

THE
GEOLOGICAL MAGAZINE

OR

Monthly Journal of Geology.

WITH WHICH IS INCORPORATED

THE GEOLOGIST.

NOS. DCXIX TO DCXXX.

GEOLOGY DEPARTMENT,

BIRKBECK COLLEGE,

HENRY WOODWARD, LL.D., F.R.S., F.G.S., V.P.Z.S., F.R.M.S.

LATE OF THE BRITISH MUSEUM OF NATURAL HISTORY; PRESIDENT OF THE
PALÆONTOGRAPHICAL SOCIETY; ETC.

ASSISTED BY

PROFESSOR J. W. GREGORY, D.Sc., F.R.S., F.G.S.

DR. GEORGE J. HINDE, F.R.S., F.G.S.

SIR T. H. HOLLAND, K.C.I.E., A.R.C.S., D.Sc., F.R.S., V.P.G.S.

JOHN EDWARD MARR, M.A., Sc.D. (Camb.), F.R.S., F.G.S.

SIR JETHRO TEALL, M.A., Sc.D. (Camb.), LL.D., F.R.S., F.G.S.

PROFESSOR W. W. WATTS, Sc.D., LL.D., M.Sc., F.R.S., F.G.S.

DR. ARTHUR SMITH WOODWARD, LL.D., F.R.S., F.L.S.,
V.P.G.S.

NEW SERIES. DECADE VI. VOL. III.

JANUARY—DECEMBER, 1916.

LONDON:

DULAU & CO., LTD., 37 SOHO SQUARE, W.

1916.

STEPHEN AUSTIN AND SONS, LTD.
PRINTERS, HERTFORD.

LIST OF PLATES.

PLATE	FACING PAGE
I. Restored Skeleton of <i>Stenomylus hitchcocki</i> , Loomis	1
II. <i>Saurostomus esocinus</i> , Agassiz; Upper Lias, Holzmaden	51
III. Terebratulid Shell-structures	56
IV. Map of the Fluvio-glacial Gravels, Thames Valley	58
V. Portrait of Arthur Vaughan, B.A., D.Sc.	92
VI. Chalk Polyzoa	100
VII. Two Obsidianites, Singapore	145
VIII. Lower Lias Ammonite, Dorset.	196
IX. Tridymite and Quartz, Iceland	209
X. Chalk Polyzoa	243
XI. Portrait of Dr. John E. Marr, F.R.S.	289
XII. Some Wealden Sands	302
XIII. Pit and Mound Structures developed during Sedimentation	542
XIV. Chalk Polyzoa	339
XV. New Extinct Bird, South Carolina	347
XVI. Volcanic Rocks, Iceland	395
XVII. Triassic Fossils, Leicestershire	420
XVIII. Chalk Polyzoa	435
XIX. New Guinea Corals	488
XX. " "	488
XXI. " "	529
XXII. " "	536

LIST OF ILLUSTRATIONS IN THE TEXT.

	PAGE
Trail and Underplight	3
Wax and pitch	5
Sketch-map of Permian formation in Maritime Alps	10
Sections of Permian formation, Maritime Alps	11
Map of West Cumberland	18
Diagrams showing amount of water and sulphuric acid in St. Bees Sandstone	19
Diagrams showing variation in number of punctæ of <i>Terebratula punctata</i> and <i>T. biplicata</i>	55
Sections of overflow channels, Murk Mire Moor	77
Plan of adoral surface of <i>Lovenia forbesi</i>	102
Second figure for comparison	103
Ball and pillow-form structures in rocks	147
Shell-jointing in sandstone	148
Ball structures in sandstone	149
Sandstone 'ball', Tyddyn-main	149
Contorted layers in sandstone	150
Diagram showing curved cleavage	153
Folded layers of sandstone and shale	153
Sandstone in shale	154
Map of crystalline rock-areas, Piedmont	199
Drawing of aggregate of Pl. IX, Fig. 5	207
Drawing of a single quartz individual	208
Map of South Wales Coal-field	222
Locality map of New Zealand	244
Sections of Monte Viso and Roccamelone	251
Mandible of <i>Nautilus pompilius</i>	261
Mandible of <i>Nautilus (Rhyncholithes butleri, n.sp.)</i> sp.	263
Diagram of distribution of temperature in depth	269
Sketch-map of crystalline rock-areas, Northern Piedmont	306
Stripped fossil denudation plain	316
Zoecia of three Bryozoa from Norseman Limestone	321
<i>Trogontherium</i> from Coptford	323
Section of brick-pit, Barnwell Station	341
Sketch-plan of Lanzo Valleys, Grajan Alps	349

	PAGE
Section of liparite exposure	392
Section showing outcrop of the Coral Rag and Amphill Clay . . .	399
Sketch-map of crystalline massif, Savona	402
Sections of crystalline massif, Savona	403
The Kegworth footprint	422
Map of Voltri Group, Western Liguria	448
Map and sections of ophiolitic groups, Eastern Liguria	491
Map of ophiolitic groups, Eastern Liguria	492
<i>Dallina floridana</i> , Pourtales	501
Section of coral, New Guinea	530
Small glacier, showing the snow-line	538
Diagram of earth's areas mapped in 1860 and 1916	568