

C 457

NEDERLANDSE VERENIGING
VOOR PARASITOLOGIE

NETHERLANDS SOCIETY
FOR PARASITOLOGY

Secretariaat: Lab.Med.Parasitologie,
Faculteit der Geneeskunde
Vrije Universiteit
Postbus 7161
Amsterdam.
Telef.020-5483975

28.8 weg
Amsterdam 17 augustus 1977

Aan de leden van de Nederlandse Vereniging voor Parasitologie,
Aan de Project- en Werkgroepen van de BION Werkgemeenschap Parasitologie.

Namens de besturen van de Vereniging en Werkgemeenschap nodigen wij u van harte uit tot het bijwonen van de najaarsvergadering op 16 september a.s.
Plaats : Gorlaeus laboratoria,
Wassenaarseweg 76 te Leiden (een kaartje is bijgevoegd)

Programma:

- 9.30 - 9.55 uur ^{Koffie} inclusief discussie : J.Andreassen (Zoological Laboratory, University of Copenhagen): Host-parasite relationship between intestinal cestodes and their hosts, with special reference to immune dependent reactions between Hymenolepis diminuta and its hosts.
- 9.55 - 10.50 uur
- 10.50 - 11.05 uur: Koffiepauze
- 11.05 - 12.00 uur: G.Uilenberg: Recent onderzoek betreffende Theileriidae (Sporozoa) bij vee.
- 12.00 - 12.55 uur: P.J.Beckers: Pneumocystis infecties bij ratten.
- 13.00 - 14.00 uur: Lunch
- 14.00 - 14.25 uur: P.Mas Bakal: Dierexperimenten betreffende het voorkomen van Toxoplasma in de tonsillen.
- 14.25 - 14.50 uur: B.H.Rep: Mijnwormen in Nederland.
- 14.50 - 15.20 uur: Theepauze
- 15.20 - 15.50 uur: H.J.Over: Factoren welke van invloed zijn op het infectierhythme bij fascioliasis.
- 15.50 - 16.15 uur: L.J.van Tiggele: Immunopathologie van Fasciola hepatica infecties bij herkauwers.

De kosten van de lunch bedragen f. 5,50. U kunt zich hiervoor opgeven door onderstaand strookje in te vullen en vóór 9 september op te sturen aan de secretaris van de NVP.

Ondergetekende:

Adres:

geeft zich op voor de lunch tijdens de vergadering van de NVP en de BION Wgm Parasitologie op 16 september 1977.

Handtekening :

Mededelingen betreffende de Joint Meeting met de Britse en Belgische Verenigingen voor Parasitologie.

Plaats : University of Kent, Canterbury, England.

Tijd : 5 tot en met 7 april 1978.

Wetenschappelijk programma: dit bestaat uit lezingen van 15 minuten, inclusief discussie en posters, beide op basis van vrije inzending.

Alle mogelijke aspecten van de parasitologie kunnen aan de orde komen. Wel is het de bedoeling zo veel mogelijk "special interest workshops" samen te stellen. Suggesties voor bepaalde "topics" kunnen bij de secretaris van de NVP worden ingediend.

Opgave lezingen en posters: dit kan geschieden bij de secretaris van de NVP vóór 3 januari 1978, met de toevoeging "lezing" dan wel "poster".

Elke opgave dient te omvatten naam (namen), titulatuur, werkadres(sen) auteur(s), volledige titel en een kort "abstract". Deze "abstracts" zullen alleen gebruikt worden als leidraad bij de samenstelling van het programma.

Degenen, die het abstract van hun lezing gepubliceerd willen hebben in "Parasitology", dienen het manuscript aan de voorzitter van hun sectie te geven, alvorens uit Canterbury te vertrekken.

Om voor publicatie in aanmerking te komen moeten/mogen de manuscripten:

- a) duidelijk getypt zijn met dubbele spatie en voorzien zijn van de titel van de lezing en naam en adres van de auteur(s).
- b) het aantal van 300 woorden niet overschrijden, referenties meegerekend. Alleen essentiële referenties mogen worden genoemd in de tekst (niet aan het eind).
- c) geen tabellen en figuren bevatten.

Accomodatatie: formulieren ter verkrijging van accomodatatie (4-8 april) in comfortabele eenpersoonkamers op de campus van de Universiteit zullen u nog worden toegezonden.

Verdere details: volgen.

