

**PROCEEDINGS OF CLEVELAND NATURALISTS'
FIELD CLUB**

1896-97-98

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Introductory Remarks

Although it is three years since the Cleveland Field Club last printed its Proceedings, its members have continued to observe natural facts, and to record them in their notebooks. In the pages which follow will be found some evidence of this work, but there is more to come. The Botanical Section of the Club, in particular, has a list of Cleveland Plants in preparation, which it is hoped to print next year. Those who are compiling this list will be much pleased to receive help in the meanwhile from any persons interested in Botany, and, if any such persons have records of any of the rarer plants occurring within the area of the Cleveland District, we hope that they will communicate when to the Secretary of the Section. Any well-authenticated lists of Cleveland *flora* will be very welcome. The Secretaries of the other Sections will also be very glad to have lists of species, or finds of special interest communicated to them. I shall be particularly glad to receive records of shells occurring on the Cleveland coast other than those noted in the list printed herewith, and I shall be still more pleased to receive specimens of the rarer shells for identification. We ought to be able to add a good many species during the present year, especially of the more minute molluscs. Any notes of interest on the habits, etc., of the mollusca on our coasts will be most acceptable, and will find a place in our next issue of Proceedings. There is a prospect that in the course of a few years the bound volume of our Proceedings will form a most useful compendium of the natural history of Cleveland.

John Hawell.

PREHISTORIC MIDDLESBROUGH
By W.Y.VEITCH, M.R.C.P., L.R.C.S.

The scenery of the site, now occupied by Middlesbrough has presumably seen better days, and from being high undulating forest-land, sustaining life of a kind very different from its present denizens, it has evidently settled down to a condition little better than a rescued tidal swamp. There are physiographical evidences recording a series of ups and downs in the remote past that merit investigation, and no doubt will be found sufficiently interesting to be worthy of some kind of record. To best realise a picture of the early landscape of the district the mind must be carried back to pre-glacial times, when the present expanse of comparatively level country, bounded on the North by the high ground of Durham, and on the South by the Cleveland Hills, was a 100 feet higher than at present. The country sloping towards the river formed, I am inclined to think, a valley somewhat similar to Kildale, but because of the greater volume of water flowing through for reasons to be presently mentioned. A glacier coming down with irresistible force from the mountains of the West has shorn the district almost level, leaving here and there rocks scratched and grooved indicating the course it had pursued, as noticed on the ironstone at Hob Hill and on the limestone near Darlington, and more constantly farther West where the limestone is bared for quarrying. The ice stream carried all before it until the resistance of the Cleveland Hills deflected the current from South-East to West and in doing so made Roseberry, Eston Nab, Hob Hill and Whorlton outliers, and other portions of the hills were left as promontories abutting into the neighbouring plain. This kind of denudation has nowhere reached higher than 800feet in this part of the country, thus it will be easily imagined that Roseberry Topping, which 1,054 feet high, would be an island in a sea of ice. The pre-glacial stream of this watershed was at Saltholme, at least 99 feet above the present sea level, meandering in a valley about 1,154 feet deep. Col. C. I. Bell kindly sent me specimens of fossil wood and hazel nuts taken from the boulder clay in boring the Salt Wells at Saltholme at a depth of 99 feet. As such frail organic matter could not be carried far in the grinding force of glacial movement I conclude the ancient pre-glacial river was fringed with forest, and, being higher, that it travelled many miles farther to meet the sea than it does today. About this time a subsidence took place, and what remained of the ancient valleys became blocked with boulder clay, which had dropped from the floating ice above. It is probable that a period of rest ensued, and the land again rose, and, of course, the sea receded. Numerous borings made in this district prove that, the riverbeds having been filled with boulder clay whilst submerged, the new streams coming down from the hills after the upheaval have carved fresh beds out of the solid rock rather than pursue their ancient course. The best example locally is Skelton Beck, (see Geological Survey Memoirs) which was most likely a tributary to the existing Tees and joining it far away eastwards. The pre-glacial bed of the Tees has been proved to be over 100 feet deep at Tees Tilery near Eston Ironworks, the outlet of which into the sea is from under the boulder clay cliffs near Marske. The present

junction of the river with the sea was barred by rocks, which have been recently blasted away making a depth of 14 feet over an area of 1¾ acres. (see T.C.C. Report).

It would appear that a long period of quiet followed and forests again clothed the land traceable in and around Middlesbrough, Hartlepool, Stranton, Redcar, &c. Oak, Beech and Hazel, and the nuts of the latter being easily recognisable, the remains of the former indicating trees of immense growth. The bole of one weighed 11 tons, this was, of course, very much water-logged and is now an example of feeble resistance to decay, and finds a resting place near the Middlesbrough Park main entrance. The most interesting part of the district relating to the sunken forests is that near the blast furnaces of Sir. R. Samuelson and Co. at Newport, where during the making of foundations, trees were found *in situ*, one at least having been felled. I addressed an enquiry upon the subject to my friend Rd. Howson, Esq., C.E. and I cannot do better than give his reply:

“ In reply to your enquiry about the underground remains of a forest at Newport, I think I can remember perfectly what took place, although it happened so far back as 1872. The locality of excavation is where the Kiln Lift now stands at the N.K. end of the works. After the surface soil was removed (in the lower part of which where were many hazel nuts) there came a thin bed of hard blue clay, and then a bed of peat. This would be from four to five feet thick and it gradually emerged into a lower bed of blue clay which was comparatively soft.”

“the excavation would be altogether not less than 12 feet deep and in the lower clay were embedded a number of tree stumps. While standing on the margin and looking down the remark was made: “ I wonder how long ago it is since those trees were growing?” A voice came from below “not very long, sir, for this here stump has been cut down with an axe.” On going down to examine it, I certainly saw distinct marks, which could scarcely be produced by anything except the strokes of an axe. The stump was short, with a series of nearly horizontal cuts across the grain; all the others were long and splintered. What kind of trees they were I could not say with certainty. I should also add that number of deer horns turned up in excavating, but I cannot remember at what depth they were found.”

An axe hammerhead was dredged out of the river Tees a few yards away from the tree stumps just described and is now in our Museum. I forwarded Canon Greenwell a photograph of it. He kindly sent the following report and I take this opportunity of again thanking him for it.

“ It is a very fine specimen and an implement, or rather weapon of uncommon occurrence. Similar weapons have now and then been found associated with burials, both of un-burnt and burnt bodies. They belong to the bronze period and when found with an interment have been deposited in company with bronze weapons for example, daggers. I suppose your specimen has the hole bored through with a tube and not, as in perforated axes of the stone period, from each side with a pointed piece of wood or bone.”

The Canon's supposition is correct, and further, the implement is made of whinstone as ascertained by the displacement test. I therefore conclude that it is of our local augite-andesite rock.

Several antlers and bones of the red deer (*Cervus elaphus*) have been taken from the same place and are not preserved in the Museum. A skull of the "Ursus" (*Bos primigenius*) was also recovered a little nearer Billingham landing.

Drainage excavations now in progress along Marsh Road reveal the following section :-

| | | | | | |
|--|-----|-----|-----|-----|----------|
| Made ground | ... | ... | ... | ... | 2ft 6in. |
| Solid Blue clay without stones | | | ... | ... | 3ft 0in. |
| Peat containing bones of the ox probably (Urns), antlers of the red-deer, willow, Hazel and blackthorn | ... | ... | ... | ... | 2ft 6in. |
| Solid blue clay without stones | | | ... | ... | 8ft 0in. |

This peat is doubtless a continuation of the Newport bed.

Both red deer and reindeer antlers were found in the Kildale peat beds (See Geological survey Memoirs).

The Mammoth (*Elphas primigenius*) is represented by its tusk, or a portion of a tusk, five inches round, which was found in the excavation of the West Hartlepool docks, and which is, or was, preserved in the Athenaeum at West Hartlepool (T.N.P.C. vol v, p III)



The Tees at Newport has also given up to the dredger an unusually large Dolichocephalic skull particulars of which were given by the late Dr. Young of Yarm; he being a Tees conservancy Commissioner thus considerably obliged his colleagues. Through the courtesy of Mr Amos, I am enabled to add this information with alight corrections to this paper. The T.C.C. has kindly

placed the relic in the charge of the Middlesbrough Museum.

DESCRIPTION OF A HUMAN SKULL
Dredged from the bed of the Tees 27ft 6in. below surface
Level, on the 27th May 1892

| | | | | | | | | | |
|---|--------------------|--|--|--|---|---|-----------------------------------|--|--|
| Long diameter from occipital protuberance to articulation of the ossa nasi with the frontal bone. | Parietal Diameter. | Frontal diameter from the articulation and malar bone to the opposite one. | From Lambdoideal Suture to foramen magnum of occipital bone. | Diameter from meatus of ear to the opposite one. | Curve of arch from occipital protuberance to ossa nasi. | Curve of arch from meatus of ear to the opposite one. | Diameter from mastoid to mastoid. | Circumference of arch from occiput to frontal sinus. | From the point the frontal bone joins the sagittal suture to the extremity of the mastoid process. |
| 7.81 | 5.50 | 4.0 | 5.62 | 4.32 | 12.0 | 14.0 | 5.15 | 21.50 | Right side $7\frac{5}{8}$ in. Left side $7\frac{1}{8}$ in. |

This is an unusually large Dolichocephalic Male Skull, as proved by the above measurements. It has one peculiarity – being one eighth of an inch larger on the right side – this peculiarity I have not found before. It is in extremely good preservation, arising in all probability from its early deposition after death preventing its being water-worn, the exclusion of air, the preservative action of the tannin and carbonaceous matter in the peat having entered its cellular structure.

It is a well marked skull, its strength and substance being far above the average and could only have belonged to an individual not under six feet in height, more probably some inches higher. The frontal bone is extremely well marked, having on each side deep sulci showing the course of the posterior branches of the temporal arteries. The sagittal suture is fully ossified so much so that it is with difficulty its direction can be traced; all the other sutures are strongly put together, showing great power of resistance to outside pressure. The glenoid fossae are very large, even for the present skull; the individual

must have had a powerful lower jaw, which is absent. Some years before death three left upper molars have been lost.

From the extremely perfect ossification of the skull, I should estimate the age of the individual to be not less than fifty years.

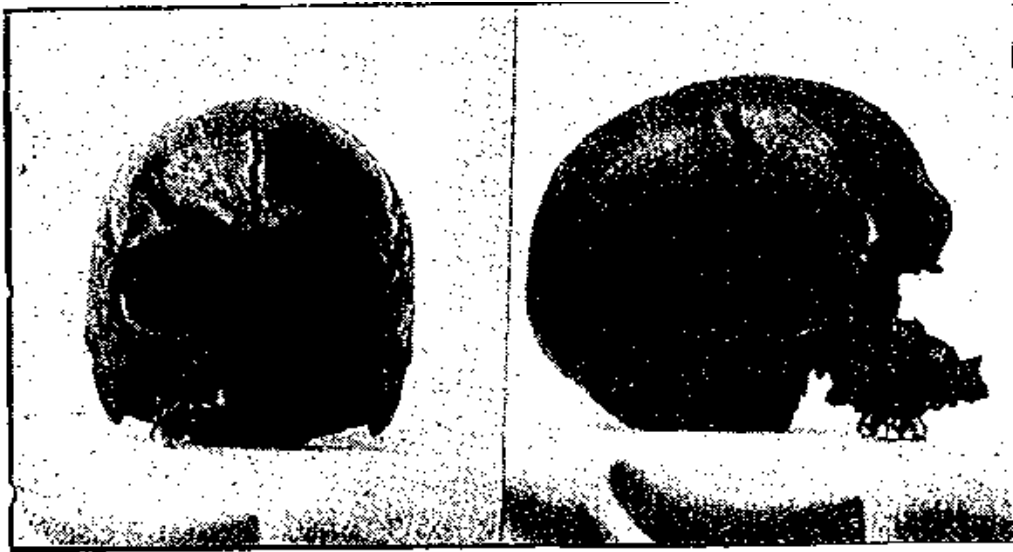
The slightly water-worn appearance, the sharpness of the sand grains, and the pieces of the common sphagnum moss turned into peat, found in the alveoli of the upper jaw and foramen at the base of the skull, prove that the skull had not been carried any great distance, most probably deposited where found. This skull was found at a depth of 27ft. 6in. from the general surface, 12ft. 6in. below the surface of the stratum of peat in which it was embedded; above the peat were alluvial deposits. In the peat were found oak trees *in situ*, and in some cases overlying peat.

From a careful examination of the skull, and the depth at which it was found, I believe it to be a prehistoric skull, belonging to a man of the Pleistocene Epoch. I am fully aware of the scarcity and almost total absence of human remains belonging to this period, which I think increases the value of the discovery. Like other events in geological history, we have no means of assigning to it a definite date in years, or centuries; we are only able to say that it belongs to that period in which the bone-breccias, the cave deposits, the lake dwellings, and the peat were formed.

