

PARASITOLOGY

PARASITOLOGY

(*Founded by G. H. F. Nuttall, F.R.S.*)

EDITORS

F. E. G. COX *and* P. J. WHITFIELD

EDITORIAL ASSISTANT

M. ELISABETH PAINTER, Ph.D.

ADVISORY BOARD

L. G. GOODWIN, F.R.S. (*Chairman*)

R. ANDERSON	D. I. GIBSON	J. H. ROSE
D. R. ARTHUR	L. P. JOYNER	J. F. RYLEY
J. R. BAKER	C. R. KENNEDY	G. SALT, F.R.S.
J. BARRETT	ANN M. LACKIE	S. R. SMITHERS
ELIZABETH U. CANNING	D. L. LEE*	K. VICKERMAN
L. H. CHAPPELL	R. J. LINCOLN	D. WAKELIN
S. COHEN, F.R.S.	J. LLEWELLYN	P. F. V. WARD
R. R. A. COOMBS, F.R.S.	S. H. P. MADDRELL, F.R.S.	H. H. WILLIAMS
G. A. M. CROSS	BRIDGET M. OGILVIE	R. A. WILSON
D. A. ERASMUS	M. ELAINE ROSE	C. A. WRIGHT

* Representing the British Society for Parasitology

VOLUME 86, 1983

CAMBRIDGE UNIVERSITY PRESS

CAMBRIDGE

LONDON NEW YORK NEW ROCHELLE

MELBOURNE SYDNEY

Published by the Press Syndicate of the University of Cambridge
The Pitt Building, Trumpington Street, Cambridge CB2 1RP
32 East 57th Street, New York, N.Y. 10022

© Cambridge University Press, 1983

Printed in Great Britain at the
University Press, Cambridge

CONTENTS

(All rights reserved)

PART 1 FEBRUARY 1983

	PAGE
COOMBS, G. H. and NORTH, M. J. An analysis of the proteinases of <i>Trichomonas vaginalis</i> by polyacrylamide gel electrophoresis	1
DUBEY, J. P. Microgametogony of <i>Sarcocystis hirsuta</i> in the intestine of the cat	7
DENHAM, D. A., MCGREEVY, P. B., SUSWILLO, R. R. and ROGERS, ROSEMARY. The resistance to re-infection of cats repeatedly inoculated with infective larvae of <i>Brugia pahangi</i>	11
JONES, JANET T., MCCAFFERY, D. M. and KUSEL, J. R. The influence of the H-2 complex on responses to infection by <i>Schistosoma mansoni</i> in mice	19
GEORGI, JAY R., DEAN, D. A. and MANGOLD, BEVERLY L. <i>Schistosoma mansoni</i> : temporal distribution of radioselenium-labelled schistosomula in lungs of mice during the first two weeks of infection	31
KNOPF, P. M., MANGOLD, BEVERLY L. and MAKARI, G. J. Recovery of parasites at different stages of migration following infection of rats with <i>Schistosoma mansoni</i>	37
MOLOO, S. K. Feeding behaviour of <i>Glossina morsitans morsitans</i> infected with <i>Trypanosoma vivax</i> , <i>T. congolense</i> or <i>T. brucei</i>	51
CROMPTON, D. W. T., KEYMER, ANNE, SINGHVI, A. and NESHEIM, M. C. Rat-dietary fructose and the intestinal distribution and growth of <i>Moniliformis</i> (Acanthocephala)	57
JENKINS, S. N. and WAKELIN, D. Functional antigens of <i>Trichuris muris</i> released during <i>in vitro</i> maintenance: their immunogenicity and partial purification	73
RICHARDS, K. SYLVIA and ARME, C. The rostellar tegumentary cytoplasm of the metacestode of <i>Hymenolepis diminuta</i> (Cyclophyllidea: Cestoda)	83
FAIRWEATHER, I. and THREADGOLD, L. T. <i>Hymenolepis nana</i> : the fine structure of the adult nervous system	89
HINDSBO, O. The effect of temperature on the survival and infectivity of the free-living larvae of <i>Nippostrongylus brasiliensis</i>	105
FUJINO, T., HIGO, H. and ISHII, Y. Histochemical studies of glycosidase activity in juveniles and adults of the lung fluke <i>Paragonimus</i>	119
SIRISINHA, S., TUTI, S., TAWATSIN, A., VICHASRI, S., UPATHAM, S. and BUNNAG, D. Attempts to induce protective immunity in hamsters against infection by a liver fluke of man (<i>Opisthorchis viverrini</i>)	127
BURDEN, D. J., BLAND, A. P., HUGHES, D. L. and HAMMET, N. C. <i>Fasciola hepatica</i> : development of the tegument of normal and γ -irradiated flukes during infection in rats and mice	137

