common to you, but I have not noticed them before, and I thought they might interest you. If all these eggs hatch the swarm of insects must be enormous.’ The box contains specimens of the Mussel Scales (*Mytilaspis pomorum* B.), a very widespread form of *Coccus*, which infests various fruit and other trees. Its history, and the precautions to be taken for its extermination, are given in Miss Ormerod’s admirable ‘Manual of Injurious Insects,’ 2nd ed., 1890, p. 297 et seq.—HILDERIC FRIEND, Cockermouth, 16th June, 1896.

*NOTE—GEOLOGY.*

**Arctic Plants and Apus Remains at Kirkmichael, in the Isle of Man.**—The following extract from the Report of the Director-General of the Geological Survey for 1895 records the occurrence of Arctic plants and Apus remains in the Isle of Man:—‘The completion of the survey of the northern end of the Isle of Man has entirely confirmed the conclusions announced in my last report as having been formed by Mr. Lamplugh regarding the history of the superficial deposits of the island. This officer has continued the separation of the insular from the extra-insular drifts, the former being found by him to occupy the hilly ground while the latter are spread over the northern plain and touch the flanks of the island in projecting portions like Maughold Head and Clay Head. In addition to the striated rock-surfaces previously reported he has obtained many new examples, one of these lying within 200 feet of the top of Snaefell, the highest point in the island. From the direction of the striæ now traced over the whole district, it is ascertained that the general course of the ice-sheet was from a point slightly west of north, but that along the eastern side of the island it swept round the flanks of the hills. During the melting of the ice local sheets of freshwater appear to have gathered round the base of the slopes, and to have caused by their drainage curious trench-like gullies in the hills at many points where no stream can flow at present.

Reference was made in my last Report to certain peaty layers which were met with in sinking a well in the high level gravel at Kirkmichael, and to the determination by Mr. Clement Reid of the seeds found in this peat. As all these seeds belonged to bog plants still indigenous in the Isle of Man, and widely distributed over the globe, they furnished no precise information as to the climate of the period in which the peat was accumulated. That they were relics of the glacial flora seemed tolerably certain from their occurrence in these upper gravels. But this question has now been definitely settled by a further examination of the peat material by Mr. James Bennie, the skilled fossil collector of the Scottish branch of the survey, who by carefully washing this material has succeeded in detecting abundant remains of what Mr. Reid has identified as an Arctic Willow (*Salix herbacea*), *Carex alpina*, an Alpine plant confined in Britain to the higher Scottish mountains, and also of the little arctic crustacean *Apus* (*Lepidurus*). The latter has not hitherto been found so far south in Britain. I referred to it last year as having been detected abundantly by Mr. Bennie in the glacial deposits of Fife. Thus the glacial age of high-level gravels of the Isle of Man is completely established.

This interesting discovery led to an examination of several other freshwater deposits in the same districts. But these were all at lower levels, and the vegetable remains yielded by them furnished no satisfactory indication of the climate in which they flourished.

From Appendix to the 43rd Report of Department of Science and Art, p. 13 [communicated by Mr. James Bennie].



# A CRITICAL CATALOGUE OF LINCOLNSHIRE PLANTS:

## FROM ALL KNOWN SOURCES.

REV. E. ADRIAN WOODRUFFE-PEACOCK, L.Th., F.L.S., F.G.S.,  
*Vicar of Cadney, Brigg; Organising and Botanical Secretary of the Lincolnshire Naturalists' Union; Curator of the Lincolnshire County Herbarium.*

### NINTH PAPER.

See explanations given in the preceding papers.

Nat., 1894, pp. 85-92, 133-140, 213-220, 257-264, 337-344. Nat., 1895, pp. 95-102, 289-302.  
Nat., 1896, pp. 53-60, 181-188.

### SALICINÆ (continued).

- Salix purpurea** L.† Native. Divs. 1.6.8.13. Herb. Brit. Mus.  
f. **Lambertiana** Sm.† Div. 8. Louth, 1856; Messrs. Bogg.  
f. **FORBYANA** Sm. Div. 12; P. Thompson.  
*SALIX PURPUREA* × *VIMINALIS*. Divs. 12.15. (*S. rubra* Huds.)  
**Populus alba** L.† Native. Divs. 2.3.6.7.13.  
**Populus canescens** Sm.† Native. Divs. 3.13.  
**Populus tremula** L.† Native. Divs. 2.7.8.12.13.16.18.  
VAR. **villosa** Lange. Div. 5. Laughton Low Warren, 1881-82;  
Rev. W. Fowler, B.R.C. in Herb. Brit. Mus.  
**Populus nigra** L.† Alien. Divs. 6.12.13.18. 'General, but  
always planted'; F. A. Lees. I have made few notes.

### EMPETRACEÆ.

- Empetrum nigrum** L.† Native, but I fear extinct. Divs. 1.2.12.  
'*Empetrum* and several other mountain plants are found upon  
the Cranbury ground'—a Common belonging to Wainfleet and  
Friskney in the East Fen, Div. 12.—'and in no other part of  
the fens.' Arthur Young's *Lincs. Agric.*, 1799, p. 232. Used  
to grow on Frodingham Common in 1856.

### CERATOPHYLLÆ.

- Ceratophyllum demersum** L.† Native. Divs. 2.3.9.11-13.15-18.

### CONIFERÆ.

- Taxus baccata** L.† Native at one time, if not truly so now.  
Divs. 2.3.7.8. See L. Edwards' *Witham*, 1769; Sir J. Banks'  
*Journ. of Science and Art*, vol. 2, p. 244. Yews are found in  
our carrs and fens, and are locally called 'Wirethorn.' Where  
the soil is sandy and gravelly they are generally met with, but  
not invariably. Where the Oak, Yew, and Fir are found  
together, the Yew lies above the Oak, but below the Fir, as



a rule. This species was badly cut by the great frost of 1895, but in very few cases killed by it, its power of resistance proving much greater than that of the Gorse—*Ulex europæus* L.

**Pinus sylvestris** L.† Native, but often planted. Divs. 1-3.6-8. 10-13.16. See F. A. Lees, *Naturalist*, 1877, p. 4; A. Stark's *Parish of Lea*, 1841, p. 7; Sir J. Banks as above; J. C. DeSerra, *Phil. Trans.*, vol. 89, p. 145 (1797); P. Thompson's *Boston*, 1820, p. 276. The 'Scotch Fir' requires a rich soil, and it is essential that the substratum be dry. It seeds and renews itself spontaneously in every suitable locality.

#### HYDROCHARIDÆ.

**Elodea canadensis** Michx.† An alien, first noted in the river Trent in 1848. Divs. 1-7.9-18. Recorded for this county by the late Dr. B. Carrington, *Bot. Gaz.*, 1849, pp. 323-4. See long account in Miller and Skertchly's *Fenland*, 1878, pp. 307-15. After thrusting out many of our native species, 'it attained its maximum of commonness about 1870. It seems dying out again over large areas now.'—F. A. Lees. Compare with this what F. M. Bailey, F.L.S., writes in the *Bot. Bulletin* No. 11 (July 1895), of the Queensland Department of Agriculture, Brisbane, on our very next species *Hydrocharis*. About twenty years ago this species became most abundant in the still waters round Brisbane, but for the last fifteen years the author has not met with a single specimen; indeed, he stated he knows of no Queensland habitat of the plant. May *Elodea* follow this example quickly.

**Hydrocharis Morsus-ranæ** L.† Native. Divs. 1-6.8-18.

**Stratiotes aloides** L.† Native, but dying out fast, and not to be found in many of its old stations recorded here even now. Divs. 2.5.6.9-12.14.16-18.

#### ORCHIDÆ.

**MALAXIS PALUDOSA** Sw. Native, for there is no reason to doubt the record though we have no specimen, and the species is extinct. Horncastle Moor, before 1820; Ward-Weir *List*. Div. 10.

**LIPARIS LOESELII** Rich. Native. Lincolnshire; F. W. Burbridge in *Gard. Chron.*, 1884, p. 144. 'Some years ago a correspondent, a lady, who was quite a stranger—I have never heard from her since—sent to me a specimen of *L. Loeselii*, in flower, growing on a little tuft of rushes—*J. effusus*, I believe. I remember her note and specimen came from Lincoln (City), and what especially impressed the fact on my mind was that I had never



myself seen the *Liparis* before alive. I have often since regretted that I did not ask where it grew ; and I also wish that I had pressed and preserved the specimen.'—F.W.B., Curator of Bot. Gard., Trinity Coll., Dublin, by letter.

**Neottia nidus-avis** Rich.† Native. Divs. 2.7.8.10.11.13.15.16.

**Listera ovata** R.Br.† Native. Divs. 1-3.5-17.

**Spiranthes autumnalis** Rich.† Native. Divs. 12(2).15. Specimens from **N.** and **S.** in the Cty. Herb., Lincoln Castle.

**Epipactis latifolia** All.† Native. Divs. 8.11.15.16.

**Epipactis media** Fr.† Native. Divs. 7.11(2). (F.A.L.).

**Epipactis violacea** Boreau.† Native. Div. 16. On Cornbrash only, in dense tufts. Mason and Peacock, 1895 (Ar. B.).

**Epipactis palustris** Crantz.† Native. Divs. 4.5. Only found in one spot in the latter Div. now, though the Cty. Herb. has specimens from both.

**Orchis pyramidalis** Scop.† Native. Divs. 2-4.6.8-16.

**Orchis ustulata** L.† Native. Divs. 2.3.5.13.15.16.

*ORCHIS PURPUREA* Huds. Lincolnshire. Dr. B. Carrington in *Bot. Gaz.*, 1849, pp. 323-324. He calls it *O. fusca* Jacq. No doubt he met with a very large specimen of *O. ustulata* L., like the Lincolnshire specimen in the Cty. Herb., from the collection of the Rev. Thomas Owston, and mistook it for *O. purpurea*.

**Orchis morio** L.† Native. Divs. 2-7.9-17.

f. **flore albo.**† Divs. 2.3.7.12. In this parish I have seen every shade from the darkest of dark purple to white in one field.

**Orchis mascula** L.† Native. Divs. 2.5-8.10-17.

f. **flore albo.** Div. 13.

**Orchis incarnata** L.† Native. Divs. 1.2.6.8-11.14.

VAR. **angustifolia** Bab.† Div. 9. (F.A.L.).

**Orchis latifolia** L.† Native. Divs. 2-5.7-9.11-16. Often an aggregate, including the last, I fear.

**Orchis maculata** L.† Native. Divs. 1-16.

*ACERAS ANTHROPOPHORA* R. Br. Div. 6. Gate Burton Wood, 'plentiful in'.—Rev. T. V. Wollaston in *Phyt.*, 1843, p. 523. See F. A. Lees in *Science Gossip*, 1870, pp. 189 and 211. He did not find it, and I believe once again *Listera ovata* was misnamed. It is certainly found there, and the soil is unsuitable for *Aceras*.

**Ophrys apifera** Huds.† Native. Divs. 2.3.6-11.14-16.

**Ophrys muscifera** Huds.† Native. Divs. 2.11. It is also said to have been found in Ancaster Quarries in Div. 15, but I have never seen a specimen.



**Habenaria conopsea** Benth.† Native. Divs. 2-4.7.8.10.11.14-16.

**Habenaria viridis** R. Br. Native. Divs. 3-7.8.10-15.

**Habenaria bifolia** R. Br.† Native. Divs. 1.4.7. The rare marsh species.

**Habenaria chloroleuca** Ridley.† Native. Divs. 2.4-8.10.11.13. 15.16. Limestone and Chalk species.

## IRIDEÆ.

**Iris foetidissima** L.† Native. Divs. 3.11.16. Only to be found in Div. 11 now, I fear. It was in Corby Wood a few years ago.

**Iris Pseudacorus** L.† Native. Divs. 1-14.16-18.

*CROCUS NUDIFLORUS* L. Native, I suppose I ought to say, for it has undoubtedly been carried there (Div. 6) ages ago by the Trent from its Nottingham home. It is almost extinct, and so rare I have not taken a specimen for the Cty. Herb. Miss Anderson.

## AMARYLLIDEÆ.

**Narcissus Pseudo-narcissus** L.† Alien always, though in some cases it has been here for ages. Could the Romans have brought it first? There are various varieties, some of the very oldest. Divs. 2-4.6-8.10.13.15. It is curious to remark how it avoids the new fen lands and sea coast.

**Narcissus biflorus** Curtis.† Alien. Div. 4. Rev. M. G. Watkins.

**Narcissus poeticus** L.† Alien. Div. 4. J. Cordeaux.

**Galanthus nivalis** L.† Alien, but a very old one. It cannot stand the bite of cattle, and is soon lost on pasture land. Divs. 2.3.7.8.10.13. This species still grows on the site of a township, called Gainsthorpe, in the parish of Hibaldstow, Div. 2, from which the population was wholly swept away in the Black Death of 1349-69, tradition says.

## DIOSCOREÆ.

**Tamus communis** L.† Native. Divs. 1-3.6-8.10-16.18.

## LILIACEÆ.

**Ruscus aculeatus** L.† A planted alien, which does not seed to my knowledge. Divs. 2.3.5.8.10.11.

**Asparagus altilis** L.† This garden species is found bird-sown or as an escape in Divs. 5.9.18(4).

*ASPARAGUS MARITIMUS* L. Has never been found in Lincolnshire to my knowledge. J. T. S. Syme records it in the 3rd ed. of the *English Botany* as reported from this country. Mr. F. A.



Lees records it again, in the *Outline Flora*, on the authority of Dr. Martin Lister and Mr. J. B. Davy. Mr. Davy tells me his specimen was certainly *altilis*. I read Dr. M. Lister's remarks, see *Journey to Paris in the year 1698*, 3rd ed., p. 227, in a different way to my friend Mr. Lees. But I think the matter is fully set at rest by J. Gerarde's *Herbal*, 1597, p. 948:—  
 'Asparagus sativus. Garden Sperage. We have in our marrish and lowe lands neere unto the sea, a Sperage of this kinde, which differeth little from that of the garden, and yet in kinde there is no difference at all, but only in manuring: by which all things, or most things, are made more beautifull and larger. This may be called *Asparagus palustris*, *Marish Sperage*. It groweth in the meadows near Moulton in Lincolnshire, and at North Moulton, in Holland, a part of Lincolnshire.' This, the first record for this county, as I read, says in modern language the variety is *altilis*, though not so large, well grown, or tasty, as the garden type.

**Polygonatum multiflorum** All.† Planted alien. Div. 7.  
 Benniworth House Plantation, 1856; Messrs. Bogg.

**Maianthemum convallaria** Weber.† Native, I believe. Div. 10.  
 George Gosling, an old labourer on the estate, has known it in its present locality for over forty years, he told me on the spot. Messrs. F. A. Lees, J. S. Sneath, L. Creswell, B. Crow, and I, thanks to the kindness and hospitality of Mr. H. M. Hawley, the squire, were able to examine the ground it grows on most carefully. In its native Yorkshire station, due north, it grows on the detritus of oolitic Limestone. In Lincolnshire it flourishes on the ancient gravel of the old river Trent, which unquestionably flowed along the course of the present river Witham, but with a much greater body of water and force, carrying the denudings of the cliff hills and spreading them out over its course. There were no aliens to be found near the *Maianthemum*. On the other hand it was growing with the characteristic *Rubus suberectus* Anders. and *Convallaria majalis* L. in one patch sixty by forty yards, and in another small one about three yards square, on the other side of a gamekeeper's footpath. The locality is not near a house, and the wood is perfectly free from aliens and has the characteristic flora of sandy limestone woods of the rest of the county, or where it stands on boulder clay the especial flora of that stratum, as Mr. F. A. Lees and I most carefully noted. This property was once part of the estate of Sir Joseph Banks, our great Lincolnshire botanist. He made experiments with foreign grasses, see W. T. Aiton's *Hort. Kewensis*, 1810, vol. 1,



p. 176, but there is not a particle of evidence to show that he ever attempted anything without a useful agricultural purpose, or that he had the knowledge of the strata and soils to attempt introducing a small and not striking species like *Maianthemum*. Another large wood not more than a quarter of a mile away on the same estate stands entirely on the ancient river gravel, and would have been a more suitable locality. During the last six years Rhododendrons and Foxgloves have been planted and sown in the wood by Mr. H. M. Hawley, but not near the *Maianthemum* locality. Before that time the wood was absolutely free from aliens. Miss Rawnsley brought this species to my notice.

**Convallaria majalis** L.† Native, and common enough in sandy limestone and chalk woods. Divs. 2.3.6.7.8.10.13.16.

**Allium Scorodoprasum** L.† Native in Div. 2. Divs. 2.5. My friend Mr. F. A. Lees says in the *Outline Flora*:— [Scorodoprasum (?) 1847, Anderson. ‘Arenarium.’ Probably the preceding]. The preceding species was *A. carinatum* L., and the square brackets excluded it, as I thought rightly at the time from our country list, despite the record for Div. 5 of the Miller-Anderson *List*. Before 1895 *A. Scorodoprasum* L. turned up in Miller’s locality and in Broughton Wood, and also the original MS. of the Rev. J. K. Miller (1842) had been found and printed. This proved that Miller’s plant was the *A. arenarium* L. and Sm., Engl. Flo., vol. 2, p. 134—but not of Smith’s Engl. Bot., 1st ed., Tab. 1358, which is *A. sibiricum* L., though the description that accompanies it is that of *A. arenarium* L. Mr. Lees wrote to me later (20/6/95);—‘All that Miller’s *Walkeringham Flora* record of *A. arenarium* Sm. does is to remove the brackets and query from *A. Scorodoprasum* L., in my *Outline Flora*. I saw it by Trent side above Gainsborough, towards Walkerith, in 1893, myself. I had it in my vasculum and showed it to you.’ He did.

**Allium vineale** L.† Native. Divs. 5.7.11.15.16.

VAR. **compactum** Thuill.† Native. Div. 9. Mablethorpe, 1893; Lees and Peacock.

**Allium oleraceum** L.† Native. Divs. 2.5.7.9.

**Allium carinatum** L.† Alien. Divs. 5.15. (F.A.L.).

*ALLIUM SCHENOPRASUM* L. A Thompsonian record for Div. 12.

*ALLIUM SIBIRICUM* L. See above under *A. Scorodoprasum* L. This first appeared in the Britten-White *List*, of 1872. Mr. J. Britten has told me it was his rendering of the Miller-Anderson *A. arenarium* of 1847. If Mr. Miller had named from the



figure in Smith's *Engl. Bot.*, as was most probable, his species would have been typical *A. sibiricum* L.; and a not strikingly wonderful ballast casual at Gainsborough, which has been a port for over a thousand years.

**Allium ursinum** L.† Native. Divs. 1.2.7.8.10.11.13.16.

*MUSCARI RACEMOSUM* Mill. Alien. Div. 6. Lincoln, 5.1879. A mere garden outcast. Mr. J. T. Burgess' *Paintings*.

*SCILLA VERNA* Huds. Alien, an outcast like the last, or perhaps purposely planted. Div. 11. Eresby, Spilsby, 5.1879. Mr. J. T. Burgess' *Paintings*. *Naturalist*, 1893, p. 332.

**Scilla festalis** Salisb.† Native. Divs. 1.2.5-8.10.11.13-16.

**f. flore albo.** Divs. 2.5.7.10. **f. flore roseo.** Divs. 2.5. These forms are only sporadic.

**Ornithogalum nutans** L.† Garden escape. Div. 10(2).

**Ornithogalum umbellatum** L.† Garden escape or planted. Divs. 2.9.13.

**Fritillaria meleagris** L.† Garden escape. Divs. 2.5.6.7.15.

**Colchicum autumnale** L.† Native. Divs. 1.2(5).3.5.

**Narthecium ossifragum** Huds.† Native. Divs. 1.2.5.7.10.14.

**Paris quadrifolia** L.† Native. Divs. 2.3.5-8.10.11.13.15.16. Sometimes with five leaves.†

#### JUNCACEÆ.

**Juncus bufonius** L.† Native. Divs. 1-7.9.11.15-18.

**Juncus squarrosus** Jacq.† Native. Divs. 1.2.5.7.10.13.

**Juncus compressus** Jacq.† Native, and very rare. Divs. 5.16. Deeping, somewhat sparingly in one place by the Cross Drain, 1883; H. W. Beeby. *J. of B.*, 1884, p. 21. Specimens in his Herb., and in that of the late G. Nicholson, of Kew. Gainsborough neighbourhood,† from the collection of the Rev. R. H. Charters, about 1867.

**Juncus Gerardi** Loisel.† Native. Divs. 1.2.4.9.11.12.18.

**Juncus glaucus** Leers.† Native. Divs. 1-18.

**Juncus effusus** L.† Native. Divs. 1.3-14.16.

**Juncus effusus** × **glaucus.** Div. 5. On Scotton Common, 1867; Rev. R. H. Charters. It turned up again in 1893—where the two species grow side by side.

**Juncus conglomeratus** L.† Native. Divs. 1-5.7-9.11-14.16.

**Juncus maritimus** Lam.† Div. 9(3). H. C. Watson and Rev. W. Fowler. It is a rare species on our coast. The **S.** in



the *Outline Flora* was a misprint for **N.** There is no record for **S.** yet.

- JUNCUS ACUTUS* L. Div. 12. A Thompsonian record.  
**Juncus supinus** Moench.† Native. Divs. 1.2.5.7-11.13.14.  
 VAR. **uliginosus** Roth.† Native. Divs. 3.13.14.  
 VAR. **subverticillatus** Wulf.† Native. Divs. 1.14.  
**Juncus obtusiflorus** Ehrh.† Native. Divs. 1-4.9.11.13.14.16.18.  
**Juncus lamprocarpus** Ehrh.† Native. Divs. 1.3-9.11-14.16.  
**Juncus acutiflorus** Ehrh.† Native. Divs. 1-5.7-11.13.14.16.17.  
**Luzula vernalis** DC.† Native. Divs. 2.3.5.7.8.11.13.14.16.  
**Luzula maxima** DC.† Native. Divs. 7.8.11.13.15.16.  
**Luzula campestris** DC.† Native. Divs. 1-3.5-16.  
**Luzula erecta** Desv.† Native. Divs. 1.2.5.7.10.11.13.15.  
 VAR. **congesta** Koch.† Native. Divs. 1.2.5.7.10.11.

## TYPHACEÆ.

- Typha latifolia** L.† Native. Divs. 1-14.16-18.  
 VAR. *MEDIA* Syme. Div. 16. In several places by the South Drove Drain, near Littleworth, 1883; W. H. Beeby, *J. of B.*, 1884, p. 20.  
**Typha angustifolia** L.† Native. Divs. 1.6.7.9-14.16.18.  
**Sparganium ramosum** Huds.† Native. Divs. 1-14.16-18.  
**Sparganium simplex** Huds.† Native. Divs. 1.3-7.9-14.16.17.  
**Sparganium minimum** Fr.† Native. Divs. 1.5.7.12.13.16.

## AROIDEÆ.

- Arum maculatum** L.† Native. Divs. 1-3.7-16.  
**Acorus calamus** L.† Native, or very old alien. Divs. 11.12.16.  
 It is flowering this season.

## LEMNACEÆ.

- Lemna trisulca** L.† Native. Divs. 1-7.9.11-18.  
**Lemna minor** L.† Native. Divs. 1.3-7.9.11-14.16-18.  
**Lemna gibba** L.† Native. Divs. 3.4.6.9.11-13.16.18.  
**Lemna polyrrhiza** L.† Native. Divs. 7.11.12.16.

## ALISMACEÆ.

- Alisma Plantago-aquatica** L.† Native. Divs. 1-18.  
 VAR. **lanceolatum** Afz.† Divs. 2.4.16.17.  
**Alisma ranunculoides** L.† Native. Divs. 1.3.5.7.9-11.13.14.16.



## GOSSIP ON NATURAL HISTORY.

R. H. MEADE, F.R.C.S.

Nature, enchanting nature . . .  
 Strange that so fair a creature should yet want  
 Admirers, and be destined to divide  
 With meaner objects, ev'n the few she finds!—COWPER.

THE advent of spring always brings great pleasure to the naturalist. He hails with delight the awakening of nature from her winter sleep, when the flowers begin to blossom, the hibernating animals to arouse from slumber, and the migratory birds to return from their southern travels.

How sweet it is to see the fields and trees turning green, to notice the Catkins on the Willows, and to hear the Cuckoo!

Birds are among our earliest harbingers of spring; besides the true migrants there are some which remove from one part of the same country to another at different seasons; and others which have a fondness for breeding in or near human habitations, but retire to the woods and fields when they have reared their families. I especially allude to the Rooks, Jackdaws, and Starlings, which are fond of each other's society, and flock together in the autumn and winter in great numbers.

Starlings (*Sturnus vulgaris*), often called Stares or Sheepstares (I suppose from their habit of often sitting upon a Sheep's back), are very pretty birds and very clever and amusing when tamed; they somewhat resemble the Blackbird at a distance, but are less elegant in shape, want the dark rich yellow beak of the male, and when looking for worms upon the lawn may be noticed to run or walk, instead of hopping like a Blackbird. They are very fond of chattering, and when congregated in flocks in the evening have been heard to use a variety of notes as if they were talking to each other, and relating their day's adventures before going to sleep.

The Starling is said to be the first to return to the houses in the spring. The Rev. Leonard Jenyns, in his list of periodic phenomena, gives the 21st of January as the *mean* day that they resort to buildings, says that their young are fledged by the 19th of May, and that they collect in flocks by the 24th of August. The same author gives the 18th of February as the date when Jackdaws (*Corvus monedula*) resort to steeples and chimneys, and the 3rd of March as the time for Rooks (*C. frugilegus*) to begin to build. We must remember, however, that Mr. Jenyns lived in Cambridgeshire, where



the seasons are earlier than in Yorkshire. These birds (Starlings) certainly appear annually in the same places at about the same time. They are commonly called Shepsters in Bradford, and I remember an old clergyman, who had never heard this name, being in the vestry of his church one Sunday morning in early spring just before service, when his clerk or factotum came up to him and said, 'Please, sir, the Shepsters have come.' My friend was rather in haste, so he answered sharply, 'Shew them into a pew ; shew them into a pew.'

One of the first of the true migrants to appear in this neighbourhood is the Wheatear or Whiterump (*Saxicola œnanthe*). It usually arrives about the middle of March and builds in the loose stone walls by which the fields are divided. For several years in succession I noticed this bird about the same time in the same place, viz., in the corner of a field at Shearbridge, close to Bradford, where a manure-heap was placed. I suspect that it was feeding upon the minute dung flies (*Borborus equinus*), which are about the earliest insects that appear in the spring.

The singing of birds does not become general before the beginning or middle of May, though some commence much earlier. One of the first to be heard is the Missel Thrush or Stormcock (*Turdus viscivorus*), which often begins to sing at the end of January or beginning of February ; and may sometimes be heard while it is blowing and raining, whence the derivation of one of its names ; the other name was given from its fondness for the berries of the mistletoe. It was formerly believed that this plant was only propagated by those seeds which had passed through the digestive organs of this bird, whence arose the old proverb, 'Turdus malum sibi cacat.' The Song Thrush (*Turdus musicus*) and the Skylark (*Alauda arvensis*) also begin to sing very early in the year.

When the number of singing birds becomes great, it requires a musical ear and a special training to know their notes from each other. It is very interesting to sit and listen to them in a sylvan spot. The late Sir Richard Owen told me that when he first went to live in Richmond Park, at Sheen Cottage (which the Queen gave him for his life), he sometimes in fine weather in early summer got up as soon as it was light and sat for an hour or two in the garden to listen to the birds, which would begin to sing one by one until the full concert was reached. He was very musical, and took great interest in their various notes.

Some interesting observations have been made respecting the time when different birds begin to sing on a summer's morning. The following is a list of those whose notes reached the ear of a listener in June :—



			a.m.
Skylark ( <i>Alauda arvensis</i> )	...	...	at 2.0
Thrush ( <i>Turdus musicus</i> )	...	...	" 3.0
Yellowhammer ( <i>Emberiza citrinella</i> )	...	...	" 3.0
Swallow ( <i>Hirundo rustica</i> )	...	...	" 3.0
Chaffinch ( <i>Fringilla cœlebs</i> )	...	...	" 3.3
Blackbird ( <i>Turdus merula</i> )	...	...	" 3.10
Pettychaps ( <i>Curruca hortensis</i> )	...	...	" 3.25
Linnet ( <i>Linaria cannabina</i> )	...	...	" 4.0
Bunting ( <i>Emberiza miliaria</i> )	...	...	" 4.0
Greenfinch ( <i>Fringilla chloris</i> )	...	...	" 4.0

After four o'clock it has been noticed that there is generally more or less cessation of song for awhile.

To the Lark has been accorded the first place by many observers, he sometimes beginning to sing before it is light.

Turning from birds to plants, the memory of the joyous days of our childhood returns at the sight of the early spring flowers.

The nodding Bluebells (*Scilla nutans*) spread in sheets in the woods; the graceful Anemone (*Anemone nemorosa*); the delicate little Woodsorrel (*Oxalis acetocella*)—the original Irish Shamrock—with many others engage our attention. A showy flower, filling the ditches and swampy places, is the Marsh Marigold (*Caltha palustris*), called a Kingcup by children, in comparison, I suppose, with its smaller sisters the Buttercups. There is a rare two-winged fly which frequents the flowers of the *Caltha* in some places; I captured numerous specimens some years ago upon this plant in Nab Wood, near Shipley, but never found it anywhere else. It is the *Cælogyia mollissima* Hal.

I am always pleased to see the shining yellow petals of the Lesser Celandine (*Ranunculus ficaria*), it is so bright and one of the first spring flowers to appear. In old botanical works and herbals, the leaves of this plant are said to be good eating along with other herbs. Another very common plant in woods, the Dogs' Mercury (*Mercurialis perennis*), is also recommended to be eaten, dressed like Spinach. Many other herbs now only looked upon as weeds were also used as food by our ancestors and called pot herbs; some foreign plants were also introduced and eaten in the same way, and have now become naturalised, and are mostly found in the neighbourhood of houses.

What was the reason that so many more common green vegetables were eaten formerly than are now, especially by the poorer classes? There is no doubt that they were found necessary for the preservation of health before the introduction of the potato. This



valuable tuber has superseded the necessity for much other vegetable food, for besides the nutritious qualities it contains an acid which is a valuable antiscorbutic.

When the potato disease first appeared in this country and in Ireland, and there was quite a potato famine, in common with many other medical men I saw a number of cases of land scurvy characterised by bleeding from the gums and other parts. Potatoes were then very bad and very scarce, but could still be obtained, and I at once said in those cases, 'You *must* eat them,' and found that they soon cured my patients.

### NOTES—BOTANY.

**Tower Cress near Cocker mouth.**—During the month of June 1895 I had occasion to visit Isel about 4 miles from Cocker mouth in a northerly direction, and there I found a few plants of the Tower Cress (*Turritis glabra* L.) in fruit. Being in the neighbourhood again this year exactly at the same date, I visited the spot in order to ascertain what had been the result of last year's seeding. I found some twenty to thirty huge and healthy plants, some not less than four feet in height, and all again in perfect fruit. The plant is evidently a native here, and has every chance to become more widely distributed. It would be interesting to try and ascertain whether the herbage on the bank is removed in early summer for fodder, hay, or either, and whether as a consequence the plant becomes transferred to other localities or not. I fear I shall be unable to ascertain this.—HILDERIC FRIEND, Cocker mouth, 16th June, 1896.

**Red Hawthorn.**—The long period of drought which has occurred during this spring and early summer has been productive of certain very visible phenomena in the Rosacean flowers of this valley. Thus the petals of the Common Hawthorn (*Crataegus oxyacantha*), which in other years and in many individual shrubs well known to me have remained almost colourless from budding to near final decay, have this year in the majority of cases exhibited quite a glow of pink towards the latter part of their blooming period. It would seem that a dry atmosphere and abundant sunlight have favoured the chemical development of certain constituents of the petal sap. Under ordinary circumstances in this plant the substances which result from the waste-products of chlorophyllian assimilation stop, as it were, at rutin, which may be regarded as an intermediate tannoid compound incapable of producing red or blue colours. Rutin is found in considerable quantity in the white flowers of Hawthorn, Dog Rose, Wild Cherry, etc., but these contain no or a mere trace of tannin, i.e., so long as they remain white. When, however, as aforesaid, their corollas exhibit an uncustomary tint of pink or red, it is time for a botanical chemist to look out and see if anything unusual is contained therein. This accordingly I have been at pains to do. I have made several analyses of this year's flowers, and in all cases where the red colour has appeared there has been found, in addition to rutin, a very notable quantity of tannin. The connection, therefore, between tannin and pigment is clearly demonstrated. Thus also, to cite another instance, in the common Dog Rose with a nearly white corolla there is no tannin; while in the most deep-tinted garden Rose there is abundant tannin and hardly any rutin or bitter principle. It may be interesting to mention that the red colouring matter of the Hawthorn flowers differs in no material particular from the familiar red of the Rose; both have undoubtedly the same chemical origin, but while the latter is developed under the ordinary atmospheric conditions of British climate, the former only appears when these are unusual and analogous to those which prevail in a more northern latitude at a corresponding period of the year.—P. Q. KEEGAN, Patterdale, Westmorland, July 9th, 1896.



## SPECIALISATION OF LEAPING LEGS OF LOCUST.

HENRY CROWTHER, F.R.M.S.,

*Curator of the Philosophical and Literary Society's Museum, Leeds.*

A LARGE Locust, probably *Ædipoda tartarica*, a species which is being imported to this country in vegetables from the south of Europe, was left with me for a short time by Miss Parkinson, of Harrogate, who had secured it in a Leeds greengrocer's shop. It lived for about two weeks, and though I offered it many kinds of food I was unsuccessful in tempting it to eat. Up the sides of the large glass bottle in which it was kept, it had no difficulty in climbing. Locusts are saltatorial insects, their hinder legs being strongly developed to subserve this purpose, but a special modification, of which I have seen no record, to ensure the full purchase of the legs when leaping, may be of interest. The observations which follow are from the Leeds specimen.

The femur or thigh of the hinder leg is very large and tapers somewhat suddenly towards the distal end, and then enlarges into a knob. Within the upper portion of the knob the tibia or shank is jointed, whilst the outer part of the enlargement acts as a guide and stay to the shank. If the tibia be folded on the femur it will be found that the superior edge of the former fits into a ventral groove of the latter. In this closed or locked position the tibia has no lateral movement.

I pass over, as it does not concern us here, a description of the arrangement of the strengthening bars of the femur, which remind one of the flanges and diagonals of a Warren girder.

All the femora and tibiæ of the insect are adorned with a few straggling, long, simple, white hairs of no special interest.

The tibia is somewhat straight, of about one-quarter the thickness of the femur, its superior aspect, when locked, or anterior when the insect is walking, is rounded to fit the inferior groove of the femur, and carries at its distal end two pairs of tibial spines which are long and strongly recurved. On its inferior, or posterior, aspect are about twenty-four slightly inclined, sharply pointed, chitinous spines, tipped with black. They are so arranged in a double row as to form a spined groove, with fourteen spines; counting two of the four superior distal spines, which are produced and curved sufficiently to fall in line with the inferior tibial spines, on the inner side of the tibia, that nearest the body of the insect,



and ten, counting the other pair of the superior spines, on the outer side of the shin. The tarsus terminates with a deep sucker which is prolonged beyond the two large sharply-recurved spines which the onychium, or last joint of the foot, carries. If the foot be folded beneath the shank, just as the latter organ was folded beneath the thigh, it will be found to fit between the spines, and its claws will be seen to act as accessory spines to those on the shank.

The fore and intermediate legs are ordinary walking and climbing limbs, with one special modification, in the presence of ten to twelve small spines on the inner sides of the shanks, and not on the outer, as in the leaping legs. These assist in giving a rigid purchase to the limbs when the straight thrust of the leap is taken.

On one occasion, not long before it died, this Locust leaped over thirty times its length ( $2\frac{1}{4}$  inches). On rough surfaces the armature of spines gives grip in the leap; from glass, from which it sprang with apparently equal facility, the suckers, especially the deep terminal ones of the feet, are used. Under both conditions the interlocking of the limbs prevents lateral thrust.

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#### NOTE—LEPIDOPTERA.

**Notodonta dictæa in Leeds City.**—On the 24th of this month I found an example of the Swallow Prominent at rest on mountain ash, at Meanwood, Leeds.—S. W. JUDGE, Leeds, April 1896.

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#### NOTES—BOTANY.

**Rare form of Guelder Rose in Cumberland.**—As one approaches the little hamlet of Sunderland, five miles N. of Cockermouth, the wooded estate of Sir Wilfrid Lawson is seen in the summer to be gay with beautiful shrubs. Among these the Guelder Rose (*Viburnum opulus* L.) is not the least conspicuous, but among the hundreds of normal plants I have for two years observed one whose peculiarities merit attention. It is entirely destitute of those barren ray florets which give this flower its conspicuous form. It is in fact the very opposite of the snow-ball form found under cultivation. Thus we have three varieties:—First, the absolutely neutral or barren form; secondly, the usual form with fertile flowers in the centre and barren florets surrounding them; and thirdly, this unusual variety with none but fertile flowers. These are very crowded and inconspicuous.—HILDERIC FRIEND, Cockermouth, 16th June, 1896.

**Bird's Nest Orchis in Cumberland.**—In the beginning of the month of June a specimen of this plant (*Neottia Nidus-avis* Rich.) was sent me for identification by the headmaster of the Friends' School, Wigton, Cumberland. It had been collected by one of the boys during their rambles the previous day, but the exact locality is not cited. It was mistaken for another plant, but was sent to me for 'confirmation or otherwise, because, so far as we know, it is the first time it has been found in our neighbourhood.' It is pleasing to be able to add a new locality for a plant which, though native, is now exceedingly rare in Cumberland.—HILDERIC FRIEND, Cockermouth, 16th June, 1896.



## NATURAL HISTORY NOTES FROM THE SKIPTON CHURCHWARDENS' ACCOUNTS.

A. BIRTWHISTLE,  
*Skipton.*

SUMS paid for foxheads or other vermin, extracted from the Skipton Churchwardens' accounts.

The total area of the ancient parish of Skipton as now reckoned is 21,057 acres and 38 poles. It comprises the townships of Barden, Beamsley, Bolton Abbey, Draughton with Berwick, Embsay with Eastby, Halton East, Hazlewood with Storiths, Skipton, and Stirton with Thorlby.

In the century (1729-1830) covered by these returns, payments were made for the destruction of 1,047 Foxes, 5 Otters, 3 Ferrets, 2 Fomarts, and 17 Polecats.

The war against the Otters was confined to the period from 1736 to 1752. Ferrets are named only in 1808, Fomarts in 1809, and Polecats from 1808 to 1827.

1729.	
20 April	...Rob <sup>t</sup> . Boocock 1 fox head ... .. 0 : 1 : 0
25 Dec	...Paid to the Churchwarden of Bolton and Barden for Ten Foxheads ... .. 0 : 10 : 0
" "	...To Spencer for fox-heads ... .. 0 : 5 : 0
11 Nov <sup>r</sup>	...for one foxhead ... .. 0 : 1 : 0
1730	
7 June	...Pd. to Barden Churchwarden for 7 foxes heads ... .. 0 : 7 : 0
" "	...Pd. to Storhies Churchwarden for 4 foxes heads ... .. 0 : 4 : 0
" "	...Pd. to Empsey Churchwarden for 5 fox- heads ... .. 0 : 5 : 0
" "	...To W <sup>m</sup> . Spencer for 6 foxheads... .. 0 : 6 : 0
" "	...To Rob <sup>t</sup> . Boocock for 1 foxhead ... .. 0 : 1 : 0
1731	
23 June	...Allow'd for 23 foxes Heads w <sup>h</sup> was kill'd within y <sup>e</sup> parish from y <sup>e</sup> 10 <sup>th</sup> of July 1730 to 23 <sup>rd</sup> June 1731 ... .. 1 : 3 : 0
1732	
7 May	...Allowed for 9 Fox heads ... .. 0 : 9 : 0
1733	
20 May	...Allow'd for 27 foxheads ... .. 1 = 7 = 0
3 June	...W <sup>m</sup> . Spencer 1 Foxhead... .. 0 - 1 - 0
" "	...George Atkinson 1 Foxhead ... .. 0 - 1 - 0



1734						
5 May	...for 9 fox Heads this year	...	...	0 :	9 :	0
28 July	...8 fox heads	...	...	0 .	8 .	0
1735						
13 April	...to Barding for 4 fox Heads	...	...	0 :	4 :	0
29 May	...for a Fox's Head...	...	...	0 :	1 :	0
1736						
9 May	...two foxheads from Barden	...	...	0 :	2 :	0
" "	...4 ditto from Embsay	...	...	0 :	4 :	0
23 June	...for an Otters Head	...	...	0 :	1 :	0
" "	...6 Fox Heads	...	...	0 :	6 :	0
" "	...Pd. for two Fox Heads	...	...	0 :	2 :	0
1737						
22 May	...George Demain 9 Fox heads (Barden)...	...	...	0 -	9 -	0
" "	...John Petty 2 Fox heads...	...	...	0 -	2 -	0
" "	...W <sup>m</sup> . Spencer 3 Fox heads	...	...	0 -	3 -	0
24 June	...Pd for a foxhead to George Demaine	...	...	0 -	1 -	0
17th July	...W <sup>m</sup> Clemmey for a Fox head (Hazlewood)	...	...	0 -	1 -	0
1738						
9 April	...To Barden Churchwarden for 4 Foxheads	...	...	0 -	4 -	0
" "	...to John Mitchell for a Fox head	...	...	0 -	1 -	0
16 June	...To Jonathan Colton a Foxhead	...	...	0 -	1 -	0
" "	...W <sup>m</sup> . Spencer 4 Foxheads	...	...	0 -	4 -	0
" "	...Geo. Demaine 3 Foxheads	...	...	0 -	3 -	0
31 Dec	...To David Wilson 2 foxheads	...	...	0 -	2 -	0
1739						
6 May	...to David Wilson for a Fox head	...	...	0 -	1 -	0
" "	...David Wilson 3 fox heads	...	...	0 -	3 -	0
" "	...Thos. Atkinson 2 fox heads	...	...	0 -	2 -	0
" "	...Jas. Tomson 3 fox heads	...	...	0 -	3 -	0
24 June	...to David Wilson one foxhead	...	...	0 -	1 -	0
" "	...Thos. Atkinson 3 foxheads	...	...	0 -	3 -	0
" "	...Jno. Holms 1 fox head	...	...	0 -	1 -	0
1740						
13 Jan <sup>y</sup> .	...a fox head Mr. Holms	...	...	0 -	1 -	0
27 July	...Pd. John Holms 5 fox Heads	...	...	0 -	5 -	0
" "	...Pd. John Pettyt 1 fox Head	...	...	0 -	1 -	0
1741						
11 Jany	...3 fox Heads	...	...	0 -	3 -	0
7 June	...4 Fox heads Rich <sup>d</sup> . Chippindale	...	...	0 -	4 -	0
22 August	...3 fox heads	...	...	0 -	3 -	0
" "	...W <sup>m</sup> . Spencer a fox-head	...	...	0 -	1 -	0



1742						
31	Jan <sup>y</sup> .	...a fox-head	...	...	...	0 - 1 - 0
9	May	...three fox heads	...	...	...	0 - 3 - 0
1743						
6	Feb.	...Emmanuel Shires fox-head	...	...	...	0 - 1 - 0
8	May	...Antony Pettite for 3 fox heads	...	...	...	0 - 3 - 0
"	"	...Matthew Young p <sup>d</sup> . for 2 fox heads	...	...	...	0 - 2 - 0
5	Dec	...Chris. Atkinson 3 foxheads	...	...	...	0 - 3 - 0
1744						
6	May	...John Emmott 3 fox heads	...	...	...	0 .. 3 .. 0
"	"	...Mr. Holms a fox head	...	...	...	0 .. 1 .. 0
"	"	...Thos. Holms a fox Head	...	...	...	0 .. 1 .. 0
1745						
2	June	...To Thomas Inman for 2 Fox Heads	...	...	...	— 2 .. 0
		...John Petty to him for 1 Fox Head	...	...	...	— 1 .. 0
1746						
20	April	...two Fox Heads	...	...	...	00   02   00
22	June	...4 foxheads	...	...	...	0 . 4 . 0
1747						
17	May	...W <sup>m</sup> . Leland a Fox head	...	...	...	00   01.   00
"	"	...Barden one Foxhead	...	...	...	00 01 00
"	"	...Hesslewood Four Foxheads	...	...	...	00 04 00
21	July	...For Barden 3 Foxheads	...	...	...	00 03 00
"	"	...For Beamsley 1 Foxhead	...	...	...	00 01 00
1748						
17	April	...from Storries 5 Foxheads	...	...	...	00 05. 00
"	"	...From Crookrice 1 Do.	...	...	...	00 01. 00
"	"	...From Barden 1 Do.	...	...	...	00 01. 00
	July	...Beamsley 1 Foxhead	...	...	...	0 1 0
"	"	...Embsey 1 Foxhead	...	...	...	0 1 0
"	"	...Barden 5 Fox heads	...	...	...	0 5 0
11	Sept	...Barden 1 Foxhead	...	...	...	0 1 0
1749						
6	August	...John Petty 1 Foxhead	...	...	...	00 01 : 00
1750						
4	Feb	...Foxhead	...	...	...	00 01 : 00
27	May	...Henry Atkinson Esq <sup>r</sup> . two Otters Jin	...	...	...	00 02 06
"	"	...Foxhead	...	...	...	00 01 00
"	"	...2 Foxheads Storries	...	...	...	00 02 00
1751						
3	Feb	...An Otter head	...	...	...	0 : 1 : 0
21	April	...8 foxheads	...	...	...	0 : 8 : 0
21	July	...9 fox heads	...	...	...	0 .. 9 .. 0



1752								
10 May	.. To 2 foxheads	...	...	...	...	0 -	2 -	0
" "	...To Mr. Benson for fox heads last year unaccounted for	...	...	...	...	0 -	3 -	0
" "	...To Frank Demaine for 2 Do	...	...	...	...	0 -	2 -	0
" "	...To Isaac Walsh 4 foxheads	...	...	...	...	0 -	4 -	0
26 July	...An Otters head to Jonas Bell	...	...	...	...	0 -	2 -	0
" "	...To a foxhead Mr. Lonsdale p <sup>d</sup> . unto Frank Atkinson	...	...	...	...	0 -	1 -	0
1753								
6 May	...To Geo: Thompson a foxhead	...	...	...	...	0 -	1 -	0
3 June	...To Geo: Thompson for - 5 - fox Heads	...	...	...	...	0 -	5 -	0
14 Oct.	...A foxhead Halton	...	...	...	...	0 -	1 -	0
1754								
8 Sept.	...Rich <sup>d</sup> . Chippindale 2 Fox Heads	...	...	...	...	0 -	2 -	0
" "	...Jos <sup>a</sup> . Spencer 1 Do.	...	...	...	...	0 -	1 -	0
" "	...Rich <sup>d</sup> . Holmes 2 Do.	...	...	...	...	0 -	2 -	0
" "	...Tho <sup>s</sup> . Mason 1 Do.	...	...	...	...	0 -	1 -	0
1755								
27 July	...P <sup>d</sup> . for 3 Fox Heads John Swainson	...	...	...	...	0 -	3 -	0
1756								
20 March	...Paid for a Fox Head W.C.*	...	...	...	...	0 -	1 -	0
23 June	...5 foxheads	...	...	...	...	0 -	5 -	0
1757								
9 May	...P <sup>d</sup> . Emmetts for 3 foxheads	...	...	...	...	0 -	3 -	0
" "	... Do. one more	...	...	...	...	0 -	1 -	0
" "	...Bolton three foxheads	...	...	...	...	0 -	3 -	0
1758								
1759								
6 May	...Bolton for Foxheads 5 <sup>s</sup> .	...	...	...	...	0 -	5 -	0
" "	...Embsay for Foxhead	...	...	...	...	0 -	1 -	0
19 August	...paid Rich <sup>d</sup> . Emmett for 2 Foxheads	...	...	...	...	0 -	2 -	0
	...p <sup>d</sup> . Laurence Thornton for a Foxhead	...	...	...	...	0 -	1 -	0
	...p <sup>d</sup> . Tho <sup>s</sup> . Croft what he paid for 9 Fox- heads	...	...	...	...	0 -	9 -	0
	...p <sup>d</sup> . John Chippendale for 2 Foxheads	...	...	...	...	0 -	2 -	0
1760								
1 May	...paid Mr. Heelis for what he p <sup>d</sup> . R <sup>d</sup> . Emmett for 3 Foxheads	...	...	...	...	0 -	3 -	0
" "	...p <sup>d</sup> . John Ianson for 4 foxheads	...	...	...	...	0 -	4 -	0
" "	...Fran <sup>s</sup> . Atkinson 2 Do.	...	...	...	...	0 -	2 -	0
9 November	p <sup>d</sup> . for a Foxhead	...	...	...	...	0 -	1 -	0

\*NOTE.—W.C. = Wm. Chippindale, then Churchwarden for Skipton.



