

THE JOURNAL OF HYGIENE

(Founded in 1901 by G. H. F. Nuttall, F.R.S.)

EDITED BY

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

READER EMERITUS IN PREVENTIVE MEDICINE IN THE UNIVERSITY OF CAMBRIDGE

IN CONJUNCTION WITH

SIR JOHN 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.

M. GREENWOOD, D.Sc., F.R.C.P., 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.

W. W. C. TOPLEY, M.D., M.Sc., F.R.C.P., F.R.S.,
Professor of Bacteriology and Immunology in the University of London.



CAMBRIDGE UNIVERSITY PRESS

LONDON: BENTLEY HOUSE

CHICAGO: The University of Chicago Press
(Agents for the United States)

BOMBAY, CALCUTTA, MADRAS: Macmillan

TOKYO: Maruzen Company Ltd.

All rights reserved

Price Fifteen Shillings net

PRINTED IN GREAT BRITAIN



The Quarterly Journal of Medicine

Edited by

CRIGHTON BRAMWELL, O. L. V. S. DE WESSELOW, A. W. M. ELLIS, F. R. FRASER,
D. HUNTER, J. W. McNEE

with the help of

E. FARQUHAR BUZZARD, GORDON HOLMES, ARTHUR F. HURST, J. A. NIXON, R. A. PETERS, E. I. SPRIGGS

CONTENTS

NEW SERIES. VOL. X, No. 40. OCTOBER 1941

(Vol. XXXIV of the continuous series)

Epidemic Myositis, with Neuritis, Erythema, and Meningeal Symptoms. By DENIS WILLIAMS.

Simmond's Disease or Panhypopituitarism (Anterior). Its Clinical Diagnosis by the Combined Use of Two Objective Tests. By RUSSELL FRASER and PATRICIA H. SMITH. With Plates 16 to 18.

Proceedings of the Association of Physicians of Great Britain and Ireland, 1941. Thirty-fifth Annual General Meeting.

Author Index to Volumes I-X New Series }
Subject Index to Volumes I-X New Series } *at end.*

SINGLE NUMBERS 10s. 6d. NET EACH SUBSCRIPTION 35s. PER ANNUM

VOLUMES 45s. NET

„ BOUND VOLUMES 40s. NET

CLOTH CASES 5s. NET

OXFORD UNIVERSITY PRESS, London, E.C. 4

TEMPORARY ADDRESS

SOUTHFIELD HOUSE, OXFORD

.....
CAMBRIDGE
UNIVERSITY
PRESS
LONDON
.....

THE JOURNAL OF HYGIENE

CAMBRIDGE UNIVERSITY PRESS
LONDON: BENTLEY HOUSE



CHICAGO: THE UNIVERSITY OF CHICAGO PRESS
(Agents for the United States)

BOMBAY, CALCUTTA, MADRAS: MACMILLAN

All rights reserved

THE
JOURNAL OF HYGIENE

(FOUNDED IN 1901 BY G. H. F. NUTTALL, F.R.S.)

EDITED BY

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

READER IN PREVENTIVE MEDICINE IN THE UNIVERSITY OF CAMBRIDGE

IN CONJUNCTION WITH

SIR 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

M. 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

W. W. C. TOPLEY, M.D., M.Sc., F.R.C.P., F.R.S.

PROFESSOR OF BACTERIOLOGY AND IMMUNOLOGY IN THE UNIVERSITY OF LONDON

VOLUME XLI. 1941

CAMBRIDGE
AT THE UNIVERSITY PRESS

1941

PRINTED IN GREAT BRITAIN

C O N T E N T S

No. 1 (JANUARY 1941)

	PAGE
LEA, D. E., HAINES, R. B. and BRETSCHER, E. The bactericidal action of X-rays, neutrons and radioactive radiations. (With 6 figures in the text)	1
TAYLOR, C. B. Bacteriology of fresh water. II. The distribution and types of coliform bacteria in lakes and streams. (With 6 figures in the text)	17
NABIH, M. SAID. An anaerogenic strain of <i>Bacterium paratyphosum</i> C	39
MASTERMAN, A. T. Air purification by hypochlorous acid gas. (With 1 figure in the text)	44
DE WAAL, H. L. A study of the serological types of haemolytic streptococci in relation to the epidemiology of scarlatina and other infections due to these organisms. (With 1 figure in the text)	65

No. 2 (SEPTEMBER 1941)

