

CLEVELAND NATURALISTS'
FIELD CLUB

RECORD OF PROCEEDINGS
1903-1904

VOL.II. Part 1.

Edited by the Rev. J. COWLEY FOWLER
B.A., F.G.S.

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Rev. J Hawell M.A., F.G.S

THE REV. JOHN HAWELL, M.A., F.G.S.

Born April 3rd 1855. Died at Keswick, June 21st 1904

In attempting to write a short sketch of the late Editor of The Proceedings of the Cleveland Naturalists' Field Club we do so with profound regret at the loss of such a brilliant member, who was always ready to help it on in every possible way. He loomed large in the history of the Society over which he exercised a predominating influence. The stream of life from which he flowed was one that has added strength and honour to the English nation for many generations but which now is running dry like the old Squirearchy. His father was what is known in the lake district as a "statesman," or "Estatesman," – a class from which Darwin himself was decended; his ancestors appearing to have been substantial yeomen in the Northern borders of Lincolnshire. We are indebted to Mrs Hawell for the following notes on her late husband's life and work.

"Rev. John Hawell, M.A., the Vicarage, Ingleby Greenhow, son of the late Isaac Hawell, of Croft House, Greystoke Gill, Cumberland, born at Lonscale near Keswick, April 3rd 1855; educated at the Grammer Schools of Blencowe and St. Bees, Cumberland, and Queen's College, Oxford, Third Class Natural Science, 1878; B.A., 1878, M.A., 1882. Ordained by Dr. Thompson, Atchbishop of York; Deacon, 1878; Priest, 1879; Vicar of Ingleby Greenhow, 1880; formerly Assistant curate of All Saints, Pontefract, 1878-1879; Chaplain of the Proprietary church at Easby-in-Cleveland from 1899-1904; Fellow of the Geological Society of London, 1898; Chairman of the Ingleby greenhow Parish Council, Member of the Councils of the Yorkshire Geological and Polytechnic Society, the Yorkshire Naturalists' Union and the Yorkshire Parish Register Society, Hon. Local Secretary for the National Society, the church Defence Committee, the Curate's augmentation Fund, the Diocesan Education Society, and the church society for the Promotion of Kindness to Animals, President of the Cleveland Naturalist's Field club, Author of various geological papers printed in the Proceedings of the Yorkshire Geological society, &c.,

Editor of the "Ingleby Greenhow Parish Register, 1539-

1800," with Historical Introduction; and the "Stokesley Parish Register, 1571-1750." Married Sarah Richardson, younger daughter of Frederick Browne, of Blencowe House, Blencowe, Cumberland, and granddaughter of the Rev. John Browne, Vicar of Ashford and Taddington, Derbyshire."

He was also Secretary of the Conchology Sectional Committee and Member of the Geology Sectional Committee of the Cleveland Naturalists' Field Club. On his proposal, in 1895, Sectional Committees were appointed for the purpose of recording and making lists of the fauna and flora of the Cleveland District. The result of the formation of these Committees has been the publication of Proceedings by the Club, these having been published for each year since 1895. The Rev. J. Hawell edited them from the first and was one of the principal contributors.

Papers contributed by the Rev. J. Hawell to the Proceedings:

List of the Mollusca of the Cleveland District.

Bajocian Plant Beds of Yorkshire.

The Evolution of Cleveland Scenery.

Rainfall Records.

Memoirs of Rev. Canon Atkinson and Dr. R. T. Manson.

He frequently acted as guide at summer meetings, the last occasion on which he attended one being at Ingleby on August 29th of last year (1903), when he arranged the programme and acted as guide.

He also lectured to our Society at the Winter Meetings, papers delivered by him being "on the collection and study of Fossils" and on "The Evolution of Cleveland Scenery."

The Society owes its present position and recent greatly improved membership in a great measure to Mr. Hawell's work and influence.

He assisted Professor Kendall, F.G.S., and others in the great work on the Glacier Lake Systems of North Yorks.

He was an all round Naturalist. Besides the subjects he was specially well up in viz :-Geology and Conchology, he took an interest in other sections, and made notes (and collected) on Coleoptera and other Insects, Birds, the Flora, &c., especially with regard to his own district."

" Coming events cast their shadows before them." This was verified in the case of Mr. Hawell; even as a small boy he began a museum - many collections of various things - labeling them in a scientific manner; with his growth grew the dominating passion of his life, and it developed at Oxford where he made the acquaintance of scientific friends and naturally went out in Natural Science, when he took his degree in 1878. Amongst others he had the privilege of the friendship of the late Sir Joseph Prestwich, in whose "Life and Letters by his Wife" we read :-" Another student with whom he kept in touch was the Rev. John Hawell, of Ingleby Vicarage, Northallerton, whom he encouraged to persevere in his work among the boulders of Yorkshire. About a year ago the writer of this memoir received a letter from Mr. Hawell saying 'The one (letter) written to me when I was in the Radcliffe Infirmary suffering from an attack of diphtheria, to which I fell a victim while undergoing examination for the Burdett-Coutts Scholarship, particularly illustrates the kindness of his disposition, of which I have so vivid and reverent a recollection,' "

He was an indefatigable worker and never lost a moment, it is always more satisfactory to wear out than to rust out, and certainly Mr. Hawell far outdid his strength by physical and mental work. rarely going to bed before the early morning had come; arduously examining, cataloguing and arranging fossils, almost every evening of his life, when his day's work was over; think for a moment of the work entailed by cataloguing 20,000 specimens. It was indeed the work of a laborious life. Very charming descriptions remain, fortunately, of a few of his geological and antiquarian excursions. Mr. Hawell's favourite departments in the grand science of geology were "Paleontology" and "Glaciation." Sad to say his career was cut short by a sudden and fatal illness just when his knowledge was ripening and he was becoming a power in the neighbourhood and the scientific world at large-his correspondence being very wide, extending especially over France, Germany, Italy, and other countries, and many were the letters and boxes of fossils which crossed the English Channel. "He did want to live a little longer" in a world which he found so very interesting and felt it very hard to be taken away just as his knowledge was bearing fruit. He was a type of the many thousands of cultured and learned men who have held the Livings in the Anglican Church for almost countless generations, men who were adapted for the positions which they held and into which they seemed to float in a most natural way. Unfortunately this cultured class is passing away to be replaced, as we fear, by mere seminarists; and great will be the loss when scholars and real gentlemen have gone. English social life will be impoverished,

religiously and parochially. A man without a hobby apart from his profession is generally an uninteresting and very often an unhappy man, but with some special object of relaxation life becomes better worth living and fuller every way. Such a man we have before us. In his own profession he was most diligent and his parishoners revered him for his work and sympathy, as a pastor, friend and helper in all the various vicissitudes, pleasures and sorrows of this mortal life.

Theologically he was abreast of the age and kept himself well informed in the highest of all studies, the relationship of God to man and man to God and to his fellow creatures. He was a powerful and thoughtful controversialist as the following letters to the "Yorkshire Post" (1903) prove. They were on the subject of "Religion and the masses."

Sir.-In your to-days issue "interested" makes a most kind and courteous reference to my previous letter, for which I thank him. Let me, however, make a remark or two by way of answer to that part of his letter which is a reply to mine. He argues that the English branch of the Church of Christ "stultifies her former teaching of centuries" by extending the horizon of her outlook in accordance with the advance ever being made in human knowledge of nature and the Bible. He might with equal justice say that I stultify myself by holding, at forty-eight, views somewhat different from those which I held at eight. Unlike the Roman branch, the Church of England lies on no Procrustean bed, but keeps her intelligence open to all truth, Verbal inspiration of Holy Scripture has never been the teaching of the Church of England, though she holds, of course, that "Holy Scripture containeth all things necessary unto salvation," In my capacity of President of the Cleveland Naturalists' Field Club, I am to take the chair in Middlesbrough tomorrow evening while my friend Professor Kendall delivers a lecture on "Early Man and his Relation to the Ice Age." I can assure your correspondent that I would not do this if I supposed that my friend's teachings would be at variance either with the teachings of the Bible which I revere, or of the Church which I love. That they may be inconsistent with the view which in days of weaker illumination the Church took of the meaning of certain passages of Scripture is another matter, and one which does not concern me as a twentieth century Churchman. It is possible that in the fuller light of to day we may place a somewhat different explanation upon some of those passages of Holy Scripture which recount miraculous events from that which our forefathers placed upon them. That which appears miraculous to a child's intelligence sometimes divests itself of its miraculous semblance before the inspection of a full-grown man. Just as there was first of all an evolution of the Bible, so there has since been an evolution of its truth. That there has been an evolution on the part of the English branch of the Holy Universal Church of Christ I need not only refer to the events which took place in that period of her history usually known as the "Reformation" to show. But though the Church may give amended interpretations of certain passages of Scripture, she still recognises therein the presence of the supernatural!

My previous letter has brought me from unknown friends, whom I hereby heartily thank, two "religious" newspapers, one of them the organ of a militant section of Churchmen, the other the organ of a Noneconformist body. They are both inspired by a spirit of narrow intolerance, and have an outlook "cribbed, cabined and confined." Each is a most unlovely presentment of soi-disant "religion." If this is to be the kind of pabulum offered to a would-be religious public, little wonder if wide-awake thinkers, such as "Interested," are driven to find a religion outside the bounds of Christianity".

Meanwhile, we are penalised by an Education Act if we teach a definite Christian faith, We have to pay rates and taxes for the promulgation of a nerveless invertebrate creed, and to help to keep up the buildings and remunerate the secretary of the schools in which that creed is taught, and in addition we have to find the buildings in which the creed in which we believe-the old creed of the land, under the teaching of which it became great - may be taught, and we have to keep up those buildings, while the secretary has to give his work voluntarily. I saw a small bird to-day rest upon a twig seemingly enlarged to twice its size by adhering ice and snow. Down it came immediately. That twig reminded me of Board School religion. It has a seeming plausibility as a *modus vivendi* amid religious strife; but it is unsubstantial as a dream, find when the Christianity of the nation trusts to its sole support down it will come like the bird. Yet it is this form of religion which the unholy alliance of Nonconformists and non Christians is striving so intensely to make universal.

In a second letter-

SIR,-I would crave permission to occupy a few lines of your valuable space in order to say a word or two by way of comment upon the letters of Mr. Goodyear and "Interested," which appear in your issue of this morning. Mr. Goodyear thinks it would be better for ourselves and for the Church if we clergy would recognise that there are very many Board school teachers doing their utmost to raise the religious and moral tone of the children committed to their charge. We do recognise this with keen gratitude, but we recognise also with keenest pain that there is no guarantee that a Board school teacher will be a Christian, and that there are many such teachers who occupy the position of "Interested" outside the bounds of Christianity, while still others hold no religious beliefs whatsoever.

In my boyhood I once had as a master an agnostic - an excellent teacher of the Bible, but who gave us plainly to understand that he did not believe in a great deal of it, I could fill much space in dealing with the disastrous influence of his teaching upon others. In my own case his teaching, and especially the private talks I had with him, led me to make full and earnest inquiry into the foundations on which my faith rested, with the result of establishing that faith on an infinitely firmer basis.

More than 20 years ago I took honours in science at Oxford, and since then my knowledge of science has progressed side by side with my knowledge of Christianity and Church doctrine, and as my outlook has extended I have found these two departments of knowledge more and more in accord.

"Interested" asserts that that. "modern thought and science have destroyed the dogmas of the Christian Church." Not so. We may have a clearer and therefore somewhat differently appearing view of the nature of Biblical inspiration and many other things, but the evolution of the scheme of Salvation which is by Christ is as much in accord with all that science teaches as is that of the evolution of a planet, or the life upon it. The establishment of a Church or Society for the salvation of men with a definite method of admission thereinto, is as understandable on scientific lines as is the formation of a vine for the elaboration of grapes through a series of definite processes. It is the indefinite un-dogmatic Christianity abroad among us, due, I think, it cannot be unfair to say, to the teaching given in Board schools rather than in Denominational schools, that is leading the masses into weakness of belief in Christianity, or on into the non-belief of such persons as "Interested," whose hearts still feel after a religion of some kind. The recently passed Education Act was very unfair to the Church, but I hope that the clergy, at least, are too busy to either actively or passively resist it. Rather let us make the best of it, and give sound Christian and Church teaching in our denominational schools, so that the youth trained in them may be a leavening of the masses growing up with inadequate conception of the Christian system, and likely to give origin in the next generation to a people divorced from Christ. From which fate may God and the Church defend our fatherland !-Yours, etc., JOHN HAWELL

Ingleby Greenhow Vicarage, Middlesbrough, Nov. 27th.

Mr. Hawell had the literary gift of facile writing and in his descriptions of scenery, history, geology, and folk lore he carried the reader pleasantly along, instructing and entertaining him at the same time; sometimes one is reminded of Charles Kingsley, in fact in many respects Mr. Hawell was a similar character, and with both, their relaxations were science and hard work. They both took a broad and wide view of Religion and its Power, of human affairs, and the cause of history, and the progress of humanity as a whole. Had he lived a few years longer we might have looked forward to another delightful book rivalling in interest the well-read, "Forty years in a Moorland Parish," by the late Canon Atkinson, but it would probably have been named "A Quarter of a Century in a Cleveland Parish." Nothing came amiss to him in the Scientific, Theological and Antiquarian World, a stone by the roadside or a field name equally interested him - and as to this old globe, his thoughts ever turned. "The face of the earth was to him," (as to another geologist recently deceased). "The face of a great angel, with infinite smiles and anguish-lines and profound sympathies with peace and suffering stamped upon its features. Every lineament a line of tragical history, full of pathos and sublimity."

But, with deep contemplation of the long history of the earth, and all that its marks and furrows teach the graveyard for millions of years of countless organisms, ever progressing in type and form, until at last the genus homo was reached; he gazed into the remote past and lived in the present a very real life of enjoyment and we doubt

not he would fully have entered into the sentiment of the late Sir E. Burne-Jones whose life was centred on his art, which he loved so well, and enriched so much, when on the very day of his death he said "I should like to paint and paint for seventeen thousand years." And like this great artist Mr. Hawell had a keen sense of the ridiculous and a fund of humour; no one enjoyed a joke more than he did.

Mr. Hawell went up to London to be present at Burlington House on the occasion when Mr. P. F. Kendall read his remarkable paper on "a system of glacier-lakes in the Cleveland Hills," January 8th, 1902. In the discussion, Mr. Hawell said "that he had accompanied the author in very many of his excursions in the Cleveland districts; he had wandered with him through his dry valleys, and assisted him through his boring operations. However convincing the author's excellent presentation of his conclusions and the evidence on which they were based had been, the evidence in the field were still more strikingly so. He had himself resided in the district for the last 22 years, and during nearly the whole of that time had paid special attention to its glacial geology; but very many of the problems which presented themselves were insoluble, until the author came down and threw a flood of light upon them. He regarded the reading of this paper as making an extremely important advance in our knowledge of glacial geology."

With regard to the boring operations here alluded to Mr. Hawell used to relate how he amused the Fellows with his ludicrous description of what happened on one particular boring day in the peat of Bilsdale. Mr. Kendall had put down one or two seven foot rods when all at once the rods went down suddenly and Mr. Kendall sprawled on his nose, in fact he went down, down, down, and just as he was disappearing Mr. Hawell pulled him out by his boot-lace! A Cleveland vicar who knew him well writes that a year before his death Mr. Hawell took from his pocket one day a fossil which he had just received from the Cambridge Professor, he asked him how long ago it was since these fossils were living organisms? He paused, ruminated, and then said, "Fifty million years." A well-known Irish gentleman who was present nearly jumped out of his seat "Och, sure, let's talk about something practical! I've got a man who won't pay his rent, tell me how to get rid of him." Mr. Hawell enjoyed the joke thoroughly, as we know he would. He was a good guide and little escaped his keen eye; he was certainly not like another well-known geologist, the late W. T. Aveline, whose silent demeanour passed in a proverb. "In the morning as he passed a crag of rock, he tapped it with his hammer, and remarked "grits." In the evening on the way homewards he had to chip another block,

and again broke silence with "more grits." Not so our old friend who was full of grit and "wise saws and modern instances." To the Vicar

of Marske he wrote in 1902 on the subject of Field names and other matters. "I am glad to hear you are working out, in conjunction with such an able antiquary as Mr. Fallow matters connected with the history of your parish, I am especially pleased to hear that you are taking up the question of old field-names. I have copied all the field-names in this parish, and I am not without hope of getting the same thing done in most of the parishes of Cleveland, I found, as you are apparently doing, that the investigation threw much light on the old open field system. I am able to trace the boundaries of the old open-fields to a considerable extent. In the Spring and Summer I must try to get you to spare me an hour or two some fine afternoon to walk through your parish paying attention to some of these matters. I do not think I have any special knowledge regarding indications of the "glacial period, etc., in the Parish of Marske. I think there are some remains of peat or forest bed between Marske and Redcar but nearer to the latter, somewhere near the rifle butts, I think. Some years ago Mr. J. M. Meek brought for my inspection some plant remains which he had obtained from the Estuarine Beds of the Lower Oolites, if I remember rightly, somewhere above New Marske. I think he said there was a footpath up the hill close to the place where he obtained them. I should like to visit that spot sometime if I could localise it. Perhaps you may know it. I am not sure that it was near New Marske. The Geological Survey Memoir on "North Cleveland" says "about a mile west of Marske and opposite Red Howls is an exposure of 'shale with hard bands,' which can only be seen under favourable circumstances, as it is so often sand covered. Messrs Tate and Blake give *Ammonites Semicostulatus* and *Ammonites bisulcatus*, from these beds, and refer them to the zone of *Ammonites Bucklandi*. Mr. Geo. Barrow, the Geological Survey Officer, who surveyed the N. Cleveland District, made four visits to the spot without being able to see this outcrop. As you are on the spot, you have a good chance of catching it in an unclothed condition, and if you could get some of its fossils they might prove interesting - of course there is plenty of glacial drift in your parish."

