

THE JOURNAL OF HYGIENE

EDITED BY

GEORGE H. F. NUTTALL, M.D., PH.D., Sc.D., LL.D., F.R.S.

EMERITUS PROFESSOR OF BIOLOGY IN THE UNIVERSITY OF CAMBRIDGE

IN CONJUNCTION WITH

JOHN S. HALDANE, C.H., M.D., D.Sc., LL.D., F.R.S.,
Late Reader in Physiology in the University of Oxford.

J. C. G. LEDINGHAM, C.M.G., M.B., D.Sc., F.R.S.,
Professor of Bacteriology in the University of London,
Director of the Lister Institute, London.

G. S. GRAHAM-SMITH, M.D., F.R.S.,
Reader in Preventive Medicine, Cambridge.

MAJOR GREENWOOD, D.Sc., F.R.C.P. (LOND.), F.R.S.,
Professor of Epidemiology and Vital Statistics in the University of London.

SIR DAVID MUNRO, K.C.B., C.I.E., M.B.,
Secretary, Industrial Health Research Board, Medical Research Council.

PUBLISHED QUARTERLY



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 Fourteen Shillings net

29 April, 1933

PRINTED IN GREAT BRITAIN

CAMBRIDGE
UNIVERSITY
PRESS
LIBRARY
FETTER LANE

The University of Chicago Press

ULTRAVIOLET LIGHT AND VITAMIN D IN NUTRITION

14s. net

By KATHARINE BLUNT and RUTH COWAN. A survey of all vitamin D discoveries, including creation of its effects by ultraviolet light.

DIET AND EFFICIENCY. A Five-Year Controlled Experiment on Man.

5s. 6d. net

By HARALD G. O. HOLCK. Objective evidence of the effects of certain eating habits.

THE EPIDEMIOLOGY AND CONTROL OF MALARIA IN PALESTINE

27s. 6d. net

By I. J. KLIGLER. A complete account of successful control measures.

CHILDBIRTH

16s. 6d. net

By WILLIAM G. LEE, M.D.

NUTRITION WORK WITH CHILDREN (*Revised edition*)

16s. 6d. net

By LYDIA J. ROBERTS. A splendid survey of the subject of malnutrition,—of its causes, effects, prevention, and treatment.

THE NEWER KNOWLEDGE OF BACTERIOLOGY AND IMMUNOLOGY

55s. net

Edited by E. O. JORDAN and I. S. FALK. A collection of late researches in the field of bacteriology prepared by the leading eighty research men in the field.

LABORATORY OUTLINES IN BACTERIOLOGY AND IMMUNOLOGY

9s. 6d. net

By JOHN F. NORTON and I. S. FALK

FOOD POISONING (*Revised edition*)

14s. net

By EDWIN O. JORDAN

THE CONTROL OF HUNGER IN HEALTH AND DISEASE

14s. net

By A. J. CARLSON

AGENTS IN GREAT BRITAIN AND THE BRITISH EMPIRE (EXCEPT CANADA)

Cambridge University Press, Fetter Lane, London, E.C. 4

THE JOURNAL OF HYGIENE

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: THE MARUZEN COMPANY, LTD.

All rights reserved

THE JOURNAL OF HYGIENE

EDITED BY

GEORGE H. F. NUTTALL, M.D., PH.D., Sc.D., LL.D., F.R.S.
EMERITUS PROFESSOR OF BIOLOGY IN THE UNIVERSITY OF CAMBRIDGE

IN CONJUNCTION WITH

JOHN S. HALDANE, C.H., M.D., D.Sc., LL.D., F.R.S.

LATE READER IN PHYSIOLOGY IN THE UNIVERSITY OF OXFORD

J. C. G. LEDINGHAM, C.M.G., M.B., D.Sc., F.R.S.

PROFESSOR OF BACTERIOLOGY IN THE UNIVERSITY OF LONDON,
DIRECTOR OF THE LISTER INSTITUTE, LONDON

G. S. GRAHAM-SMITH, M.D., F.R.S.

READER IN PREVENTIVE MEDICINE, CAMBRIDGE

MAJOR GREENWOOD, D.Sc., F.R.C.P. (LOND.), F.R.S.

PROFESSOR OF EPIDEMIOLOGY AND VITAL STATISTICS
IN THE UNIVERSITY OF LONDON

SIR DAVID MUNRO, K.C.B., C.I.E., M.B.

SECRETARY, INDUSTRIAL HEALTH RESEARCH BOARD,
MEDICAL RESEARCH COUNCIL

VOLUME XXXIII. 1933

CAMBRIDGE
AT THE UNIVERSITY PRESS

1933

CAMBRIDGE
UNIVERSITY
PRESS
LIBRARY
CENTRAL LIBRARY
UNIVERSITY OF CAMBRIDGE

CONTENTS

NO. 1 (JANUARY 1933)