Many years ago, a dugout canoe was found at a depth of 27ft. from the surface, which contained a thigh-bone of a man, and a portion of the skeleton of a dog.

During the making of a drain in Durham Street, a similar skull was unearthed a few years ago, and given into my care. The thinner bone and less pronounced muscle insertion markings, together with its smaller size, indicate a skull of the gentler sex.

Dr. Knott, of North Ormesby, received from Mr. Lee, mining engineer, an ancient skull, which he has kindly handed to our Museum. It is a very fine example of the brachycephalic type of skull, whose owner was probably a person who had reached man's estate, as a wisdom tooth and two other molars remain in position. The sulci of the supra-orbital arteries are much deeper than obtain in skulls of the present time. Generally speaking, the form is like Canon Greenwell's Weaverthorpe specimen, with even better developed corrugated ridges, and it has, in addition, a remarkable peculiarity in the frontal bone being equally divided by a suture more easily separated than the others – in fact there are two frontal bones in the front foetus.



The uncommon occurrence of such finds in North Yorkshire is explained in Greenwell and Rolleston's "British Barrows", and perhaps will bear repeating, "Examination of barrows in Cleveland has shown that, without exception, the interments have been after cremation, the bones having been placed in urns and cists." Our finds are evidently due to accidents. This last example was taken out of the drift when some workmen were driving the slope drift out of the ironstone seam to the surface at the north end of Snail's Griff, Guisbrough, and was covered with from 20 feet to 22 feet of clay.

Reverting to the accumulation of vegetable and other matter, one naturally enquires as to their naturalness. Are they the remains of an accumulation of matter brought down by river action, or are they part of an ancient forest? The following evidence will, I trust be considered conclusive. The long splintered and short felled tree stumps at Newport are described as being in their original position. Similar evidence has been noted at Redcar so far as natural position of remains is concerned. This fact was observed by Mr. Charles Harrison, whilst superintending the making of the Hartlepool Docks, only he noted that the mass of matter here had increased to 40 feet in thickness. The reason for this thickness at this particular point is given in the Yorkshire Geological, &c, society's transaction. (See Raised Beaches).

The presence of trees in the position in which they grew, the occurrence of skulls, axe-hammer, mammoth tusks, deer's antlers and bones, and the absence of shells and other estuarine debris in the so-called peat, satisfies me that the deposits are not estuarine accumulations carried from a higher level, but are remains of a forest in its original site.

Another submergence took place carrying the forest under water and causing the sea to encroach upon the boulder clay cliffs left by the last upheaval, making a new beach which is now some 35 feet higher than the present one.

This is obvious at Saltburn (See Raised beaches, Y.G.P.S.T.). The new beach rests upon glacial drift, and contains some of the same shells that are found on the present shore.

This indicates another upheaval, the district again rises out of the water, but the rise is not sufficient to restore the forest to its former altitude, consequently it now remains mostly submerged. The duration of this alteration of level has evidently been comparatively short. Yet, nevertheless, sufficiently long to allow of deposits of very fine laminated estuarine clay of a character suitable for the finest pottery. A subsequent lowering of the ground allowed the present river to carve out some of the clay, and, in its irregular wash, deposit here and there sand and sometimes gravel. Sandpits are noticeable in many places in this neighbourhood. The mound upon which the Market Place and the Parish Church stand is most probably a result, and at times the mound would be in the middle of a marsh, possibly an island hill, and thus probably achieved its name of partly Saxon origin. It is evident that ages before this, Neolithic man lived here, and, with consummate skill, fashioned his weapons from our hardest stone, and it is still a thing of beauty. He felled trees, and had for his sport mammoth, reindeer, red deer and ursus. These we know for certain, but, no doubt, there was much more and nobler game.

SOME ACCOUNT OF THE REMAINS OF NORMAN ARCHITECTURE IN CLEVELAND CHURCHES (continued)

By R. Lofthouse, Diocesan Surveyor

Whorlton (Holy Cross)

This is one of the most interesting churches in Cleveland, Unfortunately some years ago it was allowed to get into a ruinous condition, and the Nave is now without a roof, but the Chancel is still used as a Mortuary chapel, and the present Vicar has had a roof put on the Tower, and has taken other measures to protect the buildings from the weather for which he deserves the thanks of all lovers of our ancient churches.

There is a fine chancel Arch, but the chancel itself has been rebuilt in a later style. The original Chancel was probably not so long as the present one; indeed the plinth of the Norman Chancel has been laid bare, and extends about half the length of the present chancel.

The church consisted of a Nave of three bays with north and south Aisles, and another bay was added in the Early English period at the west end. The Arches are of two orders, and the capitals of the columns are elaborately ornamented, the centre one with grotesque animals, etc. The Arches in the south Arcade appear to have been lifted at a later period.

The Rev. J.C. Fowler, the present vicar, in an article on the Church contributed to the "Architect," October 7th 1892, states that "The early Norman Font is now placed on its ancient foundation near the Tower. The church was dismantled some sixteen years ago, when the new church was built, the chancel only being left in a state of repair for a Mortuary chapel. In pulling down the Nave the Arcades were found, no one, it appears, having any idea that they existed, as they were walled up on either side, and windows inserted in the Arches, probably in the seventeenth century, when the north and south aisles were pulled down."

A similar state of affairs was found when the Church of Normanby, near Sinnington, was restored. This I had an opportunity of examining when the restoration was in progress. The Nave Arcade, with columns, caps, etc., was enclosed in a substantial stonewall, leaving no outward trace of the Arcade. The Aisles of course had been taken down.

Newton (St Oswald).

There were some remains of Norman work in this church. The Chancel Arch is Norman of two orders, but may have been altered. The opening is 6ft. 4in. wide. The wall is 2ft. 9in. thick.

There is a plain bevelled abacus at the spring of the arch, which returns to the Nave wall. It is probable there may be angle-shafts, but these and all details are so thickly covered up with whitewash that they cannot be seen.

There is also a Norman Font, ornamented with intersecting arches and a cable mould above. It is circular, 2ft 6in. diameter and 2ft. 3½ in. high from top step. There are two steps each 4½ in. high, forming a circular base. The bowl is 1ft.10in. in diameter. The whole has apparently been refaced, and the base is no doubt modern. There is also a modern wood cover.

In the north wall of Nave is a semi-circular headed doorway now built up.

In plan this church is probably much the same as in Norman times.

There are several interesting carved stones of great antiquity built into the walls of the church, a floriated cross forming the lintel of the south entrance; and near the south Porch is a rude carving of two grotesque animals. There are also two interesting gable crosses.

The windows of the chancel are modern insertions.

Whitby (St Mary)

Whitby is not strictly speaking in Cleveland. It is however close to the borders and is included by Canon Atkinson in his "History of Cleveland", and it is at any rate in the Archdeaconry of Cleveland.

Moreover, the church is an exceedingly interesting one, and we have decided to include it. The venerable fabric is a history of architecture in itself, and has been altered and added to at all periods from the Norman down to the present time. Luckily it has so far escaped modern restoration. Let us hope that it may still continue to do so, but at the same time that it may be carefully watched over and kept in repair.

In Norman times the Church consisted of a Nave and chancel only, the Tower and transepts being added subsequently.

There is a plan of the Norman Church published with a paper read before the Whitby Church of England Young Men's Association, December 3rd 1855.

The original round-headed doorway is said to have been destroyed in 1823, to make way for the present entrance. It had two shafts in each of the jambs.

A fine Norman window has been uncovered on the south side of the Nave, and there are traces of others, which have been walled up; and some shallow Norman buttresses remain; but the whole fabric has been much altered and large modern sash windows inserted. Originally no doubt a line of windows like the one opened out passed round the building. The height of the opening was four feet and the width twenty inches. Externally the windows had a hood mould, continued as a stringcourse, and there was also a string under the sill. Internally they opened out with a deep splay, and had a shaft with base and cushion caps in the jambs, which carried an Arch decorated with the zigzag ornament.

The old walls are three feet thick.

The Norman chancel with slightly projecting buttresses still remains, with its corbel table or arcaded cornice, carrying a battlement parapet, projecting over the wall below. On the south side is the priest's door, apparently in its original position though altered, and there are indications of three Norman windows at the east end, and others at the sides.

There is a fine Norman Chancel Arch with moulded members and shafts with carved capitals, one resembling a volute. This fine Arch is however a good deal covered up with later woodwork.

Great Ayton (All Saints)

The following notes are additional to my previous description of this church, as I have since had an opportunity of examining it more carefully.

The Nave walls are very thick and evidently original Norman work, with Norman corbels of grotesque heads under what is evidently a modern corbel table and parapet. The corbels occur on both the north and south sides of the church.

The entrance doorway is Norman, and has had a Porch built over it at a later period.

The windows have all been enlarged except one on the north side of the chancel, which does not appear to have been re-built. This window opens into a modern Vestry on the north side of the Church, and cannot be seen from the outside. It is a typical Norman window. The daylight size is 2ft. 10in. high by 7in. wide, but the masonry of the thick wall is bevelled out to a width of 14in. externally and 3ft. 9in. internally. The masonry is now covered with plaster and whitewash on both sides, and the jointing cannot be seen.

Kirklevington (St Martin)

There are a few remains of Norman work here, as the south door, and also the chancel Arch.

There are also a number of interesting pre-conquest sculptured stones.

Crathorne (All Saints)

This church no doubt was founded in Norman times. There is a "hog-back" grave cover, built in over the entrance. Date about 1100. The oldest parts of the church are the north and south walls, the rest having been re-built.

Stainton (S.S. Peter and Paul)

While cutting holes in the south nave wall of this church in the summer of 1898, for the purpose of inserting new windows, some moulded and carved stones were met with, and at my suggestion were preserved, and are now in the church. They carry the history of this church back to a very remote period. One is evidently a Norman corbel, often used under a cornice and parapet. Another may have been the head of a window. It is a semi-circular arch cut out of a single stone, over the top of the arch, is carved a rude kind of zigzag.

There are also a number of interesting sculptured stones built into the walls of the Chancel, in rather a random fashion, and showing on the outside, the Chancel having been re-built within the last forty years.

Egton (St Hilda)

The old Church at Egton, described by Graves, Ord and Atkinson in their "Histories of Cleveland," was taken down twenty years ago and a new Church was erected nearer the town. The present vicar, the Rev. R.G. Glennie, informs me that a good deal of the old Norman work was incorporated in the new church, but the stones were nearly all re-faced. But the old style of the Norman Arches, on each side of Nave, resting on solid Norman pillars, of one large block of stone, still is seen in the new church. He believes that the greater part of the materials used was the actual stone from the old Church.

The ancient church is thus described by Graves, "The Church or chapel of Egton is an ancient and venerable structure, with a side Aisle on the south formed by round pillars supporting circular Arches. The chancel is separated from the Nave by a pointed Arch of modern architecture. It is situated about half a mile to the west from the town, upon the summit of a gently rising eminence."

The pillars of the Nave Arcade were six in number with capital and base, and the Arches were of two orders with square edges.

Yarm (St. Mary Magdelene)

This Church was re-built in 1730 in a pseudo-classic style. The west end however is old and very interesting. The lower part of the Tower is Norman. There are two narrow windows with semi-circular heads each cut out of a single stone, and there are three similar window heads built into the upper part of staircase turret on each side of the Tower. These were probably placed there when the Church was re-built. About 8ft. from the ground a carved stringcourse is carried round the tower very much weathered, but the pattern can still be made out in places. It consists of a repeating Saint Andrew's cross with triangular sinkings between the arms.

Faceby (St. Mary Magdelene)

This church was re-built, or rather a new Church was built about 20 years ago. An interesting Norman chancel Arch from the old church has been built in over the entrance doorway in the interior, and the old Font has also been preserved. It is of a peculiar form, a kind of truncated cone.

Canon Atkinson in a note at page 77, vol 2, of his "History of Cleveland", speaks as follows with respect to the above Chancel Arch: "It is painful to have to recognise not so much the disregard of, as the entire insensibility to, the interest and beauty of the architecture and architectural objects of the old Cleveland Churches everywhere evinced during the latter half of the last century and too far down in this. Thus during the demolition of Faceby old Church I saw a large number of voussoirs and other stones connected with two Norman Arches of exceeding beauty, and one of them an elaborate Arch of three members, dug out of the foundations of the church which were being removed to make way for a new one."

West Rounton (St. Oswald)

At West Rounton is a Norman Chancel Arch, and there is an angle shaft in each of the jambs with caps and a moulded abacus over. The Arch is double; there are eighteen voussoirs in the lower and twenty-three in the upper Arch; both are decorated with the chevron or zigzag ornament.

The entrance doorway is also Norman with a modern Porch built over it.

There is an interesting early Norman Font (said to be Saxon) with rude sculptures of foliage and figures, probably intended to represent some of the signs of the Zodiac.

The top only is old; it is circular in plan, 2ft 8in. in diameter, the bowl being 22ft. in diameter and 1ft. deep. The upper or old part is 1ft. 4 1/2 in. high. The base is modern.