ALI, J. H. and RILEY, J. Experimental life-cycle studies of <i>Raillietiella gehyrae</i> Bovien, 1927 and <i>Raillietiella frenatus</i> Ali, Riley and Self, 1981: pentastomid parasites of geckos utilizing insects as intermediate hosts	147
EVANS, N. A., WHITFIELD, P. J., BAMBER, R. N. and ESPIN, P. M. <i>Lernaecocera lusci</i> (Copepoda: Pennellidae) on bib (<i>Trisopterus luscus</i>) from Southampton Water	161
<i>Trends and Perspectives</i>	
NEAL, R. A. Experimental amoebiasis and the development of anti-amoebic compounds	175
PART 2 APRIL 1983	
NORTON, C. C. and CHARD, M. J. The oocyst sporulation time of <i>Eimeria</i> species from the fowl	193
KOGUT, M. H., GORE, T. C. and LONG, P. L. Serial passage of <i>Eimeria tenella</i> and <i>E. necatrix</i> in turkey embryos	199
SHERMAN, I. W. and TANIGOSHI, LINDA. Stage-specific proteins of the avian malaria <i>Plasmodium lophurae</i> .	211
LAINSON, F. A. Observations on the morphology and electrophoretic variation of enzymes of the rodent malaria parasites of Cameroon, <i>Plasmodium yoelii</i> , <i>P. chabaudi</i> and <i>P. vinckei</i> .	221
MEIS, J. F. G. M., VERHAVE, J. P., JAP, P. H. K. and MEUWISSEN, J. H. E. TH. An ultrastructural study of the role of Kupffer cells in the process of infection by <i>Plasmodium berghei</i> sporozoites in rats	231
STAGG, D. A., YOUNG, A. S., LEITCH, B. L., GROOTENHUIS, J. G. and DOLAN, T. T. Infection of mammalian cells with <i>Theileria</i> species	243
YOUNG, A. S., LEITCH, B. L., DOLAN, T. T., NEWSON, R. M., NGUMI, P. N. and OMWOYO, P. L. Transmission of <i>Theileria parva</i> by a population of <i>Rhipicephalus appendiculatus</i> under simulated natural conditions	255
SAMISH, M. and PIPANO, E. Transmission of <i>Theileria annulata</i> (Dschunkowsky & Luhs, 1904) by <i>Hyalomma excavatum</i> (Koch, 1844)	269
KUMAZAWA, H. and SUZUKI, N. Kinetics of proglottid formation, maturation and shedding during development of <i>Hymenolepis nana</i>	275
TANAKA, K., KAWAMURA, H., TOHGI, N., TSUJI, M., MIYACHI, Y. and MIYOSHI, A. The measurement of <i>Ascaris suum</i> protein by radioimmunoassay in sera from patients with helminthiasis and with gastrointestinal diseases	291
ALTAIF, K. I. and ISSA, W. H. Seasonal fluctuations and hypobiosis of gastrointestinal nematodes of Awassi lambs in Iraq	301
RAU, M. E. The open-field behaviour of mice infected with <i>Trichinella spiralis</i>	311
RAU, M. E. Establishment and maintenance of behavioural dominance in male mice infected with <i>Trichinella spiralis</i>	319

HOOLE, D. and MITCHELL, J. B. <i>Gorgoderina vitelliloba</i> : an ultrastructural study on the development of the tegument from the metacercaria to the adult fluke	323
MINCHELLA, D. J. and LOVERDE, P. T. Laboratory comparison of the relative success of <i>Biomphalaria glabrata</i> stocks which are susceptible and insusceptible to infection with <i>Schistosoma mansoni</i>	335
INCANI, R. N. and McLAREN, DIANE, J. Ultrastructural observations on the <i>in vitro</i> interaction of rat neutrophils with schistosomula of <i>Schistosoma mansoni</i> in the presence of antibody and/or complement	345