In another letter "of course I have long known that there was a buried forest at Redcar, but I have never given any very special attention to the matter, and have hardly had it before my mind for years at least. I do not remember having heard what you say about it, and an account written by an eye witness would be highly

interesting to me, but I should be sorry to give you any trouble in obtaining it for me. An old man living at South Bank recently sent me a most interesting account of his experiences in 1840, when the artificial lakes at Kildale burst and deluged the country about Great Ayton and Stokesley. I am fond of obtaining bits of information respecting the past history of Cleveland.

Conchology also interested him and in 1897 he wrote to Mr. Thomas :- " I fear I have no report to make this time on behalf of the Conchological Committee. My own collection of British Land and Fresh Water shells being practically complete, such natural history exploration as I have done has been almost entirely in other departments. I made a few records of marine mollusca on the coast, but they are not worth making a special report of. I spent most of the month of June last in the Crag District of Suffolk and brought back material out of which I have since worked out over 300 species of fossils and over 12000 specimens. The sorting and determination of these has absorbed very many of the fragments of time which I have been able to spare for Natural History pursuits. I have obtained a fair number of fossils from the Yorkshire lias during the year, but nothing worthy of special mention. A slab of Ichthyosaurian remains from the zone of *Ammonites Serpentinus* at Port Mulgrave, and a specimen or two of the crustacean *Pseudoglyphæa Etalleni* from a nodule in the zone of *Ammonites communis* at Boulby old Alum Works, are the most interesting Liassic finds that I can call to mind. These were both obtained during the visit of the Yorkshire Geological Society to the coast in the autumn. During that excursion two very notable finds were made at Saltwick Nab, a little outside the Cleveland boundary. Two species of gastropoda obtained by Mrs. Kendall from the zone of *Ammonites Serpentinus* at that point are new to the Yorkshire Lias, and I think, new to science. These I described in a paper read at the Annual Meeting of the Yorkshire Geological Society at Wakefield, in October, under the name of *Turbo Saltirciensis* and *Actæonina Kendallii*. The paper is being printed with an illustrative plate, of which I enclose you a first proof, not quite accurate, in the Annual Proceedings of the Yorkshire Geological Society.

I have in preparation a paper dealing with the Conchology of Cleveland, Land, Fresh-Water and Marine, but it will be some time I fear, before it is sufficiently complete for publication. The Cleveland Club will probably not be able to afford to print its proceedings every year, and if there is not much material ready for this year,

I would suggest that we might delay further publication until next year. By that time I could probably have my paper ready, or at least either the Marine, or Land and Freshwater section of it, if it were considered to be worth including in the Proceedings of the Field Club.

With a view to a better investigation of the Marine Shells and other organisms of the Cleveland Coast I would suggest that the Field Club should endeavour to arrange for a dredging excursion in Tees-mouth during the coming summer."

To Mr. Lofthouse he wrote in 1903. "I have been up to Rudd Scar this morning, taking a hammer with me, but though I did my best I was altogether unable to expose a single bit of *Equiselitis, in situ*. I found, however, a very interesting deposit of "dogger," where no "dogger" has been supposed to exist. I do not know what it would be best to suggest that you should do when you come out here with the Field Club. I could show you the big oak in Greenhow. It struck me to-day that there is a bit of ground that would well repay working right up in the corner of Greenhow Bottom. It is a secluded place and there are some bits of boggy ground. On a fine, mild day I should think you might do well at insects up there. There were plenty of butterflies out to-day. Energetic members of the Club might like to climb the bank above which would bring them on to Botton Head, the highest point of Eastern Yorkshire, where the Ordnance Survey had a station for some time. The summit is crowned by a large tumulus of the date of the "Bronze Age." To the writer he remarked in a letter, July 20th, 1901, on place - names."

"Speaking of the way in which the names of villages grew to be surnames of the people hailing from them, the group of surnames dependent upon your village of Heathwaite as occurring in the Stokesley Register is not without interest. The spellings are Heathwaite, Heathwait, Heathwhaite, Heathwood, Heathwode, Heuthwaite, Hewthwaite, Hewtherd. Hathwait, Hathwhatt, Hathwhitt, Hubert, Hutherd, Huther, Howther. The evolution of surnames is one of the thousand matters of interest upon which the publication of Parish Registers throws helpful light. Indeed there is absolutely no other means so far as I know or can guess of tracing the origin of such a name as Huthbert.

We have here another letter on place names :-

THE PLACE-NAME "WETWANG."

To the Editor of The Yorkshire Post.

Sir,-I am not concerned in the least to defend the derivation of the name Wetwang, the possibility of which I queried in your issue of the 29th ult. The possibility of such an origin only occurred to me at the moment of writing. We must be allowed the pleasure of guessing sometimes at "what's in a name, for though in my last letter I sufficiently indicated the futility of such guessing, especially where local knowledge is wanting, a name-origin cannot always be worked out." I certainly think that Mr. Cole's theory regarding the origin of the name of his parish is the best yet advanced.

I must, however, take exception to Mr. Cole's statement that "wheat was not grown on the Wolds till the present century." It is true that I cannot at this moment definitely prove that it was, but I have no doubt that such proof could be readily obtained. Flour was a common form of rent paid to monasteries &c., in mediæval times, and the mediæval open arable field system has been traced back to the pre-Conquest period. Under the Romans Britain was a great

corn-growing country and Wefwang was near one of the Roman roads. Though the wheat taken from the Egyptian mummy cases may have got into the cases subsequently to the mummies themselves, it has been known long enough, and was as familiar to the Hebrew Psalmist as it is to ourselves. Very possibly when the reindeer roamed the Wolds and the inhabitants thereof used his horns in preparing the ground for crops one of those crops was a wheat crop. The land which was too light for growing wheat in 1735 would not be too strong for those rude implements. Upon its first cultivation the land would be much stronger than it is now, and the soil would contain much more organic matter. The land might be unsuitable for growing wheat last century partly, at least, because much wheat had been grown there in previous centuries.

Regarding the name Wetlands, Canon Atkinson writes to me:-
 "There are two places in this parish (Danby) which were distinguished by that name from about the year 1200 as I know, how much before I can't say. One of them is still called Wedlands or Wetlands Head. Besides I know of the occurrence of the same name in, I suppose, a dozen, (maybe twenty) other cases, all going back to from the thirteenth to the fifteenth century, and to be met with in almost as many Cleveland townships. It is one of the commonest old open-field system names. The oldest form I have is hvedelandes."

In my previous letter there were two misprints. "Kearsley Gath" should have been "Kearsley Garth," and "Thiep Close" should have been "Threp Close." Compare "Threpdwa" in the Rievaulx Cartulary.

Yours truly, JOHN HAWELL.

Ingleby Greenow Vicarage, Middlesbrough,
 December 3, 1897

On finding a rare and simple little white flower on the moors at Scugdale on a lovely day in June, 1901, Mr. Hawell wrote;-The white flower we met with while descending from the moor yesterday was *Trientalis europæa* L., the Chickweed 'WinterGreen.'

Hooker says of its habitat "Subalpine Woods from York northwards, rare and local." "Absent from Ireland." I have never previously met with it to my knowledge.

In October, 1901, he kindly sent a photograph of the Bilsdale Founder's Stone with a copy of the inscription which, however, could not be reproduced as no type of the kind, we believe, is in existence; however it reads "Condit ecclesiam Willelmus nobilis istam intemeratæ nomine sanctæ virginis Hilda." The noble William builds this church in the name of the chaste holy virgin Hilda. This stone of dedication is well-known to antiquaries, and is decidedly worth a visit.

Regarding flint instruments he wrote in 1901 "thank you for forwarding to me Mr. Auberon Herbert's letter to the Standard. It was mentioned to me recently that Mr. Herbert had been contributing to the Times some account of his finds of flint implements (or flints which he supposes to be implements). I forget what his contention is, although I think it was mentioned to me. I think he holds that his flints are the work of either men or apes. The Geologists' Association evidently holds the chipping is due to the action of frost. I remember once walking down the slopes of Shotover Hill, near Oxford, with Professor Prestwich and his geological party. A member of the party submitted to him a flint from which bits had been flaked off. He pronounced it to be a case of frost-flaking. A member asked him whether many of the so-called implements might not be the work of frost. He answered *to that extent* frost might simulate an implement, but an expert is usually able to pronounce as to whether a flake has been struck off by an implement or is due to frost-bite." Mr. Auberon Herbert evidently thinks he knows better than the experts. Possibly he does. Let us hope it may be so. Let him find a few skulls of his apes in his gravel pits and even the Geologists' Association will listen to him: If I obtain more information about these matters I will write to you."

On the Boulder Question he wrote to us in 1903. "I was at Horton-in-Ribblesdale last week with the Yorkshire Geological Society, and took with me the interesting boulder specimen which I brought away from your cabinet. Kendall did not turn up, but I submitted it to two good petrologists. Dwerryhouse, Kendall's assistant at the Yorkshire College, and J. H. Howarth, the Secretary of the Boulder Committee of the Yorkshire Nats. Union and neither of them remembered to have seen anything like it. Howarth begged to take it away with him for further study, and to submit it to other petrologists at the next meeting of the Boulder Committee. He would much like, I think, to place it in the collection of Yorkshire erratics, but will return it to you if you wish. I hope you may be able to find more specimens of it. The large white orthoclases are very conspicuous.

In the introduction to the "Ingleby Greenhow Register", he says, in speaking of Glacial Boulders "we have measured and taken notes of some hundreds occurring within the limits of the parish. A collection made by us of specimens of different varieties has been examined by Professor Bonney and by Mr. C.T.Clough, of the Geological Survey, as well as by ourselves. These specimens afford evidence of a stream of erratics flowing into our locality from the Couth of Scotland, and from the Lake District of Cumberland and Westmoreland. Local rocks, such as the sandstones of the Inferior Oolite, and blocks, of Augite-andesite from the Cleveland Whinstone Dyke are, of course, numerous. Next to these in point of number come Porphyrites from the Lower Old Red District of the

cheviot Hills. The varieties also include Shap Granite, Criffell granite, Syenite, Dolorite, greenstones from Borrowdale, Volcanic Ash from Cheviots, Porphyritic Felsite, Igneous felstone, Ingeous Rock probably from near Loch Lomond, Old Red Trap, supposed to be from near Kelso, Porphyritic Basalt from Carter Fell, Whinsill from Upper Teesdale, Quartzite Greywacke, Hälleflinta, Mudstone, Coniston Flagstone, Carboniferous Limestone, Carboniferous Sandstone, Magnesian Limestone, Old Red Conglomerate, Millstone Grit, Vein quartz (see Fifteenth and Sixteenth Reports of the British Association Committee for recording the position etc., of the Erratic Blocks of England, Wales and Ireland). On one occasion Mr. Hawell found Asbestos in the Whin Sill at Great ayton. In 1903 he wrote a most interesting letter on the Sun and Glaciation. "Thank you so much for the cutting from the *Standard*." I think if it is possible to suppose that the sun may be a variable star we have the very simplest of explanations of the cause of glacial epochs. All the other explanations have presented difficulties to me, and it has been the fashion in the past for geologists to assume that the sun has gradually cooled. Still Astronomers, and even geologists have not been altogether unmindful of the possibility of there being some variability. I find, for example, in Geikie's Text Book of Geology (Edition 1883) a quotation from Prof. tait in which he suggested that "the former greater heat of the sun may have raised such vast clouds of absorbing vapour round that luminary as to prevent the effective amount of radiation of heat to the earth's surface from being greater than at present." A similar cause may, I think have made it even much less. But I do not remember to have seen the matter discussed by any physicist, astronomer or glacialist. Thank you for calling my attention to the fossil tree on Carlton Bank, as I am especially interested just now in the Lower Oolitic Vegetation. I will try to get over there some day soon. And so he did on January 4th last year, when we met in the quarry and found the tree had unfortunately been covered up with debris, however, we saw parts of other fossil trees which are fairly common. This was one of the last scientific walks he took and not long after he began to feel unwell little thinking how soon alas he would see no more of this world's structure!

Geologists sometimes meet with amusing incidents, Hawell used to relate with great glee, an encounter he and a geological party once had with a crusty old farmer on the Yorkshire Coast; they were passing through a field when up comes the farmer to turn them out for trespassing, he was very rough and in any but an amiable mood, as he ordered them away. "We are a peaceful party" urged Mr. Hawell, "we have simply come to look at the rocks and examine the stones and we shall not do any damage," however, this polite remonstrance had little effect. Mr. Hawell in his turn, became rather annoyed at the man's uncouth manner and remarked "why, you might think we were a party of fools." "I dunno but what ye are!"

was the answer, and then the party went on rejoicing and merry at the compliment which had been paid them. With this anecdote we may fairly include one or two extracts from Sir Archibald Geikie's "Scotch Reminiscences."

Some capital stories illustrating at once Scotch caution and Scotch rural simplicity are told in connection with the author's geologising experiences. It was often a great puzzle to the countryside why he should spend his time chipping off pieces of the "stones" of old Scotland to carry away in a bag.

A member of the Geological Survey, whose daily avocation consists in such pursuits, is, of course, specially liable to become the victim of curiosities and suspicion. He finds himself set down now for a postman, now for a doctor, for a farmer, a cattle-dealer, a travelling showman, a country gentleman, a gamekeeper, a poacher, an itinerant lecturer, a ganger, a clergyman, a play-actor.

If he happens to be chatty with strangers he may find himself put down for something else as well. Writes Sir Archibald :-

I was dining with an old friend, the late Mr. Cathcart of Knockdolian, who told me he was quite sure I must have been recently in his neighbourhood. "Only yesterday," he said, "I met the old farmer of G -, who had a strange tale to tell me. 'Dod! Mr. Cairthcart,' he began, 'I ran across the queerest body the ither day. As I was comin' by the head o' the cleugh I thocht I heard a wheen tinkers quarrellin', but when I lookit doon there was jist ae wee stoot man. Whiles he was chappin' the rocks wi' a hammer, whiles he was writin' in a book, whiles fetchin' wi' the thorns, and miscauin' them for a' that was bad. When he came up frae the burn him and me had a long confab, Dod! he tell't me a' about the stanes, and hoo they showed that Scotland was once like Greenland, smoor'ed in ice. A very enterteenin' body, Mr. Cairthcart, but-an awfu' leear.' "

And now, having used up the very scanty materials - all we could obtain relating to a very interesting and noble life devoted to the service of God and the study of nature, we end our very imperfect sketch of the late "guide, philosopher, and friend" of our Club, We take leave of one who was, in the words of a scholarly man - a Cleveland Rector - "head and shoulders above the rest of us." He was indeed a loss to the whole neighbourhood and like poor Clifton Ward, (a Vicar in Mr. Hawell's own Country some 20 years ago, the brilliant Geologist of the Lake District,) he has been greatly lamented; both died long before their natural course was run.

Whatever may be said about the so-called conflict between Theology and Science, it in no way applies to Geology. Theology is not religion but the philosophy of religion, and may from time to time require to be modified as the human mind can grasp more and more of the Divine Idea; like science it is inclined to be over-dogmatic at

times. Science is by no means free from this defect; forgetful that "nothing continueth in one stay," in this World, even in its domains; over and over again science has been obliged to retract her position. Only a few years ago we were told we must believe in some 70 elements, all of which were atomic, but now "Radium" has suddenly come to light and dispersed the "mighty atom," which is no longer an atom at all!

With this the Geologist has no complaint to make, he was satisfied with some 16 of the so-called elements as entering into the composition of the outer part of the globe, but he did sometimes complain when Lord Kelvin only allowed him 100,000,000 of years "unless (as he said) some new source of energy were discovered." That source of energy has now been found and he can have as many millions of years as he requires, and so he is content and happy.

The church has always been intimately connected with the study of Geology: Past Presidents of the Geological Society having amongst them the great names of Buckland, Adam, Sedgewick, and Whewell. Professor Bonney, another one being still alive, and one of the foremost Geologists of the day. Many Clerical Fellows and others have done, and are doing much to promote the study of this grand science.

"The Naturalist" for August, 1904, gives an obituary notice in which it says "The news of the recent death of the Rev. John Hawell, at the comparatively early age of 49, will come as a sad surprise to all naturalists throughout the country, so many of whom were his personal friends. Yorkshiremen will particularly mourn his loss, whilst his own parishoners of Ingleby Greenhow have lost a Vicar to whom they looked for advice and help during the last 24 years.

To the Yorkshire Naturalists Union Mr. Hawell was of great assistance, and his place will be exceedingly difficult to fill. He was President of the Geological Section, Divisional Secretary for N.E. Yorks, and served on several committees. Whatever he undertook to do he did promptly and well. The excursions which he organised in his district were always most successful.

He was largely instrumental in bringing the Cleveland Naturalists' Field Club into its present flourishing condition. Of this Society he was President in 1891, 1895-6, and 1903-4. Under his editorship the Cleveland Club has issued valuable Annual Proceedings since 1895, which contain contributions to the natural history, &c., of the Cleveland area. In these Proceedings Mr. Hawell himself published papers dealing with Mollusca, Geology, Physiography, &c" of N.E. Yorks. The Yorkshire Geological Society is also indebted to him for

papers on geology and palæontology. Under the latter head special mention might be made of his 'Description of Two New Species of Gasteropoda from the Upper Lias of Yorkshire' (1897).

To 'The Naturalist' Mr. Hawell was a frequent contributor and so recently as August last a paper appeared from his pen dealing with the plant remains which he had found in the Oolitic beds of North Cleveland. In this paper he gave an account of the last piece of scientific work he was permitted to accomplish, his subsequent illness preventing him pursuing a work which to him was a pleasure and to science a profit. In addition to the natural sciences Mr. Hawell was well acquainted with the antiquities, folk-lore, &c., of his neighbourhood.

