

GEOLOGY DEPARTMENT,

BIRKBECK COLLEGE, 1934

THE

GEOLOGICAL MAGAZINE;

OR,

Monthly Journal of Geology:

WITH WHICH IS INCORPORATED

“THE GEOLOGIST.”

NOS. XLIII. TO LIV.

EDITED BY

HENRY WOODWARD, F.G.S., F.Z.S.

HONORARY MEMBER OF THE GEOLOGICAL SOCIETIES OF GLASGOW AND NORWICH; CORRESPONDING
MEMBER OF THE NATURAL HISTORY SOCIETY OF MONTREAL; AND OF THE LYCEUM
OF NATURAL HISTORY, NEW YORK.

ASSISTED BY

PROFESSOR JOHN MORRIS, F.G.S., &c., &c.,

AND

ROBERT ETHERIDGE, F.R.S.E., F.G.S., &c.

VOL. V.

JANUARY—DECEMBER, 1868.

LONDON:

TRÜBNER & Co., 60, PATERNOSTER ROW.

CH. DELEGRAVE ET CIE, 78, RUE DES ECOLES, PARIS.

LEIPSIC: F. A. BROCKHAUS.

TURIN & FLORENCE: H. LOESCHER. NEW YORK: LEYPOLDT & HOLT.

1868.

HERTFORD :
PRINTED BY STEPHEN AUSTIN.

LIST OF PLATES.

PLATES	PAGE
I. New Limuloid Crustacean from the Upper Silurian ; <i>Prosopeon mammillatum</i> , H. Woodward, Stonesfield	1
II. New Trilobites, etc., from the Upper Cambrian Rocks of North Wales	5
III. Amethyst-Quartz, with warped Faults in concretion	12
IV. <i>Stricklandinia Davidsoni</i> , S. Salteri, <i>Pentamerus oblongus</i>	59
V. British Graptolites	64
VI. Cambrian Lower Beds, Railway Cutting south-west side of Llyn Padarn, Llanberis	121
VII. Banded Cambrian Slates, Glyn Quarries, Llanberis	121
VIII. <i>Actinoceras baccatum</i> , H. Woodw., Woolhope Limestone	133
IX. Fossil Pandanaceous Fruit	153
X. Section and Map of a Concrete Agate	156
XI. <i>Saurosternon Bainii</i> , Huxley ; a new Fossil Reptile from South Africa	205
XII. <i>Priesterodon McKayi</i> , Huxley ; a new Fossil Reptile from South Africa	205
XIII. Folded Agates and Mural Agates	208
XIV. Cretaceous and Liassic Crustacea	258
XV. XVI. Earliest forms of British Brachiopoda	303
XVII. Lower Lias Crustacea	353
XVIII. XIX. New Species of Brachiopoda from the Lower Green- sand, at Upware	399
XX. <i>Trimerella</i> , Billings, Upper Silurian, Island of Goth- land	441
XXI. Pedunculated and Sessile-eyed Crustacea	489
XXII. Skull of the Mammoth from Ilford (front view)	540
XXIII. Ditto ditto ditto (side view)	541

LIST OF WOODCUTS.

Brecciated Concretions	12, 13, 15, 17, 18
Diagram to show the variable height of the base of an escarpment above the sea-level	41
Section of the valleys of the Lea, the Roding, and the Thames	43
Section of the valley of the Ouse, near Buckingham	45
Fossil from Studland Bay ; <i>Kydia calycina</i> , India ; <i>Calycopteris (Getonia)</i> <i>floribunda</i> , India	74
Contorted Rock, Basil Wood, Charnwood Forest.	113

	PAGE
Ground-plan of Quarry near Buddon Wood, Charnwood Forest	113
Swithland Old Pit, Charnwood Forest, etc.	119
Diagram of the Igneous Rocks of Charnwood Forest	120
Section of New Tunnel, Glyn Quarries, Llanberis	122
New Railway Cutting, Llanberis	123
Diagram to illustrate the origin of slaty cleavage	149
Section of Albian or Gault at Copt Point, Folkestone	170
Plan exhibiting the localities of Natural Pits near Ripon	179
<i>Leskia mirabilis</i> , <i>Echinosphærites aurantium</i> , <i>Sphæronites pomum</i>	183
Anterior aspect of head and mandible of <i>Dimichthys Herzeri</i>	185
Hills inside Estuary at the mouth of the Buffalo river, British Kaffraria	203
Order of Superposition of Deposits, Buffalo River, British Kaffraria	203
Diagrams illustrating the origin of Faults	205, 206, 207
Banded and Brecciated Concretions	209, 210, 211, 212
Diagram of the Post-Glacial Cliff at Clacton, Essex	214
Sections at Clacton	215
Sections illustrating the Phosphatic Deposits of Nassau	263
Section illustrative of the general geological structure of the Duchy of Nassau, Germany	263
Loop of an old specimen of <i>Waldheimia tamarindus</i> , Sow.	269
Section of Strata at Upware on the Cam.	273
Diagram showing the distortion of an old brick wall	294
<i>Obolella desiderata</i>	309
Diagrams of Coal-plants, <i>Megaphyton</i> , <i>Palæopteris</i> , <i>Calamites</i> , <i>Lepido-</i> <i>dendron</i> , <i>Sigillaria</i>	331, 333, 335, 337
Section of New Red Marls, Mapperly Road, Nottingham	341
Sketch-map ¹ of a portion of the district near Nottingham, showing the position of the Faults in the Red Marls of the Keuper and Bunter	342
Diagram-section of Columnar Basalt and White Chalk near Lisburn, Co. Antrim	346
Section at Roswell Hole, near Ely	348
Diagram to explain the approximate dip of Strata at Roswell Hole, near Ely	349
Sketch-section exposed in the railway-cutting near Crofthead, Ren- frewshire	394
Diagrammatic section across the Cowdon valley, near Crofthead	395
Microscopic structure of <i>Terebratulidæ</i>	402
Ground plan of Roswell Hill Clay-pit, Ely	411
Section of north bank of railway-cutting near Crofthead, Renfrewshire	487
Tooth of <i>Climaxodus ovatus</i> , sp. nov., Low Main Coal-shale, Northum- berland	496
Section at the base of cliff at the first point west of Lower Sher- ingham	545
Cliff-section on the Norfolk coast, showing contorted Strata.	550
Railway-cutting west of Wells, Norfolk.	551
Diagram-section of side of Gravel-pit near Old, Northamptonshire	563

