

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

C. ARME

J. R. BAKER

J. BARRETT

A. E. BUTTERWORTH

ELIZABETH U. CANNING

L. H. CHAPPELL

S. COHEN, F.R.S.

D. W. T. CROMPTON

G. A. M. CROSS, F.R.S.

D. A. ERASMUS

N. A. EVANS

D. I. GIBSON

L. P. JOYNER*

C. R. KENNEDY

ANN M. LACKIE

D. L. LEE

J. LLEWELLYN

B. A. NEWTON

BRIDGET M. OGILVIE

M. ELAINE ROSE

J. F. RYLEY

S. R. SMITHERS

V. R. SOUTHGATE

K. VICKERMAN, F.R.S.

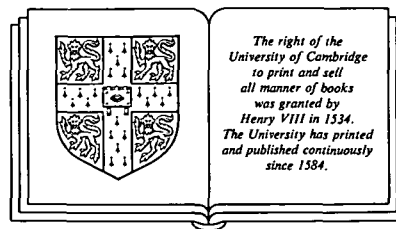
D. WAKELIN

H. H. WILLIAMS

R. A. WILSON

* Representing the British Society for Parasitology.

VOLUME 92, 1986



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, NY 10022
10 Stamford Road, Oakleigh, Melbourne 3166, Australia

© Cambridge University Press, 1986

Printed in Great Britain by the
University Press, Cambridge

CONTENTS

(All rights reserved)

PART 1 FEBRUARY 1986

	PAGE
TIESZEN, K. L., MOLYNEUX, D. H. and ABDEL-HAFEZ, S. K. Host-parasite relationships of <i>Blastocrithidia familiaris</i> in <i>Lygaeus pandurus</i> Scop. (Hemiptera: Lygaeidae)	1
COOMBS, G. H., TETLEY, L., MOSS, V. A. and VICKERMAN, K. Three dimensional structure of the leishmania amastigote as revealed by computer-aided reconstruction from serial sections	13
THOMPSON, S. N. Effects of dietary carbohydrate on the nutritional physiology and blood sugar level of <i>Trichoplusia ni</i> parasitized by the insect parasite, <i>Hyposoter exiguae</i>	25
PAINDAVOINE, P., PAYS, E., LAURENT, M., GELTMEYER, Y., LE RAY, D., MEHLITZ, D. and STEINERT, M. The use of DNA hybridization and numerical taxonomy in determining relationships between <i>Trypanosoma brucei</i> stocks and subspecies	31
BARRY, J. D. Antigenic variation during <i>Trypanosoma vivax</i> infections of different host species	51
TURNER, C. M. R., BARRY, J. D. and VICKERMAN, K. Independent expression of the metacyclic and bloodstream variable antigen repertoires of <i>Trypanosoma brucei rhodesiense</i>	67
GARDINER, P. R., WEBSTER, P., JENNI, L. and MOLOO, S. K. Metacyclic <i>Trypanosoma vivax</i> possess a surface coat	75
WILSON, R. A. and COULSON, PATRICIA S. <i>Schistosoma mansoni</i> : dynamics of migration through the vascular system of the mouse	83
WILSON, R. A., COULSON, PATRICIA S. and DIXON, B. Migration of the schistosomula of <i>Schistosoma mansoni</i> in mice vaccinated with radiation-attenuated cercariae, and normal mice: an attempt to identify the timing and site of parasite death	101
CHAO, L. P., JONES, J. T. and KUSEL, J. R. An <i>in vivo</i> model for the study of chemotaxis induced by schistosomula of <i>Schistosoma mansoni</i>	117
ARONSTEIN, W. S., LEWIS, S. A., NORDEN, A. P., DALTON, J. P. and STRAND, M. Molecular identity of a major antigen of <i>Schistosoma mansoni</i> which cross-reacts with <i>Trichinella spiralis</i> and <i>Fasciola hepatica</i>	133
JEFFS, S. A. and ARME, C. <i>Echinococcus granulosus</i> : absorption of cycloleucine and α -amino-isobutyric acid by protoscoleces	153
DE BURON, I., RENAUD, F. and EUZET, L. Speciation and specificity of acanthocephalans. Genetic and morphological studies of <i>Acanthocephaloides geneticus</i> sp.nov. parasitizing <i>Arnoglossus laterna</i> (Bothidae) from the Mediterranean littoral (Sète - France)	165