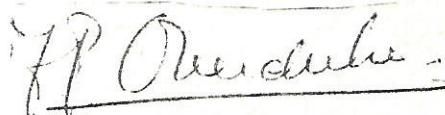
Herinnering: wellicht ten overvloede herinneren wij u aan de vervaldatum voor het inzenden van de "complete communications" voor ICOPA IV, 19-26 augustus 1978 te Warschau, Polen, zijnde 15 januari 1978.

Er op vertrouwend u met deze mededelingen van dienst te zijn geweest en in de hoop dat u zowel de komende vergadering in Leiden als de gezamenlijke bijeenkomst in Canterbury kunt en zult bijwonen, verblijven wij,

hoogachtend,



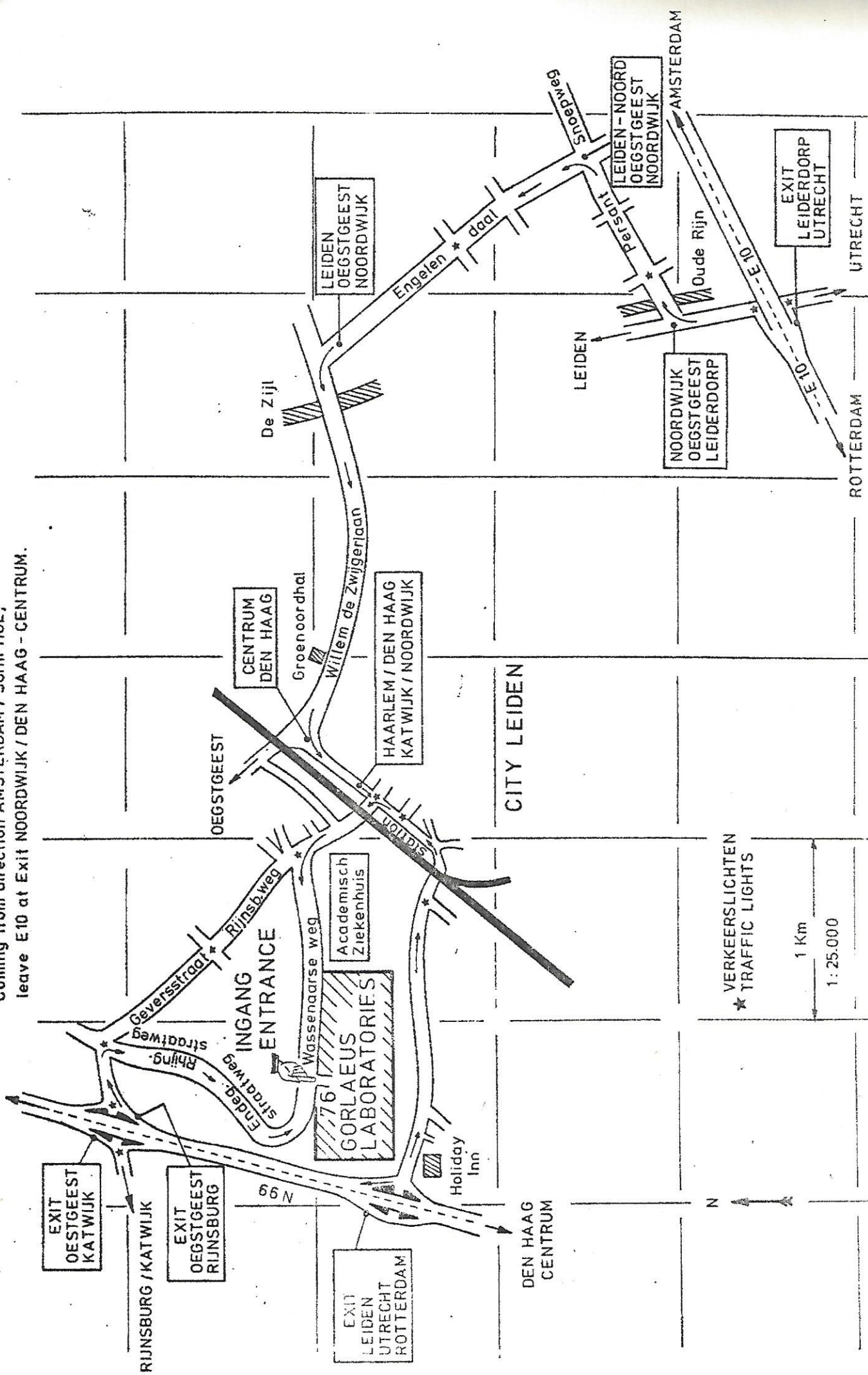
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secretaris NVP



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Parasitologie

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AUTUMN MEETING OF THE NETHERLANDS SOCIETY FOR PARASITOLOGY

Combined session with the BION Working Group on Parasitology,
Leiden, September 16th, 1977.

