

TERTIARY FAUNAS

A textbook for oilfield palaeontologists and students of geology

Volume I:
The Composition of
Tertiary Faunas

A. MORLEY DAVIES

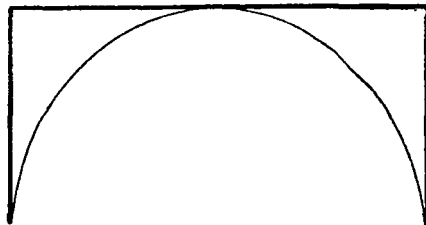
Revised and brought up to date by F. E. EAMES, and with a contribution from R. J. G. SAVAGE

This second edition of a classic text incorporates the essence of the 35 years' research work done since the first edition was published.

It has been heavily expanded and includes a new chapter on Ostracoda.

110 pages of illustrations £10.00

**George Allen
& Unwin**



Till: A Symposium

Edited by Richard P. Goldthwait

The original papers that make up this collection constitute the first volume in English to be devoted to till, and represent a systematic and coherent study of those aspects of the subject that are of primary interest to geologists and those in related fields: its genesis, structure, stratigraphic correlation, composition, and fabric. The authors are J. T. Andrews, G. S. Boulton, B. R. Brace, E. A. Christiansen, L. D. Drake, L. R. Drees, R. P. Goldthwait, G. F. Hall, N. Holowaychuck, W. A. Pettyjohn, L. P. Wilding, A. Dreimanis, U. J. Vagners, P. B. DuMontelle, H. D. Glass, D. L. Gross, N. C. Hester, F. P. Kempton, A. J. Lineback, E. B. Evenson, W. J. Johnson, G. W. White, P. MacClintock, S. R. Moran, L. H. Nobles, J. Weertman, R. W. Lemke, F. Pessl, Jr., J. Ramsden, J. A. Westgate, N. E. Smeck, D. P. Stewart, and F. R. Steiger. The volume has been edited with the assistance of Jane L. Forsyth, David L. Gross, and Fred Pessl, Jr. 8 x 10 $\frac{1}{4}$ inches. xii + 405 pp. 113 black and white, linecut and halftone illustrations.

\$20.00

**Ohio State
University Press**



2070 Neil Avenue
Columbus 43210



The Surface Features of the Land

Alfred Hettner

Translated by Philip Tilley

A key work in geomorphology, first published in 1921 but now appearing in English for the first time. Hettner's criticism of prevailing attitudes to the study of landforms stimulated widespread reaction among German geologists but still remains to have its full impact in the English-speaking world.

£5.50

Macmillan

Leyden State University

In the Department of Structural Geology at the Geological Institute of Leyden University, the Netherlands, a position for a

Structural Geologist is vacant.

The applicant should have some specialization in one of the following fields:

1. strain analysis of rocks;
2. development of cleavages and schistosities;
3. fabrics and structure of ore deposits in metamorphic terrain.

Applicants are expected to do field- and laboratory research in their speciality, which should be integrated in the research projects the department is engaged in.

In addition some teaching duties are expected, as well as supervising students.

Appointment will be in one of the ranks of 'wetenschappelijk medewerker' (Lecturer) and the salary depends on experience.

Applications can be sent to, and further information obtained from Prof. Dr H. J. Zwart, Geologisch Instituut, Garenmarkt 1b, Leyden (The Netherlands).

Philosophical Transactions of the Royal Society

Series A volume 271 number 1213

A Discussion on Volcanism and the Structure of the Earth

Organized by J. Sutton, F.R.S., P. A. Sabine and R. R. Skelhorn
323 pages 210 mm × 250 mm Price £5.90: U.S. \$15.40

Although volcanoes provide some of Nature's most spectacular phenomena, and have been the objects of record since the earliest days of science, the accumulation of data in the past 150 years has until very recently only served to emphasize the extent of their unknown characteristics. In the last decade, however, there have been notable advances, both in the observation of volcanoes and volcanic rocks, and in the spectacular development of ideas of the mobility of the crust that enable volcanicity to be related to the structure of the Earth.

The Discussion which is introduced by J. Sutton, F.R.S. contains the following papers:

- Aspects of magmatic evolution on Réunion Island
- Proposals concerning the variation of volcanic products and processes within the oceanic environment
- Structure of the Icelandic basalt plateau and the process of drift
- The evolution of the Scotia Ridge and the Scotia Sea
- Volcanism of the Kenya rift valley
- Geophysical studies relating to the Tertiary volcanic structure of the British Isles
- Cenozoic volcanism and plate-tectonic evolution of the Western United States
 - I. Early and Middle Cenozoic
 - II. Late Cenozoic
- Silica saturation in Cenozoic basalt
- Kimberlites and their relation to the mantle
- Plutonic xenoliths and their relation to the upper mantle

Available through any bookseller or direct from:
**THE ROYAL SOCIETY, 6 CARLTON HOUSE TERRACE,
LONDON, SW1Y 5AG**

Geodesy

G. BOMFORD

This book aims at covering the whole field of geodesy, considered both as the basis of surveying and as a source of geophysical data. It has been almost entirely rewritten for the present edition. The treatment of new methods, such as those dependent on electromagnetic distance measurement, artificial satellites, and electronic computers, has been much expanded. A section on gyroscopic theodolites has been included. Third edition 222 text figures £10

Geology

WILLIAM C. PUTNAM

Revised by Ann Bradley Bassett

This is a revised edition of a book first published in 1965. It is an introductory textbook covering all the major topics in geology, and examining the problems which concern geologists today. Selected references for further reading accompany each chapter. Second edition half-tone and line figures throughout £4.50
OUP New York

The Geology of the Sudan Republic

A. J. WHITEMAN

In this book an attempt is made to provide for the first time a comprehensive and systematic account of the geology of the Sudan Republic, which is the largest country in Africa and covers almost a million square miles. A scattered literature has been assessed and assembled, together with new data collected since 1960 on surveys and expeditions made largely under the author's direction in the deserts and semi-arid lands of the northern and central Sudan. The economic geology (including groundwater) is discussed in detail as well as the stratigraphy and structure. 14 plates 84 text figures £8

OXFORD UNIVERSITY PRESS

**Methuen for
Geography**



Introduction to Geomorphology

ALISTAIR F. PITTY

The author first examines the fundamental characteristics and basic postulates of geomorphology; then, rather than presenting landforms topic by topic, seeks to define the systematic stages through which the study and interpretation of the landforms of a given area might proceed. An appendix presents concise descriptions of simple and inexpensive methods of acquiring field data in landform study. £5.00; University Paperback: £2.50

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, SC.D., A.R.C.SC., F.R.S.
S. R. NOCKOLDS, PH.D., F.R.S.
and W. B. HARLAND, M.A.

assisted by MRS K. N. HEROD and MRS M. J. MASON

Associate editors

PROFESSOR K. C. DUNHAM, D.SC., F.R.S.
MR. N. L. FALCON, M.A., F.R.S.
PROFESSOR LEONARD HAWKES, D.SC., F.R.S.
PROFESSOR SIR WILLIAM PUGH, O.B.E., D.SC., F.R.S.
PROFESSOR F. W. SHOTTON, M.B.E., M.A., SC.D., F.R.S.
SIR JAMES STUBBLEFIELD, D.SC., F.R.S.
PROFESSOR C. E. TILLEY, PH.D., F.R.S.

Volume 108 of Whole Series
January–December 1971

Cambridge
at the University Press 1971

**Published by the Syndics of the Cambridge University Press
Bentley House, 200 Euston Road, London NW1 2DB
American Branch: 32 East 57th Street, New York, N.Y.10022**

© Cambridge University Press 1971

**Printed in Great Britain
by Alden & Mowbray Ltd
at the Alden Press, Oxford**

CONTENTS

ARTICLES

(Figures in bold type denote number of issue)

ALMOND, D. C.

