

NORTH STAFFORDSHIRE

Naturalists' Field Club.

ANNUAL REPORT.

1869.

# NORTH STAFFORDSHIRE

## NATURALISTS' FIELD CLUB.

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### Vice-Presidents.

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MR. J. J. RITCHIE.

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MR. R. STEVENSON.

MR. T. TURNER.

# REPORT

*Read at the Fourth Annual Meeting, held April 8th, 1869.*

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YOUR Committee desire, in presenting the usual Annual Report, to congratulate the Members of the North Staffordshire Naturalists' Field Club, on the great success which has attended its proceedings during the past year, the Fourth of its existence.

Not only have the Summer Excursions been more numerous than usual, but your Committee have much pleasure in stating, that the remarks that were made in their last report seem to have produced a marked effect, for all the Excursions of the last summer were very fairly attended, and some of them very well indeed.

The number of Excursions was seven, viz: Maer Church and Woods, Croxden Abbey, Longton Hall and Cockage, Leek and the Roaches, Wybunbury, Oakamoor and Cotton Woods, and lastly to the Hanley Deep Pit.

Not the least agreeable of these Excursions was the one to Croxden Abbey, which was numerously attended. The fineness of the weather, and the extreme beauty of the scenery, together with the vernal freshness of the foliage and vegetation, combined to give a zest to the excursion, which seems to have extended itself to all the others. The Members present were indebted to one of their number, Mr. Lynam, for a very lucid explanation of the chief features of the ruins, the Church of which, in the Early English order of Architecture, must have been one of the finest in the kingdom; and to another, Mr. Garner, for some interesting extracts from an old chronicle, written by "William de Schepeseved, Monk of the Abbey of Crokysden, in Staffordshire," who lived in the 14th century. The Abbey was founded in the 22nd Henry II., A.D. 1176, by Bertram de Verdun, and was occupied by a body of Cistercians from Aulney, in France. The Archæologists having had their turn, the Botanists and Entomologists of the party were later in the day rewarded with several good "finds" in the Valley of

duty to do something for the interests of the Club, during the coming Summer, both by their presence at the Excursions, and by engaging in those scientific objects for which the Club was established, and by the cultivation of which it can alone flourish.

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The Fourth Annual Meeting was held on April 8th, at the Railway Hotel, Stoke, under the presidency of J. E. Davis, Esq., V.P. There was a numerous attendance of Ladies and Gentlemen, and a very pleasant Evening was spent. The business of the meeting was preceded by a few remarks, by way of preface, from the Chairman, in the course of which he said "that the first duty he had to perform brought him to a matter of business. He saw at the head of the paper of *agenda*, 'Introductory Remarks by the Chairman.' Now, he thought, that in order to make remarks at such a meeting, worthy the attention of the Members of the North Staffordshire Naturalists' Field Club, some preparation was requisite. He thought their interest might be very much enhanced, now they had become an established Society, if they had a Chairman or Vice-President elected yearly, whose duty it should be to deliver an Annual Address. It could not be expected that a person coming to the meeting without having any idea as to his being called to preside, could make observations worthy the Society, the objects of the Society, or the attention of the Members. There were two things which he rejoiced he was not at that meeting called upon to do. He was not called upon to urge for further contributions. They, as Field Naturalists, led very frugal lives, and did not indulge in extravagance, so that the subscriptions, which were merely nominal, sufficed to meet their wants. Those who had leisure to join in the excursions, contributed in their proportion to the expenses. Another gratification to him was, that he was not called upon to enlist sympathy on behalf of, or urge attention to, the Society. This was well, because he was a miserable beggar, and a still worse proselytizer. It must not be supposed, however, that the Members of the Society were wishful to keep themselves apart from others. Any who should be desirous to join would be welcomed to the meetings and excursions. He also rejoiced to think, that they did not confine their attention simply to the pursuit of Natural History, as the words 'Field Naturalists' denoted. They did not devote exclusive attention to that. When they went in search of plants, forms of animal life, or fossil remains,



# List of Members, Corrected to June, 1869.

TOTAL NUMBER, 148.

