

Vol. 2, Nos. 1 and 2

May—June, 1909

PARASITOLOGY

A SUPPLEMENT TO THE
JOURNAL OF HYGIENE

EDITED BY

GEORGE H. F. NUTTALL, F.R.S.

Quick Professor of Biology in the University of Cambridge

AND

A. E. SHIPLEY, F.R.S.

Reader in Zoology in the University of Cambridge



CAMBRIDGE
AT THE UNIVERSITY PRESS

LONDON: FETTER LANE, C. F. CLAY, MANAGER

AND H. K. LEWIS, GOWER STREET

EDINBURGH: 100, PRINCES STREET

BERLIN: A. ASHER & CO.

LEIPSIK: BROCKHAUS

NEW YORK: G. P. PUTNAM'S SONS

BOMBAY AND CALCUTTA: MACMILLAN & CO., LTD.

Price Fourteen Shillings net

[Issued July 13, 1909]

REPORTS ON PLAGUE INVESTIGATIONS IN INDIA

ISSUED BY THE ADVISORY COMMITTEE APPOINTED BY THE SECRETARY
OF STATE FOR INDIA, THE ROYAL SOCIETY, AND THE LISTER
INSTITUTE.

(Forming four extra numbers of the *Journal of Hygiene*: vol. VI. no. 4, Price
6s. net; vol. VII. no. 3, Price 6s. net; vol. VII. no. 6, Price 6s. net; and
vol. VIII. no. 2, Price 6s. net.)

CONTENTS OF THE FIRST PLAGUE NUMBER, September 1906.

Introduction

- I. Experiments upon the transmission of plague by fleas
- II. Note on the species of fleas found upon rats, *Mus rattus* and *Mus decumanus*, in different parts of the world, and on some variations in the proportion of each species in different localities. By the Hon. N. Charles Rothschild
- III. The physiological anatomy of the mouth-parts and alimentary canal of the Indian rat flea, *Pulex cheopis*, Rothschild
- IV. On the effect upon virulence of passage of *B. pestis* through rats by subcutaneous inoculation without intermediate culture
- V. On the effect upon virulence of passage of *B. pestis* through rats by cutaneous inoculation without intermediate culture
- VI. A note on the immunity of Bombay rats to subcutaneous injection of plague cultures
- VII. On the infectivity of floors grossly contaminated with cultures of *B. pestis*
- VIII. On the number of plague bacilli in the blood, urine, and faeces respectively of rats which had died of plague
- IX. On the quantitative estimation of the septicaemia in human plague
- X. On the existence of chronic plague in rats in localities where plague is endemic

116 pp., with 6 Plates and 6 Folding Tables.

CONTENTS OF THE SECOND PLAGUE NUMBER, July 1907.

- XI. The diagnosis of natural rat plague
- XII. The pathological histology of the spleen and liver in spontaneous rat plague, with observations on the experimental infection. By J. C. G. Ledingham, M.B., B.Sc., M.A.
- XIII. Transmission of plague by feeding rats with infected material
- XIV. On the significance of the locality of the primary bubo in animals infected with plague in nature
- XV. Further observations on the transmission of plague by fleas, with special reference to the fate of the plague bacillus in the body of the rat flea (*P. cheopis*)
- XVI. Experimental production of plague epidemics among animals. (*Second Communication*)
- XVII. Experiments in plague houses in Bombay. (*Second Communication*)
- XVIII. On the external anatomy of the Indian rat flea (*P. cheopis*), and its differentiation from some other common fleas
- XIX. On the natural occurrence of chronic plague in rats
- XX. A note on man as a host of the Indian rat flea (*P. cheopis*)

154 pp. with 6 Plates.

CONTENTS OF THE THIRD PLAGUE NUMBER, December 1907.

- XXI. Digest of recent observations on the epidemiology of plague
- XXII. The epidemiological observations made by the commission in Bombay City
- XXIII. Observations made in four villages in the neighbourhood of Bombay
- XXIV. General considerations regarding the spread of infection, infectivity of houses, etc., in Bombay City and Island
- XXV. Observations in the Punjab villages of Dhand and Kasel.

302 pp., with 23 Plates, and 76 maps and charts.

CONTENTS OF THE FOURTH PLAGUE NUMBER, May 1908.

- XXVI. The part played by insects in the epidemiology of plague. By D. T. Verbitski, M.D., St Petersburg
- XXVII. Report on experiments undertaken to discover whether the common domestic animals of India are affected by plague. By W. B. Bannerman and R. J. Kápadia
- XXVIII. Additional experiments on the septicaemia in human plague, with an account of experiments on the infectivity of the excreta
- XXIX. Observations on the bionomics of fleas with special reference to *Pulex cheopis*
- XXX. The mechanism by means of which the flea clears itself of plague bacilli
- XXXI. On the seasonal prevalence of plague in India
- XXXII. On the differential diagnosis of the plague bacillus from certain allied organisms

148 pp. with 7 charts.

CAMBRIDGE UNIVERSITY PRESS, FETTER LANE, LONDON

C. F. CLAY, Manager

PARASITOLOGY

A SUPPLEMENT TO THE
JOURNAL OF HYGIENE

EDITED BY

GEORGE H. F. NUTTALL, F.R.S.

Quick Professor of Biology in the University of Cambridge

AND

A. E. SHIPLEY, F.R.S.

Reader in Zoology in the University of Cambridge

Volume II. 1909



CAMBRIDGE
AT THE UNIVERSITY PRESS

LONDON: FETTER LANE, C. F. CLAY, MANAGER

AND H. K. LEWIS, GOWER STREET

EDINBURGH: 100, PRINCES STREET

BERLIN: A. ASHER & CO.