Our thanks are due to the Editor of the "*Naturalist*" for kind permission to use the block from which the portrait has been printed, also to Mr. Baker Hudson, Curator of the Middlesbrough Free Library, for the extract from Mr. Hawell's Will which we have appended, so far as it relates to the Dorman Memorial Museum.

March, 1905.

J.C. FOWLER.

ABSTRACT FROM A LETTER RECEIVED FROM THE SOLICITORS OF THE LATE REV. JOHN HAWELL

"I bequeath to my friends Thomas Ashton Lofthouse, of 62, Albert road, Middlesbrough, aforesaid, Esquire William Young Veitch, of The Crescent, Middlesbrough, aforesaid L.R.C.P. Edinburgh, F.G.S. London, Thomas F Ward, of Parkfield road South, Middlesbrough, aforesaid, Esquire and James Matthew Meek, of 10, Nelson Terrace, Redcar, in the County of York, aforesaid, Esquire, my collection of fossils, rocks, minerals, and shells, with the request and in the confidence that they will deposit the same in some institution for the benefit of the people of Middlesbrough, it being my desire that they should if possible deal with the same so that the Cleveland Naturalist's Field Club and the New Museum at Middlesbrough may benefit by this bequest. I also bequeath to them such of the books in my library bearing on the subjects of Geology and Conchology as they may select to be deposited at the same place as they may select for my collections of fossils, rocks, minerals and shells. And I desire my said friends after this expression of my wishes to exercise their uncontrolled discretion as to the disposal of my said collection of fossils, rocks, minerals and shells, and of the books from my library bearing on the study of these branches of science, and I declare that the above expressions of my wishes as to the disposal of the said articles and effects shall not create and trust or legal obligation.

Referring to the bequest of books, Mrs Hawell desires us to inform you that the before-named gentlemen are at liberty to take all deceased's books on geological and conchological subjects, while Mrs Hawell herself desires to give all other her late husband's books on scientific subjects to the Middlesborough Museum authorities.

THE HISTORY OF EASBY

BY THE LATE REV. J. HAWELL, M.A., F.G.S.

Extracted from "The Stokesley and Ingleby Parish Magazine"

1901 – 1903 by J.C.F.

When I think of Easby, I think not only of the Church and the Hall, the village and the farms, but I think of the stream and the hill and the solid rock which forms the foundation of all. And in considering where I ought to begin in putting down a few notes regarding Easby my thoughts naturally turn to that which lies at the foundation – that which existed first. One might go back a long way in tracing its origin. It is perhaps enough to go back a few millions of years to the time when the rock over which the Leven flows at Easby was being formed. The waters of a sea then covered the site at Easby, a sea peopled by all sorts of creatures. There was the big ichthyosaurus – a fish lizard some 40 feet in length, not unlike those beasts depicted on the pillar in Ingleby church next to the West of the lotus-pillar.

I have never found his remains at Easby, but I have got a bit of his tail at Bilsdale out of beds of about the same age, and on the Coast at Staithes, I have found his ribs and paddles, and spinal column; so I know he was on the prowl in the neighbourhood seeking what he might devour – especially, perhaps the Ammonite. I have found beautiful little Ammonites at Easby, and I dare say that the old Saurian reptile did the same, and enjoyed getting there quite as much, a long time ago; munching a mouthful, measuring from one to six inches in diameter. I have no absolute proof that this old scavenger on the ocean loved this particular diet, but I know he liked fishes for I have seen their scales still existing in his fossilised paunch, and a school inspector once told the Ingleby school-children that a lobster was a fish, and therefore I see not why we should not call the Ammonite a fish. Besides the Ichthyosaurus may have been no more intelligent than a school inspector, and may not have drawn a clear distinction between two classes of animal life, a sort of sea-snail akin to the pearly nautilus and his shell was a beautiful spiral which reminded the men who gave his his name of the horns of Jupiter Ammon. At Whitby they call this shell a snake, and they tell how



Easby Church

St. Hilda charmed off all the heads of the snakes which were a great nuisance there when she founded the Abbey. The sea at Easby at this date was moderately deep. There was a shore some way to the North West and through a wooded land a large river brought trunks of trees which became water-logged and sank and formed the origin of what is now jet. At a later time, the site of what is now Easby was near to a shore, nay at length was dry land or land that was far from dry. At one period about the time when the sandstone now forming the cap of Roseberry was being deposited-horsetails thick as a man's arm grew in the neighbouring marshes and are at this moment to be seen still in the upright position in which they grew. Then down went Easby beneath perhaps 2,000 yards perpendicular of rock and a deep ocean on the top of that. An intelligent person seated on the summit of Roseberry on a bright summer's day, and opening his eyes as an intelligent person may be expected to do, cannot well fail to see that he is sitting on a bed of sandstone which shows current bedding and other evidences that it has been laid down in somewhat shallow water, and that the bed is continued round the hill on which Captain Cook's monument stands, and round Greenhow Botton and Hasty Bank, standing out very prominently at the Wainstones; and it must be evident to his assumed intelligence that the bed must once have been continuous from where he sits right up into Botton and right across to the Wainstones. And if he will reflect, as an intelligent person may be expected to do, he will conclude that the washing out of the material which once filled the Ingleby corner up to the level of the hill tops was a work which must have kept Dame Nature's old scrubbing brush in employ for many a long day, and that there is not a little " history" involved in the operation. But ages intervened before Madame Nature's old scrubbing brush got a start upon that particular little bit of work.

Let our intelligent person pay a visit to the Yorkshire Wolds, and he will find thick chalk deposits which were evidently laid down in a deep sea. Where was the shore of that sea? It is difficult to imagine that it could be anywhere between the Wolds and the Pennines. Therefore it is likely that the chalk, or deposits of that age - an age which alone must have extended through millions of years, for the chalk is largely composed of very minute organisms which lived on the surface of the sea and dropped to the bottom when they died -must once have extended over the Cleveland hills and moors, and that at that date the present site of Easby was thousands of feet below the surface of the sea.

Burns tells us how John Barleycorn was buried - how "they took a plough and ploughed him down, put clods upon his head, but in spite of everything, John Barleycorn got, up again and sore surprised them all. But wonderful as the resurrection of a grain of barley must be admitted to be, the rising again of the site of Easby into the light of the sun is almost 'more notable.

After the time at which the chalk was deposited there are many missing chapters in the history of the neighbourhood of Easby and though much might be inferred, we will pass on rapidly towards the present epoch. The land is rising from the sea - probably by the most gradual stages, since He with whom a thousand years are as one day never needs to hurry - must have suffered very serious waste. Possibly at more than one age this battling with the waves had to be carried through. And when the land had risen well out of the wild waters it was still liable to be acted upon by water in the shape of rain and running streams not to speak of the disintegrating action of frost and other atmospheric agencies. So some 100,000, or it may be 50,000 years ago the neighbourhood came to have pretty much the same general configuration as now. Then for some reason or other a period of intense cold set in. Some say the North Pole changed its position. Some say the Solar System passed through an intensely cold portion of space. Some say that instead of the Gulf Stream which now wraps our islands as in a blanket we had frigid currents from the North. Be that as it may there was continuous ice from the Scandinavia to the Yorkshire Coast. Ice rivers from Scotland and Cumberland flowed down to Easby bringing with them, Scotch and Cumbrian rocks which even today you may pick up in every field in the township.

The intelligent person I have before imagined - and such persons are not altogether imaginary - would naturally enquire the reason why the river Leven hugs so closely the Easby Hills from Kildale round to Easby. The explanation is interesting. I spoke before of the glacier which flowed from Scandinavia in volumes so huge that it infringed on the Yorkshire Coast. It pressed inland as far as about where Lealholme now is, and was of such thickness that it blocked the end of Eskdale and formed a lake therein. I have traced many channels formed by the water which ran into and out of this lake, which I know to have been so deep that there must have been an ice block at the Easby end of Eskdale too. This ice we will take to have come mainly from Teesdale, though there were, as the period went on, fluctuations of an interesting character, and which are so far somewhat obscure to the scientists investigating them. Eskdale, then, had an ice block at each end - the ice being possibly about 1,000 feet in thickness, or perhaps considerably more. As a rule the water from the Guisbrough side flowed into the Eskdale lake, and the outlets were in the direction of Goathland. But, I have recently

discovered that there was almost certainly an overflow at one time from the Eskdale lake into Sowerdale - the dale between the Roman " Castle," at Easby and Captain Cook's monument. Anyone looking at Sowerdale will be able to see that the denudation of it cannot well have been entirely due to the insignificant stream which now percolates through it.

I have before described how at one time at least during what is known as the "Glacial Period" or the "Great Ice Age," a great barrier of ice blocked the Ingleby end of Eskdale, so that the water of the Eskdale lake flowed over into Sowerdale and helped to form that dale. Somewhat later this water was able to flow out at a lower level between the ice-mass and what is now Easby Castle Hill. As the ice gradually shrunk the out-flow came to be at a progressively low level, but still hugged the Castle Hill, clearing away from the slopes of that hill as it gradually descended, the drift material which had accumulated there. And so when the ice had quite gone the Leven had cut its channel close under the hill instead of flowing out in the direction of Battersby Junction, as it probably did before the ice age, and as it might be expected to do under circumstances of normal denudation.

There is a world of interest involved in the tracing of preglacial river courses. We find, for example, that the Swale was once a tributary of the Tees, but I cannot stop at present to tell the tale how it was captured by "the all-devouring Humber." It concerns us more to notice at present that the stream flowing down the upper part of Kildale is aiming directly for the Esk. Why does it all of a sudden change its mind and twist round to the Tees? That it went into the Esk once there can be no doubt. This query is probably connected with another which was put to me one day at dinner by a distinguished geologist who sat next to me; whether did the Scandinavian ice or the Teesdale ice retreat first from the Cleveland Coast? Of course, the Scandinavian ice was the larger mass, but it was further from home. So my friend's query cannot be answered on a *priori* grounds. To answer it one must go into the field and use one's eyes as well as one's reasoning powers. I think that it is possible that in the twists of Kildale Beck, and in the undercliff position of Easby Beck, we have very important evidence tending to a solution of my friend's problem, which by the way, I had tried to solve before he put it to me. If the Teesdale ice blocking the Ingleby end of Eskdale, retreated first, the water of, the Eskdale lake would flow out at the Ingleby end cutting a channel under Easby Castle Hill; cutting also a channel in the same direction for the upper part of the Kildale Beck. Therefore, at the end of that mighty warfare of ice-masses which was fought out in the region of the Tees mouth and the Cleveland Coast in the days of long ago, the big mass although further from home, gained the

final victory. This ancient history is repeating itself now in South Africa.

It is difficult for us to picture to ourselves the state of the land surface as it existed around Easby when the war of the ice-masses was over, and the glaciers had gradually retreated towards the Scandinavian Peninsula, and the Scotch and Lake Country Mountains. The Ingleby corner proved a veritable *cul-de-sac* for the Teesdale ice-streams especially. How did we get the wide embayment running up into Botton, so different from the valleys of natural denudation such as we find them where atmospheric forces had the same rocks to deal with in Bilsdale, Bransdale, and Farndale? In my judgment the present form of the Ingleby Valley is largely due to causes which operated during the glacial epoch. The ice came into our corner and found itself opposed by the barrier of the hills. It knew not where to turn, and as it twisted this way and that way, its mighty and aiding force was exerted upon the rock, much of it of a soft character, which formed the lower portion of the hill-slopes. Then again when the ice-age was coming to an end, and the glaciers to leave our locality, there would be I think a mighty swirl of waters derived partly from the melting ice sweeping round between the hills and the still remaining ice, washing away the rock fragments rubbed off by the ice, and having removed the "scree" eating into the solid rock and removing that too, until the superincumbent rock, weakened and undermined, fell with a plashy thud into the mordent waters, which still swirled on, reducing all solid matter into the form of sand and gravel, and the slips and the sand-beds are there until this day. Of course, it is not likely that the ice took a sudden departure like that of a man who has robbed a bank. I have just been explaining how it had robbed the Ingleby bank, but for all that I think the leave-taking was more like that of a lover saying farewell to his sweetheart, with sundry returnings before he gets fairly on his homeward road.

The ice which had melted back a bit in the Summer advanced again in the Winter. The retreat caused by a few mild seasons may have been counterbalanced by a few succeeding severe ones. I should not be surprised if it took the ice a century or two to say farewell. There is evidence all around us relating to these matters, but the reading of it is a task of peculiar difficulty. But, at length the ice moved off, and must have left the surface of our neighbourhood in, a dirty mess. The surfaces of our higher moors were not ploughed by ice rivers, but much ice and snow must have collected on them, and it is doubtful whether there would be much vegetation clothing them when the ice-age came to an end. The lowland tract would consist of muddy expanses with boulders of all sizes here and there, and numberless little tarns scattered over its surface. Life would gradually find its way back. Some life there would be indeed, all along, Bears and a few other animals and some birds

would be there but now from the droppings of birds would begin to spring a varied vegetation. Seeds would come floating in the wind, or adhering to the bodies of animals. Ducks would come to the little tarns, and to their webbed feet there might be sticking little pond snails, which they had brought from a hundred miles away, and the pond so visited might thereby become in a short time filled with snail-life to furnish food for wild ducks for centuries to come. I have lately made some investigation into the process of filling up one of these glacial tarns of Kildale.

I have already remarked" there is a world of interest involved in the tracing of pre-glacial river courses," but, I stated that I could not then stop to speak of them. I had said there was reason to believe that the chalk sea had extended over Cleveland right up to the Pennines. Well, when the land was raised above sea-level after the age of the chalk, there was a gradual slope from the crest of the Pennines to the Eastward, and a series of rivers would be initiated flowing downwards, according to the dip of the beds. Such rivers are called "consequent" rivers. The upper portion of some of these consequent rivers probably survive to-day in pretty much their original position as the wear, Tees, Swale, Ure, Nidd, Wharfe, Aire, Calder. These rivers, in all probability flowed right down to the East coast. The Ouse, a "subsequent" tributary of the original Aire Humber, working back among the soft strata of the Triassic Valley, has captured many of these rivers and the Tees and Wear have been captured by "subsequents" working from the other end of the valley. What course then did these rivers originally follow? It is easy to race the Ure through the Gilling Gap to the Coast near Filey.

I think it is equally easy to trace the Tees through the Kildale Gap to the sea near Whitby. When the land had been reduced to the condition of a "peneplain," or more or less level track represented to some extent approximately by the topes of our moors, the Cleveland district was raised about the beginning of the Miocene time - the axis of the principal uplift running from Ingleby to Robin Hood's Bay. Then the streams received new force, due to deeper gradients, and the Esk has gone on ever since deepening the valley originally formed by the Tees.

I have said that when the ice finally retreated from Cleveland the surface of the ground would be sprinkled with many ponds. Nature would set to work to get rid of these - she would do this by two principal processes. On the one hand the rains would often fill some ponds to overflowing, and at the point of overflow a channel would be cut. This would in many cases deepen until the pond had been permanently drained off. On the other hand the ponds, especially those without a permanent outlet, would tend to become filled up by the solid matter carried into them by rainwash. Even

where there was little overflow of inorganic matter Nature's efforts at obliteration would be helped forward by organic agencies. For example, pond snails would live and multiply in many of these ponds, and their dead shells would gradually accumulate at the bottom until they might form a very considerable thickness. Mosses and other plants too, might in course of time, form a great thickness of a peaty deposit. I have recently, with the kind help of Mr. P. Huntington, put down a series of borings into the matter filling up one of these old ponds at Kildale and I found that near the centre of the pond, the peat and shell deposits were more than twenty feet in thickness. The Railway cutting near Kildale Station has been cut through this dead pond, and recently we put down a boring to a depth of thirty feet below the point reached by the cutting, or something like forty feet below the original surface at that point. At that depth we had got through the peat and the shells, but we did not meet with any obstruction, and were apparently in a deposit of sandy blue clay washed into the pond in the early stages of its post-glacial existence. When the Railway was made, remains of the Red Deer and the Reindeer were found near the surface at the junction of the peat and marl.

These I understand, were taken away by the contractor, and I have been unable to trace them. As I have a paper in preparation on this deposit for one of the learned Societies, I should be obliged to any reader of this note who could and would help me in the quest.

A member of the Geological Survey some years ago published an account of the deposit, but it is very imperfect and misleading. For example, most of the shells which he records as being found in it are the shells of the landsnails occurring on the surface! Some time ago I examined carefully a sample which I had obtained with equal care. From this I obtained 1,346 shells of pond-snails belonging to a half-a-dozen species, but not a single specimen of land-snail. Altogether I obtained 2,094 organisms from my samples. I have referred to the circumstance that some of the old glacial ponds were filled up with peat, with shelly marl and with soil washed into them. Some were to some extent filled up with iron. Mr. E. H. Wynne-Finch some months ago took me over to inspect certain deposits occurring on his property at Stanley Grange.

These deposits had been laid down in shallow marshy postglacial ponds in which much vegetable matter had been present. Iron, the universal pigment of nature, is present almost everywhere.

In marshy flats, where the organic acids are freely supplied by rotting vegetation the salts of iron are dissolved, and exposure to the air leads to their oxydation, and the iron is thrown down in the form of ferric oxide, which we more commonly call "rust." This becomes mixed with other substances and forms "bog iron ore."

But according to Ehrenberg, the formation of bog-ore is due, not merely to the chemical actions arising from the decay of organic matter, but to a power possessed by diatoms of separating iron from water and depositing it within their silicious framework. There is quite a thick deposit of bog-iron-ore at Stanley Grange, and in an adjoining field the deposit forms a hard thin iron-pan about half-an-inch thick below the present surface; forming an obstruction to the natural drainage of the land.