1761						
15 Feb.	...p <sup>d</sup> .	Jno. Chippindale for 7 Foxheads	...	0 -	7 -	0
" "	...p <sup>d</sup> .	Francis Atkinson for 4 Do.	...	0 -	4 -	0
" "	...p <sup>d</sup> .	Welbury Holgate for 5 Do.	...	0 -	5 -	0
5 June	...p <sup>d</sup> .	R. Emmett for two Foxheads by				
		Thos Heelis	... ..	0 -	2 -	0
" "	...	Geo. Demaine 2 foxheads	...	0 -	2 -	0
" "	...	Welbury Holgate foxhead	...	0 -	1 -	0
" "	...	Jon <sup>n</sup> . Ward fox	... ..	0 -	1 -	0
1762						
Jany	...p <sup>d</sup> .	R <sup>d</sup> . Emmet for a Foxhead	...	0 -	1 -	0
11 May	...	Do. for Do.	...	0 -	1 -	0
12 June	...	Do. for 2 foxheads	...	0 -	2 -	0
" "	...p <sup>d</sup> .	Chris <sup>r</sup> . Demaine Francis Atkinson and Gresham Holmes for 10 foxheads		0 -	10 -	0
" "	...p <sup>d</sup> .	Wm. Fallis & Jno Phillip 2 Do.	...	0 -	2 -	0
28 Nov	...	Jno. Chippindale for 4 foxheads	...	0 -	4 -	0
" "	...	W <sup>m</sup> . Roberts 3 foxheads	...	0 -	3 -	0
1763						
10 April	...	7 Foxheads	... ..	0 -	7 -	0
17 April	...p <sup>d</sup> .	R <sup>d</sup> . Emmet for 4 Foxheads by T. H.		0 -	4 -	0
1 May	...p <sup>d</sup> .	Do. for Do.	...	0 -	1 -	0
7 Aug	...	4 Fox Heads	... ..	0 -	4 -	0
" "	...	14 Foxheads more	... ..	0 -	14 -	0
11 Dec.	...p <sup>d</sup> .	R <sup>d</sup> . Emmot for a foxhead	...	0 -	1 -	0
1764						
20 May	..	Foxhead Step <sup>n</sup> . Brig	... ..	0 -	1 -	0
23 Sept.	...	6 Fox Heads	... ..	0 -	6 -	0
1765						
23 June	...	To Barden for 3 fox heads	...	0 -	3 -	0
" "	...	To Embsay for 1 Do.	...	0 -	1 -	0
" "	...	To Haslewood for 2 Do.	...	0 -	2 -	0
22 Dec.	...	2 Fox Heads	... ..	0 -	2 -	0
1766						
18 May	...	To Welbury Holgate for 3 Foxheads	...	0 -	3 -	0
" "	...	To Geo : Demaine for 7 Ditto	...	0 -	7 -	0
" "	...	To Rich <sup>d</sup> . Humpleby for 7 Ditto	...	0 -	7 -	0
20 July	...	One fox Head for Eastby & 5 for Hazle- wood	... ..	0 -	6 -	0
18 Dec	...	foxhead	... ..	0 -	1 -	0
1767						
21 June	...	Three fox Heads...	... ..	0 -	3 -	0
20 Sept	...	3 fox heads	... ..	0 -	3 -	0
" "	...	Hazlewood one Do.	... ..	0 -	1 -	0



1768						
20 March	...Three fox Heads	...	...	...	0 - 3 - 0	
19 June	...five fox heads	...	...	...	0 - 5 - 0	
" "	...one Do.	...	...	...	0 - 1 - 0	
18 Sept	...Two fox heads	...	...	...	0 - 2 - 0	
1769						
19 March	...2 fox heads	...	...	...	0 - 2 - 0	
18 June	...to 5 fox Heads	...	...	...	0 - 5 - 0	
17 Sept	...To John Guyer for W <sup>m</sup> . Clemie for 4 fox heads	...	...	...	0 - 4 - 0	
1770						
17 June	...Lawrence Howden, Two fox Hds	...	...	...	0 - 2 - 0	
" "	...John Wilkinson for Three Do.	...	...	...	0 - 3 - 0	
16 Sept	...To a fox Head	...	...	...	0 - 1 - 0	
1771						
17 March	...To Two Foxheads Mr. Wise	...	...	...	0 - 2 - 0	
" "	...To one Do. for Barden	...	...	...	0 - 1 - 0	
16 June	No foxes in	} Halton, a fox head ...	...	...	0 - 1 - 0	
" "	future to be p <sup>d</sup> .		} Hazlewood a foxhead	...	...	0 - 1 - 0
" "	for unless bro <sup>t</sup> .			} Barden, six foxheads	...	...
" "	to Skipton.		Skipton Two Do.		...	...
15 Dec.	...George Pettyt a fox head	...	...	...	0 - 1 - 0	
" "	...Tho <sup>s</sup> . Holms 2 fox heads	...	...	...	0 - 2 - 0	
1772						
15 March	...A fox head	...	...	...	0 - 1 - 0	
13 Sept	...Tho <sup>s</sup> . Holms 3 fox Heads	...	...	...	0 - 3 - 0	
" "	...Mr. Tho <sup>s</sup> . Chippindale 2 foxheads	...	...	...	0 - 2 - 0	
1773						
14 March	...Tho <sup>s</sup> . Holms for one fox Head	...	...	...	0 - 1 - 0	
" "	...Jn <sup>o</sup> . Heelis for two foxheads	...	...	...	0 - 2 - 0	
13 June	...Jn <sup>o</sup> . Heelis to Rich <sup>d</sup> . Emmot for a fox Head	...	...	...	0 - 1 - 0	
12 Sept	...Tho <sup>s</sup> . Holms for foxheads	...	...	...	0 - 6 - 0	
" "	...W <sup>m</sup> . Watkinson a fox head	...	...	...	0 - 1 - 0	
1774						
12 June	...Tho <sup>s</sup> . Holmes three fox Heads as by Receipt	...	...	...	0 - 3 - 0	
" "	...Mr. Heelis Two fox Heads	...	...	...	0 - 2 - 0	
1775						
12 March	...to Tho <sup>s</sup> . Holms for two foxheads	...	...	...	0 - 2 - 0	
" "	...to Mr. Bains for two foxheads	...	...	...	0 - 2 - 0	
11 June	...Mr. Jn <sup>o</sup> . Heelis for fox Heads	...	...	...	0 - 5 - 0	
10 Sept	...To Tho <sup>s</sup> . Holmes for 2 Fox Heads	...	...	...	0 - 2 - 0	
" "	...Tho <sup>s</sup> . Wise for 1 Fox Head	...	...	...	0 - 1 - 0	



1776						
10	March	...Francis Ward 3 Fox Heads	...	...	0 - 3 - 0	
"	"	...Will <sup>m</sup> . Croft 1 Do.	...	...	0 - 1 - 0	
9	June	...Francis Ward for 4 fox Heads	...	...	0 - 4 - 0	
"	"	...William Croft 2 Foxhead	...	...	0 - 2 - 0	
6	Oct	...To Rich <sup>d</sup> . Emmott 1 Foxhead	...	...	0 - 1 - 0	
"	"	...Mr. Chippindale A Foxhead	...	...	0 - 1 - 0	
"	"	...Mr. Tho <sup>s</sup> . Chippindale Barden Fox h <sup>ds</sup> .	...	...	0 - 2 - 0	
1777						
9	March	...William Rayner 2 Foxheads	...	...	0 - 2 - 0	
8	June	...Mr. Thos. Chippindale 2 Foxheads	...	...	0 - 2 - 0	
"	"	...Jonathan Mason 1 Do.	...	...	0 - 1 - 0	
"	"	...Mr. Tho <sup>s</sup> . Chippindale Barden 2 Do.	...	...	0 - 2 - 0	
7	Sept	...W <sup>m</sup> . Renards two fox Heads	...	...	0 - 2 - 0	
"	"	...Rich <sup>d</sup> . Emmott 2 foxheads	...	...	0 - 2 - 0	
7	Dec	...Linal Holms for 2 fox Heads	...	...	0 - 2 - 0	
1778						
6	Dec	...James Ward bill fox Heads	...	...	0 - 3 - 0	
"	"	...Edmond Cart for 2 fox heads	...	...	0 - 2 - 0	
1779						
6	June	...to James Ward for two Fox Heads	...	...	0 - 2 - 0	
"	"	...to John Colton for three Do.	...	...	0 - 3 - 0	
1780						
5	March	...To Rich <sup>d</sup> . Pettit 2 Foxheads	...	...	0 - 2 - 0	
"	"	...To Jas Ward 2 Ditto	...	...	0 - 2 - 0	
4	June	...To Rich <sup>d</sup> . Emmot 6 Foxheads	...	...	0 - 6 - 0	
"	"	...Matthew Win Paid to W <sup>m</sup> . Mason for 8 Foxheads	...	...	0 - 8 - 0	
"	"	...To Henry Smith Barden Churchw <sup>dn</sup> for 7 Fox Heads	...	...	0 - 7 - 0	
"	"	...Nicholas Kendall for 2 Do.	...	...	0 - 2 - 0	
"	"	...Mr. W: Myers Jun <sup>r</sup> Fox Head	...	...	0 - 1 - 0	
3	Sept.	...James Ward for Three Fox Heads	...	...	0 - 3 - 0	
3	Dec.	...Richard Pettyt Fox head	...	...	0 - 1 - 0	
1781						
10	June	...To Rich <sup>d</sup> . Emmott for 3 foxheads	...	...	0 - 3 - 0	
"	"	...To William Mason 6 Foxheads...	...	...	0 - 6 - 0	
"	"	...To Tho <sup>s</sup> . Emott 1 Do.	...	...	0 - 1 - 0	
"	"	...Simpson & Hudson 4 Do.	...	...	0 - 4 - 0	
9	Sept	...Nicholas Kendall four fox Heads	...	...	0 - 4 - 0	
1782						
9	June	...to 6 Fox Heads	...	...	0 - 6 - 0	
"	"	...to eight Fox Heads	...	...	0 - 8 - 0	
8	Sept	...Geo. Demain 3 Fox Heads	...	...	0 - 3 - 0	



1783									
8 June	...to three Foxheads	...	...	...	...	0 -	3 -	0	
1784									
5 Sept.	...3 Foxes Heads	...	...	...	...	0 -	3 -	0	
1785									
5 June	...To Geo: Atkinson for 9 Fox heads	...	...	...	...	0 -	9 -	0	
" "	...To Rob <sup>t</sup> . Gibson for 2 Do.	...	...	...	...	0 -	2 -	0	
" "	...To Mr. G. Bayns for 1 Do.	...	...	...	...	0 -	1 -	0	
1786									
4 June	...To Joseph Allen for 3 Fox Heads	...	...	...	...	0 -	3 -	0	
" "	...To George Hodgson & Co. for 5 Do.	...	...	...	...	0 -	5 -	0	
3 Dec.	...To John Summersgill for Foxheads	...	...	...	...	0 -	2 -	0	
1787									
3 June	...To sev Foxheads	...	...	...	...	0 -	7 -	0	
" "	...To W <sup>m</sup> . Hudson for one Foxhead	...	...	...	...	0 -	1 -	0	
1788									
1 June	...William Hudson for Fox H <sup>ds</sup> .	...	...	...	...	0 -	6 -	0	
" "	...Mr. Thomas Chippindale for Fox Head	...	...	...	...	0 -	1 -	0	
7 Dec.	...Tho <sup>s</sup> . Watkinson 3 Fox Heads	...	...	...	...	0 -	3 -	0	
1789									
7 June	...Geo. Gill Two Foxheads	...	...	...	...	0 -	2 -	0	
" "	...William Dale two Do.	...	...	...	...	0 -	2 -	0	
" "	...Thomas Ianson 3 Do.	...	...	...	...	0 -	3 -	0	
1790	...Fourth Quarter Meeting								
	...Bolton bill for repairs of a Bridge Fox Heads &c.	...	...	...	...	1 -	8 -	7	
	...John Holden 3 Fox Heads	...	...	...	...	0 -	3 -	0	
5 Sep.	...Barden two Foxheads	...	...	...	...	0 -	2 -	0	
1791									
4 Dec.	...James Ward 3 Foxheads	...	...	...	...	0 -	3 -	0	
1792									
4 March	...Fox Head	...	...	...	...	0 -	1 -	0	
2 Sept	...Jacob Walsh a Fox head	...	...	...	...	0 -	1 -	0	
1793									
3 March	...Ja <sup>s</sup> Ward Foxheads	...	...	...	...	0 -	7 -	0	
2 June	...James Ward for Foxheads	...	...	...	...	0 -	7 -	0	
1794									
1 June	...Fox Heads J. Emmott	...	...	...	...	0 -	6 -	0	
7 Sept	...4 Fox Heads	...	...	...	...	0 -	4 -	0	
1795									
6 Sept	...W <sup>m</sup> . Hudson for 2 Foxes' Heads	...	...	...	...	0 -	2 -	0	
1796									
5 June	...Five Foxheads to W <sup>m</sup> . Hudson	...	...	...	...	0 -	5 -	0	
4 Sept	...Four Foxheads	...	...	...	...	0 -	4 -	0	



1797							
4 June	...	John Holmes for a fox Head	...	...	0 -	1 -	0
1798							
3 June	...	Will Thompson 5 Foxheads	...	...	0 -	5 -	0
2 Sept.	...	W <sup>m</sup> . Croft 2 Fox Heads...	...	...	0 -	2 -	0
2 Dec	...	1 Fox head	...	...	0 -	1 -	0
1799							
3 March	...	A Fox's Head	...	...	0 -	1 -	0
1 Sept	...	Will <sup>m</sup> . Gill for a foxhead...	...	...	0 -	1 -	0
1800							
7 Sept	...	Six Foxheads to Barden, Hazlewood and Storis	...	...	0 -	6 -	0
1801	...	Nil					
1802							
5 June	...	W <sup>m</sup> . Hudson Barden 4 Foxheads	...	...	0 -	4 -	0
	...	Tho Harrison 2 Fox Heads	...	...	0 -	2 -	0
5 Dec	...	Geo Demaine Fox's head	...	...	0 -	1 -	0
1803	...	Nil					
1804							
2 Dec	...	For four Foxheads	...	...	0 -	4 -	0
" "	...	Isaac Walsh two Foxheads	...	...	0 -	2 -	0
" "	...	Robt Hustwick one Fox head	...	...	0 -	1 -	0
At this Meeting agreed that Half a Crown shall be allowed in future for Fox heads (say 2/6 p F. Head.)							
1805							
3 March	...	Geo: Atkinson 2 Fox-heads	...	...	0 -	5 -	0
" "	...	Isaac Walsh 1 Do.	...	...	0 -	2 -	6
2 June	...	5 Foxheads	...	...	0 -	12 -	6
1806							
2 March	...	Geo: Atkinson 3 Foxheads	...	...	0 -	7 -	6
" "	...	J. Smith 1 Do.	...	...	0 -	2 -	6
" "	...	E. Moorhouse 8 Do.	...	...	1 -	0 -	0
1 June	...	Tho <sup>s</sup> . Ward & Barrett 4 fox Head	...	...	0 -	10 -	0
" "	...	Tho <sup>s</sup> . Atkinson & Ja <sup>s</sup> . Spencer Do.	...	...	0 -	5 -	0
7 Sept	...	Two Foxheads Holton	...	...	0 -	5 -	0
" "	...	Tho <sup>s</sup> . Atkinson 2 fox heads	...	...	0 -	5 -	0
" "	...	Em <sup>l</sup> . Shiers 3 do.	...	...	0 -	7 -	6
1807							
1 March	...	Tho <sup>s</sup> . Atkinson Foxheads (two)...	...	...	0 -	5 -	0
" "	...	Geo Lowcock one ditto	...	...	0 -	2 -	6
6 Dec	...	W <sup>m</sup> . Waite Two Fox Heads	...	...	0 -	4 -	0
" "	...	Geo. Demaine 3 Fox Heads	...	...	0 -	7 -	6
" "	...	W <sup>m</sup> . Mawson 2 Fox Heads	...	...	0 -	5 -	0



1808						
6 March	...Emmanuel Shiers	Fox Heads	5	...	0 - 12 - 6	
5 June	...John Holmes	3 Foxes	3 Ferrets	...	0 - 8 - 6	
" "	...John Jennings	6 Fox Heads		...	0 - 15 - 0	
" "	...Tho <sup>s</sup> . Atkinson	7 Fox Heads		...	0 - 17 - 6	
4 Sept	...J <sup>no</sup> . Jennings	2 Fox Heads		...	0 - 5 - 0	
" "	...Tho <sup>s</sup> . Atkinson	1 Fox do.		...	0 - 2 - 6	
4 Dec	...Pole Cat	...	...	...	0 - 0 - 4	
1809						
5 March	...J <sup>no</sup> . Jennings	one Fox		...	0 - 2 - 6	
" "	...Tho <sup>s</sup> . Atkinson	2 Do.		...	0 - 5 - 0	
" "	...W <sup>m</sup> . Mawson	1 Do.		...	0 - 2 - 6	
" "	...Francis Shiers	1 Do.		...	0 - 2 - 6	
" "	...Peter Sheldin	2 Fomarts		...	0 - 0 - 8	
4 June	...John Jennings	1 Foxhead		...	0 - 2 - 6	
" "	...W <sup>m</sup> . Phillip	1 Foxhead		...	0 - 2 - 6	
1810						
4 March	...William Lowcock	Fox Heads		...	0 - 5 - 0	
3 June	...W <sup>m</sup> . West	2 Fox Heads		...	0 - 5 - 0	
2 Sept	...John Pickup	2 Fox Heads		...	0 - 5 - 0	
1811						
...Nil						
1812						
7 June	...2 Fox Heads	(G. Sidg <sup>k</sup> .)		...	0 - 5 - 0	
6 Dec	...Geo. Sidgwick	2 Fox's Heads		...	0 - 5 - 0	
1813						
6 June	...Foxheads	...	...	...	0 - 7 - 6	
4 Sept	...2 Fox Heads	...	...	...	0 - 5 - 0	
1814						
5 March	...1 Fox Head	(to Tho <sup>s</sup> . Petty)		...	0 - 2 - 6	
" "	...2 Fox Heads	(to John Holden)		...	0 - 5 - 0	
3 Dec	...3 Foxheads	...	...	...	0 - 7 - 6	
1815						
...Nil						
1816						
4 June	...2 Fox Heads	...	...	...	0 - 5 - 0	
" "	...10 Fox Heads	...	...	...	1 - 5 - 0	
7 Sept	...3 Fox Heads	...	...	...	0 - 7 - 6	
7 Dec	...J. Petty	1 Fox head		...	0 - 2 - 6	
" "	...J. Crabtree	2 Fox heads	...	...	0 - 5 - 0	
1817						
1 March	...Fox Head	...	...	...	0 - 2 - 6	
7 June	...Six Fox heads	...	...	...	0 - 15 - 0	
" "	...Three do.	...	...	...	0 - 7 - 6	
" "	...One do.	...	...	...	0 - 2 - 6	
" "	...Five Fox heads	...	...	...	0 - 10 - 0	



1818							
6 June	...10 Fox Heads	...	...	...	...	1 - 5 - 0	
5 Sept.	...Fox Head	...	...	...	...	0 - 2 - 6	
4 Dec	...Fox Head	...	...	...	...	0 - 2 - 6	
1819							
6 March	...Fox Head	...	...	...	...	0 - 2 - 6	
5 June	...Six Fox Heads	...	...	...	...	0 - 15 - 0	
..	...One Do.	...	...	...	...	0 - 2 - 6	
4 Sept	...Four Fox Heads	...	...	...	...	0 - 10 - 0	
4 Dec	...W <sup>m</sup> . Gill 5 Fox Heads	...	...	...	...	0 - 12 - 6	
1820							
4 March	...2 Fox Heads	...	...	...	...	0 - 5 - 0	
..	...2 Fox Heads	...	...	...	...	0 - 5 - 0	
3 June	...17 Fox Heads	...	...	...	...	2 - 2 - 6	
..	...J. Hall received pay for 6 Fox Heads for J. Walker & Co.						
2 Dec	...3 Pole Cats	...	...	...	...	0 - 1 - 0	
..	...2 Fox Heads	...	...	...	...	0 - 5 - 0	
1821							
3 March	...W <sup>m</sup> . Gill 1 Fox Head, 1 Do.	...	...	...	...	0 - 5 - 0	
2 June	...Fox heads 3 @ 2/6	...	...	...	...	0 - 7 - 6	
1 Sept	...8 Fox Heads	...	...	...	...	1 - 0 - 0	
1 Dec	...Fox Head	...	...	...	...	0 - 2 - 6	
..	...Do. Do.	...	...	...	...	0 - 2 - 6	
1822							
1 June	...Fox-head	...	...	...	...	0 - 2 - 6	
7 Sept	...5 Foxheads	...	...	...	...	0 - 12 - 6	
1823							
1 March	...1 Pole Cat	...	...	...	...	0 - 0 - 4	
7 June	...5 Fox Heads	...	...	...	...	0 - 12 - 6	
..	...6 Do. Do.	...	...	...	...	0 - 15 - 0	
6 Dec	...2 Pole Cats	...	...	...	...	0 - 0 - 8	
1824							
6 March	...Fox Heads 2	...	...	...	...	0 - 5 - 0	
..	...Pole Cat	...	...	...	...	0 - 0 - 4	
5 June	...3 Fox Heads	...	...	...	...	0 - 7 - 6	
..	...3 Do.	...	...	...	...	0 - 7 - 6	
4 Sept	...Pole Cat	...	...	...	...	0 - 0 - 4	
1825							
4 June	...Fox Heads 3	...	...	...	...	0 - 7 - 6	
3 Sept	...1 Fox Head	...	...	...	...	0 - 2 - 6	
3 Dec	...5 Pole Cats	...	...	...	...	0 - 1 - 8	
..	...1 Fox Head	...	...	...	...	0 - 2 - 6	



1826							
4 March	...	1	Foxhead	...	...	...	0 - 2 - 6
3 June	...	Fox Heads	5 Skipton	...	...	...	0 - 12 - 6
" "	...	Do. Do.	7 Barden	...	...	...	0 - 17 - 6
5 Sept	...	Fox Head	...	...	...	...	0 - 2 - 6
2 Dec	...	Fox Head	...	...	...	...	0 - 2 - 6
1827							
3 March	...	Fox Head	...	...	...	...	0 - 2 - 6
3 June	...	3 Pole Cats	...	...	...	...	0 - 1 - 0
" "	...	4 Fox Heads	...	...	...	...	0 - 10 - 0
1828							
7 June	...	Fox heads	...	...	...	...	0 - 5 - 0
" "	...	5 Fox Heads	...	...	...	...	0 - 12 - 6
6 Sept	...	One Fox Head	...	...	...	...	0 - 2 - 6
1829							
7 March	...	Fox Head	...	...	...	...	0 - 2 - 6
" "	...	Do. Do.	...	...	...	...	0 - 2 - 6
" "	...	Mr. Woodrup Fox H <sup>d</sup> .	by Mr. Ward	...	...	...	0 - 2 - 6
6 June	...	Church Articles,	Fox Head & buckett	...	...	...	0 - 7 - 2
" "	...	Isaac Walsh	2 Foxheads	...	...	...	0 - 5 - 0
1830							
5 June	...	Fox Head (Skipton)	...	...	...	...	0 - 2 - 6
" "	...	Fox Head Hazlew <sup>d</sup> .	...	...	...	...	0 - 2 - 6
4 Sept	...	Embsey Churchwarden	2 fox Heads	...	...	...	0 - 5 - 0
" "	...	Thos Ward for Barden	11 fox Heads	...	...	...	1 - 7 - 6

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### NOTES AND NEWS.

Mr. R. Newstead, the talented and energetic curator of the Chester Museum, continues his series of useful papers 'Observations on Coccidæ,' of which No. 15 appeared in the Entomologists' Monthly Magazine for June.



Mr. John H. Cooke, F.G.S., F.L.S., of Lincoln, has favoured us with a reprint of a paper of his in the Geological Magazine for May, in which he gives 'Notes on the "Pleistocene Beds" of the Maltese Islands,' in which group he has done so much good work.



The Chester Society of Natural Science and Literature, with its many and varied ramifications, is still in a flourishing state, as we learn from the 25th Report, for 1895-96, which has lately reached us. Dr. H. Stolterfoth, J.P., who has so long acted as Hon. Scientific Secretary, is now we see President of the Society.



The June number of the 'North Lonsdale Magazine and Furness Miscellany,' which we have received from Mr. Lister Petty, contains an interesting and abundantly-illustrated paper by Rev. F. A. Malleson, on 'Wordsworth and the Duddon,' in which the narrative is pleasantly interspersed with references to natural objects, usually plants, but there are some interesting anecdotes concerning the wild red deer which still inhabit Westmorland.



## AN ANGLER'S PARADISE.

**An Angler's Paradise | and | How to Obtain it | By | J. J. ARMISTEAD |**  
 [4 lines of titles] | Published by | The Angler Limited, at the Offices,  
 Scarborough | and 143, Strand, W.C. | 1895 [8vo, cloth, xviii+304 pages+  
 8 plates].

THE present work, which we are glad to note has run into a second edition, though there does not appear to be any direct indication thereof on the title-page of the copy now lying before us, gives a very comprehensive view of the subject. It is divided into two parts, the first of which, in four chapters, treats of an Angler's Paradise, the second, of fifteen chapters, entering into the practical details of 'how to obtain it.'

Mr. Armistead, who has now carried out pisciculture with singular ability and success for a lengthened period of years at the Solway Fishery near Dumfries, commences, after some general remarks on the subject of fish-culture, with an account of his own first beginnings in Cumberland in 1868, along with the late John Parnaby. It was not till 1882 that the establishment was transferred to its present location.

The second part of the work is the practical one, dealing successively with the construction of fish-ponds, their cultivation and suitable plants for stocking them with, how to stock them with fish, the hatchery and its construction, collecting the eggs, incubating them, hatching them, packing and unpacking them, and the care of 'alevins,' or newly-hatched fish. Pond-life forms the subject of an interesting chapter in which are mentioned the insects, crustaceans, and mollusks, which are either the food of the young trout or prey upon them. Then follow chapters on rearing the fry, the yearling stage, and the management of mature trout, and the concluding chapter deals with salmon culture. The last page is devoted to an appendix on how to make a rat trap or what appears to be rather a rat exterminator.

The whole work abounds in facts, hints, and suggestions of great value, and is throughout of very great interest. The illustrations are numerous, the full-page plates giving views of the writer's establishment at the Solway Fishery.

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## NOTES AND NEWS.

Want of space has hitherto prevented our noting the decease of the Rev. H. F. Barnes-Lawrence, C.M.Z.S., of Bridlington, to whom we owe the original inception of the first Wild Birds' Protection Act; and that of Mr. Peter Inchbald, F.L.S., F.Z.S., of Hornsea, an all-round naturalist, who not only accomplished much himself, but from his profession as a schoolmaster was able to instil the love of natural history into not a few men who have since achieved distinction.



## BRITISH ACULEATE HYMENOPTERA.

The | Hymenoptera Aculeata | of the | British Islands. | A Descriptive Account of the Families, Genera, and | Species Indigenous to Great Britain and Ireland, | with notes as to Habits, Localities, Habitats, | etc. | By | Edward Saunders, F.L.S. | London : | L. Reeve & Co., | . . | 6, Henrietta Street, Covent Garden. | 1896. [8vo. cloth, viii + 391 pages + 3 plates].

SUCH a large amount of excellent critical work in respect of our stinging hymenoptera has been done since the publication of the late Mr. Frederick Smith's well-known Catalogues (which were really monographs), more especially by Mr. Saunders, who is now our undisputedly chief authority, that the appearance of the present volume is well-timed.

The number of species treated of is 374, of which 20 are Ants, 127 are Fossores or Sand-wasps, 23 are true Wasps, and 204 are Bees. The introduction gives a long list of entomologists who have given assistance to the author in his researches, as well as an enumeration of previous works and papers covering the same ground.

Three plates are given, the first of which is a 'structural' one, in which *Priocnemis* is used as a type, and details are also given of parts of *Bombus*, *Psithyrus*, *Halictus*, *Andrena*, and *Cerceris*. The other two give figures of the mouth-parts of different genera of Bees.

The introduction describes the anatomy, internal and external, and gives some useful notes on collecting, which might have been advantageously extended to greater length and detail.

The monographic part itself follows, giving in addition to the descriptions, useful keys to the genera and species.

The account of each species includes notices of distribution in Britain, times of appearance, and such details as are obtainable as to habits and economy. There is not, however, as much indication of synonymy as might have been wished for by many students. A few exotic species of ants which have established themselves are included, but without adequate description.

We presume there is an edition with coloured plates, but the copy before us gives no indication whatever on the point, and does not even contain an advertisement either of such an edition or of the whole series of these works.

The author is to be congratulated on the admirable thoroughness with which he has performed his task, and the publishers on the addition of so important a volume to their excellent series of monographic works on the British insect-fauna.



## LINCOLNSHIRE NATURALISTS AT GRANTHAM.

R. W. GOULDING.

'THE natural history of the soke of Grantham, if particularly attended to, would probably be confined to a few objects, and may seem of little importance to the admirer of general and extended views; the naturalist, however, will not be totally disappointed.' With these unenthusiastic words the Reverend contributor of an appendix to that well-known book, Turnor's 'Collections for the History of the Town and Soke of Grantham,' introduced his sketch of the natural history of the district ninety years ago.

The tenth field meeting of the Lincolnshire Naturalists' Union was held at Grantham on the 16th June, for the investigation of Ancaster and neighbourhood, Nat. Hist. Divs. 15 and (just touching) 14. The meeting was highly successful, the weather fine, the attendance large, and the district interesting, particularly for field-geology. Amongst those present were the President of the Union (Rev. Canon W. W. Fowler, M.A., F.L.S., F.E.S.), the two ex-Presidents (Mr. John Cordeaux, M.B.O.U., and Mr. F. M. Burton, F.L.S., F.G.S.); Mr. J. H. Cooke, B.Sc., F.L.S., F.G.S., the Rev. R. W. Goodall, Mr. J. S. Sneath, and Mr. F. H. Fowler, of Lincoln; the Rev. Wm. Fowler, M.A., of Liversedge; the Rev. W. H. Daubney, of Leasingham; the Rev. W. W. Mason, of Bootle; the Rev. A. Thornley, of South Leverton; Mr. Coke, of Nottingham; Miss Woolward, of Belton; Mr. Coombs, of Huddersfield; Mr. and Miss Stow; Mr. H. Preston, F.G.S.; Mr. B. Crow, Mr. T. Gelsthorp, Mr. R. W. Goulding, Mr. J. Mawer, of Louth; and the Organising Secretary, the Rev. E. Adrian Woodruffe-Peacock.

The party, which numbered nearly fifty persons, had the advantage of being led by Mr. H. Preston, F.G.S., who combines a faculty of lucid exposition with a comprehensive geological knowledge. A summary of his work on this district will appear later in 'The Naturalist.'—May we hope this will not be his first paper. He pointed out the various interesting physical features en route, and seemed to know the exact places at which to stop, and the exact explanations to give. Leaving Grantham about 10-40 the party proceeded in three drags along the Manthorpe Road. In an adjacent field, Thrift (*Armeria maritima*) was observed growing in plenty. This was considered a very good record, as Thrift is commonly found on the tops of mountains or on sea-shores, but not in meadows inland. Mr. Cordeaux, who noticed the plant



in several other localities, was of opinion that it is a relic of the time when the tide had access to the valley, being perhaps the only surviving representative of the old fitty-flora. After passing through Belton and Syston, the first halt was made at Barkston, where a good section of Marlstone was seen, and where Mr. Preston delivered the first of a series of lecturettes with which he favoured the visitors during the day, his remarks being illustrated by diagrams. He gave a description of the Middle Lias, and the general lie of the strata. In this exposure the characteristic fossils *Rhynconella tetrahedra* and *Terebratula punctata* were collected.

At Honington, where the Celandine (*Chelidonium majus*) was very abundant by the hedge sides, another halt was made, and Mr. Preston indicated the diversion of the river Witham from its ancient course near Barkston, causing the river to leave its north and east direction and to flow westward; he also drew attention to the gap in the Lincolnshire Cliff, which he considered to have been produced by the ancient river Witham when it flowed eastward on through Sleaford to a great bay now known as the Fenland; another feature was the Watershed crossing the valley near Ancaster, by which two small streams which rise in close proximity to each other are diverted; one, the Honington Beck, flowing westward through the gap, the other, the river Slea, flowing eastward along the valley to Sleaford.

Driving thence through West Willoughby, and arriving at Ancaster, two parties were formed. The geologists visited the railway cutting to take a view of the anticlinal bend in the Limestone Rocks, in which bend were several large vertical fissures 20 to 30 feet wide, produced probably by denudation along lines of weakness in the bent rocks. The botanists were conducted by Mr. and Miss Stow, who have a thorough knowledge of local plants and their habitats, to an old quarry, where some good finds were made. The four best were the Field Fleawort (*Senecio campestris*), which Mr. Peacock described as one of the rarest plants in the county, the Squinancy-wort (*Asperula cynanchica*), Rupture-wort (*Herniaria glabra*), and the Purple Milk Vetch (*Astragalus hypoglottis*). Very conspicuous were the handsome blue flower-spikes of the Viper's Bugloss (*Echium vulgare*); and two yellow flowers, the Rock Rose (*Helianthemum vulgare*) and the Horse-shoe Vetch (*Hippocrepis comosa*) were abundant. Wild Thyme was plentiful on the road-sides near, and of the other plants found, *Specularia hybrida* may be mentioned. One curious thing observed in the quarry was a spider's web containing the remains of two or three 'Common Blue' Butterflies (*Lycæna alexis*).



Mr. Gelsthorp found a land-shell, *Helix ericetorum*, fairly abundant on the bank of the railway-cutting at Ancaster.

The geologists and botanists having united again, the whole party went to Ancaster Stone Quarry, where Mr. Preston explained the Upper Estuarine series of green, blue, and mottled clays, overlying the Lincolnshire Limestone. Near this quarry the Corn Gromwell (*Lithospermum officinale*) was found. The return route was through a green lane to Ermine Street, and thence through Syston Park. In Syston Lake *Limnanthemum peltatum*, a large floating aquatic plant with yellow flowers, was much admired; it is supposed to have been sown by birds.

Leaving Syston the party returned along the Barkston Road, through Belton, reaching Grantham about 4.45. High tea was provided at the George Hotel, and after tea several short speeches were made. The President (the Rev. Canon Fowler) spoke of the meeting as one of the most successful ever held by the Union. With respect to insects, he said that those found during the day were very few. There were, however, two good records for beetles, one *Bruchus cisti*, which is found upon Rock Rose, and the other, *Ceuthorrhynchus echii*. After congratulating the society on having been accompanied by Miss Woolward, of Belton, to whom he paid a high compliment, stating that she drew the plates for Day's British Fishes, and for an important work on orchids, lithographing the plates herself without spoiling a single stone, he concluded by proposing a vote of thanks to Mr. Preston for his services as guide. Mr. Preston having replied, Mr. Cordeaux reported on the birds seen and heard. These comprised the Wood Wren, Willow Wren, Chiffchaff, Garden Warbler, Nightingale, Redstart, Tree Pipit, Turtle Dove, Wood Pigeon, Carrion Crow, Magpie, Coot, Wood Warbler and Whitethroat. The Wood Wren he described as rather local and rare, and he added that the Turtle Dove and Nightingale seemed to be extending their range in North Lincolnshire. He also invited the Union to hold a meeting at Great Coates on the 8th September. The last report was that of the Rev. Wm. Fowler, who said that the botanists had had a very enjoyable day. They had been fortunate in finding the tall form of *Senecio campestris*. The specimens obtained on the Gog Magog Hills were quite small, from six to eight inches high, but those seen during the day were from a foot and a half to two feet in height. After referring to *Limnanthemum* and *Armeria*, he concluded by saying that *Spiraea filipendula* and *Cnicus acaulis* and *C. eriophorus* were worthy of note. It being then about 5.45 the proceedings terminated.



The Rev. E. Adrian Woodruffe-Peacock writes of the whole week :—The botanical work of this meeting of the Union began on Monday, the 15th, and continued all the week. In conjunction with Mrs. V. F. Wilson and party, I verified the old locality for *Thesium humifusum* on the High Dyke, Leadenham, Div. 13. There, too, we luckily chanced on *Hypochæris maculata*—a true native, which will undoubtedly prove the best find of the whole season. Most of the rarer limestone species were noted on the 15th, the best re-discovery being *Rumex pulcher* at Fulbeck. The 16th brought all the best botanists in the county together, but twenty pair of critical eyes failed to add anything new to such well-worked ground as the Ancaster-Grantham neighbourhood. Messrs. Fowler, Mason, and Peacock went to Spalding on the evening of the 16th, and worked up the flora of Div. 18, till the party broke up on the 19th—thanks to the hospitality of the Rev. M. H. Marsden, vicar of Spalding, and other courteous gentlemen. Full notes were made during this week on some 260 genera; but Div. 18 yielded nothing of very great interest beyond the well-known fenland species. For Cowbit Wash was dry, the fish lying dead on the mud at the bottom of the empty drains.

The Rev. Alfred Thornley, M.A., F.L.S., F.E.S., reports as follows :—Owing to the very dry weather, and the fact that the day was arranged rather in the interests of the geologists than of the entomologists, these last have not much to report. In one of the Ancaster quarries *Bruchus cisti*, an uncommon little beetle, was taken freely in flowers of *Helianthemum*. In the large quarry a few specimens of the local *Ceuthorhynchus echii* (*geographicum*) occurred, but with the exception of a single specimen of *Ceuthorhynchus chrysanthemi* (*campestris*), these were the only beetles of note. A specimen of *Carabus monilis* was secured in an old quarry; and *Elaphrus riparius*, with *Bembidium flammulatum*, abounded amongst the beautiful *Villarsia* in the muddy end of the lake in Syston Park. A fine but not uncommon Dragon-fly (*Libellula depressa*) was captured in the wood by Ancaster Quarry. The following common Hemiptera (bugs) were swept in places—*Leptoterna dolobrata* L. and *Scolopostethus adjunctus* D. & S. The Lepidoptera were not very abundant, the season being yet early for butterflies. The following were seen or captured—*Cænonympha pamphilus*, *Hipparchia janira*, *Polyommatus icarus*, *Pamphila sylvanus*, and *Thanaos tages*. *Euchelia jacobæ* was in great abundance in one of the quarries, in which also occurred both larvæ and cocoons of a *Zygæna*, possibly *Z. loniceræ*, as the common *Z. filipendulæ* would be out. Many of these cocoons were secured, and the results are being awaited with interest.