Ignimbrite vents in the Sabaloka cauldron, Sudan (Plate 1 a-d), **2**, 159

BAKER, J. W.

Intra-Lower Palaeozoic faults in the Southern Irish Sea Area, **6**, 501

BALDOCK, J. W.

Feldspathic vent agglomerates at Bukusu, Uganda—a reinterpretation (Plates 1-2), **5**, 407

BANHAM, P.

Pleistocene beds at Corton, Suffolk, **4**, 281

BHATTACHARYYA, C.

Myrmekite from the Charnockitic Rocks of the Eastern Ghats, India (Plate 1), **5**, 433

BLACK, M.

Problematical Microfossils from the Gault Clay (Plates 1-3) **4**, 325

BOSE, M. K., CHAKRAVARTI, S., & SARKAR, A.

Petrological observations on alkali syenites of Kunavaram, A. P., India, **4**, 273

BRISTOW, C. M., & HUGHES, D. E.

A Tertiary thrust fault on the southern margin of the Bovey Basin, **1**, 61

BROOKFIELD, M.

An alternative to the 'clastic trap' interpretation of oolitic ironstone facies, **2**, 137

BROWN, P. E., & FARMER, D. G.

Size-graded layering in the Imilik gabbro, East Greenland (Plate 1), **6**, 465

BRÜCK, P. M.

Fossil content and age of the greywacke formations west of the Leinster Granite in Counties Dublin, Kildare and Wicklow, Ireland, **4**, 303

BULMAN, O. M. B.

Some species of *Bryograptus* and *Pseudobryograptus* from Northwest Europe, **5**, 361

CARR, A. P.

Orford, Suffolk: Further Data on the Quaternary Evolution of the area, **4**, 311

CHAUDHRI, R. S.

Petrogenesis of Cenozoic sediments of north-western Himalayas, **1**, 43

- CHOWDHARY, P. K.**
Zircon populations in Lewisian quartzite, gneiss and granite north of Loch Laxford, Sutherland (Plate 1), 3, 255
- DALEY, B., & EDWARDS, N.**
Palaeogene warping in the Isle of Wight, 5, 399
- DAS, B. K., & VANSHNARAYAN**
Nahan Sandstone and its exfoliation, Nainital District, Uttar Pradesh, India (Plate 1), 3, 229
- DAVIES, R. G., & CRAWFORD, A. R.**
Petrography and age of the rocks of Bulland Hill, Kirana Hills, Sarghoda District, West Pakistan, 3, 235
- DOW, D. B., BEYTH, M., & HAILU, T.**
Palaeozoic glacial rocks recently discovered in northern Ethiopia (Plate 1), 1, 53
- FASHAM, M. J. R.**
A gravity survey of the Bovey Tracy basin, Devon, 2, 119
- FOX, J. S.**
Coexisting chloritoid and staurolite and the staurolite–chlorite isograd from the Agnew Lake area, Ontario, Canada, 3, 205
- FRANCIS, P. W., MOORBATH, S., & WELKE, H. J.**
Isotopic age data from Scourian intrusive rocks on the Isle of Barra, Outer Hebrides, north-west Scotland, 1, 13
- FREST, T., & PAUL, C. R. C.**
Callocystites brevis, a new Silurian rhombiferan cystoid from Indiana (Plate 1), 5, 425
- HARLAND, W. B.**
Tectonic transpression in Caledonian Spitsbergen, 1, 27
- HASLAM, H. W.**
Andalusite in the Mullach nan Coirean granite, Inverness-shire, 2, 97
- HEIMLICH, R. A.**
Greenstone assimilation by tonalite magma, Atikwa Lake, Ontario, 1, 1
- HEY, R. W., KRINSLEY, D. H., & HYDE, P. J. W.**
Surface textures of sand-grains from the Hertfordshire Pebble Gravels, 5, 377
- HOBSON, D. M.**
Deformed agglomerates near Tintagel, North Cornwall, 5, 383
- HÖISÆTER, T.**
Thrust Devonian Sediments in the Kvamshesten area, Western Norway (Plate 1), 4, 287
- HORNE, R. R.**
Aeolian cross-stratification in the Devonian of the Dingle Peninsula, County Kerry, Ireland (Plates 1–4), 2, 151

HUDDART, D.

Textural distinction of Main Glaciation and Scottish Readvance tills in the Cumberland lowland (Plates 1–2), 4, 317

KENNAN, P. S.

Porphyroblast rotation and the kinematic analysis of a small fold, 3, 221

LE BAS, M. J.

Cone-sheets as a mechanism of uplift, 5, 373

LEEDER, M. R.

Initiation of the Northumberland basin, 6, 511

LEMON, G. G.

The Pre-Cambrian rocks of the N.E. Ox Mountains, Eire, 3, 193

LOCK, B. E.

Zonal schemes in ancient ignimbrites, 2, 103

MORGAN, W. R., PERROTT, I. H., & PETHERBRIDGE, R. T.

Metamorphosed rugose corals in Devonian Limestone, at Calcium, North Queensland, Australia (Plate 1), 6, 533

MUKHERJEE, A. D., & SEN, R. N.

On the rotation of biotite from the pelites around Gruevagen, Trondhjems Feltet, Norway and its genetic implications (Plate 1), 2, 145

NAHA, K., & MAJUMDAR, A.

Reinterpretation of the Aravalli basal conglomerate at Morchana, Udaipur district, Rajasthan, western India (Plate 1), 2, 111

NORTH, F. K.

Alpine serpentinites, oceanic ridges, and continental drift, 2, 81

OLD, R. A., & REX, D. C.

Rubidium and Strontium age determination of some Pre-Cambrian granitic rocks, S.E. Uganda, 5, 353

ORAJAKA, S.

The petrography and chemistry of the Obudu type hornblende peridotite (cortlandtite), Ogoja Province, Eastern Nigeria (Plate 1), 3, 247

PIPER, D. J. W.

Pleistocene superficial deposits, Balcombe area, central Weald, 6, 517

PITTY, A. F.

Rate of uptake of calcium carbonate in underground karst water, 6, 537

RAIVERMAN, V., & RAMAN, K. S.

Facies relations in the Subathu Sediments, Simla Hills, Northwestern Himalaya, India, 4, 329

RICKARD, M. J.

A classification diagram for fold orientations, 1, 23

RIDLEY, W. I.

The origin of some collapse structures in the Canary Islands (Plate 1), 6, 477

H*

- ROBERTS, J. L.**
Some features of the Mesozoic vulcanicity in the Lebanon, 2, 115
- ROBERTS, J. L., & SANDERSON, D. J.**
The intrusive form of some basalt dykes showing flow lineation, 6, 489
- ROOBOL, M. J.**
Some relations between common acid-basic associations, 6, 525
- ROTHSTEIN, A. T. V.**
A primary igneous texture from the Lizard Peridotite, Cornwall (Plates 1–3), 5, 393
- SINGH, S. K., & KAMINENI, D. C.**
Mineralogy and Textures of some cordierite-sillimanite rocks from Labrador, Canada (Plates 1–2), 5, 439
- SKEVINGTON, D.**
Monograptus priodon (Bronn) from the Macduff Group (Upper Dalradian) of Banffshire, Scotland, 6, 485
- SOPER, N. J., & ROBERTS, D. E.**
Age of cleavage in the Skiddaw Slates in relation to the Skiddaw aureole, 4, 293
- SUBBARAO, K. V.**
The origin of the Kunavaram amphibolites, Khammam District, Andhra Pradesh, India, 2, 131
- THOREZ, J., BULLOCK, P., CATT, J. A., & WEIR, A. H.**
The Petrography and Origin of Deposits filling Solution Pipes in the Chalk near South Mimms, Hertfordshire, 5, 413
- TOZER, E. T.**
Permian Triassic Boundary in West Pakistan, 5, 451
- VELDE, D.**
A note on an analcite-bearing lamproite from Devonshire (Plate 1), 3, 201
- WALTHAM, A. C.**
A note on the structure and succession at Abereiddy Bay, Pembrokeshire, 1, 49