It is quite time we were getting into the human period of history, though it is perhaps the least interesting. In these scrappy notes we cannot pretend to give even a bare outline of the early history of the neighbourhood. For more information, I would refer readers to a paper which I am pledged to write in the course of the next day or two for publication in the "Proceedings of the Cleveland Field Club," on "The Evolution of Cleveland Scenery." One of these days it is possible I may write a little volume on the Geology of Cleveland, but there are several investigations to be made first. There is buried knowledge around us on every side only needing disinterment by the capable scientist.

My friend Professor Kendall's recent paper on the "Glacial Lake System of Cleveland," has been a revelation even to the most distinguished scientists of the day. But the solution of one problem only brings into view a score of other problems demanding solution. A few days ago my friend wrote "I feel that my work was very superficial, except so far as the very edge of the ice in this district was concerned. Could you not complete the case by working out the details of the closing stages of glaciation in the area between you and Whitby? I am sure there are interesting things to be done, and I have most of the six-inch maps, which are quite at your service if you will do the work." To this I can only reply that there are many things which it would be interesting to do if there were not a thousand other things claiming to be done. With regard to the recession of the ice, I will merely say at present, that it was a slow and irregular process, occupying possibly centuries. Palæolithic man may possibly have lived in our area before the ice came on, but, if so, the ice more forceful than Kishon of old, swept him away. On the retreat of the ice Neolithic man probably closely followed that retreat in company with animals which we now find only in sub-polar regions, and others which have disappeared altogether. Neolithic man was a long headed fellow whose remains are found in long burial mounds, of which we have so far as I know no example in Cleveland, though they occur just outside the area. He was apparently followed and subdued by Bronze man of whom we have probably a very interesting memorial at Easby. He was a round-headed type of man, and built for his departed friends burrows of a round form.

The earliest remains of man that have as yet been discovered in the neighbourhood of Easby were first brought to the attention of archaeologists by myself some years ago, and they are of singular interest. In a commanding position surmounting that remarkable and beautifully wooded and precipitous bank girdled by the Leven before reaching the village of Easby is an earthwork of ancient date, and in an unusually perfect state of preservation. I was guided to its discovery by two local names. The name "Burrow Greens" seemed to imply a "burh" or entrenchment of some sort; the name "Castle Hills" seemed to imply something of the same sort, for in the North of England numerous Castle Hills occur of which the name is due not to a building of wood and stone, but to a simple earthwork, which doubtless originally carried on its circling mound a more or less strong wooden stockade. Where then was this "burh" this "castle" of Easby. I set out one day to make this quest, and



Low Easby – block kindly lent by Mr. J.W. Brotton

without much hope of finding any valid surviving evidence, for Cleveland had had several describers of its history and antiquities, and none of them had said a word of this castle. While believing that an earthwork must once have existed there I fully expected to find that no trace was left; that agriculturalists, who usually set little or no value on these remains of the remote past, who would have levelled the mound filled in the ditch, and ploughed over the whole. It was therefore with as much surprise as pleasure that I found that the castle still survived in an excellent state of preservation.

In my last note under this head I referred to the "Castle" which once existed on the Easby Bank. But it must not be supposed that it was a castle of the usual modern kind. It dates from a time when strongholds were of a much simpler description. What remains at present is simply an earthwork consisting mainly of a raised mound

enclosing a horse-shoe shaped piece of ground. Of course the figure of a horse-shoe does not enclose anything, but in this case the enclosure is completed by what I have elsewhere described as "an almost perpendicularly falling bank." The sides of the shoe are parallel instead of being somewhat convergent as in an ordinary horse-shoe, and the toe of the shoe is, of course, the part furthest away from the precipitous bank-edge. On the outer side of the mound there is a ditch which must once have been deep. The mound, too, must originally have been of considerable height. A year or two ago, with Mr. Emerson's kind permission and help, an excavation was made in the interior of the earthwork, not far from its centre, and it was found that there was an accumulation of about four feet of soil over the original surface of the ground. Most of this must have formed part of the original mound. Perhaps that is not quite a correct statement, for this ancient strength may have been in use possibly for at least a century or two, and as the soil became denuded it may have been replaced time after time with fresh soil brought from outside. This will explain why there is apparently a much greater quantity of soil fallen into the interior than into the ditch, which of course would be kept open so long as the strength was in use. On the occasion of the excavation referred to a flint scraper was found on or near the original surface of the ground, some four feet below the present surface. This was of a type which I have often found on our moors, and which is plentiful in connection with the burial mounds with which the higher points of our moorland are usually studded. We know that these were the tombs of the men who lived during the bronze age, that is from say 1,500 B.C. to 500 B.C.

They had not much bronze, however, and these flint scrapers are the commonest type of implement found among their relics. It is usually supposed that they were used for scraping the skins of animals. Sir Henry Howorth suggests, not very seriously, that they also used them for scraping their own skins. These round-headed, bronze-using men, then, who were buried on the moor tops, formed this Easby earthwork, which of course would have a wooden stockade on its crest. Within this space measuring some 50 yards in one direction by 40 in the other they either lived permanently, or took refuge with their flocks and herds and other belongings in time of danger.

That materials should exist for a history of Easby from far-away pre-historic time to the present day is, of course, by no means to be expected. All-conquering Rome sent to our Island her legions in the middle of the first century before Christ, and more effectively in the middle of the first century after Christ and they were not finally withdrawn until the year 410. But if any evidence whatever of the Roman occupation exists in the neighbourhood of Easby it is yet to be brought to light. Through Cleveland the Romans made roads-

straight-up-hill and down-hill roads as was their wont, for they were a go-ahead people, and drove no motors. They passed along these roads from York and other stations to the coast, breaking their journey perhaps on the way now and then for a few days' hunting. Our neighbourhood was then probably a forest swamp to a great extent, uninviting for settlers certainly, and not without danger for the intrepid hunter. At the present moment, there is in Baisdale an unfenced bog into which a beast not long ago fell, and in which it disappeared entirely. And there must have been a great deal of such ground on the Cleveland lowlands 1,800 years ago. It may be that in days to come the sites of these ancient swamps may yield relics of Roman times entombed on some bright day devoted to the risky pleasures of the chase.

But now let us skip the centuries and come to the Danes who came in swarms upon the Yorkshire Coast in the ninth century. Cleveland appears to have remained to a large extent in its condition of virgin forest until their arrival, They were good farmers, and settled down in dry places, clearing away the trees around them, and bringing the land under the domination of their primitive ploughs. What has Easby to tell us about the Danish period? The name itself is eloquent in this regard. The Danish farmers, having seized upon lands in Yorkshire, were naturally desirous to " call their lands after their own names." And the name "Easby" and the great majority of place names terminating in the suffix " by " witness thereby to their Danish origin The word originally meant an abode or a single farm but in time, as other houses rose around the first established one, it came rather to signify a village. A cow-byre is a place for cows, and a bye-law a law made by the village or township. So Easby, Battersby, Ingleby. signify the houses or villages either belonging to certain individuals whose names are disguised in the first element of the place-name, or named after some local feature.

The second half of the name "Easby" appears to tell us that the Danes made a small settlement there some eleven hundred years ago. What then, does the first half of the name whisper to us? Truth to tell, the whisper is so faint that it is very difficult to catch its accents. Easby is the "place" of something or someone, the question is "of what or whom?" Ingleby and Battersby are the places of two Danish farmers whose names have been crystallized in those names. Poor serfs, they little dreamt that their name would be in daily use century after century in the "Cliffland" which they had so courageously invaded. It is not at all improbable that the name of Easby may also be derived from a personal name. The "s" in the centre of the word suggest a possessive case. Some might be inclined to derive it from one of the corruptions of the Celtic "uisge," which, according to Isaac Taylor, gives us the first part of the name of the River Eamont which name, by the way is a corruption of "Eamot' derived from that most remarkable "motte," or

ancient place of assembly, Maybrough, "the fortification on the boundary," near Penrith. The Celtic word mentioned is certainly responsible for the names of Danby Wiske and of Whiskey, but for a plausible explanation of the name of Easby we do not want to stick a Danish affix on to a Celtic prefix. Mongrel names do occur, such as Nunthorpe but they are usually open to suspicion. Graves, in "History of Cleveland, guesses that Easby signifies Eastby and was so denominated because it was at the east end of the Parish of Stokesley. This is a guess which is quite certainly wrong, and, though the parochial system is said to have been introduced into England some two centuries earlier, I am far from being certain that the locality of Easby was at this date at the east end of a parish of Stokesley, and if it were, the Stokesley people would hardly have the honour of performing the functions of Godfathers and Godmothers in the naming ceremony. If I remember rightly - I am unable to make any reference - there was an Anglo-Saxon Word, which probably had also a Danish form, which signified, in

the first place, "a beam," and in the second place, "a long ridge," from which the name might have come. And certainly, the long ridge round which the Leven winds is a natural feature such as might well have given name to settlement. But most probably the place-name is due to a Danish personal name.

**THE COMMON CROSSBILL (LOXIA CURVIROSTRA) IN
CLEVELAND IN 1904.
B: FRANK R. ATKINSON.**

The Crossbill is a bird I have always taken a considerable interest in, as he is so much out of the ordinary run of birds and one sees so little of him in these parts. Up till last year I had only seen two at large, both derelict migrants. The one I had most opportunity of watching was stranded in treeless Shetland where he had small chance of shewing off the arboreal habits of his kind amongst the stones and seaweed of that rocky coast. It was therefore with very great pleasure that last New Years Day while out for a long tramp over the hills that I spotted a suspicious band of birds in a fair sized larch tree which on nearer inspection proved to be the long hoped-for Crossbills. There were about 30 individuals in this flock which I had only short time to watch as something or other alarmed them and away they went calling loudly to one another and were no more seen. The call is rather like the rolling note of a greenfinch but much louder and the birds are very vociferous on the wing.

After this I took every opportunity of searching for the interesting strangers and after many days had the luck to come across them

again some way from where I had made their acquaintance the first time. After this second rencontre I had frequent opportunities of observing them. I generally found that they were wild at first but on being quietly approached a second time they took very little notice of the intruder. They are remarkably interesting to watch at work on the pendant branch of some cone-laden larch as they busily feed. In form they are portly, plump, heavy, sedate looking birds, but whilst feeding on their favourite food, the seeds of the larch, they show great activity. Climbing and clambering about the branches in any and every position, upside down, sideways down and all ways they are busily engaged in raking out the seeds from the cones. Silent and busy! I never heard one call while in a tree and the only sound to be heard was the pattering on the ground as they let the rifled cones fall. Busy they must be as anyone who will try to take the seeds from a larch cone will easily understand. The seeds are small and there are not many in a cone. The Crossbill is not a small bird and has a plump muscular body to support. Perforce therefore he must work busily during the short winter day to obtain sufficient to satisfy his appetite. But if he has to labour hard for his living he need never fear being out of work. His only competitor, here at least, is the squirrel and be the weather ever so hard his food is still within his reach.

Parrotlike they crawl and climb with help of beak and foot and gather together in bunches where cones are many. Well disposed to one another they seem, and there is no quarrelling although they feed so close to one another and the same cone must often be coveted by two or more. Perhaps they have no time to quarrel.

One would often break off a cone and holding it in his beak swing himself up into the nearest horizontal bough and sitting there, holding the cone parrotwise in one foot would take out the seeds from the cone at leisure. Having finished, the cone is dropped and away sidles the crossbill down the nearest branch to the store of cones. It does not take long before the combined efforts of the flock or of as many as can get into the one tree, clear off all the cones which they do most effectually, and then they move off to the nearest inviting looking tree again.

During the whole time I had them under observation I never saw them in any other tree than a larch and only on one occasion on the ground. This time they flew right out on to the moor and settled on the ling, where they remained quite a long time.

While feeding they generally seem to have several sentries posted in the tops of the neighbouring larches.

I took these birds to be sentries as if they or one of them rose with a loud call the rest of the flock followed them without more ado,

generally however leaving two or three busy feeders behind who joined the main body later.

About sunset they seem to cease feeding and sit about in the tree tops.

There is a very conspicuous difference in the sizes of the various members of the flock, the red and reddish ones being the largest and the green yellow and grey flecked ones the smaller.

Between the first time I saw them and the last occasion on which they were assembled in one flock they received considerable accessions to their numbers so that at the last there must have been close on 200 of them.

Some time about the beginning of March the original large flock had split up into many small companies and three weeks later there were a fair number of odd pairs to be seen about the woods, but the main lot had left their former haunts. I am In hopes that some may have even bred here as I saw one pair as late as the beginning of May.

An unexpected opportunity gave me the chance of examining several specimens of this interesting bird more closely and this investigation proved most interesting.

The Crossbill is very well adapted for his mode of life and is highly specialized in many directions.

When examining this bird the first thing that strikes one is the outstanding feature of the beak from which he derives his popular and scientific names. It is very unlike an ordinary beak and the first glance suggests that the bird has suffered some accident in youth which had caused the points of his beak to cross instead of being opposed to one another as in the case of nearly every other kind of bird except Crossbills. But far from this unusual formation being a deformity it is as we shall find on looking more closely into the matter an adaptation of the beak to form a wonderful and ingenious tool for extracting the seed from the larch cones. The beaks do not cross in the same direction in all cases but cases in which the under beak curves up on the right side of the upper mandible as we look at the bird facing us are considerably more common than in which it comes up on the left side.

I have picked up many cones which had been rifled and with their aid have rehearsed the act of getting out the seed.

The holes and scratches on the cone gave the clue to the manner in which the beak was used.

It is apparent that there is a considerable side leverage on the lower mandible while the seeds are being extracted and if we examine the head of the bird it will be found that the muscles

supplying the force to counteract this side leverage are so developed that the side of the head on which the point of the under beak curves up is quite considerably larger than the other. Assymetry such as this is a rather rare phenomenon in nature.

Continuing our scrutiny we see that the birds nostrils are covered by stiff and woolly looking feathers which apparently exist either for the purpose of preventing dust or chips getting drawn in while they are engaged in robbing the cones of their burden or perhaps to exclude the keen air of their far northern habitat. I incline to think that their use is to keep out dust and chips.

The plumage is very dense and there is a thick substratum of down. This down and the bases of the contour feathers are always grey, the varying colours of the birds being due to the tips and edges of the contour feathers which are of different colours in different individuals. Birds of all colours between light grey through green and yellow to deep vermillion may be found but the female appears never to assume the red plumage

Their feet are large and strong with metatarsus short (the metatarsus is the unfeathered joint of the leg between the foot and true heel of the bird, which is often called the knee unscientifically). The three toes in front and one behind are covered with coarse scales above and beneath are rough and warty with large muscular pads at the Joints. The nails are long and pointed and the two edges beneath are very sharp.

Their wings are long and narrow and the first pinion is generally the longest. The flight feathers are always brownish black with lighter edges partaking of the general colour of the individual bird. The tail is short and forked and of the same colour, the under and upper covering feathers being very long.

Their flesh when dead remains good a very long time perhaps owing to some preservative action of the turpentine contained in their food.

Thus far my own observations.

I, however, add some details gleaned from "Die Voegel Mittel Europas" of Naumann which seem to me of great interest.

Firstly, as to the beak and its shape.

"Quite young crossbills have the beak normally formed as in other birds but the already unequally developed muscles of the head shew in which direction the under mandible will cross the upper one. This condition of the beaks crossing on the one side or the other is therefore not determined by the way in which the bird uses its beak (as was formerly thought) but is already fixed in the embryo (or young before birth.)"

Secondly, as to breeding habits.

"They breed not only in spring but sometimes in the depth of winter, sometimes in summer and sometimes in spring, according to the plenty of food and with small regard to the weather.

Their nests, eggs and young, have been found in exceedingly severe weather and while much snow was present."

Thirdly, with regard to their plumage and its changes.

"The young, before their first moult, are grey spotted and flecked with black. At the first moult they become yellowish or yellowish green and at the second the females acquire a more decidedly yellow or green dress while the males take on the red plumage for the first time, been deep dusky red or reddish. At the third moult and onwards the females do not change but the males become a brighter red and take on a more vivid hue at each succeeding moult."

The consecutive changes detailed above form the normal course but there are all sorts of graduations and variations to be met with owing to the fact that these birds do not undergo a complete moult at any definite time of year as in the case of the majority of birds, but gradually during the whole course of the year they change their old feathers for new, so that it is a rare thing to come across a bird in one uniform dress except in the case of the very old birds which are, of course, in a great minority.

In this gradual moult we may see another instance of the adaptation of the bird for life in a high and cold latitude.

I have every hope of again meeting with my friends the Crossbills another year and of making further observations of their most interesting and unusual manner of life.

**EXCEPTIONAL INFLUX OF BUZZARDS ON THE N.E. COAST
DURING THE AUTUMN OF 1903.**

By FRANK R. ATKINSON

The months of September, October and November, of 1903, witnessed an unusual influx of various species of Buzzards on the N. E. Coast and of these Cleveland received a fair share.

The Rough Legged Buzzard (*Archibuteo lagopus*) was by far the most plentiful, the Common Buzzard (*Buteo vulgaris*) much less so and of the Honey Buzzard (*Pernis apivorus*) one individual only was obtained (Redcar, Oct. 3rd.) to the knowledge of the present writer.

The first date of the appearance of the Buzzards seems to have been about September 14th, and they were still arriving on the coast in the middle of November. This seems to go to shew that the exceptional circumstances which led to their visiting us in such unwonted numbers were of long duration and operated for a period of two months at least.

The rough legged Buzzard appeared in comparatively large numbers and flocks of from three to five individuals were seen in many localities. A flock of even seven is said to have been seen at Glaisdale. These dispersed in a day or two and probably lived a good long time on the extensive moors in the neighbourhood. A fair number of others also were able to persist on the moors, as isolated individuals were shot at intervals up to the summer of 1904. The majority of the immigrants however would pass on and leave the district.

