International Ichthyoparasitology Newsletter No. 8 January 2001

CONTENTS

EDITORIAL

At first it seemed that there would be little to report in the 8th Edition of the Newsletter, but my final desperate plea for material was answered by a flourish of activity. Ichthyoparasitology appears to be alive and well around the world. I'd like to thank everybody who took the time to contribute and David Gibson for posting it on the web. After Issue 7 was posted, Albina Gaevskaya made the excellent suggestion that e-mail addresses of the Regional Representatives should be added to the Webpage. I have done this, but have not been able locate addresses for the following people: Z.I.F. Rahemo (IRAQ), P. Aloo (KENYA), B. Wesney (NEW ZEALAND) and M.I. Meneses (URUGUAY). If anybody has e-mail addresses for these representatives please let myself or David Gibson know. Also of note is that Dr Wojciech Piasecki from the Division of Fish Diseases of the Agricultural University of Szczecin has replaced Dr. Katarzyna Niewiadomska as Regional Representative for Poland. We thank Dr Niewiadomska for serving as the Polish representative since the newsletter was first created. Dr Scott Monks joins Dr Pineda-Lopez as another representative for Mexico; welcome Scott.

Anyone wishing to contribute to the next issue of the Newsletter (No. 9) should note that the deadline date for submission is **September 30, 2001**. 2001 is going to be a very busy year with the ISM4 in full swing (see below) and a heavy research schedule, so if you can forward your information to me as it happens, it will help ease the end-of-year rush. Contributors are welcome to send images along with their contribution (please see the editorial policy at the end of the issue).

This, and future issues, will be available on David Gibson's Web Pages at:
http://dspace.dial.pipex.com/town/plaza/aan18/newsl5.htm

ANNOUNCEMENTS

ISM 4
Brisbane 2001

CALL FOR ABSTRACTS (ABSTRACTS AND PAYMENT DUE MARCH 5, 2001)

FOURTH INTERNATIONAL SYMPOSIUM ON MONOGENEA
Women's College of The University of Queensland, Brisbane, Queensland, Australia, July 9 to 13, 2001

ISM4 Organising Committee.
Front Row (left to right): Marty Deveney, Priya Pitt, Bronwen Cribb.
Back Row (left to right): Ingo Ernst, Mal Jones, Ian Whittington, Leslie Chisholm.

Scientific Programme

Nine scientific sessions will each incorporate Keynote Addresses by invited speakers of international acclaim. A total of 16 invitees will address themes in monogenean and parasite biology likely to have appeal to general parasitologists, aquaculturists and monogenean specialists alike.

- "Turbellaria" (**Lester Cannon**, Australia)
- Cestoda (**Ian Beveridge**, Australia)
- Digenea (**Tom Cribb**, Australia)
- Monogenea (**Graham Kearn**, UK)
- Phylogeny (**Tim Littlewood**, UK).
- Host-specificity (**Richard Tinsley**, UK)
- Physiology & Sensory Biology (**Michael Sukhdeo**, USA)
- Monogenean Parasite-Host Relationships (**Kurt Buchmann**, Denmark *and* **Tomoyoshi Yoshinaga**, Japan)
- Monogeneans & Aquaculture (**Kazuo Ogawa**, Japan)
- Biology of Gyrodactylid Monogeneans (**Jo Cable**, UK *and* **Tor Bakke**, Norway)
- Evolutionary Biology & Ecology of Monogeneans (**Robert Poulin**, New Zealand *and* **Serge Morand**, France)
- Taxonomy, Morphology & Biodiversity of Monogeneans (**Louis Euzet**, France *and* **Walter Boeger**, Brazil)

Manuscripts by all invitees will be considered for publication in October, 2001 in a Special Issue of the *International Journal for Parasitology*. Professors **Sherman Hendrix** (USA) and **Delane Kritsky** (USA) have been appointed as Guest Editors.

Contributed papers will be arranged to compliment these broad subject areas. We invite and encourage your participation! Full Conference Registration Fee is **AUS $350.00** (Late Registration Fee **AUS $450.00;** after March 5, 2001) and includes the conference satchel, Welcome Reception, entrance to all sessions, morning and afternoon teas, conference excursion to Lamington National Park and the Conference Dinner. Abstracts are due no later than **March 5, 2001** and must be accompanied by full registration payment. Full board accommodation is available at good rates at the conference venue, Women's College (please contact us for details). A day registration fee of **AUS $90.00** is also available, and an Accompanying Persons Programme of **AUS $250.00** per adult and **AUS $220.00** per child (3-13 years) will be run.

Contact Details

If you wish to register or if you require additional information, please check out our web page: http://www.biosci.uq.edu.au/micro/academic/ianw/ism4.htm or contact:

Dr Leslie Chisholm or Dr Ian Whittington
Department of Microbiology & Parasitology
The University of Queensland
Brisbane, Queensland 4072
Australia

Tel: +61 7 3365 3302
Fax: +61 7 3365 4620
e-mail: ism4@biosci.uq.edu.au

FIRST ANNOUNCEMENT

ICOPA X
The 10th International Congress of Parasitology
Parasitology in a New World

Under the auspices of
The World Federation of Parasitologists
4 to 10 August, 2002
Vancouver Convention and Exhibition Centre
Vancouver, Canada

Sponsored by
The Canadian Society of Zoologists
(Parasitology Section)
The American Society of Parasitologists

Scientific Programme – The Congress will allow for scientific communication, including Plenary Sessions, Invited Lecturers, submitted papers in the form of oral and poster presentations and informal round table discussions. Sessions will be arranged into sections that tentatively include:

- Immunology
- Molecular Biology
- Morphology and Ultrastructure
- Biochemistry and Physiology
- Ecology and Epidemiology

Papers may be presented in any language, although the official language of the Congress is English. Present plans do not include a translation service.