¹ Roughly copied from the Geological Survey Map.—W.W.

P R E F A C E.

IN closing the Fifth Volume of the GEOLOGICAL MAGAZINE, we cannot omit to express our sincere thanks to our numerous friends, especially to those who have furnished the ORIGINAL ARTICLES, which, as a matter of course, are the very foundation of this volume. We welcome some as new Geological contributors, but the chief names are of old and valued supporters who have from the outset given us their aid.

Our volume for 1868 contains articles by Messrs. T. P. Barkas; Thos. Belt, C.E., F.G.S.; E. Billings, F.G.S.; W. Carruthers, F.L.S., F.G.S.; Thos. Davidson, F.R.S., F.G.S.; D. C. Davies; T. Davies; W. Boyd Dawkins, M.A., F.R.S.; C. E. De Rance; J. Evans, F.E.S., Sec. G.S.; R. Etheridge, F.R.S.E., F.G.S.; Miss Eyton; Rev. O. Fisher, M.A., F.G.S.; Messrs. David Forbes, F.R.S., F.G.S.; Archibald Geikie, F.R.S.L. & E.; James Geikie; J. R. Gregory; Prof. C. H. Hitchcock; T. McKenny Hughes, B.A., F.G.S.; Dr. T. Sterry Hunt, F.R.S.; Capt. F. W. Hutton, F.G.S.; Prof. T. H. Huxley, LL.D., F.R.S., President Geol. Soc.; Prof. T. Rupert Jones, F.G.S.; Messrs. J. Beete Jukes, M.A., F.R.S., &c.; G. H. Kinahan, F.R.G.S.I.; E. Ray Lankester, B.A.; H. Leonard, F.G.S.; J. Logan Lobley, F.G.S.; Dr. G. Lindström; Dr. C. Lütken; Messrs. D. Mackintosh, F.G.S.; G. Maw, F.L. and G.S.; C. J. A. Meyer; Prof. J. Morris, F.G.S.; Sir Roderick I. Murchison, Bart., F.R.S. &c.; Dr. H. A. Nicholson, M.B., F.G.S.; Messrs. S. R. Pattison, F.G.S.; C. W. Peach; John Ruskin, M.A., LL.D., F.G.S.; G. Poulett Scrope, F.R.S., F.G.S.; S. H. Scudder; H. G. Seeley, F.G.S.; S. Sharp, F.S.A., F.G.S.; Revs. W. S. Symonds, M.A., F.G.S.; J. S. Tute, M.A.; Messrs. J. F. Walker, B.A., F.G.S.; J. M. Wilson, M.A., F.G.S.; S. V. Wood, junr., F.G.S.; B. H. Woodward, &c.

Besides these, we are indebted for NOTICES and REVIEWS to many gentlemen whose names we have not authority to publish, but to whom we sincerely tender our thanks.

Nor have we failed to receive a goodly array of LETTERS, which, like the ORIGINAL ARTICLES, treat '*de omnibus rebus et quibusdam aliis*' in Geology and Palæontology, and, as far as our space has permitted, we have given to each and all a place. We must, however, again beg our Correspondents to make their letters as concise as possible, so as to allow of the insertion of as much variety both of matter and opinion as can be; bearing in mind that a single letter by its length often shuts out several other communications equally deserving of a place.

In the matter of Typography and Illustrations, the ARTISTS, PRINTERS, and PUBLISHERS have done their very best; and if only more Subscribers will lend us their aid, we promise them a hundred-fold in return.

Lastly—If they have not done so already, Annual Subscribers are earnestly requested to send in their names and subscriptions to MESSRS. TRÜBNER & Co., 60, Paternoster Row, London, E.C.

The GEOLOGICAL MAGAZINE can be obtained through all Booksellers in town or country; but if any difficulty or delay arises through this method of procuring it, the Publishers will always be happy to send it direct per post.

THE EDITOR.

All Communications for the GEOLOGICAL MAGAZINE should be addressed to the Editor, 142, St. Paul's Road, Camden Square, N.W.

Books for Review, and Parcels from abroad, should be sent addressed to the Editor, at 60, Paternoster Row, E.C.

Form for Subscribers to fill up and send to their Booksellers.

To

Be pleased to add my name to the List as a Subscriber for one copy of Volume VI. of the GEOLOGICAL MAGAZINE, to be published monthly by Messrs. TRÜBNER & Co., the First Part of which appeared on January 1, 1869, price Eighteenpence each number.

Signature _____

Address _____