Many of the visitors fell victims to the gun and of those the writer had an opportunity of examining, the majority were young birds. This however, is only to be expected on the autumn flight when about 60/70 per cent of the flocks are young of the year.

This exceptional influx was in all likelihood due to some unusual weather condition in the main breeding haunts of the buzzard in the North and North-east of Europe. We are able 'able to surmise this from the fact that birds such as the Great Grey Shrike (*Lanius Excubitor*) a partial migrant, the Waxwing (*Ampelis Garrulus*) and the Crossbill (*Loxia Curvirostra*) birds that have no regular migration but which visit us in some seasons, which are erratic wanderers in fact, from the same regions in which the Buzzard birds find their chief breeding haunts appeared in unusual numbers during the same season. Their arrivals continued after the stream of Buzzards had apparently dried up, and in the case of the Waxwing and Crossbill lasted till the end of January, 1904.

What the causes were which brought about these movements we can never know for certain but apparently what affected the buzzards affected the other birds mentioned also.

EXCURSION TO REDCAR ROCKS.

By HENRY SIMPSON.

An extra meeting was arranged on Saturday, September 12, 1903, when the members of the Club to the number of upwards of twelve spent a very enjoyable and instructive three hours on Redcar Rocks. Undoubtedly more would have been present, but it was necessary on account of the tide to fix the visit for the morning. It is at no time; either on Saturday or any other day, possible to profitably arrange an excursion to these rocks for an afternoon, because when the tide is low during the afternoon it is always neap, and the rocks are never bare enough to allow of the study of marine botany, &c. Thus the seaside naturalist at Redcar must turn his attention to other fields of observation on the Saturday afternoons. In order to be, to some extent, independent of the tide the party requisitioned two boats, and visited first Saltscar, on which they spent the greater part of the time, and then Westscar. On the Saltscar rocks there was a general search for the sea anemones (actinia), for which these rocks are well-known. A considerable number of fine specimens were observed, but of two varieties only—the *Tealia crassicornis*, or *Dahlia Wartlet*, and the *Sagartia troglodytes* (cave-dwelling). The members looked in vain for the beautiful *Beadlet* (*actinia mesembryanthemum*) which is so plentiful to the east of Saltburn. Crabs in considerable numbers were captured and examined, and some large specimens of the edible crab (*Cancer pagurus*) were appropriated for home consumption, but had to be returned afterwards to their native element, as it was found that the crabbing season having closed on August 31st it was illegal to take them ashore. The *Portunus puber* (fiddler crab), one of the few that can swim, and the spider and masked crabs were also met with. The hermit or soldier crabs (*Pagurus bernhardensis*) were a disappointment, they belied the second name. There were plenty of them and of all sizes but they could not be induced to entertain us with exhibitions of their pugnacity, and show what adepts they are in mutilating each other. Evidently on September 12, 1903, those on Saltscar were peacefully inclined. Of the echidna there were observed the *uraster rubens*, (common five-fingered starfish), the *ophiocoma neglecta* and *rosula* (brittle stars), and *solaster papposa* (sun star)! two of the last-named being very fine specimens. No sea urchins were seen they having apparently returned to the deep sea. Of shells noted during the day there were:—*Murex trunculus*, *purpura lapella* (dog whelk), *buccinum undatum* (common whelk), *liittorina vulgaris* (periwinkle), *trivia pediculus* (nun cowry) *trochus zizyphinus*, *maetra solido.*, *solen siliqua*, *donax antinus*, and *mytilus edulis* (mussel). Among the seaweeds examined were the beautiful *delesseria sanguinea*, *iridia edulis* (dulse), *ulva latissima* (green sea lettuce), *porphyra vulgata* (brown

sea lettuce), fucus serratus and nodosus. On Saltscar wedged in some of the holes, the members came across a number of small dressed blocks of granite, of course water worn. It was thought that these had been lodged there for nearly a hundred years, for they probably were part of the cargo of the Caledonia of Aberdeen, which was wrecked on these rocks on March 25 1808, when 16 out of a crew of 23 were drowned. The vessel was laden with granite. It would be well if excursions could be organised more frequently for the study of marine natural history, not only to Redcar but also along the foot of the cliffs to the south east of Saltburn.

[The Club would be glad to receive papers on the Marine Fauna and Flora of the Cleveland Coast for the Proceedings.

Our thanks are due to Mr. Simpson for kindly arranging this meeting, which I am quite sure was appreciated by all who attended it.-T.A.L.].

OCCURRENCE OF THE BLACK RAT (MUS RATTUS) AT MIDDLESBROUGH.

By T. Ashton Lofthouse

Some few months ago at one of the Winter Meetings held by the Club, a case of Black Rats [*Mus rattus*] was exhibited, the specimens having been taken at Stockton-on-Tees, where the species seems to occur frequently in the old warehouses and buildings in the vicinity of the river Tees. The above exhibit led to one of our members remarking to me (when seeing him some little time after the meeting at his Printing Works, at Middlesbrough), that his workmen had been trapping rats for some time, and he, noticing they were very dark coloured, it occurred to him that they might be the Black Rat. I asked him to send me the next one that was trapped, the result being that I received a specimen on November 11th, 1903, which proved to be, as he surmised, a specimen of the Black Rat (*Mus rattus*). This is a rather interesting addition to our Fauna, especially seeing that Middlesbrough is altogether a modern town, and has practically none of the old warehouses and buildings which this species is said to frequent, our oldest buildings with one or two exceptions only dating back a matter of 60 or 70 years. A local taxidermist informs me that on two occasions within the past two years he has had Middlesbrough specimens. It is possibly a species that is very much overlooked, and is probably of very much commoner occurrence than is generally credited. In regard to this species it states in Bell's British Quadrupeds that "The old English or Black Rat, which is now becoming a rare animal in this country, was, previously to the introduction of its more

powerful congener and persecutor, the Brown Rat, as numerous and as extensively distributed as that species has since become."

Since the above paper was written I have seen specimens of the Black Rat that have been taken at Sir Baylton Dixon & Co's., Shipyard, Middlesbrough, recently, where I understand it is fairly common.

THE MONUMENTAL BRASSES OF CLEVELAND.

By T. M. FALLOW, M.A., F.S.A.

Cleveland is not rich in Monumental Brasses, and there are none of any special interest or beauty. There are three brasses with engraved effigies, three plates with inscriptions, and two stones from which brasses have been stripped.

The most important: as it is also the most interesting of the Cleveland Brasses, is that in the little church or chapel of Roxby in the Parish of Hinderwell: The reduced facsimile of a heel-ball rubbing of the brass, which is given here, explains its character better than a verbal description can. The brass is to the memory of Thomas Boynton, Esquire, who died in 1523, and who, the inscription states, "caused this chyrche fyrst to be halowed and was ye fyrst corse that was beryed in yt." He was the son of Henry Boynton, Esquire, and married Cecily, daughter of James Strangeways, Esquire, of Sneaton, near Whitby. It will be seen, that the composition of the brass is that of a full length figure in armour in the centre, below which at an interval, is a plate with a black-letter inscription in English, and that there are four shields at the corners. The brass has been relaid on the present slab, and part of the sword has been broken off. In the reproduced rubbing the two lower shields have been brought nearer the centre to avoid too great a reduction of the whole device. Each of the shields bears the Boynton Arms – *a fesse between three crescents*. The figure, says Mr. Mill Stephenson, "which is clumsy and ill proportioned, is armed in a collar of mail, breastplate, skirt of taces, with fringe of mail, over which are three very small leaf-shaped tonleteis. The pauldrons, or shoulder pieces, differ slightly in shape, that of the left shoulder having an upright ridge. The elbow pieces also differ slightly. The knee pieces are very large and the abbatons round-toed, with gussets of mail at the insteps, and large rowel spurs. The sword, the greater part of which is lost, is supported by a narrow belt crossing the hips diagonally and having somewhat complicated fastenings." * The figure, it should be added is 25 inches in height.

* Yorkshire Archæological Journal, Vol 17, P. 307.



The most interesting feature of the brass is the inscription in four lines, as follows:-

Pray for the soule of Thom's Boynton of Roysby Esquier who caused this chyrche fyrst to be halowed and was ye fyrst corse that was beryed in yt and decessed the XXIX day of marche the yer of or Lord god MI Vc and XXIIJ on whose soule Jhu haue mercy amen.

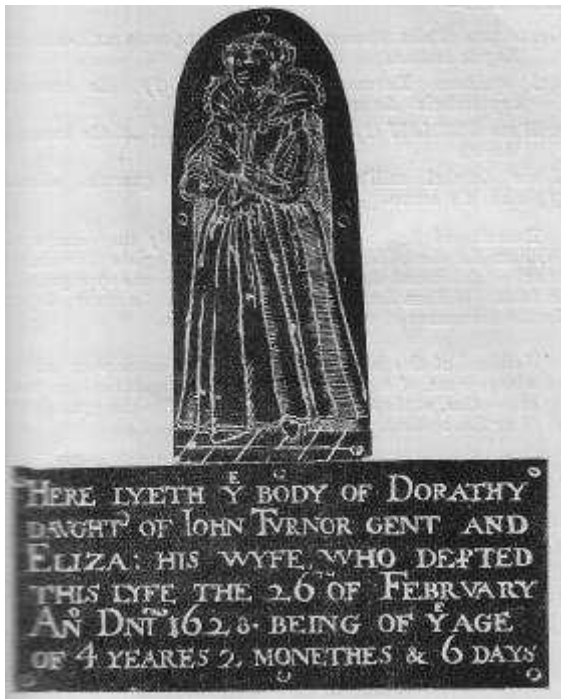
The church can only have been renewed, as there is evidence that a chapel existed at Roxby long before Thomas Boynton's time. The existing church (which was in a disgraceful state of neglect when the writer last visited it in 1903) was mainly rebuilt in 1818, though portions of the north wall are of the seventeenth century, but none of it is as old as Thomas Boynton's "chyrche." It contains one or two tombs of importance, and ought to be better cared for than seems to be the case. Close to the Church once stood the Mansion House of the Boyntons. Only a small corner remains near the west end of the Church. Each year, it is said, crops of large sized snowdrops flower in what was once the garden of the house.

The brass next in importance is that on the floor south of the Altar in Kirkleatham Church, to the memory of Robert Coulthirst. It is a notable instance of a brass of the seventeenth century, following in its arrangement the features of a brass of much earlier date. In the centre is a full length effigy of Robert Coulthirst, 3ft. 10ins. in height. He is represented in civilian costume, and, as in late brasses, is standing in perspective on a pavement or floor. The figure conveys the idea that it is a real portrait of Robert Coulthirst, and not merely the conventional figure of an old man. Round the slab, as was common in earlier brasses, is a narrow rim of brass bearing the legend, and at the four corners of the slab are four shields, each charged with the arms of the Merchant Taylors' Company of London. The legend reads :-

"HERE LYETH BURYED THE BODY OF ROBERT COVLTHIRST
FREE OF MARCHANTAYLORS OF LONDON AND LATE OF
VPLEATHAM GENT: WHO DEPARTED THIS LIFE 7TH OF
AVGV8T 1631 BEING OF THE AGE OF 90 YEARES WHOSE
SOVLE RESTETH WTH ALMIGHTEY.

Robert Coulthirst was the son of Henry Coulthirst, of Upleatham, by Elizabeth Rudd his wife. His daughter Elizabeth married John Turner, of Kirkleatham. One is tempted to moralise on the striking changes in creed, manners, and customs, which old Robert Coulthirst must have witnessed during the six reigns of Henry VIII., Edward VI., Mary, Elizabeth, James I., and Charles I., in which his life was cast.

The other brass, with an engraved effigy, is a plate 11 inches in height, also at Kirkleatham, and just to the east of Robert Coulthirst's. It is of a type of a child's brass not uncommon at the period to which it belongs. The illustration practically describes all that there is to say as to it.



Dorothy Turner, it may be added, was the third daughter of John and Elizabeth Turner, and sister of John Turner Serjeant-at-Law, and of Sir William Turner, Lord Mayor of London in 1669, the munificent founder of the Hospital at Kirkleatham and other

charities connected with that parish.

Besides these two brasses, there is a third at Kirkleatham, in the middle walk of the nave. It is an inscription, in black letter, on a plate measuring 21½ by 4½ inches. The letters are raised instead of being incised, and the inscription is much worn, and portions of it are very bad to make out. It seems to read in four lines :-

**Orate pro ai'abz Thome Lambert et agnetis ux'is sue
de,**

Keyrk letham

**qui quidem Thomas obiit qui'to (?) die mensis
septembris Anno domini.**

**mill'mo CCCCLIIJ (?) et dicta agnes obiit....die mensis
Marcii**

**Anno domini mill'mo CCCCLIIJ (?) quorum ai'abz
p'piciet' d's amen.**

Thomas and Agnes Lambert were probably the parents of, William Lambert, Master of Staindrop Collegiate Church, to which establishment the rectory of Kirkleatham was appropriated in 1423. William Lambert bequeathed in 1485 a silver gilt pix for the Sacrament of the Altar at Kirkleatham.

Westward of this brass is a slab, bearing a much worn indent of a large brass, of a priest in chasuble. Round the edge was an inscription, at the four corners of which were the symbols of the four Evangelists.

At Guisbrough there is a brass plate, 19 by 7 inches, with following inscription in Roman capital letters :-

A VERTVOVS WIFE, THIS MARBLE STONE DOTH HIDE,
ASSVREDLY, A SAINT IN HEAVEN SHEE'S TRYDE;
RELIGIOVS WAS HER LIFE, THE LIKE HER ICND,
IN SEEKING CHRIST, SHE MOST HER TIME DID SPEND.
IF READER THOV HER NAME DESIRE TO KNOW? SVSANNA
CHASTE THE SAME, PYCKERING IOYN'D TOO.

OBIT 22ND Sept: A° 1641.

The remaining brass, with an inscription, is at Brotton. It is much damaged and broken and is fixed to a small stone cross in the

churchyard. The brass was probably cast out of the old church when it was rebuilt in 1740.

At the top of the brass (which in its present broken condition measures 12 by 8 1/2 inches) has been a shield of the Blacksmiths company of London. Only a little of this remains. Below it, in a cursive lettering, is the legend:-

Here lyeth ye body of Tho Pressick,
Blacksmith who departed this life
March ye 24th, Anno Dom' 1710
Aged 74 years

Wrong him not when he is gone
For whilst he liv'd he wronged none
Mors mea vita mihi.

The remaining trace of a brass is in the chancel of the old Church of Skelton, where, on the floor, is a slab with the indent of a brass of a man and wife and several children, and with scrolls for legends. It looks as if it may have held a brass of the latter part of the fifteenth century. Whom it commemorated is unknown.

A GRAVEL DEPOSIT IN LONSDALE.
By FRANK ELGEE.

In September, 1904, I discovered a gravel deposit in Lonsdale, which I think is of sufficient interest to be placed on record, as it has some bearing upon the origin of that curious gap in the Cleveland Hills at Gribdalegate.

The deposit in question I found exposed in the side of Lonsdale Beck about half way between Lonsdale Farm and Lonsdale Cottages. The section was as follows :-

21. Soil and sub-soil.
22. Stiffish bluish clay with small stones.
23. Bedded gravel with shale and sandstone pebbles.
24. Thin band of blue clay.
5. Coarser gravel consisting almost entirely of local sandstone and shale, with quartz pebbles, and a small boulder of Shap Granite.

The origin of this bed of gravel is not far to seek. According to Mr. P. F. Kendall, Gribdalegate has been formed during the Ice Age, by an overflow of water from the Ayton side of the hills into Lonsdale,

caused by a pounding back of the drainage of the small streams that flow into the Leven by the ice*. Hence a considerable quantity of detritus produced by the erosion of the gap would be carried into Lonsdale and laid down under the static waters of Lake Eskdale, of which Lake Lonsdale would form a branch. Gribdalegate has been cut in sandstone and Upper Lias shale; hence the preponderance of those materials in the gravel bed. At the same time the boulder of Shap Granite would be carried into the dale from the ice front together with the vein quartz pebbles and a small piece of Carboniferous Limestone which I found in a field near the gravel bed. The three erratics are very characteristic of the Stainmoor Teesdale glacier.

I think therefore, that this gravel deposit proves in a conclusive manner that Gribdalegate is a deserted glacier lake overflow as suggested by Mr. Kendall. Another fact in favour of this conclusion not mentioned by Mr. Kendall is that the level which Gribdalegate commenced to be formed is the lowest point in the escarpment between Newton Moor and Easby Moor;- and consequently the impounded waters would overflow at this lowest point into Lonsdale.

* Q. G. S. Vol. 58. p. 515.

CLEVELAND LEPIDOPTERA IN 1903.

By T. ASHTON LOFTHOUSE, F. E. S.

*Denotes Species recorded in our Proceedings for first time.

On the whole the weather prevailing during the season was very unfavourable for insect life, in fact, the conditions were little, if any, more favourable than that prevailing in 1902 which was one of the worst (If not the very worst) season I have ever experienced, for the study of insect life.

Owing to the high and cold winds prevailing in the early part of the year, the shallow bloom (which is one of the early attractions to moths) was out and over in a very short time and prove of no use for collecting purposes.

A noteworthy feature of the season was an immigration of the Painted Lady Butterfly (*Vanessa cardui*), the Silver Y Moth (*Plusia gamma*), &c., which took place after a period of fine, dry weather, about the third week in September, and of which further particulars are included in my notes.

DIURNI. *Vanessa cardui*. This butterfly was very common in the district (and along the East Coast from N. to S.) from the 19th to the end of September. Reported as being very abundant at Redcar, (Ingham). Great numbers on sea wall and banks adjoining between Middlesbrough and Redcar. Single specimens noticed in gardens at Linthorpe, Middlesbrough. Several noticed in fields near Ingleby Arncliffe on the 26th. Five specimens noticed at Ingleby Greenhow on the 28th (Frank Elgee).

