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NATURAL
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REPORTS

OF THE

Burton-on-Trent

Natural History and Archaeological

SOCIETY.

Vol. 12.

*FOR THE YEARS ENDING DECEMBER 31st, 1887,
AND SEPTEMBER 30th, 1888.*

BURTON-ON-TRENT:
JOHN C. PERFECT, PRINTER, STATION STREET
1888.

The election of Officers and Committee then took place, and the Rev. C. F. Thornewill proposed the re-election of the President, Mr. Horace T. Brown. This was seconded by Mr. T. Knowles, and carried with acclamation.

The Vice-Presidents, General and Excursion Secretaries, Treasurer, and other Officers were unanimously re-elected.

The Committee, with the addition of Messrs. E. F. Daniel, T. C. Day, and A. Fox, were also re-elected.

Some alterations in the Rules were agreed to, and the meeting terminated with the usual vote of thanks to the Chairman and retiring Officers.

REPORT AND BALANCE SHEET FOR THE INTERIM
SESSION, 1888.

The only General Meeting we have to chronicle in the six months embraced in this Report is one held after the Annual General Meeting, on Friday, April 6th, when the President read a Paper on "The Permian Rocks of the Leicestershire Coal Field: the origin of their Breccias, and the physical conditions under which the beds were deposited." There were 29 members and friends present, giving an average of 36 for each of the six meetings during the Winter.

The Committee have again to congratulate the Society on the election of a large number of new members during the period covered by this Report. They, however, regret to announce the death of two of the original members of the Society—Mr J. Matthews and Dr. P. Griess.

The roll of Members is as follows:—

Subscribing Members—January, 1888	...	...	...	...	144
Resigned	...	...	...	...	7
Dead	...	...	...	...	2 — 9
					<hr/>
New Members	...	...	...	...	135
					19
					<hr/>
Subscribing Members—October, 1888	...	...	...	...	154
Honorary Members	...	...	...	...	7
					<hr/>
					161
					<hr/>

The Society is again to be congratulated on the state of its finances: the balance having been materially increased, as will be seen from the appended Balance Sheet. The Committee anticipate, however, that the greater part of this balance will be absorbed by the publication of the Transactions now in the press. This volume is in an advanced state, more than one-half being now in type.

The arrangements for the Popular Lectures for next Winter are complete, and will be found on page 13.

The Committee have great pleasure in informing the Members that they have been able to secure a suitable Room at 46, High Street, at a moderate rental, for the Society's Collections, and for the Sectional Meetings. The Monthly General Meetings will continue to be held in the Masonic Hall.

In addition to several Sectional Working Excursions, four General Excursions were announced for the summer of 1888. Of these three were successfully carried out, viz:—

<i>Date.</i>	<i>Excursion.</i>	<i>Leader.</i>
July 28th	{ Roman Encampment at Ratby, Thornton Church and Reservoir, and the Moated Grange }	MR. R. HARRISON.
Aug. 26th.—	Black Rocks, Cromford	MR F. LOTT.
Sept. 15th.—	Ashbourne and Dovedale	{ MR. H. T. BROWN. ,, T. C. MARTIN.

G. HARRIS MORRIS,

HOJ. SECRETARY.



REPORT OF THE ENTOMOLOGICAL SECTION.

CHAIRMAN—REV. C. F. THORNEWILL, M.A.

The report which I now present has to cover a longer period than usual, namely—the eighteen months from the beginning of the Summer season 1887 to the end of that of 1888, thus comprising two Summer seasons, and one Winter session.

During the Summer of 1887 a great deal of useful work was done by the members of the section, one species new to the district having been discovered, and many localities being found for recorded species. The following finds deserve special mention:—

Dasychira pudibunda larva found at Bladon by Mr. G. Baker.

Dicranura bicuspis.—Of this rare species, a single empty cocoon was found by the Chairman of the Section (The Rev. C. F. Thornevill) on Alder, on Cannock Chase. Burton is one of the few localities where it occurs, but it is many years since it has been taken in the district.

Acronycta alni.—There are many records of the occurrence of this rarity in our district. In 1887 two larvae were taken, but neither by a member of our Society, one being by Mr. G. W. Hale, of Birmingham, in Oakedge Park, and the other by Mr. R. Freer, of Rugeley, at Chartley.

Panolis piniperda was found in some abundance in the larva state on Cannock Chase by the Rev. C. F. Thornevill, who is also responsible for the following:

Plusia festucae.—One specimen at the Sobo, Burton-on-Trent.

Plusia interrogationis.—Two specimens on Cannock Chase.

Melanippe tristata at Chartley.

Thera firmata—an insect new to our list—was taken by Mr. Thornevill, on Cannock Chase.

Other finds worth recording are:

Smerinthus ocellatus.—Larva on plum at Stapenhill (C.F.T.)

Hepialus sylvanus.—Abundant in Bretby Park (J.T.H. & T.G.)
Abundant on Cannock Chase (R. Freer.)

Calamia lutosa.—Burton (G.B.)

