

The Lichenologist

Published on behalf of The British Lichen Society

Senior Editor

Peter D. Crittenden, University of Nottingham, UK

The Lichenologist is the premier scientific journal devoted exclusively to the study of lichens worldwide. As the leading forum for the dissemination of new concepts and topical reviews, *The Lichenologist* reaches more scientists concerned with the study of lichens and lichen symbionts than any other single journal. All aspects of lichenology are considered including systematics and phylogenetics; molecular biology; ultrastructure, anatomy and morphology; secondary chemistry, effects of pollutants and use as bioindicators; biogeography.

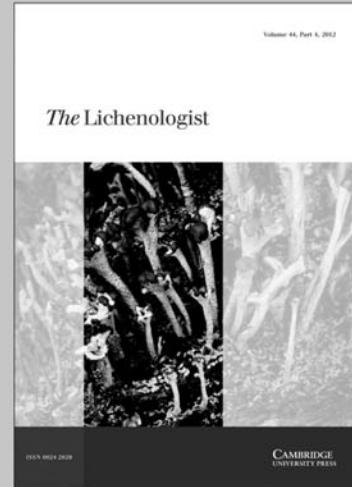
Price information

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

Free email alerts

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

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



The Lichenologist

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

To subscribe contact
Customer Services

in Cambridge:

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

in New York:

Phone +1 (845) 353 7500
Fax +1 (845) 353 4141
Email
subscriptions_newyork@cambridge.org

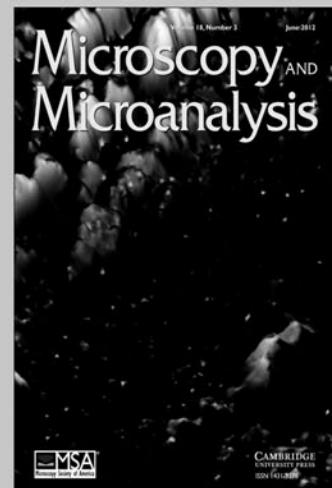
Microscopy and Microanalysis

Published for the Microscopy Society of America

Editor

Robert L. Price, *University of South Carolina, USA*

Microscopy and Microanalysis, a peer-reviewed bimonthly, publishes original research papers in the fields of microscopy, imaging, and compositional analysis. This distinguished international forum is intended for microscopists in both biology and materials science. The journal provides significant articles that describe new and existing techniques and instrumentation, as well as the applications of these to the imaging and analysis of microstructure. *Microscopy and Microanalysis* also includes review articles, short communications, letters to the editor, and book reviews.



Microscopy and Microanalysis
is available online at:
<http://journals.cambridge.org/mam>

To subscribe contact
Customer Services

in Cambridge:
Phone +44 (0)1223 326070
Fax +44 (0)1223 325150
Email journals@cambridge.org

in New York:
Phone +1 (845) 353 7500
Fax +1 (845) 353 4141
Email subscriptions_newyork@cambridge.org

Free email alerts

Keep up-to-date with new material – sign up at
journals.cambridge.org/register

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

 **CAMBRIDGE**
UNIVERSITY PRESS

Journal of Dairy Research

Published for the Institute of Food Research and the Hannah Research Institute

Executive Editors

D. G. Chamberlain, *Hannah Research Institute, UK*
E. C. Needs, *Hannah Research Institute, UK*

Journal of Dairy Research publishes original scientific research on all aspects of mammary biology and dairy science including: the physiology, biochemistry, cell biology and endocrinology of lactation; animal husbandry, milk production, composition, preservation, processing and separation; biotechnology and food science; properties of milk proteins and other components; dairy products such as cheese, fermented milks and spreads; relevant studies in bacteriology, enzymology and immunology, the use of milk products in other foods; and the development of methods relevant to these subjects.

View Sample Material
<http://journals.cambridge.org/darsample>

Free email alerts

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



Journal of Dairy Research
is available online at:
<http://journals.cambridge.org/dar>

To subscribe contact
Customer Services

in Cambridge:
Phone +44 (0)1223 326070
Fax +44 (0)1223 325150
Email journals@cambridge.org

in New York:
Phone +1 (845) 353 7500
Fax +1 (845) 353 4141
Email
subscriptions_newyork@cambridge.org



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 0031–1820/2015 \$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 2015

University Printing House, Cambridge CB2 8BS, 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 ARTICLE

Implications of co-infection of *Leptomonas* in visceral leishmaniasis in India

Angamuthu Selvapandian, Kavita Ahuja, Niti Puri and Anuja Krishnan

1657

Increased exposure to *Plasmodium chabaudi* antigens sustains cross-reactivity and avidity of antibodies binding *Nippostrongylus brasiliensis*: dissecting cross-phylum cross-reactivity in a rodent model

Karen J. Fairlie-Clarke, Christina Hansen, Judith E. Allen and Andrea L. Graham

1703

RESEARCH ARTICLES

A novel coagulation inhibitor from *Schistosoma japonicum*

Shiwanthi L. Ranasinghe, Katja Fischer, Geoffrey N. Gobert and Donald P. McManus

1663

Comparison of parasitological, immunological and molecular methods for evaluation of fecal samples of immuno suppressed rats experimentally infected with *Strongyloides venezuelensis*

Leilane A. Chaves, Ana Lúcia R. Gonçalves, Fabiana M. Paula, Neide M. Silva, Cláudio V. Silva, Julia M. Costa-Cruz and Michelle A.R. Freitas

1715

***Fasciola hepatica* mucin-encoding gene: expression, variability and its potential relevance in host-parasite relationship**

Martin Cancela, Guilherme B. Santos, Carlos Carmona, Henrique B. Ferreira, José Francisco Tort and Arnaldo Zaha

1673

Long-term spatiotemporal stability and dynamic changes in helminth infracommunities of bank voles (*Myodes glareolus*) in NE Poland

Maciej Grzybek, Anna Bajer, Małgorzata Bednarska, Mohammed Al-Sarraf, Jolanta Behnke-Borowczyk, Philip D. Harris, Stephen J. Price, Gabrielle S. Brown, Sarah-Jane Osborne, Edward Siński and Jerzy M. Behnke

1722

Functional evaluation of gene silencing on macrophages derived from U937 cells using interference RNA (shRNA) in a model of macrophages infected with *Leishmania (Viannia) braziliensis*

Clemencia Ovalle-Bracho, Diana A. Londoño-Barbosa, Carlos Franco-Muñoz and Carlos Clavijo-Ramírez

1682

Anthelmintic efficacy of cinnamaldehyde and cinnamic acid from cortex cinnamon essential oil against *Dactylogyrus intermedius*

Fei Ling, Chao Jiang, Guanglu Liu, Mingshuang Li and Gaoxue Wang

1744

Genetic population structure of *Gyrodactylus thymalli* (Monogenea) in a large Norwegian river system

Ruben Alexander Pettersen, Tor Atle Mo, Haakon Hansen and Leif Asbjørn Vollestad

1693

Diversity and patterns of interaction of an anuran-parasite network in a neotropical wetland

K.M. Campião, A. Ribas and L.E.R. Tavares

1751