NOCTURNI. *Acherontia atropos*. A worn specimen of the "Deaths Head" moth taken off the staircase window of house Cambridge Road, Linthorpe, about 7-30 a.m. on June 25th, after very wet night. Most probably a migrant, being very worn; It appeared to be a female and had apparently laid its ova, the body being quite empty.

****Nola confusalis*.** Took a fresh specimen off beech tree trunk in Mulgrave Park, Sandsend, in early June.

***Saturnia pavonia*.** Took a freshly emerged female to Eston Moors, on May 23rd, for the purpose of "assembling" males. I tied it up in the net and suspended it from a post on the open moor between 1.45 p.m. and 3.30, males soon began to "assemble," sometimes five or six flying round at one time and during the above period I should say some forty or more males were attracted, they seemed to come most freely when a little breeze sprang up and the sun shone brightly, they were quite easy to take and did not require netting. One or two males were attracted even after I had placed the female in a chip box in my pocket. One specimen taken was a rather nice variety the colouring being very much darker and blacker and the orange colouring much less conspicuous than usual.

NOCTUÆ **Xylophasia zollikoferi*. I was fortunate in taking a specimen of this, one of our greatest British rarities, off sugar in my own garden at Linthorpe, Middlesbrough, on September 26th. The specimen was sent to Mr C. G. Barrett (on the recommendation of my friend Mr. G. T. Porritt) for identification. He was uncertain as to its identity and took it to South Kensington Museum, where he,

along with Sir Geo. Hampson, Bart., identified it by comparing it with European specimens in that collection. .

There are only two previous British records of this insect as far as I know, one being taken at Deal, in 1867, and one near Aberdeen, in 1871.

It is perhaps worthy of note that the insect was captured during the period when the immigration of *Vanessa cardui* took place.

The specimen taken by me was in good condition and has been exhibited at a meeting of the Entomological Society in London, and a coloured plate of it has been included in the Lepidoptera of the British Islands, by Charles G. Barrett, F.E.S., which is now in course of publication.

Apamea basilinea. A fine, dark variety taken off sugar in garden, at Linthorpe.

Stilbia anomala. A damaged specimen, netted at dusk, near Great Ayton, in August.

Noctua stigmatica. Taken at flowers of wild sage, near Glaisdale, in August.

Noctua festiva var. conflua. Several fine specimens taken off sugar, at Glaisdale, in August.

Xanthia citrigo. Two specimens noticed at Great Ayton. (F. R. Atkinson).

GEOMETRÆ. Eurymene dolobrararia. Specimen taken at Thornaby, by Mr. Proud, on July 1st.

***Acidalia inornata.** Taken in August, near Great Ayton.

***Eupithecia abbreviata,** Bred from larvæ beaten out of oak near Kildale.

***Thera firmata.** Near Ayton, in September, also been taken on Eston Hills.

Anticlea nigrofasciaria. Sandsend.

Cidaria prunata. Taken at Great Ayton (F. R. Atkinson).

***Cidaria associata.** Great Ayton (F. R. Atkinson), also taken at Normanby, in 1904. (T. B.)

***Hydrocampa nymphæata.** Specimens taken at sugar in garden, Linthorpe, Middlesbrough.

***Pterophorus monodactylus.** At sugar in October at Linthorpe.

***Crambus inquinatellus.** Great Ayton.

***Aphomia sociella.** Taken at light, Glaisdale.

***Amphisa gerningana.** Great Ayton.

***Predisca solandriana**. Kilton Woods, near Loftus.

***Halonota bimaculana**. On August 29th, at Ingleby Greenhow.

***Pleurota bicostella**. Taken off grasses on Glaisdale Moors.

CLEVELAND LEPIDOPTERA IN 1904

The weather prevailing during this year was a great improvement on the past two or three years and much more likely to be favourable for insect life, but notwithstanding the favourable weather the *macro lepidoptera* were, if anything, even scarcer than during the past years, this result no doubt being attributable in a great measure to the cold, wet and sunless weather prevailing during the past two or three summers having proved very destructive to insect life in the earlier stages. Another factor which probably militated to a great extent against "sugar" which proved a total failure throughout the season, was the great abundance of "honeydew" which prevailed as a result of the fine, dry weather, which we had for the most part of the summer.

Owing to the scarcity of the larger insects, I devoted my attention more to the *micros* than usual with the result that I have been enabled to add a good many new species to our local list, and one of which proves to be an addition to Mr. Porritt's list of Yorkshire Lepidoptera.

I am indebted to Mr. Jno. Gardner, of Hartlepool, and Mr. Eustace Bankes of Corfe Castle, for assistance in naming most of the *micros* recorded below.

Nocturni. Sphinx convolvuli. Convolvulus Hawk Moth. "I had a specimen of this moth sent from Acklam, in September but having been put in a match box (!) it was unfortunately quite spoiled" (Frank Elgee).

Trochilium crabroniformis. Hornet clearwing. "This fine Insect was very abundant in the Albert Park, in July. Its wood feeding larvæ are working havoc among the black poplar, trees there." (Frank Elgee). .

Noctuæ. Xylophasia rurea var combusta. Taken off sugar, at Linthorpe.

Agrotis saucia. Two specimens at sugar in garden, Linthorpe, in October.

Tæniocampa munda. taken off sallows in Saltburn Wood, in April.

Hadena adusta. "On July 4th, at sugar, in Kensington Road, forming an addition to the list of Kensington Road species and hitherto only recorded from Kildale in our Proceedings. (Frank Elgee).

Heliaca tenebrata. Several flying in sun at Great Ayton in early June, also noticed near Stainton, in Cleveland.

***Chariclea umbra.** Noticed flying over Restharrow flower near Redcar.

***Plusia pulchrina.** At valerian flowers in garden, at Linthorpe.

Geometræ. ***Acidalia remutaria.** Taken in Woods, on June 18th.

***Numeria pulveraria.** Taken in Kilton Woods, in June.

***Oporabia autumnaria.** A variable series of this insect taken at Kildale in October.

***Eupithecia oblongata.** Two specimens taken by M. Clutton at Marske on August 10th.

***Eupithecia sobrinata.** Specimen bred from larvæ taken off juniper in garden at Linthorpe, no doubt introduced with shrubs, which probably came from Dutch nurseries.

Hypsipetes ruberata. Bred from Kildale pupæ, also taken at Ingleby Greenhow and Glaisdale.

Melanthia bicolorata v. plumbata. Few nice specimens of this variety taken at Kildale.

Coremia ferrugata A fine narrow banded variety captured near Great Ayton.

***Melanippe galiata.** Noted on occasion of Field Club's excursion at Glaisdale on July 9th.

PYRAUDES. ***Scoparia ambigualis.** Common. Great Ayton. Kildale, Eston, Kilton, etc.

* **Scoparia cembræ.** At light in July at Grangetown Station.

***Scoparia dubitalis**=[**Pyralella**]. Common at Glaisdale in July.

***Scoparia murana.** Great Ayton.

PTEROPHORI. **Platyptilia gonodactyla*. taken at dusk at Skinningrove on June] 8th.

**Mimæseoptilus plagiodyctylus*. Great Ayton in July.

CRAMBIDÆ. **Crambus margaritellus*. Great Ayton. July

**Crambus perlellus*. Single specimen. Redcar.

PHYCIDÆ. **Anerastia lotella*. Common near Redcar in July.

TOKTRICES. **Peronea mixtana*. Kildale in April.

**Rhacodia caudana*. Kilton Woods. August.

**Cnephasia politana*. Glaisdale in May.

**Cnephasia musculana*. Glaisdale and Eston.

**Sciaphila virgaureana*. Redcar. July.

**Sciaphila pascuana*. Eston Hills. August 27.

**Clepsis rusticana*. Glaisdale.

**Bactra lanceolana*. Ayton, Grangetown, etc.

**Phoxopteryx lundana*. Ayton.

**Ephippiphora cirsiata*. Kilton Woods. August.

**Ephippiphora grandævana*. Redcar. This insect is not recorded in Porrit's list of Yorkshire Lepidoptera. I have taken it occasionally previously on the Durham side of the Tees.

**Symethis oxyacanthella*.= (*Fabriciana*). Easby.

**Xanthoetia hamana*. Redcar.

**Aphelia osseana*. Common among benty grass on sand banks at Redcar. Also taken at Great Ayton.

TINÆ. **Blabophanes rusticella*. Great Ayton and Eston.

**Micropteryx semipurpurella*. Several noticed among beech at Carlton-in-Cleveland in April.

**Plutella cruciferarum*. Glaisdale.

***Depressaria applana**. Glaisdale.

***Gelechia, longicornis**. Eston Hills in June.

***Lita maculea**. Two bred, Glaisdale.

***Lita marmorea**. Redcar.

***Glyphipteryx fuscoviridella**. On railway embankment near Ayton in June.

***Elachista kilmunella**. Kildale.

ROBERT GEORGE CLAYTON

DIED, JUNE 27TH 1903

Mr. R. G. Clayton was the son of Mr. John Clayton, now of Stokesley. On leaving school Mr. Clayton was indentured to the firm of Messrs. J. P. Hornung and Sons, and when that firm mutually dissolved, joined Mr. W. J. Watson, and for over 18 years he was his principal assistant.

He was very well-known in the town and district and enjoyed the confidence of a large circle of friends. He took an active

part in many affairs of the town of Middlesbrough, being a member of the Free Library and Museum Committee, a member of the Literary and Philosophical Society, Conservative Club, and a prominent Freemason, being, at the time of his decease, W.M. of the Orde Powlett Lodge.

He had been a prominent member of the Cleveland Naturalists' Field Club for many years, having joined the Society in 1889; he was elected on the Committee in 1891 and served as a member of that Committee up to the time of his decease, taking an active part in the management of the Club and being a regular attendee at the Meetings. He was also Sectional Secretary to the Ornithology and Mammalogy Committee, and frequently contributed notes to the Club's Proceedings on Ornithology, Mammalogy, etc.

He was a very keen and enthusiastic observer of nature, he having a particularly good acquaintance with the birds occurring in the Cleveland District which he had made a special study of for many years.

ANGUS MACPHERSONBORN, 30TH MARCH 1827, DIED, FEBRUARY 2ND 1904

"Grow old along with me!
The best is yet to be,
The last of life, for which the first was made."

By the passing onwards of Mr. Angus Macpherson a noteworthy personage has been removed from among Cleveland Naturalists. Although of late he was not often found at the Field Excursions of the Club, in the early years of its existence he was one of the most familiar figures at its meetings. One of the first members of the Cleveland Naturalists' Field Club he always took a deep interest in its proceedings since its foundation in 1881 and, despite the fact that he did not claim to be a specialist in any department of Natural History his keen powers of observation and well trained mind made him ever an interesting and instructive companion. He was thrice elected to the Presidency of the Club, 1886, 1887 and 1894, and has at various times lectured to the members.

Mr Macpherson was a man of no small literary ability, and during his long lifetime, was the author of many books and pamphlets. In early life he was joint editor with his brother of the *West of Scotland Magazine*, and later was one of the proprietors and a constant contributor to a weekly journal entitled *Domine* which was started in Middlesbrough in May 1875. One of the most popular editions of Burns' poems was edited by Mr. Macpherson, and locally we are indebted to him for a booklet entitled "Rambles in South Durham and North Yorkshire," which was published in 1888.

Born in Glasgow, in 1827, Mr. Macpherson led a long useful life, and when he passed away in February, 1904, his 77th year, all who had the privilege of his acquaintance mourned the loss of a valued and loved friend. Although living to a ripe old age, Mr. Macpherson always retained vigour of body and a youthfulness of spirit, which, combined with a ready wit, made him the pleasantest of companions. Mentally he was alive to the latest discoveries in every department of human knowledge, for he had one of those rare minds which preserves the freshness of youth whilst attaining the wisdom of years.

REPORT ON THE COLEOPTERA OBSERVED IN CLEVELAND.

In the following notes on the occurrence of Beetles in 1903 and 1904 I have brought together the result of visits to two or three well-known localities in Cleveland. Very few of the rarer species were met with during these years. I have, however, included in this report

a number of common insects known to inhabit these parts of the district, and which may appropriately be recorded here.

COLEOPTERA.

Nebria livida, F.-Common on the Coast at Saltburn

Nebria brevicollis, F.-Common, Saltburn; Stanghow Moor; Kildale.

Nebria gyllenhalii, Sch.-Saltburn, on the Coast; Reservoir at Lockwood Beck.

Clivina fossor, L.- Common at Saltburn.

Bradycellus similis, Dej.-Common on the Cleveland Moors.

Calathus cisteloides, Panz.-,Common, Saltburn; Kildale.

Calathus flavipes, Fourc . Kildale; Stanghow Moor; Redcar.

Calathus mollis, Marsh.-,Common at Saltburn.

Calathus melanocephalus, L.-Common; Saltburn; Stanghow Moor

Anchomenus albipes.-Common; Saltburn; Reservoir at Lockwood Beck; Kilton Wood.

Bembidium nitidulum, Marsh.-Saltburn;StanghowMoor; Common.

Bembidium atrocæruleum, Steph. and **B punctulatum**,
Drap. Common in SaltburnWood.

Trechus minutus, F.-Common at Saltburn; Eston.

Trechus rubens, F.-On the margin of the Reservoir at Lockwood Beck near Saltburn. One specimen in August, 1904.

Agabus guttatus, Payk, and **A. bipustulatus**, L.-Common Saltburn; Stanghow Moor.

Octhebius rufimarginatus. Steph.-In a pond at Saltburn (May, 1903).

Sphæridium scarabæoides, F. and **S. bipustulatum**, F.-Common at Saltburn.

Megasternum boletophagum, Marsh.-Common; Saltburn Kildale.
Oxyroda longiuscula, Er., **O. Opaca**, Grav., and **O. alternans**,
 Grav.-Common at Saltburn

Ocalea castanea, Er.-Saltburn.

Homalota vicina Steph., **H. fungicola**, Thoms, **H. atramentaria**,
 Gyll, and **H. fungi**, Grav - Common at Saltburn.

Autalia impressa, Ol.-Common at Saltburn.

Agaricochara lævicollis, Er.-Saltburn Wood, in decaying fungi
 (October, 1904).

Conosoma lividum, Er, and **C. pubescens**. Grav.-Common at
 Saltburn.

Tachyporus obtusus, L.-Guisborough; Common in Cleveland.

Tachyporus chrysomelinus, L, **T. hypnorum**, F., and **T. pusillus**.
 Grav.-Common at Saltburn.

Tachinus pallipes, Grav.-Saltburn Wood, in decaying fungi
 (September, 1903).

Tachinus rufipes, L., and **T. marginellus**, F.-Common at Saltburn;
 Guisborough.

Megacrollus inclinans Grav. Saltburn Wood, in decaying fungi.
 One specimen on August 28th, 1903.

Bolitobius lunulatus, L. **Bolitobius trinotatus**, Er. and
Bolitobius pygmæus, F.-Common at Saltburn, in decaying fungi.

Mycetoporus splendidus, Grav.-On the sea banks at Saltburn
 (June, 1901).

Quedius lateralis, Grav.-Saltburn Wood, in decaying fungi.-
 Common in September, 1903.

Ocypus olens Müll, and **O. morio**, Grav.-Common in Cleveland.

Philonthus laminatus Creutz.--Common at Saltburn; Redcar.

Xantholinus glabratus, Grav.-Common, Saltburn; Redcar.

Stenus flavipes, Steph. (**filum Er.**) and **S. similis**, Herbst.
 Common at Kiidale.

Oxytelus rugosus, Grav. and **O. tetacarinatus**, Block. Common; Saltburn ; Kildale; Guisborough.

Anthophagus testaceus, Grav.-Saltburn Wood; Kilton Wood. Common.

Deleaster dichrous, Grav. Var. **Leachi**. Curt.-Saltburn; at the foot of the sea-banks. One specimen in June, 1904.

Geodromicus nigrita, Mull.-On the margin of the Reservoir at Lockwood Beck, near Saltburn (July, 1904).

Proteinus brachypterus. F.--Common in decaying fungi, Salt burn; Kildale.

Choleva grandicollis, Er.-On the moor at Kildale, in a dead hedgehog (August, 1903).

Coccinella 10-punctata, L., and **C. 11-punctata**, L.Common at Redcar and Saltburn.

Halyzia 14-guttata, L.-Saltburn; Kilton Wood.

Brachypterus urticae. F. and **B. pubescens**, Er.-Common at Salt burn; Kildale; Guisborough.

Meligethes aeneus, F., **M. viridescens** and **M. picipes**. Sturm.-Common at Saltburn and Kildale.

Coninomus nodifer, Westw.-Common, Saltburn; Guisborough.

Enicmus minutus, L. and **E. transversus**, Ol-Common at Saltburn and Kilton Wood.

Micrambe vini, Panz.--Saltburn; Guisborough

Aphodius fimetarius; L., **A. ater**, De G., **A.merdarius**, F **A. punctato-sulcatus**. Stm., -and **A.rufipes**,)L. Common at Saltburn.

Aphodius pusillus, Hbst.-Saltburn. One specimen June, 1904.

Ægialia arenaria, F.-Common at Saltburn on sandhille.

Geotrupes stercorarius, L.--Common.in Cleveland.

Athous hæmorrhoidalis, F.-Common. Saltburn Guisborough; Kildale.,

Adrastus limbatus, F.-Kilton Wood; Guisborough -Common.

Agriotes obscurus, L.-Common. Saltburn; Kilton Woods.

Agriotes sobrinus, Kies. - Saltburn.

Corymbites quercus, Gyll.-Saltburn; Kilton Woods, Common.

