

THE JOURNAL OF HYGIENE

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

EDITED BY

R. M. FRY, M.A., M.R.C.S. AND J. H. McCOY, M.B., D.P.H.

IN CONJUNCTION WITH

R. D. BARRY, M.A., B.V.Sc., Ph.D., Sc.D.

W. I. B. BEVERIDGE, D.V.Sc., Sc.D.

A. B. CHRISTIE, M.A., M.D., F.R.C.P., F.F.C.M.

A. W. DOWNIE, M.D., F.R.S.

R. I. N. GREAVES, M.D., F.R.C.P.

O. M. LIDWELL, D.Phil.

J. NAGINGTON, M.D.

HILLAS SMITH, M.A., M.D., F.R.C.P.

SIR GRAHAM WILSON, M.D., LL.D., F.R.C.P., D.P.H., F.R.S



CAMBRIDGE UNIVERSITY PRESS

The Pitt Building, Trumpington Street, Cambridge CB2 1RP

Bentley House, 200 Euston Road, London NW1 2DB

32 East 57th Street, New York, N.Y. 10022

The Journal of Hygiene

The *Journal of Hygiene* publishes reports of research and original findings in subjects related to hygiene, preventive and social medicine. The field covered is broad and includes infection, microbiology, virology, immunity, epidemiology, food hygiene, sanitary bacteriology, statistics and the clinical and social aspects of disease.

Infection is defined in the widest sense and is concerned with the control of infectious disease in the community and within institutions and includes medical microbiology, clinical immunology, epidemiology, and the laboratory and clinical aspects of antimicrobial chemotherapy.

Papers for publication should be sent to Dr R. M. Fry, Department of Pathology, Tennis Court Road, Cambridge CB2 1QP. Papers forwarded to the Editor for publication are understood to be offered to *The Journal of Hygiene* alone, unless the contrary is stated.

Contributors receive twenty-five copies of their paper free. Additional copies may be purchased; these should be ordered when the final proof is returned.

© Cambridge University Press 1979

PERMISSIONS

Copying

This journal is registered with the Copyright Clearance Center, New York. Organizations in the U.S.A. who are also registered with C.C.C. may therefore copy material (beyond the limits permitted by sections 107 and 108 of U.S. © law) subject to payment to C.C.C. of the per-copy fee indicated in the code on the first page of the article. This consent does not extend to multiple copying for promotional or commercial purposes.

ISI Tear Service 325 Chestnut Street, Philadelphia, Pennsylvania 19106, U.S.A., is authorized to supply single copies of separate articles for private use only.

For all other use, permission should be sought from the Cambridge or New York offices of the Cambridge University Press.

SUBSCRIPTIONS

The Journal of Hygiene is published six times a year in February, April, June, August, October and December.

Single parts £7.50 net (US \$18.50 in the U.S.A. and Canada) plus postage.

Three parts form a volume; two volumes are published per year. The subscription price (which includes postage) of volumes 82 and 83 (1979) is £17.50 net per volume (US \$43.00 in the U.S.A. and Canada).

Second class postage paid at New York, N.Y.

Quotations for back volumes may be obtained from the publisher.

Claims for missing issues should be made immediately upon receipt of the subsequent issue.

Orders should be sent to a bookseller or subscription agent or to the publishers, Cambridge University Press, at P.O. Box 110, Cambridge CB2 3RL, or in the U.S.A. and Canada at 32 East 57th Street, New York, N.Y. 10022.

**THE
JOURNAL OF HYGIENE**

THE JOURNAL OF HYGIENE

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

EDITED BY

R. M. FRY, M.A., M.R.C.S.

Lately Director of the Public Health Laboratory, Cambridge

J. H. McCOY, M.B., D.P.H.

Director of Public Health Laboratory, Hull

AND R. D. BARRY, M.A., B.V.Sc., Ph.D., Sc.D.

Huddersfield Lecturer in Special Pathology in the University of Cambridge

IN CONJUNCTION WITH

P. ARMITAGE, M.A., Ph.D.

Professor of Biomathematics in the University of Oxford

W. I. B. BEVERIDGE, D.V.Sc., Sc.D.

Lately Professor of Animal Pathology in the University of Cambridge

A. B. CHRISTIE, M.A., M.D., F.R.C.P., F.F.C.M.

Physician Superintendent, Fazakerley Hospital, Liverpool

A. W. DOWNIE, M.D., F.R.S.

Lately Professor of Bacteriology in the University of Liverpool

R. I. N. GREAVES, M.D., F.R.C.P.

Lately Professor of Pathology in the University of Cambridge

O. M. LIDWELL, D.Phil.

External Scientific Staff, Medical Research Council

J. NAGINGTON, M.D.

Consultant Virologist, Public Health Laboratory Service

HILLAS SMITH, M.A., M.D., F.R.C.P.

