

Cambridge University Press

*Reissue now ready, with Supplementary Bibliography.*

*At the reduced price of 15s. net.*

# THE BACTERIOLOGY OF DIPHTHERIA

INCLUDING SECTIONS ON THE HISTORY, EPIDEMIOLOGY AND PATHOLOGY OF THE DISEASE, THE MORTALITY CAUSED BY IT, THE TOXINS AND ANTITOXINS AND THE SERUM DISEASE. BY F. LOEFFLER, M.D., LL.D., ARTHUR NEWSHOLME, M.D., F.R.C.P., F. B. MALLORY, M.A., M.D., G. S. GRAHAM-SMITH, M.A., M.D., D.P.H., GEORGE DEAN, M.D., WILLIAM H. PARK, M.D. AND CHARLES F. BOLDUAN, M.D.

Edited by

G. H. F. NUTTALL, M.D., PH.D., SC.D., F.R.S.,

Quick Professor of Biology in the University of Cambridge, Fellow of Magdalene College.

AND G. S. GRAHAM-SMITH, M.A., M.D.,

University Lecturer in Hygiene, Cambridge

*Royal 8vo. Buckram. Pp. xx + 718 + 8.*

*With 4 portraits and 16 plates. Price 15s. net.*

"It is by far the most complete record of our present knowledge of this disease hitherto written in the English language.... There is nothing to say except praise for the editors, who have produced a magnificent exposition of modern knowledge on this important disease—an exposition which must certainly take its place as the classical authority upon the subject."—*Nature*

"The mere enumeration of the writers is a sufficient guarantee of the excellence of the work, and of the authority which it carries; whilst the articles are written in clear and good English, free, for the most part, from the technical terms which make many treatises on bacteriology difficult and unprofitable to read. The articles are well harmonised, and the teaching in regard to difficult and debatable points is marked by moderation and common sense."—*Athenaeum*

## HOUSE-FLIES AND HOW THEY SPREAD DISEASE

By C. G. HEWITT, D.Sc., Dominion Entomologist, Ottawa, Canada.

Cambridge Manuals Series. Cloth, 1s. net; leather 2s. 6d. net.

"Dr Hewitt's little volume is especially comprehensive and well arranged. The book contains a bibliography and is sufficiently indexed and illustrated, making altogether, perhaps, as good a manual on the subject as could at the present state of our knowledge be produced in similar compass."—*Times*

"Owing to the dangerous nature of the house fly and the general ignorance concerning its biology and habits, Dr Hewitt, some eight years ago, commenced to study the structure, development, and biology, also the relation of the house fly to the dissemination of disease. The results of his researches are now admirably given in this little volume, which should prove of great value, as it is now generally admitted, and the public are awakening to the fact that the common house fly is a dangerous little creature and a serious menace to the public health, and that steps should be immediately taken by all to keep down such a filthy and noxious pest. For this purpose full instructions will be found in this book."—*Field*

CAMBRIDGE UNIVERSITY PRESS, FETTER LANE, LONDON

C. F. CLAY, Manager

# THE CAMBRIDGE PUBLIC HEALTH SERIES

UNDER THE EDITORSHIP OF

**G. S. Graham-Smith, M.D. and J. E. Purvis, M.A.**

*Now ready. Demy 8vo. pp. xiv + 292, with 24 Plates  
2 Tables and 32 Text-figures. Price 10s. 6d. net*

## FLIES IN RELATION TO DISEASE

NON-BLOODSUCKING FLIES

by

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

The books included in the Series present in a useful and handy form the knowledge now available in many branches of the subject. They are written by experts, and the authors are occupied, or have been occupied, either in investigations connected with the various themes or in their application and administration.

