

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

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.,

Chief Medical Officer, Ministry of Supply.



CAMBRIDGE UNIVERSITY PRESS

LONDON: BENTLEY HOUSE

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

BOMBAY, CALCUTTA, MADRAS: Macmillan

All rights reserved

Price Sixteen Shillings net

PRINTED IN GREAT BRITAIN

20 April 1945

CAMBRIDGE
UNIVERSITY
PRESS
LIBRARY
LONDON

S-T-R-E-T-C-H

and REGAIN

ELASTOPLAST Technique was evolved with 'Elastoplast' Bandages and Dressings. The successful results described in the medical press and reprinted in the handbook "Elastoplast Technique" were achieved with 'Elastoplast' Bandages and Dressings. The combination of the particular adhesive spread used in making 'Elastoplast,' with the remarkable stretch and regain properties of the 'Elastoplast'

cloth, provides the precise degree of COMPRESSION and GRIP shown by clinical use to be essential to the successful practice of the technique.

These properties, peculiar to 'Elastoplast,' have produced a bandage used for many years with outstanding success by the Medical Profession throughout the world.

Note: 'Elastoplast' has a SOFT non-fray edge.

Elastoplast Technique — New Edition. Supplies of the tenth edition of "Elastoplast Technique" are limited, but there are sufficient for members of the medical profession who do not already possess a previous edition. Please write to the Medical Department of the manufacturers, address below.

Elastoplast

TRADE MARK BRAND

'Elastoplast' Bandages and Plasters are made in England by T. J. Smith & Nephew Ltd., Hull

THE JOURNAL OF HYGIENE

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

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.

CHIEF MEDICAL OFFICER, MINISTRY OF SUPPLY

VOLUME XLIV. 1945-6

CAMBRIDGE
AT THE UNIVERSITY PRESS
1946

*Printed in Great Britain at the University Press, Cambridge
(Brooke Crutchley, University Printer)
and published by the Cambridge University Press
Cambridge, and Bentley House, London
Agents for U.S.A.: The University of Chicago Press
Canada and India: Macmillan*

CONTENTS

NO. 1 (JANUARY 1945)

	PAGE
ELFORD, WILLIAM J. and VAN DEN ENDE, JOAN. Studies on the disinfecting action of hypochlorous acid gas and sprayed solution of hypochlorite against bacterial aerosols. (With Plate 1 and 3 Figures in the Text)	1
WRIGHT, G. PAYLING and WRIGHT, HELEN PAYLING. Etiological factors in broncho-pneumonia amongst infants in London. (With 4 Figures in the Text)	15
MACKENZIE, E. F. W. and TAYLOR, E. WINDLE. A study of the Vi agglutination test for the detection of typhoid carriers	31
SEVITT, SIMON. Bacteriological investigation into the causation of diarrhoea and enteritis in Dublin in 1942-3. (With 1 Figure in the Text)	37
COLIN-RUSS, A. On a new form of reagent against perspiration effects on shoe materials	53
KLIGLER, I. J. and GUGGENHEIM, K. The influence of <i>Salmonella typhi-murium</i> infection in rats on vitamin A metabolism	56
KLIGLER, I. J., GUGGENHEIM, K. and HENIG, E. Susceptibility of vitamin A-deficient and starved rats and mice to a peroral infection with <i>Salmonella typhi-murium</i> . (With 2 Figures in the Text)	61

NO. 2 (APRIL 1945)

