## 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., Cambridge

SIR A. D. HALL, K.C.B., M.A., LL.D., F.R.S., John Innes Horticultural Institution, Merton Park, Surrey

B. A. KEEN, D.Sc., F.Inst.P., Rothamsted Experimental Station, Harpenden

F. H. A. MARSHALL, Sc.D., F.R.S., Cambridge

SIR E. J. RUSSELL, D.Sc., F.R.S., Rothamsted Experimental Station, Harpenden Professor T. B. WOOD, C.B.E., M.A., LL.D., F.I.C., F.R.S., Cambridge

## IN CONSULTATION WITH

B. C. ASTON, Department of Agriculture, Wellington, New Zealand

DR C. A. BARBER, C.I.E., School of Agriculture, Cambridge

PROFESSOR B. T. P. BARKER, M.A., Agricultural and Horticultural Research Station, Long Ashton, Bristol

I. B. POLE EVANS, Department of Agriculture, Pretoria, South Africa

PROFESSOR J. HENDRICK, B.Sc., Marischal College, Aberdeen

SIR T. H. MIDDLETON, K.B.E., C.B., M.A., The Development Commission, London

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

SIR WILLIAM SOMERVILLE, M.A., D.Sc., Oxford

SIR FRANCIS WATTS, K.C.M.G., St Augustine, Trinidad, British West Indies

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

VOLUME XIX 1929

CAMBRIDGE
AT THE UNIVERSITY PRESS

1929

PRINTED IN GREAT BRITAIN

## CONTENTS

Part 1 (January 1929)	
TULAIKOV, N. Use of water by cultivated plants in the field	PA
HARDY, F. and Lewis, A. H. A rapid electrometric method for	
measuring "lime requirements" of soils	
TURNER, P. E. The lime status of soil in relation to an insect pest	
of sugar-cane	
BARTLETT, S. Studies in milk secretion based on the variations and yields of milk and butter fat produced at morning and	
evening milkings. (With five charts)	
THORNTON, H. G. The "inoculation" of luce me (Medicago sativa, L.)	
in Great Britain. (With four text-figures)	
JENSEN, H. L. On the influence of the carbon: nitrogen ratios of organic material on the mineralisation of nitrogen. (With four text-figures)	
TURNER, P. E. Liming as a factor in the amelioration of deterio-	
rated tropical soils	
HART, R. Studies in the geology and mineralogy of soils. I. A de-	
tailed study of a region characterised by diverse rocks and	
partly covered by glacial drift. (With one map and Plate I).	
Joseph, A. F. and Snow, O. W. The dispersion and mechanical	
analysis of heavy alkaline soils. (With four text-figures)	
JOSEPH, A. F. and OAKLEY, H. B. The properties of heavy alkaline soils containing different exchangeable bases. (With two	
text-figures)	
FISHER, R. A. A preliminary note on the effect of sodium silicate	•
in increasing the yield of barley. (With one text-figure).	
DEIGHTON, THOMAS. A study of the metabolism of two breeds of	•
pig. (With some remarks on a third.) (With twelve text-	
figures)	
GOODWIN, W., SALMON, E. S. and WARE, W. M. The action of	
certain chemical substances on the zoospores of Pseudoperono-	
spora Humuli (Miy. et Takah.) Wils.	
PART 2 (APRIL 1929)	
EDEN, T. and FISHER, R. A. Studies in crop variation. VI. Ex-	
periments on the response of the potato to potash and nitrogen.	
(With four tout fource)	
(with four text-figures)	