## ON THE HEPATICÆ AND MUSCI OF WESTMORLAND.

GEORGE STABLER,

*Levens, Milnthorpe, Westmorland.*

### THIRD PAPER.

*(For Second Paper, see 'The Naturalist,' May 1896, p. 133.)*

34. **Pleuridium alternifolium** (Kaulf.). On ant-hills, Sizergh Fell (Barnes and Stabler, 1870); Heversham Head (Barnes and Stabler, 1868).
35. **Ditrichum homomallum** (Hedw.) Hampe. *Trichostomum homomallum* Schpr. Syn. Helvellyn (Greville); Bowness (F. Clowes); Kentmere (1868); Grayrigg Forest (Barnes, 1869); Langdale (1893).
36. **Ditrichum flexicaule** (Schleich.) Hampe. *Trichostomum* Bry. Brit. *Leptotrichum* Schpr. Barrow Field (Barnes, 1867); Whitbarrow (1872); by river Lune near Ingmire Hall (1882); Mallerstang (1888).
- VAR. **densum** (Br. and Schpr.). Whitbarrow (Barnes and Stabler, 1871); Helsington Barrows (Barnes); Brigsteer Wood (1887).
37. **Swartzia montana** (Lamk.) Lindb. *Distichium capillaceum* (L.) Sch. Helvellyn (Clowes, 1854); Hill Bell (Clowes, 1855); Swindale (Barnes, 1867); by river Lune, near Ingmire Hall (Stabler, 1882); Dollywaggon Pike and Long Sleddale (Binstead, 1886).
38. **Dicranella crispa** (Ehrh.) Schpr. In a ravine, Oxendale (Binstead, 1885).
39. **Dicranella heteromalla** (Dill., L.) Schpr. Windermere (Clowes); Ulpha Crag (Barnes, 1868); Kentmere Hall Plantation (1868); Hill Bell (1868); The Moss, Levens (1867); Staveley; Kirkstone Pass (1881); Wildboar Fell (1888).
40. **Dicranella cerviculata** (Huds.) Schpr. Ulpha Moss (Barnes, 1868); Foulshaw Moss (1868); Benson Knot (Binstead, 1885); Levens.
41. **Anisothecium rubrum** (Huds.) Lindb. *Dicranella varia* (Hedw.). Near Low Gill railway station (Barnes, 1867); Ulpha (1868); Levens Park; Grayrigg Forest (1868); by river Eden, Mallerstang (1888).
- VAR. **tenuifolium** (Bruch). Milnthorpe (Barnes).



42. **Anisothecium rufescens** (Dicks.) Lindb. Windermere (Clowes); on sandstone near Farleton (1867); sandstone quarry, Ravenstonedale (Barnes, 1872).
43. **Anisothecium crispum** (Schreb.) Lindb. *Dicranella Schreberi* (Hedw.) Sch. Synop. Caldron Snout, Teesdale (Black); Barbon Fell (Binstead and Stabler, 1885); Benson Knot (Binstead, 1885).
- VAR. **elatum** Schpr. *Dicranella lenta* Wilson's MSS. Boggy places near Hang Bridge, Milnthorpe (Barnes and Stabler, 1872).
44. **Anisothecium squarrosium** (Starke) Lindb. Windermere c.fr. (Clowes); Hill Bell (1868); Fairfield (Barnes, 1868); Swindale (1887); Mardale; Wildboar Fell; Tebay.
45. **Seligeria Donii** (Sm.) C. Muell. Maize Beck (R. Barnes, 'Naturalist,' July 1890).
46. **Seligeria acutifolia** var.  $\beta$ . (fide Lindberg in litt., 19th Sep., 1871). On limestone rocks, Levens Park (Barnes and Stabler, 1868); Heversham Head; near Kendal (Binstead, 1893).
47. **Seligeria setacea** (Wulf.) Lindb. *Seligeria recurvata* Hedw. Near Ambleside, Sir J. E. Smith in Fl. Brit., 1804; Windermere (Clowes); Kentmere Plantation (1869); Nab Scar (1868); Harter Fell (1869); Staveley (1870); Grayrigg Forest (1868); Groove Ghyll, Barbon; Benson Knot near Kendal (Binstead, 1885); on boulder in Brigsteer Wood.
48. **Brachyodontium trichodes** (Web. et Mohr.) Frnv. *Brachyodus trichodes* Bry. Brit. Grayrigg Forest near Low Borrow Bridge, among screes (Barnes and Stabler, 1868); in the lower end of the Kentmere Valley (1868); Harter Fell (1868).
49. **Blindia acuta** (Huds.) B. & S. Long Sleddale (T. Gough); Caldron Snout (J. G. Baker); Windermere (Clowes); Mardale (Barnes, 1868); Nab Scar (1868); Langdale; Nan Bield (1869); Grisedale; Deepdale (W. B. Waterfall); Wildboar Fell.
50. **Didymodon denudatus** (Brid.) Lindb. *Dicranodontium longirostre* (Web. et Mohr.). Bowness (Hunt, 1865); in the ghyll near Sweedon Bridge, Scandale (1887); Potter Fell (Binstead, 1886); Wildboar Fell (1888).
51. **Campylopus pyriformis** (Schultz.) Bridel. *Campylopus turfæus* B. & S. Ulpha Crag (Barnes, 1868); on the Peat Moss, Foulshaw (1868).



52. **Campylopus fragilis** (Dicks.) Br. & Schp. *Campylopus densus* Bry. Brit. Barrow Field on rocks (Barnes and Stabler, 1867); Stock Ghyll (1867); Saletarn Knotts, Kentmere (1869); Witherslack; Grasmere and Tebay (Binstead); Cock Hag in Underbarrow.
53. **Campylopus Schwarzii** Schpr. Rosset Ghyll and Harrison Stickle (Binstead, 1885); [Styehead Pass, Borrowdale (Hunt, 1871)].
54. **Campylopus flexuosus** (L.) Brid. Ulpha Moss (Barnes and Stabler, 1867); Rydal Falls (1877); Naddle Forest; Barrow Field; Plaice Fell (W. B. Waterfall); Outh Ghyll, Mallerstang.
55. **Campylopus paradoxus** Wils. Foulshaw Moss (Barnes, 1868); Helvellyn (H. N. Dixon, 1891). In deference to W. Wilson this is here placed as a species, but I have always considered it as merely a vigorous state of *C. flexuosus*, induced, in this instance, by the dung of sea-gulls. *C. flexuosus* is abundant on the Moss.
56. **Campylopus atrovirens** De Not. (*C. longipilus* Brid.). Common in wet places among the mountains; Harter Fell and Nan Bield (1869); Scandale; Kentmere.
57. **Campylopus brevipilus** Br.Sch. Langdale (Barnes, 1867)(?) [Clougha near Lancaster (1881).]
58. **Dicranoweissia cirrhata** (L.) Lindb. On slates of the Peat-house roof, Levens Hall (Barnes and Stabler, 1867); Patterdale, on rocks (1886).
59. **Dicranoweissia crispula** (Hedw.) Lindb. Naddle Low Forest (1882); Tarn Crag and Dollywaggon Pike, Helvellyn (Binstead, 1886); head of Longsleddale (Binstead, 1888).
60. **Dicranum fulvellum** (Dicks.) Sm. *Arctoa fulvella* Bry. Brit. Striding Edge (Baker, 1867); Fairfield (1871); High Street; Bow Fell (Barnes, 1871); Keppel Cove (W. B. Waterfall, 1887); Dungeon Ghyll (Binstead).
61. **Dicranum Schisti** (Gunn) Lindb. *D. Blyttii* Br.&Sch. Near the summit of Helvellyn above Red Tarn (H. N. Dixon, 1891).
62. **Dicranum falcatum** Hedw. Helvellyn (J. Nowell).
63. **Dicranum Starkei** Web. Mohr. Helvellyn (H. N. Dixon, 1891).
64. **Dicranum majus** Smith. Windermere (Clowes); Stock Ghyll (1868); Mardale; by river Lune near Ingmire Hall; Scandale; Underbarrow; Wasdale Crag, near Shap (J. A. Martindale, 1889).



65. **Dicranum scoparium** (L.) Hedw. Stock Ghyll (Sidebotham, 1845); Windermere (Clowes); Kentmere (1868); Ulpha Moss (Barnes, 1868); Grayrigg; Naddle Forest; Heversham Head.
- VAR. **alpestre** (Huebn.). High Street (1869); damp peaty place, Gavel Crag, High Street (Binstead, 1886).
- VAR. **turfosum** (Schultz) Brid. Skeggleswater (Binstead, 1885); Wildboar Fell (1888).
- VAR. **orthophyllum** Brid. Bowness (G. E. Hunt); Wither-slack (Barnes and Stabler, 1867); Rydal (1868); Low Ghyll (Barnes).
66. **Dicranum Bonjeani** DeNot. (*D. palustre* LaPyl.). Bogs near Bowness (Atkinson, Barnes and Stabler); Foulshaw (1872); Benson Knot (Binstead).
- VAR. **juniperifolium** (Sendt.). Wildboar Fell (1888).
- A large *Dicranum* with undulate leaves is found on the Barrows, north-east of Helsington Church, in dry places, and has been considered to be *D. undulatum*, but being barren it is difficult to determine.
67. **Dicranum fuscescens** Turner. Rydal (Barnes, 1867); Naddle Forest (Barnes and Stabler, 1869). [Launchy Ghyll, Thirlmere (Binstead, 1886); Clougha, near Lancaster 1881].
- [**Dicranum Scottii** Turner. On granite rocks, Eskdale, Cumberland (Binstead, 1894)].
68. **Dicranum uncinatum** (Hedw.) C. Muell. *Dicranodontium circinatum* (Wils.). Dungeon Ghyll (H. N. Dixon, 1891); [Granite rocks, Eskdale, Cumberland, (Binstead, 1894).]
69. **Dichodontium pellucidum** (L.) Schimp. Windermere (Clowes, 1854); Longsleddale (Gough); Langdale (Barnes, 1867); Mardale and Fairfield (Barnes); Hill Bell; Stock Ghyll; by river Lune near Sedbergh; Mallerstang.
70. **Dichodontium flavescens** (Dicks.) Lindb. (*D. pellucidum* var. *serratum* Sch.). Stock Ghyll (1876); Levens Park; Barbon Beck.
71. **Oncophorus polycarpus** (Ehrh.) Brid. (*Cynodontium polycarpum* Schp.) Rydal (Borrer, 1845); Blea Tarn, Mardale and Red Screes (F. Clowes, 1855); rocks at the Head of Hartsop Beck (A. Ley, 1880); head of Longsleddale and Helm Crag, Grasmere (Binstead, 1885); Plaice Fell (W. B. Waterfall, 1887).



72. **Oncophorus Bruntoni** (Sm.) Lindb. *Cynodontium Bruntoni* Bry. Brit. Kettle Crag, Langdale, and Helm Crag, Grasmere (Binstead, 1885).
73. **Oncophorus crispatus** (Dicks.) Lindb. (*Rhabdoweissia denticulata* Sch.). Grasmere (Clowes, 1855); under shady rocks, Helvellyn (J. Nowell, 1867); Grasmere and Rydal (Whalley, 1864); Hill Bell.
74. **Oncophorus striatus** (Schrad.) Lindb. *Rhabdoweissia fugax* H. Grasmere and Langdale Pikes (Sidebotham, 1845); Grayrigg Forest (1868); High Street; Harter Fell; Patterdale.
75. **Oncophorus crenulatus** (Mitt.) Braithw. Far Easedale (C. H. Binstead, 1885); Westmorland (G. Jameson, Sep. 1889).
76. **Ceratodon purpureus** (L.) Brid. Windermere (Clowes and Barnes); Scout Scar (1868); Levens Park; Oxenholme; Mallerstang.
- Fam. *TORTULACEÆ*.
77. **Ephemerum serratum** (Schreb.) Hampe. Levens and Foulshaw (1868); near Arnside Tower (Barnes, 1870); Kentmere; Barrow Field, near Kendal.
78. **Acaulon muticum** (Schreb.) C. Muell. *Sphærangium muticum* Sch. Synop. Helsington Barrows (Barnes, 1870); Whitbarrow (Barnes and Stabler, 1871); Hincaster (Barnes); beside a rabbit burrow, Levens Park (1881); Witherslack, on mud-capped wall.
79. **Phascum acaulon** L. *Phascum cuspidatum* Schreb. Levens (Barnes and Stabler, 1867), plentiful; Arnside (Barnes, 1870); Beetham (1868).  
[VAR. **piliferum** Schreb. On sandy rocks, St. Bee's Head, Cumberland (W. B. Waterfall, 1886)].
80. **Phascum curvicolium** Ehrh. By the highway side, near Kendal racecourse (Barnes, 1871); Arnside (Barnes, 1871); Brigsteer Brow (1885).
81. **Pottia recta** (With.) Mitt. *Phascum rectum* Sm. On hedge bank, Heaves' Farm, Levens (1867); Levens (Barnes, 1868); Heversham Head (1869); Beetham (1868).
82. **Pottia bryoides** (Dicks.) Mitt. *Phascum bryoides* Dicks. Levens Park (Barnes, 1868); on ant-hills at Arnside (Barnes); Sizergh Fell (1870); Whitbarrow, on a path; abundant in a sandy cultivated field, Nether Levens (1885); the Serpentine, Kendal (Binstead, 1887).



83. **Pottia Heimii** (Hedw.) Fuernr. Plentiful in sandy places by the estuary of the river Gilpin, Levens (Barnes and Stabler, 1868); Sandside (Barnes and Stabler, 1872); Meathop Marsh, near Grange-over-Sands.
84. **Pottia truncatula** (L.) Lindb. *P. truncata*. Natland (John Just); Windermere (F. Clowes); Staveley (1867); Ambleside (1867); Arnside Tower (Barnes, 1870).
85. **Pottia intermedia** (Turn.) Fuernr. Levens Park (Feb. 1885).
86. **Pottia littoralis** Mitten. On the marsh, Sampool, Levens (1888).
87. **Pottia lanceolata** (Hedw.) C. Muell. *Anacalypta lanceolata* Bry. Brit. On my garden walk, Levens (1867); Whitbarrow (Barnes, 1868).
- VAR. **leucodonta** Schpr. On mud-capped walls near Brough (1890).
88. **Pottia Starkei** (Hedw.) C. Muell. Near Whitbarrow Hall (Barnes and Stabler, 1869); Levens Park (1886).
- VAR. **Duvallii** (Sm.) Lindb. *P. minutula* v. *conica*. Barrow Field and on the garden path at Greengate Cottage, Levens (Barnes, 1871).
89. **Tortula stellata** (Schreb.) Lindb. *Barbula rigida* Schultz. On mud-capped wall near Bowness (Barnes, 1868).
90. **Tortula ericæfolia** (Neck.) Lindb. *Barbula ambigua*. On mud-capped wall, Windermere (Barnes, 1868); on a bank near Whitbarrow Hall (1885).
91. **Tortula aloides** (Koch.) De Not. Nether Levens (Barnes, 1868); Broad Hill, Beathwaite Green; Heaves (1869); Whitbarrow Hall (1887).
92. **Tortula muralis** (L.) Hedw. Very common on walls and rocks; Levens (1870).
93. **Tortula subulata** (L.) Hedw. Levens Park (1886); Barbon Fell (1885); Pooley Bridge; Mallerstang; Ambleside; Kirkby Stephen.
94. **Tortula mutica** Lindb. *Barbula latifolia* Br. By the river Kent, Nether Levens (Barnes, 1869); Levens Park c.fr. (1872); by river Eden, Kirkby Stephen (1890).
95. **Tortula papillosa** Wils. On apple trees, Beathwaite Green (Barnes and Nowell, 1867); on sycamore in the playground of Levens Boys' School; on oak, Foulshaw (1870).
96. **Tortula lævipila** (Brid.) Schwægr. On trees, Levens Park, (Barnes, 1868); Windermere (Clowes); on elm, Heversham Churchyard; Dallam Tower Park; Nateby (1887).



97. **Tortula montana** (Nees) Lindb. *Barbula intermedia* Milde. Common on limestone walls at Whitbarrow, Levens, and Kirkby Stephen.
98. **Tortula ruralis** (L.) Ehrh. Brigsteer (Barnes, 1868); on hedge-bank, Natland; Underbarrow (1887).
99. **Pleurochæte squarrosa** (Brid.) Lindb. *Barbula squarrosa* Brid., Sch., Syn. II. Barrow Field (Binstead and Marquand, 1885); Heversham Head, in an old stone quarry; on exposed rocks, Brigsteer Wood (1887); Arnside Knot (1893).
100. **Mollia microstoma** (Hedw.) Lindb. *Hymenostomum microstomum* (Hedw.) R. Br. On ant-hills, Arnside (Barnes, 1870); Sizergh Fell (Barnes and Stabler); Mardale (1882); Mallerstang.
101. **Mollia squarrosa** (Nees, Hornsch.) Lindb. *Hymenostomum squarrosum*. Brant Fell (West, 1879).
102. **Mollia tortilis** (Schwægr.) Braith. On limestone rocks near Levens Church (Barnes, 1870); Sizergh Fell and Heslington Barrows (Barnes); limestone quarry, Kendal (Binstead, 1886).
103. **Mollia viridula** (L.) Lindb. *Weissia viridula*. Kendal Fell (D. Gough); Windermere (Dr. Clowes, 1855); Arnside (Barnes, 1870); Staveley (1882); Whitbarrow; on hedge-banks, Foulshaw.
- VAR. **amblyodon** Sch. *Weissia amblyodon* Brid. On rocks near Levens Church (Barnes, 1870); Sizergh Fell (Barnes); Helsington Barrows (1870); Hill Bell (1870).
104. **Mollia rutilans** (Hedw.) Lindb. *Weissia mucronata*. Staveley (1868); Arnside (Barnes, 1870); Whitbarrow; on charcoal stool (Barnes and Stabler); Bowness (Barnes, 1880).
105. **Mollia tenuis** (Schrad.) Lindb. *Gyroweissia tenuis*. Sandstone quarry, Ravenstonedale (Barnes, 1871); on red sandstone near Kaber (1890).
106. **Mollia calcarea** (Nees, Hsch.) Lindb. Whitbarrow (Barnes, 1871); Hell Ghyll, Mallerstang (1888).
107. **Mollia æruginosa** (Sm.) Lindb. *Gymnostomum rupestre* Schleich. Helvellyn (Clowes, 1855); Fairfield (Barnes, 1868); Barbondale (1875); Mallerstang (1888).
108. **Mollia verticillata** (L.) Lindb. *Eucladium verticillatum*. Hill Bell (Clowes, 1855); on tufa near the Spout; Beathwaite Green (Barnes, 1868); Levens Park (1869); by the river Eden, Mallerstang (1888).
109. **Mollia crispula** (Bruch.) Lindb. *Trichostomum crispulum*. Sizergh Fell, on rocks (Barnes); Whitbarrow; Natland (Binstead, 1887).



110. **Mollia littoralis** (Mitt.) Braith. Levens Park; [Sedbergh (1879)].
111. **Mollia brachydontia** (Bruch) Lindb. *Trichostomum mutabile* Br.&Sch. Sandside, Milnthorpe c.fr. (Barnes and Stabler, 1868).
112. **Mollia tenuirostris** (Hk. & Tayl.) Lindb. *Didymodon cylindricus*. Cook's House, Windermere c.fr. ! (F. Clowes, 1855); Red Screes (Clowes); Stock Ghyll (1876). [By the Rawthey, Sedbergh].
- VAR. **Holtii** Br. On rocks in stream, Grasmere (Binstead, 1893).
113. **Mollia nitida** Lindb. Arnside, on rocks (Boswell, 1873); Whitbarrow Scar (Barnes and Stabler, 1871); Patterdale (Binstead, 1880).
114. **Mollia tortuosa** (L.) Schrank. *Barbula tortuosa*. Whitbarrow (Clowes, 1855). Barrow Field c.fr. (Barnes and Stabler, 1867); Whitbarrow c.fr. (Barnes and Stabler); Barbon (1885); Red Screes (1881); Mallerstang (1888).
115. **Leptodontium flexifolium** (Dicks.) Hpe. *Didymodon flexifolius* (Dicks.). On rocks slightly covered with earth, Bowness (Barnes, 1868); Red Screes c.fr. (1881); Barbon Fell (Binstead and Stabler, 1885); Benson Knot, and Borrowdale in Shap Fells (Binstead, 1889).
- [**Barbula curvirostris** (Ehr.) Lindb. *Gymnostomum curvirostrum* Hedw. On moist rocks, Dent (Barnes, 1867).]
- [VAR. **commutata** (Mitt.) Lindb. Cautley Spout, Garsdale, Yorks. (West, 1881).]
116. **Barbula rubella** (Hoff.) Mitt. *Didymodon rubellus*. Very common. Windermere (Clowes); Meathop Sands (1868); Levens Park; Oxenholme; Staveley; Heversham Head (1887).
117. **Barbula lurida** (Hornsch.) Lindb. By the roadside, Beathwaite Green (Barnes and Stabler, 1869).
118. **Barbula brevifolia** (Dicks.) Lindb. *Trichostomum tophaceum* Brid. Scar Bank, near the Spout, Levens (Barnes, 1868); on tufa, Levens Park (1870).
119. **Barbula fallax** (Hedw.). Foulshaw (Barnes, 1868); Heversham Head (Barnes); Levens (Stabler).
120. **Barbula reflexa** (Brid.). *B. recurvifolia*. Rydal (Baker); Barrow Field (Barnes, 1867); on walls, Whitbarrow (1871); Lyth.



## SOME ACCOUNT OF THE SURFACE GEOLOGY OF THE DISTRICT NORTH OF GRANTHAM.

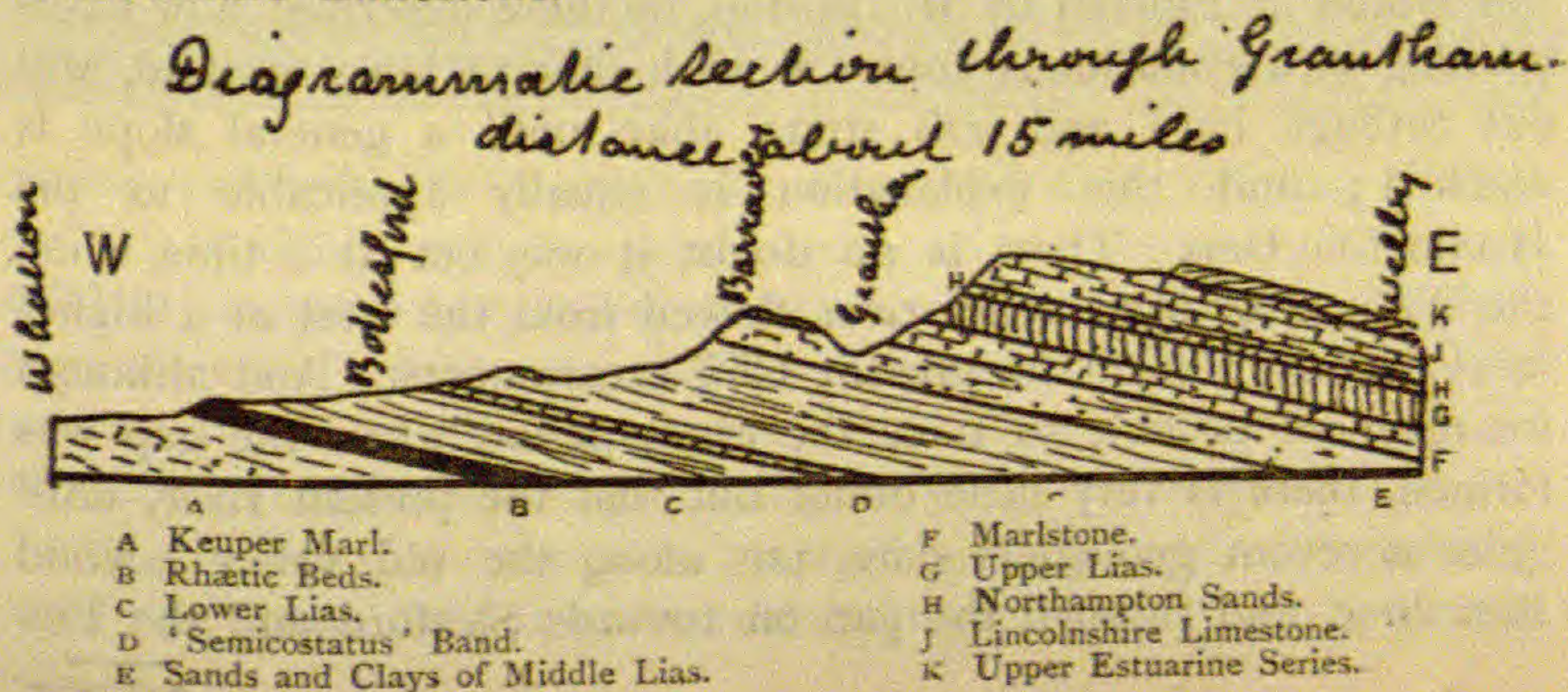
HENRY PRESTON, F.G.S.,  
*Grantham, Lincolnshire.*

To trace the formation of scenery from geological causes is one of the most pleasant pursuits that can be indulged in, and few more interesting localities could have been chosen to illustrate these effects than that selected by the Lincolnshire Naturalists' Union on the occasion of its visit to Grantham. This is only a small branch of geological study, but it is one which appeals most readily to the general student.

We cannot here attempt to enter fully into the natural history of the rocks and their fossil contents, nor of the history of the bygone ages they represent; but we may be able to attempt some account of the district, making special reference to the surface features which owe their origin to geological causes; and it will be found that here, as elsewhere, elevation and depression of land, coupled with the denuding forces of water, wind, and weather, have given us all the varied and interesting peculiarities of our country scenery; they have carved out our valleys and directed the courses of our rivers, and have in every way sculptured the earth's surface to make it beautiful and useful.

The district visited in June 1896 lies to the north of Grantham, and is contained wholly within sheet 70 of the geological survey maps; the rocks which rise to the surface are chiefly of Mesozoic age; and the scenery is truly characteristic of the secondary rocks.

As will be seen from the section diagram below the whole series of secondary strata cropping out at the surface ranges from the Keuper Marls, through the Rhætic and Liassic beds, to the Upper Estuarine series which overlies that most interesting formation the Lincolnshire Limestone.





These beds are a series of clays, sands, and limestones, of various qualities, and as their prevalent dip is towards the south-east at a very slight angle, we get the hard beds forming escarpments facing more or less west, and gentle dip slopes towards the east, whilst the softer beds form the level tracts between these hills; so that a traveller coming from the west across this district would encounter steep inclines—as at Barrowby and Whipperstall Hills—and gentle slopes as he passed on eastwards after reaching the highest point of the escarpment.

It would be impossible to study the geology of this district without taking some account of the river Witham. This river has a most interesting history, many of its stages revealing themselves by investigation of the rocks and land surfaces over which it has passed in the formation of its valley. South of Grantham the river valley is comparatively new, being cut through the limestone to the Upper Lias Clay by a gradual recession of the spring heads. At Grantham the valley is of a much greater age, having been formed at a time when the principal springs lay to the south-west, rising in the vicinity of Denton and Woolsthorpe, and forming the valley now occupied by the Mowbeck, a stream which enters the Witham at the north end of Grantham, and which is now but the ghost of its former self.

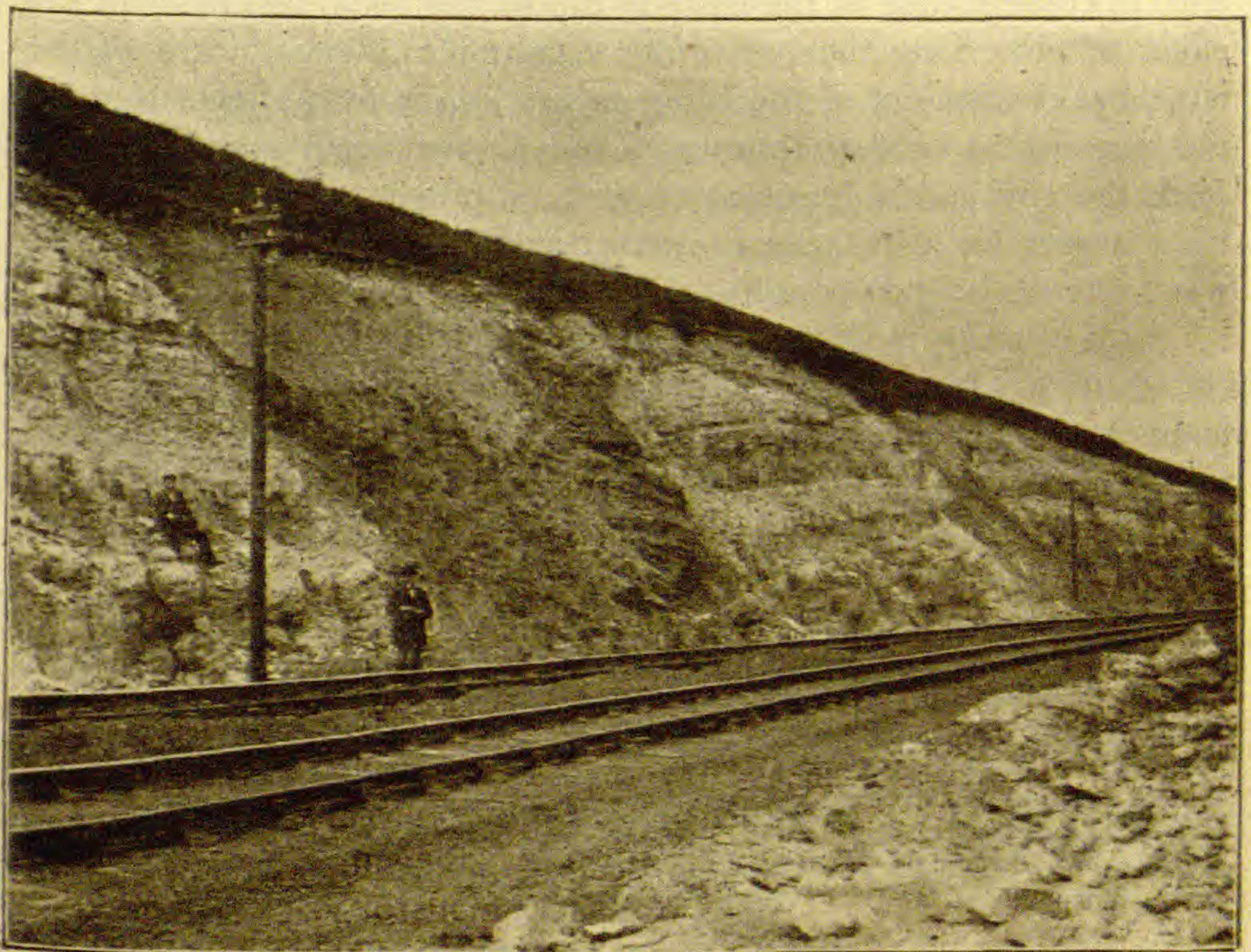
Grantham is practically built on the sands and gravels of this ancient river valley, which lies on the eroded surface of Middle Lias Clay (*Zone of Ammonites capricornus*). Passing through Grantham the valley continues northwards as far as the gap in the cliff at Honington, although the Witham leaves it and takes a westerly course at Barkstone. The alluvial deposits of the old valley continue eastwards through the Honington gap into the Fenland beyond. The question naturally arises, How was this great gap in the Cliff Escarpment formed?

Now, in the interesting paper on the Lincoln Gap, read before the Union at Lincoln by Mr. Burton, he there describes how rivers running in a continuous course from higher to lower ground, will cut through hard and soft strata alike until a general slope is reached; and this explanation is equally applicable to the Honington Gap. There is no doubt it was cut at a time when the Witham, or some other river, flowed from the west at a higher level than the top of the present Cliff escarpments. And although we may not be able to trace the exact period when the gap was formed, there is very little doubt but that the present river, until quite a recent geological date, ran along the old valley beyond Barkstone, and through the gap on towards Sleaford and the Fen



district. This being so the next question is, When and why did the river leave this valley and take a directly opposite course? Now, if we walk along the valley between Honington and Ancaster, we shall not only find sands and gravels and alluvial deposits indicative of the work of an ancient river, but we shall come across two small streams which rise in close proximity to each other, but which take opposite directions of flow, one taking a westward and the other an eastward direction. Remembering, then, that when the old river ran through this valley there must have been one gentle slope towards the east, we are at once struck with the fact that the watershed dividing these streams must have been formed at a later date than the valley.

Further, if we visit the railway cutting at Ancaster, we there find the limestone rocks bent into a long curve, which is well seen to form a sort of hog's back hill running across the valley ; in the next



cutting, and again on the Wilsford Road, the same uplifting of the rocks is noticed, and it appears quite evident not only that this uplift of the rocks has caused the elevated watershed separating the lines of flow of the two streams, but also that the Witham may trace its departure from the Honington Gap to the period when these folds had got sufficiently high to stop the general flow of water.

Of course, this would be a very gradual process, possibly occupying many ages, but the diversion of the Witham and the



folding of the rocks across the old Witham bed seem so adaptable to each other as cause and effect, that we naturally expect to find some of the details of the process, and these are evident in the vertical fissures seen in the bent rocks of the railway cutting, the sands, gravels, and river deposits found all along the valley from Barkstone to Sleaford, and other minor details.

One other feature may be mentioned which came within the area of our excursion, that is the great fault which cuts west and east across the country from Cotham to Syston, a distance of some twelve miles or more. By this fault the continuity of the oolitic escarpment in its general north and south direction has been interfered with, and the bold position of the hill on which Syston Hall is built is due to the effects of this rupture.

The strata to the north of this line of fault have been let down, and, in consequence of the easterly dip of the beds, this has had the effect of preserving the projecting escarpment, hence, north of the fault, the escarpment of the Lincolnshire limestone projects towards the west like a bold promontory, and at the north end of Belton Park the cliff suddenly seems to end, or rather appears to turn at right angles for a distance of some three-quarters of a mile to the west, whence it again continues its northward direction.

Such is a very brief account of some of the surface features in this district. It seems altogether out of character not to enter upon some description of the various rocks and their contents, but these must be reserved for future occasions.

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#### NOTE—WORMS.

**Hair-Worm at Carlisle.**—On June 4th, 1896, I received a bottle containing a specimen of this curious hair-like creature (*Gordius aquaticus* Auct.), with a note to the effect that it had been obtained in Carlisle, possibly from the drinking water, but there was doubt about this. This worm-like creature reaches me more frequently than any other from every part of the country, and just when it was sent to me from Carlisle I was pointing out a specimen to a friend who was out with me collecting at Londonderry in Ireland. There is a widespread idea that it comes from placing a horse hair in water!—HILDERIC FRIEND, Cockermouth, 16th June, 1896.

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#### NOTE—ORNITHOLOGY.

**Starlings Double-brooded.**—In regard to this interesting subject you will find at pages 130 and 373 of the 'Naturalist' for 1889 that I vouched for Starlings (*Sturnus vulgaris*) having two broods in one season in the years 1886, 1888, and 1889. Since those years I have not seen it mentioned by any one, although this present year (1896) has not passed over without my noticing the nesting operations. In the last week of May, and the first in June, there were scores of broods left their nesting-places and were cared for in the fields. But confining myself to four nests within half a mile radius of my home, there were three in separate trees and one in a gable of a cottage, all out as stated above, and I settled to my own satisfaction that the same four places contained a second brood, which left their holes in the first and second weeks of the present month of July.—JOHN WARD, Pymont House, Lofthouse, July 26th, 1896.



## A SECTION IN THE LOWER OOLITES OF SCARBOROUGH.

JOHN H. COOKE, F.G.S., ETC.,  
*Lincoln.*

IN the south-western suburbs of Scarborough, there are several outliers that contain some interesting sections of the upper beds of the Lower Oolites. Their limits and position are defined on the geological map of the district, but, as far as I am aware, no description has been given of any of their exposures. Spring Hill in the village of Falsgrave is one of these outliers; and in Messrs. Peacock's Pit, which has been opened at the southern extremity, some interesting sections are exposed that show the relations between the Cornbrash and the Upper Estuarine Sandstones, and that allow of the collection of a very complete and representative suite of the fossils of the formations. Owing to the dip of the beds, the limited thickness of the Cornbrash and the extensive accumulations of Glacial Clays that mask the face of the country in this part of Yorkshire, such sections as these are rarely found inland, and therefore during a recent visit to Scarborough I took advantage of the opportunity kindly afforded me by Messrs. Peacock to work out in some detail the lithology and fossil contents of the beds in their quarry.

Regarded vertically, the following tabular summary contains a close approximation to the thickness of the various beds exposed, and of the serial order that they occupy.

1. Sandy soil (a mixture of Shales and Kelloway Rock) ...	2 ft. to 3 ft.
2. Cornbrash—	
a. Shale ... ..	2 ft.
b. Ferruginous Limestone (Brashy) ...	} 4 ft. 6 in. to 5 ft.
c. Bluish grey Limestone (compact) ...	
3. Shale... ..	2 ft. 6 in.
4. Sandstones with lignite ... ..	12 ft. to 15 ft.
5. Shale often passing into Sandstone horizontally ...	1 ft. 6 in.
6. Sandstones with ferns and lignite ... ..	3 ft. to 5 ft.
7. Clay with seams of lignite, falsely bedded ... ..	2 in.
8. Sandstones with ferns ... ..	20 ft.
9. Shales ... ..	2 ft.
10. Sandstones to bottom of quarry... ..	10 ft.

As will be seen from the above details, the Upper Estuarine rocks form the bulk of the section, and consist of alternating beds of sandstones, shales and clays, each of which rests conformably on the other. They serve as an admirable object lesson for those who would study examples of false bedding in all of its stages, as the sandstones, clays, shales, and seams of lignite rapidly alternate one with another, assuming lenticular, pockety and other forms



within short distances, and often replacing one another at the same horizon in a manner such as one finds at the present day in delta and other estuarine deposits where the currents are erratic and constantly changing.

Remains of animal organisms seem to be rare, as neither the quarry-men nor myself have met with any specimens; but I have no doubt but that careful and systematic seeking will result in the finding of some forms of brackish-water or marine life. Carbonaceous fragments of ferns, cycads, and conifers are remarkably abundant in all of the sandstone beds. One of these pieces, measuring 15 inches long, 5 inches wide, and 5 inches thick, was well preserved, and under the microscope it exhibited in its transverse section the curvature of a segment of a circular corona; but the majority are so much changed or badly preserved that they do not present any well-defined histological structure. The ferns are numerous and in a much better state of preservation. The seam of lignite in bed 7 extends for about 10 feet along the quarry face, and is about 2 inches in thickness; but the plant-remains in it do not offer distinctive characters sufficient for specific or even generic determination. All the characters of this formation seem to point to the conclusion that the beds were deposited in a delta; and further investigations will probably result in the finding of other remains that will assist in the more exact determination of the precise character of the physical conditions that then endured.

Overlying these estuarine deposits is the representative of the Yorkshire Cornbrash, a rock which, as here developed, may be divided lithologically into three parts:—

- a. Arenaceous shales.
- b. A yellow, ferruginous 'brashy' limestone.
- c. A hard, compact, semi-crystalline limestone, the colour of which varies from a deep blue to a light ashen-grey.

The shales are ashen-grey in colour and somewhat sandy. The lower portions are very fossiliferous, the predominant forms being *Rhynchonella leedii*, *Waldheimia obovata*, and *W. lagenalis*, which form thick masses with the casts of *Modiola*, *Myacites*, *Gresslya*, and *Cardium*.

The yellow rock is variously textured, but as a rule it is very coarse and 'brashy,' and it readily cleaves and exfoliates on being exposed to weather influences. In this respect it differs distinctly from the underlying rock into which it merges imperceptibly. Iron pyrites abound in it, and it is to the decomposition of these that it owes its yellowish and reddish-yellow colour. Fossils are very abundant, the most common being *Ostrea marshii*, *Ammonites*



*henleyi*, *Lima pectiniformis*, *Pecten demissus*, *Goniomya* v. *scripta*, *Trigonia scarburgensis*, *Terebratula lagenalis*, *Exogyra nana*, *Gryphea mima*, *Homomya crassiuscula*, several species of *Pholodomya* and *Myacites*, *Serpula intestinalis*, *Vermicularia nodus*, and many others which, though plentiful, are not quite so common as the foregoing. A complete list of the fossils collected and observed in this section is appended.

In many of these fossils the carbonate of lime of which the shells were originally composed has been wholly or partially replaced by carbonate of iron, and this latter by subsequent oxidation has been converted into a hydrous peroxide.

Sub-division *c*, which is the predominant feature of the Scarborough Cornbrash, consists of an exceedingly compact, semi-crystalline limestone, having a fairly uniform thickness of about four feet. It crops out along the quarry face, and stands out in bold lines from among the shales with which it is intercalated. Owing to its great compactness the pitmen have to use dynamite when quarrying it, and it is from the masses and fragments that have been thus detached that the lithology and fossil contents may best be studied. The rock is crowded with fossil remains, but the task of removing them is a difficult and often an unsatisfactory one. Many of the fossils are of a black or of a blue-black colour, which is probably due to the presence of phosphate of iron that has been formed by the decay, by bi-carbonate of iron, of the pre-existing phosphate of lime. This bi-carbonate would be formed by the reaction of iron-oxide and the carbonic-oxide derived from the decay of the organic matter of the fossil.

The rock is variously coloured on the weathered faces, but the interior is always light blue or ashen-grey. These tinctorial variations are due to the different degrees of oxidation which the iron contained in the beds has undergone, the yellow being often due to the formation of a sesqui-oxide and the red or fawn to a per-oxide. When freshly broken the surfaces of the fractures are clean and of a blue colour; but on exposure the surface weathers rough and the colour changes to an ochreous red or an ashen grey.

The contained fossils are both generically and specifically very numerous, and are identical with those found in the overlying subdivisions.

There are, however, one or two points of interest in connection with this part of the subject that are deserving of special mention. The first of these is the noting of the occurrence of a large nautiliform cephalopod which I obtained from this bed. It has nothing in common with the *Nautilus hexagonus* which lies in the Scarborough



Museum, and which is the only nautilus that has hitherto been found in this formation in Yorkshire. I have presented my specimen to the Scarborough Museum. The second was the finding of two specimens of Belemnites in this bed.

Professor Phillips, in his monograph on 'British Belemnites,' page 109, considers the occurrence of Belemnites in the Cornbrash as very doubtful; the two specimens that I obtained from this quarry are therefore all the more interesting. The guards are very slender and delicate and about three-quarters of an inch long. They gradually taper to a pointed apex, and the transverse sections both at the apical and the alveolar parts are circular. They were obtained from the yellow rock.

The ossicles of crinoids (*Pentacrinus*) and the tests of *Echino-brissus orbicularis* and *Holectypus depressus* often occur, though not plentifully.

The following fossils have been collected from the rocks of the Cornbrash in this interesting outlier:—

Ammonites herveyi Sow.	Trigonia elongata Sow.
Var. macrocephalus Schloth.	Trigonia cassiope D'Orb.
Nautilus sp. (not hexagonus).	Cardium lobatum Phil.
Belemnites tornalis (?) Phil.	Astarte (casts).
Trochus strigosus Lycett.	Lucina (casts).
Alaria bispinosa Phil.	Quenstedtia lævigata Phil.
Chemnitzia villata Phil.	Pholodomya ovulum Agas.
Pleurotomaria granulata Sow.	Goniomya v. scripta Sow.
Ostrea marshii Sow.	Homomya crassiuscula L. & M.
Ostrea meadii Sow.	Myacites calciformis Phil.
Gryphea nana Ph.	Myacites sp.
Exogyra mima Ph.	Gresslya peregrina Ph.
Lima duplicata Sow.	Rhychonella leedii Ph.
Lima rigidula Phil.	Rhychonella varians Sch.
Lima pectiniformis Schloth.	Rhychonella concinna Sow.
Pecten demissus Phil.	Terebratula lagenalis Sch.
Pecten vagans Sow.	Terebratula ornithocephala Sow.
Pecten lens Sow.	Waldheimia obovata Sow.
Gervillia aviculoides Sow.	Echinobrissus orbicularis Ph.
Perna obliqua Lycett.	Holectypus depressus Lam.
Modiola imbricata Sow.	Serpula intestinalis Ph.
Modiola cuneata Sow.	Vermicularia nodus Ph.
Pinna cuneata Sow.	Ossicles of Crinoids ( <i>Pentacrinus</i> ).
Trigonia scarburgensis Lyc.	Fossil Wood.