CUMMINS, S. LYLE. The intra-tracheal inoculation of anthracite dust mixed with dead human tubercle bacilli into rabbits. (With Plate I)	101
RHODES, A. J. and REID, CHRISTINE. <i>Bacterium dysenteriae</i> Sonne: a study of forty strains with particular reference to the appearance of the colonies. (With 1 figure in the text)	105
LANYON, E. C. G. An apparatus for spin-freezing serum or plasma in circular bottles. (With 5 figures in the text)	111
BAKER, A. H. and TWORT, C. C. The effect of humidity of air on the disinfection capacity of mechanically atomized and heat-volatilized germicidal aerosols	117
RAÑSON, R. M. New laboratory animals from wild species. Breeding a laboratory stock of hedgehogs (<i>Erinaceus europaeus</i> L.). (With 1 figure in the text)	131
BUCHANAN-WOLLASTON, H. J. On tests of the significance of differences in degree of pollution by coliform bacteria and on the estimation of such differences. (With 3 figures in the text)	139

	PAGE
ASLETT, E. A., HART, P. D'ARCY, MARTIN, W. J. and RUSSELL, W. T. Physical type in pneumoconiosis	169
BARKWORTH, H. and IRWIN, J. O. The effect of the shape of container and size of gas tube in the presumptive coliform test	180
BOURDILLON, R. B., LIDWELL, O. M. and THOMAS, JOHN C. A slit sampler for collecting and counting air-borne bacteria. (With Plates II-IV and 5 figures in the text)	197

NO. 3 (NOVEMBER 1941)

CASE, E. M. and HALDANE, J. B. S. Human physiology under high pressure	225
GRIFFITH, THE LATE A. STANLEY. Further experiments on the field vole with tubercle bacilli	250
GRIFFITH, THE LATE A. STANLEY. Further experiments on the golden hamster (<i>Cricetus auratus</i>) with tubercle bacilli and the vole strain of acid-fast bacillus (Wells)	260
GRIFFITH, THE LATE A. STANLEY. The survival of the Calmette-Guérin strain of tubercle bacillus (B.C.G.) in the blood and mamma of goats	266
GRIFFITH, THE LATE A. STANLEY. Atypical strains of tubercle bacilli in human tuberculosis	272
GRIFFITH, THE LATE A. STANLEY. The susceptibility of the water (or grass) snake (<i>Trepidonotus natrix</i>) to the avian tubercle bacillus and to reptilian strains of acid-fast bacilli	284
GRIFFITH, THE LATE A. STANLEY. A method of preserving a strain of the tubercle bacillus without having recourse to successive subcultivation or injection of the usual laboratory animals	289
GLOVER, R. E. Infection of adult cattle with <i>Mycobacterium tuberculosis avium</i>	290
THE AGRICULTURAL RESEARCH COUNCIL'S COMMITTEE ON JOHNE'S DISEASE. Testing cattle with Johnin	297
SPOONER, E. T. C. Observations on 'hospital infection' in a plastic surgery ward. (With 1 chart in the text)	320
BARRETT, A. M. The serological diagnosis of glandular fever (infectious mononucleosis): a new technique	330

No. 4 (DECEMBER 1941)

	PAGE
JOHNSON, C. G. The ecology of the bed-bug, <i>Cimex lectularius</i> L., in Britain. (With 39 figures in the text)	345

Nos. 5, 6 (DECEMBER 1941)

CHEESEMAN, E. A. Comparison between the direct and indirect occupational risk in mortality from pulmonary tuberculosis	463
FINN, S. R. and POWELL, E. O. The chemical and physical investigation of germicidal aerosols. I. Germicidal smokes. (With 8 figures in the text)	473
GREAVES, R. I. N. The freezing of human serum and plasma in Medical Research Council transfusion bottles, before drying by sublimation from the frozen state. (With Plates V-VII and 1 figure in the text)	489
GRAHAM-SMITH, G. S. Further observations on the longevity of dry spores of <i>B. anthracis</i>	496
STEWART, F. H. Papillary variation in coliform bacteria	497
SMITH, E. C., HORGAN, E. S. and HASEEB, MANSOUR ALI. Experiments in connexion with an attempt to produce a neurotropic strain of vaccinia virus in sheep	509
BATTY-SMITH, C. G. The detection of acetyl-methyl-carbinol in bacterial cultures. A comparative study of the methods of O'Meara and of Barritt	521
GRIFFITH, THE LATE A. STANLEY. The history of six old cultures of <i>Mycobacterium tuberculosis</i>	530
DOUGLAS, R., SMITH, J., SUTHERLAND, I. N. and WATSON, R. J. P. A milk-spread epidemic of scarlet fever	543
HOGG, C. B. and KNOX, R. An outbreak of paratyphoid B fever. (With 1 figure in the text)	553
BOIZOT, G. E. An examination of the modified Eijkman method applied to pure coliform cultures obtained from waters in Singapore	566
THOMSON, SCOTT and GLAZEBROOK, A. J. Infectious diseases in a semi-closed community. (With 12 figures in the text)	570
INDEX OF AUTHORS	616
INDEX OF SUBJECTS	619