

Proceedings of the
CAMBRIDGE PHILOSOPHICAL
SOCIETY

(MATHEMATICAL AND PHYSICAL SCIENCES)

VOLUME 53

PART 4

CAMBRIDGE UNIVERSITY PRESS

BENTLEY HOUSE, 200 EUSTON ROAD, LONDON, N.W.1
AMERICAN BRANCH: 32 EAST 57TH STREET, NEW YORK 22, N.Y.

Price Thirty-five Shillings Net (U.S.A. \$6.00)

Subscription price per volume £6 net post free (\$20.00 in U.S.A.)

October 1957

CAMBRIDGE PHILOSOPHICAL SOCIETY

FOUNDED 1819; ROYAL CHARTER 1832

Session 1956–1957

President: F. J. W. ROUGHTON

Vice-Presidents: E. C. BATE-SMITH, F. P. BOWDEN, F. G. YOUNG

Treasurer: M. V. WILKES

Secretaries: (Mathematical) H. G. EGGLESTON

(Physical) T. E. FABER

(Biological) S. SMITH

The publications of the Society consist of the *Proceedings* and of the *Biological Reviews*. The publication of *Transactions* was suspended at the end of Volume XXII.

Orders should be sent to: THE MANAGER, CAMBRIDGE UNIVERSITY PRESS, BENTLEY HOUSE, 200 EUSTON ROAD, LONDON, N.W.1. Enquiries from the U.S.A. should be addressed to the Cambridge University Press, American Branch, 32 East 57th Street, New York 22, U.S.A.

For the purchase of early parts of the *Transactions*, *Proceedings* and *Biological Reviews* application should be made to the Secretaries. All parts of the *Proceedings* and *Biological Reviews* are available, and prices of sets or single parts will be quoted on application.

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, CAMBRIDGE PHILOSOPHICAL SOCIETY, FREE SCHOOL LANE, CAMBRIDGE.

All correspondence regarding library exchanges and Fellows' copies should be addressed to the Secretaries at the Society's office.

PROCEEDINGS of the CAMBRIDGE PHILOSOPHICAL SOCIETY

edited by

H. G. EGGLESTON

H. P. F. SWINNERTON-DYER

in consultation with

T. E. FABER
F. SMITHIES

D. R. HARTREE
F. URSELL

D. G. KENDALL
D. H. WILKINSON

1. Four parts of the *Proceedings* are issued each year.
2. Communications for the *Proceedings* should be sent to *The Librarian, Cambridge Philosophical Society, Free School Lane, Cambridge*. Papers by Fellows and Associates of the Society should be communicated directly by the author. Other papers must be communicated by a Fellow, who in doing so should give his opinion on the suitability of the paper for publication.
3. Papers occupying more than twenty pages of print can only very rarely be accepted.
4. It is recommended that each paper be prefaced by a short abstract. Copies of a *Guide for the Preparation of Synopses*, prepared by the Abstracting Services Consultative Committee and issued by the Royal Society, may be obtained from the Librarian.
5. Drawings for illustrations and diagrams should be on a large scale and on smooth white Bristol board in Indian ink.
6. References should be listed at the end of each paper. World List abbreviations for titles of journals should be used and first and last page numbers given where relevant.
7. Authors are particularly requested to prepare their manuscripts in a form suitable for printing, with adequate margins. A pamphlet on the preparation of papers may be obtained from the Librarian. If a large number of corrections are required in the proofs, the Council reserves the right to make a charge towards the cost.
8. Authors may receive, on request, fifty offprints of a paper in the *Proceedings* without charge.

Fluid Mechanics & Heat Transfer

J. M. KAY

A text-book for chemical and mechanical engineers in the process industries and at the university. 37s. 6d. net

Lie Groups

P. M. COHN

An introduction to the theory of Lie groups from the algebraic standpoint. No. 46 in the series *Cambridge Mathematical Tracts*. 22s. 6d. net

Photoelasticity

E. G. COKER & L. N. G. FILON

For the second edition the reviser Mr H. T. Jessop has brought the book up to date with a survey of developments since 1931 and a bibliography of recent publications. 70s. net

Digital Computers

R. K. LIVESLEY

An introductory account of automatic digital computers with the emphasis on routine work rather than advanced research. 8s. 6d. net

The Development & Meaning of Eddington's *Fundamental Theory*

N. B. SLATER

Dr Slater has collated the various drafts of Eddington's posthumous book and prints selections with an introduction. 40s. net

CAMBRIDGE UNIVERSITY PRESS

BENTLEY HOUSE, 200 EUSTON ROAD, LONDON, N.W. 1



The Institution of Electrical Engineers

*Office for Advertisements
in the Publications*

**Terminal House
Grosvenor Gardens
London, S.W. 1
SLOANE 7266**

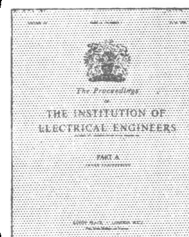
THE JOURNAL

MONTHLY. Subjects of general interest, as apart from the specialised papers and discussions appearing in Parts "A" and "B" of the Proceedings, are treated in the monthly JOURNAL which is distributed free to members of the Institution but is also on sale to non-members.



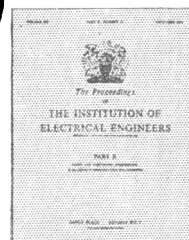
THE PROCEEDINGS

Part "A". Contains papers and discussions concerning the specialised spheres of power generation, transmission, meters and instruments...and applications of electricity. Published in February, April, June, August, October, and December.



THE PROCEEDINGS

Part "B". Contains papers and discussions concerning the progress and developments in the fields of telecommunication, radio, electronics and the many allied interests. Published in January, March, May, July, September, and November.



MONOGRAPHS OF THE SOCIETY FOR INDUSTRIAL AND APPLIED MATHEMATICS

NO. 1

Report on
A SURVEY OF TRAINING AND RESEARCH
IN APPLIED MATHEMATICS IN
THE UNITED STATES

*A Report by the National Research Council Committee
on Training and Research in
Applied Mathematics*

F. J. WEYL, Investigator

Copies are available at \$2.00 each from
SOCIETY FOR INDUSTRIAL AND APPLIED MATHEMATICS
Box 7541, Philadelphia 1, Pennsylvania, U.S.A.