The volumes will contain from 250 to 350 Demy 8vo pages and will vary in price from 5s. to 10s. 6d. net. Arrangements have already been made for the following:

- Experimental Tuberculosis.** By L. COBBETT, M.D.  
**Flies in relation to Disease—Biting Flies.** By E. HINDLE.  
**Ticks as Carriers of Disease.** By G. H. F. NUTTALL, F.R.S.  
**Serum Diagnoses.** By CARL BROWNING, M.D.  
**The Methods of Post-mortem Examinations.** By J. BEATTIE.  
**Tropical Hygiene.** By W. J. R. SIMPSON, C.M.G.  
**The Chemical Analysis of Water, Sewage and Foods.** By J. E. PURVIS, M.A.  
**The Bacteriological Analysis of Water, Sewage and Food.** By W. G. SAVAGE, M.D. (*In the press*)  
**The Purification of Water by Sedimentation, Filtration and Precipitation.** By A. C. HOUSTON, M.B., D.Sc.  
**The Purification of Water by Ozone and Chlorine; and Domestic Filters.** By G. SIMS WOODHEAD, M.A.  
**The Principles and Practice of the dilution method of Sewage Disposal.** By W. E. ADENEY, D.Sc.  
**Sewage Purification and Disposal by (1) Contact and Percolating Beds and (2) Sewage Farms.** By G. B. KERSHAW.  
**Disinfection.** By C. W. PONDER, M.D.  
**Housing in relation to Public Health.** By C. J. COLEMAN, M.D.  
**School Hygiene.** By E. T. ROBERTS, M.D.  
**Isolation Hospitals.** By H. F. PARSONS, M.D.  
**Soils, subsoils, and climate in relation to Health.** By G. WALKER, M.B.  
**Offensive and harmful Trades.** By Sir THOMAS OLIVER.  
**Vital Statistics.** By R. DUDFIELD, M.B. and G. UDNY YULE, M.A.  
**Infant Mortality.** By H. T. ASHBY, B.A., M.B.  
**Foods, Sound and Unsound.** By H. C. HASLAM, M.A., M.B.

CAMBRIDGE UNIVERSITY PRESS, FETTER LANE, LONDON.

C. F. CLAY, Manager

# OXFORD UNIVERSITY PRESS

## *Quarterly Journal of Medicine*

Edited by

WILLIAM OSLER, J. ROSE BRADFORD, R. HUTCHISON, A. E. GARROD  
AND H. D. ROLLESTON.

8s. 6d. net per number. Annual Subscription, 25s. Vol. I (I-IV). Vol. II (V-VIII). Vol. III (IX-XII). Vol. IV (XIII-XVI). Vol. V (XVII-XX). 35s. net each.

*The King's Evil.* By R. CRAWFURD. Medium 8vo, with nine plates. 8s. 6d. net.

*John of Gaddesden and the Rosa Medicinæ.* By H. P. CHOLMELEY. 8vo. 8s. 6d. net.

*Healthy Dwellings.* By Sir D. GALTON. Second edition. 8vo. 10s. 6d.

*The Study of Medicine in the British Isles: the Fitz-Patrick Lectures for 1905-6.* By NORMAN MOORE. 8vo, with 13 Collotype plates. 10s. 6d. net.

*The Treatment of Disease.* By W. OSLER. 1s. net.

*First Principles of Hygiene.* By W. D. STURROCK. Crown 8vo. 2s. 6d.

London: HUMPHREY MILFORD, Oxford University Press,  
Amen Corner, E.C.

---

## LONDON SCHOOL OF TROPICAL MEDICINE

(UNIVERSITY OF LONDON)

Under the Auspices of His Majesty's Government

CONNAUGHT ROAD, ALBERT DOCKS, E.

In connection with the Albert Dock Hospital of the SEAMEN'S HOSPITAL SOCIETY

THE SEAMEN'S HOSPITAL SOCIETY was established in the year 1821 and incorporated in 1888, and from time to time has been enlarged and extended. It now consists of the Dreadnought Hospital, Greenwich, to which is attached the London School of Clinical Medicine; the Royal Victoria and Albert Docks Hospital; the East and West India Docks Dispensary; and the Gravesend Dispensary.

