

## 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 0031–1820/2019 \$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:** The functional mechanism of anti-merozoite antibodies. Antibodies to merozoite surface proteins can mediate several effector mechanisms, including complement fixation due to cytophillic antibodies that result in merozoite lysis of C3b opsonization; inhibition of merozoite invasion into the RBC; phagocytosis of IgG-opsonized merozoites; production of reactive oxygen species (ROS) or Nitric oxide (NO) in response to opsonized parasites and antibody dependent cellular inhibition (ADCI) triggered by IgG-opsonized merozoites. From Healer et al., Vol. 145 (7), pp. 839–847.

© Cambridge University Press 2019

University Printing House, Cambridge CB2 8BS, United Kingdom  
1 Liberty Plaza, Floor 20, New York, NY 10006, USA  
477 Williamstown Road, Port Melbourne, VIC 3207, Australia  
C/O 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

### RESEARCH ARTICLES

**Morphological characterization and molecular phylogeny of zoonotic trematodes in the freshwater snail *Asolene platae***

Federico A. Dellagnola, Martín M. Montes, Sergio R. Martorelli and Israel A. Vega 839

**Antiprotozoal investigation of 20 plant metabolites on *Trypanosoma cruzi* and *Leishmania amazonensis* amastigotes. Atalantoflavone alters the mitochondrial membrane potential**

Layzon Antonio Lemos da Silva, Milene Höehr de Moraes, Marcus Tullius Scotti, Luciana Scotti, Rafaela de Jesus Souza, Judith L. Nantchouang Ouete, Maique Weber Biavatti, Mario Steindel and Louis Pergaud Sandjo 849

**Re-Emerging foci of visceral leishmaniasis in Armenia – first molecular diagnosis of clinical samples**

Anna Sukiasyan, Ara Keshishyan, Dezdemonia Manukyan, Gayane Melik-Andreasyan, Liana Atshemyan, Hripsime Apresyan, Margarita Strelkova, Marcus Frohme, Sofia Cortes and Katrin Kuhls 857

**Endogenous development of *Cystoisospora belli* in intestinal and biliary epithelium of humans**

J. P. Dubey, Kimberley J. Evason and Zenta Walther 865

**Questionnaire survey on helminth control practices in horse farms in Ireland**

Nagwa Elghryani, Vivienne Duggan, Valerie Relf and Theo de Waal 873

**Estimating effective population size for a cestode parasite infecting three-spined sticklebacks**

Hannah M. Strobel, Sara J. Hays, Kristine N. Moody, Michael J. Blum and David C. Heins 883

**The relationship between parasite virulence and environmental persistence: a meta-analysis**

Charlotte Rafaluk-Mohr 897

**Longitudinal study of *Amphibocystidium* sp. infection in a natural population of the Italian stream frog (*Rana italica*)**

Anna Fagotti, Roberta Rossi, Daniele Canestrelli, Gianandrea La Porta, Romina Paracucchi, Livia Lucentini, Francesca Simoncelli and Ines Di Rosa 903

**First isolation of *Leishmania infantum* by blood culture in bovines from endemic area for canine visceral leishmaniasis**

Mirian dos Santos Paixão-Marques, Maria Fernanda Alves-Martin, Livia Maisa Guiraldi, Wesley José dos Santos, Fábio Almeida de Lemos, Gabriela Pacheco Sánchez, Virginia Bodelão Richini-Pereira and Simone Baldini Lucheis 911

**Could angiotensin-modulating drugs be relevant for the treatment of *Trypanosoma cruzi* infection? A systematic review of preclinical and clinical evidence**

Thaiany G. Souza-Silva, Livia F. Diniz, Ana Lia Mazzeti, Andrea A. S. Mendonça, Reggiani V. Gonçalves and Rômulo D. Novaes 914

**Negative effects of parasitic lung nematodes on the fitness of a Neotropical toad (*Rhinella horribilis*)**

Crystal Kelehear, Kristin Saltonstall and Mark E. Torchin 928

**A new genus and species of the trematode family Gyliuchenidae Fukui, 1929 from an unexpected, but plausible, host, *Kyphosus cornelii* (Perciformes: Kyphosidae)**

Daniel C. Huston, Terrence L. Miller, Scott C. Cutmore and Thomas H. Cribb 937

**Development of EST-derived microsatellite markers to investigate the population structure of sparganum – the causative agent of zoonotic sparganosis**

Xi Zhang, Xiu Hong, Jiang Yang Duan, Lu Lu Han, Zi Yang Hong, Peng Jiang, Zhong Quan Wang and Jing Cui 947

**Activity of *Thymus capitatus* essential oil components against *in vitro* cultured *Echinococcus multilocularis* metacestodes and germinal layer cells**

Amani Hizem, Britta Lundström-Stadelmann, Selim M'rad, Sawssen Souiai, Hichem Ben Jannet, Guido Flamini, Roberta Ascrizzi, Kamel Ghedira, Hamouda Babba and Andrew Hemphill 956

**Malacosporean myxozoans exploit a diversity of fish hosts**

Juliana Naldoni, Edson A. Adriano, Ashlie Hartigan, Carl Sayer and Beth Okamura 968

**Detection of *Neospora caninum* DNA in cases of bovine and ovine abortion in the South-West of Scotland**

P. M. Bartley, S. Guido, C. Mason, H. Stevenson, F. Chianini, H. Carty, E. A. Innes and F. Katzer 979