

CAMBRIDGE

JOURNALS

# PARASITOLOGY

## Editorial Board Development 40% under 40

We invite young enthusiastic parasitologists, in their 30s and 40s, who might be interested in joining the Editorial Board of *Parasitology* to contact the Editor-in-Chief.

See overleaf for more details.

Publishing original research and review papers on all aspects of parasitology and host-parasite relationships.

[journals.cambridge.org/par](http://journals.cambridge.org/par)



CAMBRIDGE  
UNIVERSITY PRESS



# PARASITOLOGY

## Editorial Board Development 40% under 40 years old

In common with all international journals, the Editors of *Parasitology* have a large editorial board (EB) of distinguished parasitologists, who advise on a number of aspects of running the journal.

*Parasitology* has a policy of replacing members of the EB over time to keep the Board up to date and refreshed. The Editors now wish to give younger scientists, who have established themselves in their field and are working at the forefront of research, an opportunity to join the Board.

Although *Parasitology* is over 100 years old, we do not want this longevity reflected in the make-up of the EB; so as a long-term aim we would like up to 40% of the Editorial Board to be under the age of 40.

We invite young enthusiastic parasitologists, in their 30s and 40s, who might be interested in joining the EB of *Parasitology* to contact the Editor-in-Chief, Professor Stephen Phillips at [Stephen.Phillips@glasgow.ac.uk](mailto:Stephen.Phillips@glasgow.ac.uk). Members of the EB serve for 3 years and terms can be renewed. Please supply the name of one referee. Details of what is expected of an EB member will be sent to you on application.

### Keep Up-to-Date

Sign up to receive free email alerts to keep up to date with the latest research in your field  
[journals.cambridge.org/par-alerts](http://journals.cambridge.org/par-alerts)

### Sample Content

Read the papers in the sample issue for free  
[journals.cambridge.org/parsample](http://journals.cambridge.org/parsample)

### Instructions for contributors

Read the instructions for contributors  
[journals.cambridge.org/par/ifc](http://journals.cambridge.org/par/ifc)

### Publishing in *Parasitology*:

- Average time from submission to first decision just 26 days
- Online submission system
- Rapid online publication via *FirstView* and *Parasitology Express*
- Rigorous peer-review process
- An Open Access option is available to authors of articles at the rate of £1500/\$2700 per article



CAMBRIDGE

JOURNALS

# Epidemiology and Infection

## Editor-in-Chief

Norman Noah, London School of Hygiene and Tropical Medicine, UK

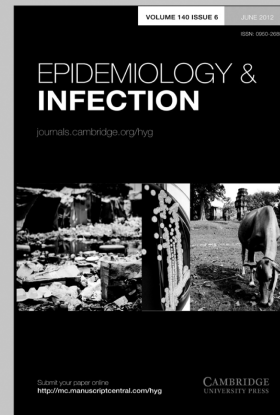
*Epidemiology and Infection* publishes original reports and reviews on all aspects of infection in humans and animals. Particular emphasis is given to the epidemiology, prevention and control of infectious diseases. The field covered is broad and includes the zoonoses, tropical infections, food hygiene, vaccine studies, statistics and the clinical, social and public health aspects of infectious disease. Papers covering microbiology and immunology, which have an epidemiological relevance, are part of this broad field. Papers come from medical and veterinary scientists worldwide. It has become the key periodical in which to find the latest reports on recently discovered infections and new technology. For those concerned with policy and planning for the control of infections, the papers on mathematical modelling of epidemics caused by historical, current and emergent infections, will be of particular value.