	PAGE
EYRE, JOHN. The Bacteriological Analysis of Winkles (<i>Littorina</i> Spp.) as they Arrive in the Market	1
TAYLOR, G. L. The Dissimilarity of the Results of Precipitin Titrations Performed with a Constant Amount of Antiserum and with a Constant Amount of Antigen	12
LANGRISHE, LT.-COL. J. DU P. On the Use of a Pressure Steam Disinfector for Disinfestation and Disinfection, by Dry Heat and/or Gaseous Disinfectants	28
JENKINS, C. E. and DON, C. S. D. The Haemoglobin Concentration of Normal English Males and Females	36
SAVAGE, WILLIAM G. Milk Pasteurisation as a Technical Problem	42
HERCUS, C. E. and AITKEN, H. A. A. Miscellaneous Studies on the Iodine and Goitre Problem in New Zealand. (With 1 Figure and 3 Charts)	55
MUMFORD, ALFRED A. Physical Measurements of Adolescent Schoolboys in Relation to Scholastic Attainment and Prowess in Games and Sports	80
SMITH, E. C. Inoculation Experiments with <i>Bacillus fusiformis</i> isolated from Tropical Ulcer with Observations on the Bacillus. (With Plate I, containing Figs. 1-10)	95
MADDOCK, E. C. G. Studies on the Survival Time of the Bovine Tubercle Bacillus in Soil, Soil and Dung, in Dung and on Grass, with Experiments on the Preliminary Treatment of Infected Organic Matter and the Cultivation of the Organism	103
BEDFORD, T., VERNON, H. M. and WARNER, C. G. The Influence of Static Effort on the Respiration and on the Respiratory Exchange. (With 9 Figures in the Text)	118

NO. 2 (APRIL 1933)

CROWDEN, G. P., HETHERINGTON, M. and LUXTON, W. R. A Comparative Study of the Physiological Effects on Children of School Heating by Hot-water Radiators and by Radiant Heat from Electric Ceiling and Wall Panels. (With 6 Figures in the Text)	151
--	-----

	PAGE
HAINES, R. B. Observations on the Bacterial Flora of some Slaughter-houses. (With 3 Figures in the Text)	165
HAINES, R. B. The Bacterial Flora developing on Stored Lean Meat, especially with regard to "Slimy" Meat. (With 1 Figure in the Text)	175
LLOYD, LL. Estimation of Water Pollution by a Biological Reaction. (With Plate II, 1 Figure in the Text, and 7 Charts)	183
DOWNIE, A. W., WADE, E. and YOUNG, J. A. An Organism resembling the Newcastle Type of Dysentery Bacillus associated with Cases of Dysentery	196
STOCKMAN, RALPH and JOHNSTON, J. M. Cereal Food Poisoning and its Relation to the Etiology of Pellagra. (With Plates III-V containing Figs. 1-18)	204
SMITH, J. Sporadic Infections in Aberdeen due to Food-Poisoning Organisms of the Salmonella Group	224
SAVAGE, WILLIAM G. Experimental Evidence of a Heat-Resistant Gastro-Intestinal Irritant produced by Bacilli of the Salmonella Group	233
PULVERTAFT, R. J. V. and LEMON, C. G. The Application of Photo-Electricity to the Determination of Bacterial Growth Rate. (With 3 Figures and 2 Graphs in the Text)	245
BROWN, ANNIE M. Felton Antibody: its Distribution and Purity as determined by Salting Out Methods. (With 2 Graphs)	252
EASTWOOD, ARTHUR. The Nature of Antibodies	259
BANKS, H. STANLEY. Further Experiences with Intravenous Antitoxin Treatment of Scarlet Fever	282

No. 3 (AUGUST 1933)

CUMMINS, S. L. and WEATHERALL, CICELY. The Effects of Colloidal Silica on Experimental Tuberculosis in Guinea-Pigs	295
JONES, WILLIAM R. Silicotic Lungs: The Minerals they contain. (With Plate VI containing Figs. 1-12, and Figs. I-IV in the Text)	307
BEDFORD, T. and WARNER, C. G. The Influence of Radiant Heat and Air Movement on the Cooling of the Kata-Thermometer. (With 5 Figures in the Text)	330

Contents

vii

	PAGE
DUFTON, A. F. The Use of Kata-Thermometers for the Measurement of Equivalent Temperature. (With 1 Figure in the Text)	349
FAULDS, J. STEVEN. Control of Scarlet Fever by Active Immunisation	353
HILL, A. BRADFORD. Contributions to the Experimental Study of Epidemiology. A Study of Cage Age and Resistance to Environment. (With 3 Figures in the Text)	359
GOWEN, JOHN W. and SCHOTT, RALPH G. Genetic Predisposition to <i>Bacillus piliformis</i> Infection among Mice	370
GIGLIOLI, GEORGE. Agglutinins for the Typhoid-Paratyphoid Group in a Random Sample of the Population of British Guiana	379
GIGLIOLI, GEORGE. Agglutinins found in the Serum of Subjects inoculated with Typhoid-Paratyphoid Vaccine	387
TWORT, C. C. and TWORT, J. M. The Fatty Infiltration of the Liver of Mice resulting from the Ingestion of Medical Liquid Paraffin, etc.	396
PAMPANA, EMILIO J. Microbic Dissociation: Detection of the "R" Variant by means of a Specific Drop-Agglutination	402
WILSON, W. JAMES. Selective Media for the Isolation, Cultivation and Differentiation of <i>Bacillus coli</i> and <i>B. lactis aerogenes</i>	404
GORDON, J. and HOYLE, L. The Inactivation of Bactericidal and Haemolytic Complement on standing	411
MENTON, J., COOPER, T. V., DUKE, F. W. and FUSSELL, W. H. The Different Types of <i>Corynebacterium diphtheriae</i>	414
RUSSELL, W. T. The Statistics of Erysipelas in England and Wales. (With 2 Diagrams)	421

NO. 4 (NOVEMBER 1933)

YOUNG, MATTHEW. A Study of Asthmatic and Rheumatic Children with Special Reference to Physical Type	435
TWORT, C. C. and LYTH, R. The Selection of Non-Carcinogenic from Carcinogenic Oils	464
DUFTON, A. F. The Measurement of Equivalent Temperature. (With 1 Figure in the Text)	474