

# MATHEMATICAL PROCEEDINGS

*(formerly Proceedings)*  
*of the*  
*Cambridge Philosophical Society*

VOLUME 82 PART 1

*July 1977*



CAMBRIDGE UNIVERSITY PRESS

# CAMBRIDGE PHILOSOPHICAL SOCIETY

FOUNDED 1819; ROYAL CHARTER 1832

1977

*President:* J. C. BURKILL

*Vice-Presidents:* R. C. EVANS, DAME HONOR FELL, P. W. BRIAN

*Treasurer:* S. G. FLEET

*Secretaries:* (Physical) J. E. FIELD

(Biological) M. A. MESSAGE

(Mathematical) G. A. REID

The publications of the Society consist of the *Mathematical Proceedings* (until 1975 entitled *Proceedings*) and of the *Biological Reviews*. The publication of *Transactions* was suspended at the end of Volume XXIII.

Orders may be sent to any bookseller or subscription agent or direct to Cambridge University Press, P.O. Box 92, London NW1 2DB, or in the U.S.A. and Canada, Cambridge University Press, 32 East 57th Street, New York, N.Y. 10022.

*Fellows and Associates of the Society are particularly requested to inform the Secretaries of any change of postal address and to send their subscriptions to the Treasurer, at the Society's office.*

Correspondence about library exchanges should be sent to the Librarian at the Society's office.

Back numbers of *Proceedings* and *Biological Reviews* may be obtained from the CAMBRIDGE PHILOSOPHICAL SOCIETY, BENE'T STREET, CAMBRIDGE CB2 3PY, ENGLAND. All parts of the *Proceedings* (including the cumulative indices to Vols. 1 to 50, 51 to 60 and 61 to 70) and of *Biological Reviews* are available, at prices which will be quoted on application.

Some parts of *Transactions* are available from the above address. The complete set on microfilm may be obtained from Microfilm Division, E.P. Group of Companies, Bradford Road, East Ardsley, Wakefield, Yorkshire, price £77.

## MATHEMATICAL PROCEEDINGS of the CAMBRIDGE PHILOSOPHICAL SOCIETY

edited by

J. C. BURKILL

in consultation with

J. F. ADAMS

P. GODDARD

A. R. D. MATHIAS

M. F. ATIYAH

S. W. HAWKING

G. A. REID

B. BOLLOBÁS

W. K. HAYMAN

H. P. F. SWINNERTON-DYER

G. K. EAGLESON

R. HILL

J. S. WILSON

1. *Mathematical Proceedings* is published once every two months. Three issues form a volume and two volumes are published each year. The subscription price (which includes postage) of volumes 81 and 82 (1977) is £19.00 net per volume (U.S. \$45.00 in the U.S.A. and Canada).

2. *Scope of the Mathematical Proceedings.* Papers which advance knowledge of mathematics, either pure or applied, will be considered by the Editorial Committee. The work must be original and not submitted to another journal. Papers should be sent to the Editor, Mathematical Proceedings, Cambridge Philosophical Society, Bene't Street, Cambridge CB2 3PY, England. Papers in languages other than English should be sent only after prior consultation with the Editor.

3. *Correction of proofs.* If a paper is accepted, the author will receive in due course page proofs for him to correct and return within seven days. To minimize disturbance of type, when words or phrases are added in proof, others of equal length should be removed if possible.

If many corrections are made in the proofs, the Council reserve the right to charge the cost.

4. Authors may receive on request 100 free offprints (for each set of authors in the case of a joint paper). Alternatively authors may have 50 free offprints in covers. Further copies may be obtained at reasonable cost. An order form is included with the proofs of each paper.

5. Suggestions for the preparation of manuscripts are given on the inside back cover of Part 1.

6. Second class postage paid at New York, N.Y.

7. © Cambridge Philosophical Society 1977.

For permission to reproduce material from *Mathematical Proceedings of the Cambridge Philosophical Society*, please apply to the London or New York office of Cambridge University Press.

ISI Tear Service, 325 Chestnut Street, Philadelphia, Pennsylvania 19106, U.S.A. is authorized to supply single copies of separate articles for private use only.