#### NOTE—MOSESSES.

**Pottia Heimii**: an Addition to the Lincolnshire List of Mosses.—This was found on the sands at Cleethorpes by the late Amos Carr, about 1880. There is a specimen in Herb. H. Boswell, and a portion of this has been sent to me for the Lincolnshire County Herbarium.—F. ARNOLD LEES, Leeds.



## LINCOLNSHIRE NATURALISTS AT BOURNE.

REV. E. ADRIAN WOODRUFFE-PEACOCK, L.Th., F.L.S., F.G.S.,  
*Vicar of Cadney; Organising and Botanical Secretary, Lincolnshire Naturalists' Union;*  
*Curator of the Lincolnshire County Herbarium.*

IN lovely weather the eleventh field meeting of the Union was held on August 3rd, at Bourne, South Lincolnshire, in the centre of Natural History Division 16. Considering the month, a holiday time for all who can get away, there was a good attendance of members. Amongst those present were Mr. F. M. Burton, F.L.S., F.G.S., of Gainsborough; Mr. J. J. Davies and Mr. Wherry, of Bourne; Mr. J. S. Sneath, Mr. A. Fieldsend, and Mr. Gregson, of Lincoln; Rev. E. Adrian Woodruffe-Peacock, of Cadney; Rev. H. A. Barker, of Wrangle; Mr. and Miss Stow, of Caythorpe; Mr. Jackson, of Fleet; Rev. W. H. Daubney, of Leasingham; Mr. J. W. Chandler, of Parson Drove; Mr. J. Lane-Clayton and the Misses Lane-Clayton, of Tytton Hall; Rev. C. M. A. Baines, of Carlby; Rev. L. N. Knox, of Creeton; the Dean of Stamford and Miss Howard, of Market Deeping; Mr. B. Crow, Mr. T. Gelsthorp, and Mr. R. W. Goulding, of Louth.

In the forenoon the members visited places of archæological and general interest in the town—which was once a Roman station, and the last refuge of Hereward the Wake, when he was driven from the Isle of Ely by William the Conqueror—botanising as they went. The old castle and earthworks and Peter's Pool or the Well Head proved particularly interesting. The latter is the source of the Bourne Eau, which, within half a mile, has sufficient force to drive three mills.

About noon the scientific proceedings proper commenced, two parties going out in drags for the purpose of examining the Scottlethorpe and Grimsthorpe Quarries and the flora of the old Bytham and Edenham Railway cutting. En route Mr. J. J. Davies, who acted as local guide, gave the following description of the geology of the Bourne district, which had been prepared by Mr. J. H. Cooke, B.Sc., F.L.S., F.G.S., of Lincoln, who was unavoidably absent:—Bourne is situated at the foot of the eastern slopes of the great Lincolnshire escarpment of the Lincolnshire Oolite, and on the very verge of the Fenland. The town of Bourne may be divided geologically into three parts, namely, the northern suburbs, which are built on the Cornbrash; the eastern suburbs, on the Post-glacial deposits of the Fenland; and the central portion, on the Oxford Clay. The Cornbrash, a shallow-sea deposit, the uppermost member of the Lower Oolite, consists of a series of coarse, shelly limestones and sands. It is so called because it readily disintegrates



and breaks up (prov. brashy) for the cornland. To the north of Bourne this formation occurs as patches or inliers that are surrounded by Oxford clays. Morton and Hanthorpe are built on one of these cornbrash islands. Three-quarters of a mile westward of the church, there are two exposures of the cornbrash bed that are known as the Old Town Pit and the New Town Pit. Another is situated about half a mile from the town, just to the north of the Bourne Drove. Diagrammatic sections of these, prepared by Mr. Davies, were shown. In each of these cuttings the cornbrash and superincumbent layers of post-glacial clays and gravels are well developed, and the contained fossils are, as a rule, numerous and well preserved. These fossils include various species of *Ammonites*, *Gervillia*, *Lima*, *Ostrea*, *Pecten*, *Pholadomya*, *Trigonia*, etc. The Oxford clays, upon which the greater portion of the town is built, constitute one of the predominant geological features of Lincolnshire. These clays underlie the Fenland; but, though they attain their maximum development in and around Lincoln, towards Bourne they thin out laterally and disappear to the north and east beneath the clays and gravels of the Fenland. The Oxford clay, a deep-sea deposit, is extremely fossiliferous, abounding in *Ammonites* and *Belemnites*. In the vicinity of Bourne it graduates into a shelly, concretionary limestone known as Kellaways rock. One of the most interesting pits in this formation lies about a mile to the north of Bourne. The characteristic fossils are *Belemnites owenii*, *Avicula expansa*, and *Gryphæa bilobata*. Eastward of the town stretches the Lincolnshire Fenland, with its post-glacial beds of marine silts and clays, and inter-stratified layers of peat. The Fenland represents a plain of marine denudation, on which has been built up, by marine agencies, the present integument of silts, clays, and peats. The operation of waves, tides, and currents, extending over great periods of time, has been the main factor in its formation. The peat beds which are exposed in most of the drains offer themselves as interesting object lessons to the geologist. They point to a time when forest trees and other vegetation flourished in rank luxuriance in the district. These trees are frequently found in ploughing; their overlying beds of silt and clay, often containing sea-shells, suggest the inundations that first destroyed, and afterwards buried, them. Of the antiquity of these there can be no doubt. The remains of neolithic man, consisting of barbed arrow-heads, celts, and dug-out canoes have been discovered at several localities in the vicinity of Bourne.

Mr. A. E. Wherry and Mr. J. J. Davies supplemented the above valuable and interesting description by indicating the local boundaries



of the various strata, pointing out that the Oxford clay terminated at the foot of Stamford Hill. The steep eastern and northern escarpments of this hill, as well as the plateau of the Brunswald, are composed of the boulder clay, which overlies the Oxford clay and the cornbrash, obscuring these formations in many parts, and thus rendering local investigation somewhat difficult. The base line of this glacial deposit slopes gradually eastward with the dip of the Oxford clay towards the border of the Fenland, where it is covered by a newer sheet of boulder clay. These boulder clays pass beneath the Fen beds, the only part of Fenland not so underlaid being the border extending to Dyke, Hacconby, Dowsby, and Dunsby. The included fragments comprise flints, chalk, and stones, and blocks from local jurassic strata. The boulder clay rises from the plains, covers the hill slopes, and rests on the higher parts of the hills in this portion of the county. It is not disposed as in moraines, but it is spread out as a universal mantle. It appears to have been banked against the southern slopes, and bedded in the valleys open to the south. It would seem, therefore, that the ice must have moved from the southward, or have formed as coast-ice along the border of a sinking shore line. Mr. A. J. Jukes-Browne, in his geological memoir, inclines to the view that the boulder clay had its origin in coast-ice. He says:—'We have only to suppose a gradual submergence of the land till the ridges formed by the cretaceous and jurassic escarpments became a succession of long, low islands, round whose shores coast-ice was accumulated every winter. The ice-foot which grew beneath the faces of the escarpments would receive a specially heavy freight of debris, and when broken up into floes during the summer thaws, the distances to which they were carried would depend upon the weight of the load, and on the varying direction of the currents among the islands. This process being continued until the movement of depression submerged the highest points of land, the resulting deposit of boulder clay would have been spread gradually over the older rocks, and, when the sea-floor was again raised, would appear as we now find it, making allowance, of course, for post-glacial denudation.' Attention was also directed to the partial ring of the Upper Estuarine Series overlying the Lincolnshire limestone in the Edenham valley, at the foot of the northern escarpment of the Brunswald. These bands of clay and fibrous limestone were accumulated under alternate marine and freshwater conditions such as prevail in the estuary of a great river. In the lower part of this series at Little Bytham clays are dug for very hard and durable bricks, locally termed clinkers. The fibrous limestone of the Upper



Estuarine was well seen in a portion of the old Edenham Railway cutting, where also was exposed a strip of the great Oolite Limestone. From this brief sketch it will be seen that, to those equipped with the necessary knowledge, Bourne and its vicinity afford a splendid field for investigation. We have noted the fact that the Oxford Clay underlying the Bourne Fen appears (to use the local term) to be 'rising.\*' Trees are continually coming to the top of this sub-stratum, forming a considerable source of annoyance to the farmer. These trees of a former age are invariably found lying in an east-and-west direction, showing the prevailing winds of that ancient time, or, perhaps, the trend of the hurricane that caused their collapse. It appears evident, from a comparison of a large number of borings, that the great Oolite Limestone is the water-bearing stratum, and that along the deep-hidden surface of this rock, which must form a sort of reservoir or wide-rushing subterranean stream beneath the town, flows the excellent water from whence Bourne derives its name and fame. The town supply is derived from a boring at the base of the Stamford Hill (in Dr. Burdwood's paddock), 95 feet; the Spalding water-supply is from the boring near the Board School, 120 feet, the difference proving the dip eastward of the limestone strata. Peterborough is supplied from Braceborough, two miles distant. There are numerous private bores for domestic use, and for mineral water manufactories (Mr. R. M. Mills', and Messrs. Lee & Green's), and for breweries (Bourne Brewery and Bott's 'Angel' Brewery). The streams running into the old Roman Fenland drain and water-way—the Car Dyke—are impregnated with iron. The Blind Well (near the Wood) is said to possess healing virtues for eye complaints; and the Braceborough Spa for skin diseases. Reverting to the geological sketch, it is instructive to note the wide climatic range indicated by the local strata and inclusive fossils. The Oolite sea, in which was laid down by innumerable marine creatures the splendid limestone that makes the county famous, proves the existence of conditions similar to those of Australia and the adjacent islands. The sandy beds show periods of elevation; the coral limestones, of clear water and temporary depression; and the clays, of deeper water, or the influx of mud-bearing currents. The sea in which was deposited the Oxford Clay was deeper and more reef-blocked with coralline formations. The Boulder Clay is a clear evidence of the great ice age, when conditions similar to those among which the Esquimaux shiver prevailed over these parts. Thus

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\* This arises from the shrinking of the peat as the water is drained off, and from the direct decomposition of the vegetable matter as the air enters.



the words of the great Victorian (and Lincolnshire) poet are literally true:—

There rolls the deep where grew the tree ;  
 O earth, what changes hast thou seen ;  
 There, where the long street roars, hath been  
 The stillness of the central sea !

The hills are shadows, and they flow  
 From form to form, and nothing stands ;  
 They melt like mists, the solid lands ;  
 Like clouds they shape themselves, and go !

The flora of this neighbourhood has been so fully studied by the late Rev. Joseph Dodsworth, a splendid all-round naturalist, who was over fifty years Vicar of Bourne, and a dozen other workers, that the following short list comprises everything new to this division:—*Lotus villosus* Ser., Bourne Wood; *Pimpinella Saxifraga* var. *dissecta* With., Edenham; *Asperula cynanchia* L., *Mentha sativa* L., *Polygonum terrestre* Leers, *P. lapathifolium* L., *Alnus glutinosa* Med., and the not uncommon hybrid between *Cnicus acaulis* and *arvensis*. Of the good finds *Atropa*, an alien in Lincolnshire, on the abandoned railway line at Edenham, and in field hedge close by, and *Euphorbia amygdaloides* L., a true native confined to Bourne and a few other woods in the extreme south of the county, must be named.

Fulfilling a promise made at Bourne, we publish the following list, which contains all the extremely rare species noted by the Rev. J. Dodsworth, which have not been recorded again since his day for the Bourne neighbourhood:—*Clematis vitalba* at Morton, *Lepidium Smithii* at Witham-on-the-Hill, *Oxalis stricta* at Bourne, *Veronica spicata* at Bourne Abbey, *Utricularia minor* by Tunnel Bank ditches, *Stachys germanica* between Thurlby and Dickey Wood, halfway up road north side, *Galeopsis ochroleuca* at Bourne, *Chenopodium urbicum* by Millbank and Well Head, *Damosonium stellatum* in Eau and river Glen. To this list may be added two species which want recovering: *Cardamine amara*, found by the Welland at Stamford and painted by the late G. W. Browning, who died at the Cape; and *Melampyrum cristatum* at Witham-on-the-Hill and Awnby.

Mr. R. W. Goulding noted the Common Blue (*Lycæna alexis*), the Wall (*Pyrarge megæra*), the Peacock (*Vanessa io*), and Silver-washed Fritillary (*Argynnis paphia*) only, for butterflies were rare. Of land shells *Helix ericetorum* was common at Scottlethorpe. While Mr. Fieldsend reported that birds had been exceedingly scarce, but his scanty list included the Redstart and Corn Bunting.



After tea at the Angel, Mr. Vice-President Burton, who occupied the chair, apologised for the absence of Canon Fowler, President of the Union, and after complimenting the Society on the number of ladies the county possessed who devoted their attention to science, he congratulated the party on having had so able a leader as Mr. Davies, who knew the district he lived in so thoroughly, and who had worked at its geology with such zeal and ability. A hearty vote of thanks was passed to the Marquis of Exeter, Lord Ancaster, and to Messrs. R. M. Mills and E. B. Binns for the permission to visit the estates traversed.

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### NOTE—WORMS.

**Fresh-water Oligochæta.**—The publication of Mr. Beddard's 'Monograph of the Oligochæta,' reviewed in *Nat.*, Mch. 1896, p. 77, suggests the idea that the time has come when the north-country species should receive more systematic attention. For some years past I have been collecting, and making notes upon, the specimens which have come in my way during my investigations among the terricolous species, and I propose from time to time to send notices of the same to the 'Naturalist.' It may be observed, however, that no hard and fast line can be drawn between aquatic and land species, so that the term aquatic or fresh-water is employed simply to distinguish the species to be studied from the well-known earthworms, including the genera *Lumbricus*, *Allolobophora*, and *Allurus*. Of all the localities which I have inspected I know none so rich as the rivers and becks of Yorkshire, which, like the Aire, are associated with the refuse and off-scourings of our large mills. A dip among the ooze and decaying matter found here will instantly reward the collector, who will sometimes spend hours in an almost fruitless search among the pure mountain torrents and unpolluted streamlets of more sequestered regions. In Cumberland, for example, none but experienced collectors would be able to find materials enough to repay them for the task of searching ponds and ditches, rivers and lakes; though such examination has yielded me more than one valuable result. I shall be glad to receive specimens from different localities for description and record in these pages. They should be sent, if possible, alive. If placed in small tins or wide-mouthed bottles, with damp moss and some of the material amongst which they are found, they will come fresher and with less risk than if sent in water or earth. As they are usually very fragile they should be so packed that the contents of the case do not batter them in transit. They range in colour from white to yellow, red, brown, green, and muddy; and wherever there is water, decaying matter, or anything putrid or humid, there is the possibility of turning up a treasure.

I may here record a species belonging to a widely-spread genus with a terrestrial habit—*Henlea leptodera* (Vejd.); Beddard, *Monograph of Oligochæta*, p. 351. In my note-book I find the following entry under *Enchytraeus leptoderus* (one of the synonyms):—'Found in the Apperley Road, from Idle to Woodhouse Grove, between the George Inn and the Canal, May 1892, among débris in the gutter. Specimens apparently belonging to this species reached me from Essex in 1892.' On turning up my Essex notes and drawings I find that it was *Henlea ventriculosa* (D'Udekem) which I received from there, and not *H. leptodera*. Seeing that my notes on the group differ in several particulars from those of other investigators, that our British species are practically unknown, and that the genus has not even yet been got into satisfactory shape, there is every reason to hope that much good work remains to be done in connection with this section. Beddard thus defines the species:—'Length, 20 mm.; number of segments, 60; setæ straight, 4 to 7 (in each bundle, of which four bundles occur in each segment). Two œsophageal glands, with simple lumen (one pair of spermathecæ). Hab.—Europe, Siberia. Terrestrial.'—HILDERIC FRIEND, Cockermouth.



## PROF. WILLIAMSON'S AUTOBIOGRAPHY.

**Reminiscences** | of a | **Yorkshire Naturalist** | By the late | WILLIAM CRAWFORD WILLIAMSON | LL.D., F.R.S. | Professor of Botany in Owens College, Manchester | Edited by | his wife | London | George Redway | 1896 [8vo. cloth, pp. xii + 228].

'THE Reminiscences of a Yorkshire Naturalist' is a volume which will be read with keen interest by the members of the Yorkshire Naturalists' Union. One of its early presidents, and the first of them to be removed by death, the name of Dr. Williamson will ever be associated with this Society, which he always regarded with singular affection.

This is the record of a life prolonged beyond the usual limit, and occupied mainly in scientific research. An autobiography is necessarily egotistical, and herein lies its chief charm. Whether a man can know himself as he is, may be open to doubt; but, in the case of a man of note, it is of value to learn how he has appeared to himself, and what part of his work he most values. In the present instance the reader will be struck by the equal esteem which the author has for all his labours, and by the concentration of his entire attention on them. They were stirring times in which he lived, these eight decades. Applied science has almost made a new world for us during this period. There has been a great political and social revolution about us. But these things do not trouble the naturalist absorbed in the study of Foraminifera, or in the examination of the Flora of the Coal Measures. Even the great men—his fellow-workers—with whom he was constantly in contact, receive but a passing mention as he hurries on to his work. It is probable that this entire concentration on his object is the secret of the success of this long life which has been spent so honourably in the advancement of natural knowledge.

It is both pleasing and fitting that Dr. Williamson, who left his native county before he had reached manhood, and who passed three-fourths of his years in Lancashire, should yet in the title of this book so emphatically assert his birthright. It was by the vast cliffs of our Yorkshire coast, with the wild sea below, that this searcher into Nature's secrets was born and bred. Behind the cliffs were the romantic gorges and hanging woods through which the infant Derwent flows from the oolitic hills; near at hand were the glacial heaps which have hemmed in its earlier course, forming the swamps of the Vale of Pickering. Beyond this débris of the ice age rose the swelling curves of the Wolds, ending on the southern horizon in the white chalk crags of Speeton and Flamborough Head.



It would be difficult to discover a spot more suitable to the breeding of a naturalist than the neighbourhood of Scarborough. The sea, daily laying bare its treasures and strewing them on the sand; the earth, disclosing itself in vertical sections of its strata, 300 feet to 500 feet in height, crowded with remains of ancient unchronicled life; the marshes of the vale famed for rare insects; the woods, where the May Lily grows, and the moors where the Dwarf Cornel still lingers, sole remnant of an Arctic flora; the distant wolds, where cultivation had just destroyed the last home of the Great Bustard: such surroundings, such sights and scenes, could not fail to be stimulating to young Williamson as they had already been to his father.

John Williamson, the father of our author, was a very remarkable man. He was brought up as a gardener, and though he had, as his son says, enjoyed no educational advantages, he must have acquired great skill in his occupation, since he had for a time the charge of the gardens of Mulgrave Castle. It is likely that the extraordinary profusion of fossils in the Lias cliffs of this neighbourhood would first turn his attention to geology. However this may be, on returning to Scarborough and establishing himself as a nurseryman, he gave all his leisure to this and the kindred studies of entomology, conchology and ornithology, forming considerable collections, which afterwards became the nucleus of the Scarborough Museum, of which he was the first curator.

Guided by a parent whose tastes he inherited, no wonder that the youth soon grew proficient in natural science and became known beyond the limits of his township and county. He had also the good fortune in very early life to meet in familiar intercourse at his father's house William Smith, the Father of English geology, who, to use the words of his nephew and great expositor, John Phillips—'spent his life in establishing the philosophical principles of geology, and in applying them when established to practical use.' Williamson thus from the outset was led on the right track, and was thus spared a mortification often to be experienced by men of great ability and industry, that of retracing painful footsteps and yielding up cherished theories. He learnt to know the fossils, and by them to distinguish the strata, and so from the first pursued his studies on the true inductive method. This was a vast advantage, and Dr. Williamson's veneration for his great teachers, Smith and Phillips, is unbounded; but this should not have led him to speak contemptuously, as he does, of another great Yorkshire geologist, who was not so far in advance of his time, the Rev. George Young. The 'Geological Survey of the Yorkshire Coast' is a book which, published 74 years ago, may



yet be read with profit by any geologist. It is quoted with respect and gratitude in the latest edition of Mr. Woodward's 'Geology of England and Wales.' We are concerned in the honour of all our Yorkshire naturalists, but Young needs no defence of ours. His opinions on the influence of the Deluge were shared by most of his contemporaries, and they were natural to a man of his profession.

How Williamson was apprenticed to a Scarborough surgeon, was attracted to Manchester, became connected with the Owens College, pursued many and varied scientific studies, until he settled down to his life-work on the fossil plants of the Coal Measures, and at last ended his days full of years and honours: all this, with many pleasant details of a homely life, is told in brisk English, not untouched with humour, in the agreeable pages of this little volume. The concluding chapter, and the revision of the whole, are the work of the wife to whom our author owed so much of the happiness of his later years, which were undoubtedly prolonged by her care. Mrs. Williamson has done her part with excellent taste, and has said no more than was necessary to complete the narrative.

The position of Dr. Williamson as a man of science stands on a sure basis. In Paleophytology he was at first a pioneer, struggling with many difficulties and often opposed by men of renown. Undismayed, unheeding, he toiled on, until in the end, with general approval, he ruled over a conquered country reduced to order greatly by his efforts.

Dr. Williamson is entitled especially to the esteem and affection of such naturalists as form the bulk of the Yorkshire Union, because of the very human and benevolent regard which he had for them. Any lover of Nature had his encouragement and support, and many a one has been stimulated by his enthusiasm and kindly interest to pursue his studies with renewed zeal. To some of us who bear him in this grateful memory he has seemed to live again in these pages.—A.H.P.

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#### NOTE—MAMMALIA.

**Badger in North Lancashire.**—Macpherson in his 'Fauna of Lakeland,' 1892, pp. 39-45, mentions two instances of Badgers (*Meles meles*) in North Lancashire. One, without evidence, that the species lingered in a wild state on the Cartmel and Windermere Fells up to about 1830. The other is a record of a capture near Broughton-in-Furness (temp. 1850-60) of a specimen (male?) which was afterwards drowned. The following cutting from the *Ulverston Advertiser* of August 15th, 1896, may refer to an escape from baiting, or in other words, of a prisoner and not a wild specimen. 'A BADGER.—On Wednesday last a badger was found caught in a trap at Holker.'—S. L. PETTY, Ulverston, Aug. 25th, 1896.



## NOTES—ORNITHOLOGY.

**Shoveller Nesting at Skipwith.**—A pair of Shovellers (*Spatula clypeata*) have nested this year at the disused brick-pit pond near Skipwith, where we shot a single bird last September. The female and young were generally to be seen on the pond, but the latter were taken one by one by a Pike, until by the beginning of August only three were left. One of these was shot by the occupier of the farm, and shown to me; the others disappeared.—C. D. ASH, Skipwith Vicarage, Selby, Sep. 22nd, 1896.

**Late Stay of the Swift at York.**—I noticed a Swift (*Cypselus apus*) this morning at 7 a.m., flying against the wind, namely, in a north-westerly direction. Some five or six pairs resort annually to this street to rear their young, and I have frequently seen them on the wing and busy hawking for insects at sunrise. They arrived this year on the 9th May, and left August 14th, but I saw one in another part of the city on the 21st August.—WILLIAM HEWETT, Howard Street, York, September 24th, 1896.

**Flamborough Bird-Notes.**—For several days we have had a great amount of Wheatears (*Saxicola œnanthe*); they are in nearly every field as well as in the lane leading up to the Lighthouse. There is not one Redstart (*Ruticilla phœnicurus*) to be seen, and only one killed flying against the Lighthouse. A few Whitethroats (*Sylvia sylvia*) and Pied Wagtails (*Motacilla lugubris*) have also been observed. Mr. Hall, the Lighthouse keeper, informs me of a strange bird flying against the Lighthouse. He says the size was only very small; the head and bill appeared to be one third, the neck and body another, and lastly the tail. Large quantities of Sea Swallows, Kittiwakes, Skuas, and Gulls have been seen on our coast and round the Headland. I am also glad to mention that I have heard of a young Black Guillemot (*Uria grylle*) being bred in the cliffs at Flamborough and seen by one of our fishermen. I hope it will get safely away.—MATTHEW BAILEY, Flamborough, September 14th, 1896.

**The Pied Flycatcher in Westmorland.**—*Muscicapa atricapilla* has been numerous again this year in a circumscribed area. The immigration of the tribe was singular and (apparently) protracted. I kept watch on a strip of woodland where last year two broods were brought out in adjacent oak trees. On the morning of April 21st a male bird had arrived in one of these trees, where he was not only singing loudly and excitedly and with an unusual variety of notes, but was popping in and out of the old nest-hole. No other bird of the species was heard thereabouts. This state of things continued till the 25th, when the bird's exuberant singing was checked, and only his low call-note revealed his presence. In fact the hen had now arrived, and was already carrying stuff into the hole, while he flitted round, absorbed and cautious. On that day another male was first heard, half a mile away; and a few more on the 29th. But it was in early May that the real swarm began to come in, waxing more numerous every day, and settling too thickly at certain spots for nest-room to be found. On the 13th I saw three mating males sparring at each other jealously at a station which (I believe) none of them managed to maintain; for the hole in a sycamore then taken possession of by one was subsequently seized by Starlings, who reared a brood in it. By the 15th of the month Pied Flycatchers were literally singing everywhere round. Even from a druggist's shop in the centre of Ambleside, the well-known note was to be heard, and the bird was found stationed in the garden of the Salutation Inn, through which the Stock flows. Again another was singing on a knoll by the town, where a row of cottages was in progress. Most of these singers drifted away, of course, but still a fair proportion of nesters remained. The earlier broods were led out by the middle of June. In one nest in a sycamore tree feeding was continued (after, I think, the stronger part of the brood was flown) until June 24th. As early as the 26th of June I had my last sight (and a very pretty one) of the tribe—a hen feeding her three still helpless young ones, cruddled all together on a high oak-tree bough. Nesting over, the birds seemed as usual to vanish utterly.—MARY L. ARMITT, Rydal Cottage, Ambleside, August 13th, 1896.



## NOTES—LEPIDOPTERA.

**Vanessa antiopa at Bracebridge near Lincoln.**—This morning in the garden here I took a Camberwell Beauty near some plum trees, but basking on the raspberries.—GUY M. ELLISON, The Manse, Bracebridge, Lincoln, September 11th, 1896.

**Death's Head Hawk Moth near York and at Spurn.**—On the 18th of August, I had a fine full fed larvæ of *Acherontia atropos* brought me by a rural postman who had picked it up on the high road near Copmanthorpe. I at once placed it in a flower-pot three parts full of soil, and it 'went down' the same day, let us hope to 'rise again' in October as a fully developed moth. Several larvæ have also recently been obtained at Spurn Point, Yorkshire, and it seems to be an *atropos* year, as correspondents from numerous parts of Britain and Ireland record its occurrence in some instances in considerable numbers.—WILLIAM HEWETT, Howard Street, York, Sept. 3rd, 1896.

**Nyssia hispidaria in Wheatley Wood, Doncaster.**—Through the kindness of my friend Mr. H. H. Corbett, of Doncaster, I made my first acquaintance with this species on March 7th, 1896. As the result of three hours' diligent search, I obtained eight males and two females *Nyssia hispidaria*, all at rest on oak, mostly about three feet from the ground, although two specimens were at an altitude of five and seven feet respectively. I also obtained two *Cymatophora flavicornis*, four *Phigalia pilosaria* males, and saw several *Hybernia leucophaearia* at rest on the oaks, but these were all more or less worn. *N. hispidaria*, though fairly common in the London parks and at Epping Forest, is an exceedingly local insect in Yorkshire, the Doncaster district being its headquarters.—WILLIAM HEWETT, Howard Street, York, Sept. 3rd, 1896.

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 NOTES AND NEWS.

The Rev. H. A. Macpherson gives in the 'Zoologist' for August an interesting account of the Museum at Carlisle, the property of the Corporation of that city, mentioning a number of good local examples of birds, including one or two unique examples.

We are pleased with the Record of Proceedings for 1895 which the Cleveland Naturalists' Field Club have sent us for review. The report bears throughout the marks of having been put together by competent members, who fully realize what the work of a local natural history society really is, and unflinchingly restrict themselves to their district. In the introductory remarks by the president of the club (Rev. John Hawell, M.A.) the boundaries of Cleveland are pointed out, and in the subsequent papers on Norman Architecture, the Geology of Runswick, and notes of observations on birds, mammals, Lepidoptera, and Coleoptera, contributed by Messrs. R. Lofthouse, W. Y. Veitch, R. G. Clayton, T. Ashton Lofthouse, W. C. Gribble and M. L. Thompson, these boundaries are respected.

The following incident, which occurred to Mr. Reginald H. Barker, of Scarborough, seemed to him very unusual:—He and two friends had on the 18th July been out after 'Iris' in the New Forest, and, knowing its love for putrefying matter, had carefully prepared and laid out at three separate spots dainty morsels, which were persistently watched for some hours, but though the butterfly was seen once or twice in the near neighbourhood, always at considerable height, none ever approached the delectable preparations, and at last, despairing of a catch, Mr. Barker left his friends and walked away down one of the rides on his return, when after going (say) 250 yards he was suddenly conscious of an insect settling on the breast of his coat. He immediately covered it with his net, and discovered it to be a female *Apatura iris*, considerably worn, and having voided her eggs, so it was sacrificed for the cabinet. No taint of the prepared food could cling to him, as it had been carried in a metal bucket two or three hours previously, and this had never come in contact with Mr. Barker's clothes. The imago seems to be fairly common there this year.







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## HEMIPTERA, 1889 to 1893.

THE present instalment has been compiled and edited by

WM. DENISON ROEBUCK, F.L.S.,

and includes all notices referring to Hemiptera, Heteroptera, Homoptera and Phytophthiria, Thysanoptera, Mallophaga and Anoplura, etc.

The counties and vice-counties of which cognizance is taken are the following, as named and numbered in the Watsonian scheme:—

53, Lincoln S. ; 54, Lincoln N. ; 56, Notts ; 57, Derby ; 58, Cheshire ; 59, Lancashire S. ; 60, Lancashire W. ; 61, York S.E. ; 62, York N.E. ; 63, York S.W. ; 64, York Mid W. ; 65, York N.W. ; 66, Durham ; 67, Northumberland S. ; 68, Cheviotland ; 69, Westmorland with Furness ; 70, Cumberland ; and 71, Isle of Man.

ANON. [not signed]. York S.W.

**Yorkshire Dialects** [words used in Calder Vale from Wakefield upwards —Brocks = Cuckoo-spit (*Aphrophora spumaria*)]. *Yorksh. Folk-Lore Journ.*, Part I, Oct. 1885, p. 16.

ANON. [signed 'W. C. B.']. York S.W.

**Parish Eke-names** [in South Yorkshire ; one is 'Lousy Thorne,' presumably by reason of prevalence of *Pediculus*]. *N. and Q.*, Oct. 21st, 1893, p. 335.

WALTER F. BAKER. Linc. N.

**[*Velia currens* observed by]** **Lincolnshire Naturalists at Woodhall Spa** [on August 7th, 1893]. *Nat.*, Oct. 1893, p. 314.

J. BATALHA-REIS. Cheviotland.

**Notes on the Plants and Insects observed at the Wooler Meeting** [Sep. 16th and 17th, 1887 ; *Velia currens* Fab., Langleyford, on the water]. *Nat. Hist. Trans. Northumb. Durh. & Newc.*, vol. 10, pt. 1, publ. 1888, p. 200.

C. BROOKSBANK. Cumberland.

***Coccus cataphractus*** [in reply to a query where this is to be found, recommends searching among bog mosses in June, Ireland, Scotland, and Cumberland being good localities]. *Sci. Goss.*, Aug. 1891, p. 189.

P. CAMERON. Lanc. S., Cheshire.

**[Excessive abundance of *Aphis dianthi* Schr. round Manchester, in the city, and at Wilmslow, Cheshire, in Sept. 1888].** *Proc. N.H.S. Glasgow*, 27th Nov., 1889, New Series, Vol. 3, part 1, 1888-9, publ. 1889, p. xvii. ; *rep. Research*, Jan. 1889, p. 119.

JOSEPH BURTT DAVY. Linc. N.

**Entomological Exhibition at Alford, Lincs.** [with note of *Dicyphus constrictus* taken by J. E. Mason at Well]. *Nat.*, May 1890, p. 150.

J. BURTT DAVY. Linc. N.

**[Hemiptera-Heteroptera observed by]** **Lincolnshire Naturalists at Gibraltar Point** [on Aug. 15th, 1891 ; *Scolopostethus adjunctus*, *Megalocera erraticus*, *Calocoris bipunctatus*, *Liocoris tripustulatus*, *Lygus contaminatus*,



*Dicyphus epilobii*, *Heteroloma merioptera*, *Plagiognathus arbustorum*, *Anthracoris nemorum*, *A. nemoralis*, *Nabis flavomarginatus*, *Salda pilosa* (new record for Lincolnshire), *S. lateralis*, *S. littoralis*, *Hydrometra stagnorum*, and *Corixa striata* noted and named by J. E. Mason]. Nat., Feb. 1892, pp. 48-49.

J. W. DOUGLAS. Cheshire, Cheviotland, York S.W., Linc. N.  
**Notes on Some British and Exotic Coccidæ (No. 17)** [*Pulvinaria ribesiæ* Sign. at Wakefield and Norland Moor (S. L. Mosley) and near Berwick-on-Tweed (E. A. Ormerod); details given]. E.M.M., Sep. 1890, pp. 238-240. (No. 18) [*Lecanium fuscum*, from near Chester, sent by R. Newstead]. E.M.M., Dec. 1890, p. 319. (No. 19) [*Lecanium ciliatum* n. sp. from Delamere Forest, July 26th, 1890, R. Newstead]. E.M.M., March 1891, p. 68; bibl. in Ent. Rec., March 16th, 1891, p. 351. (No. 20) [*Lecanium distinguendum* n. sp., found at Delamere Forest, gregarious on last year's shoots of *Vaccinium myrtillus*, by R. Newstead; details given; *Pulvinaria betulæ* found on birch at Delamere Forest, 20th July, 1890, by R. Newstead]. E.M.M., April 1891, pp. 96-98; bibl. in Ent. Rec., May 15th, 1891, p. 45. (No. 24) [*Lecanium capræ* (L.), from a rose tree at Alford, Lincs., July 1891, sent by J. Eardley Mason; discussed in detail]. E.M.M., Nov. 1892, pp. 278-280.

J. W. DOUGLAS. Durham and York S.W.  
***Pulvinaria ribesiæ*, Sign.** [at Bernard Castle, Durham, and probably at Huddersfield]. E.M.M., Aug. 1892, p. 219.

JAMES EDWARDS. Northumberland S., York S.W.  
**A Synopsis of British Homoptera-Cicadina** [noting *Strongylocephalus megerlei* Scott, Northumberland (Bold), and *Athysanus brevipennis* Kbm., Huddersfield]. Trans. Ent. Soc. Lond., 1888, part 1, March, pp. 18 and 37.

JAMES FLEMING. Cheshire.  
**Rambles during the Year 1887.**—Bramhall [2nd July; the 'Water beetle *Notonecta*' noted in pond]. Ann. Rep. Manch. Microsc. Soc. for 1887, publ. 1888, p. 65.

W. W. FOWLER. Linc. S.  
**Coccidæ in Ants' Nests** [near Lincoln, probably Hartsholme Hall]. E.M.M., Jan. 1893, p. 17.

JAMES HARDY. Cheviotland.  
**Report of the Meetings of the Berwickshire Naturalists' Club**, for the year 1888 [at Shawdon Hall, Northumberland, *Pseudococcus fagi*]. Proc. Berw. Nat. Club for 1888, publ. 1889, p. 177.

JAMES HARDY. Cheviotland, Durham.  
**Increased spread of *Pseudococcus fagi*** [in North Northumberland (Shawdon Gardens) and Durham (Dunstan Hill, Whickham, and Wishing Well Dean]. Proc. Berw. Nat. Club for 1888, publ. 1889, vol. 12, p. 395.

HENRY HYDE. Lanc. S.  
**The Water-scorpion and the Boat-fly** [*Nepa cinerea* 'very common in most of our ponds about Manchester']. Ann. Rep. Manch. Microsc. Soc. for 1884-5, publ. 1885, p. 10.

GEORGE JOHNSTON. Cheviotland.  
**Selections from the Correspondence of Dr George Johnston** [*Zicrona carulea* L., on Cheviot Moors near Dunsdale (330)].

HARRY WALLIS KEW. Cheshire, Lanc. S.  
**The Dispersal of Shells. An Inquiry into the Means of Dispersal** possessed by Fresh-water and Land Mollusca . . . London . . . 1893 [8vo, xiv. + 291 pages; *Nepa* at Mere Mere, Cheshire, and Birch Hall, Manchester p. 62].



- JAMES EARDLEY MASON. Linc. N.  
**Additions to the List of some Hemiptera-Heteroptera of Lincolnshire** [10, viz., *Gastrodes ferrugineus* L., *Teratocoris saundersi* D. & S., *Phytocoris pini* K., *Calocoris striatus* L., *C. roseomaculatus* DeG., *Chlamydatus ambulans* Fall., *Dicyphus stachydis* Reut., *D. epilobii* Reut., *Harpocera thoracica* Fall., and *Psallus roseus* Fall.; *Dicyphus globulifer* and *D. constrictus* also noted]. Nat., April 1889, p. 128.
- JAMES EARDLEY MASON. York N.W., Cumberland.  
**[Hemiptera observed by] The Yorkshire Naturalists' Union in Upper Teesdale** [in Aug. 1889: *Miris holsatus*, *Lygus pabulinus*, *L. contaminatus*, *Aetorhinus angulatus*, *Orthotylus nassatus*, *Psallus ambiguus*, *Plagiognathus viridulus*, *Anthocoris nemorum*, *A. nemoralis*, *Salda scotica*, *S. c-album*, and *Velia currens*; the two *Saldae* also occur on Cumberland stream-banks]. Nat., Sep. 1889, p. 283.
- JAS. EARDLEY-MASON. Linc. N.  
**Note on *Nabis limbatus*** [at Alford, Lincs., Sep. 1st, inflicting a severe sting]. E.M.M., Dec. 1889, p. 457.
- PHILIP B. MASON. Derbyshire.  
**Discovery of *Trioza centranthi*, Vall., in England** [at Bretby, Derbyshire, on *Valerianella dentata*; details given]. E.M.M., Oct. 1894, p. 231; bibl. in Ent. Rec., Oct. 15th, 1894, p. 248.
- S. L. MOSLEY. York S.W.  
**The Yorkshire Naturalists' Union at Holmfirth** [10th June, 1889; a Mountain Ash above Bilberry Reservoir was full of *Aphis aucupariae*]. Nat., July 1889, p. 203.
- S. L. MOSLEY. York S.W.  
**Yorkshire Galls** [enumerated, in botanical order, including those caused by *Chermes abietis*, *Pemphigus bursarius*, *Schizoneura lanigera*, *S. ulmi*, and *Aphis mali*]. Nat., Sep. 1892, pp. 273-276.
- ROBERT NEWSTEAD. Cheshire.  
**The Male of *Chionaspis fraxini*, Sign. (Ch. salicis, Linn.)** [near Chester; detailed notes]. E.M.M., Nov. 1889, p. 436.
- R. NEWSTEAD. Cheshire.  
**On Some New or Little Known Coccidæ found in England** [giving descriptions of new species; *Dactylopius walkeri*, n. sp. on *Agrostis vulgaris* at Manley, Cheshire, Sep. 5-9th, 1890; *Eriococcus insignis*, n. sp. on the same plant and on *Rumex*, *Pteris*, and *Ulex*, frequently in company (on same leaf) with *Eriopeltis festucae*, and more rarely with *Signoretia luzulae*, at Ince and Manley, Cheshire, Aug. and Sep. 1890; and *E. fraxini*, n. sp., in cracks and crevices of bark of *Fraxinus excelsior*, abundant on three trees at Ince, Cheshire, Aug. 1890]. E.M.M., June 1891, pp. 164-166, and plate 2; bibliog. in Ent. Record, June 15th, 1891, p. 80.
- ROBERT NEWSTEAD. Yorkshire, Cheshire.  
**General Notes on the Scale Insects, Coccidæ** [with notes of *Lecanium minimum* n. sp., on Areca, under glass, Cheshire, *Pulvinaria persicæ* n. sp., on peach, Cheshire, *Pseudococcus associatus* n. sp., on *Ribes*, Yorks., *Ripersia pulveraria* n. sp., under leaf-sheaths of *Agrostis*, Cheshire]. Lanc. and Chesh. Ent. Soc., Nov. 9th, 1891; Ent. Mo. Mag., Dec. 1891, p. 334; Ent., Dec. 1891, p. 307; Brit. Nat., Dec. 1891, p. 271; Ent. Rec., Dec. 15th, 1891, p. 305.
- R. NEWSTEAD. Cheshire, York S.W.  
**On New or Little Known Coccidæ, chiefly English (No. 2)** [including *Pulvinaria persicæ* n. sp., very abundant on peach trees under glass at High Legh, Knutsford, Cheshire; *Signoretia luzulae* L. Duf., abundant on a moist railway embankment on *Luzula campestris* at Ince, Cheshire 1890-91; Oct. 1896.



*Pseudococcus socius* n. sp., on black currant at Wakefield, in company with *Pulvinaria ribesii* (Geo. Parkin); and *Ripersia pulveraria* n. sp., on *Agrostis vulgaris* at Sandiway, Cheshire, Aug. 1891]. E.M.M., May and June 1892, pp. 141-147; summarised in Ent. Rec., June 15th, 1892, p. 128.

R. NEWSTEAD.

Cheshire.

**Notes on New or Little Known Coccidæ (No. 4)** [*Pseudinglisia rodriguezii*, n. gen. et sp., found on *Rodriguezia secunda* at Eaton Hall, near Chester, on plants freshly imported from Trinidad]. E.M.M., July 1893, pp. 153-5 and plate 2; abstract in Ent. Rec., July 15th, 1893, p. 202.

R. NEWSTEAD.

Cheshire.

**Observations on Coccidæ (No. 6)** [noting *Physokermes abietis* as common at Delamere Forest, and new to Britain]. E.M.M., Sep. 1893, p. 209; abst. in Ent. Rec., Sep. 15th, 1893, p. 247.

R. NEWSTEAD.

Cheshire.

**Observations on Coccidæ (No. 7)** [noting *Aspidiotus zonatus* Frauentf. from oak near High Legh, Knutsford]. E.M.M., Dec. 1893, p. 279.

Isle of Man, Cumb., Westmd., Lanc. S., Chesh.,  
Derb., Notts, Linc. N., York N.E. and S.W.,

EDWARD SAUNDERS.

Durham, Northd. S., Cheviotland.

**The Hemiptera Heteroptera of the British Islands.** A Descriptive Account of the Families, Genera, and Species indigenous to Great Britain and Ireland, with notes as to Localities, Habitats, etc. By . . . London: L. Reeve & Co., . . . 1892 [8vo., cloth, pp. viii. + 350; numerous localities given in the counties above specified].

### NOTE—FERNS.

**Moonwort in Wensleydale.**—Yesterday I found two or three patches of moonwort (*Botrychium lunaria*) near the falls on Ellerbeck, between Carperby and Askrigg. I noted it also near Carperby (Bearpark) two years ago, finding then a single specimen.—J. EDMUND CLARK, Aysgarth, R.S.O., Yorks., Aug. 2nd, 1896.

### NOTE—FISHES.

**Pike Taking Young Ducks.**—The Pike (*Esox lucius*) referred to in note on p. 302, was seen to take one of the young Shovellers when almost able to fly, and has almost destroyed a large brood of Ducks (a cross between a Rotterdam drake and a wild duck) which had been hatched at the same pond (at Skipwith).—C. D. ASH, Skipwith Vicarage, Selby, Sep. 22nd, 1896.

### NOTES—BOTANY.

**Arenaria gothica, etc.**—On Tuesday, September 1st, I was by Ribbleshead, and saw *Arenaria gothica* at its former spot, looking bright as usual. Seed which in June 1895 I sent south to my brother-in-law, Mr. John Morland, Glastonbury, grew well in his rockery, and I saw it in flower last Christmas. On Aug. 15th, near Carperby, a rose-bush in full bloom. Mr. J. Percival considered it typical *R. canina*, except that the hips were smaller and rounder.—J. E. CLARK, 12, Feversham Ter., York, 3rd Sept., 1896.