Telephorus lividus, L., **T. pellucidus**, F., and **T. Favilabris**-
Common at Saltburn.

Rhagonycha fuscicornis. Ol.-Saltburn (July, 1903).

Rhagonycha limbata, Thoms, and **R. pallida**, F.-Common. in
Kilton Wood.

Malthodes marginatus, Latr, and **M. minimus**, L. Common at
Saltburn and in Kilton Wood.

Chrysomela polita, L., and **C. staphylea**, L. – Common in
Cleveland.

Phædon tumidulus, Germ.-Common in Cleveland.

Phyllodecta vitellinæ, L.-Common at Saltburn.

Longitarsus anchusæ, Payk, **L. melanocephalus**, De G. and **L. Jacobææ**, Wat -Kilton Wood; Saltburn. Common.

Haltica oleracea, L.-Common at Saltburn.

Crepidodera smaragdina, Fourc.,-On sallows in Kilton Wood
(July, 1903).

Chætocnema hortensis, Fourc.-Redcar.

Plectroscelis concinna, Marsh.-Saltburn; Kilton Wood- Common.

Rhinosimus planirostris, F.-Saltburn, Kildale. Common

Anaspis frontalis, L and **A. rufilabris**, Gyll.-Common at Saltburn.

Apion ulicis,. Forst. and **A. pallipes**, Kirby.- Common at Saltburn
and Guisborough.

Apiori unicolor, Kirby (**platalea**, Germ).-Kildale; August, 1904.

Apion violaceum, Kirby. **A. apricans**, Hbst. **A carduo rum**, Kirby,
and **A. humile**, Germ.-Kildale; Saltburn Common.

Otiorhynchus picipes, F.-Saltburn; Kildale, Common.

Strophosomus coryli, F. -Saltburn; Kilton Wood. Common.

Strophosomus lateralis, Payk.-Common on Stanghow Moor.

Sciaphilus muricatus, F.--Common. Saltburn; Kilton Wood; Kildale.

Polydrusus pterygomalis, Boh.- Common. Saltburn ; Kilton Wood.

Phyllobius urticae., De G., **P. oblongus**, L., **P. pyri**, L., and **P. viridiæris**, Laich.-Common. Saltburn; Kilton Wood.

Philopedon geminatus. F.-Common on the Saltburn sandhills.

Sitones regensteinenis, Herbst, **S. tibialis** Herbst, **S. flavescens**, Marsh, **S sulcifrons**. Thumb, **S. hipidulus**, F., and **S. lineasus** L., - Common at Saltburn

Liosoma ovatum. -Clair, Saltburn, Kilton Woods, Guisborough. Common

Orchestes fagi, L., On the beech at Guisborough.

Dorytomus pectoralis, Gyll. – On sallows at Salburn (July, 1904)

Mecinus pyrafter, Hubst. – Common on *Plantago lanceolata*; Saltburn; Kildale.

Cæliodes quadrimaculatus, L. – Common on nettles in Cleveland.

Ceuthorrhynchus ericæ. Gyll. – Common on ling and heather; Stanghow Moor; Kildale.

Ceuthorrhynchus pollinarius, Forest. – Common on nettles in Cleveland

Rhinoncus pericarpus, L. – Kilton Wood, on *Polygonum*.

*METEOROLOGICAL RECORD, AT LINTHORPE, MIDDLESBOROUGH, IN 1904.
By G. LEVINGAR DEL.

1904
Moors

BAROMETER

	JANUARY.	FEBRUARY.	MARCH.	APRIL.	MAY.	JUNE.
Highest	30.077	30.830	30.187	30.813	30.248	30.352
On the	32nd	28th	24th	19th	20th	4th
Lowest	28.036	28.737	30.194	29.544	27.908	29.432
On the	14th	13th	30th	14th	2nd	25th
Mean	30.932	30.511	30.084	30.826	30.883	30.015

THERMOMETER Max.

Mean	44	42	44	54	57	61
Highest	54	57	56	60	71	71
on the	28th	21st	21st	10th, 25th & 30th	26th	30th
Lowest	34	33	36	47	52	51
on the	25th	28th	7th	2nd	23rd	12th
Min. Mean	34	33	34	40	43	48
Highest	44	39	44	49	63	53
on the	23rd	21st & 22nd	24th	29th	17th	15, 17 & 18th
Lowest	27	27	27	30	32	39
on the	21st & 25th	28th	12th	13th	20th	3rd
Dry Mean	39	36	38	48	52	56
Highest	50	47	53	56	60	63
on the	27th	20th	20th	30th	30th	13th

Lowest	30	30	32	53	41	40
on the	170b	104b & 20th	1, 12 & 15th	1st & 20th	70b & 8th	8, 11 & 12th
Wet Mean	37	35	37	44	47	52
Highest	49	44	51	52	57	53
on the	271b	20th	20th	30th	26th	15th
Lowest	30	28	31	28	40	47
on the	16th	10th	1, 12 & 13th	9th	70b & 8th	8, 11 & 12th
Terrestrial Mean	30	30	31	35	39	44
Highest	40	40	44	45	39	69
on the	28th	22nd	21st	20th	17th	15th
Lowest	20	20	21	28	27	16
on the	22nd	20th	12th	12th & 19th	30th	28th
12° below Surface	38	38	39	44	50	51
Mean	41	40	43	45	53	57
Highest	20th	1st & 23rd	21st	20th	27th	30th
Lowest	35	30	35	40	45	52
on the	1, 2, 17, 18, 25, 26th	17, 18, 19, 23, 20th	2, 3, 4, 5, 6 & 7th	1st & 2nd	3, 10 & 11th	1, 8, 9, 10 & 12th
In Vacuo—						
Bright Mean	49	49	55	71	76	75
Highest	64	65	71	80	92	98
on the	28th	21st	23rd	25th & 30th	27th	13th
Lowest	25	41	40	57	52	65
on the	2nd	55th & 20th	5, 6, 7 & 8th	16th	9th	12th

Dark Moon	01	64	78	104	105	109
Highest	83	94	104	110	133	124
on the	25th	30th	33rd	33th	4th	17th
Lowest	88	47	40	77	66	66
on the	2nd & 9th	6th	14th	10th & 23th	28th	12th
Total Rainfall	1.17	2.40	1.45	1.18	5.16	1.92
Max in 24 hours	22	45	30	35	1.00	.84
on the	14th	1st & 4th	1st	13th	28th	25th
Days on which rain fell	14	21	20	15	16	14
Wind	No. of days average					
N.	1	2	1	6.21	1	1
N.E.	1	5.90	4	5.87	1	9.73
E.	1	10.00	1	5.71	1	5.03
S.E.	5	9.71	1	10.34	1	6.55
S.	10	11.63	6	9.94	9	11.11
S.W.	3	10.61	2	13.10	3	11.11
W.	3	8.20	2	8.06	4	9.28
N.W.	3	8.20	3	7.38	3	7.76
No Wind	10	20	15	23.25	8	4.80

*The Instruments are placed in a Field to the West of "Auburn," Linthorpe, with the exception of the Barometer which is in the Hall and is 48 feet above O.D. The Records are taken at 9 a.m. each morning.

Wet Mean ...	...	55-6	...	52-0	...	45-5	...	52-0	...	37-1
Highest ...	...	66	...	59	...	56	...	54	...	53
on the ...	...	4th	...	5th	...	17th & 19th	...	9th	...	17th
Lowest ...	...	50	...	45	...	30	...	28	...	23
on the ...	...	17, 21 & 22nd	...	28th	...	14th	...	26th	...	22nd
Terrestrial Mean ...	...	44-6	...	39-9	...	35-3	...	31-1	...	27-2
Highest ...	...	56	...	54	...	49	...	49	...	43
on the ...	...	24th	...	6th	...	21st	...	5th	...	6th
Lowest ...	...	34	...	30	...	22	...	17	...	15
on the ...	...	25th	...	20th & 21st	...	13th & 15th	...	26th	...	9th
12 in. below surface ...	...	57-7	...	54-1	...	48-9	...	43-0	...	39-5
Mean ...	...	61	...	58	...	52	...	49	...	44
Highest ...	...	14th & 16th	...	1st, 2, 3 & 6th	...	1st	...	4th	...	5th
on the ...	...	57	...	54	...	45	...	38	...	37
Lowest ...	...	2, 3, 4th & 5th	...	28th	...	16th	...	26th to 29th	...	22nd to 28th
on the ...	...	87	...	113-1	...	91-1	...	71-4	...	48-1
Bright Mean ...	...	96	...	125	...	110	...	98	...	67
Highest ...	...	10th	...	31st	...	2nd	...	6th	...	2nd
on the ...	...	70	...	72	...	59	...	43	...	31
Lowest ...	...	26th	...	23rd	...	30th	...	28th	...	14th
on the ...	...	120	...	82-3	...	67-9	...	54-1	...	60-2
Dark Mean ...	...	134	...	97	...	78	...	72	...	31
Highest ...	...	7 & 18th	...	31st	...	18, 19 & 21st	...	4th	...	2nd
on the ...	...		...		...		...		...

IN VACUO

SECRETARY'S REPORT FOR 1903 - 4

In presenting to the members my SIXTH ANNUAL REPORT it is once more my pleasing duty to record that the work of the Society during the past twelve months has been quite as successful as during any previous period of the Club's existence. Summer and Winter Meetings have been held regularly.

Before giving my Report in detail it would perhaps be interesting to preface my remarks by informing you that, on referring to the First Minute Book of the Club. I find that this is the 23rd year of the Club's existence since organised as the Cleveland Naturalists' Field Club, the Club being established at a meeting held in the "Lit. and Phil," on April 4th, 1881. During the first year the Club appears to have had 72 members. Of these 16 are at present members, and 4 who attended the first meeting are members of the Committee, 8 of them still taking an active part in the work of the Club. The Club during its first year of existence held both Summer and winter meetings, and also published a handbook of Middlesbrough and district for the use of the members of the British Association, who visited the district in the autumn of 1881.

SUMMER MEETINGS.-The programme arranged for the summer months provided for 8 *meetings*, exclusive of the Yorkshire Naturalists' Union meetings. The whole of the meetings were held, and when the weather was anything like fine there was generally a good attendance. During the whole of the summer months, however, the weather was exceptionally cold and unsettled, and it materially interfered with the attendance at two or three of the meetings. At several of the meetings members of the Club or others acquainted with the localities to be visited kindly assisted in arranging the programme and also acted as guides, which arrangement added very greatly to the interest and value of the outings I hope that more members will assist in this, and it would also be a great assistance if a few of the members would undertake to be responsible for the arrangements of, say, one meeting each during the summer.

The FIRST meeting of the season was held on Saturday May 2nd, to Dinsdale, for the purpose of visiting the woods: &c, on the banks of the Tees, and the old Churches at Dinsdale and Sockburn. The weather for some days preceding having been very unsettled and wet, and the outlook on the day not being very promising, no doubt accounted in a great measure for the small number (6) who took part in our first meeting. As it happened, those who attended were well repaid for the risk taken, as the afternoon was fine and warm, the walking was good, and the outing generally was a particularly interesting and enjoyable one. The party, on arrival at Dinsdale

Station about two o'clock, walked from there through the woods to the Spa and along the Durham banks of the Tees to Dinsdale Church. (It was noticed en route that a great many trees had been or were in process of being felled in these woods, which will tend to destroy the beauty of this part for some time to come.) The Church appears to be mostly of recent date, what old remains having been very much restored; the old part remaining *ie* the Nave, Arcade, and a few stones near the base of the Nave walls being apparently the only remains of the Church erected about 1196 this church being, according to historians, on the site of a former Saxon Church.

In the Church were noticed a Norman Font (plain circular), a rather fine Grave Cover of Hog backed fashion and a Memorial Brass with Wivill Coat of Arms on, dated 1668. In the Porch walls were built in some remains of Pre-Conquest Crosses and an old Grave Cover with fine floreated cross carved on and an inscription to one of the Surtees family. In the Churchyard was a Stone Sarcophagus in rather good preservation, and dating probably from about the 12th century. After leaving Dinsdale Church the party crossed the Tees, and walked through the fields on the Yorkshire side of the river to Girsby, a small out-of-the way village pleasantly situated on the banks of the Tees. Very fine views of the river and surrounding country were obtained all along the route from Dinsdale to Girsby. The River Tees was again crossed at Girsby, and after walking a short distance Sockburn Hall was reached, a modern building erected on the site of an older building, very pleasantly situate at the southern point of a big bend of the Tees. In the grounds are the remains of Old Sockburn Church, for which permission to visit had kindly been granted by W. H. Williamson, Esq., the present occupier of the Hall. The Church, which is very much in ruins, is principally of the Early English period. The owner of the estate, Sir Edward Blackett, has had a portion of the ruins covered in for the purpose of protecting the extensive remains of Pre-Conquest Crosses, Grave Covers of Hog-backed fashion, Sepulchral Remains of Anglican Crosses, etc., and a very fine Mailed Effigy of a Conyers of the early part of the 14th century, and some Memorial Brasses of the same family.

Sockburn originally belonged to the Conyers' family, one of whom, Sir John Conyers, a Knight of the 11th century, is said to have slain a large "WORM" or serpent which infested these parts and to have received the Estate as a reward on the tenure of his rendering up his Victorious Sword to every new Bishop of Durham entering at this point. The Sword or Falchion is at present in the possession of the Owner of the Estate, Sir Ed. Blackett, of Matten.

After looking over the many objects of interest at Sockburn, the party returned to Dinsdale Station along the Durham side of the

river by way of Neasham. During the afternoon a number of plants were noticed in flower by the Botanists, but not so many as are usually noted at this season of the year, on the occasion of our first outing. Foliage was very well forward up to the first week in April, but after this it received a very severe check, hard frost in many cases having killed the foliage entirely, and the blight generally has been the means of keeping many plants back that would have been well on but for this.

No insects of any moment were noted by the Entomologists of the party. With regard to Birds the Spring migrants were not very prominent, the only one noticed in abundance being the Willow Wren. The Sand Martin was seen, and the Cuckoo and Tree pipit heard. Resident Birds seemed to be busy nesting, and a Yellow Hammer was flushed from a nest containing three eggs.

The Club were indebted to Mr. H. Hylton Taylor for information supplied with regard to the route, and to W. H. A. Williamson, Esq., and Rev. E. H. Greatorex for permission to visit the Churches of Sockburn and Dinsdale.

KILDALE TO HUTTON.-At the meeting held at Kildale on Saturday, May 16th, there was a good attendance, upwards of 25 being present, including members from Middlesbrough, Redcar, Ingleby, Whorlton, Ayton, Stockton and Nunthorpe.

The afternoon kept fine, although it was threatening, especially in the early part, and this no doubt kept some of our members from attending. The party on arrival at Kildale were met by the President of the Club, the Rev. J. Hawell, M.A., who conducted them over some of the most interesting ground (of geological interest) in the immediate neighbourhood, giving a description of the most prominent features. Among the places visited were a filled-up pool, in the Kildale Moraine in which he (the Rev. J. Hawell) had bored some 30ft. through fresh water shells, etc: The old ironstone workings were examined near Kildale Station, and from this point the various geological and physical features of the surrounding country were commented upon by Mr. Hawell. Before leaving Kildale the archæological features of interest were examined in Kildale Church and Churchyard. These included two old Fonts probably early Norman and Early English respectively. These are laying about exposed in or near the Churchyard. In my opinion, it would have been much better if one of them at any rate, had been used in the new Church, instead of being thrown outside and left exposed to the weather. It is a great pity that more respect has not been paid in the past to old Fonts and other Church fittings which have, no doubt, been of great service to past generations. A few remains of an Early Church were noticed scattered about the Churchyard and there were also some Crosses (consecration?)

built into the Porch walls, and a little zigzag ornament, which may have been the remains of a Norman Church. In the Porch were several Gravestones bearing the Arms of the Percys (formerly Lords of the Manor). I should be glad if some member would give a detailed description of these and the other remains and also of the Danish Bronze and Iron Weapons which were discovered when excavating for the present Church (and which, I believe, are in York Museum) for our Proceedings.

After investigating the ironstone workings a portion of the party walked over to Hutton, by Sleddale, as outlined in the programme, but the bulk of the members walked over *Percy Cross* (only the stump of which remains), Sleddale being viewed *en route*.

Very little of interest was noted by the Ornithologists, Entomologists and Botanists of the party. The afternoon being dull and rather cool, birds and Insects were conspicuous by their absence, and the continued cold weather has kept all plantlife very backward.

BOOSBECK TO GUISBOROUGH.-On Saturday, June 6th, a meeting was held at Boosbeck. Owing to the inconvenient train service members had to leave Middlesbrough at 12-55, and this no doubt militated against a good attendance, for though the afternoon was quite fine (although cool) under a dozen attended

The party on arrival at Boosbeck walked by a path through the fields to Slapewath, investigating the woods, etc., *en route*. At Slapewath the members who came by a later train were met and tea was taken at the inn there. Wiley Cat Wood, the moors above and the woods along the hill side to Guisborough were investigated, but although the ground looked promising very little work of any moment was done by any of the party investigating. Only some 50 species of plants or so were noticed in flower by the Botanists, a very small number for this period of the year, but no doubt this is accounted for by the long-continued occurrence of Easterly and Northerly winds. Very few insects were noticed by the Entomologists for similar reasons, only a few odd specimens being taken, including *T. biundularia*, *Eupithecia indigata*, and *Iariciata*, *A. myrtilli*, and a single larvæ of *Agrotis agathina* about half grown, taken off the heather.

The Club were indebted to Mr. Garbutt, of Kilton Mill, for giving us an outline of the best route to follow from Boosbeck.

The district between Guisbro' and Slapewath is well wooded and the Wiley Cat and Waterfall Woods, would probably well repay working at a little later period.