Dr.H.J.v.d.Kaay, in the chair.

Communications

1. J.ANDREASSEN (University of Copenhagen, Zoological Laboratory,
Universitetsparken 15, DK 2100, Copenhagen, Denmark)

Host-parasite relationship between intestinal cestodes and their hosts, with special reference to immune dependent reactions between Hymenolepis diminuta and its hosts.

The two most important phenomena - besides nutrition - involved in the regulation of the individual worm size and the total worm population are:

- 1) Competition between other parasites
 - a) Intraspecific competition (crowding)
 - b) Interspecific competition
- 2) Host immune reactions
 - a) Specific immunological responses
 - b) Non-specific immunological responses

These phenomena can act together, which is probably the case in the phenomenon known as premunitio.

The results of crowding: decrease in individual worm length, weight and egg-production and dispersion of the tapeworm population in the intestine will be discussed briefly.

Interspecific competition between Hymenolepis diminuta and the acanthocephalan, Moniliiformis moniliiformis in the rat, where the tapeworms are forced into the posterior part of the small intestine and are lighter and shorter than in single infections, will be shown.

The immune reactions are host species dependent. Results from normal mice, rats, golden hamsters and congenitally athymic nude mice will be compared.

The hosts all have an expulsion mechanism which in several respects resembles the well-known self-cure in many nematode infections and especially Nippostrongylus brasiliensis infections in rats: The primary infection is destrobilated and expelled, the destrobilation and expulsion is inhibited by immunosuppressive treatment, the expulsion rate is increased in secondary infections and most of the residual worms are damaged (in this case destrobilated) - and furthermore the destrobos are migrated to the anterior part of the duodenum synchronously with the expulsion.

It will be shown that non-specific immunological responses provoked by Moniliiformis also reject a concurrent H. diminuta infection.

It will briefly be discussed where to look for the funtional antigens.

The role of the humoral antibodies and cellular immunity will be discussed in relation to the serological antibody titers and the histopathology of the intestine with special reference to the plasma cells, eosinophils and mast cells - both from laboratory models and from human infections.

2. G. UILENBERG (Institute of Tropical Diseases, Faculty of Veterinary Medicine, University of Utrecht)

Some recent research on Theileriidae (Sporozoa) of cattle.

A succesful method of immunization against East Coast Fever (Theileria parva infection of cattle), using an "infection and treatment" method, has been developed recently in East Africa, while another method using the lymphocytic stage grown in tissue culture is in a promising stage. There is also more hope of finding effective chemotherapeutical agents for the disease.

A beginning has been made in unravelling the taxonomy of Theileria spp. of cattle worldwide, using serological (IFA test) and morphological comparisons (helped by the recent discovery in some species of a bar-like and/or a crystalline veil-like structure of unknown function,

associated with the parasite in the red cell) and also taking the biological transmission pattern and the pathogenicity into account.

The following named species of cattle appear to be valid:

Theileria parva in Africa, with biologically different strains, ranging from strains in African buffalo (T. parva lawrencei) causing Corridor Disease in cattle, to cattle-adapted strains (T. p. parva) causing classical East Coast Fever. Main vector Rhipicephalus appendiculatus.

Theileria annulata in Africa, Asia and Europe, in cattle and domestic buffalo, causing Mediterranean or "tropical" theileriosis. Vectors Hyalomma spp.

Theileria mutans in Africa, in cattle and African buffalo, transmitted by Amblyomma spp., causing "benign" theileriosis, sometimes fatal.

Theileria velifera in Africa, in cattle and wild buffalo, transmitted by Amblyomma spp., non pathogenic.

Theileria sergenti in cattle in Asia, transmitted by Haemaphysalis longicornis, pathogenic.

A group of serologically and morphologically related strains or species of cattle in Europe, Australia, Asia and America, transmitted as far as known by Haemaphysalis spp., may be non pathogenic strains of T. sergenti, unless T. orientalis, an insufficiently described Asian species, proves to be valid. Non pathogenic North African strains may belong to this group.

Finally there is a group of serologically and morphologically related strains in eland antelope and cattle in East Africa, which appear to constitute another valid unnamed non pathogenic species, transmitted by Rhipicephalus spp.

3. P.J.BECKERS (Institute of Parasitology, University of Nijmegen)

Pneumocystis infections in rats.