ASAO LU, S. O. Observations on the morphology of the testis in the larvae of <i>Moniliformis</i> (Acanthocephala)	173
DELVES, C. J., HOWELLS, R. E. and POST, R. J. Gametogenesis and fertilization in <i>Dirofilaria immitis</i> (Nematoda: Filarioidea)	181
JOYSEY, H. S. Suppression of <i>Taenia crassiceps</i> during concurrent infections with <i>Mesocestoides corti</i> in mice	199
ANNAN, AKWELEY, CROMPTON, D. W. T., WALTERS, D. E. and ARNOLD, S. E. An investigation of the prevalence of intestinal parasites in pre-school children in Ghana	209
DUBINSKÝ, P., RYBOŠ, M. and TURČEKOVÁ, Ľ. Properties and localization of chitin synthase in <i>Ascaris suum</i> eggs	219
ADJEI, E. L., BARNES, A. and LESTER, R. J. G. A method for estimating possible parasite-related host mortality, illustrated using data from <i>Callitetrarhynchus gracilis</i> (Cestoda: Trypanorhyncha) in lizardfish (<i>Saurida</i> spp.)	227
MADHAVI, R. and RAMANJANEYULU, J. V. Observations on chromosomes and gametogenesis of <i>Transversotrema patialense</i> (Trematoda)	245

PART 2 APRIL 1986

ARNASON, A. N., DICK, T. A. and WASSOM, D. L. A model to assess survival mechanisms of parasites in a genetically defined host system	253
HAM, P. J. Acquired resistance to <i>Onchocerca lienalis</i> infections in <i>Simulium ornatum</i> Meigen and <i>Simulium lineatum</i> Meigen following passive transfer of haemolymph from previously infected simuliids (Diptera, Simuliidae)	269
NORTON, C. C. Coccidia of the domestic goat <i>Capra hircus</i> , with notes on <i>Eimeria ovinoidalis</i> and <i>E. bakuensis</i> (syn. <i>E. ovina</i>) from the sheep <i>Ovis aries</i>	279
BANNISTER, L. H., MITCHELL, G. H., BUTCHER, G. A. and DENNIS, E. D. Lamellar membranes associated with rhoptries in erythrocytic merozoites of <i>Plasmodium knowlesi</i> : a clue to the mechanism of invasion	291
HEMPELMANN, E., PUTFARKEN, B., RANGACHARI, K. and WILSON, R. J. M. Immunoprecipitation of malarial acid endopeptidase	305
LING, I. T., COOKSLEY, S., BATES, P. A., HEMPELMANN, E. and WILSON, R. J. M. Antibodies to the glutamate dehydrogenase of <i>Plasmodium falciparum</i>	313
KUBELKA, C. F., RUPPEL, A., KRAMMER, P. H. and GEMSA, D. Killing of schistosomula of <i>Schistosoma mansoni</i> by macrophages: induction by T-cell clone-derived lymphokines and interferon-gamma	325
TOUASSEM, R. and THÉRON, A. Study on the intramolluscal development of <i>Schistosoma bovis</i> : demonstration of three patterns of sporocystogenesis by daughter sporocysts	337
CRABTREE, JEAN E. and WILSON, R. A. <i>Schistosoma mansoni</i> : an ultrastructural examination of pulmonary migration	343
LAMONT, GRETEL S., TUCKER, R. S. and CROSS, G. A. M. Analysis of antigen switching rates in <i>Trypanosoma brucei</i>	355

LINDSAY, S. W. The migration of infective larvae of <i>Brugia pahangi</i> within the mosquito, <i>Aedes aegypti</i>	369
ROGAN, M. T. and RICHARDS, K. SYLVIA. <i>In vitro</i> development of hydatid cysts from posterior bladders and ruptured brood capsules of equine <i>Echinococcus granulosus</i>	379
RILEY, E. M., DIXON, J. B., JENKINS, P. and ROSS, G. <i>Echinococcus granulosus</i> infection in mice: host responses during primary and secondary infection	391
MAEMA, MALEFANE. Experimental infection of <i>Tribolium confusum</i> (Coleoptera) by <i>Hymenolepis diminuta</i> (Cestoda): host fecundity during infection	405
HOOLE, D. and ARME, C. The role of serum in leucocyte adherence to the plerocercoid of <i>Ligula intestinalis</i> (Cestoda: Pseudophyllidea)	413
RAPSON, E. B., CHILWAN, A. S. and JENKINS, D. C. Acetylcholinesterase secretion – a parameter for the interpretation of <i>in vitro</i> anthelmintic screens	425
TINGLEY, G. A. and ANDERSON, R. M. Environmental sex determination and density-dependent population regulation in the entomogenous nematode <i>Romanomermis culicivorax</i>	431
LENGEMANN, F. W., GRIEVE, R. B., CHMIELEWICZ, M. and GEORGI, J. R. ²⁰³ Hg and other gamma-emitting radio-isotopes as labels for <i>Dirofilaria immitis</i> microfilariae	451
LENGEMANN, F. W., GRIEVE, R. B., CHMIELEWICZ, M., KALLFELZ, F. A. and GEORGI, J. R. External monitoring of ²⁰³ Hg-labelled <i>Dirofilaria immitis</i> microfilariae in mice and dogs.	463
SMITH, G., GRENFELL, B. T. and ANDERSON, R. M. The development and mortality of the non-infective free-living stages of <i>Ostertagia ostertagi</i> in the field and in laboratory culture	471

