

THE JOURNAL OF HYGIENE

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

EDITED BY

H. J. BENSTED, O.B.E., M.C., M.R.C.P.

LATELY DIRECTOR, CENTRAL PUBLIC HEALTH LABORATORY

IN CONJUNCTION WITH

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

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

R. I. N. GREAVES, M.D.

J. O. IRWIN, M.A., D.Sc., Sc.D., F.S.S.

Sir WILSON JAMESON, G.B.E., K.C.B., M.D., F.R.C.P., D.P.H.

E. T. C. SPOONER, M.D.

G. S. WILSON, M.D., F.R.C.P., D.P.H.



CAMBRIDGE UNIVERSITY PRESS

Bentley House, 200 Euston Road, London, N.W. 1

American Branch: 32 East 57th Street, New York 22, N.Y.

Price Thirty Shillings net

(U.S.A. \$5.00)

"GURR'S"

ESTABLISHED 1915



STAINS AND REAGENTS FOR MICROSCOPY

●
THE CRITICS' CHOICE
●

Stains	Staining Vessels
pH Indicators	Microscope Slides
Buffer Tablets	Cover Slips
Immersion Oils	Dissecting Instruments
Mounting Media	Microtomes
Embedding Waxes	Embedding Baths and Ovens
Aquax	Drop and Balsam Bottles
Celloidin	Autoclaves
Bacteriological and	Microscope Lamps
Histological Products	Slide Storage Equipment

U.K. Agents for Sigma Biochemicals

WRITE FOR LISTS

GEORGE T. GURR Ltd.

136/138 NEW KING'S ROAD, LONDON, S.W.6

TELEPHONE: RENOWN 5482 (3 lines)

TELEGRAMS: MICROSTAIN, WALGREEN, LONDON

MICHROME STAINS

Biological and Histochemical Reagents

Adenosine	Giemsa Stain	Ribonuclease
Adenylic acids	Janus Green, B	Sudan Black
Adonitol	Lacmoid	Toluidine Blue
Bromocresol Green	Leishman Stain	TPN
Carminic Acid	Luxol Fast Blue	Trypsin
Celloidin	Methyl Green	Urease
Gallocyanin	Pyronin	Wright Stain, &c.

OPTOIL: synthetic, non-sticky immersion oil.

62-page catalogue available on request.

EDWARD GURR, LTD.

42 Upper Richmond Road West
LONDON, S.W. 14

Telephones: PROspect 8051 and 7606

Service, uniform high quality, reliability, and
immediate delivery

Now ready: "Methods of Analytical Histology & Histochemistry", by Edward Gurr, 332 pages, Royal 8vo, price 70/-
"Microscopic Staining Techniques" No. 4, 66 pages, price 6/-, (\$1.00 in U.S.A.). No. 3 (2nd edit.), 66 pages, price 6/-, (\$1.00 in U.S.A.).

Ready Autumn 1959: "Encyclopaedia of Microscopic Stains", by Edward Gurr, about 500 pages, Royal 8vo, price about 95/-

BOOKS ON HYGIENE

H. K. LEWIS & CO. Ltd., can supply all Standard Works and Text-books on Hygiene and Sanitary Science, and all branches of Medicine and Surgery. Large selection available. Catalogues on request

MEDICAL AND SCIENTIFIC LIBRARY

ANNUAL SUBSCRIPTION FROM £1. 17s. 6d.

The Library includes all standard and recent works in all branches of Hygiene and Sanitary Science.

Bi-monthly List of New Books and New Editions added to the Library sent post free to any address regularly on request.

THE LIBRARY CATALOGUE revised to December 1956, containing a classified Index of Authors and Subjects. £2. 2s. net; postage 2s. To subscribers to the Library, £1. 5s.; postage 2s.

Secondhand Department. A constantly changing large stock of Medical and Scientific Literature on view, classified under subjects. Libraries or small collections purchased.

LONDON: H. K. LEWIS & CO. Ltd., 136 GOWER STREET, W.C.1

Telephone: EUSton 4282. Telegrams: Publicavit; Westcent: London

Business hours: 9 a.m. to 5.30 p.m. Saturdays to 1 p.m.