- Acton, Walter, Newcastle.  
 Adams, Captain R., Shelton Lodge.  
 Alcock, John, M.R.C.S., Burslem.  
 Alfieri, Charles, Northwood.  
 Arlidge, J. T., A.M., M.D., London.  
 Blurton House, *Vice-President*.  
 Arlidge, Mrs.  
 Ashwell, Hatfield, Longton.  
 Ashwell, Mrs. H.  
 Ashwell, Mr. H., M.R.C.S., Stoke.  
 Ashwell, Mrs.  
 Ashworth, Taylor, Shelton.  
 Astle, George, M.R.C.S., Newcastle.
- Badnall, Rev. James, B.A., Endon.  
 Bailey John, Newcastle.  
 Bale, T. S. Newcastle.  
 Barlow, Alfred, Stoke.  
 Bateman, James, M.A., F.R.S.,  
 F.H.R.S., and F.L.S., Biddulph  
 Grange, *President*.  
 Beech, James, junr., Longton.  
 Blackie, John, Northwood.  
 Blackshaw, T., Burslem.  
 Blakiston, M. F., Shelton.  
 Blundell, Richard, Shelton.  
 Botham, Rev. G. W., B.A., Shelton.  
 Bradshaw, John, Shelton.  
 Broad, Rev. J. S., M.A., Newcastle.  
 Brough, Wm. S., Leek.  
 Brunt, E., Hanley.  
 Byrne, E., Newcastle.
- Challinor, W., Leek.  
 Cherry, J. L., Hanley.  
 Clarke, Rev. John, M.A., Meerbrook.  
 Clews, Acton, Newcastle.  
 Crowe, Rev. J., Hanley.
- Daltry, Rev. Thos. W., M.A., Madeley  
 Vicarage, *General Secretary*.  
 Daltry, Mrs.  
 Davis, J. E., Longton Hall, *Vice-  
 President*.  
 Davis, W. Haslam, M.R.C.S., Hanley  
 Dawes, John, M.R.C.S., Longton.  
 Dawes, Mrs.  
 Deuser, J. P., Leek.  
 Dickenson, Alfred, Hartshill.  
 Dix, Alexander M., Shelton.  
 Dunkley, Edwin, Penkhill.
- Earl, E., Newcastle.  
 Edwards, Rev. G. J., M.A., Trentham.  
 Emery, J. P., Cobridge.  
 Evans, Rev. J. D., M.A., Shelton.  
 Everett, J. E., Shelton.  
 Eversfield, Rev. S., B.A., Burslem.
- Farrow, Robert, Leek.  
 Forbes, Joseph S., Etruria.  
 Forsyth, J. C., Newcastle.  
 Frazer, John, M.D., Wolverhampton,  
*Vice-President*.  
 Furnival, Thos., junr., Cobridge.  
 Fynney, Mountford, Leek.
- Garlick, G. W., Burslem.  
 Garner, Robert, F.R.C.S., F.L.S.,  
 Stoke, *Vice-President, & Chairman  
 for 1869*.  
 Garner, Mrs.  
 Glover, Edwin, Longton.  
 Glover, Mrs. E.  
 Goddard, Thos., Spratslade, Longton.  
 Goodall, R., M.R.C.S., Silverdale.  
 Greatbatch, W., Longton.

IX.—That, after providing for the payment of all incidental expenses, the Funds shall be applied to the purchase of Books, Journals, &c., or in any other way the Committee may think likely to advance the interests of the Club.

X.—That the Papers which are read in the Society be published either in the Reports or in the Scientific Journals, and also abstracts of the same in the public Papers.

XI.—That the Committee have power to make Rules for the circulation among the Members of Books belonging to the Club.

XII.—No Rules of the Club shall be altered, except at a General Meeting called for the purpose, notice of which must be given at a previous Monthly Meeting.

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LIST OF PROPOSED EXCURSIONS FOR 1869.

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- Tuesday, April 20th,—To Macclesfield and Kerridge.  
 Thursday, May 20th,—To Dovedale.  
 Saturday, June 19th,—To Swithamley and Ludchurch.  
 Tuesday, July 20th,—To Wetley Moor and Rocks.  
 Friday, August 20th,—To Wooton and Weaver Hills.  
 Monday, September 20th,—To Lichfield.  
 Wednesday, October 20th,—To Northwich Salt Mines.
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# GEOLOGY OF THE ROACHES:

BY T. WARDLE, F.G.S.