PART 3 JUNE 1986

WILLIAMS, HARFORD. Gwendolen Rees FRS – fifty-six years (1930 to date) in research	483
NORTON, C. C. and JOYNER, L. P. Avian coccidiosis: the administration of encapsulated oocysts	499
ALEY, S. B., SHERWOOD, J. A., MARSH, K., EIDELMAN, O. and HOWARD, R. J. Identification of isolate-specific proteins on sorbitol-enriched <i>Plasmodium falciparum</i> infected erythrocytes from Gambian patients	511
HOWARD, R. J., REUTER, G., BARNWELL, J. W. and SCHAUER, R. Sialoglycoproteins and sialic acids of <i>Plasmodium knowlesi</i> schizont-infected erythrocytes and normal rhesus monkey erythrocytes	527
HOWARD, R. J., SEELEY, D. C. JR, KAO, VIVIEN, WEMBER, MARGRET and SCHAUER, R. Sialic acid analysis and tritium-labelling of sialoglycoproteins of mouse erythrocytes infected with <i>Plasmodium berghei</i>	545
WOZENCRAFT, ANNE O. Damage to malaria-infected erythrocytes following exposure to oxidant-generating systems.	559

LUCIUS, R., BÜTTNER, D. W., KIRSTEN, CHRISTA and DIESFELD, H. J. A study on antigen recognition by onchocerciasis patients with different clinical forms of disease	569
GARDINER, P. R., THATTHI, R., GATHUO, H., NELSON, R. and MOLOO, S. K. Further studies of cyclical transmission and antigenic variation of the ILDar 1 serodeme of <i>Trypanosoma vivax</i>	581
BELOSEVIC, M., FAUBERT, G. M. and MACLEAN, J. D. Mouse-to-mouse transmission of infections with <i>Giardia muris</i>	595
GEMMELL, M. A., LAWSON, J. R. and ROBERTS, M. G. Population dynamics in echinococcosis and cysticercosis: biological parameters of <i>Echinococcus granulosus</i> in dogs and sheep	599
ROBERTS, M. G., LAWSON, J. R. and GEMMELL, M. A. Population dynamics in echinococcus and cysticercosis: mathematical model of the life-cycle of <i>Echinococcus granulosus</i>	621
GRENFELL, B. T., SMITH, G. and ANDERSON, R. M. Maximum-likelihood estimates of the mortality and migration rates of the infective larvae of <i>Ostertagia ostertagi</i> and <i>Cooperia oncophora</i>	643
BAYNE, C. J., LOKER, E. S. and YUI, MARY A. Interactions between the plasma proteins of <i>Biomphalaria glabrata</i> (Gastropoda) and the sporocyst tegument of <i>Schistosoma mansoni</i> (Trematoda)	653
ALGHALI, SIDI T. O. and GRENCIS, R. K. Immunity to tapeworms: intraspecific cross-protective interactions between <i>Hymenolepis citelli</i> , <i>H. diminuta</i> and <i>H. microstoma</i> in mice	665
DOBSON, A. P. Inequalities in the individual reproductive success of parasites	675
WHITFIELD, P. J., ANDERSON, R. M. and BUNDY, D. A. P. Host-specific components of the reproductive success of <i>Transversotrema patialense</i> (Digenea: Transversotrematidae)	683
STABLES, J. N. and CHAPPELL, L. H. The epidemiology of diplostomiasis in farmed rainbow trout from north-east Scotland	699
MERCER, J. G., MUNN, A. E., SMITH, J. W. and REES, H. H. Cuticle production and ecdysis in larval marine ascaridoid nematodes <i>in vitro</i>	711
<i>Trends and Perspectives</i>	
MOLYNEUX, D. H. and JEFFERIES, D. Feeding behaviour of pathogen-infected vectors	721
BOOK REVIEWS	737

PARASITOLOGY

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 Cambridge or the American Branch of Cambridge University Press.

