

THE  
GEOLOGICAL MAGAZINE.

NEW SERIES.

DECADE IV. VOL. VI.

JANUARY — DECEMBER, 1899.

THE  
GEOLOGICAL MAGAZINE

OR,

Monthly Journal of Geology:

WITH WHICH IS INCORPORATED

“THE GEOLOGIST.”

NOS. CCCCXV TO CCCCXXVI.

EDITED BY

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

OF THE BRITISH MUSEUM OF NATURAL HISTORY;

PRESIDENT OF THE PALÆONTOGRAPHICAL SOCIETY,

AND VICE-PRESIDENT OF THE MALACOLOGICAL SOCIETY;

MEMBER OF THE LYCEUM OF NATURAL HISTORY, NEW YORK; AND OF THE AMERICAN PHILOSOPHICAL SOCIETY, PHILADELPHIA; HONORARY MEMBER OF THE YORKSHIRE PHILOSOPHICAL SOCIETY; OF THE GEOLOGISTS' ASSOCIATION, LONDON; OF THE INSTITUTION OF MINING AND METALLURGY, LONDON; OF THE GEOLOGICAL SOCIETIES OF EDINBURGH, GLASGOW, HALIFAX, LIVERPOOL, AND SOUTH AFRICA; CORRESPONDING MEMBER OF THE GEOLOGICAL SOCIETY OF BELGIUM; OF THE IMPERIAL SOCIETY OF NATURAL HISTORY OF MOSCOW; OF THE NATURAL HISTORY SOCIETY OF MONTREAL; AND OF THE MALACOLOGICAL SOCIETY OF BELGIUM.

ASSISTED BY

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

WILFRID H. HUDLESTON, M.A., F.R.S., F.G.S., F.L.S., F.C.S.

GEORGE J. HINDE, PH.D., F.R.S., F.G.S., &c.

AND

HORACE BOLINGBROKE WOODWARD, F.R.S., F.G.S., &c.

NEW SERIES. DECADE IV. VOL. VI.

JANUARY—DECEMBER, 1899.

LONDON:

MESSRS. DULAU & CO., 37, SOHO SQUARE.  
1899.

**HERTFORD :**  
**PRINTED BY STEPHEN AUSTIN AND SONS.**

## LIST OF PLATES.

PLATE	FACING PAGE
I. Large rolled and split Crystalline Boulder from the top of the Mountain above Falun, Sweden . . . . .	4
II. Portrait of Dr. A. R. C. Selwyn, C.M.G., F.R.S., F.G.S. . . . .	49
III. Chromolithographic folding Map of the Eastern Margin of the North Atlantic . . . . .	97
IV. Portrait of Professor H. A. Nicholson, M.A., M.D., F.R.S. . . . .	138
V. The Lightning Channel . . . . .	147
VI. The British-Biscayan Atlantic . . . . .	149
VII. The Gulf of Gascony, with the Fosse de Cap Breton . . . . .	151
Portrait of Professor O. C. Marsh, LL.D., Ph.D., F.G.S. . . . .	193
VIII. Egyptian Miocene Shells . . . . .	199
IX. Egyptian Miocene Shells . . . . .	199
X. A New Carboniferous Trilobite . . . . .	241
XI. Mastodon Tooth, Red Crag ( <i>M. angustidens</i> , var. <i>latidens</i> ) . . . . .	289
XII. Glaucophane Gabbro of Pegli, North Italy . . . . .	292
XIII. British Cretaceous Madreporaria . . . . .	298
XIV. <i>Elephas ganesa</i> , Pliocene, Sewalik Hills . . . . .	337
XV. Recent and Fossil Crustacea . . . . .	388
XVI. <i>Lindstromaster antiqua</i> and <i>Palæasterina Bonneyi</i> . . . . .	341
XVII. Skeleton of <i>Sciurus Bredai</i> , H. v. Meyer . . . . .	363
XVIII. <i>Dinornis maximus</i> , Owen, New Zealand . . . . .	395
XIX. Egyptian Pliocene and Post-Pliocene Shells . . . . .	480
XX. Egyptian Post-Pliocene Shells . . . . .	480
XXI. Portrait of Henry H. Howell, F.G.S. . . . .	433
XXII. Graptolites of Victoria, Australia . . . . .	439
XXIII. <i>Brachyodus africanus</i> , Lower Miocene, Egypt . . . . .	481
XXIV. <i>Pliohyrax græcus</i> (Gaudry), Upper Miocene, Samos . . . . .	547

LIST OF ILLUSTRATIONS IN THE TEXT.