## Price information

is available at: <http://journals.cambridge.org/hyg>

## Free email alerts

Keep up-to-date with new material – sign up at  
<http://journals.cambridge.org/alerts>



*Epidemiology and Infection* is available online at:  
<http://journals.cambridge.org/hyg>

## To subscribe contact Customer Services

### in Cambridge:

Phone +44 (0)1223 326070  
Fax +44 (0)1223 325150  
Email [journals@cambridge.org](mailto:journals@cambridge.org)

### in New York:

Phone +1 (845) 353 7500  
Fax +1 (845) 353 4141  
Email  
[subscriptions\\_newyork@cambridge.org](mailto:subscriptions_newyork@cambridge.org)

For free online content visit:  
<http://journals.cambridge.org/hyg>



CAMBRIDGE  
UNIVERSITY PRESS

CAMBRIDGE

JOURNALS

# Journal of Helminthology

## Editor

John Lewis, Royal Holloway, University of London, UK

*Journal of Helminthology* publishes original papers and review articles on all aspects of pure and applied helminthology, particularly those helminth parasites of environmental health, medical or veterinary importance. Research papers on helminths in wildlife hosts, including plant and insect parasites, are also published along with taxonomic papers contributing to the systematics of a group. The journal will be of interest to academics and researchers involved in the fields of human and veterinary parasitology, public health, microbiology, ecology, epidemiology and biochemistry.

## Price information

is available at: <http://journals.cambridge.org/jhl>

## Free email alerts

Keep up-to-date with new material – sign up at  
<http://journals.cambridge.org/jhl-alerts>



*Journal of Helminthology*  
is available online at:  
<http://journals.cambridge.org/jhl>

## To subscribe contact Customer Services

### in Cambridge:

Phone +44 (0)1223 326070  
Fax +44 (0)1223 325150  
Email [journals@cambridge.org](mailto:journals@cambridge.org)

### in New York:

Phone +1 (845) 353 7500  
Fax +1 (845) 353 4141  
Email  
[subscriptions\\_newyork@cambridge.org](mailto:subscriptions_newyork@cambridge.org)

For free online content visit:  
<http://journals.cambridge.org/jhl>



CAMBRIDGE  
UNIVERSITY PRESS

## Parasitology

**Back volumes.** Vols. 1–71: Inquiries should be addressed to Wm. Dawson & Sons Ltd, Cannon House, Folkestone, Kent. Vols. 72 onwards: quotations for parts still in print may be obtained from Cambridge or the American Branch of Cambridge University Press.

**Copying.** This journal is registered with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA. Organizations in the USA who are also registered with C.C.C. may therefore copy material (beyond the limits permitted by sections 107 and 108 of US copyright law) subject to payment to C.C.C. of the per-copy fee of \$16.00. This consent does not extend to multiple copying for promotional or commercial purposes. Code 0031–1820/2013 \$16.00.

Organizations authorized by the Copyright Licensing Agency may also copy material subject to the usual conditions.

**ISI Tear Sheet Service.** 3501 Market Street, Philadelphia, Pennsylvania 19104, USA, is authorized to supply single copies of separate articles for private use only.

**For all other use,** permission should be sought from Cambridge or the American Branch of Cambridge University Press.

**Claims** for missing issues can only be considered if made immediately after receipt of the subsequent issue.

**Advertising.** Details of advertising in *Parasitology* may be obtained from the publisher.

**Online submission.** Authors are encouraged to submit their manuscripts online. Go to <http://mc.manuscriptcentral.com/par/> to open an author's account for *Parasitology*. Manuscript Central is helping to improve the speed of the publication process for the journal.

**Front Cover illustration:** *Eimeria tenella*: early-stage immature schizonts at 72 h (A) and 2nd generation large immature and mature schizonts at 84 h (B) in the lamina propria; 3rd generation schizonts in the epithelium of the crypts at 96 h (E). From Matsubayashi *et al.* Vol.139(12) pp. 1553–1561.