**Botanical Notes from Sheffield: Correction.**—The following records in Botanical Notes from the Sheffield District, 'Naturalist,' Jan. 1895, pp. 7-13, I find to be erroneous:—Page 7, *Ranunculus hederaceus* L. Redmires (T.G.), Snake Inn (T.G.). Page 11, *Crepis hieracioides* Wald. & Kit. The Rev. W. R. Linton pronounces the former to be *R. Lenormandi* F. Schultz, and the latter to be only a form of *C. virens* L. Page 10, *Ænanthe Phellandrium* Lam. This must be struck out, as I understand from Mr. Snelgrove that his record rests upon an error.—THOS. GIBBS, Burton-on-Trent, Sep. 21st, 1896.



**A CRITICAL CATALOGUE OF LINCOLNSHIRE  
PLANTS:  
FROM ALL KNOWN SOURCES.**

REV. E. ADRIAN WOODRUFFE-PEACOCK, L.Th., F.L.S., F.G.S.,  
*Vicar of Cadney, Brigg; Organising and Botanical Secretary of the Lincolnshire Naturalists'  
Union; Curator of the Lincolnshire County Herbarium.*

**TENTH PAPER.**

See explanations given in the preceding papers, viz. :—

Nat., 1894, pp. 85-92, 133-140, 213-220, 257-264, 337-344. Nat., 1895, pp. 95-102, 289-301.  
Nat., 1896, pp. 53-60, 181-188, 245-252.

ALISMACEÆ (*continued*).

**Sagittaria sagittifolia** L.† Native. Divs. 1-7.9-14.16-18.

*DAMASONIUM STELLATUM* Pers. Div. 16. Bourne Eau and river  
Glen, circâ 1837; Rev. J. Dodsworth's *MS. Notebook*, Library  
of Bot. Dep. Nat. Hist. Mus., South Kensington.

**Butomus umbellatus** L.† Native. Divs. 1-7.9-14.16.18.

NAIADACEÆ.

**Triglochin palustre** L.† Native. Divs. 1-6.8-12.16.17.

**Triglochin maritimum** L.† Native. Divs. 2-4.9.11.12.17.18.

The County Herbarium type specimens of *Potamogeton* have  
been named by Mr. Arthur Bennett, for whose continued help  
we wish to express our most heartfelt thanks. Their distribution  
in the county is still very imperfectly worked out; all the notes  
to hand are here.

**Potamogeton natans** L.† Native. Divs. 1.3-5.7-9.11-14.16.18.

**Potamogeton polygonifolius** Pers.† Native. Divs. 1-3.5.7.  
H. C. Watson saw it in S.

VAR. **ericetorum** Syme.† Native. Div. 2. Crossby Warren, 8-93;  
Rev. W. Fowler (Ar. B.).

**Potamogeton coloratus** Hornem.† Native. Divs. 2.3.12.  
Herb. Brit. Mus.

**Potamogeton alpinus** Balb.† Native. Divs. 4.9.13.

**Potamogeton heterophyllus** Schreb.† Native. Divs. 1.3.14.16.

**Potamogeton nitens** Web. Div. 16. In the North Drove Drain,  
Deeping Fen, 3.8. 1883; W. H. Beeby. Herb. Ar. Bennett.

**Potamogeton lucens** L.† Native. Divs. 1-3.6.9.12-14.16-18.

**Potamogeton decipiens** Nolte. Native. Div. 16. Sparingly  
in the North Drove Drain, 1883; W. H. Beeby in *J. of B.*, 1884,  
p. 20. Herbaria of W. H. Beeby and A. Bennett. 'Not the  
Swedish or Holstein form, but that of Silesia.'—Ar. B.



**Potamogeton angustifolius** Presl.† Native. Div. 16(2).  
Deeping and Dunsby Fens.

**Potamogeton prælongus** Wulf.† Native. Divs. 13.14. In  
Fossdyke and river Witham.

**Potamogeton perfoliatus** L.† Native. Divs. 1-4.6.7.9.11-14.16.

**Potamogeton crispus** L.† Native. Divs. 1.3-5.7-9.11-14.16.

**Potamogeton densus** L.† Native. Divs. 1-6.8.9.11.13-16.

*POTAMOGETON ZOSTERÆFOLIUS* Schum. Div. 9. Saltfleetby  
neighbourhood, 1856; Rev. W. Fowler's *MS. Notebook*.

**Potamogeton acutifolius** Link. Native. Div. 12. Merdyke  
Bridge, between Boston and Spilsby, circa 1795; Sir J. Banks,  
Herb. Brit. Mus.

**Potamogeton obtusifolius** Mert. et Koch. Native. Divs. 4.5.  
Herb. Brit. Mus. and Mr. Ar. Bennett's Herb. See Dr. B.  
Carrington's paper, *Bot. Gaz.*, 1849, p. 323.

**Potamogeton Friesii** Rufr.† Native. Divs. 8.9.12.14.18.

**Potamogeton pusillus** L.† Native. Divs. 1.3.4.8.9.11.12.15.16.

VAR. **tenuissimus** Koch.† Native. Divs. 7.9.14.16.

**Potamogeton pectinatus** L.† Native. Divs. 1-4.6.9.11-14.16.18.

**Potamogeton interruptus** Theb.† Native. Divs. 4.8.16.17.

VAR. **scoparius** Wallr.† Native. Divs. 4.9.12.

**Ruppia spiralis** Hartm. Native. Divs. 9(2).12(4). Rare and  
local. Herb. Brit. Mus.

**Zannichellia palustris** L.† Native. Divs. 1.4.7.15-17.

**Zannichellia brachystemon** J. Gay.† Native. Divs. 3.9.11.16.

**Zannichellia pedunculata** Reichb.† Native. Divs. 9.12.16.18.

*ZOSTERA MARINA* L. Native in Div. 12, I suppose. P. Thompson  
records it for Skirbeck Hundred, and Mr. F. A. Lees tells me  
he has seen it on Friston shore. I know of no specimen.

**Zostera nana** Roth. Native in N. Div. 4.9. Cleethorpes  
shore, 150 yards out, 1884; H. Searle. See *B.R.C.*, 1884;  
*J. of B.*, 1884, p. 301; Somercotes, 1889; J. Cordeaux, *Field*,  
1889, p. 415. Herb. Brit. Mus.

#### ERIOCAULÆ.

*ERIOCAULON SEPTANGULARE* With. Div. 12. A Thompsonian  
record.

#### CYPERACEÆ.

*CYPERUS LONGUS* L. Div. 16. Bourne, in Redhall Moat, 1839;  
Rev. J. Dodsworth. No doubt planted there.

**Eleocharis acicularis** R. Br.† Native. Divs. 6.16(2). Very  
rare and local.



- Eleocharis palustris** R. Br.† Native. Divs. 1-9.11-13.15-18.
- Eleocharis multicaulis** Sm.† Native. Divs. 2.5.7.12. No record for **S.** yet.
- Scirpus cæspitosus** L.† Native. Divs. 1(2).7(2).
- Scirpus fluitans** L. Native. Divs. 1.5.7.9(2). Dr. B. Carrington sent or showed H. C. Watson a specimen from **S.** See his Herb. at Kew and Herb. Brit. Mus.
- Scirpus setaceus** L.† Native. Divs. 1.7(2).8.13.
- Scirpus lacustris** L.† Native. Divs. 1.2.4-7.11.13.16.18.
- Scirpus Tabernæmontani** Gmel.† Native. Divs. 1.4.6.12. No record for **S.** yet.
- Scirpus maritimus** L.† Native. Divs. 1-5.8-12.17.18.
- VAR. **compactus** Koch.† Native. Divs. 3.4.11.12.18.
- Scirpus caricis** Retz. Native. Divs. 2.9.13. Very rare indeed. Herb. Brit. Mus. and Watsonian Herb., Kew.
- Scirpus rufus** Schrad.† Native. Divs. 5.9.11(3).
- VAR. **bifolius** Wallr.† Native. Div. 5. (Ar. B.).
- ERIOPHORUM VAGINATUM** L. Once a native, extinct now I fear. Divs. 1.7. For Div. 1 the authorities are W. Peek's *Isle of Axholme*, 1815; 'one of the *Eriophorums*'; and *E. angustifolium* Roth. is there now. The Miller-Anderson *List*, 1847, says 'near Crowle'; but the Rev. J. K. Miller's *Flora Walkeringhamiensis*, see *Naturalist*, 1895, pp. 159-171, only says *E. vaginatum* L., in patches on Thorne Waste. I am sure I took this species on Thorne Waste in 1875, though it is not recorded for the Trent Div. in my friend's *Flora of West Yorks.* We have full proof that the Miller-Anderson *List* was taken from the *Flora*. Div. 7. 'In small quantity on the drier parts of Osgodby Common, near Usselby Corner, 1878'; Mr. F. A. Lees in *MS. Florula of the Market Rasen 'Circuit.'*
- Eriophorum angustifolium** Roth.† Native. Divs. 1.2.4-10.12.13.16.
- VAR. **elatus** Koch.† Native. Divs. 1.5.7.
- ERIOPHORUM LATIFOLIUM** Hoppe. Divs. 1.16. But in both cases there is the greatest doubt. The Miller-Anderson *List*, 1847, says 'near Crowle'; but Miller's *Flora* says, 'In patches on Thorne Waste.' This waste being so near Crowle, there can be no doubt Miller included both *E. vaginatum* and *E. latifolium* in his Lincolnshire list, concluding, no doubt, as they were found just over the border they were with us. This species is not recorded for the Trent Div. of West Yorks. in Mr. F. A. Lees' *Flora*. He says: 'Oozy, marshy places on moors, but



usually upon calcareous soil, appearing to prefer a stiff soil to a light peaty one.' If so, the immediate neighbourhood of Crowle is the most likely spot for it to be found still—far more likely than Thorne Waste, though I thought I took it there in 1875 ; but as my specimens were destroyed years ago I cannot be sure, and *E. angustifolium* var. *elatus* Koch. may have been mistaken for it. Div. 16 is a similar case. In the Britten-White *List*, 1872, it is queried. In H. C. Watson's *Top. Bot.*, 1874, no authority is given ; the 2nd edition is the same ; but in the MS. notes for the 1873-4 edition we read in his own handwriting : 'Entered in the county folios, for this county, on the authority of the Rev. M. J. Berkeley. But his note does not certainly imply this county—"near Stamford." H. C. W.' This note lands us in a double difficulty. Where and what are these 'county folios' ?\* Neither Messrs. J. Burt Davy and F. A. Lees nor I, though we have all worked the bibliography of Lincolnshire botany over and over again, have ever come across a record for this species. If it is in the Berkeley MSS., where are they now ? Watson quotes from them for Northampton. This species has never in the last hundred years grown in Lincolnshire **N.** or **S.** I believe.

**Rynchospora alba** Vahl. Native, but growing rarer each year.

Divs. 1.2.5.7.10(2). Herb. Brit. Mus. Not recorded for **S.**

**Schoenus nigricans** L.† Native. Divs. 1.2(2).3.4.16.

**Cladium jamaicense** Crantz.† Native. Divs. 1.2.5.12. Mr. F. A. Lees adds **S.** in *Outline Flora*, 1892.

*CAREX PULICARIS* L. Native. Divs. 2(2).12. This is a rare species in Lincolnshire. I know of no specimen in a Herbarium. There is no **S.** record.

**Carex divisa** Huds.† Native. Divs. 3.4(2).12. No **S.** record yet.

**Carex disticha** Huds.† Native. Divs. 2.7-9.12.13.15.16.

**Carex arenaria** L.† Native. Divs. 1.2.4-7.9.11.12.16.

VAR. **ligerica** J. Gay.† Native. Twigmoor, 6.7.92 ; Davy and Peacock (Ar. B.).

VAR. **pseudo-brizoides** Clav.† Native. Div. 2. Middleton Plantation, Scawby, 8.6.95. Charles Waterfall. Mr. A. Bennett writes :—'Your plant is hardly *C. disticha* Huds., and I think may be *C. pseudo-brizoides* Bov. et Clav., but I have not seen an authentic specimen, and hence cannot be sure of the name.'

*CAREX TERETIUSCULA* Good. Div. 5. Laughton Low Warren, 1892 ; F. A. Lees says :—'An uncertain plant, which may prove to be *elongata*.'

\* See note at foot of p. 316.



- Carex paniculata* L.† Native. Divs. 1-4.7.8.10.13.16.
- Carex vulpina* L.† Native. Divs. 1-18.
- Carex muricata* L.† Native. Divs. 3.7-9.11.13-16.
- Carex divulsa* Good.† Native. Divs. 3.11.16.
- Carex echinata* Murr.† Native. Divs. 2(3).5.7.18.
- Carex remota* L.† Native. Divs. 1.2.6.8.11-13.15.16.
- Carex elongata* L.† Native. Div. 5. Laughton Low Warren, *B.R.C.* 1881-82. Fowler and Lees. Herb. Brit. Mus.
- Carex curta* Good.† Native. Div. 5. Laughton, 1878; Rev. W. Fowler. *Nat.* 1887.
- Carex ovalis* Good.† Native. Divs. 2.6.7.11.13.
- Carex Hudsonii* Ar. Benn.† Native. Divs. 5.7.
- Carex acuta* L.† Native. Divs. 1-3.5-8.10.13.16.
- Carex Goodenowii* J. Gay.† Native. Divs. 1.2.5.6.12.13.16.
- VAR. *juncella* Fries. Native. Cleethorpes, 1882; H. Searle. *J. of B.*, 1885, p. 50. Mr. A. Bennett's Herb.
- Carex flacca* Schreb.† Native. Divs. 1-11.13-18.
- Carex pilulifera* L.† Native. Divs. 1.2.5.7.10.13.
- Carex verna* Chair.† Native. Divs. 3.5.7.13.
- Carex pallescens* L.† Native. Divs. 2.6-8.15.16.
- Carex panicea* L.† Native. Divs. 1.2.4-8.14.
- Carex sylvatica* Huds.† Native. Divs. 2.8.10-13.15.16.
- Carex binervis* Sm.† Native. Divs. 1.2.5.7.13.
- Carex distans* L.† Native. Divs. 4.5.9.11.12.
- Carex fulva* Good. Native. Divs. 2(2).16. Bogs between Sawcliffe and Roxby, 1857. Bagmoor, *B.R.C.*, 1875; both Rev. W. Fowler. Bourne, in fenpits, circa 1887; Rev. J. Dodsworth. Herb. Brit. Mus.
- VAR. *Hornschuchiana* Bab. Native. Divs. 5.7. Herb. Brit. Mus. Rev. W. Fowler. *B.R.C.*, 1879, p. 90.
- Carex fulva* × *distans*.† Native. Div. 14. Sleaford, above town by river, 1895; Mason and Peacock. Mr. F. Lees suggests *C. xanthocarpa* Degl.; Mr. Ar. Bennett says 'I agree,' but adds 'very odd.'
- Carex extensa* Good. Native. Divs. 9.17. Saltfleet and Humberstone; Rev. W. Fowler. *Nat.*, 1878, p. 129. In Mr. Ar. Bennett's Herb.
- VAR. *pumila* Anders.† Native. Div. 4. Cleethorpes, 1892; F. A. Lees (Ar. B.).
- Carex flava* L.† Native. Divs. 1-6.13.14.16.



- VAR. *elatio* Schlec.† Native. Divs. 2(2).5.13.  
 VAR. *lepidocarpa* Rab.† Native. Divs. 2(3).5.13.  
 VAR. *Æderi* Rentz.† Native. Divs. 2.3.7.13.  
*Carex filiformis* L. Native. Div. 5. Laughton Common, 1879;  
 Rev. W. Fowler. Herb. Brit. Mus.  
*Carex hirta* L.† Native. Divs. 1-4.7.9.11.13-16.18.  
*Carex Pseudo-cyperus* L.† Native. Divs. 1.10.13.14.16.18.  
*Carex acutiformis* Ehrh.† Native. Divs. 1.2.6-9.11.13.14.16.  
*Carex riparia* Curtis.† Native. Divs. 1-5.8.14.16.18.  
*Carex rostrata* Stokes.† Native. Divs. 1-7.13.  
*Carex vesicaria* L.† Native. Divs. 1.2.7.9.11.13.

## GRAMINEÆ.

- SETARIA VIRIDIS* Beauv. Div. 12. 1856. A Thompsonian record.  
*Setaria verticillata* Beauv.† Alien. Div. 1. Near Belton,  
 8.94; Sam. Hudson.  
*Spartina stricta* Roth.† Native. Div. 12(3).  
*Phalaris canariensis* L.† Alien from escaped birdseed. Divs. 2-6.  
*Phalaris arundinacea* L.† Native. Divs. 1-18.  
*Anthoxanthum odoratum* L.† Native. Divs. 1-5.7-13.16-18.  
*ANTHOXANTHUM PUELI* Lecoq. et Lamotte. Alien weed sown in  
 permanent pasture by swindling seed-merchants. I had better  
 not give any localities. It is an annual.  
*Alopecurus myosuroides* Huds.† Native. Divs. 1-3.8.9.11-14.18.  
*Alopecurus geniculatus* L.† Native. Divs. 1.3-5.7.9.11.13.18.  
*Alopecurus bulbosus* Gouan.† Native. Div. 3. Barton-on-  
 Humber Marshes, 5.'93; Miss K. G. Firbank (Ar. B.).  
*Alopecurus pratensis* L.† Native. Divs. 1-18.  
*Milium effusum* L.† Native. Divs. 3.7.8.10.13.16.  
*Phleum pratense* L.† Native. Divs. 1-18.  
 VAR. *nodosum* L.† Native. Divs. 3.15.  
*Phleum arenarium* L.† Native. Divs. 4.9.11.13.  
*Agrostis canina* L.† Native. Divs. 1.5.7.12. No record for  
 S. yet.  
*Agrostis palustris* Huds.† Native. Divs. 1-4.9.11.12.14-16.18.  
 VAR. *stolonifera* L.† Native. Divs. 1-14.17.18.  
*Agrostis vulgaris* With.† Native. Divs. 1.5.7-9.11.12.15.18.  
*Calamagrostis epigeios* Roth.† Native. Divs. 2.6-8.12-14.16.



- Calamagrostis lanceolata** Roth.† Native. Divs. 2.10.13.15.16.
- Apera Spica-venti** Beauv.† Native. Divs. 1.2.5. No record for **S.** yet.
- Ammophila arundinacea** Huds.† Native. Divs. 4.9.11.12. Not recorded for **S.** yet.
- LAGURUS OVATUS* L. Alien casual. Div. 11. Skegness, on sand-hills, circâ 1870; Rev. W. W. Mason. It is a species which no botanist with half the knowledge of my friend Mr. Mason can mistake. No doubt an escape from a garden.
- Aira caryophyllea** L.† Native. Divs. 2.7.13.
- Aira præcox** L. Native. Divs. 7.10.13. Herb. Brit. Mus.
- Deschampsia cæspitosa** Beauv.† Native. Divs. 1-8.10.13.14. 16-18.
- DESCHAMPSIA DISCOLOR* Roem. et Schult. Div. 7. 'At Linwood, in wet places and bare peaty spots with *Eriophorum*, 1878-79. Searched for in vain in 1895, after so many dry summers.' F. A. Lees.
- Deschampsia flexuosa** Sm.† Native. Divs. 1.2.5.7.8.10.13. 16.18.
- Holcus mollis** L.† Native. Divs. 1-5.7.12.13.16.
- Holcus lanatus** L.† Native. Divs. 1-18.
- Trisetum pratense** Pers.† Native. Divs. 1-5.7-9.11-13.15.16.18.
- Avena pubescens** Huds.† Native. Divs. 2.3.5.7. Mr. F. A. Lees' *Outline Flora* says **S.**
- Avena pratensis** L.† Div. 12.13. Skirbeck Hundred, 1820 and '56; P. Thompson. Leadenham! 1896 (Ar. B.).
- AVENA STRIGOSA* Schreb. Div. 12. A Thompsonian record.
- Avena fatua** L.† Native. Divs. 3.7.13.16. Always the variety *pilosissima* Gray.
- Arrhenatherum avenaceum** Beauv.† Native. Divs. 1-9.11-14. 16-18.
- Sieglingia decumbens** Bernh.† Native. Divs. 1.2.5.7.15.
- Phragmites communis** Trin.† Native. Divs. 1-7.9-14.16-18.
- Cynosurus cristatus** L.† Native. Divs. 1-18.
- CYNOSURUS ECHINATUS* L. A ballast casual. Divs. 3.12.
- Kœleria cristata** Pers.† Native. Divs. 2.5.7.8.13.15.
- Molinia varia** Schrank.† Native. Divs. 1.2.5.7.13.
- VAR. depauperata** Lindl.† Div. 5(2).
- Catabrosa aquatica** Beauv. Native. Divs. 2.7.13.



- Melica nutans** L. Native. Div. 2. Broughton and Appleby Woods, 1856; Rev. W. Fowler. Herb. Brit. Mus.
- Melica uniflora** Retz.† Native. Divs. 2.3.5.7.8.10.13.15.16.
- Dactylis glomerata** L.† Native. Divs. 1-18.
- Briza media** L.† Native. Divs. 2-9.11-13.15.16.18.
- VAR. **pallescens** Doell.† Div. 13.
- Poa annua** L.† Native. Divs. 1-18.
- Poa nemoralis** L.† Native. Div. 8. Skidbrooke, 7.6.'56: Messrs. Bogg. This grass cannot be very rare and must have been overlooked. It is sown in all kinds of soils except deep loams and heavy clays for permanent pastures.
- VAR. **coarclata** Gaud.† Doddington, 1862; Rev. R. E. G. Cole (Ar. B.).
- Poa compressa** L. Native. Divs. 2.7.13. Herb. Brit. Mus.
- Poa pratensis** L.† Native. Divs. 1-4.7.9.11.12.16-18.
- Poa trivialis** L.† Native. Divs. 1-4.6-8.11.12.18.
- Glyceria fluitans** R. Br.† Native. Divs. 1-18.
- Glyceria plicata** L.† Native. Divs. 1.3.5.8.11.13.16.
- Glyceria aquatica** Sm.† Native. Divs. 1.3-9.11.12.16.18.

NOTE ON 'COUNTY FOLIOS.'—These 'county folios' are, I have no doubt, what Mr. Watson sent me specimens of, as an idea that had suggested itself to him after the distribution of the first ed. of the *Top. Bot.* I cannot at this moment put my hand on his letter that has reference to this matter, but they were a set of half sheets ruled specially for every species of the British Isles for his 112 counties and vice-counties, so as to show at a glance their distribution, *i.e.*, one on each half sheet.

In consulting Mr. Watson's *MSS.* care is needed, because 53 and 54 did *not* always mean **S.** and **N.** Lincolnshire, the difference being as under:—

<i>Top. Bot.</i>	Map in works before <i>Top. Bot.</i>
53. Linc. <b>S.</b>	53. Leicester.
54. Linc. <b>N.</b>	54. Linc. <b>S.</b>
55. Leicester.	55. Linc. <b>N.</b>
56. Nottingham.	56. Norfolk.
57. Derby.	57. Derby.

In the list of Watsonian *MSS.* given by Mr. Jackson in *J. of B.*, 1883, there is no mention of any Northampton (32) list (*ex* Berkeley), but in the first ed. of the *Top. Bot.* Berkeley is credited with correspondence respecting counties and vice-counties 15.31.32.55.57. (Notes from Mr. Ar. Bennett, 22.9.96).



## MANITOBAN FLOWERS.

**Plants of Manitoba** [ANONYMOUS]. Marcus Ward & Co. Ltd., London.  
N.D. [but 1896. 10s. 6d.]

IT is such 'a far cry' to Lake Winnepeg and the rainy belt of Canadian Manitoba, albeit the province lies, practically, within the same parallels as England, that the point of Art in execution is about the only one in which it is profitable to view this Portfolio of 40 chromo plates—without any letterpress save a meagre numbered 'list of plants,' the figures on quarto cards not being numbered. We regret *not* to be able to praise these, either for accuracy of draughtsmanship, coloring, or precision in 'register.' To a botanist the figures are rather artistically pretty than good; and anyone else with a keen sense of form in our wild flowers, turning over the leaves and coming across the presentments of such common integers in our flora as the Hairbell, or Couchgrass, would be very apt to be misled into inferring what is not the fact—that the species of West Canada were very different to those put under the same scientific name in the mother-country. The watchet Hairbell (*Campanula rotundifolia*), for example, never had in this world such full purple flowers, or such stiff spoon-shaped root-leaves as are here figured! The bloom-scape of the Bird's Eye Primrose is fairly good, but the acuminate rosette leaves indicated on the plate are an exaggerated, unhappy abortion. The Silverweed (*Potentilla anserina*) also, is shockingly unlike the same plant of our goose-greens, with flowers much too orange-red, and leaves that might be those of the Rowan tree, rayed from a centre with inconceivable·maladroitness.

Another point: out of the forty pictured, ten are British, and several of these not true natives of Manitoba at all; shewing, at the best, the work to be intended for eyes upon the spot. The wild Mustard, our Charlock, is a tolerably good effigy, but the expediency in plating it as a, presumably, characteristic wilding, whereas it is only adventive from Europe, is doubtful. It points a moral, however: that the inception of the portfolio is due to a non-discriminating botany.

Another Introduction, the Penny Cress (*Thlaspi arvense*) of our potato and turnip fields, is called 'French Weed,' inferentially because a relic of the pioneer agriculture of our Gallic neighbours. If correct, this is as interesting as it is new to us.

The 'Canada' Thistle ('*Cnicus arvense*'), another weed brought from the Old World, is, in facies, very unlike the same thing with us; being shewn without the creeping roots that make it so terribly difficult to eradicate, and with unbranched stems, and big solitary anthodes, the like of which were never on land of ours!



The only really interesting plates,—in ‘green’ and ‘ripened’ state—but why?—are those which figure what is here called the ‘Russian’ cornland variety *Tragus*, of the prickly Saltwort (*Salsola Kali*), of our sandy seaboard. Whether this curious goat-smelling weed, of the Mediterranean and Euxine countries, considered a distinct species by Linnæus (*Salsola Tragus*), is one with *S. Kali*, transmogrified by the altered conditions of long-continued reproduction with seed-crops, is a moot point; but certainly in physiognomy it is startlingly different. Not impossibly we have in this queer plant a clue to what has happened in the course of ages to the wheat cereal and some few other plants, the wild originals of which are lost. There is sufficient similarity, in such a case as this, to make it probable that in vegetable as well as in animal ‘Evolution,’ missing links, truly existing once upon a time, are, in fact as well as in fancy, of the Past only. To alter to our meaning a well-known line, ‘Oh! for a glimpse of the vanish’d hand’ as verily still remains the cry of the scientist as of the poet; indeed, to feather for far flight the arrow of investigation, the one must have something of the quality of the other.

In absence of any explanatory letterpress, one wonders what is the *raison d’être* of this expensively got-up affair? There are forty times forty shrubs and weeds in the wilds and clearings of the province, all equally worth their portrait; why then, this particular selection, half garden ornamentals, half pests of the tiller? We cannot help seeing reflected in this work something of that immaturity and childishness one so often finds in productions of the West, or designed for Americans. One is puzzled by its showiness, and imperfect nature; and, since lacking in what might have made it of service to practical farmers, one is led to surmise ’twas intended to be an album for the parlour table of shingle-board farms out West, a make-believe of some beauty, to be a ‘joy for ever’ to well-to-do colonists’ daughters.—F. A. L.

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#### NOTE—ARACHNIDA.

**Dolomedes mirabilis in Northumberland.**—On the 6th of August last, while engaged in searching for Spiders at Staward in the above county, I obtained two specimens of *Dolomedes mirabilis* Bl., both males, from the *Colluna vulgaris* growing amongst the rocks below the Peel, and shortly afterwards observed several more of the same species on the waste, stony ground by the river a little beyond the same spot. I am informed by the Rev. J. E. Hull, M.A., who has compiled a catalogue of the Spiders of Northumberland and Durham, that this is the first record of the occurrence of the above Spider in Northumberland.—WM. FALCONER, 4, Roseville Avenue, Leeds, Sep. 10th, 1896.



## RIPPLE-MARKED SANDSTONE AT GRIMESTHORPE, SHEFFIELD.

C. BRADSHAW, F.C.S.,

*Hon. Sec. Sheffield Naturalists' Club.*

THE illustration on p. 320 is from a photograph of an excellent example of ripple-marked sandstone, which occurs about two miles to the east of Sheffield, in the grounds of the Grimesthorpe Chemical Works, belonging to the Sheffield United Gas Light Co. Limited.

In this neighbourhood the geological horizon of the rocks is chiefly that of the Middle Coal Measures, and the rippled stratum, which has a dip of  $27^{\circ}$  towards the south, is one of the beds occurring above what is known as the Parkgate Rock. The markings in this fine-grained sandstone may be traced the whole length of the northern boundary of the works' yard, a distance of some 1,450 feet, the greater portion of which has been bared by the necessary brickmaking and other operations of the Gas Company. An area of the exposure, measuring 325 feet by 120 feet, has suffered little as yet from the disintegrating effects of the atmosphere, and the wave marks, which are nearly parallel to a line running east and west, are remarkably sharp and regular, while here and there transverse and longitudinal sections of *Stigmaria* are evidence of the affinity between the rippled stratum, and the underlying coal seams, of whose existence a contiguous pit affords practical proof.

The illustration covers an area 26 feet by 20 feet, and besides the rippling it shows the preservation of what seems to have been a channel in the old sea beach, along which a streamlet, probably of fresh or brackish water, made its way across the shore to a shallow sea of the coal measure period. As this interesting feature does not appear to be of common occurrence in ripple-marked rocks, the illustration is taken from that part of the sandstone where it is situated.

In a short time atmospheric denudation will have obliterated all traces of this sea beach of the coal period, but that there may exist some permanent record of its occurrence, a slab 34 inches by 22 inches, kindly presented by the Gas Company, has been placed in the geological collection at the Sheffield Public Museum.

Thanks are due to Mr. T. Gascoigne Calvert, Superintendent of the Chemical Works, for his courtesy in affording facilities for taking the photograph and obtaining measurements.



RIPPLE-MARKED SANDSTONE AT GRIMESTHORPE, SHEFFIELD.



RIPPLE-MARKED SANDSTONE AT GRIMESTHORPE, SHEFFIELD.



ALGÆ FOUND AT ROCHE ABBEY,  
ON JULY 11th, 1896.

J. NEWTON COOMBE,

*Chairman of the Sheffield School Board.*

THE result of my microscopical examination of the gatherings taken from the Sandbeck Lake, and from the 'Wishing Well' and Lake at Roche Abbey, on the occasion of the Yorkshire Naturalists' Union excursion there on the 11th July, 1896, has been eminently satisfactory as regards the Diatomaceæ, which were the objects of my special investigation. Taking the above-named waters in the order in which they were visited, the well-known water weed (*Myriophyllum*) which grew very freely in Sandbeck Lake, and for a tube of which I am indebted to the courtesy of Mr. J. Stubbins, of Leeds, proved to be a favourite habitat for the following stipitate species of the Diatomaceæ:—*Cocconema cymbiforme*, *Gomphonema curvatum*, *G. constrictum*, *Achnanthes exilis*, as well as of the needle-like *Synedra radians*, and the curious tube dwelling and somewhat uncommon *Encyonema prostratum*, the frustules of which last-named species move and pass one another up and down their hyaline mucous-made tubes in very curious jerky fashion.

The parasitic members of the family were well represented on the same weed by *Cocconeis placentula*, which appears like so many small lozenges stuck all over and along the decayed portions of the weed from which the chlorophyll had departed. I was fortunate enough to find in Mr. Stubbins' gathering two of the frustules of this species in the interesting state of 'conjugation,' although too much attached to the weed to admit of being separated and mounted without injury to the specimen.

Coming to the waters of the 'Wishing Well' at Roche Abbey, a dipping from which brought me by my wife some two years ago was found to contain an almost pure gathering of the by no means common filamentous Diatom *Odontidium mesodon* (W. Sm.), I was not a little pleased on this my first personal visit to find floating in the depths of the cool clear well water, a brown silkworm-silk-like and perfectly pure mass of this interesting alga. After so successful a second find of this particular diatom, which I may say I have never met with in so pure and healthy a condition in any other of the numerous waters which I have examined in various parts of South Yorkshire, the 'Wishing Well' at Roche Abbey ought certainly to be noted by Yorkshire naturalists as a place to be visited by the lovers of freshwater algæ in their search for 'gems.'



Proceeding to the Lake close to the Abbey ruins, it was but a few minutes before I detected upon the surface of this picturesque water a small piece (about an inch square) of that peculiar-looking yellowish-brown scum which to an experienced eye is a certain indication of a 'good find' of Diatomaceæ. Upon examination under the microscope the gathering, of which, needless to say, I very quickly secured a tube, proved to be in many respects similar to an extremely fertile one I made some three years ago from the lake at Thoresby. Its special feature was its richness in unusually large frustules, '001" in length, of *Pleurosigma attenuatum*, which, after careful cleaning and boiling in nitric acid, give a brilliant opal iridescence of great beauty under dark ground illumination with a magnification of two or three hundred diameters.

I have been able to identify and to mount in Canada balsam, and also dry, the following 58 species of the Diatomaceæ in this one gathering, of which over 40 may be seen on a single slide under a  $\frac{5}{8}$  in. circular cover glass:—

<i>Pleurosigma attenuatum</i> (W. Sm.).	<i>Navicula tumida</i> (W. Sm.).
<i>Pleurosigma lacustre</i> (W. Sm.).	<i>Stauroneis anceps</i> (W. Sm.).
<i>Pleurosigma spencerii</i> (W. Sm.).	<i>Cymatopleura solea</i> (W. Sm.).
<i>Nitzschia sigmoidea</i> (W. Sm.).	<i>Cymatopleura elliptica</i> (W. Sm.).
<i>Nitzschia parvula</i> (W. Sm.).	<i>Cymatopleura apiculata</i> (W. Sm.).
<i>Nitzschia amphioxys</i> (W. Sm.).	<i>Cymbella cuspidata</i> (W. Sm.).
<i>Tryblionella angustata</i> (W. Sm.).	<i>Amphora ovalis</i> (W. Sm.).
<i>Tryblionella gracilis</i> (W. Sm.).	<i>Amphora minutissima</i> (W. Sm.).
<i>Surirella biseriata</i> (W. Sm.)	<i>Diatoma vulgare</i> (W. Sm.).
<i>Surirella ovalis</i> (W. Sm.).	<i>Diatoma elongatum</i> (W. Sm.).
<i>Surirella linearis</i> (W. Sm.).	<i>Odontidium harrisonii</i> (W. Sm.).
<i>Pinnularia viridis</i> (W. Sm.).	<i>Odontidium mutabile</i> (W. Sm.).
<i>Pinnularia viridula</i> (W. Sm.).	<i>Odontidium parasiticum</i> (W. Sm.).
<i>Pinnularia oblonga</i> (W. Sm.).	<i>Denticula sinuata</i> (?)
<i>Pinnularia gracilis</i> (W. Sm.).	<i>Gomphonema curvatum</i> (W. Sm.).
<i>Pinnularia acuta</i> (W. Sm.).	<i>Gomphonema constrictum</i> (W. Sm.).
<i>Pinnularia radiosa</i> (W. Sm.).	<i>Cyclotella kutzingiana</i> (W. Sm.).
<i>Navicula cuspidata</i> (W. Sm.).	<i>Cocconeis placentula</i> (W. Sm.).
<i>Navicula firma</i> (W. Sm.).	<i>Synedra ulna</i> (W. Sm.).
<i>Navicula amphisbæna</i> (W. Sm.).	<i>Cocconema lanceolatum</i> (W. Sm.).
<i>Navicula elliptica</i> (W. Sm.).	<i>Cocconema cistula</i> (W. Sm.).
<i>Navicula gibberula</i> (W. Sm.).	<i>Cocconema cymbiforme</i> (W. Sm.).
<i>Navicula inflata</i> (W. Sm.).	<i>Encyonema prostratum</i> (W. Sm.).
<i>Navicula affinis</i> (W. Sm.).	<i>Encyonema caespitosum</i> (W. Sm.).
<i>Navicula cryptocephala</i> (W. Sm.).	<i>Achnanthes exilis</i> (W. Sm.).
<i>Navicula binodis</i> (?)	<i>Eunotia monodon</i> (W. Sm.).
<i>Navicula bleischii</i> (?)	<i>Melosira varians</i> (W. Sm.).
<i>Navicula veneta</i> (?)	<i>Fragilaria capucina</i> (W. Sm.).
<i>Navicula producta</i> (W. Sm.).	<i>Colletonema neglectum</i> (W. Sm.).

The time of year and want of rain were not favourable for Desmids, but I came across a few vigorous specimens of the



following species:—*Closterium striolatum* (showing very clearly the phenomena of cyclosis and so-called 'swarming of the granules' at its extremities), *Pediastrum granulatum*, *Cosmarium botrytis*, while among the less common of the filamentous algæ, I was fortunate enough to find in the Roche Abbey Lake, and subsequently to be able to mount in its own water a well defined gathering of *Oscillaria spiralis*, the curious and unexplained movements of which (as of a headless screw turning continually on its end) were extremely interesting to watch.

Several other and more common species of *Oscillaria* and at least three species of *Spirogyra* and *Zygnema* were abundant in the Lake.

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## OCCURRENCE OF MACQUEEN'S BUSTARD IN EAST YORKSHIRE.

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JOHN CORDEAUX, M.B.O.U.,

*Great Cotes House, R.S.O., Lincoln; President of the Yorkshire Naturalists' Union.*

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ON October 17th a remarkably fine example of this Eastern Bustard (*Otis macqueeni* J. E. Gray), a resident in the Aralo-Caspian region, was seen in a vetch-stubble behind the warren house at Kilnsea. It was shot at by Colonel White and flew off apparently uninjured. On the next day it was killed by Mr. G. E. Clubley, of Kilnsea, in a wheat-stubble in Easington.

Mr. W. Eagle Clarke, who was out for a walk with Mr. Harry F. Witherby, was fortunate in being able to watch the bird for a quarter of an hour, at the distance of 150 yards, through a powerful binocular. He says it looked on the wing very much like a large owl, and flew low and slow, just skimming the ground. It was pursued by small birds, and the Grey Crows hovered over it, marking the place where it alighted, beyond a high bank. Its colour on the wing appeared isabelline and very contrasting black and white in wing. In walking it carried its head and neck like a feeding pheasant, moving in a stately fashion, but not with head erect. The long black feathers on the side of the neck were conspicuous. When first fired at it rose and flew very leisurely 100 yards and alighted. When under observation it was either feeding or washing and preening itself.

Mr. H. B. Hewetson, of Leeds, and myself saw the bird a few minutes after it was killed, when I took the following notes:—Length,  $28\frac{1}{2}$  inches; flexure, 16; tarsi,  $4\frac{1}{2}$ ; iris very light-straw yellow; tarsi and feet nearly the same colour, perhaps a trifle



darker; bill slaty, base of lower mandible yellow, palate black, tongue whitish, weight 3 lbs. 11 oz.

The feathers on the scapulars and nape are shaded cinnamon and buff, vermiculated, and show very conspicuous broken bands of black on each, one on the latter and two or three on the former. The three bars on the tail are slaty-black, tips of the feathers white. The base of the feathers on the back and breast, for nearly a fourth of their length, are a beautiful salmon-pink, also the down.

An example of Macqueen's Bustard was shot in October 1847, on the Wold, near Kirton-in-Lindsey, Lincolnshire, and another in October 1892, at Marske, North-East Yorkshire. Altogether three examples in England, all on the east coast.

On dissection it proved a male, and the crest, also an examination of the bones, showed it was a young bird. The stomach was filled with vegetable matter, chiefly the heads of ragwort, and remains of a few beetles of the genus *Carabus*.

Easington, 20th October, 1896.

### NOTES—BOTANY.

**The American Water Weed at Roche Abbey.**—In the flora of Roche Abbey in Dr. Aveling's History of the Abbey (1870), the author states that this plant (*Elodea canadensis*) first appeared at Roche about 1865, and that he noticed it in several places growing with great freedom fifty years before (1820), and then it disappeared. Woodruffe-Peacock, in his list of Lincolnshire plants, says there is some evidence of its dying out now.—B. CROW, Louth, Oct. 20th, 1896.

**North Lancashire Plant Records, 1896.**—The following species are all of any consequence that have come in my way for 1896. It is but a poor record. Still for the sake of a few definite localities, I venture to make it poorer by the inclusion of some species included by Miss Hodgson in 1874. The aliens predominate. New records for North Lancashire are marked \*.

*Melilotus parviflora* Lam. Alien. Waste ground, Dale Street, Ulverston. Mr. Duckworth, 1896. Previous record, 1874. Miss Hodgson in J. of B. 'A solitary plant, nr. Bowstead Gates, nr. Ulverston'; and repeated in Baker's Flora, 1885.

\**Bidens tripartita* L. Bank of Urswick Tarn, nr. Ulverston. When found, the specimen was in poor condition, having been submerged for some days—the heavy rains had raised the Tarn.

\**Symphytum patens* Sibth. Denizen, I suppose. One plant on road-side near Stanyon Lodge, Ulverston. So far as I could find, not in any of the adjoining gardens.

\**Antirrhinum Orontium* L. Colonist. A garden weed in Kent Place, Ulverston.

\**Euphorbia Lathryst* L. Alien. A garden weed in Queen Street, Ulverston. The garden in which it occurred had for some time been neglected, and for over two years the house was empty in addition. House now been occupied 18 months and seedlings still appear, only of course to be pulled up.

*Narcissus biflorus* Curtis. Alien. Hawkfield, nr. Urswick. Mr. M. Cranke. Previous records, 1885: Baker's Flora; Field by Coniston Lake, Miss S. Beaver. In Furness, near Old Halls, Miss E. Hodgson, who made the same statement in J. of B. 1874.—S. L. PETTY, Ulverston, 12th October, 1896.



# A CRITICAL CATALOGUE OF LINCOLNSHIRE PLANTS:

## FROM ALL KNOWN SOURCES.

REV. E. ADRIAN WOODRUFFE-PEACOCK, L.Th., F.L.S., F.G.S.,

*Vicar of Cadney, Brigg; Organising and Botanical Secretary of the Lincolnshire Naturalists' Union; Curator of the Lincolnshire County Herbarium.*

### ELEVENTH PAPER.

See explanations given in the preceding papers, viz. :—

Nat., 1894, pp. 85-92, 133-140, 213-220, 257-264, 337-344. Nat., 1895, pp. 95-102, 289-301.  
Nat., 1896, pp. 53-60, 181-188, 245-252, 309-316.

- Glyceria maritima** Merb. et Koch.† Native. Divs. 2-5.9.11.17.18.  
**Glyceria distans** Wahlenb.† Native. Divs. 2.9.17. 8.  
**Festuca rigida** Kunth.† Native. Divs. 2.10.13-16.  
**Festuca rottbœllioides** Kunth. Native. Div. 11. Gibraltar Point, 1878; F. A. Lees. H. C. Watson **N.** and **S.** Herb. Brit. Mus.  
**Festuca Myuros** L. Native. Div. 5. Laughton Low Warren, in a lane near, 1879; Rev. W. Fowler. Herb. Brit. Mus.  
**Festuca sciuroides** Roth.† Native. Divs. 7.9.13.  
**Festuca ovina** L.† Native. Divs. 1.5.7.12.13.15.18.  
**Festuca rubra** L.† Native. Divs. 3.8.9.11. F. A. Lees' *Outl. Flora* says **S.**  
**VAR. arenaria** Osbeck.† Native. Divs. 3.9.11.  
**VAR. FALLAX** Thuill. Div. 7. 'I have kept no record beyond entering it as seen in 1877 or '78 in Rasen area'; F. A. Lees. His *Outline Flora* says **N.** and **S.**  
**Festuca elatior** L.† Native. Divs. 1.3.5.7.9.11.14.18.  
**VAR. pratensis** Huds.† Native. Divs. 3.7.9.11-13.  
**Festuca elatior** × **Lolium perenne**.† Native. Div. 3. Cadney, 1896! Growing where the two species were found together.  
**Festuca arundinacea** Schreb. Native. Divs. 1.3.4.11.12.16. Mr. W. H. Beeby's *Herb.*  
**Bromus giganteus** L.† Native. Divs. 1.3.7.8.13-16.  
**Bromus ramosus** Huds.† Native. Divs. 1.2.7.8.11.12.14.18.  
**Bromus erectus** Huds.† Native. Divs. 4.6.10.13.15.  
**Bromus sterilis** L.† Native. Divs. 1-3.5.8.9.11.13.14.16.18.  
**Bromus secalinus** L.† Native. Divs. 3.11. Skegness, 1891; F. T. Mott. Cadney! 1896 (Ar. B.).  
**BROMUS RACEMOSUS** L. Alien. Divs. 7.13. 'A common casual in dry meadows and "seed-fields." Seen by me in many places in **N.** and about Skellingthorpe in **S.**, but I have kept no specimens or records'; F. A. Lees.