CORRESPONDENCE

- BLACK, W. W., BULMAN, O. M. B., HEY, R. W., & HUGHES, C. P.**
Ordovician stratigraphy of Abereiddy Bay, Pembrokeshire, 6, 546
- BROMLEY, A. V.** Phases of deformation in North Wales, 6, 548
- BROWN, G. C.** Granitic liquids: their generation and intrusion, 4, 343
- CANN, J. R.** Granitic liquids: their generation and intrusion, 4, 345
- COCKS, L. R. M., & TOGHILL, P.** Stages of the Llandovery Series, 3, 263
- GEORGE, T. N.** Stages of the Llandovery Series, 3, 263
- GREEN, D.** Evolution in meaning of certain geological terms, 2, 177

- HILL, P. J. Carboniferous Conodonts from Southern Ireland, **1**, 69
- HUGHES, C. P. Recommendation to discontinue the use of the terms 'niobiform' and 'isoteliform' in the description of asaphid (trilobite) sutures, **2**, 179
- KNOX, R. W. O'B. An alternative to the 'Clastic Trap' interpretation of oolitic ironstone facies, **6**, 000
- MITCHELL, A. H. G., JANTARANIPA, W., & YOUNG, B. The Phuket Group of Peninsular Thailand, **5**, 446
- NICHOLSON, R. Tectonic ripples and associated minor structures in the Silurian rocks of Denbighshire, **5**, 447
- RIDD, M. F. The Phuket Group of Peninsular Thailand, **5**, 445
- WALTHAM, A. C. Ordovician stratigraphy of Aberiddy Bay, Pembrokeshire, **6**, 548
- WARREN, P. T., HARRISON, R. K., WILSON, H. E., SMITH, E. G., & NUTT, M. J. C. Tectonic ripples and associated minor structures in the Silurian rocks of Denbighshire, **5**, 449

REVIEWS

- Advances in Organic Geochemistry, **3**, 268
- Adventures in Earth History, **6**, 563
- Afghanistan (Trilobite), Asteropyginae aus, **1**, 73
- African Magmatism and Tectonics, **6**, 551
- Alpen, Geologie der, **6**, 553
- Ancient Sedimentary Environments, **6**, 551
- Atlantic Continental Shelf and Slope of United States, **5**, 459
- Asteropyginae aus Afghanistan (Trilobite), **1**, 73
- Bewcastle, Geology of the Country around, **6**, 561
- Biostratigraphic Classification of the Marine Triassic in North America, **1**, 74
- Brasilien, Geologie von, **6**, 554
- British Isles, The Geological History of the, **4**, 347
- Die bruchtektonische Zyklennordnung im Orogen am Beispiel der Ostalpen, **5**, 457
- Chester through Derry Conodonts and Stratigraphy of Northern Clark and Southern Lincoln Counties, Nevada, **2**, 181
- Colorado River Region and John Wesley Powell, **6**, 569
- Conodonts (Chester through Derry) and Stratigraphy of Northern Clark and Southern Lincoln Counties, Nevada, **2**, 181
- Crystals and the Polarising Microscope, **4**, 349
- Data Processing in Biology and Geology, **6**, 568

- The Earth—an Introduction to physical geology, **6**, 563
- Earth History, Adventures in, **6**, 563
- Earth, The Interior of the: Structure and Process, **6**, 555
- Earth, Understanding the, **6**, 563
- The Elements of Palaeontology, **4**, 349
- Energie Handbuch, **6**, 553
- Die Entstehung der Gesteine. Ein Lehrbuch der Petrogenese, **4**, 351
- Everest—The West Ridge, **6**, 558
- The Exploration for Petroleum in Europe and North Africa, **1**, 75
- Fusulnids from the Lower Permian of West Pakistan, Morphologic studies of,
1, 76
- Genesis and Geology, **2**, 183
- Geochronology of Phanerozoic Orogenic Belts, **6**, 558
- The Geological History of the British Isles, **4**, 347
- Geologie der Alpen, **6**, 553
- Geologie von Brasilien, **6**, 554
- Geology 1400–1900, A Source book in, **4**, 350
- Geology of Recent Sediments, **5**, 457
- Geology of the Country around Bewcastle, **6**, 561
- The Geology of the Stirling District, **6**, 563
- Gesteine, Die Entstehung der, **4**, 351
- Glacial and Quaternary Geology, **6**, 566
- The Glaciations of Wales and Adjoining Regions, **6**, 559
- Glaciers, The Physics of, **4**, 350
- Global Geophysics, **5**, 458
- Greenland, Tectonic Geological Map of, **1**, 76
- Handbook of New Zealand Microfossils, **5**, 459
- Ice Ages—their Nature and Effects, **6**, 562
- Igneous Intrusion, Mechanism of, **6**, 560
- The Interior of the Earth: Structure and Process, **6**, 555
- Isotopes, Lead, **6**, 556
- Late Paleozoic and Mesozoic Continental Sedimentation, **4**, 347
- Lead Isotopes, **6**, 556
- Lithogenesis, Principles of, **1**, 77; **2**, 184
- Lithology and Geochemistry of the Weathering Crust, **5**, 456
- Lithology, Textbook of, **6**, 557
- Manganese deposits of the Soviet Union, **6**, 565

- Map Studies with Related Field Excursions, **4**, 351
- Marine Triassic in North America, Biostratigraphic Classification of the, **1**, 74
- Mechanism of Igneous Intrusion, **6**, 560
- Morphologic studies of Fusulinids from the Lower Permian of West Pakistan, **1**, 76
- New Zealand Microfossils, Handbook of, **5**, 459
- Oceans, Using the, **6**, 553
- Organic Geochemistry, Advances in, **3**, 268
- Organic Geochemistry. Methods and Results, **2**, 187
- Orogen am Biespiel der Ostalpen, Die bruchtektonische Zykenordnung im, **5**, 456
- Palaeontology, The Elements of, **4**, 349
- Paleontology, Principles of, **6**, 553
- The Periglacial Environment, **2**, 183
- Permian Triassic Boundary in West Pakistan, **5**, 451
- Petroleum in Europe and North Africa, The Exploration for, **1**, 75
- Phanerozoic Orogenic Belts, Geochronology of, **6**, 558
- Physical Process of Sedimentation, **2**, 188
- The Physics of Glaciers, **4**, 350
- Principles of Lithogenesis, **1**, 77; **2**, 184
- Principles of Paleontology, **6**, 553
- Radiocarbon Variations and Absolute Chronology, **6**, 568
- Recent Sediments, Geology of, **5**, 457
- Resources and Man, **5**, 458
- Rivers and River Terraces, **2**, 181
- Rocks and Relief, **5**, 460
- Sedimentary Environments, Ancient, **6**, 551
- Sedimentation, Late Paleozoic and Mesozoic Continental, **4**, 347
- Sedimentation, Physical Processes of, **2**, 188
- Silurian Reefs of Gotland, **6**, 559
- A Source Book in Geology, **4**, 350
- Statistical analysis of geological data, **1**, 74
- Stirling District, The Geology of the, **6**, 563
- Tectonic Geological Map of Greenland, **1**, 76
- Textbook of Lithology, **6**, 557
- Trace Fossils, **3**, 266
- Understanding the Earth, **6**, 563