Enzoic lunginfections with Pneumocystis carinii were studied in a colony of specific pathogen free (SPF) Wistar rats.

By transversal observations in the naturally infected rat colony it was demonstrated that the thick-walled pneumocysts occurred in the age period of 8-20 weeks. All infected animals had cellular lung-infiltrations and positive titers were found in an indirect fluorescent antibody assay with thick-walled pneumocysts as the antigen.

No transplacental transmission of pneumocysts could be demonstrated. It was shown however that Pneumocystis was transmitted before the age of three weeks under natural conditions.

The results of corticosteroid treated germfree rats by intravenous transfer of blood from massively infected animals and by intrapulmonal and intranasal application of heavily infected lung material were all negative.

Ultrastructural studies of Pneumocystis - in cooperation with the Department of Submicroscopic morphology - were carried out on heavily infected lungs of rats treated with corticosteroids. This resulted in the demonstration of the existence of both intracellular and extra-cellular stages of Pneumocystis. The formation of daughter cells within thick-walled organisms appears to be not the only way of multiplication. Thin-walled daughter cells are also produced in thin-walled parent cells. There are indications for cyto-pathogenicity due to the intracellular development of parasites in alveolar cells.

4. P.MAS BAKAL and N.IN 'T VELD (Laboratory of Parasitology, Leyden University)

Investigation into the occurrence of Toxoplasma in pharyngeal and palatine tonsils by means of animal experiments.

The following results were obtained:

age in years	number of patients	Successful isolation (number examined in brackets)		
		phar. t.	phar.and/or palat. t.	palat. t.
1	7	1 (7)		
2	22	0 (7)	0 (15)	
3	22		0 (22)	
4	29	1 (4)	0 (24)	0 (1)
5	25	0 (4)	1 (20)	0 (1)
6	12	0 (2)	0 (10)	
7	7	—	1 (7)	—
	124	2 (24)	2 (98)	0 (2)
16	5		1 (3)	0 (2)

The generally accepted incidence of positive dye tests in a random group varying from one year to seven years of age is about eight per cent (Thalhammer, 1967; Fleck, 1963; Harboe, 1952). In our similar age group - however selected - a higher incidence is to be expected. An arbitrary percentage of twice the generally assumed would result in 20 positive dye tests out of 124 cases. The four successful isolations must be looked for among these 20. Out of a group of 20 persons aged 14 to 21 years, with known positive dye test titres, one isolation was successful in a girl of 16 years. The history of the five persons from whom Toxoplasma could be isolated reported laryngo pharyngeal symptoms; generalized lymphnode enlargements were not mentioned and could not be detected shortly before the ectomy. Nevertheless Toxoplasma cannot simply be designated as the cause of the morbid symptoms.

Striking facts are the considerably higher number of successful isolations in the younger age group and the four all referring to boys and the one and only successful isolation in the elder age group referring to a girl of 16 years.

1. Thalhammer, O. *Pränatale Erkrankungen des Menschen*, Georg Thieme Verlag (1967).
2. Fleck, D.G. J.Hyg.(Lond.) 61 (1963) 61-75.
3. Harboe, A. Acta Pathol.Microbiol.Scand.Suppl. 93 (1953) 325-331.

5. B.H.REP (Laboratory of Parasitology, University of Amsterdam)
Hookworm in Holland.

Autochthonous intestinal infections of human hookworm species are no longer observed in Holland and are not expected to occur in future. The only possibility for man to be infected by hookworms seems to be a zoonotic infection by hookwormlarvae (creeping eruption) originating from animals like dogs and cats.

In 1924 Nieschultz found 40% of 20 surveyed dogs to be infected by Uncinaria stenocephala. In 1972 a survey was started among street dogs to detect the prevalence of hookworm infections in these animals in Holland. In 1977 over 450 stool samples have been examined and the percentage of hookworm-infected dogs was stated constantly as 2%, with the exception of the first period of the survey when 8% of the dogs were found to be infected.

To explain these low infection rates the existence of a hookworm reservoir in other animals was suggested. As foxes are known to be frequently infected by Unc.stenocephala and also because of the record of the highest infection rate for dogs just in the area where foxes are living, these animals were inspected on intestinal helminths. From 29 foxes examined 25 (= 86%) were found to harbour Unc.stenocephala populations consisting of 1-176 hookworms (30 on the average).

Experiments to infect dogs with Unc.stenocephala were only successful if the dogs were orally infected. So infection of the dogs in the field is assumed to occur after consumption of or contact with faecal/-soil contaminated material originating from foxes.