PART 3 JUNE 1983

MCDONALD, V. and BALLINGALL, S. Further investigation of the pathogenicity, immunogenicity and stability of precocious <i>Eimeria acervulina</i>	361
MCDONALD, V. and BALLINGALL, S. Attenuation of <i>Eimeria mivati</i> (= <i>mitis</i>) by selection for precocious development	371
JOYNER, L. P. and NORTON, C. C. <i>Eimeria mitis</i> in mixed infections with <i>E. acervulina</i> and <i>E. brunetti</i> in the fowl	381
FERNANDO, M. A., LAWN, A. M., ROSE, M. ELAINE and AL-ATTAR, M. A. Invasion of chicken caecal and intestinal lamina propria by crypt epithelial cells infected with coccidia	391
RICHARDS, K. SYLVIA, ARME, C. and BRIDGES, JANINE F. <i>Echinococcus granulosus equinus</i> : an ultrastructural study of the laminated layer, including changes on incubating cysts in various media	399
RICHARDS, K. SYLVIA, ARME, C. and BRIDGES, JANINE, F. <i>Echinococcus granulosus equinus</i> : an ultrastructural study of murine tissue response to hydatid cysts	407
PAINE, S. H., KEMP, D. H. and ALLEN, J. R. <i>In vitro</i> feeding of <i>Derma-centor andersoni</i> (Stiles): effects of histamine and other mediators	419
HARRISON, R. A. and DOENHOFF, M. J. Retarded development of <i>Schistosoma mansoni</i> in immunosuppressed mice	429
SHAW, M. K. and ERASMUS, D. A. <i>Schistosoma mansoni</i> : changes in elemental composition in relation to the age and sexual status of the worms	439
KEYMER, ANNE, CROMPTON, D. W. T. and SAHAKIAN, B. J. Parasite-induced learned taste aversion involving <i>Nippostrongylus</i> in rats	455
KEYMER, ANNE, CROMPTON, D. W. T. and WALTERS, D. E. <i>Nippostrongylus</i> (Nematoda) in protein-malnourished rats: host mortality, morbidity and rehabilitation	461
LEE, D. L. and NICHOLLS, C. D. The use of plasma etching to reveal the internal structure of <i>Nippostrongylus brasiliensis</i> (Nematoda).	477
MARTIN, JEAN and LEE, D. L. <i>Nematodirus battus</i> : structure of the body wall of the adult	481
ADAMSON, M. L. Ultrastructural observations on oogenesis and shell formation in <i>Gyrinicola batrachiensis</i> (Walton, 1929) (Nematoda: Oxyurida)	489

TINSLEY, R. C. and EARLE, CELIA M. Invasion of vertebrate lungs by the polystomatid monogeneans <i>Pseudodiplorchis americanus</i> and <i>Neodiplorchis scaphiopodis</i>	501
YOUNG, A. S., LEITCH, B. L., STAGG, D. A. and DOLAN, T. T. Identification of <i>Theileria</i> infections in living salivary glands of ticks	519
LOM, JIŘÍ, DYKOVÁ, IVA and PAVLÁSKOVÁ, MILENA. <i>Sphaerospora molnari</i> sp.nov. (Myxozoa: Myxosporea), an agent of gill, skin and blood sphaerosporosis of common carp in Europe	529
SHIMURA, S. Seasonal occurrence, sex ratio and site preference of <i>Argulus coregoni</i> Thorell (Crustacea: Branchiura) parasitic on cultured freshwater salmonids in Japan.	537
BOOK REVIEWS	553

PARASITOLOGY

SUBSCRIPTIONS may be sent to any bookseller or subscription agent or direct to Cambridge University Press, The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU. Subscriptions in the U.S.A. and Canada should be sent to Cambridge University Press, 32 East 57th Street, New York, N.Y. 10022. All orders must be accompanied by payment. The subscription price of volume 86, 1983, is £50.00 net (including postage) for a volume of four parts (US \$129.00 in the U.S.A. and Canada) and for volume 87, 1983, £38.00 net (including postage) for a volume of three parts (US \$96.00 in the U.S.A. and Canada) payable in advance (£88.00 or US \$225.00 per year); separate parts cost £14.00 net or US \$36.00 each (plus postage).

BACK VOLUMES. Vols. 1-39: Inquiries should be addressed to Wm. Dawson & Sons Ltd, Cannon House, Folkestone, Kent. Vols. 40 onwards: quotations for parts still in print may be obtained from the Cambridge or New York offices of the Cambridge University Press.