Using the Oceans, 6, 553

Weathering Crust, Lithology and Geochemistry of the, 5, 456

The Writing of Geography, 5, 460

Publications Received

Lists appear beginning pages 1, 79; 2, 191; 3, 270; 4, 352; 5, 461; 6, 571

INDEX

to Authors and key words in titles in Volume 108; (R) indicates Review

- Aberiddy Bay, Pembrokeshire, A note on the structure and succession, Waltham, A. C., 49, 546
- Acid-basic associations, Some relations between common, Roobol, M. J., 525
- Aeolian cross-stratification in the Devonian of the Dingle Peninsula, County Kerry, Ireland, Horne, R. R., 151
- Afghanistan (Trilobita), Asteropyginae aus (R), 73
- African Magmatism and Tectonics (R), 551
- Agglomerates (deformed) near Tintagel, North Cornwall, Hobson, D. M., 383
- Alkali syenites of Kunavaram, A. P., India, Petrological observations on, Bose, M. K., Chakravarti, S., & Sarkar, A., 273
- Allen, J. R. L., Physical Processes of Sedimentation (R), 188
- Almond, D. C., Ignimbrite vents in the Sabaloka cauldron, Sudan, 159
- Alpen, Geologie der, 553
- Amphibolites, Kunavaram, Khammam District, Andhra Pradesh, India, The origin of the, Subbarao, K. V., 131
- Analcite-bearing lamproite from Devonshire, A note on an, Velde, D., 201
- Andalusite in the Mullach nan Coirean granite, Inverness-shire, Haslam, H. W., 97
- Aravalli basal conglomerate at Morchana, Udaipur district, Rajasthan, western India, Reinterpretation of the, Naha, K., & Majumdar, A., 111
- Asaphid (trilobita) sutures, Recommendation to discontinue the use of the terms 'niobiform' and 'isoteliform' in the description of, Hughes, C. P., 179
- Atlantic Continental Shelf and Slope of United States (R), 459
- Baker, J. W., Intra-Lower Palaeozoic faults in the Southern Irish Sea Area, 501
- Baldock, J. W., Feldspathic vent agglomerates at Bukusu, Uganda, 407
- Banham, P., Pleistocene beds at Corton, Suffolk, 281
- Barth, T. F. W., Correns, C. W., & Eskola, P., Die Entstehung der Gesteine. Ein Lehrbuch der Petrogenese (R), 351
- Basalt dykes showing flow lineation, The intrusive form of some, Roberts, J. L., & Sanderson, D. J., 489
- Bennison, G. M., & Wright, A. E., The Geological History of the British Isles (R), 347
- Beurlen, K., Geologie von Brasilien (R), 554
- Bewcastle, Geology of the Country around (R), 561
- Beyth, M., Dow, D. B., & Hailu, T., Palaeozoic glacial rocks recently discovered in northern Ethiopia, 53
- Bhattacharyya, C., Myrmekite from the Charnockitic Rocks of the Eastern Ghats, India, 433
- Biotite from the pelites around Gruvehagen, Trondhjems Feltet, Norway and its genetic implications, On the rotation of, Mukherjee, A. D., & Sen, R. N., 145

- Black, M., Problematical Microfossils from the Gault Clay, 325
- Black, R. M., The Elements of Palaeontology (R), 349
- Black, W. W., Bulman, O. M. B., Hey, R. W., & Hughes, C. P., Ordovician stratigraphy of Abereiddy Bay, Pembrokeshire, 546
- Bose, M. K., Chakravarti, S., & Sarker, A., Petrological observations on alkali syenites of Kunavaram, A. P. India, 273
- Bott, M. H. P., The Interior of the Earth: Structure and Process (R), 555
- Bovey Tracy basin, Devon, A gravity survey of the, Fasham, M. J. R., 119
- Brasilien, Geologie von (R), 554
- Bristow, C. M., & Hughes, D. E., A Tertiary thrust fault on the southern margin of the Bovey Basin, 61
- British Isles, The Geological History of the (R), 347
- Bromley, A. V., Phases of deformation in North Wales, 548
- Brookfield, M., An alternative to the 'clastic trap' interpretation of oolitic ironstone facies, 137
- Brown, G. C., Granitic liquids: their generation and intrusion, 343
- Brown, P. E., & Farmer, D. G., Size-graded layering in the Imilik gabbro, East Greenland, 465
- Brück, P. M., Fossil content and age of the greywacke formations west of the Leinster Granite in Counties Dublin, Kildare and Wicklow, 303
- Bryograptus* and *Pseudobryograptus* from Northwest Europe, Some species of, Bulman, O. M. B., 361
- Bullock, P., Thorez, J., Catt, J. A., & Weir, A. H., The Petrography and Origin of Deposits filling Solution Pipes in the Chalk near South Mimms, Hertfordshire, 413
- Bulman, O. M. B., Black, W. W., Hey, R. W., & Hughes, C. P., Ordovician stratigraphy of Abereiddy Bay, Pembrokeshire, 546
- Bulman, O. M. B., Some species of *Bryograptus* and *Pseudobryograptus* from Northwest Europe, 361
- Calcium carbonate in underground karst water, Rate of uptake of, Pitty, A. F., 537
- Callocystites brevis*, a new Silurian rhombiferan cystoid from Indiana, Frest, T., & Paul, C. R. C., 425
- Callocystites brevis* sp. nov., 428
- Cann, J. R., Granitic liquids: their generation and intrusion, 345
- Carboniferous Conodonts from Southern Ireland, Hill, P. J., 69
- Carr, A. P., Orford, Suffolk: Further Data on the Quaternary Evolution of the area, 311
- Catt, J. A., Thorez, J., Bullock, P., Weir, A. H., The Petrography and Origin of deposits filling solution pipes in the Chalk near South Mimms, Hertfordshire, 413
- Cenozoic sediments of north-western Himalayas, Petrogenesis of, Chaudhri, R. S., 43
- Chakravarti, S., Bose, M. K., & Sarker, A., Petrological observations on alkali syenites of Kunavaram, A. P., India, 273
- Charnockitic Rocks of the Eastern Ghats, India, Myrmekite from the, Bhattacharyya, C., 433

- Chaudhri, R. S., Petrogenesis of Cenozoic sediments of north-western Himalayas, 43
- Chowdhary, P. K., Zircon populations in Lewisian quartzite, gneiss and granite north of Loch Laxford, Sutherland, 255
- Clifford, T. N., & Gass, I. G. (Eds), African Magmatism and Tectonics (R), 551
- Cloud, P. (Ed.), Adventures in Earth History (R), 563
- Cocks, L. R. M., & Toghil, P., Stages of the Llandoverly Series, 263
- Collapse structures in the Canary Islands, The origin of some, Ridley, W. I., 477
- Colorado River Region and John Wesley Powell (R), 569
- Cone-sheets as a mechanism of uplift, Le Bas, M. J., 373
- Conodonts (Chester through Derry) and Stratigraphy of Northern Clark and Southern Lincoln Counties, Nevada (R), 181
- Conodonts from Southern Ireland, Carboniferous, Hill, P. J., 69
- Continental drift, Alpine serpentinites, oceanic ridges, and, North, F. K., 81
- Continental Shelf and Slope of United States, Atlantic (R), 459
- Cordierite-sillimanite rocks from Labrador, Canada, Mineralogy and Textures of some, Singh, S. K., & Kamineni, D. C., 439
- Cornwall, I., Ice Ages—their Nature and Effects (R), 562
- (Cortlandtite), Ogoja Province, Eastern Nigeria, The petrography and chemistry of the Obudu type hornblende peridotite, Orajaka, S., 247
- Crawford, A. R., & Davies, R. G., Petrography and age of the rocks of Bulland Hill, Kirana Hills, Sarghoda District, West Pakistan, 235
- Crimes, T. P., & Harper, J. C. (Eds), Trace Fossils (R), 266
- Crystals and the Polarising Microscope (R), 349
- Cutbill, J. L. (Ed.), Data Processing in Biology and Geology (R), 568
- Daley, B., & Edwards, N., Palaeogene warping in the Isle of Wight, 399
- Das, B. K., & Vanshnarayan, Nahan Sandstone and its exfoliation, Nainital District, Uttar Pradesh, India, 229
- Data Processing in Biology and Geology (R), 568
- Davies, R. G., & Crawford, A. R., Petrography and age of the rocks of Bulland Hill, Kirana Hills, Sarghoda District, West Pakistan, 235
- Day, J. B. W., Geology of the Country around Bewcastle (R), 561
- Deformation in North Wales, Phases of, Bromley, A. V., 548
- Devonian (Thrust) Sediments in the Kvamshesten area, Western Norway, Høisæter, T., 287
- Doe, B. R., Lead Isotopes (R), 556
- Douglas, R. C., Morphologic studies of fusulinids from the Lower Permian of West Pakistan (R), 76
- Dow, D. B., Beyth, M., & Hailu, T., Palaeozoic glacial rocks recently discovered in northern Ethiopia, 53
- Dury, G. H. (Ed.), Rivers and River Terraces (R), 181
- Earth—an Introduction to physical geology (R), 563
- Earth History, Adventures in (R), 563
- Earth, The Interior of the: Structure and Process (R), 555
- Earth, Understanding the (R), 563
- Edwards, N., & Daley, B., Palaeogene warping in the Isle of Wight, 399