LEIPSIK: BROCKHAUS

NEW YORK: G. P. PUTNAM'S SONS

BOMBAY AND CALCUTTA: MACMILLAN & CO., LTD.

[*All rights reserved*]

Cambridge :

**PRINTED BY JOHN CLAY, M.A.
AT THE UNIVERSITY PRESS**

CONTENTS.

Nos. 1 and 2 (May—June).

	PAGE
GROVE, A. J. The Anatomy of <i>Siphonophora rosarum</i> , Walk., the "Green-fly" pest of the Rose-tree. Part I. The Apterous Viviparous Stage. (Plate I and 15 Text Figures.)	1
HARRISON, A. J. AND WALKER HALL, I. Fatal Enteritis in a Tiger caused by <i>Physaloptera praeputialis</i>	29
PORTER, ANNIE. <i>Amoeba chironomi</i> , nov. sp., Parasitic in the Alimentary Tract of the Larva of a <i>Chironomus</i> . (21 Text Figures.)	32
POTTS, F. A. Some Phenomena associated with Parasitism. (3 Figures.)	42
WARBURTON, CECIL AND NUTTALL, GEORGE H. F. On New Species of Ixodidae, with a Note on Abnormalities observed in Ticks. (26 Text Figures.)	57
LEIPER, ROBERT T. The Structure and Relationships of <i>Gnathostoma siamense</i> (Levinsen)	77
STRICKLAND, C. On the supposed Development of <i>Trypanosoma lewisi</i> in Lice and Fleas; and the Occurrence of <i>Crithidia ctenophthalmi</i> in Fleas	81
PATTON, W. S. A Critical Review of Our Present Knowledge of the Haemoflagellates and Allied Forms	91
PATTON, W. S. The Haemogregarines of Mammals and Reptiles; A Rejoinder to Dr Sambon	144
NUTTALL, GEORGE H. F. AND HADWEN, S. The Successful Drug Treatment of Canine Piroplasmiasis, together with Observations upon the Effect of Drugs on <i>Piroplasma canis</i> . (1 Text Figure.)	156

No. 3 (September).

	PAGE
DREW, G. H. Some notes on Parasitic and other Diseases of Fish. (Plate II.)	193
ADERS, W. M. <i>Herpetomonas aspongopi</i> . (2 Figures.)	202
NUTTALL, GEORGE H. F. AND GRAHAM-SMITH, G. S. <i>Theileria parva</i> : Attempts at Cultivation	208
NUTTALL, GEORGE H. F. AND GRAHAM-SMITH, G. S. Note on Attempts to Infect the Fox and the Jackal with <i>Piroplasma canis</i>	211
NUTTALL, GEORGE H. F. AND GRAHAM-SMITH, G. S. Notes on Immunity in Canine Piroplasmosis	215
NUTTALL, GEORGE H. F. AND HADWEN, S. Further Experiments upon the Drug Treatment of Canine Piroplasmosis	229
NUTTALL, GEORGE H. F. AND HADWEN, S. The Drug Treatment of Piroplasmosis in Cattle. (7 Charts.)	236
MACKINNON, DORIS L. Observations on the Division of Spirochaetes. (2 Text Figures.)	267
MACKINNON, DORIS L. Observations on the Effect of Various Chemical Reagents on the Morphology of Spirochaetes. (4 Text Figures.)	281
MACKINNON, DORIS L. Note on two new Flagellate Parasites in Fleas— <i>Herpetomonas ctenophthalmi</i> , n. sp., and <i>Crithidia hystri-</i> <i>chopsyllae</i> , n. sp. (Plate III.)	288
MCCOY, GEORGE W. AND MITZMAIN, MAURICE B. The Regional Distribution of Fleas on Rodents	297
PETRIE, G. F. AND AVARI, C. R. On the Seasonal Prevalence of <i>Trypanosoma lewisi</i> in <i>Mus rattus</i> and in <i>Mus decumanus</i> and its Relation to the Mechanism of Transmission of the Infection	305

Contents

v

No. 4 (December).

	PAGE
NUTTALL, GEORGE H. F., FANTHAM, H. B. AND PORTER, ANNIE. Observations on <i>Theileria parva</i> , the Parasite of East Coast Fever of Cattle. (2 Charts and 4 Diagrams.)	325
NUTTALL, GEORGE H. F. Note on the Mode of Multiplication of <i>Piroplasma bovis</i> as observed in the living Parasite. (1 Diagram.)	341
BOSANQUET, W. CECIL. A Note on the Spirochaete present in Ulcerative Granuloma of the Pudenda of Australian Natives. (5 Text Figures.)	344
PORTER, ANNIE. The Morphology and Life-history of <i>Crithidia</i> <i>gerridis</i> , as found in the British Water-Bug, <i>Gerris paludum</i> . (Plate IV.)	348
PORTER, ANNIE. The Life-Cycle of <i>Herpetomonas jaculum</i> (Léger), Parasitic in the Alimentary Tract of <i>Nepa cinerea</i> . (Plate V and 1 Text Figure.)	367
FANTHAM, H. B. The Spirochaetes found in the Crystalline Style of <i>Tapes aureus</i> : A Study in Morphological Variation. (Plate VI and 2 Text Figures.)	392
NUTTALL, GEORGE H. F. The Drug Treatment of Canine Piroplas- mosis	409
PUBLICATIONS RECEIVED	435
INDEX OF AUTHORS	437
INDEX OF SUBJECTS	439