

# PROCEEDINGS

of the

GLASGOW MATHEMATICAL ASSOCIATION

Published with the assistance of the University Court of the University of Glasgow

---

VOLUME II

JULY 1955

PART III

---

## CONTENTS

On Homogeneous Ideals : D. G. NORTHCOTT	page 105
Note on Three-Dimensional Lie Groups : E. M. PATTERSON	page 112
General Products of Two Finite Cyclic Groups : K. R. YACOUB	page 116
A Product of Two <i>E</i> -Functions expressed as a Sum of Two <i>E</i> -Functions : F. M. RAGAB	page 124
Integrals involving <i>E</i> -Functions and Associated Legendre Functions : T. M. MACROBERT	page 127
Integrals involving Products of Modified Bessel Functions of the Second Kind : T. M. MACROBERT	page 129
Some Results involving Hypergeometric and <i>E</i> -Functions : C. B. RATHIE	page 132
The Closest Packing of Spherical Caps in <i>n</i> Dimensions : R. A. RANKIN	page 139
On Packings of Spheres in Hilbert Space : R. A. RANKIN	page 145
Two Integrals involving Modified Bessel Functions of the Second Kind : B. W. CONOLLY	page 147

OLIVER AND BOYD

EDINBURGH : TWEEDDALE COURT .

LONDON : 39A WELBECK STREET, W.1

# PROCEEDINGS OF THE GLASGOW MATHEMATICAL ASSOCIATION

THE *Proceedings* are published in Parts and issued twice each year, in January and in July. Four Parts will complete a Volume of approximately 200 pages, and the Title Pages and Index will be published in Part 4 of each Volume.

The prepaid subscription for each Volume is Forty Shillings (U.S.A. \$6.00), post free. Single Parts may be supplied at a cost of Ten Shillings and Six Pence each (U.S.A. \$1.50) post free.

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

## *Information for Contributors*

While the *Proceedings* are 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 should be prepared so as to conform with the practice in current Numbers of the *Proceedings*, 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 according to the order of reference. 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 off-prints. Offprints are supplied free to the number of twenty-five ; 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 ASSOCIATION  
DEPARTMENT OF MATHEMATICS  
THE UNIVERSITY, GLASGOW, W. 2