THE JOURNAL OF

AGRICULTURAL SCIENCE

EDITED FOR THE PLANT BREEDING AND ANIMAL NUTRITION RESEARCH INSTITUTES AT CAMBRIDGE,
AND THE ROTHAMSTED RESEARCH INSTITUTES BY

PROFESSOR SIR R. H. BIFFEN, M.A., F.R.S., School of Agriculture, Cambridge E. M. CROWTHER, D.Sc., F.I.C., Rothamsted Experimental Station, Harpenden SIR A. D. HALL, K.C.B., M.A., LL.D., F.R.S., John Innes Horticultural Institution, Merton Park, London, S.W. 19

B. A. KEEN, D.Sc., F.R.S., Rothamsted Experimental Station, Harpenden F. H. A. MARSHALL, C.B.E., Sc.D., M.A., F.R.S., School of Agriculture, Cambridge Sir E. J. RUSSELL, D.Sc., F.R.S., Rothamsted Experimental Station, Harpenden

IN CONSULTATION WITH

B. C. ASTON, F.I.C., Department of Agriculture, Wellington, New Zealand
PROFESSOR B. T. P. BARKER, M.A., Agricultural and Horticultural Research Station, Long
Ashton, Bristol

DR I. B. POLE-EVANS, C.M.G., Department of Agriculture, Pretoria, South Africa Professor J. HENDRICK, B.Sc., F.I.C., Marischal College, Aberdeen

SIR T. H. MIDDLETON, K.C.I.E., K.B.E., C.B., M.A., The Development Commission, London DR A. E. V. RICHARDSON, Waite Agricultural Research Institute, Glen Osmond, South Australia

DR FRANK T. SHUTT, F.I.C., Experimental Farms, Ottawa, Canada

DR H. J. WHEELER, American Agricultural Chemical Co., Agricultural Service Bureau, 419 Fourth Avenue, New York, U.S.A.



LONDON

Cambridge University Press Fetter Lane, E.C. 4

CHICAGO: The University of Chicago Press (Agents for the United States)

BOMBAY, CALCUTTA, MADRAS: Macmillan

Tokyo: Maruzen Company, Ltd.

All rights reserved

Price Ten Shillings net

[Issued 25 April 1935]

PRINTED IN GREAT BRITAIN

Imperial College of Science and Technology

COURSES IN
AGRICULTURAL CHEMISTRY
and Allied Subjects

Fee £22. 10s. 0d. per annum

Students are prepared for the Higher Degrees of the University of London (by Research or Dissertation) and for the Fellowship of the Institute of Chemistry (Branch F.—Agricultural Chemistry).

Arrangements are made for the study of the Chemistry of Soils, Fertilizers, Feeding Stuffs, and Farm Products; Plant and Animal Nutrition, Insecticides, Fungicides, etc., and will include courses of lectures, laboratory instruction, together with demonstrations and practical work at the College Biological Field Station at Slough.

Intending students should apply to the Registrar

IMPERIAL COLLEGE OF SCIENCE
AND TECHNOLOGY
PRINCE CONSORT ROAD
SOUTH KENSINGTON, S.W. 7

THE JOURNAL OF AGRICULTURAL SCIENCE

AN INDEX TO VOLUMES I-XX

(1905 - 1930)

has been prepared, and may be obtained from any bookseller or from The Cambridge University Press Fetter Lane, London, E.C. 4 The price is 3s. 6d. net in paper covers and 9s. net bound in buckram

The University of Chicago Press

ECONOMIC POLICY FOR AMERICAN AGRICULTURE

Edited by Edward A. Duddy

Eleven leading agricultural economists discuss taxation, land utilization, consumption trends, standard of living, and all factors that need to be considered in framing a unified national policy.

115. 6d. net

ADULT EDUCATION AND RURAL LIFE

Proceedings of the 15th American Country Life Conference. 9s. net

SELECTIVE FERTILIZATION

By Donald F. Jones

The factors operating in the plant and animal world to influence choice in mate selection.

9s. net

THE HARD WINTER WHEAT POOLS

An Experiment in Agricultural
Marketing Integration.

Ru Joseph G. Knapp. 75. n

By Joseph G. Knapp. 7s. net

CHINESE FARM ECONOMY

By J. Lossing Buck

A survey of the year's business on 2866 farms in 17 localities, combining factual data, technical management and social phases.

228. 6d. net

AGRICULTURE IN THE CHICAGO REGION

By E. A. Duddy

The location, nature, and value of agriculture within the area of a metropolis.

