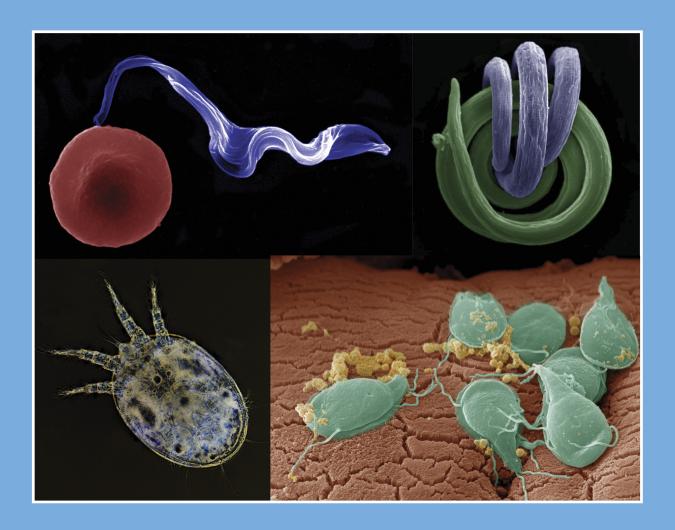
ISSN: 0031-1820

PARASITOLOGY

cambridge.org/par

Submit your paper online

http://mc.manuscriptcentral.com/par



Editor-in-Chief J. R. Stothard

Deputy Editor-in-Chief & Special Issues J. T. Ellis

Editors

H. Carabin, A. Hemphill, L. Ranford-Cartwright, L. Rinaldi. J. Wastling



Parasitology

EDITOR-IN-CHIEF
J. R. STOTHARD

DEPUTY EDITOR-IN-CHIEF & SPECIAL ISSUES

J. T. ELLIS

EDITORS

H. CARABIN, A. HEMPHILL, L. RANFORD-CARTWRIGHT, L. RINALDI, J. WASTLING

EDITORIAL POLICY

Parasitology publishes definitive papers on all aspects of pure and applied parasitology including biochemistry, molecular biology, immunology, genetics, ecology and physiology and also the application of new techniques, long-term epidemiology studies, advances in the understanding of life-cycles, chemotherapy and major systematic revisions. Papers should normally be full length with an explanatory introduction and detailed discussion of the findings reported. Shorter reports of particularly important findings will also be considered.

To submit papers online, go to http://mc.manuscriptcentral.com/par/

- W. ALSALEM, Ministry of Health, Saudi Arabia
- R. AROIAN, University of California, San Diego, USA
- G. AWANDARE, University of Ghana, Ghana
- D. BLAKE, The Royal Veterinary College, UK
- A. BOWMAN, University of Aberdeen, UK
- C. BRITTON, University of Glasgow, UK
- C. CANTACESSI, University of Cambridge, UK
- K. C. CARTER, University of Strathclyde, UK
- G. P. CORDÓN, Public Health Wales, UK
- K. COUPER, University of Manchester, UK
- M. DE NAZARÉ CORREIA SOEIRO, Fundação Oswaldo Cruz, Brazil
- P. W. DENNY, Durham University, UK
- B. S. DEZFULI, University of Ferrara, Italy
- J. DUNN, University of Lincoln, UK
- A. FENTON, University of Liverpool, UK
- C. F. FREY, Canadian Food Inspection Agency, Saskatoon, Canada
- J. FRIEDMAN, Warren Alpert Medical School of Brown University, USA
- D. HANSEN, The Walter and Eliza Hall Institute of Medical Research, Australia
- H. HELMBY, London School of Hygiene & Tropical Medicine, UK
- G. HIDE, University of Salford, UK
- A. JABBAR, University of Melbourne, Australia
- J. A. JACKSON, University of Salford, UK

- P. JOKELAINEN, Statens Serum Institut, Denmark
- N. KARUNAWEERA, University of Colombo, Sri Lanka
- F. KATZER, Moredun Research Institute, UK
- J. LACOURSE, Liverpool School of Tropical Medicine, UK
- ZHAO-RONG LUN, Sun Yat-Sen (Zhongshan) University, P.R. China
- M. McALLISTER, University of Adelaide, Australia
- S. N. MOHD ZAIN, University of Malaya, Malaysia
- S. MORAND, CNRS, ISEM, University of Montpellier, France
- E. MORGAN, Queen's University Belfast, UK
- F. MUTAPI, University of Edinburgh, UK
- M. G. ORTEGA PIERRES, Federal Government of Mexico
- D. OUTLAW, Mississippi State University, USA
- C. PANCHADCHARAM, Malaysian Veterinary Research Institute, Malaysia
- T. SCHETTERS, Veterinary Vaccinology Network, UK
- W. E. SECOR, Centers for Disease Control and Prevention, USA
- U. TATU, Indian Institute of Science, India
- L. A. TCHUEM-TCHUENTE, University of Yaoundé, Cameroon
- J. T. TIMI, Universidad Nacional de Mar del Plata-CONICET, Argentina
- P. TORGERSON, University of Zürich, Switzerland
- M. VINEY, University of Liverpool, UK
- R. A. WILSON, University of York, UK
- A. ZINTL, University College Dublin, Ireland

Parasitology (ISSN 0031-1820) is published monthly and semi-monthly in April and September.

Subscriptions may be sent to any bookseller or subscription agent or direct to the publisher: Cambridge University Press, University Printing House, Shaftesbury Road, Cambridge CB2 8BS, UK. Subscriptions in the USA, Canada and Mexico should be sent to Cambridge University Press, Journals Fulfillment Department,

1 Liberty Plaza, Floor 20, New York, NY 10006, USA. All orders must be accompanied by payment.

The subscription price (excluding VAT) of Volume 148, 2021 which includes print and electronic access is £2085 (US \$3542 in the USA, Canada and Mexico), for fourteen parts; the electronic-only price for institutional subscribers is £1668 (US \$2839 in the USA, Canada and Mexico); separate parts cost £171 or US \$291 each (plus postage). EU subscribers (outside the UK) who are not registered for VAT should add VAT at their country's rate. VAT registered subscribers should provide their VAT registration number. Japanese prices for institutions are available from Kinokuniya Company Ltd, P.O. Box 55, Chitose, Tokyo 156, Japan. Periodicals postage paid at New York, NY and at additional mailing offices. POSTMASTER: send address changes in USA, Canada and Mexico to Parasitology, Cambridge University Press, 1 Liberty Plaza, Floor 20, New York, NY 10006, USA.

Information on back volumes, permissions and advertising is given on the inside back cover.

The Journal is listed in the major relevant abstracting and indexing services worldwide, including Abstracts on Hygiene and Communicable Disease, Biological Abstracts, Biotechnology Research Abstracts, Chemical Abstracts,

Current Awareness in Biological Science, Current Contents, Dairy Science Abstracts, Excerpta Medica, Helminthological Abstracts, Index Medicus, Index Veterinarius, IABS, Protozoological Abstracts, Reviews of Applied Entomology, Tropical Diseases Bulletin, Veterinary Bulletin.

Information on Parasitology and all other Cambridge journals can be accessed via journals.cambridge.org.

This journal issue has been printed on FSC-certified paper and cover board. FSC is an independent, non-governmental, not-for-profit organization established to promote the responsible management of the world's forests.