**Over 30,000 Patients treated annually. Of this number many are cases of Tropical Diseases.**

The School buildings are situated within the grounds of the Royal Victoria and Albert Docks Hospital.

### Lectures and Demonstrations daily by Members of the Staff

There are three Sessions yearly of three months each, viz., from October 1st to December 31st, from January 15th to April 14th, and from May 1st to July 31st inclusive. Women Graduates are received as Students.

Certificates are granted after Examination at the end of each Session, and the course is accepted by Cambridge University as Qualifying for admission to their Examination for the Diploma in Tropical Medicine and Hygiene, and by London University as Study for the M.D. in Branch VI (Tropical Medicine).

### Fee for course £16. 16s.; shorter periods by arrangement

Additional Special Courses are held in Entomology and in Veterinary Helminthology. There are also Advanced Courses each Session in Medical Zoology, Protozoology, Entomology and Helminthology.

Students can be provided with Board and Residence, or partial Board, at the School.

Medical men requiring posts in the Tropics may apply to the Secretary at the School, where a Register is kept.

A syllabus, with the various courses of study, can be had on application to the Secretary, from whom further information may be obtained.

Students of the London School of Tropical Medicine who join the London School of Clinical Medicine will be allowed an abatement on their fees and *vice versa*.

P. MICHELLI, C.M.G., *Secretary.*

Chief Office—SEAMEN'S HOSPITAL, GREENWICH, S.E.

# CONTENTS

(All rights reserved)

	PAGE
WU LIEN-TEH (TUCK, G. L.). First Report of the North Manchurian Plague Prevention Service. (With Plates VI-XVI, 1 Map, and 4 Plans) . . . . .	237
SCHMIDT, HANS. The Inactivation of Complement by Mechanical Agitation . . . . .	291
SCHMIDT, HANS. Complement Action in regard to Surface Tension	314
BROWNING, C. H., GILMOUR, W. and MACKIE, T. J. The Isolation of Typhoid Bacilli from Faeces by means of Brilliant Green in Fluid Medium . . . . .	335
SAVAGE, WILLIAM G. and READ, W. J. Gaertner Group Bacilli in Rats and Mice . . . . .	343
O'BRIEN, R. A. The Effect of repeated Bleedings on the Blood Constituents of Immunised Horses. (With 3 Charts) . . . . .	353

---

*The Journal of Hygiene* is issued as material accumulates. A volume containing about 500 pages, with plates and figures, is issued annually.

Volumes I, II, and III (1901-3) complete. In Four Parts, paper covers, 15s. net per volume. Bound in buckram, 18s. 6d. net per volume.

Volumes IV, V, VI, VII, VIII, IX, X, XI and XII (1904-12) complete. In Parts, paper covers, 21s. net per volume. Bound in buckram, 25s. net per volume.

Papers for publication may be sent to Prof. GEO. H. F. NUTTALL, F.R.S., Longfield, Madingley Road, Cambridge, or to the associate Editors. Other communications should be addressed to the University Press, Cambridge.

Papers forwarded to the Editors for publication are understood to be offered to the *Journal of Hygiene* alone, unless the contrary is stated.

Contributors receive seventy-five copies of their papers free. Additional copies may be had at cost price: these should be ordered when the final proof is returned.

The subscription price is £1. 1s. per volume (post-free), payable in advance; single numbers 7s. net. Subscriptions may be sent to any Bookseller, or to MR C. F. CLAY, MANAGER, Cambridge University Press, Fetter Lane, London, E.C.

Plague Numbers, Vol. VI. no. 4 (not sold separately), Vol. VII. nos. 3 and 6, and Vol. VIII. no. 2, Vol. X. no. 3, Price 6s. net each. Bound volumes containing all five numbers, with Index, are also issued, price 20s. net.

A new series of Plague Supplements is now being issued; the first two of these, which are now ready, contain the Sixth and Seventh Reports on Plague Investigations in India. They will be, in pagination, completely independent of the *Journal* although subscribers to the latter will receive copies without extra cost. Price to non-subscribers 7s. net.