Concerning the pathogenicity of Unc.stenocephala radioisotope experiments demonstrated the lowest values for bloodloss per worm ever registrated in hookworm studies. Using this parameter Unc.stenocephala-worms can be considered as non-pathogenic !

Nevertheless, Unc.stenocephala-infections can be lethal for dogs
.....!

Therefore this study will be continued.

6. H.J.OVER (Department of Parasitology, Central Veterinary Institute, Lelystad)

Factors affecting infection rhythm in fascioliasis

The life cycle of Fasciola hepatica is characterized by the alternation of generative and parthenogenetic phases in host and intermediate host resp. Both phases are linked by the free living larval stages. In order to keep host and parasite populations in equilibrium "net reproductive rate" of the parasite should equal 1.

As the reproductive capacities in host and intermediate host are high important reducing factors should operate as well. In the (intermediate) host this reduction is achieved by physiological characteristics of the (intermediate) host-parasite system.

Moreover ecological factors will influence the developmentel- and survival chances of the different larval stages in the field.

With regard to the epidemiological pattern the relative importance of these factors is discussed.

7. L.J.VAN TIGGELE (Central Veterinary Institute, P.O.B. 6007,
3002 AA Rotterdam)

Immunopathology of Fasciola hepatica infections in ruminants.

The main pathological effects of Fasciola hepatica infections in ruminants are anaemia as a result of bloodloss with the bile and extensive damage and fibrosis of the liver. During infections these effects are reflected in changes in blood composition: concentrations of erythrocytes fall and liver-derived enzymes rise. In addition to this, high quantities of eosinophilic granulocytes appear in the circulation and after maturation of the flukes eggs can be found in the faeces. These parameters have been studied in a number of different infection schedules in cattle and sheep. The significance of the findings in relation to migrating behaviour of flukes, the pathogenesis of the disease and the development of resistance to reinfections with Fasciola hepatica will be discussed.

Instructions to contributors

International journal for Parasitology

Editor-in-Chief: **Professor J.F.A. Sprent**, *University of Queensland, Australia*

Foundation Editor: **Professor J.D. Smyth**, (1971-1974), *Imperial College, London*

Editorial Advisory Council: **Dr. C. Bryant**, **Dr. C. Dobson**, **Professor W.P. Rogers**,
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Aims and Scope

The International Journal for Parasitology aims to serve as a medium for communication between parasitologists at an international level. It publishes original research papers dealing with parasites, parasitism and parasitic infection. The journal also publishes news items, reports of meetings and a Parasitological Calendar which lists forthcoming meetings and symposia.

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INSTRUCTIONS TO CONTRIBUTORS

1. **Scope.** The *International Journal for Parasitology* is a medium for publication of research on parasites, parasitism and parasitic infection. The Journal consists of six issues a year.

2. **Contributions.** All papers for publication in the *International Journal for Parasitology* should be submitted directly to the Editor-in-Chief,

Professor J. F. A. Sprent,
Department of Parasitology,
University of Queensland,
St. Lucia, Brisbane, 4067,
Queensland, Australia.

Papers should be mailed in a strong envelope, preferably linen, as they often arrive in a damaged condition. Papers will be accepted for publication at the discretion of the Editor-in-Chief.

(i) **Language.** Manuscripts must be written in English, except in exceptional circumstances which will be at the discretion of the Editor-in-Chief.

(ii) **Form of contribution.** Authors should, as far as possible, adhere to the following prescribed pattern in presenting their contributions for publication: Title page (containing title, name(s) of author(s), address for correspondence, and running title); abstract page (containing abstract and index key words); text pages written under the following headings where appropriate: Introduction; Materials and Methods; Observations/Experimental Procedure/Results; Discussion; Summary; Acknowledgements; References. Close attention should be paid to the Authors/Secretaries checklist which appears from time to time in the journal. Short communications such as, research notes, letters to the Editor etc. are not acceptable for publication. All contributions should be in the form of formal research papers as indicated above. In the preparation of a manuscript, it is of the utmost importance that Contributors exercise economy in style and presentation of data.

(a) **Typescript.** Papers should be typewritten on quarto or A4 bond paper with double spacing and wide margins (not less than 4 cm on the left hand side of each sheet). An original plus one exact copy should be submitted. It is important that an exact copy be kept by the author so that he may check the proofs against the manuscript; the original will be held by the Press.