Consultant Physician, Coppets Wood Hospital

Sir GRAHAM WILSON, M.D., LL.D., F.R.C.P., D.P.H., F.R.S.

Lately Director of the Public Health Laboratory Service

VOLUME 82 1979

CAMBRIDGE UNIVERSITY PRESS

CAMBRIDGE · LONDON · NEW YORK

**PUBLISHED BY
THE SYNDICS OF THE CAMBRIDGE UNIVERSITY PRESS**

**The Pitt Building, Trumpington Street, Cambridge CB2 1RP
Bentley House, 200 Euston Road, London NW1 2DB
32 East 57th Street, New York, N.Y. 10022, U.S.A.**

© Cambridge University Press 1979

Printed in Great Britain at the University Press, Cambridge

Contents

No. 1 (FEBRUARY 1979)

	PAGE
ANGULO, JUAN J. and WALTER, STEPHEN, D. Variola minor in Braganca Paulista County, 1956: household aggregation of the disease and the influence of house size on the attack rate	1
DANKERT, J., ZIJLSTRA, J. B. and LUBBERDING, H. A garment for use in the operating theatre: the effect upon bacterial shedding	7
HUTCHINS, P., MATTHEWS, T. H. J., MANLY, J. E., LAWRIE, B. and WALKER-SMITH, J. A. Comparison of oral sucrose and glucose electrolyte solutions in the out-patient management of acute gastroenteritis in infancy	15
SKINNER, H. H. and KNIGHT, E. H. Epidermal tissue as a primary site of replication of lymphocytic choriomeningitis virus in small experimental hosts	21
BROOKS HEATHER, J. L., CHAMBERS, T. J. and TABAQCHALI, SOAD. The increasing isolation of <i>Serratia</i> species from clinical specimens	31
PINTO, A. A. and GARLAND, A. J. M. Immune response to virus-infection-associated (VIA) antigen in cattle repeatedly vaccinated with foot-and-mouth disease virus inactivated by formalin or acetyleneimine	41
OXFORD, J. S., SCHILD, G. C., POTTER, C. W. and JENNINGS, R. The specificity of the anti-haemagglutinin antibody response induced in man by inactivated influenza vaccines and by natural infection	51
BALL, LYN C. and PARKER, M. T. The cultural and biochemical characters of <i>Streptococcus milleri</i> strains isolated from human sources	63
HILL, G. W. R. and ROACH, M. Comparison of the tuberculin Tine Test ⁺ and the Mantoux	79
PYHÄLÄ, R. and VISAKORPI, R. Influenza A (H1N1) viruses of the 1977/78 outbreak: isolation and haemagglutination properties	81
LILLY, H. A., LOWBURY, E. J. L. and WILKINS, M. D. Detergents compared with each other and with antiseptics as skin 'degerming' agents	89
SMALL, R. G. and SHARP, J. C. M. A milk-borne outbreak due to <i>Salmonella dublin</i>	95
ELLIS-PEGLER, R. B., HIGGS, R. and LAMBERT, H. P. Gastroenteritis in London and Jamaica: a clinical and bacteriological study	101
ELLIS-PEGLER, R. B., LAMBERT, H. P., ROWE, B. and GROSS, R. J. <i>Escherichia coli</i> in gastroenteritis of children in London and Jamaica	115
ROBERTS, DIANE and GILBERT, R. J. Survival and growth of non-cholera vibrios in various foods	123
MEAD, G. C. and ADAMS, B. W. Microbiological aspects of polyphosphate injection in the processing and chill storage of poultry	133

