

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

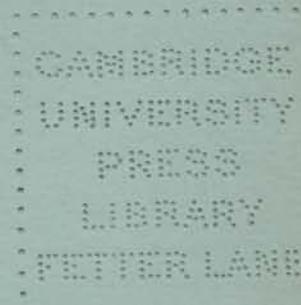
TOKYO: Maruzen Company Ltd.

All rights reserved

Price Fourteen Shillings net

5 January 1935

PRINTED IN GREAT BRITAIN



The University of Chicago Press

ULTRAVIOLET LIGHT AND VITAMIN D IN NUTRITION 11s. 6d. 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. 4s. 6d. net

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

THE EPIDEMIOLOGY AND CONTROL OF MALARIA IN PALESTINE 22s. 6d. net

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

CHILDBIRTH 13s. 6d. net

By WILLIAM G. LEE, M.D.

NUTRITION WORK WITH CHILDREN (*Revised edition*) 13s. 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 45s. 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 7s. 6d. net

By JOHN F. NORTON and I. S. FALK

FOOD POISONING (*Revised edition*) 11s. 6d. net

By EDWIN O. JORDAN

THE CONTROL OF HUNGER IN HEALTH AND DISEASE 13s. 6d. 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 XXXIV. 1934

CAMBRIDGE
AT THE UNIVERSITY PRESS

1934

.....
: NOURBMAO :
: YNORIVIMU :
: 60004 :
: YNARLU :
: INNA - YNEN :
:.....

PRINTED IN GREAT BRITAIN

CONTENTS

NO. 1 (FEBRUARY 1934)

	PAGE
GREENWOOD, MAJOR. Droplet Infection. Some Theoretical Considerations	1
MARTIN, W. J. The Epidemic Curve of Smallpox. (With 3 Graphs in the Text)	10
MCGIBBON, J. P. The Anomalous Features of the Dick Reaction .	30
BARDSLEY, DORIS A. The Distribution and Sanitary Significance of <i>B. coli</i> , <i>B. lactis aerogenes</i> and Intermediate Types of Coliform Bacilli in Water, Soil, Faeces, and Ice-cream. (With 4 Graphs in the Text)	38
BAMFORTH, J. An Enquiry into the <i>Coli anaerogenes</i> Bacteria .	69
BEDFORD, T. and WARNER, C. G. On Methods of measuring Skin Temperature. (With 10 Figures in the Text)	81
DUDGEON, Prof. LEONARD S. and BOND, L. T. On the Digestive Action of Leucocytes, Pus and Body Exudates	99
TAYLOR, G. L., ADAIR, G. S. and ADAIR, MURIEL E. The Precipitation Reaction. Optimal Proportions, Neutrality and Maximal Precipitation in Mixtures of Albumin and Antiserum. (With 1 Figure in the Text)	118
LONIE, THOMAS C. Weight, Height and Nutrition. Observations from the Isle of Ely	131
MCCALLUM, GAVIN B. and KIRKPATRICK, JOHN. Tuberculosis in the Hebrides: the Rarity of Tubercle Bacilli in the Milk of Cows—with a Note on the Vitality of Tubercle Bacilli preserved in Frozen Milk	141

NO. 2 (JUNE 1934)

STOCKMAN, R. The Chemistry and Pharmacology of Lathyrus Peas .	145
FINE, J. The Influence of Avitaminosis on the Course of Trypanosome Infection	154
MATTICK, A. T. R. and CHRISTIAN, M. I. The Vernes Test for the Diagnosis of Tuberculosis in Dairy Cattle. (With 1 Chart) .	157

