

# 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

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., School of Agriculture, Cambridge

SIR E. J. RUSSELL, D.Sc., F.R.S., Rothamsted Experimental Station, Harpenden

IN CONSULTATION WITH

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

DR C. A. BARBER, C.I.E., 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.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.

VOLUME XXII 1932

CAMBRIDGE  
AT THE UNIVERSITY PRESS  
1932

**PRINTED IN GREAT BRITAIN**

# CONTENTS

## PART 1 (JANUARY 1932)

	PAGE
JENSEN, H. L. The microbiology of farmyard manure decomposition in soil. III. Decomposition of the cells of micro-organisms. (With seven text-figures) . . . . .	1
WOODMAN, H. E. and UNDERWOOD, E. J. Nutritive value of pasture. VIII. The influence of intensive fertilising on the yield and composition of good permanent pasture (seasons 1 and 2). (With three diagrams) . . . . .	26
TURNER, P. E. An analysis of factors contributing to the determination of saturation capacity in some tropical soil types. (With one text-figure) . . . . .	72
HOSKING, J. S. The influence of hydrogen-ion concentration on the decomposition of soil organic matter by hydrogen peroxide. (With two text-figures) . . . . .	92
"ALUMNUS." A comparison of the effect of rainfall on spring- and autumn-dressed wheat at Rothamsted Experimental Station, Harpenden. (With five text-figures) . . . . .	101
DU TOIT, M. M. S. and PAGE, H. J. Studies on the nitrogen cycles in the soil. IV. Natural and artificial humic acids . . . . .	115
KEEN, B. A. and CASHEN, G. H. Studies in soil cultivation. VI. The physical effect of sheep folding on the soil. (With five-text-figures) . . . . .	126
SCHOFIELD, R. K. and SCOTT BLAIR, G. W. Rapid methods of examining soils. I. Measurements of rolling weights. (With three text-figures) . . . . .	135
CASHEN, G. H. Measurements of the electrical capacity and conductivity of soil blocks. (With six text-figures) . . . . .	145
RUSSELL, E. W. The present position of the theory of the coagulation of dilute clay suspensions. A résumé . . . . .	165
COUTTS, J. R. H. "Single value" soil constants: a study of the significance of certain soil constants. VI. On the changes produced in a soil by exposure to high temperatures. (With one text-figure) . . . . .	200
COUTTS, J. R. H. "Single value" soil properties: a study of the significance of certain soil constants. VII. The moisture equivalent and some related quantities. (With two text-figures) . . . . .	203
SEN, ASHUTOSH. The measurement of electrical conductivity of aqueous soil suspension and its use in soil fertility studies. (With five text-figures) . . . . .	212