LIST OF THE MOLLUSCA OF THE CLEVELAND DISTRICT

By the Rev. John Hawell, M.A., F.G.S.

The following list makes no sort of claim to be exhaustive. Its principal utility will be to form a foundation for future investigation, and to act as a stimulus thereto. Of a large proportion of my own observations I have kept no record, and I have scrupulously refrained from recording anything here from mere recollection. I have also omitted many records, whether made by myself or by others, which I considered to be doubtful. Of course I have made large use of D. Ferguston's "Natural History of Redcar and its Neighbourhood" (1860). I have gained some information for my purpose from Dixon and Watson's "Descriptive Manual for British Land and fresh Water Shells" (1858), and a little from Roberts' "Natural History of Lofthouse". The pages of the "Journal of Conchology," "The Naturalist" and "Science Gossip" have also been consulted with advantage. No use could however, be made of some records in these and other publications, which simply mentioned molluscs as existing within a certain distance of Middlesbrough, or on the Yorkshire Coast, without noting whether or not they occurred in Cleveland. Records made in the above mentioned periodicals and elsewhere by the Rev. W. C. Hey and Mr. Baker Hudson have been made use of, as well as lists furnished by Messrs. T.A. Lofthouse, B.R. Lucas and M.L. Thompson.

Loligo Forbesi, Steenstrup. Off Staithes (W.Y.Veitch).

Limax maximus, L. Ingleby Greenhow (J. H.), Kildale (J.H.), Kilton (B.Hudson) var. *pallido-dorsalis* (Hudson). Wilton Wood (B.H.).

Limax cinereo-niger, Wolf. Easby Wood (J.H.), Mulgrave Wood (W.D. Roebuck).

Limax marginatus, Müll, (L. arborum, B.C.) Kildale (B.H.). Kilton (B.H.), Saltburn (B.H.)

Agriolimax agrestis, L. Ingleby Greenhow (J.H.), Kildale (B.H.), Middlesbrough (T.A. Lofthouse), Saltburn (B.H.), Mulgrave (W.D.R.) Very common.

Agriolimax Lævis, Müll. Saltburn (B.H.), Kilton (B.H.), Mulgrave (W.D.R.).

Amalia gagates, Drap. Middlesbrough (T.A.L.).

Amalia Sowerbyi. Fér. (L. *marginatus*, Jeff). Middlesbrough (T.A.L.). Dixon and Watson say "We have found specimens in the North of Yorkshire, though by no means common".

Vitrina (Phenacolimax) pellicuda, Müll. Ingleby Greenhow (J.H.), Kildale (J.H.), Great Ayton (B.R.Lucas), Marton (J.H.), Lealholm (G. Roberts), Middlesbrough (T.A.L.), Saltburn (B.H.), Kilton (B.H.), Staithes (B.H.), Wilton (B.R.L.).

Hyalinia (Polita) cellaria Müll. Ingleby Greenhow (J.H.) Kildale (B.H.), Great Ayton (B.R.L.). Middlesbrough (T.A.L.), Wilton (B.R.L.), Saltburn (B.H.), Kilton (B.H.), Staithes (B.H.), Mulgrave (W.D.R.), Mount grace (B.R.L.).

Hyalina (Polita) glabra, Studer. Wilton (B.R.L.).

Hyalina (Polita) alliaria. Müll. Ingleby Greenhow (J. H.), Kildale (J.H.), Great Ayton (B.R.L.), Ingleby Arncliffe (J.H.), Lealholm (G. Roberts) Wilton (B.R.), Saltburn (B.H.), Kilton (B.H.), Staithes (B.H.)

Hyalinia (Polita) nitidula, Drap. Ingleby Greenhow (J.H.), Kildale (J.H.), Great Ayton (B.R.L.), Ingleby Arncliffe (J.H.), Middlesbrough (T.A.L.), Guisbrough (B.R.L.), Wilton (B.R.L.), Saltburn (B.H.), Kilton (B.H.), Staithes (B.H.). var. *Helmii*, Alder. Near Marske (B.H.).

Hyalinia (Polita) radiatula. Alder. Ingleby Greenhow (J.H.), Kildale (J.H.), Wilton (B.R.L.), Kirkleatham (B.R.L.), Saltburn (B.H.), Staithes (B.H.), Mulgrave (W.D.R.).

Hyalinia (polita) pura, Alder. Ingleby Greenhow (J.H.), Kildale (B.H.), Great Ayton (B.R.L.), Ormesby (T.A.L.), Wilton (T.A.L.), Kilton (B.H.), Saltburn (B.H.), Staithes (B.H.). var. *margaritacea*, Jeff. Ingleby Greenhow (J.H.), Kildale (J.H.), Ingleby Arncliffe (J.H.), Kilton (B.H.).

Hyalinia (Vitrea) crystallina. Müll. Ingleby Greenhow (J.H.), Kildale (J.H.), Ingleby Arncliffe (J.H.), Ormesby (T.A.L.), Acklam (T.A.L.), Wilton (T.A.L.), Kilton (B.H.), Saltburn (B.H.), Staithes (B.H.), Very common.

Hyalinia (Conulus) fulva, Müll. Ingleby Greenhow (J.H.), Kildale (J.H.), Great Ayton (B.R.L.), Ormesby (T.A.L.), Wilton (T.A.L.), Kilton (B.H.), Saltburn (B.H.), Mulgrave (T.A.L.).

Hyalinia (Zonitoides) nitida, Müll. I collected three specimens at Ingleby Greenhow some years ago.

Hyalinia (Zonitoides) excavata, Bean. Two specimens occurred to me at Ingleby Greenhow, feeding on bramble leaves, in 1893, and one at Kildale in the same year.

Arion ater. L. Ingleby Greenhow (J.H.), Kildale (B.H.), Great Ayton (J.H.), castleton (J.H.), Kilton (B.H.), Saltburn (B.H.), Mulgrave (W.D.R.). var. *albo lateralis*, Roebuck. Coatham Marshes (B.H.).

Arion subfuscus, Drap. Ingleby Greenhow (W.D.R.).

Arion fasciatus, Nilson (*A. circumscriptus*, Johnst, *A. bourguignati*, Mabilie). Ingleby Greenhow (W.D.R.), Kildale (B.H.), Kilton (B.H.), Saltburn (T.A.L.).

Helix (Patula) rotundata, Müll. Ingleby Greenhow (J.H.), Kildale (J.H.), Ingleby Arncliffe (J.H.), Lealholm (G. Roberts), Kilton (B.H.), Saltburn (B.H.), Staithes (B.H.), Very common.

Helix (Acanthinula) lamellata, Jeff. Ingleby Greenhow (J.H.), Kildale (J.H.), The Kildale specimens are much lighter than those at Ingleby, and the apex has often a reddish tint. Airey Holme Wood (Dixon and Watson), Great Ayton (B.R.L.), Saltburn (B.H.), Mulgrave Woods (T.A.L.).

Helix (Acanthinula) aculeata, Müll. Ingleby Greenhow (J.H.), Kildale (J.H.), Great Ayton (T.A.L.), Guisbrough (T.A.L.), Wilton (T.A.L.), Kilton (B.H.), Saltburn (B.H.), Tocketts Wood (B.R.L.), Staithes (B.H.), Mulgrave (T.A.L.).

Helix (Punctum) pygmaea, Drap. Ingleby Greenhow (J.H.), Kildale (J.H.), Marton (B.R.L.), Kilton (B.H.), Saltburn (B.H.), Mulgrave (T.A.L.).

Helix (xerophila) virgata, Da Cos. Redcar (T.A.L.), Coatham (B.R.L.), Saltburn (T.A.L.). var. *albicans*, Gratel. Saltburn (J.H.), Redcar (T.A.L.).

Monstros sinistrorsum, Taylor. Coatham (W.C.H.).

Helix (Xerophila) caperata, Mont. Ingleby Greenhow (J.H.), Kildale (J.H.), Redcar (J.H.), Ferguson says that at Redcar it is in some places so abundant as to give you the idea of their being sown." Saltburn (B.G.), Staithes (B.H.). var. *fulva*, Moq. One specimen at Kildale (J.H.).

Helix (Xerophila) itala, L. (*H. ericetorum* Müll). Coatham (T.A.L.), Ferguson says "Sand hills in front of Coatham, not so plentiful as formerly." Redcar (B.R.L.).

Helix (Vallonia) pulchella, Müll. Saltburn (J.H.), Redcar (T.A.L.).var. *costata*, Müll. Saltburn (J.H.), Redcar (T.A.L.).

Helix (Fruticicola) fusca, Mont. Kildale (J.H.), Airey Holme Wood (Dixon and Watson), Great Ayton (B.R.L.), Wilton (T.A.L.), Kilton (T.A.L.), Tocketts (B.H.), Mulgrave (T.A.L.).

Helix (Fruticicola) granulata, Alder. (*H sericea*, Jeff) Ingleby Greenhow (J.H.), Kildale (B.H.), Great Ayton (B.R.L.), Hutton Rudby (B.R.L.), Wilton (B.R.L.), Kilton (B.H.), Saltburn (T.A.L.), Staithes (B.H.).

Helix (Fruticicola) hispida, L. Ingleby Greenhow (J.H.), Kildale (J.H.), Great ayton (B.R.L.), Ormesby (T.A.L.), Guisbrough (B.R.L.), Wilton (T.A.L.), Kilton (B.H.), Saltburn (B.H.), Staithes (J.H.), Very common.var. *subglobosa*, Jeff Ingleby Greenhow (J.H.).var. *hispidosa*, Mousson. Kildale (J.H.).var. *depilata*, Alder. Redcar (D.F.), (J.H.), Saltburn (B.H.). var. *subrufa*, Moq. Ingleby Greenhow (J.H.).var. *concinna*, Jeff. Saltburn (B.H.).

Helix (Fruticicola) rufescens, Penn. About a mile from Mount Grace on the Middlesbrough side. (B.R.L.).

Helix (Fruticicola) cantiana, Moq. A small colony on the railway "batter" at Ingleby Greenhow, introduced with ballast. Messrs, T.A. Lofthouse and B.R. Lucas record it from Great Ayton. Mr Lofthouse states that the specimens which he found occurred at a field's distance from the railway, but he thinks the colony might have been introduced from there.

Helix (arianta) arbustorum, L. Ingleby Greenhow (J.H.), Kildale (J.H.), Ingleby Arncliffe (J.H.), Mount Grace (B.R.L.), Kilton (B.H.), Kirkleatham (B.R.L.), Tocketts (B.R.L.), Saltburn (T.A.L.), Staithes (B.H.), Mulgrave (W.D.R.).var. *cincta*, Taylor. Ingleby Greenhow (J.H.).var. *flavescens*, Moq. Ingleby Greenhow (J.H.).

Helix (Tachea) nemoralis. L. Ingleby Greenhow (J.H.), Kildale (J.H.), Great Ayton (J.H.), Hutton Rudby (B.R.L.), Redcar (D.F.), Coatham (B.R.L.), Kilton (B.H.), Wilton (B.R.L.), Saltburn (B.H.), Staithes (B.H.), Mulgrave (W.D.R.), Lythe (G. Roberts).var. *roseolabiata*, Taylor. Great Ayton (J.H.), Redcar (T.A.L.).var. *albolabiata*, von Martens. Great Ayton (J.H.).var. *bimarginata*, Moq. Redcar (T.A.L.).var. *rubella*, Moq. Great Ayton (J.H.), Redcar (T.A.L.)var. *libellula*, Risso. Ingleby Greenhow (J.H.), Redcar (T.A.L.).var. *hyalozonata-albolabiata*, Taylor-von-Mart. Great Ayton (J.H.).var. *interrupta*, Moq. Great Ayton (J.H.).

Helix (Tachea) hortensis, Müll. Ingleby Greenhow (J.H.), Yarm (T.A.L.), Mount Grace (B. R. L.), Skelton (B.H.), Tocketts Wood (B.R.L.), Kilton (B.H.), Mulgrave (W.D.R.).var. *incarnata*, Moq. Ingleby Greenhow (J.H.).var. *arenicola*, Macgill. Near Yarm (T.A.L.).

Helix (Pomatia) aspersa, Müll. Ingleby Greenhow (J.H.), Saltburn (B.H.), Redcar (B.H.), Coatham (B.R.L.), Staithes (B.H.), Lythe (G. Roberts).var. *minor*, Moq. Ingleby Greenhow (J.H.).var. *undulata*, Moq. Ingleby Greenhow (J.H.).var. *flammea*, Picard. Ingleby Greenhow. I have obtained fine specimens of this variety and the last in my garden.

Monstros. *Sinistrorsum*, Taylor. Coatham (W.C.H.).

Buliminus (Ena) obscurus, Müll. Ingleby Greenhow (J.H.), Kildale (J.H.), Mount Grace (B.R.L.), Kilton (B.H.), Saltburn (B.H.), Staithes (B.H.), Mulgrave (T.A.L.).