*A Paper read before the North Staffordshire Naturalists' Field Club, at the Stoke Athenæum, on December 15th, 1868.*

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THE pleasant excursion we enjoyed in the summer of this year in the neighbourhood of Leek was upon an interesting and outlying portion of the Pennine Chain which is sometimes called the backbone of England.\* This Chain traverses Northern England in the line of its length from north to south. It stretches from Carter Fell, one of the Cheviots, near the sources of the Upper Tyne, to the Weaver Hills, near Alton, in our own county, comprising an entire course of about 170 miles. The chain, low and narrow at its north extremity, attains its greatest elevation near the junction of Cumberland, Westmoreland, and Durham, acquires considerable expansion in Yorkshire, and continues broad and high to the Derbyshire Peak. In the Northern counties the highest parts of the Chain rise from 2000 to 3000 feet above the sea. In its more Southern portion it forms broad ridges of wild moorland, as at the Kinder-Scout and Axe Edge, varying from 1000 to 2000 feet high.†

The ridge known as the Roaches is, with the exception of the Cloud or Mow Cop ridge, the Eastern boundary of the Cheshire Triassic plain. These form the western outlying spurs of the Pennine Chain in Staffordshire. Perhaps no portion of the Chain unfolds its pages in a more distinct and legible manner than the measures in the neighbourhood of the Roaches, certainly no part of it exhibits more interesting Geology, comprising as it does within narrow limits, the representation of each division of the Carboniferous system, from the Mountain Limestone which comes to the surface at Mixon to the Coal measures of that portion of the Goyt trough which lie immediately at the back of the Roaches.

The Carboniferous System is next in age to the Old Red Sandstone, or Devonian System, and was next succeeded by the formation of those Rocks which constitute the Magnesian Limestone or Permian System.

\* The word *Pennine* is from the Celtic penn, a hill. It is a term also applied to the highest parts of the Alpine Chain from Mont Blanc to Napoleon's great road over the Simplon.

† Milner's Atlas of Physical Geography.

perhaps the most striking of the series, the fine edges formed by its outcrop being among the most noticeable features in the scenery, and often running for miles in an unbroken wall of rock; it might well be called the Escarpment Grit. It is mostly red in colour, and from a thickness of 400 feet, which it reaches in Lancashire, thins away to about 100 feet near Congleton, and still further South seems on the point of dying away altogether. At the Roaches it forms a clear unbroken ridge with splendid escarpments; fine sections of it are also given by the River Dane and the Brook running through Gradbach Wood. This bed of Grit is much used for building purposes. It is quarried at Hen Cloud. About a mile from Roach End is a very curious chasm in this rock, known as Ludchurch. It is a rent running through the solid Grit, in the line of strike, for about 100 yards, from 39 to 40 feet deep, and with a breadth of from 6 to 10 feet; the walls are vertical or overhanging, and it gives the idea that the front of the hill has parted bodily from the main mass and slipped a little forward, leaving the fissure along the line of fracture."

Allow me here to recommend Ludchurch to the Committee as a most interesting place for a future excursion. I can well recommend it on account of its scenery and heather; its proximity to Shuttlingslow, and for its ferns, which grow in profusion on the damp sides of its walls. It would be easily reached from Rushton Station by a lovely walk along the banks of the river Dane.

The following amusing notice of Ludchurch is from the pen of Dr. Plot, whose History of Staffordshire was published in 1686. At p. 173 he writes: "The stupendous cleft in the rock between Swithamley and Wharnford, commonly called Lud-Church, which I found by measure 208 yards long, and at different places 30, 40, or 50 feet deep; the sides steeped and so hanging over that it sometimes preserves snow all the summer, whereof they had signal proof at the town of Leek, on the 17th of July, their Fair day, at which time of year a Wharnford man brought a Sack of Snow thence, and poured it down at the Market Cross, telling the people that if any body wanted of that commodity he could quickly help them to a 100 load on't."

The 4th Grit is splendidly developed at Kinderscout, in Derbyshire and in Lancashire, where it forms an enormous mass of Gritstone and Conglomerate 1000 feet thick, and passes into two beds of finer Gritstone, with a Shale between, North of Buxton. It undergoes a further change into a still finer Sandstone, and totally disappears in the Biddulph and Rudyard basins.

The Millstone Grit is only feebly represented in the Leicestershire Coal Field, and is totally wanting in that of South Staffordshire.

At the borders of Lancashire and Yorkshire, the Millstone Grit Series (inclusive of the Shales) attains a thickness of 2,800 feet, they more or less gradually become attenuated until at the Roaches they are only from 800 to 900 feet thick.