	PAGE
Two figures of <i>Glyptocrinus decadaetylus</i> . . . . .	32
Anal area of <i>Ulocrinus Blairi</i> . . . . .	32
<i>Ulocrinus</i> (three figures) . . . . .	33
<i>Meroocrinus</i> . . . . .	33
<i>Heterocrinus</i> . . . . .	33
<i>Hyboocrinus</i> . . . . .	33
<i>Homocrinus</i> . . . . .	33
<i>Zeocrinus</i> . . . . .	33
<i>Delocrinus</i> . . . . .	33
Four figures of <i>Antedon</i> . . . . .	33
<i>Iocrinus subcrassus</i> . . . . .	35
<i>Dendroocrinus longidactylus</i> . . . . .	35
,, <i>Casei</i> . . . . .	35
<i>Poteroocrinus elegans</i> . . . . .	35
<i>Cyathocrinus longimanus</i> . . . . .	35
<i>Parisocrinus</i> . . . . .	35
Anal area of <i>Heterocrinus isodactylus</i> . . . . .	41
Ossicles of <i>Iocrinus</i> . . . . .	42
Three figures of <i>Calamocrinus Diomedee</i> . . . . .	43
Diagrammatic sketch of <i>Prolimulus Woodwardi</i> . . . . .	58
Diagram-section in the Ayot Brickfield . . . . .	60
Plan of the Forbes Reef Gold-mining Company's Property, Swaziland . . . . .	106
Section in the Forbes Reef Gold-mining Company's Property, Swaziland . . . . .	108
Section in the Ryan Tin-mining Company's Property, Swaziland . . . . .	109
Two figures of <i>Dinocystis Barroisi</i> . . . . .	135
Photo-reproduction of <i>Pterygotus Australis</i> (McCoy), Melbourne . . . . .	193
Two transverse sections across Coir' a' Ghreadaidh, Skye . . . . .	197
Longitudinal section down valley at Bealach, Skye . . . . .	197
Section of lower part of Garbh-choire and Loch Coruisk, Skye . . . . .	198
Section down Coir' an Lochain, Skye . . . . .	198
Full-page illustration of <i>Archonodon Jukesi</i> , Old Red, Monmouthshire . . . . .	248
Three figures of <i>Douwilléveras euomphalus</i> , Chalk, Whitlands . . . . .	252
,,    ,,    ,,    ,,    Lower Chalk, Whitlands . . . . .	253
Former drainage of Davos district . . . . .	260

	PAGE
Present drainage of Davos district . . . . .	21
Course of the Landwasser in relation to Davos area . . . . .	21
Original position of skull of <i>Elephas ganesa</i> . . . . .	31
Three figures of <i>Palaeasterina Bonneyi</i> , Ludlow Shales, Leintwardine . . . . .	31
Restored outline of <i>Oryctocephalus Reynoldsi</i> . . . . .	31
Premolars of <i>Lagopsis verus</i> . . . . .	31
Front view of skull and side view of tail-sheath of <i>Miolania Oweni</i> , Pleistocene, Queensland, Australia . . . . .	38
Front view of skull of <i>Miolania</i> , Patagonia . . . . .	38
Page-section along the coast near Balbriggan . . . . .	40
Two new species of Graptolites from Victoria . . . . .	45
<i>Lepracanthus rectus</i> , Wellburn . . . . .	45
Transverse section of a valley modified by glacial erosion, Skye . . . . .	48
Longitudinal profile of a valley occupied by glacier, Skye . . . . .	48
Sketch-map of Sligachan River, Skye . . . . .	49
Geological sketch-map of North-Central Socotra . . . . .	53
Sketch-map of Vik i Eidfjord . . . . .	53
Eidfjord Vand, Vik i Eidfjord, Hardanger . . . . .	53
View from mouth of River Eieo, Vik i Eidfjord . . . . .	53
Section in sand-pit, Eide, Graven Fjord . . . . .	53
Diagrams of <b>W</b> -shaped outer walls of teeth . . . . .	54
<i>Ammonites calcar</i> , Zieten's type-specimen (= <i>Bonarellia bicostata</i> , Stahl, sp.)	55
Suture-line of <i>Bonarellia bicostata</i> , Stahl, sp. . . . .	55