Pupa (Lauria)angelica, Fér. (*P. ringena*, Jeff). Ingleby Greenhow (J.H.), Kildale (J.H.), Airey Holme Wood (Dixon and Watson), Great Ayton (B.R.L.), Mulgrave (T.A.L.).

Pupa (Lauria) cylindracea, Da costa (*P. umbilicata*, Drap). Ingleby Greenhow (J.H.), Kildale (J.H.), Ingleby Arncliffe (J.H.), Acklam (T.A.L.), Kilton (B.H.), Saltburn (J.H.), Staithes (B.H.).var *curta*, Westl. Saltburn (J.H.).

Pupa (pupilla) muscorum. L. (*P. marginata* Drap). Redcar (D.E.), Saltburn (J.H.), Staithes (B.H.). var. *unidentata*, C.Pfr. Saltburn (J.H.).

Vertigo (Alœa) pygmæ, Drap. Ingleby Greenhow (J.H.), Saltburn (J.H.).

Vertigo (Alœa) substriata. Jeff. Near guisborough (W.C.H.), Great Ayton Quarries (B.R.L.).

Vertigo (Vertilla) pusilia, Müll. Near Guisborough (W.C.H.).

Vertigo (Sphœradium) edentula, Drap. Ingleby Greenhow (J.H.), Kildale (J.H.), Great Ayton (B.R.L.), Saltburn (B.H.), Staithes (B.H.).

Balea perversa, L. Ingleby Greenhow (J.H.), Kildale (T.A.L.), Ingleby Arncliffe (J.H.), Wilton Woods (B.R.L.).var. *veridula*, Jeff. This variety was named from specimens collected by Humphreys near Cork. I do not know whether it had been obtained in Great Britain until four specimens occurred to be in this parish on November 23rd 1888. I have not since been able to find any more.

Clausilis (Marpessa) laminata, Mont. Ingleby Greenhow (J.H.), Kildale (J.H.), Hutton Rudby (B.R.L.), Ingleby Arncliffe (J.H.), Kilton (B.H.), Saltburn (B.H.), Staithes (B.H.), Mulgrave (T.A.L.).

Clausilia (Pirostoma) perversa, Pult. (*C. rugosa*, Drap).Ingleby Greenhow (J.H.), Kildale (J.H.), Great Ayton (B.R.L.), Ingleby Arncliffe (J.H.), Wilton (T.A.L.), Kilton (B.H.), Saltburn (B.H.), Staithes (B.H.), Very common.

Cochlicopa lubrica, Müll Ingleby Greenhow (J.H.), Kildale (J.H.), Great Ayton (B.R.L.), Ingleby Arncliffe (J.H.), Middlesbrough (T.A.L.), Kilton (B.H.), Wilton (T.A.L.), Saltburn (B.H.), Tocketts (B.R.L.), Staithes (B.H.).

Azeca tridens, Pult. Ingleby Greenhow (J.H.), Kildale (J.H.), Ingleby Arncliffe (J.H.), Kilton (B.H.), Saltburn (T.A.L.), Tocketts Wood (B.R.L.), Staithes (B.H.)

Cæcilioides acicula, Müll. Dixon and Watson say "after a considerable flood we once found them in great abundance amongst the rejectment of the River Tees, near Middlesbrough, whither they had been brought from the banks of the stream higher up "It is very curious indeed that the species would have been found "in great abundance" under such circumstances".

Succinea putris, L. Kildale (J.H.), Great Ayton (T.A.L.).

Succinea elegans, Risso. Ingleby Greenhow (J.H.), Great Ayton (B.R.L.), Stokesley (J.H.), Glaisdale (T.A.L.), Mulgrave (W.D.R.), Kirkleatham (B.R.L.).

Carychium minimum, Müll. Ingleby Greenhow (J.H.), Kildale (J.H.), Ingleby Arncliffe (J.H.), Ormesby (T.A.L.), Wilton (T.A.L.), Kilton (B.H.), Saltburn (B.H.), Very common.

Alexia myosotis, Drap. (*A. denticulata*, Mont) Middlesbrough (Dixon and Watson).

Leuconia bidentata, Mont. Tees Mouth (D.F.).

Otina otis, Turton. Redcar, "occasionally found on West Scar" (D.F.).

Ancylus (Ancylastrum) fluviatilis, Müll. Ingleby Greenhow (J.H.), Stokesley (T.A.L.), Guisbrough (T.A.L.), Acklam (T.A.L.), Tocketts (B.R.L.), Staithes (B.H.), Lealholm Bridge (B.R.L.).

Ancylus (Velletia) lacustris L. Trenholme Bar (J.H.), Great Ayton (T.A.L.), Stokesley (B.R.L.), Linthorpe (B.R.L.).

Limnaea (Radix) peregra, Mull. Ingleby Greenhow (J. H.), Kildale (J. H.), Trenholme Bar (J. H.), Ingleby Arncliffe (J. H.), Beck between Thornaby and Middlesbrough (A. Hann), Skelton (B. H.), Staithes (B. H.) Very common.
var. *ovata*, Drap. Ingleby Greenhow (J. H.).

Limnaea (Limnophysa) stagnalis, L. I have specimens from the collection of the late J. Watson, of Ingleby Greenhow, obtained about 1857, and labelled as having been found at Stokesley. Dixon and Watson say: "We have found it abundantly in the South of Durham and North of Yorkshire."

Limnaea (Limnophysa) truncatula, Mull. Ingleby Greenhow (J. H.), Kildale (J. H.), Kirkby-in-Cleveland (J. H.), Easby (B.R.L.), Great Ayton (B. R. L.), Ormesby (T. A. L.), Coatham (T. A. L.), Mulgrave (W. D. R.).

Limnaea (Omphiscola) glabra, Mull. Kirkby-in-Cleveland (J. H.), Great Broughton (B. R. L.).

Planorbis (Hippeutis) fontanus, Lightfoot (*P. Nitidus*, Jeff.). Potto (B. R. L.), Acklam (B. R.L.).

Planorbis (Gyraulus) nauleus, L. Ingleby Greenhow (J. H.), Trenholme Bar (J. H.), Marton (B. R. L.), Acklam (T.A. L.), Coatham (T. A. L.), Wilton (B. R. L.). var. *crista*. L. Trenholme Bar (J. H.).

Planorbis (Gyraulus) albus. Mull. Stokesley (B. R. L.), Trenholme Bar (J. H.), Acklam (B. R. L.).

Planorbis (Gyororbis) spirorbis, Mull. Kirkby-in-Cleveland (J. H.), Great Ayton (B. R. L.), Acklam (B. R. L.).

Planorbis (Gyororbis) vortex, L. Acklam (T. A. L.), Middlesbrough Park (T. A. L.), Coatham (T. A. L.).

Planorbis (Gyororbis) umbilicatus, Mull. (*P. complanatus*, Jeff.). Acklam (T. A. L.), Coatham Marshes (D. F.).

Planorbis (Bathymorphus) contortus, L. Trenholme Bar (J. H.).

Bullinus hypnorum, L. Kirkby-in-Cleveland (J.H.), Ingleby Arncliffe (J. H.), Coatham Marshes (B. R. L.).

Physa fontinalis, L. Marton (B. R. L.), Middlesbrough Park (T. A. L.), Beck between Thornaby and Middlesbrough (A. Hann), Acklam (B. R. L.), Coatham (T. A. L.), Coatham Marshes (D. F.).

Anoplodoris (Archidoris) tuberculata, L. Saltburn (B. H.).

Acanthodoris pilosa, Mull. Staithes (Arnold T. Watson), Saltburn (M. L. Thompson).

Acanthodoris (Lamellidoris) bilamellata, L. Saltburn (M. L. T.).

Ancula cristata, Alder. Redcar "Common at the east end of West Scar" (D. F.).

Tritonia (Candiella) plebeia, Johnst. Redcar. "On old shells in fishing lines" (D. F.).

Dendronotus arborescens, Miill. Redcar. "On the far ledge of the West Scar, in the beautiful pools amongst zoophytes" (D. F.).

Æolis (Tergipes) despecta, Johnst. Off Redcar. "Often brought in by the boats from deep water on *Laomedea gelatinosa*" (D. F.). Ferguson says that

various species of *Æolis* are found in rock pools on all the scars at Redcar and under stones.

Doto fragilis, Turton. Redcar. "On *Plumularia falcata*, constantly brought in by the fishermen" (D. F.).

Doto coronata, Gmel. Redcar. Occurring with the last (D. F.).

Actaeon tornatilis, L. Redcar. "From deepish water, rather rare, we have only once found it alive" (D. F.) (W. C. H.).

Aplysia punctata, Cuvier. Redcar. "Has been common on the West Scar for the last two years, feeding on seaweeds)) (D. F.)

Pleurobranchus (Berthella) plumula, Mont. Salt Scar, Redcar (D. F.).

Bela rufa, Mont. Redcar (J. H.).

Chrysodomus (Neptunea) antiqua, L. Off Redcar. "Common in the deep water region; many very large specimens have come under our notice" (D. F.), Redcar (W. C. H.).

Chrysodomus (Volutopsis) norvegica, Chemn. Off Redcar (D. F.). .

Chrysodomus (Jumala) Turtoni, Bean. Ferguson says that this, and the last, have been taken at Redcar by the fishermen in deep water.

Sipho gracilis, Da Cos. Saltburn (M. L. T.), Tees Mouth (M. L. T.).

Sipho (Tritonofusus) islandicus, Chemn. Off Redcar, "One living and one dead shell have come into our possession from the deep water boats." (D. F.) (W. C. H.), Staithes, dead shells (J. H.).

Buccinum undatum, L. Redcar. "With all its varieties it is very abundant here among the rocks at low water mark whilst the thin variety is found at the eighth buoy in the Tees, on a muddy bottom" (D. F.) (J. H.), Saltburn (J.H), Staithes (J. H.).

Nassa (Hima) incrassata, Mull. Redcar'. " Very abundant," (D. F.) (J. H.), Dredged in Tees Mouth (J. H.), Saltburn common (M. L. T.).

Ocenebra erinacea, L. -Ferguson mentions that dead and worn shells have been found at Redcar, which were probably brought into the Tees with ballast.

Purpura (Polytropha) lapillus, L. Redcar. "White and yellow varieties very common on all our rocks " (D. F.) (J. H.), Saltburn (J. H.), Staithes (J. H.).

Trivia europaea Mont. Redcar. "This shell is most abundantly thrown up on our sands, and is found alive among the little zoophyte-clad caverns at spring tides. We occasionally find *Cypraea arctica*" (D. F) (J. H.), Saltburn, common (M. L.T.).

Chenopus pes-pellicani, L, Redcar (W. C. H.), off Redcar "from the fishermen's lines" (D. F.).

Bittium reticulatum, Da Cos. Ferguson says it has frequently been found on the beach at Redcar.

Turritella terebra, L. Off Redcar. "Brought in pretty plentifully by the fishermen" (D. F.), Redcar, dead (J. H.), Saltburn (M. L. T.).

Littorina littorea, L. Redcar. "Very common; a red variety is occasionally found in company with the black one" (D. F.) (J. R.), Saltburn, common (M. LT.), Staithes (J. H.).

Littorina rudis, Maton. Huntcliffe (D. F), Saltburn, common (M. L. T.), Staithes (J. H.). var. *saxatilis*, Johnst. Staithes (J. H.).

Littorina (Neritoides) obtusata, L. Huntcliffe (D. F.), Saltburn, common (M. L. T.), Staithes (J. H.). var. *neritiformis*, Brown, Staithes (J. H.).

Lacuna pallidula, Da. Cos. Redcar (J. H.).

Lacuna divaricata, Fabr. Redcar (W. C. H.).

