# GEOLOGICAL MAGAZINE

Edited by LEGE

## O. M. B. BULMAN and S. R. NOCKOLDS

#### assisted by

PROFESSOR W. S. BOULTON PROFESSOR W. G. FEARNSIDES Professor O. T. Jones W. J. Pugh

Professor Leonard Hawkes Professor C. E. Tilley
Henry Woods

## CONTENTS

	PAGE
Wilson, A. F. Metamorphism of Granite Rocks by Olivine Dolerite in Central Australia	73
MABBUTT, J. A. A Study of Granite Relief from South-West Africa .	87
AMIN, M. S. Metamorphic Differentiation of Talc-Magnesite-Chlorite Rocks in Shetland	97
BLACK, G. P. The Age Relationship of the Granophyre and Basalt of Orval, Isle of Rhum	106
Anderson, E. M. Lineation and its relation to sub-crustal Convection Currents	113
LEMON, G. G. The Moinian Inlier of Rosses Point, near Sligo, Eire .	124
BENTOR, Y. K. Magmatic Intrusions and Lava-sheets in the Raman area of the Nagev (Southern Israel)	129
Wilson, G. A Quartz Vein System in the Moine Series near Melness, A'Mhoine, North Sutherland, and its Tectonic Significance	141
FERMOR, Sir L. L. On a New Chrome Garnet	145
McKerrow, W. S. Notes on the Species and Subspecies in Palaeonto-	
logy	148
CORRESPONDENCE	
Zoological Nomenclature, F. HEMMING	151
Accuracy in Geological Localities, A. Morley Davies	152

1 FORE STREET, HERTFORD, HERTS

STEPHEN AUSTIN & SONS, LTD.

## GEOLOGICAL MAGAZINE

founded in 1864

by the late Dr. H. Woodward, F.R.S., with which

is incorporated

## THE GEOLOGIST

(founded 1858)

Published every two months, price 32/6 per annum (single numbers, 7/6).

Subscriptions for 1952, inquiries relating to back stock, advertising, etc., should be sent to Stephen Austin & Sons, Ltd., Fore Street, Hertford, Herts.

## Instructions to Contributors.

Articles submitted for publication in the Geological Magazine should be addressed to the Editors at the Sedgwick Museum, Cambridge, not to the Publishers.

Manuscripts should be typewritten, double-spaced, and preferably with a wide margin, and should be carefully revised; they should be as concise as possible, and in no case should an article exceed 10,000 words. MS. must be accompanied by a short abstract, 50–100 words. References should not be given in footnotes, but arranged in alphabetic order of author's names at the end of the article; the author's name should be followed by date of publication, and the title of each paper should be given in addition to volume and page numbers of the Journal, thus:—

LAPWORTH, C. 1878. The Moffat Series. Quart. Journ. Geol. Soc., xxxiv, 240-343.

References should be cited in the text by author's name and date, with page reference if necessary, in brackets:—(Lapworth, 1878, p. 339).

Illustrations should be so drawn as to allow reduction to a maximum size of  $6\frac{1}{4} \times 3\frac{3}{4}$  inches (the type-area of the Magazine) and originals must not exceed  $40 \times 22$  inches. Map lettering should be such as to be clearly legible after reduction (equivalent to 5-point as a *minimum* on reduction), while lettering on text-figures should in general be left in pencil for printing.

Authors will receive 25 reprints free of cost.

#### RESEARCH ASSISTANT

UNIVERSITY GRADUATE, female, with majors in chemistry and mineralogy/geology required for base metal research laboratory in Northern Rhodesia. Duties principally microscopic examination of minerals and analytical determinations. Salary according to qualifications and experience, minimum £700 per annum. Fluctuating cost of living allowance now about £8 per month. Life Assurance and Contributory Pension Scheme. Cash Bonus Scheme which at present rate equal to 60% of basic salary. Outward passage paid.—Apply giving full details of age, qualifications, and experience to Foster Turner and Everetts, Limited, Box No. 3123/3, 11 Old Jewry, London, E.C. 2.