**THE
JOURNAL OF HYGIENE**

THE JOURNAL OF HYGIENE

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

EDITED BY

H. J. BENSTED, O.B.E., M.C., M.R.C.P.

LATELY DIRECTOR OF THE CENTRAL PUBLIC HEALTH LABORATORY, COLINDALE

IN CONJUNCTION WITH

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

Professor of Animal Pathology in the University of Cambridge

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

Professor of Bacteriology in the University of Liverpool

R. I. N. GREAVES, M.D.

Reader in Bacteriology in the University of Cambridge

J. O. IRWIN, M.A., D.Sc., Sc.D., F.S.S.

Of the Medical Research Council's Statistical Research Unit,
London School of Hygiene and Tropical Medicine

Sir WILSON JAMESON, G.B.E., K.C.B., M.D., F.R.C.P., D.P.H.

Some time Chief Medical Officer, Ministries of Health and Education

E. T. C. SPOONER, M.D.

Professor of Bacteriology and Immunology in the University of London

G. S. WILSON, M.D., F.R.C.P., D.P.H.

Director, Public Health Laboratory Service (Medical Research Council, London)

VOLUME LVII. 1959

CAMBRIDGE
AT THE UNIVERSITY PRESS
1959

*Printed in Great Britain at the University Press, Cambridge
(Brooke Crutchley, University Printer)
and published by the Cambridge University Press
Bentley House, 200 Euston Road, London, N.W. 1
American Branch : 32 East 57th Street, New York 22, N.Y.
Agent in Canada : The Macmillan Company of Canada Limited*

CONTENTS

No. 1 (MARCH 1959)

	PAGE
DALMAT, HERBERT T. Arthropod transmission of rabbit fibromatosis (Shope). (With Plates 1-2)	1
MCKILLOP, ELIZABETH J. Bacterial contamination of hospital food with special reference to <i>Clostridium welchii</i> food poisoning	31
TOLHURST, JEAN C., BUCKLE, GLEN and WELLINGTON, N. A. M. The experimental infection of calves with <i>Mycobacterium ulcerans</i>	47
SCHWABACHER, HERTA. A strain of mycobacterium isolated from skin lesions of a cold-blooded animal, <i>Xenopus laevis</i> , and its relation to atypical acid-fast bacilli occurring in man. (With Plates 3-4)	57
EPSTEIN, SAMUEL S. and PAYNE, PETER M. The effect of some variables on experi- mental <i>Klebsiella</i> infections in mice. (With 5 Figures in the Text)	68
FIELD, H. I. and GOODWIN, R. F. W. The experimental reproduction of entero- toxaemia in piglets. (With Plates 5-6)	81
NEWELL, K. W., McCLARIN, R., MURDOCK, C. R., MACDONALD, W. N. and HUTCHINSON, H. L. Salmonellosis in Northern Ireland, with special reference to pigs and salmonella-contaminated pig meal	92
MCLAREN, ANNE and SANDERS, F. K. The influence of the age of the host on local virus multiplication and on the resistance to virus infections. (With 4 Figures in the Text)	106
WHITE, D. O. and FAZEKAS DE ST GROTH, S. Variation of host resistance to in- fluenza viruses in the allantois. (With 4 Figures in the Text)	123

No. 2 (JUNE 1959)

BENTLEY, E. W. and LARTHE, YVONNE. The comparative rodenticidal efficiency of five anti-coagulants	135
HOLT, LEWIS B. A re-assessment of the risk of provoking paralytic poliomyelitis by making prophylactic inoculations against diphtheria and pertussis	150
THOMAS, C. G. A. and PENIKETT, E. J. K. Grading of coagulase-positive staphy- lococci in the control of hospital cross-infection	162
DIXON, J. M. S. Observations on the growth in nutrient broth of mixtures of <i>Escherichia coli</i> strains, and of faecal specimens harbouring pathogenic <i>Escherichia coli</i> serotypes	174
JEBB, W. H. A. A comparison of media for the detection of coliform organisms in water	184
MATHEWSON, SUE FLICK, DAVIS, DAVID E. and CHRISTIAN, JOHN J. Effect of constant length of day on reproduction in albino mice. (With 3 Figures in the Text)	193
STEVENS, K. M. Estimate of molecular equivalents of antibody required for prophylaxis and therapy of poliomyelitis	198