Luperina testacea—Bretby (T.G.)

Mamestra persicariæ.—Common at Burton (C.F.T. & J.E.N.)

Triphæna fimbria—Newton Road (G.B.)

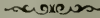
„ *interjecta*—Bretby (T.G.)

Cirrhœdia xerampelina—Burton, abundant (J.E.N.)
One at Bretby (H. F. Gibson.)

Cosmia affinis—Repton Shrubs (T.G.)

Notes on the Geology of the Milton, Ingleby, and Knowle Hills' District,

BY HORACE T. BROWN, F.G.S.



THE village of Milton is situated in a small but steep-sided valley, eroded in the Bunter Conglomerate by a small stream which rises in Repton Rocks. The water of this stream is thrown out in the upper part of the valley at the junction of the highly permeable Conglomerates and the underlying Permian Marls.

In many places the sides of the valley are scored with shallow furrows running at right angles to the stream. They occur at pretty regular intervals of a few hundred yards, and form a gently undulating contour. By the deepening and extension of these lateral furrows have been produced the curious rolling hills so characteristic of the Bunter of our neighbourhood.

From a little north of Repton Rocks to the Trent the bedding of the Conglomerates appears to be horizontal, and, in the valley we are describing, there are occasional indications that the stream has cut through the Bunter Conglomerates, and is now eroding the underlying Permian. Of this latter formation there is a small exposure recently opened near an old barn on the W. side of the stream, 330 yards E.S.E. of the "sheepfold" of Repton Common (*see six inch Map.*) The beds exposed consist of fine purple and grey variegated marls with carbonaceous specks, and thin bands of a soft buff-coloured sandstone.

Traces of these same beds may also be observed in the new excavations at Milton Mill.

There are two very good sections of the Conglomerates opened at Milton. The more southerly one, at the N.E. side of Milton Carr, shews partly consolidated pebble beds in a grey and highly calcareous matrix. This rock is precisely similar to that of Repton village. A little to the N. of this, and close to the mill, beds slightly lower in the series are well shewn. They consist of a consolidated Conglomerate containing very large pebbles and some well rolled lumps, which appear to be the MORE INDURATED PORTIONS OF THE UNDERLYING PERMIAN MARL. That these Marls suffered a great denudation and erosion in early Triassic times there is no doubt, but I believe that this is the first time undoubted fragments of their ruins have been observed in the Conglomerates. Although by far the greater number of pebbles in the Conglomerate consist of well rounded quartzite, there are also to be found fragments of a variety of other rocks, many of which—judging from their angular appearance—cannot have travelled far. A careful study of these fragments is much to be desired, and must afford important evidence towards elucidating the physical Geography of our district in early Triassic times.

Travelling from Milton through Foremark to Ingleby, we are still on the Bunter Conglomerates, which are well shewn both at Anker Church and Ingleby village.

Between Ingleby and Knowle Hills there lies a small tract of country of peculiar geological interest and complexity. Of the geology of this tract, the Survey Map gives an altogether erroneous interpretation.

The rainfall of February is, as you will observe, but slightly more than 1/5th of the average amount; the 11th of March ending a period of 36 days with a rainfall of only a quarter of an inch. In April, again, the first twenty days had only a rainfall of 0.25 of an inch. It is, however, in June that we find the longest spell of fine weather, the 3rd of July being the twenty-fifth day absolutely without rain. Considerable inconvenience has been caused, as you are well aware, by the meagre fall of rain, and which inconvenience has since been extended into the present year.

The severity of the weather during the earlier months of 1887 is easily seen on comparing the mean temperatures with those of 1885, which is about a normal and even year. Appended are the monthly mean temperatures for the first months of 1885—6—7; but it must be remembered, in comparing them, that the Spring of 1886 was abnormally cold.

	1885.		1886.		1887.
January	... 30.9	...	34.5	...	33.5
February	... 42.7	...	33.1	...	37.7
March	... 40.1	...	37.6	...	37.0
April	... 46.2	...	44.2	...	42.5
May	... 46.8	...	49.0	...	47.3
June	... 57.9	...	54.8	...	60.6
July	... 63.7	...	59.9	...	64.0

It will be noticed how the sudden burst into Summer weather in June has affected the mean temperatures of June and July. The mean temperature of the former month is four degrees higher than that for any year of which I hold records, that is since 1878.

The total number of frosts during the first four months was no less than 92—that is, out of a possible 120—and it was not until the first of June that the last frost of the Winter was registered. The minimum temperature on the ground for January, (7.0) is the lowest recorded since January, 1881.

Winter returned upon us early, too, the first frost occurring on the 14th August, and the first fall of snow taking place on October 11th, seven weeks earlier than in 1886. The thermometer on the same night registered 10 degrees below freezing point, an intensity of frost not equalled till December 2nd in the preceding year. In spite, however, of these rather ominous portents, the temperature of the latter months of the year was, if anything, above the average.