**Bromus commutatus** Schrad. Native. Divs. 6.7.13.16. H. C. Watson's Herb.

**Bromus mollis** L.† Native. Divs. 1-5.7-9.11-13.16-18.

**Bromus arvensis** L.† A casual in 'seeds.' Divs. 8.12.13.

**Brachypodium gracile** Beauv.† Native. Divs. 1-3.7.8.13-16.

**Brachypodium pinnatum** Beauv.† Native. Divs. 1-3.7.8.11.13-16.

**Lolium perenne** L.† Native. Divs. 1-18.

VAR. **italicum** Braun.† A sown alien. Divs. 1-18. On some rich soils and highly farmed pastures it is perennial for years.

VAR. **tenue** L.† Native. Divs. 3.13.

VAR. *STOLONIFERUM* G. Sinclair. Native. Div. 7. Normanby-le-Wold, 1823; G. Whitworth. See Sinclair's *Hort. Gram. Wob.*, 1825, pp. 212 and 217.

*LOLIUM TEMULENTUM* L. Native? Div. 8. Kenwick, circâ 1850; Rev. J. H. Thompson in H. C. Watson's 1873-4 *Top. Bot.* notes in Bot. Dep. Brit. Mus., South Kensington.

VAR. *ARVENSE* With. Div. 5. Near Gainsborough, 1865; Rev. R. H. Charter's MS. *Notes*.

**Agropyron caninum** Beauv.† Native. Divs. 7.12.14.16.

**Agropyron repens** Beauv.† Native. Divs. 1-18.

VAR. **barbatum** Duval-Jouve.† Native. Divs. 1-4.6.7.9.14.16.17.

**Agropyron pungens** Roem. et Shult.† Native. Divs. 17.18.

VAR. *LITTORALE* Reichb. Native. Divs. 3.4.12. Watson's Brit. Mus. *Notes*, and Rev. W. Fowler, *Nat.*, 1879, p. 149.

**Agropyron acutum** Roem. et Schult.† Native. Divs. 9.11.17.

**Agropyron junceum** Beauv.† Native. Divs. 4.11.17.

**Lepturus filiformis** Trin.† Native. Divs. 2.11.12.17.18.

VAR. *INCURVATUS* Trin. Native. Divs. 4.9; Rev. W. Fowler's *MSS.*

**Nardus stricta** L.† Native. Divs. 1-3.5.7.13.

**Hordeum sylvaticum** Huds.† Native. Div. 13. Doddington, 1860; Rev. R. E. G. Cole (Ar. B.).

**Hordeum secalinum** Schreb.† Native. Divs. 1-5.7.8.10-13.15.18.

**Hordeum murinum** L.† Native. Divs. 1-5.9.11-14.16.18.

**Hordeum marinum** Huds. Native. Divs. 3.11.12.17. Specimen in one of H. C. Watson's Herbaria.

**Elymus arenarius** L.† Native. Divs. 4.9.11.12.

#### FILICES.

**Pteris aquilina** L.† Native. Divs. 1-3.5-8.10-13.15.16.

**Lomaria spicant** Desv.† Native. Divs. 1-3.5.7.8.10.11.13.



- Asplenium adiantum-nigrum** L.† Native, I suppose. Divs. 10.11(2).12.18.
- ASPLENIUM VIRIDE* Huds. Div. 11. Toynton St. Peter's Church, 1860; Rev. J. Dodsworth's *Interleaved Flora*.
- Asplenium trichomanes** L.† Native? Div. 1(2). Owston Ferry and Epworth, 1878-1895; Rev. W. Fowler.
- Asplenium Ruta-muraria** L.† Native. Divs. 1.2.4.6.7.9.10.12-16.
- Athyrium Filix-fœmina** Roth.† Native. Divs. 1-3.6-8.10.13.15.
- CETERACH OFFICINARUM* Willd. Wind-sown from garden? Div. 14. Sleaford Church, in one place on the **N.** side; Rev. C. Wilkinson.
- Scolopendrium vulgare** Symons.† Native? Divs. 1.3.8.10-13.15.
- Polystichum lobatum** Presl.† Native. Divs. 8.11(3).
- VAR. **aculeatum** Syme.† Divs. 1.4.11.
- Polystichum angulare** Presl.† Native. Divs. 5.8.11(3).
- Lastræa Thelypteris** Presl. Native. Divs. 2.3.7. Herb. Brit. Mus.
- Lastræa Oreopteris** Presl.† Native. Divs. 1.3.5.7.8.11.13.
- Lastræa Filix-mas** Presl.† Native. Divs. 1-3.6.7.10-16.
- VAR. **affinis** Bab. There was a specimen in Messrs. Bogg's Herb., but I never received it. Div. 8, I imagine. See F. A. Lees' *Outline Flora*.
- VAR. **paleacea** Moor.† Native. Divs. 1.7.10.
- Lastræa spinulosa** Presl.† Divs. 1-3.5.7.10.11.13.15.
- Lastræa dilatata** Presl.† Native. Divs. 1-3.6-8.10-13.15.
- Polypodium vulgare** L.† Native. Divs. 1.3.6-8.11-13.15.
- Phegopteris Dryopteris** Fée.† An alien, I imagine. Div. 1. In an oak wood, now cut down, near Epworth. 'It has been found many times since the wood was felled in this neighbourhood, but is scarce now.'—Sam. Hudson. Edward Newman writes, *Hist. Brit. Ferns*, 1854, p. 59, 'It has been recorded as growing in Lincolnshire, but I have reason to suspect the intentional introduction of the species, or an error in name, since it certainly requires some proficiency in botany to distinguish between this and the following species.'
- PHEGOPTERIS CALCAREA* Fée. Alien, if with us now. Div. 3. Horkstow, 1892; Miss Firbank.
- Osmunda regalis** L.† Native, but very rare now. Divs. 1.2.5.10.13.
- Ophioglossum vulgatum** L.† Native. Divs. 1-3.6-15.17.
- Botrychium Lunaria** Sw.† Native. Divs. 1-4.7.10.13.



## EQUISETACEÆ.

- Equisetum maximum** Lam.† Native. Divs. 3.7.8.10.11.15.16.  
**Equisetum arvense** L.† Native. Divs. 1-9.11-14.16-18.  
**Equisetum sylvaticum** L.† Native. Divs. 2.3.6.7.12.13.  
**Equisetum palustre** L.† Native. Divs. 1.3-5.7-9.11.13.16.  
 VAR. **polystachyum** Syme.† Divs. 2.5.14.  
 VAR. *NUDUM* Newm. Div. 2. Crossby Warren, 1870-80; Rev. W. Fowler. 'A starved state.'—J. T. B.  
**Equisetum limosum** Sm.† Native. Divs. 1.3-9.11-14.16.17.  
 VAR. **fluviatile** L.† Native. Divs. 1.3-7.9.11.13.16.  
*EQUISETUM HYEMALE* L. Div. 12. Wainfleet, 1829. E. Oldfield's *Wainfleet*, p. 310.

## LYCOPODIACEÆ.

- LYCOPODIUM SELAGO* L. Div. 1. W. Peck's *Isle of Axholme*, 1815.  
**Lycopodium inundatum** L.† Native. Divs. 2.5.7.  
**Lycopodium clavatum** L. Native. Divs. 2.5. Herb. Brit. Mus.  
**Lycopodium alpinum** L. Native, if still with us. Div. 2. Crossby Warren, where iron workings are now, 1875; Rev. W. Fowler. Herb. Brit. Mus. *J. of B.* 1883, p. 84.

## SELAGINELLACEÆ.

- Selaginella selaginoides** Gray.† Native. Divs. 2.5.

## CHARACEÆ.

The specimens have been submitted to the critical examination of Messrs. H. and J. Groves; for which we have to thank them.

- Chara fragilis** Desv.† Native. Divs. 3.7.11.13.16.  
 VAR. **barbata** Gant.† Native. Div. 16. Dunsby, 1895; Mason and Peacock.  
 VAR. **Hedwigii** Kuetz.† Native. Div. 16(2). Deeping and Crowland, 2.8.'83; W. H. Beeby.  
 VAR. **delicatula** A. Br.† Native. Div. 3. Newstead, 19.7.'94; Mason and Peacock.  
**Chara aspera** Willd.† Native. Divs. 1.16. Althorpe, 8.'94; Rev. W. Fowler. Deeping Fen, 1884; W. H. Beeby. 'The commonest species and the only one that is generally plentiful: covering the bottom of the larger drains for miles.'—W. H. B. in *J. of B.*, 1884, p. 2.  
**Chara polyacantha** Braun.† Native. Div. 3. Bigby, 20.7.'94; Mason and Peacock.  
**Chara contraria** Kuetz.† Native. N. 9. North Somercotes, 1896; Lees and Peacock (Ar. B.).  
**Chara hispida** L.† Native. Divs. 1.3.4.7.15.16.



- Chara vulgaris** L.† Native. Divs. 1-4.7.9.11-13.15.16.  
 VAR. **longibracteata** Kuetz.† Native. Divs. 3.6.12-14.16.  
 VAR. **papillata** Wallr.† Native. Divs. 14.16. Sleaford, 1895;  
 Mason and Peacock. Deeping St. James, 2.8.'83; W. H.  
 Beeby.  
**Tolypella glomerata** Leonh.† Native. Div. 12. Leverton,  
 7.'94, and Wainfleet, 19.5.'94; Rev. W. W. Mason.  
**Tolypella prolifera** Leonh.† Native. Div. 16. Deeping Fen,  
 29.7.'83; W. H. Beeby.  
**Nitella opaca** Agardh.† Native. Divs. 3(3).4.7.

The following list of aliens, escapes, and outcasts, not to be found in the 9th ed. of *The London Catalogue*, includes nothing that I believe to have been purposely planted. They are in alphabetical order under the scientific name, for the sake of rapid reference, and because they are hardly worth the trouble of recording at all, in my opinion.

I have specially to thank Mr. J. G. Baker, F.R.S., the keeper of the Herbarium at Kew; Mr. James Britten, F.L.S., of the Bot. Dep. Brit. Mus.; Mr. F. A. Lees, of Leeds; and Mr. E. G. Baker, of the Bot. Dep. Brit. Mus., South Kensington, for continual help in naming these foreign aliens.

- Achillea decolorans** L.† Divs. 9.15.  
*ACHILLEA TOMENTOSA* L. Div. 12. Boston, 1856; P. Thompson.  
**Ambrosia artemisiæfolia.** Div. 7. Rasen, among clover after-  
 math, 1877; F. A. Lees. Herb. Brit. Mus.  
**Amsinckia lycopsoides** Lehm.† Divs. 4.8.13. Foreign wheat.  
**Anchusa italica** † Div. 13. Lincoln, 1896. Lees, Sneath, and  
 Peacock.  
*ANDROSACE SEPTENTRIONALIS* L. This was a garden plant or  
 escape. C. Merrett's *Pinax Rerum*, 1667, p. 6. Found by  
 Mr. Halilah.  
**Anthemis discoidea** L.† Div. 13. Lincoln, by Fosdyke, 1896;  
 Lees, Sneath, and Peacock.  
**Arabis albida** L.† Div. 12. Near Boston, 5.'84; L. Gibbs.  
*ARTEMISIA CÆRULESCENS* L. See *Nat.* 1895, p. 96.  
**Athelexis humilis.**† Div. 9. Mablethorpe, 1895; B. Crow.  
*BUFFONIA TENUIFOLIA* Sm. See *Nat.* 1894, p. 139.  
**Bunias orientalis** L.† Div. 5. Kirton Station Flour Mill, 1893;  
 Peacock. Foreign wheat.  
**Calendula officinalis** L.† Divs. 2.3.4. Garden escapes or  
 outcasts.



- Campanula pyramidalis.**† Div. 10. Woodhall Spa, 1882 ; Miss Mackinder. Garden escape.
- Campanula speculum** L.† Div. 13. Doddington, 1862 ; Rev. R. E. G. Cole. In foreign wheat.
- Cannabis sativa** L.† Divs. 3.5.7. From escaped bird-seed and foreign wheat.
- Centaurea axillaris** Willd.† Div. 13. Lincoln, by Fosdyke, 1896 ; L., S., and P.
- Centaurea spinosa** L.† Div. 6. Cleethorpes, 31.8.'85 ; Rev. H. Friend. Druce Herb., Oxford.
- Collomia linearis.**† Divs. 1.10.11. Garden escapes ?
- CROCUS SATIVUS* L. Div. 16. Ropsley, 1838 ; Rev. J. Dodsworth. In a stone-pit by the road-side between the Nightingale Inn and Ropsley Rise. This is the true Saffron.
- Dianthus barbatus** L.† Divs. 2.13. Garden outcasts.
- DIPSACUS FULLONUM* Mill. Divs. 3.15.
- Echinosperrum Lappula** Lehm.† Div. 13. Mere, 1895 ; Miss Pears. In wheat.
- ELYMUS GENICULATUS* Curt. Div. 11. Skegness and Ingoldmells, 1838? ; Rev. J. Dodsworth. According to W. T. Aiton's *Hortus Kewensis*, London, 1810, vol. 1, p. 176, Sir J. Banks introduced *Elymus philadelphicus* from North America into England. Can Dodsworth's plants have been the last vestige of his experiments on the Lincolnshire coast?
- Erysimum hieracifolium** L.† Divs. 12.17.
- Eschscholtzia californica.**† Div. 5. Kirton Station, by Flour Mill. Brought with Californian wheat.
- Faba vulgaris** L.† Divs. 3.13. Cadney, 1894 ; water carried and thrown out with sand in cleaning Kelsey Beck. Lincoln, 1896 ; L., S., and P.
- Falcaria Rivini** Host.† Div. 6. Lincoln, near Barracks, 1895 ; W. Higginbottom.
- Farsetia incana** R. Br.† Div. 6. Lincoln, in a seed field, 1895 ; Miss W. T. Venables.
- Galium spurium** L.† Div. 13. Lincoln, by Fosdyke, 1896 ; L., S., and P.
- Genista ovata** Willd.† Div. 13. Near Scopwick Railway Station, 1896 ; Rev. W. W. Mason.
- Gilia capitata** Don.† Div. 13. Mere, 1895 ; Rev. W. W. Mason.
- Heliotropium peruvianum** L.† Div. 1. Grey Green, Belton, 1895 ; S. Hudson. From escaped seed after hot summer of 1893 ?



- Iberis umbellata** L.† Div. 4. Cleethorpes Shore, 1896; Peacock.  
A garden outcast or escape.
- Iris germanica** L.† Div. 2. In a stone-pit between Roxby and Winterton, 1892; Rev. W. Fowler. A garden outcast.
- JUNIPERUS SABINA* L. Div. 6. Lea Wood, 1893; Miss Anderson.  
Bird sown?
- Lathyrus annuus** L.† Div. 13. Lincoln, by Fossdyke, 1896; L., S., and P.
- Lathyrus inconspicuus** Willd. Div. 13. Lincoln, by Fossdyke, 1896; L., S., and P.
- Limnanthes Douglasii** Br.† Div. 2. Bottesford, 1866.  
Impermanent.
- Lunaria biennis** L.† Div. 3. A garden escape or outcast.
- Mahonia aquifolium** T. and G.† Divs. 2.3. *Nat.*, 1894, p. 90.
- Malva nicæensis** L.† Div. 15. Lincoln, by Fossdyke, 1896; L., S., and P.
- Melilotus cærulea** L.† Div. 13. Lincoln, by Fossdyke, 1896; J. S. Sneath.
- Neslia paniculata** Desf.† Div. 7. Hatton, in seed-field, 1894; W. Higginbottom.
- Nigella damascena** L.† Div. 7. Middle Rasen, in corn-field, 1894; Mrs. Tryon.
- Œnothera Godestea**.† Div. 5. Scotton Common, 1896; Rev. W. Fowler. From bird-sown or blown seed.
- Oxalis violacea** L.† Div. 10. Mavis Enderby, 1896; Miss S. T. Raunsley. Found in a field recently broken up into small plantations.
- Philadelphus coronarius** L. Div. 8. *Nat.*, 1891, p. 41.
- Raphinus Laudra** Morett.† Div. 5. Kirton Station, by Flour Mill, 1896; Peacock.
- Salvia verticillata** L.† Div. 15. Ancaster, 1895; Rev. W. W. Mason.
- SCILLA BIFOLIA* L. Div. 10. Thornton, before 1820; Ward-Weir *List*, 1820. I think this was a mistake.
- Scilla italica** L.† Div. 7. Holton, 1896; Rev. W. W. Mason.
- Scleria bracteata** Cavan. ?† Div. 3. North Kelsey, 1892-96; Peacock. But this is a doubtful case of naming, for we have never been able to flower this plant under glass or in the open. It was named at Kew approximately. If it is right, it is a native of tropical S. America; and is growing in a little spinny of fir trees in an old clay-pit on the left-hand side of the road before you come to the S. Kelsey boundary.



**Secale orientale** Willd.† Div. 5. Kirton Station, by Flour Mill, 1896; Peacock.

**Silene dichotoma** Ehrh.† Divs. 1.5.

**Silene pendula** L.† Div. 10. Kirkstead, 1893; Miss Mackinder.

**Spiræa tormentosa** Willd. Div. 5. *Nat.* 1895, p. 258.

*STAPHYLEA PINNATA* L. See *Nat.* 1894, p. 216, and *Phyt.* 1842, p. 9.

**Symphoricarpus racemosus** Mich.† Divs. 2.3.5.10. Often far enough away from gardens and woods in hedges. Whether it can bring its seeds to perfection I cannot say; once in a stop it extends by its creeping roots.

**Tetragonolobus siliquosus.** Div. 13. Lincoln, by Fossdyke, 1896; L., S., and P.

*THALICTRUM AQUILEGIFOLIUM* L. Div. 2. Appleby, in wood, 1895; Hon. Mrs. R. N. Sutton-Nelthorpe.

*TRACHELIUM MAJUS.* Div. 10. Revesby, before 1820; Ward-Weir *List.*

**Trifolium badium** P. S.† Div. 13. Lincoln, by Fossdyke, 1896; L., S., and P.

**Trifolium spumosum** L.† Div. 13. Same as last.

**Trigonella Fœnum-græcum** Willd. Div. 13. Same as last.

*TRITICUM MONOCOCCUM* L. T. Johnson's *Herball*, 1633, p. 74. 'Briza monococceus. St. Peter's corn. My memorie deceives me if I have not often times found many ears thereof amongst ordinarie barley, when as I lived in the further side of Lincolnshire, and they there call it Brant Barley.' This species is still cultivated under the name of St. Peter's Corn.

**Vicia monantha** Willd.† Div. 13. Lincoln, by Fossdyke, 1896; L., S., and P.

**Vicia narbonensis** L.† Divs. 2.13. Twigmoor, 3.6.'95; Charles Waterfall, and in his *Herb.* Lincoln, by Fossdyke, 1896; L., S., and P.

**Vicia pseudo-cracca** Berb.† Div. 13. Same as last. This is *V. tenuifolia* Roth.

**Vicia striata** Breb.† Div. 13. Same as last.

**Wiedemannia erythrotricha** Benth.† Divs. 5.13. Kirton Station, by the Flour Mill, 1895; Peacock. Lincoln, by Fossdyke, 1896; L., S., and P.

It is my intention to continue this series of papers, bringing the whole up-to-date to the end of season 1896, and afterwards to keep it so by occasional papers.



## NOTES ON THE OCCURRENCE OF BOULDERS OF SHAP GRANITE, ETC., IN LINCOLNSHIRE.

THOMAS SHEPPARD,

*Hon. Secretary to Hull Naturalists' and Scientific Club; Hull.*

WHILST examining the erratics in the vicinity of Barton for the newly-formed Lincolnshire Boulder Committee, I found a boulder of Shap Granite, measuring 2 feet 6 inches by 1 foot 3 inches, by 1 foot + . This was at the foot of a gatepost at the entrance to Mr. Milson's mill, near the top of the hill just outside Barton, on the South Ferriby Road. The granite in question was well rounded and thoroughly embedded in the ground, so that its precise dimensions could not be ascertained. Owing to its long exposure to the atmosphere the upper part is weathered, the large pink feldspars being very prominent. It was in its present position when Mr. Milson took charge of the place several years ago, and I have no doubt it came originally from the boulder clay which occurs in the neighbourhood, though up to the present I have been unable to get any definite information on the point. So far as I can learn, this is the first boulder of Shap Granite recorded for Lincolnshire.

A few weeks later, when walking along the Humber bank between South Ferriby Hall and the Chalk Pit, I was fortunate enough to find a small pebble of the same rock *in the Boulder Clay* at a depth of eighteen feet. I have this pebble before me as I write. Though small, it is a very good sample, and there is no doubt whatever that it is Shap Granite. The characteristic feldspars are exceptionally well shown, and, though the pebble is only an inch and a half long, there are portions of no less than four porphyritic crystals of feldspar thereon, one of them showing the twinning. This specimen, it should be noted, was found in the clay only about two miles from the previously mentioned boulder.

There are two Boulder Clays in the cliff between Ferriby Chalk Pit and the Hall. The lower one, which is only a thin deposit, is of a dark colour, is very compact, and contains a fair quantity of boulders of different sorts, including rhomb-porphry and others of Scandinavian origin.\* The upper clay, however, is of a totally different character. It attains a thickness of about 20 feet in its highest part, which is near the centre of the cliffs, and gradually thins out towards the east and west. It resembles the 'Hessle'

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\* For a list of the various rocks of Scandinavian origin found in Lincolnshire, see the list which accompanies my paper 'On the Occurrence of Scandinavian boulders in England' (*Glac. Mag.*, vol. iii, 1895, p. 129).



clay of Wood and Rome,\* being of a very red colour, blue-jointed in places, and containing only a few pebbles (including rhomb-porphry). Large boulders are only rarely found in this upper clay. In both deposits pebbles, generally of carboniferous limestone, are often found beautifully ice-scratched, and sometimes even polished.

On the opposite side of the Humber, at North Ferriby, is a precisely similar deposit, about the same size as the bed at South Ferriby, containing similar boulders (though in far greater number and variety), and composed of similar beds of Boulder Clay, etc. These sections have recently been fully described by Mr. J. W. Stather, F.G.S.\*\* Both Mr. Stather and the writer have found boulders of Shap Granite here.

The Rev. W. Tuckwell tells me he has lately found a block of Shap Granite measuring 1 foot by 1 foot, by 1 foot 6 inches, at Irby, near Laceby, North Lincolnshire. It was 'taken out of an old Saxon wall,' and is 'hollowed into quern-like depressions on three sides.' Of course there is no knowing from where this boulder may have been carted, along with other stones, to build the wall with.

Mr. Parrish also has seen a boulder at Yarborough, measuring about 5 feet by 3 feet, which he thinks may possibly be Shap Granite, though he is not certain about it. I should be glad if any reader of this note who lives in the vicinity, or who happens to be passing, would chip a piece off the boulder (the larger the piece the better) and send it either to Mr. Tuckwell or myself, together with exact measurements, etc., as, if it proves to be Shap Granite, it will be the largest boulder of that rock found in Lincolnshire.

Mr. Clement Reid, F.G.S., in his 'Geology of Holderness,' 1885, page 35, refers to a boulder of Shap Granite which he found on the beach near Dimlington, and which up to that time was 'the furthest point to the south-east to which Shap Granite had yet been traced.' Later, Mr. John Cordeaux records a boulder of this rock at Kilnsea near Spurn.† This is now in the garden of Mr. H. B. Hewetson, at Easington.

Inland, at Royston near Barnsley, which is just south of the line of the Humber, this granite has been found,|| and Messrs. Corbett and Kendall report a boulder at Balby near Doncaster;‡ this and the Barton, South Ferriby, and Irby specimens described above, are the only records that I know of for the country immediately south of the Humber.

\* Quart. Journ. Geol. Soc., vol. xxiv, p. 146.

\*\* In a paper read to the Yorks. Geol. Soc. at Whitby, July, 1896.

† 'The Naturalist,' 1889, p. 355.

|| Mackintosh. Geol. Mag., 1871, p. 312.

‡ Report of Brit. Assn. Committee on Erratic Blocks, 1896.



Whilst in the quarries at Wasdale Crag in Westmorland last Easter (it is from this place that all the boulders of Shap Granite have originally travelled) I obtained a quantity of hand specimens of the rock, and shall be very pleased indeed to send a piece to anyone in Lincolnshire interested in the subject, who is unacquainted with the rock, in the hopes that a constant look-out may be made for 'Shaps.' I feel confident that many other boulders of this granite will be found in Lincolnshire—they only require looking for. The rock cannot very well be mistaken, it is a 'pepper-and-salt'-looking granite, of a pinkish colour, containing large rectangular crystals of flesh-coloured felspar, which vary from an inch to an inch and a half in length, and are about half as wide. The matrix consists of minute crystals of colourless quartz, pink felspars and black mica, together with other minerals. There is also a whitish variety of the same rock, the ground-mass in this case containing several small specks of white felspar, which give it a generally whiter aspect. This granite has recently formed the subject of an exhaustive paper by Messrs. Harker and Marr.\*

I should here like to say a few words respecting the Lincolnshire Boulder Committee. It was with very great pleasure that I read in Part I. of the Transactions of the Lincolnshire Naturalists' Union, the Presidential address of Mr. J. Cordeaux, M.B.O.U., in which he proposed (p. 7) that a Boulder Committee should be formed whose object would be 'to take observations relative to the erratic or ice-borne blocks of Lincolnshire, their character, position, size, origin and height above the sea. This to be carried out on the same lines generally as those adopted by the Boulder Committee of the British Association.' It is also gratifying to learn that this suggestion has been carried out, the Committee consisting of the following gentlemen:—The Rev. W. Tuckwell (Secretary), and Messrs. F. M. Burton, J. H. Cooke, H. Preston, A. W. Rowe, E. A. Woodruffe-Peacock and P. F. Kendall. Though only in existence a very short period, a large amount of good work has already been done. Mr. Tuckwell has put on record particulars of a quantity of boulders (including some Norwegian) obtained from a depth of over ten feet at Grimsby,† and during the past summer the Hull Geological Society and the writer have sent particulars of a large number of erratics which have been observed at different places in the county, to the Committee. In May last the Hull Society made an excursion in the Louth neighbourhood, when Mr. Tuckwell, Mr. Kendall (the Secretary of Brit. Assn. Erratic

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\* Quart. Journ. Geol. Soc., 1891, p. 266-328.

† 23rd Report Brit. Assn. Erratic Blocks Committee, 1895.



Blocks Committee), and others were also present. On this occasion everybody was surprised at the large quantity of boulders and rocks of foreign origin that were found on and in the Boulder Clay of the district. In front of the entrance to Thorp Hall, just outside Louth, on the Lincoln Road, was a boulder of Augite-syenite, a characteristic Norwegian rock, measuring 2 feet by 1 foot 8 inches, by 1 foot 5 inches, which still retained the scratches inflicted upon it by the ice during the 'Glacial Period.' Up to the time of writing, this is one of the largest boulders of Augite-syenite recorded for Britain, if not the largest. Steps are being taken by Captain Tennyson, the owner of Thorp Hall, to preserve this boulder.



GEOLOGISTS AT LOUTH, MAY 1896.

Rev. W. TUCKWELL.  
 Mr. W. H. CROFTS.    Mr. T. SHEPPARD.    Mr. D. CROSS.  
 Mr. CLAPHAM.    Mr. P. F. KENDALL.    Mr. F. F. WALTON.    Mr. J. W. STATHER.

There is another Norwegian rock which was found in plenty in the Boulder Clays, viz., Rhomb-porphry. This is so called on account of the large rhomb-shaped crystals of felspar (orthoclase), which are embedded in a fine-grained matrix, which varies in colour from slaty green to purple or brown. These 'rhombs' are especially striking on a water-worn surface.

From these numerous finds it would appear that there is a splendid field open for persons having a geological inclination who are fortunate enough to live in the 'second largest county of



England.' So far as I am concerned, I shall be glad at any time to render what services I can, and if any of our Lincolnshire friends would care to have specimens of the commoner of the Norwegian rocks, I shall be only too pleased to have the opportunity of supplying them. Mr. Tuckwell, the Secretary of the Boulder Committee, would, I am sure, answer any inquiries respecting the boulders of his county, or receive any information respecting the erratics of any part of Lincolnshire.

With regard to the manner in which the various far-travelled stones have reached their present positions, the following is the view generally accepted by those geologists who make a special study of the subject.

During the last of the series of great geological events, viz., the 'Glacial Period,' the climate gradually grew colder and colder, and the snow accumulated on the great hill-centres of the Northern Hemisphere, and probably of the whole world. The cause of this it is not necessary at the present moment to discuss.\*

As the accumulated snow was in excess of the quantity annually melted, glaciers began to descend, first of all into the Irish Sea from all sides, namely, North Wales, Ireland, the Clyde, and the English Lake District, and into the North and Baltic Seas from the Scandinavian Mountains. Year after year, the glaciers increased in magnitude, and the ice flowing into the Irish Sea (which is only, comparatively speaking, very shallow) coalesced, entirely excluding the water,† and finally diverted the ice from the Lake District over the Lower Stainmoor Pass into Teesdale, down which it flowed towards the North Sea.

In the meantime the ice from the Scandinavian Mountains, advancing in a huge sheet (which would resemble the Greenland Ice-cap of the present day), encroached upon the waters of the North Sea,|| and, after reaching our shores, the two glaciers flowed down the east coast. The Norse ice brought with it the boulders of rhomb-porphry, augite-syenite, etc., while the Teesdale glacier carried the boulders of Shap Granite, 'Brockram,' and other Lake District rocks, together with boulders of carboniferous limestone from the sides of Teesdale itself. It was at this stage, when the Scandinavian arrested the progress of the Teesdale ice, that the bulk of the latter glacier was diverted down the Vale of York and

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\* The subject has been fully dealt with by Mr. P. F. Kendall, F.G.S., in 'The Cause of an Ice Age.' Trans. Leeds Geol. Ass., part viii, 1893.

† We have proof that it covered Snæ Fell (2,034 feet), the highest peak in the Isle of Man. Kendall, 'On the Glacial Geology of the Isle of Man.' Yn Lioar Manninagh, 1894.

|| The bed of the North Sea, like that of the Irish Sea, is exceedingly shallow.



formed the beautiful crescentic mounds around York, which have been so lucidly described by Mr. Kendall.\* These mounds are terminal moraines.

The Boulder Clays of Yorkshire and Lincolnshire, therefore, not only mark the area covered by the ice, but contain boulders which help to indicate the direction the ice took.†

The Norwegian ice-sheet, as might be expected, laid down a moraine, and this, a line of gravel hills, extends from Flamborough Head into Lincolnshire, crossing the Humber at Paull. During the many oscillations of the ice front the moraine was over-ridden—perhaps on two or three occasions.

In addition to the great moraine just mentioned there is a smaller, though none the less interesting, one, a few miles to the west of this large one. This moraine (for such it is) crossed the Humber at North and South Ferriby, the Boulder Clay cliffs on either side of that estuary being all that is left of a bank of glacier débris that once existed right across the river, which would no doubt at some time interfere with its drainage. It was in this moraine, at a depth of eighteen feet, that the pebble of Shap Granite referred to at the beginning of this paper was obtained.

It should here be remarked that whilst 'boulder-searching' during the past summer I found a piece of chalk thoroughly embedded in the chalky rubble on which the bank of boulder clay rests at South Ferriby, which was beautifully ice-scratched, the striations thereon indicating that the ice which made them came from a north-easterly direction.

The foregoing remarks may perhaps appear to be a rather round-about way of explaining the transportation of the boulders in East Yorkshire and Lincolnshire, but it must be borne in mind that were it not for the fact that the Irish Sea was filled with ice to overflowing, thus causing the Lake District ice to find its way into the North Sea, to be afterwards dragged down by the Norwegian ice-sheet, we should not have had the pleasure of finding Shap Granite in Lincolnshire!

The whole subject is so full of interest that one could say much more, but I feel I have already trespassed too much on valuable space. However, I have endeavoured to show that simply recording

\* The Glaciation of Yorkshire. Proc. Yorks. Geol. Soc., 1893. See also Mr. C. Fox Strangways' paper in Proceedings of same Society for 1895.

† Mr. Fox Strangways' paper (just referred to) is accompanied by an excellent map showing the drift-covered area of Yorkshire, and a similar map appears with Mr. A. J. Jukes-Browne's paper in Quart. Journ. Geol. Soc. for May 1885, p. 115, indicating the range of the Boulder Clays in the county of Lincoln.



'erratics' is not uninteresting, and it is such *facts* as these that we must have in order to solve the complex glacial problems that are occupying the attention of so many of the geologists of to-day. No matter what theory may be advanced in order to explain the presence of these boulders, the records of the boulders themselves must be first considered.

In conclusion, I sincerely hope that an earnest effort will be made, by all who are able, to help the Lincolnshire Boulder Committee in their work. The Yorkshire Boulder Committee have now been in existence some ten years, and have each year printed most valuable reports, though the county is far from being 'worked out' yet.

The 'East Riding' Boulder Committee, which reports to the Yorkshire Boulder Committee, has divided the area under its supervision into mile squares, each member taking one or more of these squares and reporting *all* the large boulders occurring in the area allotted to him. By this means a systematic record is being made and though we can hardly expect our few, too few, fellow-workers in Lincolnshire to adopt the same course just yet, it is to be hoped this method will be carried out in time to come.

Unlike the other sections of the Lincolnshire Naturalists' Union, the geologists are able to pursue their field-work, and with good result too, during the winter months. In fact, for boulder recording, wet weather is decidedly preferable, as the rocks show off to far greater advantage when wet, and can thus be identified with much greater ease. We need only go into one of the numerous 'cobble'-paved yards that abound in districts where Boulder Clay occurs (the 'cobbles' being obtained from the clay) to see this. In dry weather they all appear to be of similar composition, but as soon as they have been thoroughly cleaned with rain, it is quite surprising what a variety of granites, porphyrites, schists, limestones, sandstones, etc., can be seen. This variety is also noticeable, though not to such an appreciable extent, among the larger erratics.

Mr. J. Lomas, speaking of striated surfaces in the Liverpool district, says—'It is worth remarking that the *striæ more thickly congregate in places where geologists reside.*'\* Let us hope that our Lincolnshire boulder reports will shortly show a similar result.

The illustration given on page 336 is prepared from a snapshot of a portion of the party at Louth, whilst walking down a slight incline. I am indebted to Mr. W. S. Parrish for permission to make use of the same.

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\* *Glacialists' Magazine*, Vol. III., 1895, p. 21.



*NOTE—DIPTERA.*

**Nycteribia latreillii** in Cheshire.—As the curious insects of the genus *Nycteribia* are not often obtained by entomologists, it may be well to record the occurrence of this species in Cheshire. On December 15th, 1894, Mr. T. A. Coward and I obtained a Daubenton's Bat (*Vespertilio daubentonii*) in the old copper mines at Alderley Edge, which was infested with these parasites. To secure them proved to be no easy matter, as they seemed to swim through the fur of their host, swiftly gliding along the surface for a moment, and then disappearing again before we could seize them with a pair of forceps. Mr. P. H. Grimshaw has kindly identified the species for me.—CHAS. OLDHAM, August 24th, 1896.

*NOTE—FUNGI.*

**Jews-ears and Scarlet Peziza** in Furness.—Many years ago the Rev. F. A. Malleson told me he had found *Hirneola auricula-judæ* Berk. near Broughton-in-Furness. Early this year Mr. W. Duckworth sent me some beautiful specimens collected in Plumpton Woods, near Ulverston, on elder. There may be other records for this species in this district, but I am not aware of them. The Scarlet Peziza (*Peziza coccinea* Jacq.) is fairly well distributed, sometimes almost abundant, especially after the coppices have been cut. In the Duddon Woods (S. W. Cumberland) often in great quantity, and I have gathered it also in two woods in the neighbourhood of Broughton-in-Furness, and Old Hall Wood near Ulverston. Mr. W. Waite saw it in quantity this year in White Ghyll Wood, near Ulverston; and a lady sent some to a friend of mine gathered in the Plumpton Woods. Each of these places is on the coast side of the Furness area, and in each case the fungus was growing on hazel.—S. L. PETTY, Ulverston, October 10th, 1896.

*NOTES—ORNITHOLOGY.*

**Late Stay of Swift in Cheshire.**—The Swifts (*Cypselus apus*) as a rule, leave us in the latter half of August, and it is unusual to see even a solitary laggard at the end of the month. I was therefore surprised to see a single bird hawking about with some Swallows (*Hirundo rustica*) and House Martins (*Chelidon urbica*) near Romiley, on the afternoon of September 13th.—CHAS. OLDHAM, Romiley, September 19th, 1896.

**Buffon's Skua in Northumberland.**—A fine specimen of Buffon's Skua (*Stercorarius parasiticus*), in immature plumage, has been shot on the Northumberland coast. This bird—as far as I know—is very rare on this coast. In Richardson's Skua (*St. crepidatus*), the shafts of the wing feathers are *all* white, but in Buffon's only the first two. The young bird has not the long tail of the mature. This present specimen is in the hands of Mr. Duncan, for preservation.—H. T. ARCHER, Lombard Street, Newcastle-upon-Tyne, October 9th, 1896.

**Flamborough Bird-Notes, October 1896.**—So far the month of October has been a very wet and boisterous one, but I am glad to say we have had no shipwrecks or loss of life, although the coast of Flamborough is a very rough and dangerous one. Ever since the month came in hundreds of birds have arrived on the headland. Great flocks of Larks (*Alauda arvensis*) have been coming in from the sea; Lapwings (*Vanellus vanellus*), Hooded Crows (*Corvus cornix*), and Blackbirds (*Turdus merula*). On the 13th, I had brought in the Great Shrike (*Lanius excubitor*), also the Quail (*Coturnix coturnix*). Several Woodcocks (*Scolopax rusticola*) have been shot, and several seen. Yesterday, Mr. Allinson Sedman saw the Great Spotted Woodpecker (*Dendrocopus major*). On the 8th, hundreds of flocks of Kittiwakes (*Rissa tridactyla*) were passing south, and flocks of Skuas (*Stercorarius* sp.) following in the same direction. On the 12th, 13th, 15th, and 16th, we had nothing but gales of wind which brought great quantities of Kittiwakes, this time all going north.—MATTHEW BAILEY, Flamborough, October 19th, 1896.



THE CONSTITUENTS OF  
THE NORTH LANCASHIRE FLORA, 1597(?) - 1893.

LISTER PETTY,  
*Ulverston.*

TENTH PAPER.

**Antennaria dioica** R.Br. Clarke's First Record, 1641.

*Gnaphalium* L.

1762. Hudson, Fl. Ang., ed. i., 312. Mont. in Cumb., Lancs., etc., frequens. 1775. Jenkinson, Brit. Pl., 200. On mountains of Lancashire, etc. 1864. Linton, Lake Country, 325. 'Common,' no locality. 1869. Aspland's Guide. Within six miles of Grange, A. Ma on. 1874. J. of B., Miss E. Hodgson. Dunnerdale Fells; highest ridge of Cartmel Fell. 1885. Baker's Flora, 138. Miss Hodgson repeated.

**Gnaphalium uliginosum** L. C.F.R., 1597.

1864. Linton, Lake Country, 325. 'Common,' no locality. 1874. J. of B., Miss E. Hodgson. No locality.

**Gnaphalium sylvaticum** L. C.F.R., 1548.

1796. Withering, ed. iii., 713-14, as *rectum*.—On the great island in Windermere, Woodward, and repeated in every subsequent edition. 1864. Linton, Lake Country, 325. 'Common,' no locality. 1874. J. of B., Miss E. Hodgson. Hillsides not infrequent, Lindeth, near Pool Bridge, Rusland. 1885. Baker's Flora, 135. Humphrey Head.

**Inula Helenium** L. C.F.R., 1570.

1796. Withering, ed. iii., 730. Several places near Dalton-in-Furness, clearly in a wild state. W. Atkinson, and repeated in every subsequent edition. Also in 1800. Smith, Fl. Brit., 891. 1805. West. Antiq., ed. Close, 378. 1805. Turner and Dillwyn, Bot. Guide, ii., 371. 1829. Smith, Eng. Fl., ed. ii., vol. 3, 441. Atkinson repeated, and 'between Ulverston and Foulness,' J. Crowe. 1839. Baxter, Phænog. Bot., iv., 265. 1842. Evans, Furness and Furness Abbey, 25. 1843. Jopling, Furness and Cartmel, 266. 1869. Aspland's Guide. Within six miles of Grange, A. Mason. 1885. Baker's Flora, 139. Atkinson repeated. 1892. 'Naturalist,' 303. Near Aldingham in 1888 and 1892, L. Petty. 1893. 'Naturalist.' Mr. E. T. Baldwin writes that he saw this species in flower near Dalton many years ago, when he was a child.

NOTE.—In Eng. Bot., ed. iii., vol. 5, pp. 97-8. 'Possibly native in the Lake District,' but no guide is given as to county.



**Inula Conyza** DC. *Conyza major mart* CB. C.F.R., 1597.

First reported by Lawson to Ray, April, 1688. 1718. Derham, Phil. Lett., 215. By Cartmel Medicinal Well, Lawson. 1796. Withering, ed. iii., 717. At Force Forge and Hollow Oak, in Furness Fells, Jackson. On the Common near Penny Bridge, Atkinson, and repeated in all following editions. 1805. West. Antq., 377. 1842. Evans, Furness and Furness Abbey, 24. 1848. Ray's Corres. Ray Soc., 197 et seq., Lawson to Ray in full. 1869. Aspland's Guide. Within six miles of Grange, A. Mason. 1874. J. of B., Miss E. Hodgson. Waste places, Newland, etc. 1885. Baker's Flora, 139, Lawson repeated; Yewbarrow and other places on the limestone about Grange and Cartmel (? J.G.B.). 1888. Westm. Notebook, 84. Lawson repeated in Martindale's 'Early Westm.' Plant Records.' 1892. Haviland, Distrib. Disease, 377. No locality.

**Pulicaria dysenterica** Gært. *Conyza media* Ger. C.F.R., 1597.

1889. Westm. Notebook, 185. Extracts from Lawson's Notebook, circa 1680, ed. by J. A. Martindale. 'By Aldingham-in-Furness, Lawson.

**Bidens cernua** L. C.F.R., 1570.

1874. J. of B., Miss E. Hodgson. Peat ditches, Plumpton, and repeated 1885. Baker's Flora, 133.

**Achillea Millefolium** L. C.F.R., 1538.

1864. Linton, Lake Country, 325. 'Common,' no locality. 1874. J. of B., Miss E. Hodgson. No locality.

**Achillea Ptarmica** L. C.F.R., 1597.

1864. Linton, Lake Country, 325. 'Common,' no locality. 1874. J. of B., Miss E. Hodgson. No locality.

**Achillea Ptarmica** fl. pl. *Ptarmica* fl. pl.

First reported by Lawson to Ray, April 1688. 1688. Ray, Fascic., 24. Little Holme Island in Windermere. Lawson, and repeated 1709. Robinson, T., Nat. Hist. Westm. and Cumb., 93. 1718. Derham, Phil. Lett., 220. Lawson to Ray, in full. 1724. Ray, Syn., ed. iii., 183. 1787. Withering, ed. ii., 841, and in all following editions. 1848. Ray Corresp., Ray Soc., 207. Lawson to Ray in full, and in 1888. Westm. Notebook, 84.