	PAGE
SHEWELL, JENNIFER and LONG, D. A. The influence of the thyroid gland on anti-toxin production in different species	202
SPICER, C. C. The survival of <i>Shigella sonnei</i> on cotton threads. (With 3 Figures in the Text)	210
LONG, D. A. Immune and allergic reactions to diphtheria toxin and toxoid in guinea-pigs. (With 9 Figures in the Text)	216
LONG, D. A. The fate of ¹³¹ I-labelled diphtheria toxin and toxoid in the skin of immune and allergic guinea-pigs. (With 8 Figures in the Text)	227
CROWLEY, NUALA. The association of starch-accumulating strains of Group A streptococci with acute nephritis and acute rheumatic fever. (With 3 Figures in the Text)	235

No. 3 (SEPTEMBER 1959)

GRAY, R. D. Formate lactose glutamate: A chemically defined medium as a possible substitute for MacConkey broth in the presumptive coliform examination of water	249
WILLIAMS SMITH, H. The isolation of salmonellae from the mesenteric lymph nodes and faeces of pigs, cattle, sheep, dogs and cats and from other organs of poultry	266
BUCKLAND, F. E., BYNOE, M. L., PHILIPSON, L. and TYRRELL, D. A. J. Experimental infection of human volunteers with the U-virus—A strain of ECHO virus Type 11. (With 5 Figures in the Text)	274
SELZER, GOLDA and BUTCHART, M. Further experiments on the adaptation of Mahoney, Type 1, poliomyelitis virus to suckling mice. (With 3 Figures in the Text)	285
BENTLEY, E. W., BATHARD, A. H. and RILEY, J. D. The rates of recovery of sewer rat populations after poisoning. (With 1 Figure in the Text)	291
LIDWELL, O. M., NOBLE, W. C. and DOLPHIN, G. W. The use of radiation to estimate the numbers of micro-organisms in air-borne particles. (With 1 Figure in the Text)	299
JOHNSON, P. and PIERCE, A. E. Ultracentrifugal and electrophoretic studies on neonatal calf sera and maternal colostrum. (With 5 Figures in the Text)	309
SELZER, GOLDA. A comparison of complement-fixing antigens by Types 1 and 2 poliomyelitis-infected suckling mouse brains	321
NORRIS, K. P. Infra-red spectroscopy and its application to microbiology. (With 2 Figures in the Text)	326
CALLOW, THE LATE BESSIE R. A new phage-typing scheme for <i>Salmonella typhimurium</i>	346
BENNETT, B. M. A sampling study on the power function of the χ^2 'index of dispersion' test. (With 6 Figures in the Text)	360

No. 4 (DECEMBER 1959)

	PAGE
TINKER, CECILY M. Pulmonary tuberculosis among men over forty. (With 2 Figures in the Text)	367
TUFFERY, A. A. The health of laboratory mice. A comparison of general health in two breeding units where different systems are employed. (With 5 Figures in the Text)	386
BUSBY, D. Contamination of apparatus during freeze-drying. (With Plate 7) .	403
COULING, C. W. and REES, R. J. W. A protective cabinet for the post-mortem examination of infected animals. (With Plate 8 and 1 Figure in the Text) .	407
KELLER, PAUL. Bacteriological aspects of sewage purification and river pollution. (With 2 Figures in the Text)	410
COLLARD, PATRICK, SEN, RANJIT and MONTEFIORE, DAVID. The distribution of <i>Salmonella</i> agglutinins in sera of healthy adults at Ibadan. (With 2 Figures in the Text)	427
THE COMMITTEE ON BATHING BEACH CONTAMINATION OF THE PUBLIC HEALTH LABORATORY SERVICE. Sewage contamination of coastal bathing waters in England and Wales. A bacteriological and epidemiological study. (With 4 Figures in the Text and an Appendix)	435
GRAY, DAVID F. Fate of tubercle bacilli in early experimental infection of the mouse. (With Plates 9-11)	473
MARSHALL, I. D. The influence of ambient temperature on the course of myxomatosis in rabbits. (With Plate 12 and 2 Figures in the Text)	484