- Eglinton, G., & Murphy, M. T. J. (Eds), *Organic Geochemistry. Methods and Results (R)*, 187
- Energie Handbuch (R), 553
- Everest—The West Ridge (R), 558
- Farmer, D. G., & Brown, P. E., Size-graded layering in the Imilik gabbro, East Greenland, 465
- Fasham, M. J. R., A gravity survey of the Bovey Tracy basin, Devon, 119
- Feldspathic vent agglomerates at Bukusu, Uganda, Baldock, J. W., 407
- Flint, R. F., *Glacial and Quaternary Geology (R)*, 566
- Flow lineation, The intrusive form of some basalt dykes showing, Roberts, J. L., & Sanderson, D. J., 489
- Fold orientations, A classification diagram for, Rickard, M. J., 23
- Fold, Porphyroblast rotation and the Kinematic analysis of a small, Kennan, P. S., 221
- Fox, J. S., Coexisting chloritoid and staurolite and the staurolite–chlorite isograd from the Agnew Lake area, Ontario, 205
- Francis, E. H., Forsyth, I. H., Read, W. A., & Armstrong, M., *The Geology of the Stirling District (R)*, 563
- Francis, P. W., Moor bath, S., & Welke, H. J., Isotopic age data from Scourian intrusive rocks on the Isle of Barra, Outer Hebrides, north-west Scotland, 13
- Freeman, T. W., *The Writing of Geography (R)*, 460
- Frest, T., & Paul, C. R. C., *Callocystites brevis*, a new Silurian rhombiferan cystoid from Indiana, 425
- Fusulinids from the Lower Permian of West Pakistan, Morphologic studies of, 76
- Gaskell, T. F. (Ed.), *Using the Oceans (R)*, 553
- Gass, I. G., Smith, P. J., & Wilson, R. C. L. (Eds), *Understanding the Earth (R)*, 563
- Gault Clay, Problematical Microfossils from the, Black, M., 325
- Genesis and Geology (R), 183
- Geochemistry of the Weathering Crust, Lithology and (R), 456
- Geochronology of Phanerozoic Orogenic Belts (R), 558
- Geological terms, Evolution in meaning of certain, Green, D., 177
- Geology 1400–1900, A Source book in (R), 350
- Geophysics, Global (R), 458
- George, T. N., Stages of the Llandovery Series, 263
- Gesteine, Die Entstehung der (R), 351
- Gillispie, C. C., *Genesis and Geology (R)*, 183
- Glacial and Quaternary Geology (R), 566
- Glacial rocks recently discovered in northern Ethiopia, Palaeozoic, Dow, D. B. Beyth, M., & Hailu, T., 53
- Glaciations of Wales and Adjoining Regions (R), 559
- Glaciers, The Physics of (R), 350
- Global Geophysics (R), 458
- Granitic liquids: their generation and intrusion, Brown, G. C., 343; Cann, J. R., 345
- Green, D., Evolution in meaning of certain geological terms, 177

- Greenland, Tectonic Geological Map of (R), 76
- Greenstone assimilation by tonalite magma, Atikway Lake, Ontario, Heimlich, R. A., 1
- Greywacke formations west of the Leinster Granite in Counties Dublin, Kildare and Wicklow, Ireland, Fossil content and age of the, Brück, P. M., 303
- Gwinner, M. P., *Geologie der Alpen* (R), 553
- Haas, W., & Mensink, H., *Asteropyginae aus Afghanistan (Trilobita)* (R), 73
- Hailu, T., Dow, D. B., & Beyth, M., Palaeozoic glacial rocks recently discovered in northern Ethiopia, 53
- Harland, W. B., Tectonic transpression in Caledonian Spitsbergen, 27
- Harrison, R. K., Warren, P. T., Wilson, H. E., Smith, E. G., & Nutt, M. J. C., Tectonic ripples and associated minor structures in the Silurian rocks of Denbighshire, 449
- Hartshorne, N. H., & Stuart, A., *Crystals and the Polarising Microscope* (R), 349
- Haslam, H. W., Andalusite in the Mullach nan Coirean granite, Inverness-shire, 97
- Hazel, J. E., *Atlantic Continental Shelf and Slope of United States* (R), 459
- Heimlich, R. A., Greenstone assimilation by tonalite magma, Atikwa Lake, Ontario, 1
- Heppele, P., *The Exploration for Petroleum in Europe and North Africa* (R), 75
- Hey, R. W., Black, W. W., Bulman, O. M. B., & Hughes, C. P., Ordovician stratigraphy of Abereiddy Bay, Pembrokeshire, 546
- Hey, R. W., Krinsley, D. H., & Hyde, P. J. W., Surface textures of sand-grains from the Hertfordshire Pebble Gravels, 377
- Hill, P. J., Carboniferous Conodonts from Southern Ireland, 69
- Hobson, D. M., Deformed agglomerates near Tintagel, North Cornwall, 383
- Höisæter, T., Thrust Devonian Sediments in the Kvamshesten area, Western Norway, 287
- Hornbein, T. F., *Everest—The West Ridge* (R), 558
- Hornblende peridotite (cortlandtite), Ogoja Province, Eastern Nigeria, The petrography and chemistry of the Obudu type, Orajaka, S., 247
- Horne, R. R., Aeolian cross-stratification in the Devonian of the Dingle Peninsula, County Kerry, Ireland, 151
- Hornbrook, N. de B., *Handbook of New Zealand Microfossils* (R), 459
- Huddart, D., Textural distinction of Main Glaciation and Scottish Readvance tills in the Cumberland lowland, 317
- Hughes, C. P., Black, W. W., Bulman, O. M. B., & Hey, R. W., Ordovician stratigraphy of Abereiddy Bay, Pembrokeshire, 546
- Hughes, C. P., Recommendation to discontinue the use of the terms 'niobiform and 'isoteliform' in the description of asaphid (trilobita) sutures, 179
- Hughes, D. E., & Bristow, C. M., A Tertiary thrust fault on the southern margin of the Bovey Basin, 61
- Hyde, P. J. W., Hey, R. W., & Krinsley, D. H., Surface textures of sand-grains from the Hertfordshire Pebble Gravels, 377
- Ice Ages—their Nature and Effects (R), 562
- Igneous Intrusion, Mechanism of (R), 560
- Ignimbrite vents in the Sabaloka cauldron, Sudan, Almond, D. C., 159