WOOLF, BARNET and WATERHOUSE, JOHN. Studies on infant mortality. Part I. Influence of social conditions in county boroughs of England and Wales. (With 8 Figures in the Text)	67
KLIENEBERGER-NOBEL, EMMY. Changes in the nuclear structure of bacteria, particularly during spore formation. (With Plates 2-4 and 3 Figures in the Text)	99
TAYLOR, C. B. The effect of temperature of incubation on the results of tests for differentiating species of coliform bacteria	109
BERGER, F. M. A new non-mannite-fermenting dysentery organism of the Flexner group	116
GELL, P. G. H., HOBBS, BETTY C. and ALLISON, V. D. An outbreak of water-borne typhoid investigated by bacteriophage typing and 'selective' sewage examination. (With 1 Figure in the Text)	120
WILSON, J. F. Agglutination tests in the diagnosis of enteric fever in the inoculated	129
BARR, MOLLIE and GLENNY, A. T. Some practical applications of immunological principles. (With 5 Figures in the Text)	135
DAY, H. B. Studies on immunization by a species antigen. III. The presence of an anti-immunity factor in <i>Pneumococcus</i>	143

NO. 3 (SEPTEMBER 1945)

HOPKINS, FREDERICK GOWLAND and LEADER, VIOLET RUBY. On refection in rats and on the nature of the growth promoted by the addition of small quantities of milk to vitamin-free diets. (With 9 Figures in the Text)	149
BRIEGER, E. M. and FELL, HONOR B. Warm-stage observations on the initial development of the avian tubercle bacillus cultivated in embryo extract. (With 4 Figures in the Text)	158

	PAGE
HOYLE, L. An analysis of the complement-fixation reaction in influenza. (With 11 Figures in the Text)	170
GORDON, R. F. and BUXTON, A. The isolation of <i>Salmonella thompson</i> from outbreaks of disease in chicks	179
LEETE, H. MASON. Diphtheria in Hull. A review of six years bacteriological typing. (With Plate 5 and 2 Figures in the Text)	184
SHEWAN, J. M. The bacteriology of dehydrated fish. I. Qualitative and quantitative studies of the drying process. (With 4 Figures in the Text)	193
JORDAN, R. C. and JACOBS, S. E. Studies in the dynamics of disinfection. III. The reaction between phenol and <i>Bact. coli</i> : the effect of temperature and concentration: with a detailed analysis of the reaction velocity. (With 6 Figures in the Text)	210
WILSON, DAGMAR C. Note on the war-time health of women in industry and at home. A comparative survey	221

NO. 4 (JANUARY 1946)

TEORELL, TORSTEN. Quantitative aspects of antigen-antibody reactions. I. A theory and its corollaries. (With 11 Figures in the Text)	227
TEORELL, TORSTEN. Quantitative aspects of antigen-antibody reactions. II. Some comparisons between the theory and the experimental results. (With 5 Figures in the Text)	237
JORDAN, R. C. and JACOBS, S. E. Studies in the dynamics of disinfection. V. The temperature coefficient of the reaction between phenol and <i>Bact. coli</i> , derived from data obtained by an improved technique. (With 3 Figures in the Text)	243
JORDAN, R. C. and JACOBS, S. E. Studies in the dynamics of disinfection. VI. Calculations of a new and constant temperature coefficient for the reaction between phenol and <i>Bact. coli</i> . (With 4 Figures in the Text)	249
BRIEGER, E. M. and FELL, HONOR B. Warm-stage observations on the development of pseudomycelia in cultures of avian tubercle bacilli grown in dilute embryo extract. (With 3 Figures in the Text)	256
HUNTER, G. J. E. The differentiation of <i>Streptococcus cremoris</i> and <i>Streptococcus lactis</i> by means of bacteriophage action	264
OLITZKI, L., SHELUBSKY, M. and KOCH, P. K. A thermolabile substance of <i>Shigella dysenteriae</i> Shiga	271
SPIRA, LEO. Fluorine alopecia. (With Plate 6)	276
COSSERY, G. N. Enteric fevers in Egypt	284
KOCH, WALTER. Three rapid tests for the estimation of tropical fitness of fabrics. (With 3 Figures in the Text)	286
COMPTON, ARTHUR and YOUSSEF, GEORGE. A routine method of bacteriological analysis and grading of ice-creams: with records of eleven years' application	289
CRAUFURD-BENSON, H. J. and MACLEOD, J. A.L. 63, the original British army louse-powder. (With 3 Figures in the Text)	294