Pegge, W.	...	...	...	...	Rolleston Road, Horninglow.
Perfect, J. C.	...	...	...	...	Stapenhill.
Perks, C., M.R.C.S., L.R.C.P.	...	...	...	...	High Street.
Pickering, W. S.	...	...	...	...	Stanton Road, Stapenhill.
Porter, H.	...	...	...	...	Dale Street.
Ramsden, F. L.	...	...	...	...	Gas Works.
Ranby, Robert	...	...	...	...	Newton Park.
Ratcliffe, Richard, J.P.	...	...	...	...	Radbourne Hall.
Reese, A.	...	...	...	...	Horninglow.
Riddell, R.	...	...	...	...	86, Derby Street.
Robinson, C.	...	...	...	...	88, Horninglow Street.
Robinson, R. M.	...	...	...	...	Station Street.
Rutty, Miss	...	...	...	...	Alsop's High School.
Sadler, J. W.	...	...	...	...	11, Market Place.
Salt, E. D.	...	...	...	...	Newton Solney.
Salt, Mrs. E. D.	...	...	...	...	"
Salt, W. C.	...	...	...	...	Willington Hall.
Salt, Miss F.	...	...	...	...	High Street.
Scrivener, Alexander	...	...	...	...	Stoke-on-Trent.
Seike, J. W.	...	...	...	...	Moor Street.
Slator, Henry	...	...	...	...	Orchard Street.
Smith, D.	...	...	...	...	High Street.
Smith, Mrs. D.	...	...	...	...	"
Sparrow, John	...	...	...	...	Queen Street.
Starey, E.	...	...	...	...	Stapenhill Road.
Starey, Mrs. E.	...	...	...	...	"
Stirk, J.	...	...	...	...	Station Street.
Stockler, C.	...	...	...	...	Wile House, Bond Street.
Strachan, A.	...	...	...	...	"
Swinnerton, W.	...	...	...	...	Branstone Road.
Tarver, G. A.	...	...	...	...	Station Street.
Talbot, J.	...	...	...	...	The Leas, Stapenhill.
Thornewill, Rev. C. F.	...	...	...	...	The Soho.
Thornewill, Mrs. C. F.	...	...	...	...	"
Thornewill, R.	...	...	...	...	Tatbury.
Thudichum, Miss M.	...	...	...	...	47, High Street.
Tomlinson, H. G.	...	...	...	...	The Woodlands.
Tomlinson, R. W.	...	...	...	...	Ashby Road.
Tompson, F. W.	...	...	...	...	70, Spring Terrace, Stapenhill.
Underhill, C. F.	...	...	...	...	11, Shobnall Street.
Upton, C. W.	...	...	...	...	Orgreave Hall, near Lichfield.
Walters, W.	...	...	...	...	Alexandra Road.
Wardle, H., M.P.	...	...	...	...	Highfield House.
Wells, J. G.	...	...	...	...	Derby Road.
Whitehead, T. N.	...	...	...	...	The Bridge House.
Willcox, J. B.	...	...	...	...	8, Claremont Terrace.
Wilkinson, Mr. J.	...	...	...	...	Alexandra Road.
Wilkinson, Mrs. J.	...	...	...	...	"
Worthington, W. H.	...	...	...	...	Derby.
Wright, Jos.	...	...	...	...	Branstone Road.

RULES.

1.—That this Society be called the "BURTON-ON-TRENT NATURAL HISTORY AND ARCHÆOLOGICAL SOCIETY," having for its object the promotion and encouragement of the practical study of Natural History, Archæology, and General Science.

2.—That the Officers of the Society consist of a President, two or more Vice-Presidents, Treasurer, two Secretaries, Curator and Librarian, Junior Secretary, and a Committee of not less than six Members—three to form a quorum; the above officers to retire annually, but to be eligible for re-election.

3.—That a General Meeting be held not later than the end of October in each year, for the purpose of electing Officers for the ensuing year, and transacting any other business which may be brought before it.

4.—That Candidates for membership shall be proposed and seconded (in writing) at any meeting of the Committee, and may be elected at the next general meeting by a majority of the Members present.

5.—That the Society commences its year with October 1st. That an annual subscription of five shillings be paid by each Member *in advance*, and that all Members whose subscriptions are six months in arrear be considered to have forfeited their privileges as Members of the Society; that all Members who have not given notice to one of the Treasurers or Secretaries of their intention to retire before the Annual General Meeting in March, shall be held responsible for the current year's subscription.

6.—That the Committee may elect as Associates any person under the age of eighteen, and that the subscription of such Associates be one shilling per annum, payable in advance; Associates to have no voice in the appointment of Officers or the management of the Society, except in the election of their own Secretary, who shall be considered as a Member of the General Committee.

NOTE.—Associates must be elected Members in the ordinary way on exceeding eighteen years of age.

7.—That the Committee may recommend as Honorary Members any persons distinguished for scientific attainments, or who may have in any special manner advanced the interests of the Society.

8.—That Field Meetings or Excursions be held during the year, in suitable localities, and that timely notice of each be given to the Members by circular.