COPYING. This journal is registered with the Copyright Clearance Center, 21 Congress Street, Salem, Mass. 01970. Organizations in the U.S.A. who are also registered with C.C.C. may therefore copy material (beyond the limits permitted by sections 107 and 108 of U.S. copyright law) subject to payment to C.C.C. of the per-copy fee of \$05.00. This consent does not extend to multiple copying for promotional or commercial purposes. Code 0031-1820/83/0080-0001 \$05.00.

ISI TEAR SERVICE, 3501 Market Street, Philadelphia, Pennsylvania 19104, U.S.A., is authorized to supply single copies of separate articles for private use only.

FOR ALL OTHER USE, permission should be sought from the Cambridge or New York offices of the 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.

PARASITOLOGY

Volume 86, Part 3, June 1983

CONTENTS

	PAGE
MCDONALD, V. and BALLINGALL, S. Further investigation of the pathogenicity, immunogenicity and stability of precocious <i>Eimeria acervulina</i>	361
MCDONALD, V. and BALLINGALL, S. Attenuation of <i>Eimeria mivati</i> (= <i>mitis</i>) by selection for precocious development	371
JOYNER, L. P. and NORTON, C. C. <i>Eimeria mitis</i> in mixed infections with <i>E. acervulina</i> and <i>E. brunetti</i> in the fowl	381
FERNANDO, M. A., LAWN, A. M., ROSE, M. ELAINE and AL-ATTAR, M. A. Invasion of chicken caecal and intestinal lamina propria by crypt epithelial cells infected with coccidia	391
RICHARDS, K. SYLVIA, ARME, C. and BRIDGES, JANINE F. <i>Echinococcus granulosus equinus</i> : an ultrastructural study of the laminated layer, including changes on incubating cysts in various media	399
RICHARDS, K. SYLVIA, ARME, C. and BRIDGES, JANINE F. <i>Echinococcus granulosus equinus</i> : an ultrastructural study of murine tissue response to hydatid cysts	407
PAINE, S. H., KEMP, D. H. and ALLEN, J. R. <i>In vitro</i> feeding of <i>Dermacentor andersoni</i> (Stiles): effects of histamine and other mediators	419
HARRISON, R. A. and DOENHOFF, M. J. Retarded development of <i>Schistosoma mansoni</i> in immunosuppressed mice	429
SHAW, M. K. and ERASMUS, D. A. <i>Schistosoma mansoni</i> : changes in elemental composition in relation to the age and sexual status of the worms	439
KEYMER, ANNE, CROMPTON, D. W. T. and SAHAKIAN, B. J. Parasite-induced learned taste aversion involving <i>Nippostrongylus</i> in rats	455
KEYMER, ANNE, CROMPTON, D. W. T. and WALTERS, D. E. <i>Nippostrongylus</i> (Nematoda) in protein-malnourished rats: host mortality, morbidity and rehabilitation	461
LEE, D. L. and NICHOLLS, C. D. The use of plasma etching to reveal the internal structure of <i>Nippostrongylus brasiliensis</i> (Nematoda)	477
MARTIN, JEAN and LEE, D. L. <i>Nematodirus battus</i> : structure of the body wall of the adult	481
ADAMSON, M. L. Ultrastructural observations on oogenesis and shell formation in <i>Gyrinicola batrachiensis</i> (Walton, 1929) (Nematoda: Oxyurida)	489
TINSLEY, R. C. and EARLE, CELIA M. Invasion of vertebrate lungs by the polystomatid monogeneans <i>Pseudodiplorchis americanus</i> and <i>Neodiplorchis scaphiopodis</i>	501
YOUNG, A. S., LEITCH, B. L., STAGG, D. A. and DOLAN, T. T. Identification of <i>Theileria</i> infections in living salivary glands of ticks	519
LOM, JIŘÍ, DYKOVÁ, IVA and PAVLÁSKOVÁ, MILENA. <i>Sphaerospora molnari</i> sp.nov. (Myxozoa: Myxosporaea), an agent of gill, skin and blood sphaerosporosis of common carp in Europe	529
SHIMURA, S. Seasonal occurrence, sex ratio and site preference of <i>Argulus coregoni</i> Thorell (Crustacea: Branchiura) parasitic on cultured freshwater salmonids in Japan	537
BOOK REVIEWS	553

© Cambridge University Press 1983

The Pitt Building, Trumpington Street, Cambridge CB2 1RP
32 East 57th Street, New York, N.Y. 10022

Printed in Great Britain at the University Press, Cambridge