

Glasgow Mathematical Journal

CONTENTS

M. S. Khan , Fixed points and their approximation in Banach spaces for certain commuting mappings	1
K. A. Brown and T. H. Lenagan , A note on Jacobson's conjecture for right Noetherian rings	7
I. M. Musson , Some examples of modules over Noetherian rings	9
Robert M. Guralnick , Generation of the lower central series	15
L. Kuipers and Jau-Shyong Shiue , Uniform distribution of sequences in rings of integral quaternions	21
E. R. Love, T. R. Prabhakar and N. K. Kashyap , A confluent hypergeometric integral equation	31
Daniel J. Troy , Polynomially bounded multisequences and analytic continuation	41
John Hannah , Quotient rings of semiprime rings with bounded index	53
M. R. Dixon , Some topological properties of residually Černikov groups	65
G. J. Murphy , Lifting sets and the Calkin algebra	83
E. R. Puczyłowski , Hereditariness of strong and stable radicals	85
Ernst Albrecht , A characterization of spectral operators on Hilbert spaces	91

© *Glasgow Mathematical Journal* 1982

SCOTTISH ACADEMIC PRESS LIMITED
33 MONTGOMERY STREET
EDINBURGH EH7 5JX

GLASGOW MATHEMATICAL JOURNAL

The *Glasgow Mathematical Journal* is a continuation of the *Proceedings of the Glasgow Mathematical Association*, founded in 1952 by the late Professor T. M. MacRobert. It is published with the support of the University Court of the University of Glasgow. The *Glasgow Mathematical Journal* is published in Parts twice yearly, in January and July; two Parts complete a Volume of approximately 200 pages.

The prepaid subscription for each Volume is £19.50 in U.K., \$45.00 in U.S.A., post free. Single parts may be supplied at a cost of £10.00 in U.K., \$22.50 in U.S.A., net.

Copies may be ordered direct from the publisher or from any bookseller.

Information for Contributors

While the *Glasgow Mathematical Journal* is intended primarily for Pure Mathematics, papers on Applied Mathematics will also be accepted. Manuscripts from all parts of the world will be welcomed and given careful consideration.

Manuscripts, preferably typed, should be prepared so as to conform with the practice in current numbers of the *Journal*, especially with regard to line illustrations, references, tables and summaries. The name of the author and the date of the receipt of the manuscript will be printed under the title. Text figures must be suitable for line block reproduction, lettered in pencil, numbered, and separated from the text but allocated clearly to sections of the text.

References should be placed at the end of the paper, arranged and numbered in alphabetical order. In the text, reference numbers should be enclosed in square brackets and underlined, to distinguish them from formula numbers, which should be quoted in round brackets. The following particulars should be given, in the order indicated:

for references to books—*author, title, edition, place of publication, year of publication, page reference*;

for references to articles in periodicals—*author, title of article, short title of periodical, series no. (if any), volume no., year, pagination*.

A proof is supplied once in galley form, together with an Order Form for offprints. Offprints are supplied free to the number of fifty; additional copies, if ordered prior to publication, will be supplied, at cost, at the request of the contributor. Excessive corrections may be charged to the author.

Manuscripts should be sent to:
THE EDITORS
GLASGOW MATHEMATICAL JOURNAL
DEPARTMENT OF MATHEMATICS
UNIVERSITY OF GLASGOW, GLASGOW G12 8QW

GLASGOW MATHEMATICAL JOURNAL
VOLUME 23

GLASGOW MATHEMATICAL JOURNAL

EDITED BY

H. R. DOWSON

G. D. FINDLAY

J. B. HICKEY

W. D. MUNN

R. A. RANKIN

P. F. SMITH

I. N. SNEDDON

M. J. TOMKINSON

D. B. WEBBER

VOLUME 23

1982

PUBLISHED BY

SCOTTISH ACADEMIC PRESS LIMITED

33 MONTGOMERY STREET

EDINBURGH EH7 5JX

Printed in Northern Ireland at The
Universities Press (Belfast) Ltd.

CONTENTS

Al-Khezi, S. , Analytic functions of a prespectral operator	171
Albrecht, Ernst , A characterization of spectral operators on Hilbert spaces	91
Alzubaidy, Kahtan , Free actions of p -groups ($p > 3$) on $S^n \times S^n$	97
Brown, K. A. and Lenagan, T. H. , A note on Jacobson's conjecture for right Noetherian rings	7
Dixon, M. R. , Some topological properties of residually Černikov groups	65
Feldman, W. A. and Porter, J. F. , M -spaces with quasi-interior points	131
Ghahramani, F. , Isometric representation of $M(G)$ on $B(H)$	119
Glass, A. M. W. , <i>See</i> van den Dries, L. P. D., Glass, A. M. W., Macintyre, Angus, Mekler, Alan H. and Poland, John	115
Guralnick, Robert M. , Generation of the lower central series	15
Gut, Allan , A contribution to the theory of asymptotic martingales	177
Hannah, John , Quotient rings of semiprime rings with bounded index	53
Howie, J. M. , <i>See</i> Snowden, Mary and Howie, J. M.	137
Kashyap, N. K. , <i>See</i> Love, E. R., Prabhakar, T. R. and Kashyap, N. K.	31
Khan, M. S. , Fixed points and their approximation in Banach spaces for certain commuting mappings	1
Koros, Demetrios , Superdiagonal forms for completely continuous linear operators	163
Kuipers, L. and Shiue, Jau-Shyong , Uniform distribution of sequences in rings of integral quaternions	21
Lamont, P. J. C. , Computer generated natural inner automorphisms of Cayley's algebra	187
Lenagan, T. H. , <i>See</i> Brown, K. A. and Lenagan, T. H.	7
Love, E. R., Prabhakar, T. R. and Kashyap, N. K. , A confluent hypergeometric integral equation	31
Macintyre, Angus , <i>See</i> van den Dries, L. P. D., Glass, A. M. W., Macintyre, Angus, Mekler, Alan H. and Poland, John	115
Mekler, Alan H. , <i>See</i> van den Dries, L. P. D., Glass, A. M. W., Macintyre, Angus, Mekler, Alan H. and Poland, John	115
Mukherjee, T. H. and Summers, W. H. , Stability and closed graph theorems in classes of bornological spaces	151

Murphy, G. S. , Lifting sets and the Calkin algebra	83
Musson, I. M. , Some examples of modules over Noetherian rings	9
Passman, D. S. , Universal fields of fractions for polycyclic group algebras	103
Pastijn, Francis , Essential normal and conjugate extensions of inverse semigroups	123
Poland, John , <i>See</i> van den Dries, L. P. D., Glass, A. M. W., Macintyre, Angus, Mekler, Alan H. and Poland, John	115
Porter, J. F. , <i>See</i> Feldman, W. A. and Porter, J. F.	131
Prabhakar, T. R. , <i>See</i> Love, E. R., Prabhakar, T. R. and Kashyap, N. K.	31
Puczyłowski, E. R. , Hereditariness of strong and stable radicals	85
Shiue, Jau-Shyong , <i>See</i> Kuipers, L. and Shiue, Jau-Shyong	21
Snowden, Mary and Howie, J. M. , Square roots in finite full transformation semigroups	137
Summers, W. H. , <i>See</i> Mukherjee, T. K. and Summers, W. H.	151
Troy, Daniel J. , Polynomially bounded multisequences and analytic continuation	41
van den Dries, L. P. D., Glass, A. M. W., Macintyre, Angus, Mekler, Alan H. and Poland, John , Elementary equivalence and the commutator subgroup	115