© Cambridge University Press 2014

The Edinburgh Building, Cambridge CB2 8RU, United Kingdom  
32 Avenue of The Americas, New York, NY 10013-2473, USA  
477 Williamstown Road, Port Melbourne, VIC 3207, Australia  
C/ Orense, 4, Planta 13 28020 Madrid, Spain  
Lower Ground Floor, Nautica Building, The Water Club, Beach Road,  
Granger Bay, 8005 Cape Town, South Africa

*Printed in the UK by Bell & Bain*

# PARASITOLOGY

## CONTENTS

### REVIEW ARTICLES

**Species limits in avian malaria parasites (Haemosporida): how to move forward in the molecular era**  
Diana C. Outlaw and Robert E. Ricklefs 1223

**Non-coding RNAs in epithelial immunity to *Cryptosporidium* infection**  
Rui Zhou, Yaoyu Feng and Xian-Ming Chen 1233

**How to become a parasite without sex chromosomes: a hypothesis for the evolution of *Strongyloides* spp. and related nematodes**  
Adrian Streit 1244

**The microbiota and helminths: sharing the same niche in the human host**  
Laura Glendinning, Norman Nausch, Andrew Free, David W. Taylor and Francisca Mutapi 1255

### RESEARCH ARTICLES

***In vitro* investigation of the efficacy of novel diamidines against *Trypanosoma cruzi***  
B. L. Timm, P. B. da Silva, M.M. Batista, A. A. Farahat, A. Kumar, D.W. Boykin and M. N. C. Soeiro 1272

**Immunological characterization of a chimeric form of *Schistosoma mansoni* aquaporin in the murine model**  
Barbara Castro Pimentel Figueiredo, Natan Raimundo Gonçalves de Assis, Suellen Batistoni de Moraes, Vicente Paulo Martins, Natasha Delaqua Ricci, Rodrigo Marques Bicalho, Carina da Silva Pinheiro and Sergio Costa Oliveira 1277

**A longitudinal assessment of the serological response to *Theileria parva* and other tick-borne parasites from birth to one year in a cohort of indigenous calves in western Kenya**  
H. Kiara, A. Jennings, B.M. de C. Bronsvort, I. G. Handel, S. T. Mwangi, M. Mbole-Kariuki, I. Conradie van Wyk, E. J. Poole O. Hanotte, J. A. W. Coetzer, M. E. J. Woolhouse and P. G. Toye 1289

**Auxin production by the plant trypanosomatid *Phytomonas serpens* and auxin homeostasis in infected tomato fruits**  
Susan lenne, Luciano Freschi, Vanessa F. Vidotto, Tiago A. de Souza, Eduardo Purgatto and Bianca Zingales 1299

**Alternative oxidase inhibitors as antiparasitic agents against scuticociliatosis**  
Natalia Mallo, Jesús Lamas and José M. Leiro 1311

**Evidence of cryptic speciation in mesostigmatid mites from South Africa**  
Adriaan Engelbrecht, Conrad A. Matthee, Edward A. Ueckermann and Sonja Matthee 1322

**The effect of glycosylation of antigens on the antibody responses against *Echinostoma caproni* (Trematoda: Echinostomatidae)**  
Javier Sotillo, Alba Cortés, Carla Muñoz-Antoli, Bernard Fried, J. Guillermo Esteban and Rafael Toledo 1333

**Purification and characterization of guanylate kinase, a nucleoside monophosphate kinase of *Brugia malayi***  
Smita Gupta, Sunita Yadav, Nidhi Singh, Anita Verma, Imran Siddiqi and Jitendra K. Saxena 1341

### NOTICE OF REMOVAL

**Host selection by the louse fly *Crataerina pallida*; an avian nest ectoparasite of the common swift *Apus apus***  
Mark D. Walker and Ian D. Rotherham 1353

### CORRIGENDUM

**Urban forests as hubs for novel zoonosis: blood meal analysis, seasonal variation in *Culicoides* (Diptera: Ceratopogonidae) vectors, and avian haemosporidians**  
Diego Santiago-Alarcon, Peter Havelka, Eduardo Pineda, Gernot Segelbacher and H. Martin Schaefer 1354