The *Scottish Journal of Geology* continues the *Transactions of the Edinburgh Geological Society* and the *Transactions of the Geological Society of Glasgow*, and is sponsored by the councils of the two Societies. It contains three parts per volume. The *Journal* is sent to members of both societies. Details of membership may be obtained from the secretaries, whose names appear below.

The Societies gratefully acknowledge financial help from the Kilwarlin Trust. Contributions or legacies to assist towards the cost of publication of the *Journal* would be welcomed by the Editorial Board.

**EDITORS**

- William A. Ashcroft
- Stewart Brown
- Alan W. Owen
- Peter R. Thomas
- Gordon M. Biggar
- Douglas Grant
- J. Douglas Peacock
- Nigel H. Trewin

**Secretaries of Societies**

**EDINBURGH**

- David H. Land, British Geological Survey
- Murchison House
- West Mains Road, Edinburgh EH9 3LA

**GLASGOW**

- B. R. Bell, Department of Applied Geology,
- University of Strathclyde,
- Glasgow G1 1XJ

**Front Page Illustration**

Scanning electron microscope photograph of mattheddleite (×1400), a new mineral species from Leadhills, Scotland described in this volume by Livingstone *et al.* (pp. 1–8). The mineral is a member of the apatite group in which sulphur and silicon completely replace phosphorus. It is named after the famous Scottish mineralogist Matthew Forster Heddle (1829–1897).

Heddle was Professor of Chemistry at the University of St Andrews, a Vice-President of the Mineralogical Society of Great Britain and Ireland and a President of the Edinburgh Geological Society. He visited virtually every known mineral locality north of the Forth–Clyde line and the bulk of his collection passed to the Royal Museum of Scotland shortly before his death. Heddle is remembered particularly for “The County Geognosy and Mineralogy of Scotland” published in book form from articles in the Mineralogical Magazine and for his “Mineralogy of Scotland” published posthumously in 1901, edited by J. G. Goodchild. His list of Scottish minerals was recently updated by Macpherson and Livingstone (1982, *Scott. J. Geol.* 18, 1–47).

Copyright © Scottish Journal of Geology 1987
Reproduction of authors’ summaries is authorised

Prices for non-members: Volume subscription £50.00—Single copies £17.00
The *Scottish Journal of Geology* is a Journal continuing and amalgamating the *Transactions of the Edinburgh Geological Society* and the *Transactions of the Geological Society of Glasgow*, and is sponsored by the Councils of the two Societies.
CONTENTS

VOLUME XXIII PART I (Published 27 May 1987)

LIVINGSTONE, A., RYBACK, G., FEJER, E. E. and STANLEY, C. J. Mattheddleite, a new mineral of the apatite group from Leadhills, Strathclyde Region ....................................................... 1

MUSSETT, A. E., DAGLEY, P., HODGSON, B. and SKELHORN, R. R. Palaeomagnetism and age of the quartz-porphyry intrusions, Isle of Arran .......................................................... 9

TORSVIK, T. H. and STURT, B. A. On the origin and stability of remanence and the magnetic fabric of the Torridonian Red Beds, NW Scotland .......................................................... 23

XU, T. C. and TARLING, D. H. A palaeomagnetic study of the intrusions and Carboniferous sediments at Dunbar, Scotland .......................................................... 39

SCRUTTON, COLIN T. and MCCURRY JOHN, A. The derivation, biostratigraphy and palaeobiogeographic significance of corals from Silurian deep-sea turbidite facies in the south-west Southern Uplands .......................................................... 49

WILLIAMS, S. HENRY. Upper Ordovician graptolites from the D. complanatus Zone of the Moffat and Girvan districts and their significance for correlation ........................................ 65

PEACOCK, J. D. A reassessment of the probable Loch Lomond Stade marine molluscan fauna at Garvel Park, Greenock .................................................. 93

WATKINS, KEITH P. Biotite- and garnet-forming reactions in inverted metamorphic zones in the Balquhidder region of the Scottish Dalradian .................................................. 105

SHORT COMMUNICATIONS:

HALL, I. H. S. and CHISHOLM, J. I. Aeolian sediments in the late Devonian of the Scottish Midland Valley .................................................. 129

VOLUME XXIII PART II (Published 9 September 1987)

MADDOX, STEVEN J. and ANDREWS, JULIAN E. Lithofacies and stratigraphy of a Dinantian non-marine dolostone from the Lower Oil-Shale Group of Fife and West Lothian .................................................. 129

DAWSON, A. G., LOWE, J. J. and WALKER, M. J. C. The nature and age of the debris accumulation at Gribun, Western Mull, Inner Hebrides .................................................. 149
RITCHIE, J. D., HITCHEN, K. and MITCHELL, J. G. The offshore continuation of the Moine Thrust north of Shetland as deduced from basement isotope ages 

BENN, D. I. and DAWSON, A. G. A Devensian glaciomarine sequence in western Islay, Inner Hebrides 

WILL, C. D. Theses on Scottish geology, 1984–85 

FOWLER, M. B. and PLANT, J. A. Rare earth element geochemistry of Lewisian grey gneisses from Gruinard Bay 

SHORT COMMUNICATIONS 

HALL, I. H. S. and CHISHOLM, J. I. Aeolian sediments in the late Devonian of the Scottish Midland Valley 

BARNICOAT, A. C., CARTWRIGHT, I. and O’HARA, M. J. Kyanite in the mainland Lewisian complex 

THOMPSON, P., MUSSETT, A. E. and DAGLEY, P. Revised 40Ar–39Ar age for granites of the Mourne Mountains, Ireland 

GIBSON, D., MCCORMICK, A. G. MEIGHAN, I. G. and HALLIDAY, A. N. The British Tertiary Igneous Province: Young Rb–Sr Ages for the Mourne Mountains Granites 

VOLUME XXIII PART III (Published 26 February 1988) 

BATCHelor, R. A. Geochemical and petrological characteristics of the Etive granitoid complex, Argyll 

SUTHERLAND, D. G. Submerged rock platforms on the continental shelf west of Sula Sgeir 

ROBERTSON, S. Early sinistral transpression in the Lower Old Red Sandstone of Kincardineshire, Scotland 

HARRISON, T. N. and HUTCHISON, J. The age and origin of the Eastern Grampians Newer Granites 

HASZELDINE, R. S., RITCHIE, J. D. and HITCHEN, K. Seismic and well evidence for the early development of the Faeroe–Shetland Basin 

MOLYNEUX, S. G. Probable early Wenlock acritarchs from the Linkim Beds of the Southern Uplands