CARLTON, SWAINBY.-The weather just previous to this meeting, held at Carlton, on June 20th, being very cold and unsettled no doubt prevented many members from securing wagonette accommodation and attending this meeting, however, the day turned out fine and a party of about 21 members and friends attended, some of the members travelling to Carlton by Wagonette, others by rail and one or two by bicycle; the party, on arrival at Carlton, about 8 o'clock, were met by Mr. Harries, of Carlton, and had the advantage of his local knowledge, he acting as guide and conducting the party, some of the members, under his guidance, proceeded up Carlton Bank to a Quarry with a view to securing some fossils but were not very successful, from there the party proceeded to *Bryant's Pond*, which is surrounded by a moss of some extent, the Botanists' here found, among other interesting plants, the Sundew (*Drosera rotundifolia*), leaving *Bryant's Pond* a decent was made into the valley to examine some old jet workings and many signs of jet were found although of poor quality, from here the party walked across the heath down in Snotterdale, and from thence into Scugdale, eventually arriving at Swainby.

The thanks of the Club are due to Mr. Harries of Carlton for information as to route and for kindly acting as guide also to the Rev. J. C. Fowler, for information with regard the locality. I have to thank Mr. Sachse for assistance rendered in carrying out this meeting.

LOFTUS.-The meeting fixed to be held at Carlin How, on July 6th, was attended by upwards of 15 members and friend but owing to the party going on to Loftus instead of Carling How, they missed the gentleman (Mr. Garbutt) who kindly came to meet the party and give them the benefit of his local knowledge with regard to route, etc.

On arrival at Loftus a section of the party went over a portion of the route outlined on the programme. viz. from Loftus to Rockcliffe and, the day being fine, they no doubt had an enjoyable and instructive outing.

Several of our members and some friends journeyed to Loftus by an earlier train and walked from there to Kilton Woods, working the locality for Lepidoptera, but although the afternoon was fine and favourable, insects were not at plentiful, even common species, and no new species were added to the list for this locality.

LEALHOLM-GLAISDALE.-The sixth meeting of the season was held at Lealholm, on Saturday, July 18th, the route being from Lealholm to Glaisdale over ground specially interesting to all who have followed up the Cleveland Glacier Lake system as described

by Mr. Percy, F. Kendall, F.G.S., and our President, the Rev. J. Hawell.

The weather being cold and threatening at Middlesbrough and coming after a very cold week, it no doubt deterred many members from attending and it was perhaps surprising, under the circumstances, that the attendance was so good, there being 14 members and friends present; unfortunately the Rev. J. Hawell was prevented from attending owing to clerical duties in Bilsdale, and another of our members who well acquainted with the route and promised to attend, failed to put in an appearance; this rather left us in a dilemma. as to the route, however, by the aid of maps in the possession of Rev. J. C. Fowler and Mr. Simpson, and with assistance the obtained from the "natives" we were able to trace out the principal features as outlined in the programme; but owing to the mist and drizzle it was not possible to obtain a fine view of the district. Very little work was done by any of the members owing to, the miserable state of the weather. The route seemed to be a very interesting one, and it would be well to repeat the meeting at some future time, when it is hoped that better fortune will await us both as regards weather and guides.

INGLEBY GREENHOW.-A party of 15 took part in the meeting held at Ingleby Greenhow on Saturday, August 20th, when the afternoon being fairly fine (although threatening as usual) and having the advantage of our President, the Rev. J. Hawell, as guide on ground with which he is naturally well acquainted, the outing proved to be a successful one. The route taken by the general party was along the Rosedale Railway as far as the incline foot, from thence into "Midnight," and back across the fields to Ingleby Greenhow. Some interesting plants were obtained by the Botanists, one or two being, I understand, particularly noteworthy. Mr. Hawell pointed out the various features of interest *en route*. Botton Head, the highest point in the Cleveland Hills, was viewed, but not ascended by any of the party to my knowledge.

Two or three of the members who were interested in Entomology, went up to the moors near "Turkey Nab" and worked the heath for one or two insects that it was expected might occur there, but without success, the afternoon being very windy and cool-the evening being worse, if anything- with the result that insect life was notable by its absence, a not unusual occurrence this summer.

YORKSHIRE NATURALISTS' UNION MEETINGS.-Members of the Club attended the Yorkshire Naturalists' Union meetings at Walshford Bridge, Filey, Goathland, and Bowes.

The only meeting held in our district-viz., Goathland, on June 27th-was attended by 7 of our members. the day being exceptionally

fine, they had a very enjoyable and instructive outing, the Geologists being especially fortunate in having Mr. Percy F. Kendall as guide on ground with which he is very familiar and very widely known in connection with, through his able work on "The Glacier Lakes of the Cleveland Hills."

WINTER MEETINGS.- Five meetings were fixed for the Winter Session, four of which have already been held. There has been a good attendance of our members at all the meetings especially seeing that the weather on three out of the four nights was of the worst description, we seeming to be singularly unfortunate in this respect.

The first meeting was held in the Literary and Philosophical Society's Hall, on Saturday November 7th, when a paper given by Mr. T. W. Woodhead, F.L.S., entitled "*Natural History of Water Plants*." The Lecture was open to Lit. and Phil. members, and a fairly large audience attended (especially so having regard to the state of the weather, the night being very foggy and cold), our members being very well represented, members attending from Redcar, Saltburn, Stockton, Middlesbrough, etc.

The Lecturer traced the history and development of water plants from primitive forms, and gave very graphic descriptions of the development of certain plants. illustrating their adaptation to circumstances, their means of propagating their species etc., under often very adverse conditions.

The paper was illustrated by means of Lantern slides, some of which were exceptionally fine.

The Lecture being one of the Y.N.U. series the Lecturer at the conclusion laid before our members and others the desirability of supporting the Union by becoming members, and thus further the aims and objects of the Union exploring and publishing the various fauna and flora of the County. A vote of thanks was proposed by the President of the Lit. and Phil. (Mr. F. H. Marshall), seconded by our Vice-President (Mr. T. F. Ward), and carried unanimously.

On December 3rd the *second* Lecture was delivered by Mr Percy F. Keudall, F.G.S. (ex-President Y.N.U), his subject being entitled, "*Early Man and his Relation to the Ice Age*"

There was a good attendance of our members, and the paper proved to be a most instructive and interesting one. It was well illustrated by means of a good series of slides. Mr. Kendall traced the succession of races of man in the South of England by means principally of the flint and metal instruments used in the chase, beginning with the iron and bronze weapons and tracing backwards

to the very rudest form of flint arrow heads. He also treated on the course of events during the Ice Age, the growth of British Glaciers and their Confluence with the Scandinavian Ice Sheet, Invasion of the East Coast of England by the Ice Stream from the North Sea, the Limits of the Ice, Paleolithic Man and the Associated Animals, Occurrence of Remains in River Gravels and in Caves, Geographical Distribution and Relations to the Glacial Deposits.

At the conclusion of the Lecture a vote of thanks was proposed to the Lecturer by the President of the Literary and Philosophical Society (Mr. F. H. Marshall), seconded by our President (the Rev. J. Hawell), and carried with acclamation .

The Club are indebted to the Rev. J. Hawell in a great measure for inducing Mr. Kendall to come over and give us this Lecture.

The Third Winter Meeting was held on February 4th, 1904 at the Lit. and Phil., when a microscopical exhibition was given under the direction of Messrs. Hy. Simpson and J. W. B. Punch. who had the assistance of Messrs. Percy Hodges, A. E. Ward, and J. W. B. Wright.

Although the night was a very unpropitious one from a weather point of view, it raining as usual, and was altogether disagreeable, the attendance was much better than expected, there being well on to 30 members and friends present, members attending from Stockton, Eaglescliffe, Grangetown, Redcar, Saltburn, and Middlesbrough.

Microscopes were kindly lent by H. Simpson, J. W. B. Punch, J. Percy Hodges, J. W. B. Wright, A. E. Ward, T. F. Ward, R. Howson, Middlesbrough High School, Thos. Brown, J. E. Stead, Stevens, and objects by Mr. Simpson, including a trout fry and other living objects, and slides by many of the members, including a set of bacteriological slides by Mr. Hodges. Mr. S. Lithgow kindly supplied the lamps used for providing the requisite lighting to the microscopes.

A few members exhibited objects of interest, among them being Mr. C. Milburn, who exhibited a Black Redstart that had been taken at the Tees mouth recently, Mr. Simpson a Map of the North and East Ridings of Yorkshire published in 1610, with some very interesting notes as to the district at that period, Rev. J. Hawell and Mr. Punch specimens of a new fossil plant discovered near Marske by Mr. Hawell, and named after him (by Mr. Seward) *Lictyozomites Hawelli*. Mr. Punch also exhibited several other fossil plants, etc., from the same section as above. T. A. Lofthouse exhibited a case containing representatives of most of the British Thorn Moths etc.

An exhibit of "*Radium*" by Mr. J. E. Stead, F.R.S., proved of great interest to all present.

The next meeting was held in the Literary and Philosophical Society's Hall, on March 16th, from 7 to 9-30, when a " fine series of slides was exhibited by *Mr. R. Barnes*, of Harrogate (formerly Head Gardener at Saltburn Pleasure Gardens, and well known to many of the members). The meeting was well attended, there being upwards of 25 members and friends present, and the meeting was one of the most successful of its kind held by the Club. The slides, which had all been prepared by Mr. Barnes himself, were exceedingly fine not only as illustrating fully the development of Mosses and Ferns, but also to microscopists as examples of very skillful workmanship. Mr. Barnes explained the various slides to those present, and as we only saw a portion of his 'extensive series, of slides, I hope to arrange for a further exhibition by him at some future winter meeting.

The best thanks of the Club are due to Mr. Barnes for kindly coming over from Harrogate and providing material for one of the most successful meetings held during the winter session. The Club were also indebted to Messrs: Simpson, Punch, Hodges, and others for assistance in arranging the slides, and also to the following for the loan of microscopes :- Mrs. C. Hood and Messrs. J. E. Stead, J. J. Burton, Thos. Brown, J. W. R. Punch, R. Barnes, J. W. B. Wright, J. Percy Hodges, M. L. Thompson, T. F. Ward, and H. Simpson.

As hitherto, the Lectures have been given voluntarily, the out-of-pocket expenses being paid by the Club, fees for lanterns, and the expenses in connection with printing and postages.

I should be glad to hear from any member who would work the Lantern for us, and save cost in this direction which might be devoted towards holding one or two more winter meetings.

I should also be obliged to hear from members who are willing to contribute papers or arrange meetings for the new Winter Session as soon as possible, as it would be a great advantage to have the dates fixed at the beginning of the season.

COMMITTEE MEETINGS. -During the year eight Committee meetings have been held, with an average attendance of six.

We are again indebted to the Council of the Cleveland Literary and Philosophical Society for permission to use their rooms both for Winter Meetings and Committees.

MEMBERSHIP.-The Club has a membership of 114, this being about the same as last year; Twenty new members have been elected, one of whom has since left the district. During the year several members have resigned or left the district, two have died, and some have had to be struck off owing to non-payment of subscriptions.

It will perhaps be interesting to know that we have members at present in the following places :-Middlesbrough, Eaglescliffe, Nunthorpe, West Hartlepool, Redcar, Saltburn, Ingleby Greenhow, North Ormesby, Ormesby, Great Ayton, Stockton, Carlin How, Darlington, Stokesley, Whorlton, Marske, Normanby, Guisborough, Boosbeck, and Grangetown.

The Rev. J. Hawell and one or two other of our members have been the means of adding to our membership during the year, and I am quite sure if all members had done what they could in this direction that we would have had a very material increase on last year, in place of being practically the same.

The two members who have died during the past twelve months were both prominent supporters.-*Mr. R. G. Clayton*, who died suddenly in June last, was at the time a member of your Committee and also Secretary of the Ornithological Section. He was a keen Naturalist and an active worker for the Society, being a frequent attender at the meetings, and having contributed a good deal of material to the proceedings during past years.

Mr. Angus Macpherson, who died in the early part of this year had been a member of the Society since its formation, and served three years as President, viz.: in 1886, 1887 and 1894. He for many years was a regular attender at our meetings, but latterly owing to, stress of work he had only attended very occasionally. The Club were frequently indebted to him for papers at the Winter Meetings, the last occasion being in December, 1902, when he gave a very interesting paper on Rome. He was well known and greatly respected by all and both he and Mr. Clayton are members who will be very much missed. Short obituary notices are included in these Proceedings.

BOTANICAL SURVEY.-Since our last Annual Meeting I have received some copies of a paper on *Botanical Survey* for Local Naturalists' Societies, by Dr. Smith, of the Yorkshire College, Leeds, to which I should like to call the attention of all interested in the plant life of the District, and I trust some of our members will assist in this work which is being taken up by members of other Societies in other parts of Yorkshire. Quoting briefly from the paper, I may state that "the first step in the case of starting a record is to select a place where the vegetation is fairly uniform, for example, a

wood, a portion of a moor, or some swamp. The size of the area is of minor importance, although there are many advantages in having it as large as possible - say, at least an acre. The identification of the place should be ensured by colouring it on a 6-inch Ordnance Survey Map. For each Plant - Association dealt with there should be a record book, suitable for carrying and using out of doors.

Each worker may begin with one association and extend his operations. This may be done either by recording associations quite distinct in character (e.g., a moor, a wood or a marsh), or by comparing different areas with similar vegetation (e.g., several oak woods).

The scheme aims at more than mere identification of plants, it will train in observation on the social conditions of life in plants. Common plants in time become familiar not only by their flowers, but by their leaves and other organs, and the winter period will furnish material for observations quite as interesting as the summer. After an association has been carefully studied, it would form a suitable topic for a paper to the Society." I should be glad to supply any of our members interested with copies of the Paper.

I have also received from the Secretary of the Durham County Naturalists' Union a Record Book for the use of Field Clubs, which is intended for working districts according to the Botanical Survey method, but they suggest not only recording the plants of the particular area investigated, but the geology and the whole of the Fauna.

I should be pleased to hand the Record Book with the instructions to any member or members who would be willing to make a trial of it during the coming summer.

LIBRARY.-The following Works have been added to the Society's small Library during the year, Vol. II and Vol. III, Part 1 of the Hull Society's Proceeding, presented by the Society; The County Naturalists' Record Book, presented by the Durham County Naturalists' Union; The Naturalist for 1903 and the Yorkshire Naturalists' Union Transactions, Part 24, 25, 28 and 29; Derwent Naturalists' Field Club Publication, Vol. II and IV.

DISTRICTS OF CLEVELAND.- At the last Annual Meeting I suggested that it would be worth the consideration of the Society as to whether it would not be advisable to divide the Cleveland district into 4 or 5 divisions, and during the summer months hold a meeting in each division, and that some member should take one of the divisions and make all necessary arrangements as to programme, route and guides, and personally attend the meeting. This would enable more members to take an active part in the work of the

Society. Nothing definite was decided as regards this, although the meetings held last year were arranged so as to cover each portion of Cleveland as far as possible.

MICROSCOPY.- With regard to the Microscopist Section, the members of this Section, especially Messrs. Simpson and Punch, have rendered great assistance at two of the meetings held during the winter, and it has occurred to me, seeing the great interest that has been taken in these meetings, whether it would not be worth while this Section considering the practicability of holding meetings in the winter months for the purpose of furthering the study of Microscopy and comparing and assisting one another as regards methods of working, &c.

PHOTO SURVEY.- I should be glad if some of our members would take up the question of a *Photographic Survey* of the Cleveland district and by this means record all features of interest both Physical, Geological and Archæological. We have a number of members who are Photographers, and if each contributed 3 or 4 Photographs a year, we would soon have a good number of Records for the Cleveland district. These should be placed in an album or albums, which would be placed in the Society's Library and be accessible to members. This is a most important subject and is being taken up by many Societies in other parts of the Country; a Record of the Physical and Geological features, of the remains of Archæological interest, and also Customs still lingering in out of the way country places, is of the utmost importance in these times, when towns are making such rapid strides and obliterating prominent features of interest so rapidly, they would be invaluable to students and others in years to come; it is also valuable in regard to the River and Sea Coast, and would show in future years if any alteration had taken place through the deep dredging and reclamation works that take place in the river, and by the ravages of sea and weather, and in regard to Archæological objects by weather and also through human agency.

The thanks of the Club are again due to Messrs. Punch, Ward, Sachse and F. Elgee for having had part of the notices of meetings distributed, and by this means saving the Club a considerable sum in postage. I hope they will continue to assist in this way and also that some more of our members will volunteer assistance in this direction. We are also indebted to the Press for notices of our meetings printed from time to time, and also to the North Eastern Railway for the special privileges granted to our members by them.

In conclusion I have pleasure in acknowledging the great assistance rendered me by my Co-secretary, Mr. Frank Elgee, also by the President, the Rev. J. Hawell, and other members for assistance and help at various times, and I trust that all members of

the Club will in future support and further the interests of the Society by extending its membership, by contributing matter for its proceedings, and by assisting in the carrying out of the arrangements for Summer and Winter Meetings. Previous numbers of the Proceedings of the Cleveland Naturalists' Field Club can be obtained of the Hon. Secretary, Mr T.A. Lofthouse, 62, Albert road, Middlesbrough

Vol 1. Part 1	-	Sixpence
Vol 1. Part 2	-	One Shilling
Vol 1. Part 3	-	Two Shillings
Vol 1. Part 4	-	Two Shillings
Vol 1. Part 5	-	Two Shillings

Vol 1. complete in parts to Members 5/=

MEMBERSHIP

Any persons interested in the work of our Society are invited to become Members, even if they are not able to be active Members. Their support would be valuable and would also show that the work of the Society was not altogether unappreciated.

The Annual Subscription is 5/= . Further particulars would be supplied by the Hon. Secretary.