Skeneia planorbis, Fabr. Redcar "On sea-weeds between tide marks" (D.F.),
Rissoia (Turbella) parva, Da Cos. Redcar (W. C. H.), Saltburn (J. H.).
 var. *interrupta*, Ad. Saltburn (J. H.), Redcar (J. H.)
Rissoia (Onoba) striata, Ad. Redcar (J.H.) (W C. H.)
Rissoia (Alvania) punctura, Mont. Redcar (J. H.)
Rissoia (Cingula) semistriata, Mont. Redcar (J. H.), Saltburn (J. H.)
Barleeia rubra, Mont. Redcar (J. H.)
Hydrobia (Peringia) stagnalis, Bast. (*H. ulvae*, Penn). Tees Mouth (D. F.), a
 dead specimen dredged in Tees Mouth (J. H.)
Paludestrina Jenkinsi, Smith. Mr. A. Hann found this species in a beck
 between Thornaby and Middlesbrough in the early spring of 1897, and later in
 the year he found it in the same stream in profusion on *Elodea canadensis*
 and *Aruwto phragmites*. All the specimens he took were uncarinated forms He
 suggests that the colony may have been imported with Baltic timber.
Viviparus viviparus, L. Mr. T. A. Lofthouse obtained one dead shell from
 pond cleanings at Acklam.
Acicula lineata, Drap. Airey Holme Wood (Dixon and Watson).
Capulus hungaricus, L. Dr. R. T. Manson, F.G.S., has kindly sent for my
 inspection a small specimen of this species, which he found in 1898 on the
 sands between Marske and Saltburn. Though the animal was not contained in
 it when found, it is a perfectly fresh shell, measuring three-eighths of an inch
 in its longest diameter,
Natica (Naticina) pulchella, Risso (*N. Alderi*, Forbes). Redcar (J H.), off
 Redcar (D. F)
Natica (Naticina) catena, Du. Cos. Saltburn (M. L. T.)
Natica (Naticina) Montagu, Forbes. Off Redcar (D.F.) Ferguson says that
 this and *N. pulchella* are often met with in the fishing boats, and found in the
 stomachs of
Scalaria Turtonoo, Turton. Redcar. "From deep water" (D. F.).
Scalaria trevelyana, Leach. Redcar (W. C. H.)
Eulima bilineata, Alder. Saltburn (J.H.).
Odostomia unidentata, Mont. Recar. "In sand; a variety is also found here"
 (D. F.).
Gibbula magus, L Redcar "Two or three specimens of this shell have been
 found on the sands, but it is a very doubtful native of the North-East Coast"
 (D. F.).
Gibbula (Steromphalus) cineraria, L. Redcar "In pools among the rocks,
 very common" (D. F.) (J. H.), Saltburn, common (M. L. T), Staithes (J. H.).
Eumargarita helicina, Fahr. Redcar, "On sea-weeds and under stones"(D.F.)
Calliostoma zizyphinum, L. Redcar. "We have only found one living
 specimen of this interesting shell, and that occurred on Salt Scar" (D. F.) (W.
 C. H.).
Emarginula fissura, L. Redcar. "Occasionally found in sand" (D. F.),
 Saltburn, two specimens (M. L. T.).
Acmaea virginea, Mull Redcar. "Under stones at extreme low water mark"
 (D. F.), Saltburn, one(M. L. T.).
Acmaea (Collisella) testudinalis, Mull. Saltburn. Fine specimens (W. C. H.).
Patella vulgata, L. Redcar. "Very common and extensively used as a bait by
 the fishermen" (D: F.) (J. H.), Saltburn, common (M. LT.), Staithes (J. H.).

var. *athletica*, Bean. "Tees Mouth, or in heaps of stones near the Red Light" (D. F.), Saltburn, common (M. L. T.).

Helcion (Patina) pellucidum, L. Dredged in Tees Mouth, (J. H.) Redcar, "On the fronds of "*Laminaria*" (D. F.) (J. H.) Saltburn. common (M. L. T.). var *loevis*, Pennant, Redcar. "At the roots of *Laminaria*" (D. F.). Saltburn. Common (M. L. T.). *Holochiton* (*Leptochiton*) *ruber*, L. Redcar (W. C. H.).

Tomochiton (Trachydermon) marginatus, Penn. Redcar (W. C. H.), Saltburn, common (M. L. T.), Staithes (J. H.).

Anisochiton (Acanthochiton) fascicularis, L. Redcar (W. C. H.).

Dentalium (Entalis) entalis, L. Saltburn, four (M. L. T.).

Anomia ephippium, L. Saltburn, common (M. L. T.).

Anomia patelliformis, L. Redcar (D. F.). Alder says "The *Ostrea striata* of British Authors, first noticed by Lister, as common upon the sands at the Mouth of the Tees, we take to be this species."

Pecten maximus, L. Off Redcar. "Deep water fishing, rare " (D. F.).

Pecten pusio, . Redcar (W. C. H.), Saltburn (M. L. T.).

Chlamys varius. L. Redcar (W. C. H.). "Under stones on East and West Scars)) (D. F.).

Chlamys (Æquiptecten) oparcularis. L. Redcar (W. C. H.). Off Redcar. "Sometimes washed up on the Tees Sands after a heavy storm, and occasionally brought in by the fishermen " (D. F.), Saltburn (M. L. T.).

Mytilus edulis, L. Staithes (J. H.), Redcar (D. F.) (J. H.), Saltburn, common (M. L. T.)

Modiola modiolus, L. Redcar (W. C. H.), off Redcar (D. F.), Saltburn (M. L. T.).

Modiola barbata, L. Staithes (Arnold T. Watson).

Modiolaria discors L. Redcar. L. "At the roots of seaweeds between tide marks" (D. F.).

Modiolaria nigra, Gray, off Redcar (D. F.).

Dreissensia polymorpha, Pallas. Mr. T. A. Lofthouse has seen specimens that have been taken on driftwood in the Tees at Newport.

Margaritana margaritfera, 1. Lealholm (T. A. L.), River Esk (Dixon and Watson).

Anodonta cygnea L. I have full grown specimens from the collection of the late J. Watson, of Ingleby Greenhow, which were obtained from Stokesley Mill Dam about 1857. Mr. T. A. Lofthouse has obtained small specimens from streams near Great Ayton and Stokesley.

Astarte sulcata, Da Cos. Off Redcar (D. F.).

Astarte compressa, Mont. Off Redcar (D. F.).

Turtonia minuta, Fabr. Redcar. "In the pretty rock-pools on the smaller algae)" (D. F.).

Kellya suborbicularis, Mont. Redcar. "This species is very variable in form and size, and is found at the roots of *Laminaria digitata*, and in old shells. "We generally find it on Salt Scar, though at dead low water mark on West Scar we meet with it". (D. F.). A dead specimen dredged in Tees Mouth (J. H.).

Lasrea rubra, Mont. Redcar (J. H.).

Eucardium echinatum, L. Redcar (W. C. H.). Ferguson says that several varieties of this species are occasionally brought in with the fishing lines.

Eucardium (Cerastoderma) edule, L. Tees Mouth (D. F.), Redcar (J. H.), Saltburn, common (M. L. T.), Staithes (J. H.).

Cyprina islandica, L. Redcar (J. H), off Redcar . "In deep water; common, and after a storm washed up in large numbers on the Coatham Sands" (D. F.), Saltburn, common (M. L. T.).

Dosinia exoleta. L. Off Redcar (D. F.), Redcar (W. C. H.), Saltburn (J. H.).

Dosinia lupinus, L. (*D. lincta*, Pult), Redcar (W. C. H.), Tees Mouth (M. L. T.).

Chione (Chamelrea) gallina. L. Redcar, "rather rare " (D. F). (J. H.). Dredged in Tees Mouth (J. H.), Saltburn, common (M. L. T.).

Chione (Timoclea) ovata, Penn. Redcar, "rather rare" (D. F.).

Lucinopsis undata, Penn. Off Redcar (D. F.), Redcar (W. C. H.).

Tapes virgineus, L. Redcar , "rather rare" (D. F.) (W. C. H.).

Tapes (Amygdala) decussatus, L. Redcar , "rather rare" (D.F.).

Tapes (Pullastra) pullastra, Mont. Redcar, "rather rare" (D. F.) (J. H.) Saltburn, common (M. L. T.). var *perfurans*, Mont. Redcar. "In every part of our rocks; it does not appear to bore its own hole, but merely to occupy the holes bored by the *Pholas*" (D. F.).

Sphaerium corneum, L. Trenholme Bar (J. H.).

Sphaerium (Musculium), lacustre, Mull. Acklam, very fine (B. R. L.).

Pisidium amnicum, Mull. Tocketts Stream (B. R. L.).

Pisidium fontinale, Drap. Ingleby Greenhow (J. H.).

Pisidium pusillum, Gmel. Near Ormesby (T. A. L.), Acklam (T. A. L.), Mulgrave (W. D. R.)

Pisidium roseum, Scholtz. Hutton Rudby (B. R. L.).

Donax vittatus, Da Cos. Redcar (D. F.) (J. H), Saltburn, common (M. L. T.).

Psammobia ferroensis, Chemn. "From deep water in a living state; occasionally found on the sands" (D. F.) (W. C. H.).

Solen (Ensis) siliqua, L. Ferguson says that this species, together with the two which follow, is "common on Coatham Sands, near Marsh House, where they live in the sand about low water mark, and are much sought after by the fishermen, as being a tempting bait for fish." Redcar (J. H.), Saltburn (J. H.).

Solen (Ensis) ensis, L. Redcar (D. F.) (W. C. H.).

Solen pellucidus, Penn. Redcar (D. F.).

Mactra solida, L. Redcar. "On the beach" (D. F.) (W. C. H.), Tees Mouth, one (M. L. T.). var. *truncata*. Mont. Tees Mouth (M. L. T.). var. *elliptica*. Brown. Off Redcar (D. F.), Tees Mouth (M. L. T.).

Mactra stultorum, L. " Very common on the Coatham Sands, and often thrown up alive after a storm" (D. F.), Redcar (J. H.), Saltburn, common (M. L. T.).

Mactra subtruncata, Da Cos. Redcar. "On the beach" (D. F..) (W. C. H.). Dredged in Tees Mouth (J. H.).

Lutraria elliptica, Lam. Redcar (J.H.). "So far back as anno 1678 Lister Anim Angl. 171, ad ostium fluminis Tees. copiosissime reperiuntur, and it still occupies a considerable tract of land in its old habitat, the Tees Mouth" (D. F.), Saltburn, common. (M. L. T.).

Mya truncata, L. Tees Mouth (D. F.), Saltburn (J. H.).

Mya arenaria, L. Tees Mouth (D. F) (W. C. H.).

Corbula gibba, Olivi. Off Redcar (D. F.).

Saxicava norvegica, Speng. Redcar. "We have only met with two specimens of this rare species from deep water" (D. F.).

Saxicava rugosa, L. Redcar (D. F.) (J. H.), Saltburn, common (M. L. T.), Staithes (J. H.).

Holopholas (Barnea) candida, L. Tees Mouth, common (M. L. T.).
Holopholas (Zirfaea) crispata, L. Redcar. "In all our soft rocks" (D. F.) (W. C. H.), Saltburn, common (M. L. T.).
Xylophaga dorsalis, Turton. "We once found it in an old piece of wood washed up near Huntcliffe " (D. F.).
Teredo norvegica. Spengler. Dredged in Tees Mouth, 1889 (W. Y. Veitch).
Lucina borealis, L. Redcar (D. F.), Saltburn (M. L. T.).
Eutellina (Angulus) fabula, Gron. Redcar (D. F.) (W. C. H.), Saltburn (M. L. T.).
Tellina tenuis, Da Cos. Redcar (D. F.) (J. H.), Saltburn, common (M. L. T.).
Macoma balthica, L. Tees Mouth, common (J. H.), Redcar (D. F.) (J. H.).
Scrobicularia piperata, Gmel. Tees Mouth (D. F.) (M. L. T.), Redcar (W. C. H.).
Syndesmya prismatica, Mont. Off Redcar. "Frequent in deep water, and that excellent conchologist, the haddock, often contains in its stomach this interesting shell" (D. F.).
Syndesmya alba, Wood. Redcar (W. C. H.).
Syndesmya tenuis, Mont. Redcar (W. C. H.).

LEPIDOPTERA NOTICED IN CLEVELAND DURING 1896.

By T. ASHTON LOFTHOUSE.

Very few insects were added to the list during the past season, the weather with the exception of June being of a most unfavourable character, the results from Sugar and Larval beating being practically nil. The only exception was the abundance of *Mania typica* at sugar in almost any kind of weather.

Alucita hexadactyla was the first insect noticed during March. I also took larval of *Bombyx rubi* in the same month near Great Ayton. During the greater part of April I was away from home and the only insect noticed by me was *Taeniocampa incerta*. In May I bred *Spilosoma mendiea* from local pupae.

On the 22nd I bred *Saturnia pavonia* from larvae taken on Eston Hills last year. On the 25th I took this specimen to the moors and by this means attracted two or three males.