[**Diotis maritima** Cass.

A misnomer, see *Filago germanica*.]

**Anthemis arvensis** L. C.F.R., 1713.

1874. J. of B., Miss E. Hodgson. No locality.



**Anthemis Cotula L. and A. nobilis.**

Are recorded in Baker, 141, as having been gathered, the former by Mr. Roper\* near Skelwith Force, and the latter by himself near Colwith Force in 1882, and Mr. Arthur Bennett (J. of B., 1885, 330) considers *A. nobilis* thoroughly established and seemingly wild at the Colwith habitat. But are these on the Lancashire side of the river?

**Chrysanthemum segetum L.** C.F.R., 1570.

1874. J. of B., Miss E. Hodgson. No locality. 1885. Baker's Flora, 139. Duddon Valley, Colwith, Hawkshead, Ulverston, Grange.

**Chrysanthemum Leucanthemum L.** C.F.R., 1570.

1864. Linton, Lake Country, 325. 'Common,' no locality. 1874. J. of B., Miss E. Hodgson. No locality.

**Chrysanthemum Parthenium Pers.**

1874. J. of B., Miss E. Hodgson. Face of rocks, Furness Abbey. 1885. Baker's Flora, 140. A frequent straggler from gardens, Furness Abbey.

**Matricaria inodora L.** C.F.R., 1633.

1864. Linton, Lake Country, 325—as *Pyrethrum*. 'Common,' no locality. 1874. J. of B., Miss E. Hodgson—as *Chrysanthemum*. Cultivated fields in Furness.

**Matricaria maritima L.**

1796. Withering, ed. 3, 736—as *Pyrethrum*. Isle of Walney. Atkinson, and repeated in every edition and in 1805. West. Antiq. 378. 1805. Turner and Dillwyn, Bot. Guide, ii., 372. 1835. Watson, New Bot. Guide, i., 301, but ascribed to 'B.G.' 1842. Evans, Furness and Furness Abbey, 25. 1874. J. of B., Miss E. Hodgson. Shores from Grange westward. 1885. Baker's Flora, 140. 'A maritime variety is abundant along the shore from Walney Island past Grange and Flookborough' (to Arnside).

**Tanacetum vulgare L.** C.F.R., 1597.

1874. J. of B., Miss E. Hodgson—as *Chrysanthemum* T. Bardsea, doubtfully wild, and repeated 1885. Baker's Flora, 140.

**Artemisia Absinthium L.** C.F.R., 1551.

1874. J. of B., Miss E. Hodgson. Lindeth Wood, Rusland, and repeated 1885. Baker's Flora, 134.

**Artemisia vulgaris L.** C.F.R., 1551.

1874. J. of B., Miss E. Hodgson. No locality.

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\* F. C. S. Roper, of Eastbourne, b. 1819, d. 1896. Obit. notice in J. of B., 1896, p. 430.



**Artemisia maritima** L. C.F.R., 1548.

1796. Withering, ed. iii., 709. Isle of Walney, Atkinson; sea coast between Barrow and Rampside, Gough, and repeated in all subsequent editions. 1805. West. Antiq., ed. Close, 376, Atkinson repeated. 1843. Jopling, Furness and Cartmel, 266. 1885. Baker's Flora, 134, Atkinson and Gough repeated.

**Tussilago Farfara** L. C.F.R., 1548.

1864. Linton, Lake Country, 325. 'Common,' no locality. 1874. J. of B., Miss E. Hodgson. No locality. 1885. Baker's Flora, 136. 'The highest station in which I have noted it is about the slate quarries on Coniston Old Man.' J. G. Baker.

**Petasites fragrans** Presl.

1892. Naturalist, 84. Naturalised on a roadside near Grange, 1890; roadside at Aldingham, a few plants only, 1889. W. Duckworth.

**Petasites vulgaris** Desf. = *P. officinalis* Moench. C.F.R., 1538.

1869. Aspland's Guide. Within six miles of Grange. A. Mason. 1874. J. of B., Miss E. Hodgson. Margins of becks not uncommon.

**Doronicum Pardalianches** L.

1892. Naturalist, 84. Naturalised near Swarthmoor, 1890. It grows on the bank of a stream. W. Duckworth. For some time I was much exercised to account for this plant having escaped; the only explanation that seems feasible is in the following passage from the diary of a very precocious youth of eleven years old:—'I went by Swarthmoor Hall, a Place a great Deal of which is pulled down by that infamous Man Captain Lindow; he has spoiled the Beauty of the Woods surrounding it, by haggling down the trees. . . . The Gardens belonging to Swarthmoor Hall are overgrown with Thistles, Briars, Thorns, &c., but there are some of the *Garden Flowers growing wild.*' Pages 9 and 10. (The italics are mine). Journeys in Furness in the year 1777 by Wm. Fell, aged 11 years. Ed. by the Rev. L. R. Ayre, M.A., Ulverston, 1887. 8vo., 50 copies only, and long since out of print.

**Senecio vulgaris** L. C.F.R., 1538.

1864. Linton, Lake Country, 325. 'Common,' no locality. 1874. J. of B., Miss E. Hodgson. No locality.

**Senecio sylvaticus** L. C.F.R., 1713.

1864. Linton, Lake Country, 325. 'Common,' no locality. 1882. J. of B., 347. Lake Lancashire. W. F. Miller.

**Senecio viscosus** L. C.F.R., 1660.

1885. Baker's Flora, 137. Sandy bank on Walney Island near the Ferry. F. A. Lees. 1892. Naturalist, 81. Lees repeated. Walney Island, Shore bank between Barrow and Rampside. L. Petty.



**Senecio Jacobæa** L. C.F.R., 1597.

1864. Linton, Lake Country, 325. 'Common,' no locality.

1874. J. of B., Miss E. Hodgson. No locality. 1885. Baker's Flora, 137. A discoid variety by the side of the high road between Grange and Lindale. J. G. Baker.

**Senecio aquaticus** Huds. C.F.R., 166c.

1864. Linton, Lake Country, 325. 'Common,' no locality.

1874. J. of B., Miss E. Hodgson. No locality.

**Senecio saracenicus** L.

1805. Turner and Dillwyn, Bot. Guide, ii., 371. About Newby Bridge, J. Woods, junr., and repeated 1835. Watson, New B. G., i., 301. 1846. Phytologist, 428. By the river at Newby Bridge where Woods saw it. W. Borrer, and repeated 1861. (1855). Martineau's Guide, 184. C. F. Clowes. 1866. Eng. Bot., ed. iii., vol. 5, 87. Lancashire. 1874. J. of B., Miss E. Hodgson. Corner of a field on the Old Hall estate. 1885. Baker's Flora, 138. Near Newby Bridge, and in an old orchard at Ghyll Head; first recorded by Woods. Miss Hodgson repeated.

**Carlina vulgaris** L. C.F.R., 1597.

1861. Phytologist, 237. Humphrey Head, C. J. Ashfield.

1864. Linton, Lake Country, 325. 'Common,' no locality. 1874. J. of B., Miss E. Hodgson. No locality.

**Arctium minus** Schk. *A. lappa* L. Aggregate, C.F.R., 1548.

1864. Linton, Lake Country, 324. 'Common,' no locality.

1874. Miss E. Hodgson. Roadsides at Penny Bridge and Bigland.

1885. Baker's Flora, 129. 'Typical *minus* I have seen at Ulverston.' J. G. Baker.

**Arctium intermedium** Lange. *A. pubens* Bab. C.F.R., 1856.

1874. J. of B., Miss E. Hodgson. Roadside, Bigland Hall; Furness Shores at Bardsea.

NOTE.—The commonest form in the [Lake] district is *A. intermedium* Lange. J. G. Baker.

**Carduus tenuifolius** Curt. C.F.R., 1634.

1874. J. of B., Miss E. Hodgson. Top of Humphrey Head.

1885. Baker's Flora, 130. Miss Hodgson repeated. About Barrow-in-Furness, W. Foggitt.

**Carduus crispus** L. C.F.R., 1629.

1885. Baker's Flora, 130. Furness Abbey and Grange. Not seen at Coniston or the heart of the Lake District. J. G. Baker.



- Cnicus lanceolatus** Willd. C.F.R., 1597.  
 1864. Linton, Lake Country, 324. 'Common,' no locality.  
 1874. J. of B., Miss E. Hodgson. No locality.
- Cnicus palustris** Hoffm. C.F.R., 1633.  
 1864. Linton, Lake Country, 324. 'Common,' no locality.  
 1874. J. of B., Miss E. Hodgson. No locality.
- Cnicus heterophyllus** Roth. C.F.R., 1583.  
 1874. J. of B., Miss E. Hodgson. Near Newby Bridge.  
 1885. Baker's Flora, 131. Miss Hodgson repeated.
- Cnicus acaulis** Willd. C.F.R., 1629.  
 1864. Linton, Lake Country, 324 (as *Carduus*). Barrow.
- Cnicus arvensis** Hoffm. C.F.R., 1597.  
 1874. J. of B., Miss E. Hodgson. No locality.
- Silybum Marianum** Gærtm.  
 1805. West. Antiq., 377 (as *Carduus*). In the Isle of Walney.  
 Atkinson, and repeated 1842. Evans, Furness and Furness  
 Abbey, 23.
- Serratula tinctoria** L. C.F.R., 1570.  
 1842. Wordsworth, Scenery, 23. Near the riverside near Newby  
 Bridge. Gough. 1864. Linton, Lake Country, 324. 'Common,'  
 no locality. 1874. J. of B., Miss E. Hodgson. Hills, east of  
 Backbarrow. 1885. Baker's Flora, 129. Banks of the river at  
 Newby Head; shore of Coniston Lake at Waterhead, Miss Susan  
 Beever. On the shore of Windermere at Ferry Inn and other places,  
 J. G. Baker. Isles of Windermere, W. Foggitt. Frequent in  
 Furness and Cartmel, J. Sidebotham. Drawn from Wray by Miss  
 Wilson. Miss Hodgson repeated. 1885. J. of B., 330. Windermere  
 shore, near Low Wood, A. Bennett.
- Centaurea Jacea** L.  
 1874. J. of B., 370. Cark. Rev. W. M. Hind.\*
- Centaurea nigra** L. C.F.R., 1597.  
 1864. Linton, Lake Country, 324. 'Common,' no locality.  
 1874. J. of B., Miss E. Hodgson. No locality.
- Centaurea decipiens** Thuill.  
 1874. J. of B., Miss E. Hodgson—as *nigrescens* Bab. Roadside  
 east bank of river Crake, and repeated 1885. Baker's Flora, 132.
- Centaurea Scabiosa** L. C.F.R., 1597.  
 1861. Phytologist, 237. Rougholme. C. J. Ashfield. 1874.  
 J. of B., Miss E. Hodgson. Roosebeck. 1885. Baker's Flora, 132.  
 Miss Hodgson and Ashfield repeated. Grange. W. Foggitt.

\* Rev. W. Marsden Hind, b. 1815, d. 1894. Obit. notice in J. of Botany,  
 Nov. 1894, 352.



- Cichorium Intybus** L. C.F.R., 1538.  
 1843. Jopling, Furness and Cartmell, 266. Frequent in the borders of fields. Aiton and W. Wilson. 1869. Aspland's Guide. Within six miles of Grange. A. Mason. 1885. Baker's Flora, 128. Aiton and Wilson rep. Near Rampsid in Furness. Miss S. Beever.
- Lapsana communis** L. C.F.R., 1597.  
 1864. Linton, Lake Country, 324. 'Common,' no locality.  
 1874. J. of B., Miss E. Hodgson. No locality.
- Picris echioides** L. *Helminthia* Gært. C.F.R., 1551.  
 1864. Linton, Lake Country, 324. Rare, to be found on Oxen Fell. 1885. Baker's Flora, 121. Linton rep. 'Confirmation wanted.'
- Crepis virens** L. C.F.R., 1597.  
 1864. Linton, Lake Country, 324. 'Common.' No locality.  
 1885. Baker's Flora, 123. Ascending to 300 yards over Coniston.  
 VAR. **agrestis** in cultivated fields between Hawkshead and Coniston, J. G. Baker.
- Crepis paludosa** Moench. C.F.R., 1677.  
 1882. J. of B., 347. Lake Lancashire. W. F. Miller.  
 NOTE.—But where?
- Hieracium Pilosella** L. \*1548.  
 1864. Linton, Lake Country, 324. 'Common,' no locality.  
 1874. J. of B., Miss E. Hodgson. No locality.
- Hieracium aurantiacum** L.  
 1892. Naturalist, 84. Side of Coniston Lake, 1888. Alien. An escape, a few plants only. L. Petty.
- Hieracium pallidum** Biv.  
 1857. Phytologist, 257. Humphrey Head, Dr. Windsor.  
 1860. Phytologist, 257. Dr. Windsor repeated. 1861. Phytologist, 260. Dr. Windsor repeated. 1873. Windsor, Flora Cravon., 45. Dr. Windsor repeated. 1874. J. of B., 370. The record of Dr. Windsor mentioned, but apparently not seen by Rev. W. M. Hind. 1885. Baker's Flora, 125-6. Dr. Windsor repeated.
- Hieracium murorum** L. in pt. 1629.  
 1861. Phytologist, 260. Humphrey Head. Dr. Windsor.
- Hieracium cæsius** Fr.  
 1860. Phytologist, 257. Humphrey Head. Dr. Windsor. 1874. J. of B., Miss E. Hodgson. Humphrey Head. Rev. W. M. Hind.
- Hieracium vulgatum** Fr. *H. sylvaticum* Sm. ? 1666.  
 1874. J. of B., Miss E. Hodgson. No locality. 1882. J. of B., 347. 'Lake Lancashire.' W. F. Miller. 1885. Baker's Flora, 125.

\* The *Hieracia* with dates not accompanied by 'C.F.R.' are dated as nearly as possible from Clarke's résumé in J. of B., 1893, p. 277.



On the red sandstone walls of Furness Abbey (J.G.B.?) and var. *maculata* (Auct.) to the high slate crags of Coniston Old Man, 600 yards. A variety with several stem leaves approaching *H. tridentatum* grows on the east side of Windermere, below Gummers How (J.G.B.?).

**Hieracium umbellatum** L. 1597.

1885. Baker's Flora, 128. Near Rampside. Prof. Oliver. Specimen seen by Mr. Baker.

**Hieracium crocatum** Fr.

1885. Baker's Flora, 127. River bank, Tongue How, Seathwaite, Duddon Valley. Rev. A. Ley. Specimen seen by Mr. Baker.

**Hieracium boreale** Fr. 1634.

1874. J. of B., Miss E. Hodgson. No locality. 1885. Baker's Flora, 128. Abundant in the railway-cutting south of Ulverston station. J. G. Baker.

**Hypochæris radicata** L. C.F.R., 1597.

1864. Linton, Lake Country, 324. 'Common,' no locality. 1874. J. of B., Miss E. Hodgson. No locality.

**Hypochæris maculata** L. C.F.R., 1633.

1796. Withering, ed. iii., 691. On Humphrey Head, by Cartmel Wells, very plentifully. I. Hall, and repeated in all succeeding editions. 1800. Smith, Fl. Brit., vol. 2, 840. 1805. Turner and Dillwyn, Bot. Guide, II., 371. 1829. Smith, Eng. Fl., ed. ii., vol. 3, 375. 1835. Watson, New B. G., I., 301, but ascribed to 'B. G.' 1842. Wordsworth Scenery, 27. 1856. Phytologist, 353. Dr. Windsor, in his article on 'Plants of Settle,' says:—'I believe I have seen it . . . at Humphrey Head, plentifully.' 1857. Phytologist, 74. 'In the year 1804 or 1805 I saw it growing plentifully at Humphrey Head, but in places too inaccessible to be reached.' 1857. Phytologist, 257. Given as seen by Dr. Windsor, at Humphrey Head, in that year. 1858. Irvine. Handb. Brit. Pl., 534. Dr. Windsor repeated. 1860. Phytologist, 257. Dr. Windsor repeated. 1861. Phytologist, 238. C. J. Ashfield says he could not find it at Humphrey Head. 1861. Phytologist, 260. 'A specimen seen in flower' by Dr. Windsor. 1866. Eng. Bot., ed. iii., vol. 5, 130, locality repeated. 1874. J. of B., 370, Humphrey Head. Rev. W. M. Hind. 1885. J. of B., 330. 'Still to be found at Humphrey Head in 1885. W. R. Nash.' 1892. Haviland, Distrib. Disease, 377. No locality.

**Leontodon hirtus** L. C.F.R., 1690.

1857. Phytologist, 257, as *Thrinicia hirta* Roth. Humphrey Head. Dr. Windsor. 1885. Baker's Flora, 121. Dr. Windsor repeated.



## THE LINCOLNSHIRE NATURALISTS' UNION BOULDER COMMITTEE.

REV. W. TUCKWELL,

*Secretary of the Committee; Waltham Rectory, Great Grimsby.*

EARLY in this year a Committee was appointed by the Lincolnshire Naturalists' Union for the purpose of recording all the facts they can collect about the erratics left by the great ice-sheet that once overspread the county. It consists of the following members:— F. M. Burton, F.G.S.; J. H. Cooke, B.Sc., F.G.S.; H. Preston, F.G.S.; A. W. Rowe, F.G.S.; Percy F. Kendall, F.G.S.; E. A. Woodruffe-Peacock, F.G.S.; with the writer acting as Secretary. A circular was sent out, and over 200 boulders are now recorded. Many of these remain unvisited yet, but it seems time to send out a first report, the others remaining over for our next. For the Barton and South Ferriby records we have to thank an admirable observer, Mr. T. Sheppard, of Hull. The notes on the Louth rocks, which I visited with him and with Professor Kendall, are also from his pen. Please observe (1) the boulder of *Augite syenite* (or possibly *Elæolite syenite*) at Thorpe Hall. It is the largest yet recorded, though we think we are on the scent of a bigger specimen. Captain Tennyson is kind enough to promise, as I understand, that he will protect it. (2) Three blocks of *Shap-granite*, not previously found south of the Humber.

### Waltham.—By Schoolhouse.

No. 1. Basalt (Whin Sill) strongly ice-marked, 3 ft. 6 in. × 1 ft. 4 in.  
× 1 ft. 6 in.

### Waltham.—Mr. G. White's gate.

No. 2. Basalt, 1 ft. 8 in. × 1 ft. 3 in. × 2 ft. 11 in.

### Louth.—Printer's Yard.

No. 3. Blue stone, 32 in. in height, 145 in. in girth. Basalt.

### Louth.—Near Bridge.

No. 4. Light red granite, 2 ft. × 1½ ft. × 1 ft.

5. Basalt, 2 ft. × 1½ ft. × 1½ ft.

### Louth.—Chalkpit north of Church. Large heap of boulders,

average 9 in. diameter.

No. 6. Rhomb porphyry, 8 in. × 6 in. × 5 in., scratched.

7. Augite syenite, 6 in. × 4 in. × 3 in.

8. Lamprophyre, 2 ft. 6 in. × 2 ft. 8 in. × 1 ft. 4 in.

9. Diorite, 1 ft. 4 in. × 1 ft. 2 in. × 11 in.

10. Gneiss.



- No. 11. Pink granite.  
 12. White granite (several).  
 13. Quartz porphyry.  
 14. Carboniferous limestone (glaciated).  
 15. Lias.

**Louth.—Brickyard on road to Elkington.** Boulders and pebbles in heaps.

- No. 16. Rhomb porphyry.  
 17. Fredericksvaarn porphyrite.  
 18. Augite syenite.  
 19. Halleflinte.  
 20. Mica Schist.  
 21. Schist.  
 22. Black flint.  
 23. Green-coated flint.  
 24. Porphyrite.  
 25. Fine-grained white granite.  
 26. Quartz porphyry.  
 27. Diorite.  
 28. Basalt (scratched).  
 29. Vesicular lava.  
 30. Conglomerate (with pebbles of quartz porphyry).  
 31. Millstone grit.  
 32. Carboniferous limestone (scratched).  
 33. Carboniferous sandstone (gannister).  
 34. Ironstone. Liassic?  
 35. Septarian nodule. Kimmeridge clay.

**Louth.—Gate of Thorp Hall, close to Louth, on Lincoln Road.**

- No. 36. Augite syenite (scratched), 2 ft. × 1 ft. 8 in. × 1 ft. 5 in.  
 37. Basalt, 1 ft. 10 in. × 1 ft. × 1 ft. 10 in.

**Louth.—Road-side near the town.**

- No. 38. Gannister (carboniferous sandstone), 1 ft. 7 in. × 1 ft. 2 in. × 1 ft. 1 in.

**Louth.—Stream-side of Hubbards Valley.**

- No. 38. Secondary Sandstone, 4 ft. 1 in. × 2 ft. 7 in. × 1 ft. 9 in.

**Louth.—Ingram's Chalk Pit.**

- No. 39. Basalt, 2 ft. 6 in. × 2 ft. × 2 ft.

**Louth.—Mr. Cheetham's lawn, Eastgate.**

- No. 40. Red granite taken from railway cutting, 2 ft. × 1 ft. 6 in. × 1 ft.



**Louth.—Cemetery.**

No. 41. Red foliated granite, 2 ft. × — ?

**Hallington.—Rifle Range.**

No. 42. Ditch in hollow of hill, 6 ft. deep, filled with pebbles of sandstone and granite.

**Benniworth.—Near carpenter's shop.**

No. 43. Augite syenite, roundish, 3 ft. in diameter.

**Benniworth.—By farmyard gate.**

No. 44. Secondary sandstone, flattened sphere, 1 ft. 6 in. diameter, 1 ft. deep.

**South Elkington.—Near old pinfold.**

No. 45. Bluish granite, 1 ft. 8 in. × 1 ft. 8 in. × 7 ft.

**South Ferriby.—From boulder clay cliff.**

No. 46. Small boulder, Rhomb porphyry.

47. Small boulder, Rhomb porphyry.

48. One small boulder, Quartz porphyry.

49. One Basalt, 4 in. × 5 in. × 4 in.

50. One Basalt, 18 in. × 12 in. × 14 in. (depth of 12 ft. under surface close to jetty).

51. One Basalt, 12 in. × 13 in. (depth of 14 ft. close to house on cliffs).

52. Carboniferous limestone, 10 in. × 3 in. × 8 in. (ice scratched).

53. Black flint, 8 in. × 6 in. (depth of 14 ft. by house on cliffs).

54. One pebble of Shap granite (depth of 18 ft.).

**South Ferriby.—Side of horse-pond.**

No. 55. Basalt, 3 ft. × 2 ft. × 2 ft., subangular.

56. Basalt, 1 ft. 3 in. × 1 ft. 2 in. × 8 in., well rounded.

57. Gneiss, 1 ft. 8 in. × 1 ft. 6 in. × 1 ft., rounded.

58. Schist? 2 ft. × 2 ft. × 1 ft. 8 in.

**South Ferriby.—Humber Bank, in front of Hall.**

No. 59. Red granite, in large quantity, averaging 1 ft. in diameter.

60. Carboniferous limestone, in large quantity, averaging 1 ft. in diameter.

61. Basalt, in large quantity, averaging 1 ft. in diameter.

62. Sandstone, etc., in large quantity, averaging 1 ft. in diameter.

**South Ferriby.—Corner of lane opposite Mount Pleasant.**

No. 63. Carboniferous limestone with encrinite stems, 2 ft. × 1 ft. 3 in. × 6 in.

64. Sandstone, 1 ft. × 11 in.



**South Ferriby.—Mr. Havercroft's stackyard.**

- No. 65. Basalt, 1 ft. 3 in.  $\times$  1 ft.  $\times$  10 in.  
 66. Basalt, 1 ft.  $\times$  10 in.  $\times$  8 in.  
 67. Basalt, with small white amygdules, 1 ft. 3 in.  $\times$  1 ft. 3 in.  $\times$  1 ft.  
 68. Secondary sandstone, 2 ft.  $\times$  1 ft. 6 in.  $\times$  1 ft. 3 in.  
 69. Secondary sandstone, with small flakes of white mica, 1 ft. 6 in.  $\times$  1 ft. 3 in.  $\times$  1 ft.  
 70. Porphyrite, weathered, 1 ft.  $\times$  10 in.  $\times$  10 in.  
 71. Primary sandstone, 1 ft.  $\times$  1 ft. 2 in.  $\times$  1 ft.  
 72. Red Granite, 6 in.  $\times$  7 in.  $\times$  5 in.

**South Ferriby.—Mr. Havercroft's farmyard.**

73. Soft limestone (Oolitic?), 1 ft. 6 in.  $\times$  1 ft. 3 in.  $\times$  8 in.  
 74. Soft limestone (Oolitic?), 1 ft. 2 in.  $\times$  1 ft. 1 in.  $\times$  10 in.  
 75. Basalt, 1 ft. 3 in.  $\times$  1 ft. 4 in.  $\times$  1 ft. 2 in.  
 76. Basalt, 10 in.  $\times$  10 in.  $\times$  8 in.  
 77. Basalt (green), 1 ft.  $\times$  4 in.  $\times$  6 in.  
 78. Basalt (coarse-grained), 1 ft.  $\times$  8 in.  $\times$  6 in.  
 79. Carboniferous sandstone (ganister, with rootlets), 1 ft.  $\times$  8 in.  $\times$  6 in.  
 80. Millstone grit, 8 in.  $\times$  10 in.  $\times$  6 in.  
 81. Porphyrite, 1 ft. 2 in.  $\times$  6 in.  $\times$  6 in.

**Barton.—Mr. Milsom's mill.**

- No. 82. Shap granite, 2 ft. 6 in.  $\times$  1 ft. 3 in.  $\times$  1 ft.

**Barton.—Finger-post, corner of South Ferriby road.**

- No. 83. Granite (?), 1 ft. 6 in.  $\times$  1 ft. 3 in.  $\times$  10 in., rounded.

**Barton.—Lamp-post outside Barton Station.**

- No. 84. Basalt, subangular, 2 ft. 6 in.  $\times$  2 ft.  $\times$  1 ft. 3 in.  
 85. Basalt, rounded, 1 ft. 2 in.  $\times$  1 ft.

**Barton.—Corner of Coach and Horses Yard.**

- No. 86. Basalt, rounded, 1 ft.  $\times$  10 in.

**Stewton.—Conspicuous in a field.**

- No. 87. Basalt, 3 ft.  $\times$  1 ft. 7 in.

**Ludborough.—Mr. Marshall's farmyard.**

- No. 88. Basalt, 3 ft.  $\times$  1 ft. 2 in.

**Brigg.—Howsham, taken out of Boulder Clay.**

- No. 89. Spilsby sandstone, 2 ft. 9 in.  $\times$  1 ft. 9 in.  $\times$  2 ft.

**Irby.—In Rectory garden.**

- No. 90. Shap granite. Found built into a Saxon tenth century wall, hollowed into quern-like depressions on three sides, the fourth side rough, 1 ft.  $\times$  1 ft.  $\times$  1 ft. 6 in.  
 91. Secondary sandstone, triangular, 2 ft. 2 in.  $\times$  1 ft. 2 in.



No. 92. Several sandstone blocks from the same old wall, mostly squared for building.

93. Basalt, 1 ft. 5 in. × 1 ft. 4 in. × 7 in.

**Irby.—Roadside opposite Rectory gate.**

No. 94. Dolerite (?), 3 ft. 2 in. × 1 ft. 10 in. × 10 in.

**Irby.—Road-side by school-room.**

No. 95. Basalt (Wesley supposed to have preached from it), 2 ft. 11 in. × 1 ft. 7 in. × 1 ft. 6 in.

**Irby.—Corner of road beyond schoolroom.**

No. 96. Red granite, 1 ft. 9 in. × 1 ft. 5 in. × 11 in.

97. Secondary sandstone, 2 ft. 5 in. × 1 ft. 5 in. × 1 ft. 6 in.

**Brocklesby.—Few yards from station.**

No. 98. Primary sandstone, 2 ft. 6 in. × 1 ft. × 1 ft.

**Brocklesby.—Chalk quarry close by station.**

No. 99. Basalt, small, ice-scratched.

**Brocklesby.—Gate-post two fields off towards Croxton gravel-pits.**

No. 100. Quartz, 1 ft. 8 in. × 1 ft. 4 in. × 1 ft. 2 in.

**Ulceby.—Chase farmyard.**

No. 101. Basalt, green, one side flat and beautifully striated, 2 ft. × 1 ft. 8 in. × 1 ft. 3 in.

**Kirmington.—Boulder clay above brickworks gravel-pit.**

No. 102. Rhomb porphyry, small, depth of three feet.

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### NOTES AND NEWS.

The September number of 'Knowledge,' which has been sent us for review, consists mostly of articles beyond our sphere of action, including a special one by Mr. E. W. Maunder on the Eclipse of the Sun. There is a full-page photo plate of a nesting colony of Sooty Albatrosses at Laysan, and at p. 211 the Rev. Samuel Barber gives 'Some notes on Spiders' in Cumberland and elsewhere.

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We have received the Report and Proceedings of the Manchester Field Naturalists' and Archaeologists' Society for 1895, which is edited by Leo H. Grindon. It is a bulky part of over a hundred pages devoted to picturesquely written accounts of the rambles and lectures. It seems a pity that so strong and prosperous a Society should not turn its attention to definite and systematic work within a restricted field of operations.

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We have before us the 25th Annual Report of the Sheffield Naturalists' Club, for 1895. It is mostly devoted to abstracts of the papers read, and very brief accounts of the Excursions, but a page is given to a Second List of the Flora of Sheffield District, and two pages to Mr. E. Howarth's summary of Sheffield Meteorology for 1895. The balance sheet and lists of members and officers complete the report, which shows the Club to be in a flourishing condition.



*NOTES—LEPIDOPTERA.*

**Capture of Clifden Nonpareil at Scarborough.**—A worn specimen of *Catocala fraxini* was captured in the Spa Grounds, Scarborough, on October 3rd, 1896, by Mr. H. R. E. Grey.—J. H. ROWNTREE, Scarborough, 18th November, 1896.

**Odezia atrata in Cheshire.**—Within the last fortnight several specimens of this species have occurred to me at Woodley and Romiley. Mr. J. W. Ellis cites only two Cheshire localities for it—Bramhall and Knutsford—in his 'Lepidopterous Fauna of Lancashire and Cheshire' ('Naturalist,' 1887, p. 104).—CHAS. OLDHAM, Romiley, July 5th, 1896.

**Acherontia atropos at Bradford.**—On the early morning of Sept. 17th a specimen of the Death's Head Moth was taken in Dale Street, Bradford, right in the centre of the town. A lamplighter—Mr. Mercer—whilst going his morning round putting out the lights, found it resting at the foot of a lamp; he succeeded in capturing and conveying it home admirably, for it is now in the most perfect condition, and is in the possession of Mr. B. Illingworth. It is a male specimen. J. W. CARTER, Manningham, Bradford, October 30th, 1896.

*NOTE—MOLLUSCA.*

**Slugs in the Goyt Valley.**—On August 17th, 1896, I found several examples of *Limax marginatus*, including a beautiful specimen of the rare variety *maculata* Rbk., beneath the bark of a dead crab tree on the Cheshire bank of the Goyt near Errwood Hall. From the same tree I obtained a single *Limax cinereo-niger* var. *luctuosa* and two half-grown individuals of the species, of a uniform brown colour with faint indications of the pale keel characteristic of this slug. Mr. Roebuck considers this form identical with Moquin-Tandon's var. *obscura*, which has not hitherto been recorded for Britain. On the Derbyshire bank of the stream near Whaley Bridge I obtained two more immature examples of the brown form of *L. cinereo-niger* and several *L. marginatus* from beneath the bark of an old oak stump. *Arion subfuscus* and *A. intermedius* occur freely on both sides of the stream.—CHAS. OLDHAM, Romiley, Oct. 22nd, 1896.

*NOTES—MAMMALS.*

**Daubenton's Bat in Derbyshire.**—On the evening of August 13th I watched one of these Bats (*Vespertilio daubentonii*) for some time, as it flitted to and fro, like a ghostly Sand Martin, close to the surface of the water of one of the lakes in Buxton Gardens. On the 15th the Bat was feeding at the same spot, but, although I carefully scanned the river and the other pools in the gardens, I failed to see any others. A friend tells me that when trout-fishing on the river Bradford, near Alport, in the early part of September 1895, he saw Bats, late in the evening, flying so close to the surface of the river that he thought they would have taken his fly—a habit very characteristic of Daubenton's Bat.—CHARLES OLDHAM, Romiley, August 24th, 1896.

**The Wild Boar in Furness.**—The 'Barrow News,' October 3rd, 1896, contains a report of the paper by Mr. Harper Gaythorpe, which was read before the Cumberland and Westmorland Antiquarian and Archaeological Society at Coniston, on September 16th, entitled 'Prehistoric Implements in Furness.' In this communication to the Society Mr. Gaythorpe mentions that during excavations for building at Mossfield, Roose, near Barrow, in 1872, a bronze Celt was found at 12 or 13 inches below the grass surface, and also 'the upper tusks of two Boars, one imperfect 2¼ inches long, and one perfect 2 inches long, the latter evidently from a young animal, as at one corner it is very little worn.' These specimens I saw when exhibited at Coniston. Macpherson, in his 'Fauna of Lakeland,' xlix, gives no North Lancashire find of Boar (*Sus scropha ferus*) remains. Such there have probably been, and possibly some correspondent knows of it. If so, will he kindly put it on record?—S. L. PETTY, Ulverston, 10th October, 1896.



## FUNGUS FORAY AT SELBY: WITH LIST OF SPECIES FOUND.

CHARLES CROSSLAND,

*Halifax; Secretary to the Yorkshire Mycological Committee.*

THE annual Fungus Foray of the Yorkshire Naturalists' Union, held this year at Selby, September 19th to 22nd, was, as usual, a decided success both from a social and a scientific standpoint. The gathering of mycologists and cryptogamists in general was larger than on any previous occasion, and it was gratifying to notice the welcome presence of several Woolhopeans, who acknowledged that the Yorkshire gathering is a worthy successor to the once famous annual meeting of mycologists at Hereford under the auspices of the Woolhope Club. There were present Mr. G. Masee, F.L.S., F.R.M.S., of the Royal Herbarium, Kew; Mr. Carlton Rea, M.A., B.C.L., Worcester; Dr. Plowright, F.L.S., F.R.C.S., Kings Lynn; Mr. T. Hey, M.C.S., Derby, and nearly all the Yorkshire workers in mycology. The announcement received at the last moment that, owing to a slight accident, the Rev. Canon Du Port, M.A., of Downham, would be unable to attend, was received with universal regret. The woods investigated were Stainor and Bishop's woods in Mid West Yorkshire Vice-County; and Escrick and Blackwood in South East Yorkshire Vice-County. Time did not allow for working Osgodby Wood. The season having been exceptionally favourable to the growth of fungi, specimens were fairly abundant in suitable places, and a good variety were met with. Portions of Escrick and Blackwood proved to be very good hunting grounds. Altogether from all quarters about 270 species were collected. Many not to be found every day were collected, including *Tricholoma onychinum* Fr., new to Britain, having previously been recorded from Sweden only; there were also some new county records. A somewhat rare Ascomycete, *Rhizina inflata* (Schæff.) was found in Bishop's Wood, not very prolific ground in some parts of it on account of the dense undergrowth of brambles and bracken. In other parts of this and in the other woods a few commoner species, *Lactarius glyciosmus* Fr. and *Collybia butyracea* Bull., for instance, and some Boleti, were extremely abundant. In Escrick extraordinarily fine specimens of *Otidea aurantia* Mass. were met with like large deep-orange-coloured flowers springing direct from the ground. *Torrubia ophioglossoides* Tul. was found parasitic on *Elaphomyces granulatus* in Blackwood. On



each day's return the specimens collected were laid out for inspection in one of the rooms connected with the Selby Mechanics' Institute.

The business meeting was held on Monday evening at the Londesborough Arms, the President, the Rev. W. Fowler, M.A., Liversedge, occupying the chair. The time taken up by the necessary formal business was very brief, there being no dissentient voices to the proposal that the Chairman and Secretary of the Mycological Committee retain office for another year. Mr. Harold Wager, F.L.S., Leeds, was unanimously elected a member of the committee. Votes of thanks were accorded to Lady Beaumont, Lord Wenlock, Lord Londesborough, Mr. Charles Weddall, Mr. Riley Briggs, Mr. J. Lloyd Wharton, M.P., and the Ecclesiastical Commissioners for the permission given to visit their estates. It was unanimously decided to hold the next annual foray at Barnsley as a centre. Several interesting lecturettes were given and papers read on various branches of mycology. One by Mr. Wager, F.L.S., on 'The Sexuality of the Agaricineæ,' was profusely illustrated by diagrams, and showed a great amount of careful investigation and original research into the coalescence and redivision of nuclei in the basidium, preparatory to the production of a nucleus for each spore borne by the basidium. The paper by Mr. Carleton Rea, M.A., on 'The Duration of the Sporophyte of *Collybia tuberosa* and *Cyathus striatus*,' also denoted careful original observation. The Rev. Canon Du Port had engaged to give the details of 'A case of poisoning from eating *Agaricus pantherinus* at Charleville (Ardennes),' but not being able to attend had written a short paper on the subject which Dr. Plowright kindly read on his behalf. Mr. Masee gave an interesting and valuable discourse on 'Some doubtful species of Agarics.' Mr. A. Clarke, of Huddersfield, exhibited a large number of charming and novel stereoscopic views of fungi.

Up to the close of Monday's work the weather, always an important factor towards the success or failure of these meetings, proved to be all that could be desired. Rain, however, set in pretty sharply on Tuesday morning and put a check on further outdoor operations. The work set apart for that day was the investigation of Camblesforth and Carleton Woods, but it had to be abandoned. One or two of the more hardy members revisited Stainor Wood and turned up a few species not seen on the Saturday. Not a little of the success of the meeting was due to the untiring energy of the local Secretary, Mr. W. N. Cheesman, Selby, who at times experienced some little difficulty in keeping his flock within hailing distance in the extensive woods traversed. A collection of fungi, including *Paxillus lepista* Fr., was brought by Mr. Hey from Derby. Consignments were received



from the Scarborough and Malton Naturalists' Societies, and the names of the species sent returned to each. Mr. Clarke brought *Lepiota erminea* Fr. from Huddersfield.

The idea of a National Mycological Union has for some years past been discussed by mycologists, and at this meeting the subject was revived, the result being the establishment of a society to be known as 'The British Mycological Society.' The officers elected were:—President, Mr. George Masee, F.L.S., F.R.M.S.; Secretary, Mr. Carleton Rea, M.A., Worcester; Treasurer, Mr. Chas. Crossland, Halifax. The two leading ideas of the society are as follows:—(1) An annual gathering of a week's duration to be held at a new locality each year for the investigation of the mycological flora of Great Britain. (2) The publication of an annual report and résumé of work—British and Continental—dealing with mycology for the current year. Sherwood Forest was suggested as a suitable place for the first foray. About a score members were enrolled.

The species collected and determined at this Selby meeting were as follow:—

## HYMENOMYCETES.

### AGARICINEÆ.

- Amanita phalloides* Fr. Stainor Wood; Bishop's Wood; Escrick; Blackwood.
- Amanita mappa* Fr. Blackwood.
- Amanita pantherina* DC. Stainor Wood; Escrick.
- Amanita muscaria* L. Blackwood.
- Amanita rubescens* Pers. Stainor Wood; Bishop's Wood; Escrick Wood; Blackwood.
- Amanitopsis vaginata* Roze. Stainor Wood; Bishop's Wood; Escrick; Blackwood.
- Lepiota procera* Scop. Escrick; Bishop's Wood.
- Lepiota procera* var. *rachodes* Vitt. Escrick.
- Lepiota acutesquamosa* Weim. Stainor Wood.
- Lepiota felina* Pers. Escrick.
- Lepiota metulæspora* B. & Br. Blackwood.
- Lepiota cristata* A. & S. Blackwood.
- Lepiota carcharia* Pers. Bishop's Wood; Escrick.
- Lepiota granulosa* Batsch. Stainor Wood; Bishop's Wood; Escrick.
- Armillaria mellea* Vahl. Stainor Wood; Bishop's Wood; Escrick; Blackwood.



- Tricholoma flavo-brunneum* Fr. Blackwood.  
*Tricholoma rutilans* Schæff. Escrick; Blackwood.  
*Tricholoma saponaceum* Fr. Blackwood.  
*Tricholoma inamœnum* Fr. Blackwood.  
*Tricholoma carneum* Bull. Stainor Wood; Bishop's Wood;  
 Escrick.  
*Tricholoma melaleucum* Pers. Stainor Wood; Escrick.  
*Tricholoma sordidum* Fr. Stainor Wood; Bishop's Wood.  
*Tricholoma onychinum* Fr. Escrick.  
*Clitocybe nebularis* Batsch. Stainor Wood.  
*Clitocybe clavipes* Pers. Bishop's Wood.  
*Clitocybe candicans* Pers. Escrick.  
*Clitocybe tumulosa* Kalchbr. Bishop's Wood.  
*Clitocybe gigantea* Sow. Escrick.  
*Clitocybe infundibuliformis* Schæff. Bishop's Wood; Blackwood.  
*Clitocybe cyathiformis* Bull. Escrick.  
*Clitocybe fragrans* Sow. Escrick.  
*Laccaria laccata* Scop. Stainor Wood; Bishop's Wood; Escrick;  
 Blackwood.  
*Collybia platyphylla* Fr. Stainor Wood; Bishop's Wood; Black-  
 wood.  
*Collybia fusipes* Bull. Escrick.  
*Collybia maculata* A. & S. Bishop's Wood; Escrick; Blackwood.  
*Collybia butyracea* Bull. Stainor Wood; Bishop's Wood;  
 Escrick; Blackwood.  
*Collybia velutipes* Fr. Escrick.  
*Collybia confluens* Pers. Bishop's Wood; Escrick.  
*Collybia tuberosa* Bull. Blackwood.  
*Collybia dryophila* Bull. Bishop's Wood; Blackwood.  
*Collybia ambusta* Fr. Blackwood.  
*Mycena epipterygia* Scop. Bishop's Wood; Escrick.  
*Mycena galopoda* Fr. Stainor Wood; Bishop's Wood; Escrick.  
*Mycena sanguinolenta* A. & S. Bishop's Wood.  
*Mycena acicula* Schæff. Escrick.  
*Mycena ammoniaca* Fr. Skipwith.  
*Mycena galericulata* Scop. Bishop's Wood; Escrick.  
*Mycena polygramma* Bull. Escrick.  
*Mycena pura* Pers.



- Omphalia umbellifera* L. Escrick.  
*Omphalia fibula* Bull. Bishop's Wood.  
*Volvaria gloiocephala* Dec. Fl. Escrick.  
*Pluteus cervinus* Schæff. Stainor Wood; Bishop's Wood; Escrick.  
*Entoloma sinuatum* Fr. Blackwood.  
*Entoloma jubatum* Fr. Blackwood.  
*Entoloma sericellum* Fr. Bishop's Wood; Escrick; Blackwood.  
*Entoloma clypeatum* L. Escrick.  
*Entoloma rhodopolium* Fr. Blackwood.  
*Entoloma costatum* Fr. Blackwood.  
*Entoloma sericeum* Fr. Escrick; Blackwood.  
*Clitopilus orcella* Bull. Escrick.  
*Leptonia placida* Fr. Blackwood.  
*Leptonia lampropoda* Fr. Escrick.  
*Nolanea pascua* Pers. Escrick.  
*Nolanea pisciodora* Cesati. Escrick.  
*Claudopus variabilis* Pers. Escrick.  
*Pholiota aurea* Matt. Escrick.  
*Pholiota dura* Bolt. Escrick.  
*Pholiota comosa* Fr. Selby (wood-yard).  
*Pholiota squarrosa* Müll. Escrick.  
*Pholiota dissimulans* B.&Br. Bishop's Wood.  
*Pholiota mutabilis* Schæff. Bishop's Wood; Escrick; Blackwood.  
*Inocybe pyriodora* Pers. Blackwood.  
*Inocybe rimosa* Bull. Escrick.  
*Inocybe asterospora* Quel. Escrick.  
*Inocybe geophylla* Fr. Blackwood.  
*Hebeloma glutinosum* Lindgr. Blackwood.  
*Hebeloma elatum* Fr. Blackwood.  
*Flammula gummosa* Lasch. Blackwood.  
*Flammula carbonaria* Fr. Escrick.  
*Flammula sapinea* Fr. Escrick.  
*Flammula picrea* Fr. Blackwood.  
*Galera tener* Schaff. Bishop's Wood; Escrick.  
*Galera ovalis* Fr. Bishop's Wood.  
*Galera hypnorum* Batsch. Bishop's Wood.  
*Agaricus campestris* L.  
*Agaricus campestris* var. *sylvicola* Vitt. Blackwood.