#### THE

# GEOLOGICAL MAGAZINE

VOL. LXXXIX OF WHOLE SERIES
JANUARY-DECEMBER, 1952

# GEOLOGICAL MAGAZINE

with which is incorporated

### THE GEOLOGIST

FOUNDED IN 1864 BY THE LATE DR. HENRY WOODWARD, F.R.S.

Edited by

O. M. B. BULMAN, Ph.D., A.R.C.Sc., F.R.S.

and

S. R. NOCKOLDS, Ph.D.

assisted by

Professor W. S. Boulton, D.Sc. Professor W. G. Fearnsides, M.A., F.R.S. Professor Leonard Hawkes, D.Sc., F.R.S. Professor O. T. Jones, M.A., D.Sc., F.R.S. W. J. Pugh, O.B.E., D.Sc., F.R.S. Professor C. E. Tilley, Ph.D., F.R.S.

Vol. LXXXIX of Whole Series JANUARY—DECEMBER, 1952

STEPHEN AUSTIN & SONS, LTD 1 FORE STREET, HERTFORD, HERTS

HERTFORD
STEPHEN AUSTIN AND SONS, LTD.

# **CONTENTS OF VOLUME LXXXIX, 1952**

No. 1	January–February	PAGE
G. WILSON. P	tygmatic Structures and their Formation	1
K. W. Bond. Grit) as ill	Cyclic Sedimentation of the Rough Rock (Millstone lustrated by a section near Eakring, Nottinghamshire	22
G. A. JOPLIN	. The Granitization Process and its Limitations as	
	ed in Certain Parts of New South Wales	25
	A Note on Chromite-Marbles	39
	An Unusual Appinitic Sill Near Killin, Perthshire .	41
-	The Paragenesis of the Varuträsk Pegmatite	49
	The Significance of the Hydrothermal Stage in the of Igneous Rocks	61
Corresponden	ICE.—The name "Tholeiite", 69; Age of the Portsalon rate, 70.	
Geologica	ologia Applicata all' Ingegneria, 71; International I Congress, 71; Das Polarisations-mikroskop, 72; emical Analysis, 72.	
No. 2	March-April	•
	Metamorphism of Granite Rocks by Olivine Dolerite	
	Australia	73
	r. A Study of Granite Relief from South-West Africa	87
	Rocks in Shetland	97
of Orval,	The Age Relationship of the Granophyre and Basalt Isle of Rhum	106
E. M. Anderso Currents	ON. Lineation and its relation to sub-crustal Convection	113
G. G. LEMON.	The Moinian Inlier of Rosses Point, near Sligo, Eire .	124
	. Magmatic Intrusions and Lava-sheets in the Raman e Nagev (Southern Israel)	129
G. Wilson. A	A Quartz Vein System in the Moine Series near Melness, North Sutherland, and its Tectonic Significance	141
	OR. On a New Chrome-Garnet	145
W. S. McKerf logy .	Row. Notes on the Species and Subspecies in Palaeonto-	148
CORRESPONDEN	ICE.—Zoological Nomenclature, 151; Accuracy in 1 Localities, 152.	
No. 3	May-June	
T. M. THOMAS	. Littoral Trias in the Vale of Glamorgan	153
B. W. SPARKS.	Pleistocene Sections at Barrington, Cambridgeshire .	163
B. E. BALME. Coals .	Spore Specimens from British Upper Carboniferous	175
	TH. Malvern Tectonics—A Contribution	185
W. W. BLACK		195
stones . D. Parkinson	. Allometric Growth in Dielasma hastata from Treak	173
Cliff, Derb	pyshire	201
	DER. Structural Imperfections in Alpine Quartz Crystals	217
C. A. COTTON.	Cyclic Resection of Headlands by Marine Erosion .	221