- Ignimbrites, Zonal schemes in ancient, Lock, B. E., 103
- Imilik gabbro, East Greenland, Size-graded layering in the, Brown, P. E., & Farmer, D. G., 465
- Intra-Lower Palaeozoic faults in the Southern Irish Sea Area, Baker, J. W., 501
- Ironstone facies, An alternative to the 'clastic trap' interpretation of oolitic, Brookfield, M., 137
- Isotopes, Lead (R), 556
- Jackson, K. C., Textbook of Lithology (R), 557
- Jager, E., Grunenfelder, M., & Herb, R. (Eds), Geochronology of Phanerozoic Orogenic Belts (R), 558
- Jantaraniya, W., Mitchell, A. H. G., & Young, B., The Phuket Group of Peninsular Thailand, 446
- Kamineneni, D. C., & Singh, S. K., Mineralogy and Textures of some cordierite-sillimanite rocks from Labrador, Canada, 439
- Kennan, P. S., Porphyroblast rotation and the kinematic analysis of a small fold, 221
- Kirana Hills, Sarghoda District, West Pakistan, Petrography and age of the rocks of Bulland Hill, Davies, R. G., & Crawford, A. R., 235
- Klein, G. de V. (Ed.), Late Paleozoic and Mesozoic Continental Sedimentation (R), 347
- Knox, R. W. O'B., An alternative to the 'Clastic Trap' interpretation of oolitic ironstone facies, 544
- Koch, G. S., & Link, R. F., Statistical analysis of geological data (R), 74
- Krinsley, D. H., Hey, R. W., & Hyde, P. J. W., Surface textures of sand-grains from the Hertfordshire Pebble Gravels, 377
- Kukal, Z., Geology of Recent Sediments (R), 457
- Kummel, B., & Teichert, C. (Eds), Stratigraphic boundary Problems: Permian and Triassic of West Pakistan (R), 451
- Laguncula dorotheae* sp. nov., 327
- Lamproite from Devonshire, A note on an analcite-bearing, Velde, D., 201
- Lapideacassis glans* sp. nov., 326
- Lapideacassis mariae* sp. nov., 326
- Le Blas, M. J., Cone-sheets as a mechanism of uplift, 373
- Leeder, M. R., Initiation of the Northumberland basin, 511
- Leinster Granite in Counties Dublin, Kildare and Wicklow, Ireland, Fossil content and age of the greywacke formations west of the, Brück, P. M., 303
- Lemon, G. G., The Pre-Cambrian rocks of the N.E. Ox Mountains, Eire, 193
- Lewis, C. A. (Ed.), The Glaciations of Wales and Adjoining Regions (R), 559
- Lewisian quartzite, gneiss and granite north of Loch Laxford, Sutherland, Zircon populations in, Chowdhary, P. K., 255
- Lithogenesis, Principles of (R), 77, 184
- Lithology, Textbook of (R), 557
- Llandovery Series, Stages of the, George, T. N., 263; Cocks, L. R. M., & Toghill, P., 263
- Lock, B. E., Zonal schemes in ancient ignimbrites, 103
- Lukashev, K. I., Lithology and Geochemistry of the Weathering Crust (R), 456

- Macduff Group (Upper Dalradian) of Banffshire, Scotland, *Monograptus priodon* (Bronn) from the, Skevington, D., 485
- Majumdar, A., & Naha, K., Reinterpretation of the Aravalli basal conglomerate at Morchana, Udaipur district, Rajasthan, western India, 111
- Manganese deposits of the Soviet Union (R), 565
- Manten, A. A., Silurian Reefs of Gotland (R), 559
- Map Studies with Related Field Excursions (R), 351
- Marine Triassic in North America, Biostratigraphic Classification of the (R), 74
- Mather, K. F., & Mason, S. L., A Source book in Geology 1400–1900 (R), 350
- Mesozoic volcanicity in the Lebanon, Some features of the, Roberts, J. L., 115
- Microfossils (Problematical) from the Gault Clay, Black, M., 325
- Mitchell, A. H. G., Jantaranipa, W., & Young, B., The Phuket Group of Peninsular Thailand, 446
- Monograptus priodon* (Bronn) from the Macduff Group (Upper Dalradian) of Banffshire, Scotland, Skevington, D., 485
- Morgan, W. R., Perrott, I. H., & Petherbridge, R. T., Metamorphosed rugose corals in Devonian Limestone, at Calcium, North Queensland, Australia, 533
- Moorbath, S., Francis, P. W., & Welke, H. J., Isotopic age data from Scourian intrusive rocks on the Isle of Barra, Outer Hebrides, north-west Scotland, 13
- Mukherjee, A. D., & Sen, R. N., On the rotation of biotite from the pelites around Gruvehagen, Trondhjems Feltet, Norway, 145
- Myrmekite from the Charnockitic Rocks of the Eastern Ghats, India, Bhattacharyya, C., 433
- Naha, K., & Majumdar, A., Reinterpretation of the Aravalli basal conglomerate at Morchana, Udaipur district, Rajasthan, western India, 111
- Nahan Sandstone and its exfoliation, Nainital District, Uttar Pradesh, India, Das, B. K., & Vanshnarayan, 229
- Newhall, G., & Rast, N. (Eds), Mechanism of Igneous Intrusion (R), 560
- New Zealand Microfossils, Handbook of (R), 459
- Nicholson, R., Tectonic ripples and associated minor structures in the Silurian rocks of Denbighshire, 447
- North, F. K., Alpine serpentinites, oceanic ridges, and continental drift, 81
- Northumberland basin, Initiation of the, Leeder, M. R., 511
- Nutt, M. J. C., Warren, P. T., Harrison, R. K., Wilson, H. E., & Smith, E. G., Tectonic ripples and associated minor structures in the Silurian rocks of Denbighshire, 449
- Oceanic ridges, and continental drift, Alpine serpentinites, North, F. K., 81
- Oceans, Using the (R), 553
- Old, R. A., & Rex, D. C., Rubidium and Strontium age determination of some Pre-Cambrian granitic rocks, S.E. Uganda, 353
- Olsson, I. U. (Ed.), Radiocarbon Variations and Absolute Chronology (R), 568
- Oolitic ironstone facies, An alternative to the 'Clastic Trap' interpretation of, Brookfield, M., 137; Knox, R. W. O'B., 544
- Orajaka, S., The petrography and chemistry of the Obudu type hornblende peridotite (cortlandtite), Ogoja Province, Eastern Nigeria, 247

- Ordovician stratigraphy of Aberiddy Bay, Pembrokeshire, Black, W. W., Bulman, O. M. B., Hey, R. W., & Hughes, C. P., 546; Waltham, A. C., 548
- Organic Geochemistry, *Advances in* (R), 268
- Organic Geochemistry. *Methods and Results* (R), 187
- Orogen am Biespiel der Ostalpen, *Die bruchtektonische Zykiernordnung im* (R), 456
- Palaeogene warping in the Isle of Wight, Daley, B., & Edwards, N., 399
- Palaeontology, *The Elements of* (R), 349
- Palaeozoic glacial rocks recently discovered in northern Ethiopia, Dow, D. B., Beyth, M., & Hailu, T., 53
- Palaeozoic (Intra-Lower) faults in the Southern Irish Sea Area, Baker, J. W., 501
- Paleontology, *Principles of* (R), 553
- Paterson, W. S. B., *The Physics of Glaciers* (R), 350
- Paul, C. R. C., & Frest, T., *Callocystites brevis*, a new Silurian rhombiferan cystoid from Indiana, 425
- Pebble Gravels (Hertfordshire), Surface textures of sand-grains from the, Hey, R. W., Krinsley, D. H., & Hyde, P. J. W., 377
- Peridotite (cortlandtite), Ogoja Province, Eastern Nigeria, The petrography and chemistry of the Obudu type hornblende, Orajaka, S., 247
- Peridotite, Lizard, Cornwall, A primary igneous texture from the, Rothstein, A. T. V., 393
- Periglacial Environment (R), 183
- Permian and Triassic of West Pakistan, *Stratigraphic boundary Problems* (R), 451
- Permian Triassic Boundary in West Pakistan, Tozer, E. T., 451
- Perrott, I. H., Morgan, W. R., & Petherbridge, R. T., *Metamorphosed rugose corals in Devonian Limestone, at Calcium, North Queensland, Australia*, 533
- Petherbridge, R. T., Morgan, W. R., & Perrott, I. H., *Metamorphosed rugose corals in Devonian Limestone, at Calcium, North Queensland, Australia*, 533
- Petrogenesis of Cenozoic sediments of north-western Himalayas, Chaudhri, R. S., 43
- Petrography and age of the rocks of Bulland Hill, Kirana Hills, Sarghoda District, West Pakistan, Davies, R. G., & Crawford, A. R., 235
- Petroleum in Europe and North Africa, *The Exploration for* (R), 75
- Petrological observations on alkali syenites of Kunavaram, A.P., India, Bose, M. K., Chakravarti, S., & Sarkar, A., 273
- Péwé, T. L. (Ed.), *The Periglacial Environment* (R), 183
- Phanerozoic Orogenic Belts, *Geochronology of* (R), 558
- Phuket Group of peninsular Thailand, Ridd, M. F., 445; Mitchell, A. H. G., Jantaranipa, W., & Young, B., 446
- Piper, D. J. W., Pleistocene superficial deposits, Balcombe area, central Weald, 517
- Pitty, A. F., Rate of uptake of calcium carbonate in underground karst water, 537
- Pleistocene beds at Corton, Suffolk, Banham, P., 281