COPYING. This journal is registered with the Copyright Clearance Center, 21 Congress Street, Salem, Mass. 01970. 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 \$05.00. This consent does not extend to multiple copying for promotional or commercial purposes. Code 0031–1820/86/0092–0001 \$05.00.

ISI TEAR 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.

PARASITOLOGY

Volume 92, Part 3, June 1986

CONTENTS

	PAGE
WILLIAMS, HARFORD, Gwendolen Rees FRS – fifty-six years (1930 to date) in research	483
NORTON, C. C. and JOYNER, L. P. Avian coccidiosis: the administration of encapsulated oocysts	499
ALEY, S. B., SHERWOOD, J. A., MARSH, K., EIDELMAN, O. and HOWARD, R. J. Identification of isolate-specific proteins on sorbitol-enriched <i>Plasmodium falciparum</i> infected erythrocytes from Gambian patients	511
HOWARD, R. J., REUTER, G., BARNWELL, J. W. and SCHAUER, R. Sialoglycoproteins and sialic acids of <i>Plasmodium knowlesi</i> schizont-infected erythrocytes and normal rhesus monkey erythrocytes	527
HOWARD, R. J., SEELEY, D. C. JR, KAO, VIVIEN, WEMBER, MARGRET and SCHAUER, R. Sialic acid analysis and tritium-labelling of sialoglycoproteins of mouse erythrocytes infected with <i>Plasmodium berghei</i>	545
WOZENCRAFT, ANNE O. Damage to malaria-infected erythrocytes following exposure to oxidant-generating systems	559
LUCIUS, R., BÜTTNER, D. W., KIRSTEN, CHRISTA and DIESFELD, H. J. A study on antigen recognition by onchocerciasis patients with different clinical forms of disease	569
GARDINER, P. R., THATTHI, R., GATHUO, H., NELSON, R. and MOLOO, S. K. Further studies of cyclical transmission and antigenic variation of the ILDar 1 serodeme of <i>Trypanosoma vivax</i>	581
BELOSEVIC, M., FAUBERT, G. M. and MACLEAN, J. D. Mouse-to-mouse transmission of infections with <i>Giardia muris</i>	595
GEMMELL, M. A., LAWSON, J. R. and ROBERTS, M. G. Population dynamics in echinococcosis and cysticercosis: biological parameters of <i>Echinococcus granulosus</i> in dogs and sheep	599
ROBERTS, M. G., LAWSON, J. R. and GEMMELL, M. A. Population dynamics in echinococcosis and cysticercosis: mathematical model of the life-cycle of <i>Echinococcus granulosus</i>	621
GRENFELL, B. T., SMITH, G. and ANDERSON, R. M. Maximum-likelihood estimates of the mortality and migration rates of the infective larvae of <i>Ostertagia ostertagi</i> and <i>Cooperia oncophora</i>	643
BAYNE, C. J., LOKER, E. S. and YUI, MARY A. Interactions between the plasma proteins of <i>Biomphalaria glabrata</i> (Gastropoda) and the sporocyst tegument of <i>Schistosoma mansoni</i> (Trematoda)	653
ALGHALI, SIDI T. O. and GRENCIS, R. K. Immunity to tapeworms: intraspecific cross-protective interactions between <i>Hymenolepis citelli</i> , <i>H. diminuta</i> and <i>H. microstoma</i> in mice	665
DOBSON, A. P. Inequalities in the individual reproductive success of parasites	675
WHITFIELD, P. J., ANDERSON, R. M. and BUNDY, D. A. P. Host-specific components of the reproductive success of <i>Transversotrema patialense</i> (Digenea: Transversotrematidae)	683
STABLES, J. N. and CHAPPELL, L. H. The epidemiology of diplostomiasis in farmed rainbow trout from north-east Scotland	699
MERCER, J. G., MUNN, A. E., SMITH, J. W. and REES, H. H. Cuticle production and ecdysis in larval marine ascaridoid nematodes <i>in vitro</i>	711
<i>Trends and Perspectives</i>	
MOLYNEUX, D. H. and JEFFERIES, D. Feeding behaviour of pathogen-infected vectors	721
BOOK REVIEWS	737

© Cambridge University Press 1986

The Pitt Building, Trumpington Street, Cambridge CB2 1RP
32 East 57th Street, New York, NY 10022, USA
10 Stamford Road, Oakleigh, Melbourne 3166, Australia

Printed in Great Britain by the University Press, Cambridge