The 3rd Grit at Mottram is about 400 feet thick, at the Roaches it has lost more than half its thickness, and at Wetley Farm, Mr. Green found it to be only about 20 feet.

The following table is from a very interesting paper on this subject by E. Hall, Esq., in the Quarterly Journal of the Geological Society, vol. 24, p. 322.

Comparative Vertical Sections of the Carboniferous Strata from North Lancashire to Leicestershire.

	N.N.W.		S.S.E.	
	Burnley District. ft.	Mottram District. ft.	North Staffordshire. ft.	Leicester- shire. ft.
Coal Measures	846	7635	6000	3000
Millstone Grit Series	5500	2500	500	50
Yoredale Series	4675	2000	2300	50
	<hr/> 8655	<hr/> 12135	<hr/> 8800	<hr/> 3100

The Upper group of Yoredale Rocks die away altogether, they have not been seen in Leicestershire and are not in the South Staffordshire Coal Field; the middle and lowest groups also being absent.

Of the main Geological features of this neighbourhood Mr. Green forcibly writes: "On the one side we stand on the Eastern margin of the great Triassic Plain of Cheshire, the soft rocks of which have been planed down by denudation into a nearly level surface, and afterwards covered by a thick coating of clay, sand, and gravel; while on the other side we have the outlying heights, the advanced bulwarks as it were, of the Pennine Chain, formed of Carboniferous Rocks, which have been upheaved, contorted, and bent into countless folds, and by their greater hardness have been better able to hold out against denudation, and thus stand up in bold relief."

The height in feet and classification of a few neighboring Grit elevations are as follows: Axe Edge, 4th Grit, 1809; The Cat and Fiddle, 1st Grit, 1750; Shutlingslow, 1st Grit, 1718; Cloud Hill, 3rd Grit, 1190; Mow Cop, 1st Grit, 1101; Tegg's Nose, near Macclesfield, 3rd Grit, 1300; Kinder Scout, 11 miles N. by E. of Buxton, highest point of the Peak, 1981.

into a series of great folds, ranging from east to west across North Lancashire and Yorkshire."

At Low Moor Mr. Hull states that Permian Measures rest on the contorted edges of Mountain Limestone, itself worn by denudation to the extent of 250 feet, making in all nearly 20,000 feet of Coal, Grit, Yoredale, and Limestone Measures washed away mainly by marine action, "an amount of materials," writes Mr. Hull, "at the waste of which one feels as much astonishment as at the gathering together of it. And if (as is most probable) this denudation took place in the interval between the Carboniferous and Permian periods, it cannot fail to impress us with some idea of the prodigious lapse of time necessary for the accomplishment of such a result,—a lapse of time, it may be remarked which is not represented by any known group of Rocks. Here, indeed, is a blank in the Geological record waiting to be filled up." p. 129.

Second. At the close of the Permian period.

Third. After the formation of the Bunter Sandstone.

(This Sandstone was deposited over a very wide area of central England. Mr. Hull thinks the Pennine Chain was enveloped by these Sandstone beds and owe their partial protection to their having been so encased. The denudation of this period must have been excessive. It is interesting to note the detached masses, the surviving remnants of the denudation which occur in this district, as in the Churnet valley at Leek, of about 5 miles in length, at Rushton 1 mile, at Endon, a circular patch a quarter of a mile in diameter, a smaller patch resting on the Yoredale Measures at Ashcombe Park, and at Cheadle of about half-a-mile resting on the Coal Measures.)

The 4th, close of the Jurassic period.

„ 5th, previous to the period of the Lower Boulder Clay or Till.

„ 6th, previous to the deposits of the Upper Boulder Clay or Till.

The 7th, close of the Glacial Epoch and still in existence.

Part of the debris of the Coal Measures may be seen in the sands which stretch over large parts of Cheshire and Lancashire. They are full of fragments of Coal, and abound with worn pieces of Grit and Sandstones of all sizes, the fragmentary remnant of a vast period of the most exuberant vegetation the records of the world bear evidence of, and whose animal life appear to be represented mainly by reptilian and aquatic existence. †

† There were also Insects, Scorpions, Centipedes, and Land Shells.

Staffordshire County Studies  
Sample

C. HICKSON, PRINTER, NEWCASTLE.