Contents

vii

No. 5 (MAY 1946)

	PAGE
BHATNAGAR, S. S. and SHRIVASTAVA, D. L. An experimental study on cellular immunity in <i>Pasteurella pestis</i> infection. (With Plate 7)	307
CARNE, J. B. The natural ventilation of unheated 'closed' rooms. (With Plate 8 and 8 Figures in the Text)	314
LIDWELL, O. M. and LOVELOCK, J. E. Some methods of measuring ventilation. (With 5 Figures in the Text)	326
LIDWELL, O. M. Bactericidal effects of the partial irradiation of a room with ultra-violet light. (With 7 Figures in the Text)	333
CROWE, M. A localized outbreak of <i>Salmonella</i> food poisoning apparently transmitted by a hen's egg	342
BRIDGES, R. F. and TAYLOR, JOAN. A critical examination of the organism described as <i>Bacillus wakefield</i>	346
BASU, P. N. and ROY, R. N. The incidence of natural diphtheria antitoxin in horses: its influence on the results of antigenic stimulus	348
HEIBERG, POVL and PETERSEN, HELGE. The epidemic curve for mumps. (With 1 Figure in the Text)	350
KERLY, MARGARET, MORKAM, FLORENCE and MAGILL, KATHLEEN. Analysis of meals served in Surrey school canteens. (With 3 Figures in the Text)	352
RAYMOND, W. F. Iodine as an aerial disinfectant. (With 1 Figure in the Text)	359
IRWIN, J. O. and GOODMAN, NANCY. The statistical treatment of measurements of the carcinogenic properties of tars (Part I) and mineral oils (Part II). (With 9 Figures in the Text)	362

No. 6 (SEPTEMBER 1946)

JORDAN, R. C. and JACOBS, S. E. Studies in the dynamics of disinfection. VII. The reaction between phenol and <i>Bact. coli</i> : the effect of temperature on the usually accepted concentration exponent and the calculation of a more satisfactory exponent based on theoretical considerations. (With 4 Figures in the Text)	421
DICK, JOHN C. Laboratory findings in enteric group fevers in the Middle East forces	430
VOGELSANG, TH. M. and KRYVI, B. O. Schick reactions in recently confined women and their new-born infants	437
HUGHES, D. L. and EDWARDS, S. J. The <i>in vitro</i> action of disinfectants and the application of CTAB in the control of <i>Str. agalactiae</i> mastitis. (With 1 Figure in the Text)	442
TWORT, C. C., WHITE, L. J. and BAKER, A. H. The significance of volatility and water solubility in disinfection processes	451
LOUREIRO, J. A. DE and LITO, EUGENIO. Quantitative study of the sterilization of bacteria by mercuric compounds. (With 4 Figures in the Text)	463
DUGUID, J. P. The size and the duration of air-carriage of respiratory droplets and droplet-nuclei	471

	PAGE
WRIGHT, G. PAYLING and WRIGHT, HELEN PAYLING. Diarrhoea and enteritis amongst infants in the London area, 1930-8	480
PARKES, A. S. Feeding and breeding of laboratory animals. I. Rat and mouse cubes, and cube containers. (With 7 Figures in the Text)	491
BRUCE, H. M. and PARKES, A. S. Feeding and breeding of laboratory animals. II. Growth and maintenance of rabbits without fresh green food. (With 5 Figures in the Text)	501
ALLEN, L. A. and EDEN, G. E. Effect of continuous aeration on bacterial oxidation of organic matter. (With 3 Figures in the Text)	508
MONTEIRO, MOURA A., COUTINHO, HERCULANO, JANZ, G. J. and LOUREIRO, J. A. DE. Endemic pellagra in northern Portugal	518
INDEX OF AUTHORS	526
INDEX OF SUBJECTS	528