- Pleistocene superficial deposits, Balcombe area, central Weald, Piper, D. J. W., 517
- Porphyroblast rotation and the kinematic analysis of a small fold, Kennan, P. S., 221
- Powell, John Wesley, Colorado River Region and (R), 569
- Pre-Cambrian granitic rocks, S.E. Uganda, Rubidium and Strontium age determination of some, Old, R. A., & Rex, D. C., 353
- Pre-Cambrian rocks of the N.E. Ox Mountains, Eire, Lemon, G. G., 193
- Problematic Microfossils from the Gault Clay, Black, M., 325
- Pseudobryograptus* and *Bryograptus* from Northwest Europe, Some species of, Bulman, O. M. B., 361
- Publications received, 79, 191, 270, 352, 461, 571
- Pyrobolella bradfieldii* sp. nov., 327
- Quaternary Evolution of the Orford, Suffolk area, Further Data on the, Carr, A. P., 311
- Rabbitt, M. C., McKee, E. D., Hunt, C. B., & Leopold, L. B., The Colorado River Region and John Wesley Powell (R), 569
- Radiocarbon Variations and Absolute Chronology (R), 568
- Raiverman, V., & Raman, K. S., Facies relations in the Subathu Sediments, Simla Hills, Northwestern Himalaya, India, 329
- Raman, K. S., & Raiverman, V., Facies relations in the Subathu Sediments, Simla Hills, Northwestern Himalaya, India, 329
- Raup, D. M., & Stanley, S. M., Principles of Paleontology (R), 553
- Recent Sediments, Geology of (R), 457
- Resources and Man (R), 458
- Rex, D. C., & Old, R. A., Rubidium and Strontium age determination of some Pre-Cambrian granitic rocks, S.E. Uganda, 353
- Rickard, M. J., A classification diagram for fold orientations, 23
- Ridd, M. F., The Phuket Group of peninsular Thailand, 445
- Ridley, W. I., The origin of some collapse structures in the Canary Island, 477
- Rivers and River Terraces (R), 181
- Roberts, D. E., & Soper, N. J., Age of cleavage in the Skiddaw Slates in relation to the Skiddaw aureole, 293
- Roberts, J. L., Some features of the Mesozoic vulcanicity in the Lebanon, 115
- Roberts, J. L., & Sanderson, D. J., The intrusive form of some basalt dykes showing flow lineation, 489
- Robinson, A. H. W., & Wallwork, K. L., Map Studies with Related Field Excursions (R), 351
- Rocks and Relief (R), 460
- Roobol, M. J., Some relations between common acid-basic associations, 525
- Rothstein, A. T. V., A primary igneous texture from the Lizard Peridotite, Cornwall, 393
- Rubidium and Strontium age determination of some Pre-Cambrian granitic rocks, S.E. Uganda, Old, R. A., & Rex, D. C., 353
- Rugose corals (metamorphosed) in Devonian Limestone, at Calcium, North Queensland, Australia, Morgan, W. R., Perrott, I. H., & Petherbridge, R. T., 533

- Sanderson, D. J., & Roberts, J. L., The intrusive form of some basalt dykes showing flow lineation, 489
- Sand-grains from the Hertfordshire Pebble Gravels, Surface textures of, Hey, R. W., Krinsley, D. H., & Hyde, P. J. W., 377
- Sandstone (Nahan) and its exfoliation, Nainital District, Uttar Pradesh, India, Das, B. K., & Vanshnarayan, 229
- Sapozhnikov, D. G. (Ed.), Manganese deposits of the Soviet Union (R), 565
- Sarkar, A., Bose, M. K., & Chakravarti, S., Petrological observations on alkali syenites of Kunavaram, A.P., India, 273
- Schenck, P. A., & Havenaar, I. (Ed.), Advances in Organic Geochemistry (R), 268
- Scourian intrusive rocks on the Isle of Barra, Outer Hebrides, north-west Scotland, Isotopic age data from, Francis, P. W., Moorbath, S., & Welke, H. J., 13
- Sedimentation, Late Paleozoic and Mesozoic Continental (R), 347
- Sedimentation, Physical Processes of (R), 188
- Sedimentary Environments, Ancient (R), 551
- Selley, R. C., Ancient Sedimentary Environments (R), 551
- Sen, R. N., & Mukherjee, A. D., On the rotation of biotite from the pelites around Gruevehagen, Trondhjems Feltet, Norway, 145
- Serpentinites (Alpine), oceanic ridges, and continental drift, North, F. K., 81
- Silberling, N. J., & Tozer, E. T., Biostratigraphic Classification of the Marine Triassic in North America (R), 74
- Silurian Reefs of Gotland (R), 559
- Silurian rhombiferan cystoid from Indiana, *Callocystites brevis*, a new, Frest, T., & Paul, C. R. C., 425
- Silurian rocks of Denbighshire, Tectonic ripples and associated minor structures in the, Nicholson, R., 447; Warren, P. T., Harrison, R. K., Wilson, H. E., Smith, E. G., & Nutt, M. J. C., 449
- Singh, S. K., & Kamineni, D. C., Mineralogy and Textures of some cordierite-sillimanite rocks from Labrador, Canada, 439
- Size-graded layering in the Imilik gabbro, East Greenland, Brown, P. E., & Farmer, D. G.
- Skevington, D., *Monograptus priodon* (Bronn) from the Macduff Group (Upper Dalradian) of Banffshire, Scotland, 485
- Skiddaw Slates in relation to the Skiddaw aureole, Age of cleavage in the, Soper, N. J., & Roberts, D. E., 293
- Smith, E. G., Warren, P. T., Harrison, R. K., Wilson, H. E., & Nutt, M. J. C., Tectonic ripples and associated minor structures in the Silurian rocks of Denbighshire, 449
- Solution Pipes in the Chalk near South Mimms, Hertfordshire, The Petrography and Origin of Deposits filling, Thorez, J., Bullock, P., Catt, J. A., & Weir A. H., 413
- Soper, N. J., & Roberts, D. E., Age of cleavage in the Skiddaw Slates in relation to the Skiddaw aureole, 293
- Sparks, B. W., Rocks and Relief (R), 460
- Statistical analysis of geological data (R), 74

