

# EXPERIMENTAL AGRICULTURE

*Editors*

PROFESSOR J. P. HUDSON

DR R. J. SUMMERFIELD

*Book Review Editor*

PROFESSOR N. W. SIMMONDS

*Editorial Board*

PROFESSOR E. W. RUSSELL (CHAIRMAN)

PROFESSOR A. H. BUNTING

A. R. MELVILLE

DR I. D. CARRUTHERS

PROFESSOR J. L. MONTEITH

DR R. K. CUNNINGHAM

DR R. D. STERN

PROFESSOR J. D. IVINS

DR G. WATTS PADWICK

DR C. C. WEBSTER



CAMBRIDGE UNIVERSITY PRESS

The Pitt Building, Trumpington Street, Cambridge CB2 1RP

32 East 57th Street, New York, N.Y. 10022

*Expl Agric.*

**Experimental Agriculture** is the successor to the *Empire Journal of Experimental Agriculture*, which was founded in 1933. It publishes the results of original research on the agronomy of economically significant field and industrial crops, of fruit and vegetable crops important for the incomes or nutrition of rural people, of herbage and forage crops used in animal production, and of systems of agricultural production, including their social and economic aspects, particularly in the warmer regions of the earth. Papers on plant breeding may be accepted if their interest is primarily agronomic; submissions from researchers using artificial, more-or-less controlled or protected environments, may also be accepted. However, the main emphasis is on measurement and experimentation in the field, associated in appropriate cases with survey methods. The journal also publishes accounts of new experimental techniques, new methods in experimental crop production, and critical discussions of specific problems arising in countries where agricultural production is developing rapidly. Reviews of particular fields of agronomy, or of agronomic research methods, will be commissioned from time to time by the Editor, who welcomes suggestions of appropriate topics. **Experimental Agriculture** (ISSN 0014-4797) is published quarterly. Four parts form a volume.

**Orders**, which must be accompanied by payment, may be sent to any bookseller or subscription agent or direct to Cambridge University Press, The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU, or in the U.S.A. and Canada, 32 East 57th Street, New York, N.Y. 10022. The subscription price of volume 18, 1982, is £36.00 net (including postage) for a volume (US \$100.00 in the U.S.A. and Canada), payable in advance; separate parts cost £11.00 net or \$30.50 each (plus postage). Second class postage paid at New York, N.Y. and at additional mailing offices. POSTMASTER: send address changes in the U.S.A. and Canada to Cambridge University Press, 32 East 57th Street, New York, N.Y. 10022.

**Back Volumes.** Inquiries for Vols. 1-32 of *The Empire Journal of Experimental Agriculture* should be addressed to Wm Dawson & Sons Ltd, Cannon House, Folkestone, Kent. Previously published parts of *Experimental Agriculture* are available from the Cambridge or New York offices of Cambridge University Press.

© Cambridge University Press 1982

**Copying.** This journal is registered with the Copyright Clearance Centre, 21 Congress St., Salem, Mass. 01970. Organizations in the U.S.A., who are also registered with C.C.C., may therefore copy material (beyond the limits permitted by sections 107 and 109 of the U.S. copyright law) subject to payment to C.C.C. of the per-copy fee indicated in the code on the first page of the article. This consent does not extend to multiple copying for promotional or commercial purposes.

ISI Tear Service, 3501 Market Street, Philadelphia, Pennsylvania 19104, U.S.A. is authorized to supply single copies of separate articles for private use only.

**For all other use**, permission should be sought from the Cambridge or New York offices of the Cambridge University Press.

#### NOTES FOR CONTRIBUTORS

Contributions will be welcomed from scientists of all nationalities, particularly those working in tropical and sub-tropical countries where up-to-date techniques of agricultural experimentation are helping in the development of more effective methods of farm production. **Contributions, which must be written in English, should be sent to the Editor: Dr R. J. Summerfield University of Reading, Department of Agriculture and Horticulture, Shinfield Grange, Shinfield, Reading RG2 9AD, England.**

**Conditions of acceptance.** Submission of a paper will be taken to imply that the material has not previously been published, and is not being submitted for publication elsewhere. Papers published in *Experimental Agriculture* may not be reprinted or published in translation without permission from the Editor, given on behalf of the Editorial Board.

**General lay-out.** Before having manuscripts typed, contributors should look carefully at the lay-out of other papers published in a