	PAGE
SANBORN, WARREN, R., VIEU, J.-F., KOMALARINI, S., SINTA, TRENGGONOWATI, R., KADIRMAN, I. L., SUMARMO, AZIZ, ABDEL, SADJUMIN, T., TRIWIBOWO, ATAS and AYAM, SUTRISNA. Salmonellosis in Indonesia: phage type distribution of <i>Salmonella typhi</i>	143
WILSON, SIR GRAHAM. The Brown Animal Sanatory Institution	155
No. 2 (APRIL 1979)	
HAVEKORN, M. L. and MICHEL, M. F. Nosocomial klebsiellas. I. Colonization of hospitalized patients	177
HAVEKORN, M. L. and MICHEL, M. F. Nosocomial klebsiellas. II. Transfer in a hospital ward	195
EDMONDSON, A. S. and COOKE, E. MARY. The development and assessment of a bacteriocin typing method for <i>Klebsiella</i>	207
TERZIN, A. L., DJURIŠIĆ, S., VUKOVIĆ, B. and VUJKOV, V. Haemagglutination-inhibiting (HI) antibodies against four prototype strains of influenza A virus in different age groups	225
ROCCHI, G., CARLIZZA, L., ANDREONI, M., RAGONA, G., PIGA, C., PELOSIO, A., VOLPI, A. and MUZZI, A. Protection from natural infection after live influenza virus immunization in an open population	231
MABLES, R. R. and TOWERS, A. G. A laboratory model for the investigation of contact transfer of micro-organisms	237
BICKNELL, S. R. and BELL, R. A. <i>Brucella abortus</i> in the bitch: subclinical infection associated with urinary excretion	249
BATTY, ELIZABETH, FARMER, YVONNE L., BREAME, A. J. and BRUCE, W. The effect of relative humidity on swine vesicular disease virus in dried films before and during formaldehyde fumigation	255
BARNES, ELLA M., IMPEY, C. S. and STEPHENS, B. J. H. Factors affecting the incidence and anti-salmonella activity of the anaerobic caecal flora of the young chick	263
BALLUZ, S. A. and BUTLER, M. The influence of operating conditions of activated-sludge treatment on the behaviour of f2 coliphage	285
DERBYSHIRE, J. B. and BROWN, E. G. The inactivation of viruses in cattle and pig slurry by aeration or treatment with calcium hydroxide	293
YOUSSEF, NAGWAN, WYBORN, C. H. E., HOLT, G., NOBLE, W. C. and CLAYTON, YVONNE M. Ecological effects of antibiotic production by dermatophyte fungi	301
WALLACE, MARGARET E. and MACSWINEY, FELICITY M. An inherited mild middle-aged adiposity in wild mice	309
CRADOCK-WATSON, J. E., RIDEHALGH, MARGARET K. S. and BOURNE, M. S. Specific immunoglobulin responses after varicella and herpes zoster	319
WILSON, SIR GRAHAM. The Brown Animal Sanatory Institution. Chaps. 5-7	337

Contents

vii

No. 3 (JUNE 1979)

	PAGE
AYLIFFE, G A. J., GEDDES, A. M., PEARSON, J. E. and WILLIAMS, T. C. Spread of <i>Salmonella typhi</i> in a maternity hospital	353
RANSJÖ, ULRIKA and HAMBRAEUS, ANNA. An instrument for measuring bacterial penetration through fabrics used for barrier clothing	361
RANSJÖ, ULRIKA. Attempts to control clothes-borne infection in a burn unit. 2. Clothing routines in clinical use and the epidemiology of cross-colonization	369
RANSJÖ, ULRIKA. Attempts to control clothes-born infection in a burn unit. 3. An open-roofed plastic isolator or plastic aprons to prevent contact transfer of bacteria	385
THIJM, H. A. and VAN DER WAAIJ, D. The effect of three frequently applied antibiotics on the colonization resistance of the digestive tract of mice	397
HOOKEE, J. M., SMITH, G. R. and MILLIGAN, R. A. Differentiation of <i>Mycoplasma mycoides</i> subsp. <i>mycoides</i> from certain closely related caprine mycoplasmas by mycoplasmaemia and cross-protection tests in mice	407
CASSAR, PAUL. Four bills of health issued from Malta by the Order of St John	419
WYATT, T. D. and WILSON, T. S. A bacteriological investigation of two leisure centre swimming pools disinfected with ozone	425
MEEKIN, GAIL E., BETTELHEIM, K. A. and BACON, D. F. Serotypes of antibiotic resistant <i>Escherichia coli</i> isolated from the sewage of Palmerston North (New Zealand)	443
JONES, R. J. Antibody response of burned patients immunized with a polyvalent <i>Pseudomonas</i> vaccine	453
GAYA, H., THIRLWALL, J., SHAW, ELIZABETH J. and HASSAM, ZERHA. Evaluation of products for treating babies' napkins	463
COOKE, E. MARY, BRAYSON, JANET C., EDMONDSON, A. S. and HALL, DIANA. An investigation into the incidence and sources of <i>Klebsiella</i> infections in hospital patients	473
WEST, B. and WHITE, G. A survey of trimethoprim resistance in the enteric bacterial flora of farm animals	481
EVANS, A. E. J., SIMMONS, R. L. L., FERRIS, R. D., HASELL, S. K., LETLEY, E. and FREESTONE, D. S. Antibody response to vaccination with WRL 105 strain live influenza vaccine in previously vaccinated and unvaccinated volunteers	489
LILLEY, H. A., LOWBURY, E. J. L., WILKINS, M. D. and ZAGGY, A. Delayed antimicrobial effects of skin disinfection by alcohol	497
WILSON, SIR GRAHAM. The Brown Animal Sanatory Institution	501