JOURNAL OF

AGRICULTURAL SCIENCE

EDITED BY

Professor R. H. BIFFEN, M.A., F.R.S., Cambridge A. D. HALL, M.A., F.R.S., Board of Agriculture, London E. J. RUSSELL, D.Sc., F.R.S., Rothamsted Experimental Station, Harpenden Professor T. B. WOOD, M.A., Cambridge

IN CONSULTATION WITH

DR H. P. ARMSBY, State College, Pennsylvania, U.S.A. B. C. ASTON, Department of Agriculture, Wellington, New Zealand DR C. A. BARBER, Agricultural College, Coimbatore, India 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 Major J. W. LEATHER, V.D., F.I.C. T. H. MIDDLETON, C.B., M.A., Board of Agriculture, London F. T. SHUTT, M.A., 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. DR FRANCIS WATTS, C.M.G., Barbados DR H. J. WHEELER, American Agricultural Chemical Co., Boston, Mass.

Volume VIII 1916–17



Cambridge University Press C. F. CLAY, Manager LONDON: Fetter Lane, E.C. 4

EDINBURGH: 100, Princes Street
also H. K. Lewis & Co., Ltd., 136, Gower Street, London, W.C. 1
and William Wesley & Son, 28, Essex Street, London, W.C. 2
CHICAGO: The University of Chicago Press
BOMBAY, CALCUTTA AND MADRAS: Macmillan and Co., Ltd.
TORONTO: J. M. Dent and Sons, Ltd.
TOKYO: The Maruzen-Kabushiki-Kaisha

[All rights reserved]

CONTENTS

Part 1 (September, 1916)

| | PAGE |
|--|------|
| ELLIS, J. C. B., and Morison, C. G. T. The ammoniacal nitrogen | |
| of peats and humus soils. Part I | 1 |
| DAVIS, WILLIAM A. The estimation of carbohydrates. V. The | |
| supposed precipitation of reducing sugars by basic lead acetate | 7 |
| ROBERTSON, G. S. Notes on the nature of the phosphates con- | |
| tained in mineral phosphates. (Two figures in text) | 16 |
| STAPLEDON, R. G., and JENKIN, T. J. Pasture problems: indi- | _ |
| genous plants in relation to habitat and sown species . | 26 |
| RUSSELL, EDWARD JOHN, and PRESCOTT, JAMES ARTHUR. The | |
| reaction between dilute acids and the phosphorus compounds | |
| of the soil. (Twenty figures in text) | 65 |
| PRESCOTT, JAMES ARTHUR. The phenomenon of absorption in its | |
| relation to soils. A résumé of the subject. (One figure in | |
| text) | 111 |
| PICKERING, SPENCER. The fruiting of trees in consecutive seasons | 131 |
| DAVIS, WILLIAM A., and PRESCOTT, JAMES ARTHUR. Note on the | 100 |
| loss of phosphoric acid during fusion with ammonium fluoride | 136 |
| Part 2 (March, 1917) | |
| , | |
| HAMMOND, J., and HAWK, J. C. Studies in milk secretion. I. The effect of nutrition on yield and composition. (Two figures in text) | 139 |
| HAMMOND, J., and HAWK, J. C. Studies in milk secretion. II. The | เบฮ |
| relation of the glands of internal secretion to milk production | 147 |
| Wild, Leonard John. Some soils of the Southern Island of New | 141 |
| Zealand with special reference to their lime requirements. | |
| (Two figures in text) | 154 |
| Mosscrop, T. Duncan. Some conditions affecting the value of | 101 |
| calcium cyanamide as a manure | 178 |
| Williams, Gwilym. Hydrolysis of the soluble protein of swede | 1,0 |
| turnips | 182 |
| WORMALD, H. The celery-rot bacillus. (Plates I and II) | 216 |
| TAYLOR, A. M. Black current eelworm. (Plate III, and One | |
| figure in text) | 246 |

iv Contents

Part 3 (June, 1917)

| RAMSAY, A. A. The solubility of calcium phosphates in citric acid |
|--|
| |
| RICHARDS, ERIC HANNAFORD. The fixation of nitrogen in fæces. |
| (Two figures in text) |
| TEMPANY, H. A. The shrinkage of soils. (Four figures in text). RICHARDS, ERIC HANNAFORD. Dissolved oxygen in rain-water. (Two figures in text) |
| ROBINSON, GILBERT WOODING. Studies on the palæozoic soils of North Wales. (Two figures in text) |
| RUSSELL, E. J., and APPLEYARD, A. The influence of soil conditions on the decomposition of organic matter in the soil. |
| (Nine figures in text) |
| |
| Part 4 (December, 1917) |
| GODDEN, WILLIAM. The comparative keeping qualities of palm kernel, coconut, ground-nut and other oil-cakes. CROWTHER, CHARLES, and WOODMAN, HERBERT ERNEST. The comparative digestibility of palm kernel cake, extracted palm kernel meal and undecorticated cottonseed cake. (Two figures in text) |
| CROWTHER, CHARLES, and WOODMAN, HERBERT ERNEST. The digestibility of dried yeast |
| CROWTHER, CHARLES, and WOODHOUSE, HILDA. The influence of palm kernel cake upon the composition of milk-fat |
| SALMON, E. S. On forms of the hop (Humulus lupulus L.) resistant to mildew (Sphaerotheca humuli (DC.) Burr.) |
| CAYLEY, DOROTHY M. Bacterial disease of Pisum sativum. (Plates IV—VII) |
| PAINE, SYDNEY G. Studies in bacteriosis. I. "Blackleg" of the potato |
| RUSSELL, E. J., and RICHARDS, E. H. The changes taking place |
| during the storage of farmyard manure. (Ten figures in text) |