18s. net

Agents for Great Britain and Ireland

Cambridge University Press:

FETTER LANE, LONDON, E.C.4

THE JOURNAL OF THE

American Society of Agronomy

ISSUED ON THE 15th OF EACH MONTH AT GENEVA, N.Y., U.S.A.

Vol. 27. No. 2

CONTENTS

FEBRUARY, 1935

Effects of Soil Type and Soil Treatments on the Chemical Composition of Alfalfa Plants. A. L. GRIZZARD.

One Aspect of the Interrelation of Soil Bacteria and Plant Growth. Norman Ashwell Clark.

The Rhythmical Nature of Microbiological Activity in Soil as Indicated by the Evolution of Carbon Dioxide. F. B. Smith, P. E. Brown and H. C. Millar.

The Decomposition of Lignin and Other Organic Constituents by Certain Soil Fungi. F. B. Smith and P. E. Brown.

The Mineral Content of Soil Types as Related to "Salt Sick" of Cattle. O. C. Bryan and R. B. Becker.

The Effects of Inoculation and Fertilization of Spanish Peanuts on Root Nodule Numbers. J. F. Duggar.

Toxicity of Several Chemicals to a Species of Moss Common to Old Pastures in the New England States. A. B. Beaumont.

The Correlation Between Tillering and Productiveness in Sweet Corn Crosses. D. F. Jones, W. R. SINGLETON and L. C. CURTIS.

Fifteen Years of Selection in Six Varieties of Barley. MERRITT N. POPE.

Inheritance of Rye Crossability in Wheat Hybrids. J. W. Taylor and K. S. Quisenberry.

Pole Beans vs. Soybeans as a Companion Crop with Corn for Silage. R. G. WIGGANS.

Note: Effect of Over-grazing on Kentucky Bluegrass Under Conditions of Extreme Drouth.

SUBSCRIPTION

Price \$5.00 per volume (12 numbers) in United States and Canada, \$5.50 elsewhere.

ADDRESS ALL COMMUNICATIONS TO

J. D. LUCKETT, Editor

Journal of the American Society of Agronomy GENEVA, N.Y., U.S.A.

THE EMPIRE JOURNAL OF EXPERIMENTAL AGRICULTURE

THIS JOURNAL offers agricultural research workers a medium for disseminating the records and results of their investigations on the feeding and management of live stock, cultivation and manuring of crops, trial of farm machinery, agricultural economics, and experimental technique.

Vol. III. No. 9

CONTENTS

Jan. 1935

- The Inheritance of Productivity in Farm Live Stock: I. J. HAMMOND: Meat. With Plates 1-6. II. A. D. BUCHANAN SMITH: Milk. III. A. W. GREENWOOD: Breeding for Egg-Production. IV. J. E. NICHOLS: Wool. V. J. L. LUSH: Discussion of Preceding Contributions.
- R. L. KNIGHT: The Effect of Shade on American Cotton.
- H. L. RICHARDSON: Field Experiments on the Action of Calcium Cyanamide on Germinating Seeds and on Charlock in Barley.
- R. O. DAVIES and H. G. CHIPPINDALE: The Response of Grasses and Clover to Treatment on Acidic Upland Soils, and the Effect of Herbage Plants on the Reaction of Acidic Soils. With Plate 7.
- H. H. NICHOLSON and F. HANLEY: Soil Conditions in East Anglia.
- A. H. H. FRASER and J. E. NICHOLS: Wool-growth in Sheep as affected by the Carbohydrate-content of the Diet. II.
- E. H. CALLOW: Carcass Quality of the Pig in Relation to Growth and Diet. With Plates 8-10.

Royal 8vo. 7s. 6d. net. Annual subscription (four numbers) 20s. post free

OXFORD UNIVERSITY PRESS, Amen House, LONDON, E.C. 4

The Foundations of Agricultural Economics

TOGETHER WITH AN ECONOMIC HISTORY OF BRITISH AGRICULTURE DURING THE GREAT WAR

by J. A. VENN

A second edition, rewritten throughout, reset and enlarged by the addition of seven new chapters

20 plates. 25s. net

Cambridge University
Press

THE WELSH JOURNAL OF AGRICULTURE

I SSUED ANNUALLY by the Welsh Agricultural Education Conference to give publicity to the results of research work in connexion with, or bearing upon, agriculture in Wales.

Published by the University of Wales Press Board (Cardiff).

Vol. XI will be issued in the early part of 1935.

Copies of this and of previous volumes may be purchased direct from the Secretary of the Press Board, University Registry, Cathays Park, Cardiff, or through any Bookseller.

Price 2s. 6d. (Paper cover)
Price 4s. 0d. (Full cloth)

https://doi.org/10.1017/S0021859600009643 Published online by Cambridge University Press

i