On this date specimens of *Bombyx rubi* were very plentiful, flying about rapidly in Lonsdale. *Nemeophila plantaginis* was noticed, and larvae of *Bombyx quercus* in the vicinity of Hutton. Mr. Sachse records for this month *Amphidasys betularia* var *doubledayaria* bred from pupae taken in Kilton Woods. Another specimen of this variety was taken at Linthorpe during the early part of June *Spilosoma fuliginosa* (Kilton Wood). *Noctua plecta*, *Miana strigilis* var. *Æthiops*, bred from dug pupae. *Odontopera bidentata*, 25th. *Zygaena filipendulae* larvae and pupae at Yarm, 31st. *Nisoniades tages* noticed near the Park, Middlesbrough. During June were taken on the 15th *Hysipetes trifasciata (impluviata)*, *Eupisteria heparata* and *Eubolia plumbaria*, all near Great Ayton. 17th, *Plusia iota* at Dinsdale (W.S.). *Notodonta ziczac*, bred from larvae taken at Linthorpe last Autumn, 20th, on the occasion of the Field Club's excursion to Broughton and Battersby, *Eriogaster lanestris*, nest of larvae on whitethorn *Tortrix corylana.*, *Hyponomeuta evonymellus*. The larvae of this moth were very abundant on bird cherry in Ingleby Greenhow

Woods. The trees were simply covered with the webs and completely denuded of leaves *Plusia chrysitis*, Great Broughton (W.S.). 28th, near Great Ayton, *Hepialus hectus*, *Boarmia repandata*, *Acidalia fumata*, *Cabera pusaria*, *Macaria liturata*, *Lomaspis marginata*, *Larentia viridaria*, *Venusia cambrica*, *Thera variata*, *Coremia ferrugata*, *Melanippe tristata* and *Tortrix adjunctana*. On July 3rd, at sugar, *Miana fasciuncula*, *Apamea gemina* and *Leucania impura*, *Caradrina morpheus*. Caught *Xylophasia rurea* (W.S.). 4th. *Uropteryx sambucaria* (several noticed during the month). *Trochilium crabroniformis*, (W.S.). 11th, at Great Ayton, *Cidaria populata*, *Melanippe ocellata* and *Agrotis porphyrea*. 12th, *Tapinostola elymi* noticed near Redcar, *Triphoena comes*. 26th. *Cidaria fulvata*. 28th. *Macroglossa stellatarum*. A specimen of *Mamestra abjecta* was taken near Saltburn during this month and recorded in the Naturalist by Mr. Dennis, of York. *Acherontia atropos*. I had a pupa sent of this hawk moth, got near Linthorpe. During August the weather was of a most unfavourable description, and very few insects were noticed or taken. 1st. *Luperina testacea*, very dark specimen taken near Redcar, *Depressaria bardiella* common on the sandbanks, 3rd. Yorkshire Naturalists' Union excursion, from Easington to Staithes, *Hypsipetes sorditata*, *Eubolra limitata*, *Pyrausta purpuralis* and *Phoxopteryx unguicella*, Larvae of *Phalera bucephala*, *Notodonta ziczac*, *Lophopteryx camelina* and *Smerinthus populi* were taken this month, *Miana literosa* (W.S.). *Melanippe sociata* (W.S.). September 12th. *Polia chi*, *Xanthia fulvago* at Great Ayton, 27th. *Nonagria fulva*, a single specimen of *Vanessa cardui* was taken this month (W.S.), During October *Hydroecia micacea* and *Cerastis spadicea* were taken at sugar, *Cheimatobia brumata* were exceedingly abundant about the end of November,

1897.

With the exception of one or two weeks in June, this year has been only a moderate one, cold winds being much too prevalent to allow of satisfactory work being done in this section. We had very mild weather in February, and had to suffer for this in the spring and summer months.

The first insect noticed this season was *Taeniocampa stabilis* at Acklam, on April 11th, also taken at sugar at Linthorpe together with a specimen of *T. gothica*. On the 22nd, *Taeniocampa cruda*, was taken at Great Ayton, and on the 28th, *Anticlea badiata* was caught at Linthorpe. May 1st, *Cidaria corylata* taken in fir plantation near Great Ayton. 8th. Found several larvae near Swainby about full grown of *Depressaria assimilella*. They were situated between the united stems of broom. On the same date a specimen of *Cidaria miata* in good condition was taken by Mr. Sachse near Whorlton Church.

June 2nd, Took a specimen of the Poplar kitten. *Dicranuria bifida*, freshly emerged at 5-30 pm., off Poplar (*P. nigra*) tree trunk at Linthorpe, Middlesbrough. 10th *Eupithecia vulgata*, several in garden. 12th. *Eupithecia lariciata* fairly common about firs at Great Ayton. *Acidalia fumata*, two or three specimens, also specimens of *Melanippe tristata* and *Macaria liturata*, all at Great Ayton. 15th, *Hadena thalassina*, *Noctua plecta* and *Agrotis segetum* at sugar in garden. 19th. Took larvae of *Zygaena filipendulae* about full grown near Redcar. 21st. *Cilix glaucata* caught and *Apamea gemina* at sugar at Middlesbrough 22nd *Coremia propugnata*, *Lomaspilis marginata*, *Hypsipetes trifasciata* and *Emmelesia alchemillata*, all taken near Great

Ayton. 25th. *Noctua festiva* at sugar in garden. 26th. *Melanippe ocellata*, Great Ayton 27th. *Amphidasys betularia* var. *doubledayaria* taken in garden, laid several ova. 28th. *Trochilium crabroniformis* took one freshly emerged 9.am on Poplar Tree trunk, Middlesbrough (another specimen taken on July 19 at 8.15 am.). July 2nd. *Apamea unanimitis*, *Xylophasia lithoxylea* at sugar in garden. 4th. *Lophopteryx camelina* came to gas light at Linthorpe, 8th. *Eupithecia tenuiata* bred from sallows got near Great Ayton 9th. *Noctua C-nigrum*, *Leucania comma*, &c. at sugar. *Miana arerosa* very common, flying about rough pasture field at Linthorpe 10th *Hepialus velleda*. 12th. *Ellopiia prosapiaria* bred from pupae got at Great Ayton. 13th. *Acidalia bisetata*, several flying about at dusk near Acklam. 17th, *Acidalia virgularia*, Redcar. 24th, *Tortrix adjunctana*, *Eupithecia nanata*, *Anarta Myrtilli*, near Great Ayton 25th. *Xanthia fulvago*. During the next two or three weeks bred a number of these including some very nicely marked ones, also the var. *flavescens*. 26th. *Uropteryx sambucaria* caught. 28th *Xanthia flavago* bred from larvae got near Great Ayton.. 30th. *Tapinostola elymi*, took several specimens at rest on grasses and flying about on banks near Redcar. *Mamestra abjecta*, one at sugar near Redcar. *Cerigo matura*, specimen came to light at Linthorpe. August 5th. *Noctua baja* and *Triphaena comes* at sugar. *Melanthia bicolorata* several about alders near Great Ayton also a single specimen of var. *plumbata*. 11th. *Dianthecia capsincola*, larvae very plentiful in seed heads of *Lychnis dioica* at Redcar. *Pelurga comitata* caught. 22nd. *Calocampa solidaginis*, several on fir tree trunks near Great Ayton. This insect is rather difficult to detect on account of its likeness to a small piece of lichen-covered bark sticking out from the trunk. 26th. *Halia vauaria*. 28th. *Oporabia dilutata* near Great Ayton. During this month Mr. Sachse took larvae of *Notodonta dictaea* and *dromedaruis* at Grove Hill, Middlesbrough, and *Saturnia pavonia*, Brotton. September. *Anchocelis pistacina* and *litura* at sugar during the month. October. The following were taken at sugar :-*Hydroecia micacea*, *Cerastis spadicca*, *Scopelosoma satellitia* (1) and *Miselia oxyacanthae*. November 13th. Single specimen of *Calocampa exoleta* at sugar, also *Caradrina quadripunctata*.

1898.

On the whole this has been a better season than usual, several additional species being added to the Cleveland list. The weather in the spring and early summer was very cold, and sugar was not of much use until about the end of August, when insects came very freely. During September, October, and the early part of November the autumn species occurred very freely at sugar, in fact much more commonly than I have ever noticed them before.

January 16th. *Hybernia rupicapraria*, Linthorpe. March 13th. *Hybernia Marginaria* noticed near Thornaby also a dark variety of same taken at Linthorpe on the 20th. April 8th. *Brephos parthenias*, several specimens were seen by Mr. Sachse flying about birch in bright sunshine near Carlton-in-Cleveland. Visited locality on 16th, when a few were noticed but they did not seem to fly except when the sun was shining brightly, and then principally about the tops of the trees. *Xylophasia hepatica* single full grown larva taken on 16th near Stokesley. 21st. *Selenia bilunaria*. Taken at light at Linthorpe.

May 28th. *Selenia lunaria* near Battersby. June 6th. *Nisoniades tages* Battersby (Elgee). June 11th. Field Club excursion to Kilton Woods added three species to Cleveland list, viz. :-*Melanippe albicillata*, single specimen taken by Mr. Sachse, (one or two larvae taken in same locality during September), *Numeria pulveraria*, laid ova, and *Abraxas sylvata*, several resting on plants under Wych Elm. Some of the specimens were darker than usual and of a bluish tinge. This insect occurred also on the occasion of two later visits, the last date being September 10th, on which date larvae were also noticed in all stages of growth feeding on Wych Elm. Other insects taken on June 11th were *Coremia propugnata*, *Cilix glaucata* and *Tephrosia biundularia*. 18th. *Eupithecia indigata* taken near Great Ayton. 29th. *Phalera bucephala*, Acklam. July 2nd. *Asthena luteata* and *Phytometra viridaria* near Great Ayton. 7th. *Hadena dissimilis* single specimen at sugar in garden. 16th. *Asthena candidata*, Kildale (Sachse). 1st. *Plusia iota* and *Cucullia umbratica* at flowers in garden. 23rd. *Aplecta prasina*, one near Great Ayton. July 30th August 1st. :Following taken in Kilton Woods *Aplecta nebulosa*, *Hepialus hectus*, *Cidaria dotata*, *Larentia olivata*, several rather worn. *Emmelesia affinitata*, *Anaitis plagiata*, *Asthena blomeri*, one good specimen, *Zanclognatha grisealis* and *Calymnia trapesina*. August 6th. *Euchelia jacobreae*, larvae plentiful on ragwort near Redcar. 11th *Nola cucullatella*, single specimen taken out of garden hedge. 13th. *Cidaria prunata* (Sachse) Ingleby Greenhow. 16th. *Eupithecia pulchellata*, several larvae taken on foxglove flowers near Great Ayton. 19th. *Luperina testacea*. Among the moths that came to sugar during the latter part of this month were *Agrotis obscura*, single specimen also on September 16th (W.S.). *Miana literosa*, *Triphaena comes*, &c., all in garden at Linthorpe. September. New species taken in the Middlesbrough District were *Agrotis nigricans*, *Orthosia lota*, *Xanthia circellaris* at sugar, at which the following occurred also very freely *Hydroecia micacea*, *Anchocelis pistacina*, very variable, and *Phlogophora meticulosa*. 3rd. *Noctua glareosa*, Kildale, (Sachse) also at Kilton on the 10th. 5th. *Gonoptera libatrix* at sugar near Park (Sachse), also in garden on October 21st. September 8th. *Epione apiciaria*, specimen caught near Linthorpe (W. S.). 10th. *Hypolepia sequella*) one or two caught in Kilton Wood. *Gortyna ochracea* and *Hydroecia nictitans* taken at light at Linthorpe, the latter also taken off sugar at Kilton. 16th. *Agrotis sancia*, *Agrotis suffusa*, *Calocampa exoleta*, (W.S.). The two latter occurred pretty plentifully until the end of October. *Cidaria immanata*. 17th. *Aporophyla lutulenta*, at sugar near Park (W.S.). 22nd. *Polia flavicincta*, two specimens at sugar near Park (W.S.). October 12th. *Acherontia atropos*, larvae taken near Park (W.S.). One was also taken near Staithes during September.

REPORT ON THE COLEOPTERA OBSERVED IN CLEVELAND.

Mr. M. L. THOMPSON.

1896.

In this Report on Beetles met with in Cleveland during the year 1896 I have adopted the same form as that of last year as regards the order of arrangement of species.

COLEOPTERA.

Geodephaga-*Loricera pilicornis*, *Dyschirius thoracicus*, *Bradycellus verbasci*, *Amara communis*, *A. trivialis*, *Anchomenus angusticollis*, *A. parumpunctatus*, *Bembidium guttula*, *B. tibiale*, *B. quadriguttatum*, *B. affine*, *Acpus Robinii*, and *Dromius quadrimaculatus* occur at Saltburn. *Notiophilus aquaticus*, *Bradycellus cognatus*. *Pterostichus vitreus* and *Calathus melanocephalus* are common on Stanghow Moor.

Hydradephaga .. -*Hydroporus pictus*, *H. rivalis*, *H. planus*, and *Dytiscus marginalis* are common at Saltburn, and *Hydroporus discretus*, *H. lituratus* and *H. obsoletus* were washed up on the coast. *Hydroporus morio* and *H. pubescens* are common on Stanghow Moor, where also *Hydroporus melanarius* and *Colymbetes fuscus* occurred.

Hydrophilidae-*Helophorus rugosus* occurred at Saltburn, whilst *Laccobius hipunctatus* and *Ochthebius marinus* are common in Coatham Marsh. *Cercyon littoralis* and *C. unipunctatus* are common at Saltburn.