vi Contents

	PAGE
CORRESPONDENCE.—Foraminiferal Zones in the Tertiary of Australia 225, 228; Gold Coast University College, 230; Species and Subspecies, 230; Accuracy in Geological Localities, 231.  LIST OF PUBLICATIONS RECEIVED.—231.	
Announcements.—International Geological Congress, Algiers, 1952, 162; Empire Mining and Metallurgical Congress, 220.	
No. 4 July–August	
<ul> <li>DORIS L. REYNOLDS. The Difference in Optics Between Volcanic and Plutonic Plagioclases, and its Bearing on the Granite Problem</li> <li>J. T. TEMPLE. The Ontogeny of the Trilobite Dalmanitina olini</li> <li>D. FLINN. A Tectonic Analysis of the Muness Phyllite Block of Unst and Uyea, Shetland</li> <li>W. G. HARDIE. The Lochaber Series South of Loch Leven, Argyllshire</li> <li>C. E. WILLIAMS. Carbonatite Structure: Tororo Hills, Eastern Uganda</li> <li>F. A. HENSON. Volcanic Ash from the Hekla Eruption of 1947</li> <li>REVIEWS.—Internal Constitution of the Earth, 298; Geology of the Appleby District, 298; The Tectonics of Middle North America,</li> </ul>	233 251 263 273 286 293
299; Sedimentary Petrography, 300; Coast Erosion and Protection: Studies in Causes and Remedies, 300; Tables for Microscopic Identification of Ore Minerals, 301.	
CORRESPONDENCE.—The Granitization Process and its Limitations, 301; Supposed Tufa Bands in Carboniferous Reef Limestone, 302; Fossiliferous Strata at Kapp Scania, Daudmannsøyra, Vest Spitsbergen, 303; The Age of the Malvern Folding, 304.	
No. 5 September-October	
H. H. WILSON. The Cove Marine Bands in East Lothian and their Relation to the Ironstone Shale and Limestone of Redesdale, Northumberland	305
J. WRIGHT. Crinoids from Thornton Burn, East Lothian W. S. PITCHER, and H. H. READ. An Appinitic Intrusion-Breccia at	320
Kilkenney, Maas, Co. Donegal	328
F. WALKER. Mugearites and Oligoclase-Basalts	337
boniferous Reefs at Castleton, North Derbyshire.	346
K. A. Joysey. Fossil Lineages and Environmental Change	357
G. A. L. JOHNSON. A glacial erratic boulder of Shap Granite in South	261
Northumberland	361
I. STRACHAN. On the Development of <i>Diversograptus</i> Manck E. B. BAILEY. So-called Amygdaloidal Gabbro, Skye	365 369
D. L. REYNOLDS. So-called Amygdaloidal Gabbro, Skye: Comments	
on a paper by E. B. Bailey	376
REVIEWS.—Selected Exercises upon Geological Maps, 380; The Formation of Mineral Deposits, 380; Vergleichende Baugeschichte de Gebirge, 380; Die Baugeschichte der Alpen, 380; Plane Table Mapping, 381; The Elements of Field Geology, 382. Correspondence.—Pleistocene Sections at Barrington, 382; Malvern Tectonics, 384.	
No. 6 November-December	
A. N. THOMAS. On the Origins of the Kumaon Lakes in the Himalayas R. J. ADIE. The Position of the Falkland Islands in a Reconstruction	
of Gondwanaland	401

Contents	vii
	PAGE
W. T. HARRY. Basic hornfels at a gabbro contact near Carlingford, Eire	411
K. W. BARR. Limestone Blocks in the Lower Cretaceous Cuche Formation of the Central Range, Trinidad, B.W.I	417
V. A. Eyles and A. G. MacGregor. The Great Glen Crush-Belt .	426
CORRESPONDENCE.—Foraminiferal Zones in the Tertiary of Australia, 437; Lineation in the Shetland Islands, 438; Mugearites and Oligoclase-Basalts, 439; Cove Marine Bands, 440; Malvern Tectonics, 440.	
REVIEWS.—A Palaeogeographical Atlas, 441; Grundlagen der Biostratonomie, 442; Radiocarbon Dating, 442.	
List of Publications Received.—443.	
INDEX.—445.	