	PAGE
GUDJONSSON, SK. V. and JACOBSON, C. J. A Fatal Case of Silicosis. (With Plates I-III, containing Figs. 1-6)	166
BIGGER, JOSEPH W. The Bacteriological Examination of Mussels .	172
HOYLE, L. The Haemophilic Bacteria of the Upper Respiratory Tract, the Appearance of Virulent Forms in Relation to Upper Respiratory Infections. (With Chart including Figs. 1-6) .	195
WARREN, S. H. and IREDALE, J. L. G. Some Fermentative Varieties of <i>Bacillus paratyphosus</i> B	203
WARREN, S. H. and IREDALE, J. L. G. Anaerogenic Fermentation with Paratyphoid Bacilli	213
BONSER, GEORGIANA M. The Incidence of Intrathoracic Tumours in Leeds. (With 1 Graph)	218
STOCKMAN, R. The Cause of Convulsive Ergotism. (With Plate IV, containing Figs. 1-13)	235
SMITH, J. Sources of Infection in Undulant Fever	242
MYERS, G. NORMAN. An Experimental Investigation on the In- fluence of Emulsions of Oils and Fats on the Lethal Effects of Bacterial Toxins	250
SAUNDERS, J. C. Typhoid Epidemic in Cork City, 1920. (With Graphs I-III and a Map)	265
HAINES, R. B. The Minimum Temperatures of Growth of some Bacteria. (With 1 Figure in the Text)	277

NO. 3 (OCTOBER 1934)

FAIRLEY, A., LINTON, E. C. and WILD, F. E. The Absorption of Hydrocyanic Acid Vapour through the Skin	283
FERGUSON, A. E. and FERGUSON, T. The Examination of Blood Films in Relation to the Prevention of Plumbism among Ship- breakers	295
MACDONALD, A. D. and MAITLAND, H. B. The Examination of Cotton, Coir, and Esparto-Grass Dust for Histamine	317
GARROD, LAWRENCE P. A Study of the Chick-Martin Test for Dis- infectants	322
The Genus <i>Salmonella</i> Lignières, 1900. Issued by the Salmonella Subcommittee of the Nomenclature Committee of the Inter- national Society for Microbiology	333

Contents

vii
PAGE

SMITH, J. Sporadic Salmonella Infections: A new Salmonella type	351
WILSON, G. S. The Reputed Antigenic Relationship between Organisms of the Brucella Group on the One Hand, and of the Pasteurella, Pfeifferella, and Proteus Groups on the Other . . .	361
MADDOCK, E. C. G. Further Studies on the Survival Time of the Bovine Tubercle Bacillus in Soil, Soil and Dung, in Dung and on Grass, with Experiments on Feeding Guinea-pigs and Calves on Grass Artificially Infected with Bovine Tubercle Bacilli . . .	372
RUSSELL, W. T. and SALMON, G. Pulmonary Tuberculosis in Wales between 1911 and 1931	380
UNDERWOOD, ASHWORTH E. The Epidemiology of an Influenza Outbreak in Leeds	407
SMITH, E. C. Filtration Experiments with <i>Spirochaeta schaudinnii</i>	429

NO. 4 (DECEMBER 1934)

KERMACK, W. O., MCKENDRICK, A. G. and MCKINLAY, P. L. Death-rates in Great Britain and Sweden: Expression of Specific Mortality Rates as Products of Two Factors, and some Consequences thereof. (With 6 Figures in the Text)	433
BEDFORD, T. and WARNER, C. G. The Globe Thermometer in Studies of Heating and Ventilation. (With 4 Figures in the Text)	458
BAKER, JOHN R. and RANSON, R. M. The Spermicidal Powers of Chemical Contraceptives. VI. An Improved Test for Suppositories	474
FAIRLEY, A., LINTON, E. C. and FORD-MOORE, A. H. The Toxicity to Animals of 1 : 4 Dioxan	486
GILL, COL. C. A. Population Growth and Birth-control. A Biological Study	502
STRONG, PAUL S. and CULBERTSON, JAMES T. The Filtrability of the Components of Alexin	522
DUDLEY, SHELDON F. and BRENNAN, J. R. High and Persistent Carrier Rates of <i>Neisseria meningitidis</i> , unaccompanied by Cases of Meningitis	525
GRIFFITH, F. The Serological Classification of <i>Streptococcus pyogenes</i>	542
INDEX OF AUTHORS	585
INDEX OF SUBJECTS	588