Brachelytra.-*Aleochara fuscipes*, *A. grisca*, *Calodera umbrosa* (rare), *Homalota cauta* (parva), *Myrmecopora* (*Xenusa*) *uvida*, *Autalia rivularis*, *Gyrophæna lucidula*, *Hypocyrtus longicornis*, *H. seminulum*, *Tachyporus obtusus*, *Tachinus subterraneus*, *Mycetoporus nanus*, *M. angularis*, *M. splendidus*, *M. clavicornis* (var. *forticornis*), *Quedius picipes*, *Q. cruentus*, *Q. semiaeneus*, *Philonthus politus*, *P. trossulus* (common), *P. fimetarius* (common), *P. puella*, *P. decorus*, *Cafius xanthoina* (all the coast), *Xantholinus linearis*, *Leptacinus parumpunctatus*, *Stilicus affinis*, *Lithocaris ochracea*, *Stenus speculator*, *Bledius longulus*, *Oxytelus maritimus*, *Trogophloeus pusillus*, *Deliphrum tectum*, *Homalium cresum*, *H. oxyacanthæ*, *Megarthus denticollis*, were met with at Saltburn and *Homalota circellaris*, *Tachinus laticollis*, *Philonthus proximus*, and *P. scutatus* on Stanghow Moor.

Clavicornia.-*Agathidium marginatum*, *Anisotoma dubia*, *A. calcarata*, *Hydnobius Perrisii*, *Colenis dentipes*, *Ptenidium nitidum* (pusillum) *Coccinella* 7 -*punctata*, *Micropeplus porcatus*, *Carcus rufilabris*, *Monotoma picipes*, *Lathridius laradius*, *Corticaria pubescens*, *C. serrata*, *Melanophthalma fuscula*, *Telmatophilus caricis*, *Cryptophagus scanicus*, *Atomaria pusilla*, *Ephistemus gyrinoides*, *Typhaea fumata*, *Byturus tomentosus*, *Simplocaria semistriata*, and *Elmis parallelipedus* were all found at Saltburn. *Necrophorus humator*, *N. vespillo*, *Silpharugosus* and *Choleva chrysomeloides* occurred on Stanghow Moor; whilst *Rhizophagus bipustulatus* was found below the Moor, and *Halyzia 14-guttata* at Glaisdale.

Lamellicornia: Three species occur at Saltburn. *Aphodius erraticus*, *Ægialia sabuleti* and *Serica brunnea* (common).

Sternoxi. *Agriotes lincatus*, *A. pallidulus*, and *Adrastus limbatus*-all found at Saltburn.

Malacoderma. *Rhagonycha* (*Telephorus*) *limbata*, *R. pallida*, *R. fulva*, and *Dryophilus pusillus* are common at Saltburn, where *Ochina hederæ* was also found (the last two insects belonging to the group *Teredilia*). *Telephorus flavilabris* was found at Glaisdale.

Longicornia. *Leiopus nebulosus*, taken at Saltburn represents this group.

Phytophaga. *Lochmaea suturalis* is common on Stanghow. Moor, and *Haltica pusilla*, *Apteropoda orbiculata*, *Mantura rustica*, and *Cassida viridis* are common at Saltburn where also *Longitarsus atricillus* and *Aphthona atrocrucea* (*cyanella*) occur. *Psylloides marcida* was met with at Redcar.

Heteromera. -*Lagria hirta*, *Notoxus monoceros*, *Rhinosimus ruficollis*, *Anaspis maculata* (*melanopa*), and *A. ruficollis* are common at Saltburn, where *Salpingus ater* was also found.

.Rhynchophora. Of weevils, *Apion unicolor* (*platalea*), *Liophloeus nubilus*, *Polydrusus cervinus* common, *Barynotus obscurus* (common), *B. elevatus*, *Orchestes salicis*, *Dorytomus maculatus*, *Cionus pulchellus*, *Ceuthorrhynchus assimilis* (common), *C. litura* (common), *Ceuthorrhynchidus troglodytes*, and *Phloeophthorus rhododactylus* all occur at Saltburn. *Bagous tempestivus* and *Litodactylus leucogaster* were met with in Coatham Marsh.

During his residence in Middlesbrough, Mr. B. R. Lucas. collected a number of beetles in a few localities in Cleveland. He has furnished the Club with a list of these insects, which is here embodied in this Report. The localities in which the species were taken are indicated by placing after each name a numeral to be interpreted as follows

1, Vicinity of Middlesbrough 2, Great Ayton 3, Ingleby Greenhow; 4, Eston 5, Wilton 6, Guisbrough.

| | |
|---|--|
| <i>Carabus violaceus</i> 2 | <i>Tachyporus obtusus</i> 4 |
| <i>Carabus nemoralis</i> 2 | <i>Creophilus maxillosus</i> 1 |
| <i>Notiophilus biguttatus</i> 1 | <i>Staphylinus pubescens</i> 2 |
| <i>Leistus fulvibarbis</i> 2 | <i>Ocypus morio</i> 3 |
| <i>Leistus rufescens</i> 4 | <i>Philonthus scutatus</i> 2 |
| <i>Nebria gyllenhalii</i> 2 | <i>Othius fulvipennis</i> 2 |
| <i>Nebria brevicollis</i> 2 | <i>Stenus brunnipes</i> 2 |
| <i>Bradycellus verbasci</i> 2 | <i>Oxytelus rugosus</i> 3 |
| <i>Bradycellus cognatus</i> 2 | <i>Olophrum piceum</i> 2 |
| <i>Bradycellus similis</i> 2 | <i>Lathrimaeum unicolor</i> 2 |
| <i>Harpalus aeneus</i> 1 | <i>Necrophorus vespillo</i> 6 |
| <i>Harpalus ruficornis</i> 1 | <i>Silpha atrata</i> 3 |
| <i>Pterostichus strenuus</i> 2 | <i>Hister cadaverinus</i> 1 |
| <i>Pterostichus niger</i> 2 | <i>Coccinella punctata</i> 1 |
| <i>Pterostichus madidus</i> 2 | <i>Rhizophagus dispar</i> 2 |
| <i>Pterostichus vulgaris</i> 2 | <i>Cryptophagus scanieus</i> 2 |
| <i>Pterostichus striola</i> ... 2 | <i>Mycetophagus quadripustulatus</i> 2 |
| <i>Amara bifrons</i> (<i>livida</i>) 2 | <i>Cytilus varius</i> ... 2 |
| <i>Calathus melanocephalus</i> . 4 | <i>Sinodendron cylindricum</i> 2 |
| <i>Calathus mollis</i> 4 | <i>Aphodins fossor</i> 1 |
| <i>Calathus flavipes</i> 4 | <i>Aphodins ater</i> 1 |
| <i>Pristonychus torticola</i> 2 | <i>Aphodins rufipes</i> 1 |
| <i>Anchomenus dorsalis</i> 1 | <i>Aphodins obliterated</i> 1 |
| <i>Anchomenus albipes</i> 2 | <i>Aphodins depressus</i> ... 1 |
| <i>Anchomenus angusticollia</i> 2 | <i>Aphodins fimetarius</i> 1 |
| <i>Anchomenus fuliginosus</i> 1 | <i>Geotrupcs stercorarius</i> 1 |
| <i>Bembidium littorale</i> 1 | <i>Melolontha vulgaris</i> 1 |
| <i>Bembidium rufescens</i> 5 | <i>Telephorus lividus</i> 6 |
| <i>Bembidium seneum</i> 1 | <i>Telephorus pellucidus</i> 6 |
| <i>Trechius minutus</i> 1 <i>Cis boleti</i> | <i>Telephorus bicolor</i> 6 |
| <i>Dromius quadrimaculatus</i> 1 | <i>Cis boleti</i> 2 |
| <i>Dromius quadrinotatus</i> 3 | <i>Rhagium bifasciatum</i> 4 |
| <i>Laccophilus obscurus</i> 1 | <i>Chrysomela polita</i> ... 6 |

| | |
|-----------------------------|---------------------------|
| Hyphydrus ovatus 5 | Chrysomela staphylea 6 |
| Hydroporus pubescens 5 | Phaedon tumidulus ... 2 |
| Hydroporus palustris 5 | Hydrothassa marginella 2 |
| Hydroporus planus 5 | Serrula halensis ... 2 |
| Agabus bipustulatus 5 | Phyllotreta undulata 2 |
| Agabus conspersus 5 | Crepidodera ferruginea. 1 |
| Platambus maculatus 5 | Scaphidema metallicum 2 |
| Ilybius fuliginosus 1 | Meloe proscarabreus ... 4 |
| Colymbetes fuscus 1 | Otiorrhynchus picipes 6 |
| Dytiscus marginalis 1 | Otiorrhynchus sulcatus 6 |
| Acilius sulcatus 1 | Strophosomus coryli 2 |
| Gyrinus natator 1 | Phyllobius argentatus 1 |
| Hydrobius fuscipes 1 | Barynotus elevatus 6 |
| Sphaeridium scarabraoides 1 | Hylobius abictis 2 |
| Helophorus brevilpalpis 2 | Orchestes fagi 2 |

1897.

In this report on the beetles observed in 1897, I have not adopted the mode of arrangement followed in previous papers. The species are here grouped in the respective families, to which they belong, this being more in accordance with modern ideas on the classification of these insects.

COLEOPTERA.

Carabidae --Carabus catenulatus, Notiophilus palustris, Nebria brevicollis, Bradycellus collaris (rare), were found. On Glaisdale Moor, and Olisthopus rotundatus, Bembidium Mannerheimi, B. nitidulum (brunnipes), on Danby Moor, At Saltburn Bembidium assimile (on the coast). B. lunulatum (riparium), and Lebia chlorocephala were met with.

Haliplidae - Only one species, Haliplus obliquus, occurring in a pond at Saltburn, was added to the list

Dytiscidae. Hydroporus moria (atriceps) is common on Danby Moor. Agabus biguttatus (nitidus) was found in a woodland watercourse at Saltburn

Saphylinidae ---On the borders of the stream in Saltburn Wood, Myllaena brevicornis, Homalota yolans (common), H. elongatula, Stenus pusillus, Ancyrophorus omalinus, Trogophloeus corticinus and Geodromicus nigrila (in flood refuse) were met with. On the Saltburn coast were found Aleochara succicola, A. nitida (var. bilineata), Homalota sordida, H. halobrechtha, H. aquatica (in a sandpit on the sea-banks), H. vestita (common), Quedius puncticollis, Q. mesomelinus, Staphylinus stercorarius (one specimen), Philonthus longicornis, P. corvinus (rare), P. umbratilis, P. puella, Oxytelus complanatus, Homalium laeviusculum and H. Allardi. Other Saltburn species of this family are Homalota pagana, H. muscorum, Astilbus canaliculatus Homalota oblita Stenus declaratus, Homalium pusillum (under fir bark), H excavatum, Anthobium minutum, Sipalia ruficollis, Bolitochara lucida and B. obliqua (the last three insects taken in a fungus on a tree). Homalota serlcea, H. atramentaria, Philonthus longicornis, Bledius bicornis, Platystethus arenarius, Trogophloeus bilineatus, occur on the shore of the Tees. In Arncliffe Wood, Glaisdale, Autalia impressa, Gyrophaena minima, and Anthophagus testaceus were met with; also Ocypus cupreus and Homalota circellans on Glaisdale Moor. Ocypus cupreus was also found on Danby Moor and Anthobium ophthalmicum in Kilton Wood

Silphidae. Three species of *Choleva*-*C. tristis*, *C. fusca* and *C. Watsoni* are common at Saltburn.

Micropeplidae. One species *Micropeplus staphylinoides* was found at Saltburn.

Nitidulidae. *Cercus pedicularius*, *C bipustulatus*, *Epuria melina*, *Cychramus luteus* occur in Kilton Wood. *Nitidula bipustula* and *Omosita colon* were met with in carrion on the shore of the Tees. *Omosita discoidea* is common at Saltburn, and a specimen of *Meligethes obscurus* was found on the seabanks there.

Scydmaenidae A single specimen of the rare *Euconnus denticornis* was found on the Saltburn sea-banks.

Lathridiidae. *Corticaria denticulata* is common at Saltburn.

Scarabaeidae *Aphodius foetens* was found at Saltburn, and *Geotrupes typhoeus* on Danby Moor.

Elateridae *Cryptohypnus riparius* occurs on Danby Moor, and *Corymbites cupreus* at Ayton.

Dascillidae *Cyphon coarctatus* from Kilton Wood represent this family.

Malacodermidae The two species belonging to this family are *Telephorus flavilabris* taken at Eston Marsh, and *Malthodes atomus* taken at Saltburn

Cerambycidae One species *Strangalia armata* was found at Saltburn.

Chrysomelidae Of this family *Cryptocephalus labiatus* and *Chrysomela varians* occur in Kilton Wood. *Phaedon amoracia* in Arncliffe Wood, Glaisdale, and *Longitarsus luridus* at Saltburn were also noted.

Tenebrionidae *Gnathocerus cornutus* was common in flour at Thornaby.

Pythidae A specimen of *Lissodema quadripustulata* was taken by sweeping at Saltburn, and *Rhinosimus viridipennis* under bark there.

Curculionidae The weevils met with were *Apion pubescens*, *Otiorrhynchus sulcatus*, *Trachyphloeus alternans* (a specimen found on the sea-banks), *Brachysomus echinatus*, *Phillobius calcaratus*, *Sitones crinitus*, *Barynotus Schonherri*, and *Grypidium equiseti*, all at Saltburn

1898.