- Staurolite–chlorite isograd from the Agnew Lake area, Ontario, Coexisting chloritoid and staurolite and the, Fox, J. S., 205
- Stirling District, The Geology of the (R), 563
- Strakhov, N. M., Principles of Lithogenesis (R), 77, 184
- Subathu Sediments, Simla Hills, Northwestern Himalaya, India, Facies relations in the, Raiverman, V., & Raman, K. S., 329
- Subbarao, K. V., The origin of the Kunavaram amphibolites, Khammam District, Andhra Pradesh, India, 131
- Syenites of Kunavaram, A.P., India, Petrological observations on alkali, Bose, M. K., Chakravarti, S., & Sarkar, A., 273
- Tectonic ripples and associated minor structures in the Silurian rocks of Denbighshire, Nicholson, R., 447; Warren, P. T., Harrison, R. K., Wilson, H. E., Smith, E. G., & Nutt, M. J. C., 449
- Tectonic transpression in Caledonian Spitsbergen, Harland, W. B., 27
- Tertiary thrust fault on the southern margin of the Bovey Basin, Bristow, C. M., & Hughes, D. E., 61
- Thorez, J., Bullock, P., Catt, J. A., & Weir, A. H., The Petrography and Origin of Deposits filling Solution Pipes in the Chalk near South Mimms, Hertfordshire, 413
- Tills in the Cumberland Lowland, Textural distinction of Main Glaciation and Scottish Readvance, Huddart, D., 317
- Toghill, P., & Cocks, L. R. M., Stages of the Llandovery Series, 263
- Tollman, A., Die bruchtektonische Zykenordnung im Orogen am Biespiel der Ostalpen (R), 456
- Tonalite magma, Atikwa Lake, Ontario, Greenstone assimilation by, Heimlich, R. A., 1
- Tozer, E. T., Permian Triassic Boundary in West Pakistan, 451
- Trace Fossils (R), 266
- Triassic in North America, Biostratigraphic Classification of the Marine (R), 74
- Triassic of West Pakistan, Stratigraphic boundary Problems: Permian and (R), 451
- Tucker, R. H., Cook, A. H., Iyer, H. M., & Stacey, F. D., Global Geophysics (R), 458
- Uranium Exploration Geology (R), 567
- Vanshnarayan, & Das, B. K., Nahan Sandstone and its exfoliation, Nainital District, Uttar Pradesh, India, 229
- Velde, D., A note on an analcite-bearing lamproite from Devonshire, 201
- Verhoogen, J., Turner, F. J., Weiss, L. E., & Wahrhaftic, C., The Earth—an introduction to physical geology (R), 563
- Waltham, A. C., A note on the structure and succession at Abereiddy Bay, Pembrokeshire, 49, 548
- Warren, P. T., Harrison, R. K., Wilson, H. E., Smith, E. G., & Nutt, M. J. C., Tectonic ripples and associated minor structures in the Silurian rocks of Denbighshire, 449
- Water, Rate of uptake of calcium carbonate in underground karst, Pitty, A. F., 537
- Weathering Crust, Lithology and Geochemistry of the (R), 456

- Webster, G. D., Chester through Derry Conodonts and Stratigraphy of Northern Clark and Southern Lincoln Counties, Nevada (R), 181
- Weir, A. H., Thorez, J., Bullock, P., & Catt, J. A., The Petrography and Origin of deposits filling solution pipes in the chalk near South Mimms, Hertfordshire, 413
- Welke, H. J., Francis, P. W., & Moorbath, S., Isotopic age data from Scourian intrusive rocks on the Isle of Barra, Outer Hebrides, north-west Scotland, 13
- Wilson, H. E., Warren, P. T., Harrison, R. K., Smith, E. G., & Nutt, M. J. C. Tectonic ripples and associated minor structures in the Silurian rocks of Denbighshire, 449
- Writing of Geography (R), 460
- Young, B., Mitchell, A. H. G., & Jantaranipa, W., The Phuket Group of Peninsular Thailand, 446
- Zircon populations in Lewisian quartzite, gneiss and granite north of Loch Laxford, Sutherland, Chowdhary, P. K., 255

NOTES FOR CONTRIBUTORS

Articles submitted for publication in the *Geological Magazine* should be addressed to the editors at the Sedgwick Museum, Downing Street, Cambridge CB2 3EQ, England, and sent in duplicate. Publications for notice and review should be marked for the review editor at the same address.

Contributions, including reference lists, should be typewritten, double-spaced, and should be carefully revised. Where typing errors are corrected or minor alterations made, they should be done neatly in the typescript, leaving the margins clear. Marginal marks should be used only when correcting proofs. Illustrations should be drawn to allow reduction to a maximum size of 165mm × 110mm; originals must not exceed 495mm × 330mm and must be sent in a flat package. Lettering must allow for legibility after reduction (i.e. equivalent to 1mm as a minimum on reduction). Duplicates of illustrations may be prints or, preferably, reductions. Metric units of the SI system are preferred. Illustrations in the text will be referred to as figures (Fig. 2, 2a, etc.), and halftone plates will be referred to (also in arabic) as Plates 2, 2a, etc. Folding plates will not be accepted. Captions must be typed on separate sheets.

The typescript must be accompanied by a short summary. Contributors should follow the rules in the Geological Society of London's *Notes to Authors* (*Proc. geol. Soc. Lond.*, No. 1627, Oct. 1965), with the following exceptions. The total length of a paper should not in general exceed 20 pages of the *Geological Magazine*; preference and priority are given to short papers. Primary headings should be in lower case, at margin, with arabic numeral. Secondary headings should be in *lower case italics (underlined)*, at margin, with Section number followed by lower case letter (1.a, 1.b, etc.). Tertiary headings should be in *lower case italics (underlined)*, at margin, with Section number, lower case letter, and number of sub-section (1.a.1, 1.a.2, etc.).

No cross-references by page should be given to other parts of the text, but 'above' and 'below' used (with the section specified, e.g. 'Section 2 a 1.'). References should be abbreviated in the form of the *World List of Scientific Periodicals* (4th edit., 1963-65) as far as possible. e.g. Lapworth, C. 1878. The Moffat Series. *Q. Jl geol. Soc., Lond.*, **34**, 240-343. Books should be cited briefly as: Burns, R. G. 1970. *Mineralogical applications of crystal field theory*. 224 p., C.U.P., London. Unpublished work, e.g. from theses, should normally be referred to in the text in parentheses and not included in the reference list unless already in the press. In the interests of authors, copyright is assigned to Cambridge University Press.

Twenty-five offprints of each article will be provided free of charge. Additional offprints may be purchased according to an agreed scale of charges.

Geological Magazine

Volume 108, Number 6, for November 1971

	<i>pages</i>
BROWN, P.E. & FARMER, D.G. Size-graded layering in the Imilik gabbro, East Greenland.	465-476
RIDLEY, W.I. The origin of some collapse structures in the Canary Islands.	477-484
SKEVINGTON, D. <i>Monograptus priodon</i> (Bronn) from the Macduff Group (Upper Dalradian) of Banffshire, Scotland.	485-487
ROBERTS, J.L. & SANDERSON, D.J. The intrusive form of some basalt dykes showing flow lineation.	489-499
BAKER, J.W. Intra-Lower Palaeozoic faults in the Southern Irish Sea Area.	501-509
LEEDER, M.R. Initiation of the Northumberland basin.	511-516
PIPER, D.J.W. Pleistocene superficial deposits, Balcombe area, central Weald.	517-523
ROOBOL, M.J. Some relations between common acid-basic associations.	525-531
MORGAN, W.R., PERROTT, I.H. & PETHERBRIDGE, R.T. Metamorphosed rugose corals in Devonian Limestone, at Calcium, North Queensland, Australia.	533-536
PITTY, A.F. Rate of uptake of calcium carbonate in underground karst water.	537-543
CORRESPONDENCE	
An alternative to the 'Clastic Trap' interpretation of oolitic iron-stone facies: R.W.O'B. Knox.	544-545
Ordovician stratigraphy of Aberiddy Bay, Pembrokeshire: W.W. Black, O.M.B. Bulman, R.W. Hey & C.P. Hughes and A.C. Waltham.	546-548
Phases of deformation in North Wales: A.V. Bromley.	548-550
REVIEWS	551-569
PUBLICATIONS RECEIVED	571-575

© Cambridge University Press 1971

Printed in Great Britain by Alden & Mowbray Ltd
at the Alden Press, Oxford