- Agaricus campestris* var *pratensis*.  
*Stropharia æruginosa* Curt. Escrick; Blackwood.  
*Stropharia squamosa* Fr. Blackwood.  
*Stropharia semiglobata* Batsch. Stainor Wood; Bishop's Wood; Escrick; Blackwood; Skipwith.  
*Hypholoma sublateritium* Schæff. Bishop's Wood; Escrick; Blackwood.  
*Hypholoma epixanthus* Fr. Escrick.  
*Hypholoma eleodes* Fr. Escrick.  
*Hypholoma fasciculare* Huds. Stainor Wood; Bishop's Wood; Escrick; Blackwood.  
*Hypholoma velutinum* Pers. Escrick; Skipwith.  
*Hypholoma candolleanus* Fr. Escrick.  
*Hypholoma appendiculatum* Bull. Escrick.  
*Psilocybe semilanceata* Fr. Bishop's Wood; Escrick.  
*Psilocybe spadicea* Fr. Escrick.  
*Psilocybe fœnisecii* Pers. Escrick.  
*Anellaria separata* Karst. Escrick.  
*Anellaria fimiputris* Karst. Escrick.  
*Panæolus campanulatus* L. Escrick.  
*Psathyrella atomata* Fr. Bishop's Wood.  
*Psathyrella disseminata* Pers. Escrick.  
*Coprinus comatus* Fr. Bishop's Wood; Selby.  
*Coprinus atramentarius*. Bishop's Wood; Escrick.  
*Coprinus niveus* Fr. Bishop's Wood.  
*Coprinus micaceus* Fr. Escrick; Blackwood.  
*Coprinus lagopus* Fr. Escrick.  
*Coprinus radiatus* Fr. Escrick.  
*Coprinus ephemerus* Fr. Blackwood.  
*Coprinus plicatilis* Fr. Blackwood; Stainor Wood.  
*Coprinus hemerobius* Fr. Escrick.  
*Cortinarius (Telamonia) torvus* Fr. Escrick.  
*Cortinarius (Telamonia) impennis* Fr. Blackwood.  
*Cortinarius (Telamonia) armillatus* Fr. Blackwood.  
*Cortinarius (Telamonia) hinnuleus* Fr. Escrick.  
*Cortinarius (Telamonia) hemitrichus* Fr. Blackwood.  
*Cortinarius (Dermocybe) ochroleucus* Fr. Escrick.  
*Cortinarius (Dermocybe) cinnamomeus* Fr. Blackwood.



- Gomphidius glutinosus* Fr. Stainor Wood.  
*Gomphidius roseus* Fr. Skipwith.  
*Gomphidius gracilis* Berk. Bishop's Wood.  
*Paxillus giganteus* Fr. Escrick.  
*Paxillus orcelloides* Cke. & Mass. Escrick.  
*Paxillus involutus* Fr. Bishop's Wood; Escrick; Blackwood;  
 Hambleton.  
*Paxillus panuoides* Fr. Escrick.  
*Hygrophorus (Hygrocybe) miniatus* Fr. Escrick.  
*Hygrophorus (Hygrocybe) puniceus* Fr. Escrick.  
*Hygrophorus (Hygrocybe) conicus* Fr. Escrick.  
*Hygrophorus (Hygrocybe) chlorophanus* Fr. Escrick.  
*Hygrophorus (Hygrocybe) psittacinus* Schæff. Escrick.  
*Hygrophorus (Hygrocybe) unguinosus* Fr. Escrick.  
*Hygrophorus (Camarophyllus) nemoreus* Fr. Escrick.  
*Hygrophorus (Camarophyllus) pratensis* Fr. Escrick;  
 Skipwith.  
*Hygrophorus (Camarophyllus) virgineus* Wulf. Escrick.  
*Hygrophorus (Camarophyllus) niveus* Fr. Escrick.  
*Lactarius (Piperates) torminosus* Schæff. Blackwood.  
*Lactarius (Piperates) turpis* Fr. Bishop's Wood; Escrick;  
 Blackwood.  
*Lactarius (Piperates) insulsus* Fr. Escrick.  
*Lactarius (Piperates) blennius* Fr. Escrick.  
*Lactarius (Piperates) trivialis* Fr. Bishop's Wood.  
*Lactarius (Piperates) circellatus* Fr. Blackwood.  
*Lactarius (Piperates) chrysorrhæus* Fr. Blackwood.  
*Lactarius (Piperates) vellereus* Fr. Bishop's Wood.  
*Lactarius (Dapetes) deliciosus* Fr. Blackwood.  
*Lactarius (Russulares) quietus* Fr. Bishop's Wood; Stainor  
 Wood; Escrick; Blackwood.  
*Lactarius (Russulares) rufus* Scop. Bishop's Wood.  
*Lactarius (Russulares) glyciosmus* Fr. Bishop's Wood;  
 Escrick; Blackwood.  
*Lactarius (Russulares) mitissimus* Fr. Blackwood.  
*Lactarius (Russulares) subdulcis* Fr. Bishop's Wood; Black-  
 wood.  
*Russula integra* Fr. Bishop's Wood.  
*Russula nigricans* Fr. Bishop's Wood; Escrick; Blackwood.



- Russula adusta* Fr. Escrick.  
*Russula delica* Fr. Escrick.  
*Russula virescens* Fr. Escrick.  
*Russula xerampelina* Fr. Escrick.  
*Russula vesca* Fr. Bishop's Wood ; Escrick.  
*Russula depallens* Fr. Blackwood.  
*Russula cyanoxantha* Schæff. Escrick ; Blackwood.  
*Russula fellea* Fr. Blackwood.  
*Russula rubra* Fr. Blackwood.  
*Russula drimeia* Cooke. Blackwood.  
*Russula ochroleuca* Fr. Stainor Wood ; Bishop's Wood ;  
 Escrick ; Blackwood.  
*Russula consobrina* Fr. Escrick.  
*Russula sardonica* Fr. Escrick.  
*Russula emetica* Fr. Bishop's Wood ; Escrick ; Blackwood.  
*Russula fragilis* Fr. Stainor Wood ; Bishop's Wood ; Escrick ;  
 Blackwood.  
*Russula queletii* Fr. var. *purpurea* Gill. Escrick.  
*Cantharellus aurantiacus* Fr. Bishop's Wood.  
*Marasmius peronatus* Fr. Escrick ; Blackwood.  
*Marasmius oreades* Fr. Escrick ; Skipwith ; Selby.  
*Marasmius ramealis* Fr. Bishop's Wood ; Escrick.  
*Marasmius androsaceus* Fr. Bishop's Wood ; Blackwood.  
*Marasmius epiphyllus* Fr. Bishop's Wood.  
*Lentinus cochleatus* Fr. Bishop's Wood.  
*Panus conchatus* Fr. Escrick.

## POLYPOREI.

- Boletus chrysenteron* Fr. Bishop's Wood ; Escrick ; Blackwood.  
*Boletus elegans* Schum. Bishop's Wood ; Escrick.  
*Boletus flavus* Witt. Bishop's Wood ; Escrick.  
*Boletus subtomentosus* L. Stainor Wood ; Bishop's Wood ;  
 Escrick ; Blackwood.  
*Boletus spadiceus* Schæff. Escrick.  
*Boletus variegatus* Swartz. Blackwood.  
*Boletus badius* L. Bishop's Wood ; Escrick ; Blackwood.  
*Boletus bovinus* L. Blackwood.  
*Boletus edulis* Bull. Escrick ; Blackwood.  
*Boletus luridus* Schæff. Blackwood.



- Boletus felleus* Bull. Escrick.  
*Boletus scaber* Fr. Bishop's Wood ; Escrick ; Blackwood.  
*Boletus versipellis* Fr. Blackwood.  
*Fistulina hepatica* Fr. Blackwood ; Escrick.  
*Polyporus brumalis* Fr. Escrick.  
*Polyporus squamosus* Fr. Bishop's Wood ; Stainor Wood ;  
 Escrick.  
*Polyporus intybaceus* Fr. Escrick.  
*Polyporus destructor* Fr. Escrick.  
*Fomes annosus* Fr. Blackwood.  
*Polystictus versicolor* Fr. Stainor Wood ; Bishop's Wood ;  
 Escrick ; Blackwood.  
*Polystictus radiatus* Fr.  
*Poria vaporaria* Fr. Bishop's Wood ; Escrick.  
*Poria blepharistoma* B. & Br.  
*Dædalea quercina* Pers. Escrick.

## HYDNEI.

- Hydnum repandum* L. Blackwood.  
*Radulum orbiculare* Fr. Escrick.

## THELEPHOREÆ.

- Thelephora laciniata* Pers. Bishop's Wood ; Escrick.  
*Stereum purpureum* Pers. Bishop's Wood ; Escrick.  
*Stereum hirsutum* Fr. Escrick ; Blackwood.  
*Stereum rugosum* Fr. Blackwood.

## CLAVARIEÆ.

- Clavaria cinerea* Bull. Bishop's Wood ; Escrick ; Blackwood.  
*Clavaria cristata* Holmsk. Bishop's Wood.  
*Clavaria rugosa* Bull. Bishop's Wood ; Escrick.  
*Clavaria formosa* Pers. Escrick.  
*Clavaria inæqualis* Fl. Dan. Escrick.  
*Clavaria vermicularis* Scop. Escrick.  
*Typhula erythropus* Fr. Bishop's Wood.

## TREMELLINÆ.

- Calocera viscosa* Fr. Bishop's Wood ; Escrick ; Blackwood.  
*Calocera cornea* Fr. Blackwood.  
*Dacryomyces deliquescens* Duby. Stainor Wood ; Bishop's  
 Wood ; Escrick.  
*Hirneola auricula-judæ* Berk. Escrick.



**GASTROMYCETES.**

- Scleroderma vulgare* Fr. Bishop's Wood; Escrick.  
*Cyathus striatus* Hoffm. Escrick.  
*Cyathus vernicosus* DC. Bishop's Wood.  
*Crucibulum vulgare* Tul. Escrick.  
*Sphærobohus stellatus* Tode. Bishop's Wood; Escrick.  
*Lycoperdon saccatum* Vahl. Escrick.  
*Lycoperdon gemmatum* Batsch. Bishop's Wood; Escrick.  
*Lycoperdon pyriforme* Schæff. Bishop's Wood.  
*Ithyphallus impudicus* (L.) Fischer. Bishop's Wood; Escrick.  
*Mutinus caninus* (Huds.) Fr. Bishop's Wood.

**UREDINEÆ.**

- Puccinia menthæ* Pers. Bishop's Wood.  
*Puccinia violæ* (Schum.). Bishop's Wood.  
*Puccinia primulæ* (DC.). Bishop's Wood.

**DISCOMYCETES.**

- Leotia acicularis* Pers. Escrick.  
*Helvella crispa* Fr. Escrick.  
*Helvella lacunosa* Afz. Bishop's Wood; Escrick.  
*Rhizina inflata* (Schæff.). Bishop's Wood.  
*Otidea aurantia* Mass. Stainor Wood; Bishop's Wood; Escrick.  
*Humaria melaloma* Mass. On charcoal, Stainor Wood.  
*Humaria granulata* (Fekl.). Escrick.  
*Lachnea hemispherica* (Wigg.). Stainor Wood; Bishop's Wood;  
 Escrick.  
*Ciboria ochroleuca* (Bolton) Mass. Stainor Wood.  
*Helotium scutula* (Pers.). Stainor Wood.  
*Helotium cyathoideum* (Bull). Bishop's Wood.  
*Ascobolus furfuraceus* Pers. Escrick.  
*Bulgaria polymorpha*. Escrick.  
*Rhytisma acerinum* Fr. Bishop's Wood.  
*Phacidium multivalve* Kze & Schmidt, Mycol. Heft 1., p. 42.

**PYRENOMYCETES.**

- Torrubia ophioglossoides* Tul. On *Elaphomyces granulatus*,  
 Blackwood.  
*Hypocrea rufa* Fr. Bishop's Wood; Blackwood.



*Nectria cinnabarina* Fr. Bishop's Wood; Escrick; Stainor Wood.

*Xylaria hypoxylon* Grev. Stainor Wood; Bishop's Wood; Escrick; also sent by Mr. James Carter from near Masham, N.W. Yorks.

*Sphæria pulvis-pyrius* Pers. Bishop's Wood.

### TUBERACEÆ.

*Elaphomyces granulatus* Fr. Blackwood.

### PHYCOMYCES.

*Pilobolus crystallinus* Tode. Escrick.

*Pilobolus roridus* Pers. Escrick.

*Spinellus fusiger* Van Teigh. On pileus of *Mycena*, Escrick.

*Sporodinia aspergillus* Schrot.

*Phytophthora infestans* De Bary. Selby and other places.

### HYPHOMYCTES.

*Sepedonium chrysospermum* Fr.

*Heterosporium epimyces* Cke. & Mass.

*Isaria farinosa* Fr.

### MYXOGASTRES.

*Stemonitis friesiana* De Bary. Escrick.

*Arcyria punicea* Rost. Escrick.

*Arcyria cinerea* Mass. Escrick.

*Didymium squamulosum* Fr. Bishop's Wood.

*Tilmadoche nutans* Rost. Escrick.

*Leocarpus fragilis* Rost. Escrick.

### NOTES—ORNITHOLOGY.

**Migration of the Ring-ouzel.**—On September 24th, 1896, one of this species (*Turdus torquatus*), a fine mature male, which by some mishap had struck against the telegraph wires, and fell upon the highway dead, was picked up and brought to me to be named, it being the first on record in the village of Lofthouse.—JOHN WARD, Pymont House, Lofthouse, Wakefield, Nov. 14th, 1896.

**Flamborough Bird-Notes.**—In the latter part of October, Mr. H. Bailey, one of the fog signalmen, informed me that to his surprise, so late in the season, he saw a flight of Swallows (*Hirundo rustica*) flying near to the Fog Signal Station at Flamborough Head. In the early part of November we experienced very rough weather, which brought several birds from the far North. Several Little Auks (*Mergulus alle*) and Stormy Petrels (*Thalassidroma pelagica*) were seen on the coast. Enormous quantities of Snow Buntings (*Plectrophanes nivalis*) arrived on the Headland. I had also brought in a very fine, large Glaucous Gull (*Larus glaucus*).—MATTHEW BAILEY, Flamborough, Nov. 19th, 1896.



## NATURAL HISTORY OF UPPER TEESDALE.

Upper Teesdale, | Past and Present: | A Handy Reference Book, | with Eight Illustrations and a Map. | By | James Backhouse, F.L.S., F.Z.S., F.R.H.S., | Member of the British Ornithologists' Union, &c. ; | Hon. Curator of Zoology to the Yorkshire Philosophical Society; | Author of "A Handbook of European Birds." | London: | Simpkin, Marshall, Hamilton, Kent & Co., Ltd. | Barnard Castle: | W. R. Atkinson, Market Place. | 1896. [8vo, paper boards, pp. vi. + 89; preface dated May 1896: Price 1s.].

THE work now lying before us is the production of one who unites to a close and intimate personal familiarity with the district a kind of hereditary knowledge of it. For the Backhouses, son and father and grandfather alike, have all been so associated with the very name of Teesdale as to make it almost seem their own. To them we owe the first discovery of many of those rare flowers which make Upper Teesdale unique among valleys in the North of England, a Mecca for the botanical pilgrim. To the Backhouses also—and particularly to the author of the present book—we owe what we know of the Vertebrate fauna, and it is by their assiduity and knowledge that the caves in the district have been investigated.

It is therefore with peculiar pleasure that we turn to the book now before us, and that we note the prominent position which scientific matters take in it, occupying as they do five chapters out of the nine.

The first four chapters are topographical and descriptive, the first being general, the second treating of Barnard Castle and Bowes and the Tees Valley Line, the third describing Winch Bridge, High Force, Micklefell, etc., and the fourth taking us to the very dale-head and introducing us to Langdon Beck, Cauldron Snout, Highcup, Harwood, Yad Moss, Cross Fell, and Alston.

The remarkably interesting Geology and Palæontology of the district are treated of in the fifth chapter, including the Teesdale Cave and the human skull found therein. Chapter six is archæological, and discusses early historical remains, coins, etc. Chapter seven deals with 'Teesdale Forest,' defining its one-time limit, etc. The eighth chapter gives a brief—too brief—discussion of the Teesdale Flora and its striking peculiarities, while the ninth chapter is a much fuller account of the Avi-fauna of Upper Teesdale, giving a complete list (with interesting and valuable annotations) of the birds which inhabit the district. The concluding pages are devoted to practical information as to railway access to the district, and an index.

A lithographic view of the High Force makes a striking and effective cover-design, and the book, London-printed, is neatly got up.



## LINCOLNSHIRE NATURALISTS AT GREAT COTES.

REV. E. ADRIAN WOODRUFFE-PEACOCK, L.Th., F.L.S., F.G.S.,  
*Vicar of Cadney; Organising and Botanical Secretary, Lincolnshire Naturalists' Union;*  
*Curator of the Lincolnshire County Herbarium.*

AT the invitation of Mr. John Cordeaux, M.B.O.U., who was the first president of the Lincolnshire Naturalists' Union, a large number of its members mustered for their twelfth field meeting at Great Cotes, in Division 4, on Tuesday, September 8th. Among the visitors were Mr. F. M. Burton, F.L.S., F.G.S., of Gainsborough; Rev. W. Tuckwell, of Waltham; Rev. W. Fowler, M.A., of Liversedge; Rev. A. Thornley, M.A., F.L.S., F.E.S., of Leverton; Mr. J. H. Cooke, B.Sc., F.L.S., F.G.S., Mr. A. Fieldsend, Mr. J. S. Sneath, and Mr. G. A. Grierson, F.L.S., of Lincoln; Mr. B. Crow, Mr. T. Gelsthorp, and Mr. J. Mawer, of Louth; Miss Lane-Claypon, of Tytton Hall; Rev. C. Wilkinson, of Toft Newton; Rev. Canon Staffurth, of Frieston; Rev. W. Wyatt, of Broughton; Mr. J. O. Nicholson, of Staniwells; Mr. J. Jarvis Rainey, of Spilsby; Mr. C. L. Hett, of Brigg; Mr. S. Pegler, of Retford; Mr. G. H. Caton Haigh, of Grainsby Hall; Rev. C. A. Alington, of Swinhope; Rev. J. P. Young, Mr. G. Parker and Mr. S. J. North, of Grimsby; Rev. W. H. Daubney, of Leasingham; Rev. J. E. Wallis-Loft, of Swallow; Rev. J. S. H. McSwiney, of Barnoldby-le-Beck; and the Secretaries, the Rev. E. Adrian Woodruffe-Peacock, F.L.S., F.G.S., of Cadney, and Mr. R. W. Goulding, of Louth.

For once, during a month of rain, the weather was fine, though dull, the whole day, and the members enjoyed their exploration thoroughly. With the object of investigating a large area of ground two parties were formed—one which, under the guidance of Mr. Peacock, went by the old Fleet drain to the Humber Bank; the other was led by Mr. Cordeaux, and proceeded mostly by the side of the stream, called the Freshney, which runs into Grimsby Docks, through Great Cotes, Little Cotes and Aylesby, chiefly over pastures and boggy ground.

Botany was the branch of science with which both parties chiefly concerned themselves, but the experts in each branch of Natural History gave close attention to all things in their path which appertained to their particular work. Owing chiefly to the lateness of the season, and the limited time allowed for research, the day was not as fruitful in 'finds' worthy of record as might have been expected, but the rambles were abundantly interesting both from the scientists' and pleasure-seekers' point of view. The



party under the guidance of Mr. Cordeaux took by far the pleasanter route. True, as before mentioned, some of the ground was boggy, and needed careful stepping, but so slight a suggestion of difficulty served only to spice the outing. The specimens collected were numerous, but none were very uncommon, and it was difficult or impossible to surprise the host, Mr. Cordeaux, with a find of any kind, so thoroughly familiar is he with the flora and fauna of the district and the county. His party wandered on in straggling groups round the Freshney over the Great Cotes road to the plantations beyond, where the blow-wells came in for a large share of attention. There are many examples in the district traversed, and Mr. Cordeaux explained that the blow-hole in the centre of each is often from 60 to 70 feet deep; the water, which comes up from the chalk, maintains an even temperature and never freezes. Two Herons were seen fishing in the stream, and one kindly disposed gentleman seemed quite to regret the fact that they were disturbed by the approach of the party. Mr. Cordeaux pointed out several spots which he said were resorts of Wild Ducks and Snipe in winter, and also a willow plantation which he described as a familiar haunt of the Reed-warbler, the Sedge-warbler and the Grasshopper-warbler. Not far away from this place were two Sweet-scented Willow-trees (*Salix pentandra*), the leaves of which when rubbed have an aromatic smell; and he also indicated a part of the stream in which he had found bones of the wolf, the wild deer, the red deer, and of several other species. Of plants the perforated St. John's Wort (*Hypericum perforatum*), Water Plantain (*Alisma plantago*) and Mare's-tail (*Hippuris vulgaris*), were abundant; and in the bogs the following were found:—Hemp Agrimony (*Eupatorium cannabinum*); Musk Mallow (*Malva moschata*), the flowers of which were uncommonly pale; *Leontodon autumnalis*; Grass of Parnassus (*Parnassia palustris*), a very elegant plant and a good record; Buckbean (*Menyanthes trifoliata*), leaves only; Purple Loosestrife (*Lythrum salicaria*); Marsh Ragwort (*Senecio aquaticus*); Yellow Loosestrife (*Lysimachia vulgaris*); Marsh Red Rattle (*Pedicularis palustris*), leaves only; and Yellow Iris (*Iris pseudacorus*), fruit only. It is said that the roasted seeds of the last-named may be used as a substitute for coffee. On the walls of Great Cotes Church were *Parietaria officinalis* and *Asplenium ruta-muraria*. Full lists of plants observed were received from Messrs. J. S. Sneath and G. A. Grierson.

Among the first finds were some typical and commonly distributed species of fungi, such as *Stropharia semiglobata* and *S. æruginosa*. The latter has a bluish or greenish slime on its cap, but as this slime is liable to be washed off by rain



its colour cannot be relied upon as a sure indicator of the species. Another common species was the Parrakeet mushroom (*Hygrophorus psittacinus*), so called because its tints are generally bright, combining parrot-like and very variable hues; when young it generally has a green tinge, and it is always green just at the top of the stem. Another member of this genus was *H. coccineus*, of a beautiful red colour. Then growing in a tuft on a stump, was *Armillaria mellea*, which is honey-coloured and is said to be much eaten on the continent. The other fungi included *Bolbitius tener*, which is very fragile, *Tremella mesenterica* (a gelatinous little fungus of a bright orange colour, growing on ash), *Clavaria vermiculata*, which grows in clusters, *Panæolus papilionaceus*, *Coprinus atramentarius*, which when fully expanded melts away like inky drops, *Hypholoma appendiculatus*, and *Marasmius oreades*. The last-named is the little Champignon which is so familiar from its eccentric habit of growing in so-called fairy-rings.

Both parties returned to Mr. Cordeaux's house about 3.45, and there in a barn close at hand (kindly lent by Mr. Fulford), they found that extensive preparations had been made for a suitable termination of the day's proceedings. The barn, which was decorated with banners, the greeting 'Welcome to the Lincolnshire Naturalists' Union' being conspicuous on the wall, had the appearance of a dining-hall, and a most excellent one it made. The very choice repast provided by Mr. and Mrs. Cordeaux was much appreciated by every one.

After tea the usual business meeting was held, when various sectional officers detailed the day's proceedings. Mr. F. M. Burton (Vice-President) presided, and expressed the regret felt at the absence of the President (Canon Fowler), who was taking a much-needed holiday from scholastic duties in the Lake district.

Mr. G. H. Caton Haigh, M.B.O.U., reported on Vertebrate Zoology. Birds had been scarce, but his list included the Kingfisher, Curlew, Rook, Carrion Crow, Magpie, Kestrel, Chaffinch, Yellow-hammer, Swallow, Wood Pigeon, Common, Great Black-backed, and Lesser Black-backed Gulls. He concluded by referring to a Beaked Whale (*Hyperoödon rostratus*) which came up on the coast near Frieston a few weeks ago.

The Rev. A. Thornley, M.A., F.L.S., F.E.S., reported that Entomologists were very poorly represented, those present electing to follow the party led by Mr. Cordeaux. The district traversed had the appearance of being an extremely good collecting ground; but owing to the lateness of the season, and the very wet weather which had prevailed previously, and also from the fact that a considerable



distance had to be quickly traversed in order to get back in time not much of interest was obtained. A few blue butterflies (*Lycæna icarus*), Small Coppers (*Chrysophanus phlœas*), and whites (*Pieris*) were observed, and the Rev. Mr. Wilkinson obtained a caterpillar of *Cerura furcula* (the Small Kitten moth), and one or two undetermined larvæ. On *Angelica*, Diptera were common, and subjoined is a small list of those observed. The Coleoptera were chiefly collected by Mr. Stephen Pegler of Retford, and Mr. Thornley. An interesting and pretty capture was that of *Chrysomela didymata* on *Hypericum perforatum*, the species being, it is believed, unusual on this plant, which is usually taken possession of by its neighbour *Chrysomela hyperici*. This plant is, apparently, a favourite one with the genus *Chrysomela*, as *C. staphylea* was found also upon it. Appended are the lists of Diptera and Coleoptera :—

#### Diptera.

*Eristalis tenax*.  
*Eristalis pertinax*.  
*Eristalis arbustorum*.  
*Catabomba pyrastris*.  
*Syrphus ribesii*.  
*Syrphus balteatus*.  
*Syrphus luniger*.  
*Syrphus corollæ*.  
*Melanostoma* sp.  
*Helophilus pendulus*.  
*Calliphora erythrocephala*.  
*Lucilia cæsar*.  
*Lucilia cornicina*.  
*Graphomyia maculata*.  
*Morellia hortorum*.  
*Sarcophaga carnaria*.  
*Hyetodesia basalis*.

#### Coleoptera.

*Pterostichus versicolor*.  
*Pterostichus strenuus*.  
*Amara aulica*.  
*Bembidium gilvipes*.  
*Ocypus cupreus*.  
*Quedius tristis*.  
*Leistotrophus nebulosus*.  
*Leistotrophus murinus*.  
*Stilicus affinis*.  
*Stenus unicolor*.  
*Omalium excavatum*.  
*Choleva tristis*.  
*Meligethes rufipes*.  
*Cercus pedicularius*.

*Brachypterus urticae*.  
*Ephistemus gyrinoides*.  
*Halyzia 18-punctata*.  
*Coccinella 7-punctata*.  
*Subcoccinella 24-punctata*.  
*Scymnus frontalis*.  
*Mycetophagus quadripustulatus*.  
*Atomaria basalis*.  
*Cercyon analis*.  
*Aphodius contaminatus*.  
*Aphodius rufipes*.  
*Chrysomela didymata*.  
*Chrysomela polita*.  
*Chrysomela staphylea*.  
*Lema melanopa*.  
*Lema lichenis*.  
*Phratora vulgatissima*.  
*Galerucella lineola*.  
*Crepidodera aurata*.  
*Psylliodes cupro-nitens*.  
*Longitarsus melanocephalus*.  
*Batophila rubi*.  
*Aphthona cærulea*.  
*Cassida viridis*.  
*Ceuthorhynchus litura*.  
*Ceuthorhynchus pollux*.  
*Rhinoncus gramineus*.  
*Rhinoncus pericarpus*.  
*Erirrhinus acridulus*.  
*Hypera variabilis*.  
*Anthonomus rubi*.  
*Sitones lineatus*.  
*Sitones hispidulus*.  
*Sitones sulcifrons*.



Mr. J. H. Cooke, B.Sc., F.L.S., F.G.S., reported that the extensive accumulations of Boulder Clay and Estuarine Warp that envelope the country in the neighbourhood of Great Cotes, most of which, at the time of the visit of the members of the Lincolnshire Naturalists' Union, were covered with ripening crops, militated considerably against the success of the geological section. Some interesting work was, however, done in seeking for erratics and in studying the problems which were offered in a small pit that lies between Great Cotes and Healing. This pit is specially noteworthy as being the only section in the neighbourhood where the Boulder Clay may be seen in juxtaposition with and overlying the shelly sands and gravels. It has been excavated in an inlier, and it shews in section a layer of chalky Purple Boulder Clay of about four feet in thickness overlying a series of thin seams of gravel, sand, and carbonaceous matter.

The predominant feature of the clay is the many fragments of chalk which it contains, all of which are in a more or less advanced state of decomposition; but besides these, angular masses of flint, some black, others piebald, due to the solution of portions of their contained chalcedonic silica, and also small boulders of local and of far-travelled rocks are by no means uncommon. Of these latter, fragments of oolitic limestone, micaceous sandstone, mica schist, and red granite were noted.

The shelly gravels with their intercalations of carbonised vegetable matter exhibit very marked evidences of false-bedding, and contain quantities of shell fragments having a distinct marine facies. Mr. Cordeaux and the Geological Survey obtained 17 species of marine shells from this pit. On the day of the excursion many fragments were obtained, and also entire shells of *Cardium echinatum*, *C. edule*, *Mytilus edulis*, and *Buccinum undatum*. *Mytilus edulis* is not recorded from this locality in the Survey Memoir.

Of the boulders that were seen the most noteworthy was a fine rounded mass of porphyritic granite that would probably weigh nearly three-quarters of a ton. It lies near the gateway leading to Mr. Cordeaux's grounds. It is not a local erratic, but was dredged up from the Dogger Bank in the North Sea and was brought to Great Cotes a few years ago. Between the village and the station several isolated boulders were observed by the roadside, e.g., schist, oolitic limestone, micaceous sandstone, and quartzite; and about one hundred yards from the station is a large heap of foreign rocks that includes boulders of basalt, schist, porphyritic granite, quartzite, grey granite, and limestones, all of which were at one time used in the construction of a road pavement near Great



Cotes Vicarage. It is therefore highly probable that they had been carted from Grimsby from one of the many ballast-heaps that abound there. From the foregoing observations it will be seen that the greatest caution will have to be exercised when taking note of the occurrence of igneous, metamorphic, sedimentary, and other erratics in this neighbourhood.

The Rev. W. H. Daubney proposed that Mr. Cordeaux be most heartily thanked for the very kind and hospitable way in which he had received his visitors. He had entertained them entomologically, botanically, geologically, and lastly, as they had evidence before and within them, in a very excellent culinary way. Mr. Peacock, in seconding the motion, said that, as a compiler of the bibliography of Lincolnshire Natural History observations, he had found that Mr. Cordeaux had probably done more work, and work on wider lines, than any other scientific worker in the county. His position as an ornithologist was known to everybody, and there was no department of Natural History that he had not touched.

The motion having been put and carried enthusiastically, Mr. Cordeaux replied for himself and Mrs. Cordeaux, whose name had been joined as the provider of the entertainment. He thanked the proposer and seconder for the kind expressions used towards Mrs. Cordeaux and himself, and he assured those present that he felt himself honoured by the presence of so large a company. Looking back upon his fifty years' experience as a worker in Natural History, he remembered the time when he began to take notes, when he had only one correspondent in the county, and then years afterwards when he had only two, the late Sir Charles Anderson, of Lea, and the late Rev. R. P. Alington, of Swinhope. Let them but compare that state of things with the number of Lincolnshire workers to-day. The Union consisted of about 110 members, and it was satisfactory to find that they nearly all of them had paid their subscriptions. He hoped that sometime in the future they might have another meeting at Cotes in the summer, and he further hoped that at some time during the ensuing winter he might have an opportunity of telling them something about the marvellous things he had recently seen in Arctic Europe.

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#### NOTE—TRICHOPTERA.

**Stenophylax vibex at Huddersfield.**—In May last, Mr. B. Morley gave me a fine specimen of *Stenophylax vibex* which he had taken during the spring at Skelmanthorpe; and on Saturday last he brought me, among other commoner trichoptera, three more *S. vibex*. As all his captures in the order were made casually when working for lepidoptera, the species is evidently not uncommon at Skelmanthorpe. I have never seen it on my own side of our town, nor in any other part of the West Riding.—GEO. T. PORRITT, Crosland Hall, Huddersfield, November 16th, 1896.



## LINCOLNSHIRE BOULDERS.

THOMAS SHEPPARD.

I AM pleased to have had such a number of applications for specimens of Shap Granite, etc., in response to the offer contained in my note respecting the boulders of Lincolnshire, which appeared in this magazine for last month.

With regard to the boulder at Yarborough, referred to in the first paragraph on page 335, Mr. J. H. Cooke, B.Sc., F.G.S. (Hon. Sec. of the Geological Section of the Lincolnshire Naturalists' Union), has examined this boulder and sent me a chip therefrom. It is *not* 'Shap' Granite.

The same gentleman also informs me that he has found two or three boulders of Shap Granite at Goxhill during the last few days. This confirms the suggestion that boulders of this particular granite occur in plenty in Lincolnshire, and that 'they only require looking for' ('Naturalist,' November 1896, page 335). Mr. Cooke will publish detailed particulars of these and other erratics which he has observed, in the next report of the Lincolnshire Boulder Committee.

Seeing that so many geologists are interesting themselves in the boulders of Lincolnshire, the following list of papers, etc., referring thereto, may be of some service:—

- J. CORDEAUX, M.B.O.U.—Presidential Address to the Lincolnshire Naturalists' Union. Part I of Union's Transactions, 1895, p. 7 (suggests formation of a Boulder Committee for Lincolnshire).
- W. HAMPTON, F.C.S., AND H. W. KEW, F.E.S.—'The "Blue Stone" Boulder at Louth, Lincolnshire.' The 'Naturalist,' August 1887, pp. 225-6.
- A. J. JUKES-BROWNE, B.A., F.G.S.—'The Geology of East Lincolnshire,' Geol. Surv. Memoir, 1887 (contains, p. 72, lists of boulders from the Hessele Clay and Purple Clay respectively; also a description of the 'Blue Stone' boulder at Louth, by J. J. H. Teall).
- P. F. KENDALL, F.G.S., Secretary.—'Twenty-third Report of Committee on Erratic Blocks of England, Wales, and Ireland, 1895.' (This contains particulars of some erratics observed at Grimsby by the Rev. W. Tuckwell.)
- P. F. KENDALL, F.G.S., Secretary.—'First Report of Committee on Erratic Blocks of British Isles, 1896' (contains abstract of first report of the Linc. Nat. Union Boulder Committee).
- H. CARVILL LEWIS.—'Glacial Geology of Great Britain and Ireland,' 1894 (refers to erratics at Louth, Grimsby, Cleethorpes, Welton, etc.).
- C. REID, F.G.S.—'Geology of Holderness' (Geol. Surv. Memoir), 1885 (mentions, page 41, boulders at Grimsby, Cleethorpes, etc.).
- T. SHEPPARD.—'On the Occurrence of Scandinavian Boulders in England.' Glacialists' Magazine, vol. 3, 1895, pp. 129-131 (with list of records).
- T. SHEPPARD.—'On the Occurrence of Boulders of Shap Granite, etc., in Lincolnshire.' 'Naturalist,' November 1896, pp. 333-339.
- T. SHEPPARD AND HERBERT MUFF.—'Notes on the Glacial Geology of Robin Hood's Bay.' Glacialists' Magazine, vol. 4, September 1896, pp. 47-60 (refers to boulders of Rhomb-porphry, etc., at South Ferriby).
- REV. W. TUCKWELL.—'The Lincolnshire Naturalists' Union Boulder Committee' (First Report). 'Naturalist,' November 1896, pp. 349-353.
- W. A. E. USSHER, F.G.S., AND OTHERS.—'Geology of North Lincolnshire, etc.' Geol. Surv. Memoir, 1890 (Lincolnshire erratics referred to on pages 131-133, 135, 137, 150, and 170).



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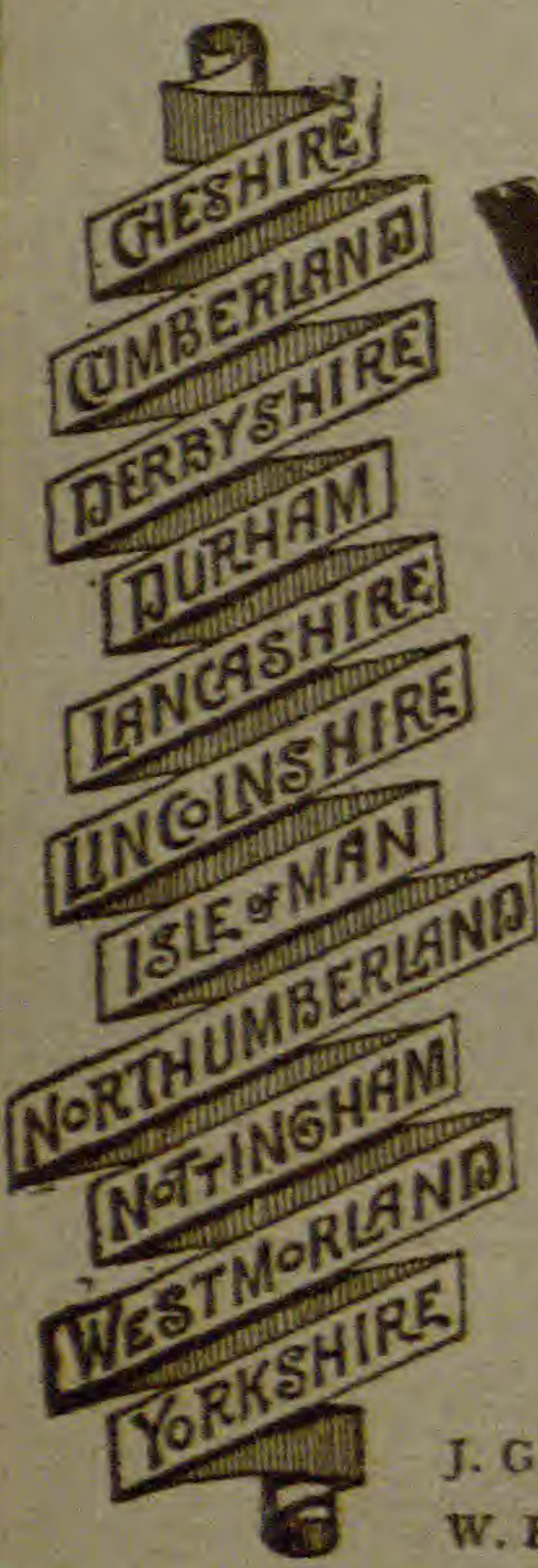
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- Science Gossip, N. S., Vol. 2, No. 21, November 1895. [Jno. T. Carrington, ed.]
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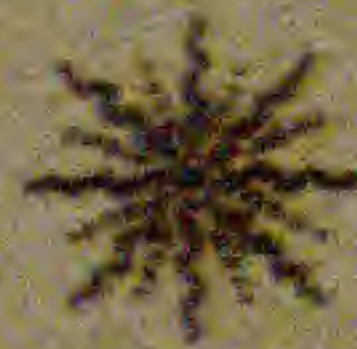
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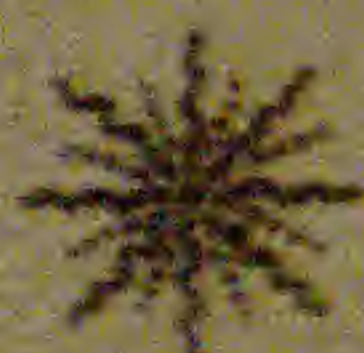
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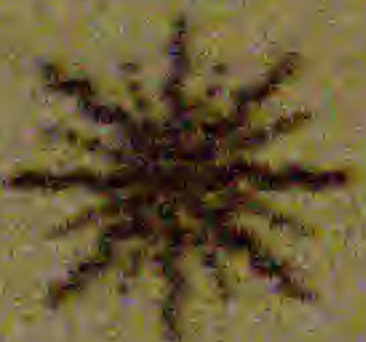
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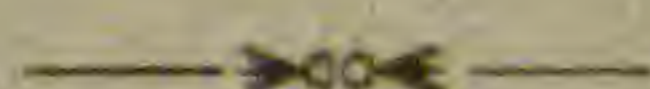
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No. 92. Several sandstone blocks from the same old wall, mostly squared for building.

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**Irby.—Roadside opposite Rectory gate.**

No. 94. Dolerite (?), 3 ft. 2 in. × 1 ft. 10 in. × 10 in.

**Irby.—Road-side by school-room.**

No. 95. Basalt (Wesley supposed to have preached from it), 2 ft. 11 in. × 1 ft. 7 in. × 1 ft. 6 in.

**Irby.—Corner of road beyond schoolroom.**

No. 96. Red granite, 1 ft. 9 in. × 1 ft. 5 in. × 11 in.

97. Secondary sandstone, 2 ft. 5 in. × 1 ft. 5 in. × 1 ft. 6 in.

**Brocklesby.—Few yards from station.**

No. 98. Primary sandstone, 2 ft. 6 in. × 1 ft. × 1 ft.

**Brocklesby.—Chalk quarry close by station.**

No. 99. Basalt, small, ice-scratched.

**Brocklesby.—Gate-post two fields off towards Croxton gravel-pits.**

No. 100. Quartz, 1 ft. 8 in. × 1 ft. 4 in. × 1 ft. 2 in.

**Ulceby.—Chase farmyard.**

No. 101. Basalt, green, one side flat and beautifully striated, 2 ft. × 1 ft. 8 in. × 1 ft. 3 in.

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Critical Catalogue of Lincolnshire Plants.—REV. E. ADRIAN WOODRUFFE-PEACOCK, L.Th., F.L.S., F.G.S. (*Eleventh Paper*).

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## NATURAL SCIENCE.

NOVEMBER, 1896.

In the November Number the Notes and Comments are largely devoted to discussions that took place at the British Association, and to Presidential Addresses.

E.H.A., author of 'A Naturalist on the Prowl,' has one of his charming papers on the Influence of Mind in Evolution.

Dr. A. W. ROWE describes new methods in preparing and mounting Fossils.

Professor J. B. FARMER contributes an article on the Cell and some of its supposed structures, while the articles on Zoology since Darwin and the Anthropoid Apes by Professor L. VON GRAFF and Dr. ARTHUR KEITH respectively are continued.

Among the books reviewed may be mentioned Semon in the Australian Bush, Gregory's Catalogue of Jurassic Bryozoa, Tyndall's Glaciers of the Alps, and Simroth's Plankton Pelecypods.

The usual Up-to-date Obituaries and News conclude the number.

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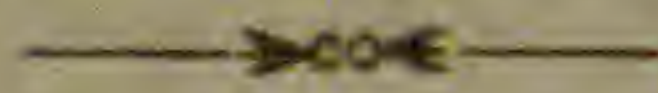
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The chief feature in the December Number is a list of 26 specialists who are willing to assist writers on stratigraphical geology in the determination of their fossils.

Prof. L. VON GRAFF's article on 'Zoology since Darwin' is concluded with the discussion of Geographical Distribution.

Dr. F. G. PARSONS pleads for the publication of still more details in Comparative Anatomy.

Dr. A. KEITH concludes his introduction to the study of Anthropoid Apes with an account of the literature on the Gibbon.

Mr. W. L. CALDERWOOD, in an article entitled 'Cunning in Animals,' gives what might be described as the philosophy of a fox-hunt.

Among the books reviewed one notices Wheelton Hind's Monograph on Carbonicola, &c., Rowland Ward's Records of Big Game, Lydekker's Geographical History of Mammals, Henslow's Study of Wild Flowers, F. Groos' Die Spiele der Thiere, and others.

The Notes and Comments contain further remarks on the recent meeting of the British Association, and some notes on Collecting, on Variation in Snails and elsewhere, &c., on some recent vagaries of publication.

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