The following Report on Beetles is from observations made during the year

COLEOPTERA.

Carabidae Two species belonging to this family have been added this year, - *Pristonychus terricola*, taken at Middlesbrough, and *Bembidium obtusum*, at Saltburn.

Dytiscidae A specimen of the rare *Hydroporus ferrugineus (victor)* was found on the sands at Saltburn, having been washed down the stream.

Hydrophilidae *Limnebius nitidus* was found in Coatham Marshes, and a specimen of *Ochthebius rufimarginatus* at Saltburn where *Cryptopleurum atomarium* also occurs

Staphylinidae *Homalota longicornis*, *Philonthus ventralis*, *Stellus ossium*, *Homalium striatum*, *Syntomium aeneum*, *Coprophilus striatulus*, *Lathrimaeum unicolor*, *L. atrocephalum*, *Megarthrus depressus* (common), were all met with at Saltburn. In the bed of a dried-up pond at the same place *Stenus bifoveolatus* and *Trogophloeus bilineatus* were found; and under bark *Ischnoglossa corticina* and *Leptusa fumida*. At the foot of the Saltburn sea-banks single specimens of a few of the less common Staphylinidae were met with *Lathrobium longulum*, *Acidota cruentata*, *Homalium regulipenne* (on the

shore, and *Trogophloeus elongatulus*. At Eston Marsh occur *Gnypeta labilis* and *Cilea silphoides*, and on the shore of the Tees *Homalota vestita* *Philonthus splendens* is found on Stanghow Moor; and Mr. Sachse picked up *Staphylinus pubescens* in Middlesbrough.

Pselaphidae Single specimens of *Tychus niger*, *Pryaxis fossulata*, and *Euplectus signatus*, were met with on herbage at Saltburn

Silphidae *Clambus armadillo* and *Agathidium laevigatum* occur at Saltburn, whilst *Anisotoma badia*, *A. punctulata* (*litura*), and *A. lunicollis*, the last a rare insect, have been taken on the Saltburn sandhills.

Trichopterygidae A specimen of *Ptilium Spencei* was obtained on roadside herbage at Saltburn.

Coccinellidae *Halyzia 22-punctata* is found at Saltburn.

Nitidulidae *Meligethes lumbaris*, and *M. erythropus* both from Saltburn, represent this family.

Lathridiidae *Enicmus minutus* was taken at Middlesbrough, and *Corticaria elongata* at Saltburn.

Scarabaeidae *Geotrupes spiniger* is found at Saltburn, and *Anomala frischii* on the shore of the Tees. .

Elateridae *Athous niger* and *Limonius minutus*, taken on herbage at Saltburn are the two species in this family.

Malacodermidae. At Saltburn *Telephorus lituratus*, and *Malthodes flavoguttatus*, were met with by sweeping.

Ptinidae *Priobium castaneum* occurs at Saltburn.

Cerambycidae *Clytus arietis*, taken at Eston by Mr. Sachse, is the only addition.

Chrysomelidae. Three species of this family, viz.: *Lema lichenis*, *Lamprosoma concolor* and *Longitarsus ater* are recorded from Saltburn.

Curculionidae--*Rhynchites minutus* (*germanicus*), *Apion dichroum* (*flavipes*), *A. vorax*, *A. loti*, *A. marchicum*, *Polydrusus tercticollis* (*undatus*), *Orchestes fagi* (on beech) and *Exomias aranciformis* (*brunnipes*) are the weevils met with at Saltburn during the year.

ORNITHOLOGICAL NOTES FOR 1896-7.

By R. G. CLAYTON.

There is not much to record for the past year, which opened with fine weather, and continued thus until July. About that month rain and low temperatures generally prevailed, but no violent storms, consequently the migration and nesting of birds were not interfered with, or out of the ordinary. Owing to my being able to attend only two of the Club excursions, I regret that of observations at the meeting I noted practically none, those I made applying merely to the commonest species.

I have the following to mention :-

1896.

16TH JANUARY Male Shag (*Phalacrocorax cristatus*) shot in Lonsdale. This species is rarely obtained on our immediate Coast, but four were seen several times during same month, as Mr. T. H. Nelson informs me.

27TH FEBRUARY Redthroated Diver (*Colymbus septentrionalis*) was killed in Middlesbrough Dock, and a few days later a Razorbill *Alcas torda* in same place

4TH SEPTEMBER An immature male Honey Buzzard (*Pernis apivorus*), (one of four, was shot at Redcar; and about same date a Spotted Redshank (*Totanus fuscus*) also at Redcar. I was informed a great Skua (*Stercorarius catarrhactes*) had been shot at sea.

28TH OCTOBER Five Gadwall (*Chaulelasmus streperus*) were shot on the Tees, of which I acquired a male specimen, immature.

Other noticeable birds obtained in the autumn were Sooty Tern (*Sterna fuliginosa*) and Long-tailed Drake (*Harelda glacialis*).

As the Shooting Season ends in February, and our Club year closes shortly after, I have thought it advisable to bring these notes up to that time. Therefore add

1897.

JANUARY Waxwing (*Ampelis garrulus*), Pied Blackbird (*Turdus merula*), both at Worsall

FEBRUARY. Male Goldeneye (*Clangula histrionica*), Female Velvet Scoter (*Aedemia nigra*). Eared Grebe (*Podiceps auritus*), Sclavonian (sic) Grebe (*Podiceps cornutus*), Brent Goose (*Bernicla brenta*), Little Auks (*Mergulus alle*) a number. The above were obtained at the River Mouth or at Redcar. About the end of the month three Whooper Swans (*Cygnus musicus*) were shot near Coatham.

By R. LOFTHOUSE.

March. Coot. One of these birds frequented the Lake at Middlesbrough Park for some weeks about this time.

21. Pied Wagtail. Two noticed near Great Ayton.

22. Chiff-Chaff. Heard and seen at Middlesbrough Park.

This is the earliest date I have record of the arrival of this migrant.

April. 23. Willow Wren. Observed at Park.

April 25. Swallow & Sand Martin. Observed at Park.

April 30. Cuckoo. Observed at Great Ayton.

May 3. Tree Pipit. Observed at Great Ayton.

May 6. White Throat. Observed at Great Ayton.

May 9. Corncrake. Observed at Great Ayton.

May 12. Swift. Observed at Great Ayton.

July 11. Squirrel. One noticed in Woods, near Great Ayton.

Note, -With the exception of the Chiff-chaff most of the Spring migrants were late in putting in an appearance, no doubt owing to the continuous cold weather we had during the month of April.

ORNITHOLOGICAL NOTES FOR 1897.

By R. G. CLAYTON.

Nothing of special interest came under my notice during 1897. The year opened fine, and not until early March was there any hard weather to cause birds to flock together in numbers. The Club excursions which I attended did not bring any rarities under observation, and the only birds which may be recorded as taken in our district were-

SEPTEMBER -Dusky Grebe (*Podiceps cornutus*), Dotterel (*Eudromias morinellus*).

NOVEMBER. - Goosander (*Mergus merganser*), Red-breasted Merganser (*Mergus serrator*), Long-tailed Duck (*Harelda glacialis*).

Owing to the high cultivation of land and close protection of game in the neighbourhood, there are very few opportunities of ascertaining the

occurrence of unusual or scarce species. When such creatures do happen they appear to be secured by the keepers and landowners, without it appearing in the columns of any journal.

By R. LOFTHOUSE

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|-----------|--------------------|--|
| April 10, | Wheatear | Observed near great Ayton |
| April 10 | Ring Ouzel | Noticed near Great Ayton |
| April 11 | Wheatear | Noticed at Middlesbrough |
| April 14. | Willow Wren | Observed, and in song, at Middlesbrough |
| April 14 | Chiff-chaff | Observed, and in song, at Middlesbrough. |
| April 15. | Sand Martin | Observed, and in song, at Middlesbrough. |
| April 20. | Tree Pipit | Observed, and in song, at Middlesbrough. |
| April 21. | Swallow | Observed near Gt Broughton |
| April 21 | House Martin | Observed, near Gt Broughton |
| April 28, | Cuckoo | Observed at Middlesbrough |
| April 28 | Corncrake | Observed at Middlesbrough |
| April 29 | Sedge Warbler. | Observed at Middlesbrough |
| May 3. | Whin Chat | Observed at Sleights |
| May 4. | Lesser Whitethroat | Observed at Middlesbrough |
| May 5 | Swift | Observed at Stokesley |

May 8. Grasshopper Warbler. In hedge near own garden in Linthorpe.

Stayed and probably nested in neighbourhood

Aug, 15 Greenshank Immature bird shot near Redcar

ORNITHOLOGICAL NOTES FOR 1898.

By R G. CLAYTON.

No unusual movements of birds occurred except in the case of Crossbills (*Loxia curvirostra*), which were plentiful in small flocks apparently working the quiet woods along the hill bottoms, during January and February. At sea large numbers of ducks were observed, and again the Long-tailed Hareld Duck (*Harelda glacialis*) was obtained.

The autumn migratory season was unusually fine, consequently birds did not appear much in evidence along the shore or inland. A Mute Swan seemed to have been looking for fresh pastures, and was prematurely stopped by a gun on the river. A Reeve (*Machetes pugnax*) was shot. These birds still straggle every year to our vicinity, as odd immature specimens are not unusual.

I am sorry to observe that the Ring Dotterel (*Ægialitis hiaticula*) is being gradually driven from its last breeding place on the south side of the Tees. The boys from the adjoining villages are constantly over the ground and clear off every egg. With it will disappear the last of the shore birds which bred here, and in such numbers during the time of some now living that in places the nests were so crowded together that it was impossible to walk without damaging the contents

| | | |
|-----------|-------------|---------------------------|
| April 10. | Wheatear | Observed at Linthorpe |
| April 16. | Willow Wren | Observed at Middlesbrough |
| April 17 | Chiff-Chaff | Observed at Tollesby |

April 19 Swallow Observed at Acklam.
 April 21 Cuckoo Observed at Linthorpe
 April 24 Corncrake Observed Linthorpe
 April 24 Tree Pipit Observed at Thornaby
 April 30 House Martin Observed at Middlesbrough
 May 6 Sedge Warbler Observed at Middlesbrough
 May 7 Whitethroat Observed at Middlesbrough
 May 11 Sand Martin Observed at Middlesbrough
 May 30 Spotted Flycatcher Observed at Middlesbrough
 May 30 Whinchat Observed at Middlesbrough
 Oct 15 Fieldfares and Redwings. Noticed several, evidently just arrived at Tod Point near Redcar .
 Oct 15 Golden crested Wren very numerous, especially in a bank leading down to the Jetty, when two or three came out of every clump of grass
 Oct 22 Swallow Several noted
 Dec 26 Shell Drake A female shot near Tod Point, Redcar. I heard of a brood being taken near Tod Point during this last summer.
 Curlew Sandpiper Two or three shot during the autumn

MAMMALIAN NOTES.

By R.. G. CLAYTON,

In January, 1896, a male Otter (*Lutra vulgaris*) was caught near Glaisdale. The following particulars were given. Length 43 inches, girth 16 inches, weight just 14 lbs. A Badger (*Meles taxus*) took up its residence in Kilton Woods in the spring, and an immature specimen was taken near Carlton in Summer. From the latter place I received a Squirrel in November. These animals seem to be spreading in Cleveland. White Stoats were taken at Stainton and Kildale in February, 1897,

1898

In 1896 I recorded a Badger (*Meles taxus*) at Kilton Woods, but shortly afterwards it met with the usual violent end. I have since traced these animals almost continuously from the coast to Swainby Moor. They are rigorously exterminated by the keepers, although what harm they do beyond killing a few of the ever plentiful rabbit it is difficult to understand. Squirrels are still on the increase and seem general everywhere in small woods.

Stoats assuming the white fur have been obtained in about usual numbers, notwithstanding that the last winters and springs have been remarkable for the absence of hard weather, Is it possible that the change has become so fixed and hereditary that it continues after the necessity for it has ceased?

Otters have been taken both last and this year in the valley of the Esk.

PISCES

On November 15th, 1898, Dr. Veitch, the Honorary Curator of Middlesbrough Museum, reports the capture of a Shark in the Tees. He writes: "Early yesterday afternoon two river men ran to earth near the 9th buoy a blue shark

(*Squalus glaucus*), 71 feet long, and weighing about 4 cwt. After many troubles with it, a landing at Middlesbrough was effected without damaging the specimen. Fishermen on the coast have a deadly hate against the creature because of its depredations among their nets whilst pursuing its food; and it is very probable that its last foray was after salmon on their way up the river. It is likely to find a peaceful repose in the N.H. collection of Middlesbrough. Sailors believe that the blue shark swallows its young in an emergency. Viperine snakes are credited with the same faculty. However, living young pristidae have been found in the stomach of the parents; the record of dead ones so found is nil." The stomach of the above specimen only contained a few remnants of crabs.