(b) **Financial contribution by authors.** There is no charge for publication of papers, except that a contribution towards publication costs may in some special instances be required, at the discretion of the Editor-in-Chief. It should be emphasised that photographs and tables are particularly expensive items in publication. For this reason, duplication of information in tables and figures should be avoided and only photographs of the highest quality should be submitted.

(c) **Pagination.** The paper should be presented in the following order and all pages numbered consecutively: title page, abstract and index keywords, text, references, tables, explanations of figures, and lists of abbreviations. All of these should be double-spaced. Explanations of figures should be sufficient to make them intelligible without reference to the text. If an author should find it necessary for an insertion to be included in the paper it should be typed, double-spaced, on a separate sheet, given a page number, and placed last; its position in the text should be clearly indicated. Footnotes are not acceptable; all information should be in the body of the text.

(d) **Titles.** The title should be short, but contain enough information to indicate the contents of the paper. If a series of publications is anticipated a colon can be used at the end of the first part of the title and the second part can contain the subsidiary title. Do not indicate a series of papers by numbers. The running title should comprise no more than fifty letters. Genus and species names should be given in full without the author in all titles.

(e) **Abstract.** This should be typed on a page separate from the title page. It should be preceded by the author's name, year, title of paper, and Journal reference. It should summarize the main contents and conclusions of the paper and should not exceed about 150 words. A summary at the end of the paper making conclusions for the specialist may be helpful. New names should not be given in the abstract; the abstract should contain the phrase 'a new species is described' rather than include the new name.

(f) **Index keywords.** At the end of each volume, an Author and Keyword Index is inserted. Contributors are asked to provide up to 20 keywords for use in this index and to list them at the end of the abstract.

(g) **Acknowledgements.** ALL acknowledgements should be included under the heading 'Acknowledgements' just before REFERENCES, and not as a footnote on the first page.

(h) **References.** Authors are particularly urged to ensure that bibliographical details are accurate. *Correct references are the responsibility of the author.* References should be given in alphabetical order in the following style: ABRAHAM R. & HONIGBERG B. M. 1965. Cytochemistry of chick liver cell cultures infected with *Trichomonas gallinae*. *Journal of Parasitology* 51: 823-833. Note that the full name of the journal must be given. In the text, a reference should be stated by giving in brackets the name of the author and the year of publication, e.g. (Taylor, 1931), except when the author's name is part of the sentence, e.g. 'Taylor (1931) showed that...'. When a paper written by two authors is quoted, both names are given, the ampersand (&) being used in place of 'and', e.g. Taylor & Smith (1931). If there are more than two authors, all names should be given when cited for the first time, and thereafter the first name only, adding *et al.* The term *et al.* should not be used where it might cause confusion between two similar references. For example, Kanagasuntheram R., Singh M., Ho B. C. & Chan H. L. 1974 and Kanagasuntheram R., Singh M., Ho B. C., Yap E. H. & Chan H. L. 1974. In this case the whole reference should be given on each occasion. When books are listed, the title of the book should be in italics (or underlined) and should be followed by the place of publication and the name of the publisher. Special care should be taken to ensure that all references given in the text are included in the list at the end of the paper and that all references listed are mentioned in the text. If several papers are cited by the same author, published in the same year, they should be given the suffixes a, b, c, d, etc. after the year of publication. Do not use suffixes unless the year of publication, the authors and the order in which they are listed are identical. Titles of papers should be written in full, and in the original language, unless published in scripts other than Latin. In the latter case, a transliteration into English should be made and enclosed in square brackets. Authors should not cite a paper in the references unless the paper has actually gone to press. If a paper has gone to press the words 'in press' enclosed in brackets should be inserted both in the text and in the references in place of the year. In the references this should be followed by the title of the paper and the name of the journal. If an author wishes to refer to work which has not been published or gone to press, he should use in the text terms, such as, 'unpublished', 'in preparation' or 'submitted for publication'. Personal communications may be used only when written authorization from the communicator is submitted with the original manuscript; they may be mentioned only in the text.

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ONCHOCERCIASIS IN ZAIRE

Editor: **F. Rodger**, *Princess Margaret Hospital, Swindon*

The combined work of the multi-disciplinary medical team which surveyed diseases in the Congo Basin during the course of the Zaire River Expedition. A computer analysis of information collected on river blindness disease is used to try to ascertain the differences between those blinded and those not blinded in communities where every patient was heavily infected.

Contents: The History of Onchocerciasis in Zaire. Socio-economy. Nutrition. Immunology. Parasitology. Ophthalmology. Entomology.

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