

# THE JOURNAL OF AGRICULTURAL SCIENCE

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

PROFESSOR R. H. BIFFEN, M.A., F.R.S., Cambridge

SIR A. D. HALL, K.C.B., M.A., LL.D., F.R.S., Ministry of Agriculture, London

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., 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., National Fruit and Cider Institute, Long Ashton, Bristol

W. BATESON, M.A., F.R.S., John Innes Horticultural Institute, Merton, Surrey

J. R. CAMPBELL, B.Sc., Department of Agriculture, Dublin

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

F. B. GUTHRIE, Department of Agriculture, Sydney, N.S.W.

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

PROFESSOR W. SOMERVILLE, M.A., D.Sc., School of Rural Economy, Oxford

DR A. C. TRUE, Department of Agriculture, Washington, D.C., U.S.A.

SIR FRANCIS WATTS, K.C.M.G., Barbados

DR H. J. WHEELER, American Agricultural Chemical Co., Boston, Mass., U.S.A.

VOLUME XIII 1923

CAMBRIDGE  
AT THE UNIVERSITY PRESS

1923

**PRINTED IN GREAT BRITAIN**

## PART 3 (JULY 1923)

	PAGE
HARDY, F. The physical significance of the shrinkage coefficient of clays and soils . . . . .	243
BURD, J. S. and MARTIN, J. C. Water displacement of soils and the soil solution. (One figure in text) . . . . .	265
HAINES, W. B. The volume-changes associated with variations of water content in soil. (Seven figures in text) . . . . .	296
FISHER, R. A. and MACKENZIE, W. A. Studies in crop variation. II. The manurial response of different potato varieties. (Two diagrams in text) . . . . .	311
JOSEPH, A. F. and MARTIN, F. J. The hydrogen-ion concentration of heavy alkaline soils . . . . .	321
PRESCOTT, J. A. The efficiency of ammonium sulphate as a fertiliser. (One figure in text) . . . . .	333
HARDY, F. The maximum water-retaining capacity of colloidal soils: the interpretation of this and of certain other soil moisture constants . . . . .	340
THORNTON, H. G. On the vibration method of obtaining a suspension of the bacteria in a soil sample, developed by C. L. Whittles . . . . .	352

## PART 4 (OCTOBER 1923)

HARDY, F. The soil-point method for directly estimating the water-supplying power of a soil in the field . . . . .	355
SALAMAN, REDCLIFFE N. The determination of the best method for estimating potato yields, together with a further note on the influence of size of seed on the character and yield of the potato. III. (Eight figures in text) . . . . .	361
ENGLEDOW, F. L. and WADHAM, S. M. Investigations on yield in the cereals. I. (With Plate IV and 2 text-figures) . . . . .	390
DEIGHTON, THOMAS. The effect of movement of soil salts on standardization values of electrodes used in moisture determinations. (Two figures in text) . . . . .	440
ORR, J. B. and MAGEE, H. E. The application of the indirect method of colorimetry to ruminants. (Five figures in text) . . . . .	447
GODDEN, WILLIAM. Notes on the drainage from tower silos . . . . .	462
KEEN, BERNARD A. and HAINES, WILLIAM B. On the effect of wear on small mesh wire sieves. (With Plate V and 9 text-figures) . . . . .	467
WOODMAN, HERBERT ERNEST. Wheat offals: their grading, composition and digestibility . . . . .	483