City and Venue – Vancouver is a modern city on the shores of the Pacific Ocean. A natural harbour, majestic mountains and sandy beaches set the mood for a relaxed lifestyle. Must-see visits include Stanley Park, Gastown, the Museum of Anthropology and B.C.'s capital City, Victoria. The Vancouver Convention and Exhibition Centre is located at the downtown waterfront on the shore of Burrard Inlet.

Be sure to join us in Vancouver in August of 2002! For further information on the Congress, please contact:

The ICOPA X Secretariat
c/o Venue West Conference Services, Ltd.
#645 – 375 Water Street
Vancouver, British Columbia, Canada
V6B 5C6
Tel: +1 604 681 5226, Fax: +1 604 681 2503
E-mail: congress@venuewest.com

COURSES

University of Tasmania
FISH PARASITOLOGY COURSE

Conducted on: *Undersea Explorer*
WHERE? **The Coral Sea & Great Barrier Reef, Queensland, Australia**
WHEN? **November 3 - November 9 2001** *(Applications close Sept 3, 2001)*

Fish Parasitology Course:
The course will be run on the waters of the Great Barrier Reef and Coral Sea aboard the magnificent vessel *Undersea Explorer*. A series of lectures and hands-on practical sessions will give students a thorough introduction to fish parasitology. The course will be presented by active researchers and academics who have extensive teaching and research experience in this area.

ABOUT THE BOAT:
Undersea Explorer is a large and stable charter vessel. She not only makes a wonderful platform from which to dive and collect sample material, but also has great facilities for teaching and study, including an excellent laboratory and facilities from slides and video. Running the course in the field gives us a great opportunity to compare fixed material with freshly collected specimens.

WHAT THE COURSE OFFERS YOU:
This course will certainly provide a stimulating way to study fish parasitology and allow participants to visit and dive one of the great natural wonders of the world. It is a must for fish health professionals, including veterinarians, postgraduate students, aquarium fish keepers and marine biologists with an interest in fish parasitology. It will provide 4Knowledge of fish parasites (including taxonomy) 4Knowledge of the effects of fish parasites on human health 4Practical skills in isolation, preservation and identification of parasites 4Recreational diving in a superb coral reef environment.

Space on the course is limited to 15 participants

THE DELIVERY TEAM:

Dr Mike Kent:
Dr Mike Kent is currently Director of the Salmon Disease Research Centre at Oregon State University and newly elected President of the Fish Health Section of the American Fisheries Society. Mike has been an avid scuba diver all his life and has published on parasites of fish in a wide range of habitats.

Dr Rob Adlard:
Dr Rob Adlard spent 3 years living at the Heron Island Research Station while collecting data from his doctoral thesis. Rob has accumulated over 500 dives from as far north as the Torres Strait (sea-grass surveys), through the reefs of Lizard Island, the Pompey Group and the Capricorn-Bunker Group at the southern end of the Great Barrier Reef. He has published extensively on fish and shellfish parasites and is currently Curator of Protozoa at the Queensland Museum in Brisbane.

Dr Barbara Nowak:
Dr Barbara Nowak is a Lecturer at the University of Tasmania, teaching Aquatic Animal Health to undergraduate and graduate diploma students at the School of Aquaculture. Barbara has been involved in fish health for more than fifteen years. She has organised numerous fish histopathology workshops (both in Australia and in Europe for the European Association for Fish Pathologists), and taught in fish health workshops for veterinarians (organised through the Post Graduate Foundation in Veterinary Science, Sydney University).

COST: **AUD $3500.00**

Contact Details:
Please contact Dr Barbara Nowak for further details Phone: +61 3 6324 3814, B.Nowak@utas.edu.au and an application form.

ADVANCES IN ECOLOGICAL PARASITOLOGY

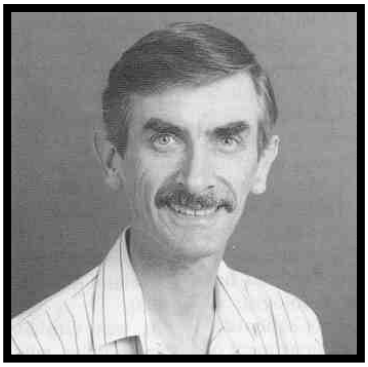
Konnevesi Research Station,
University of Jyväskylä, Finland, August 13th – 18th, 2001

Modern parasitology is an exciting new discipline that has evolved from the synthesis of a range of disciplines including the traditional parts of parasitology, evolutionary ecology and population dynamics. Modern parasitology attempts to capture some of the smallest scales of the molecular interaction between a parasite and a host while considering how these have shaped host ecology up to some of the largest scales such as how trophic interactions influence community structure. While our course focuses on parasitological systems, it aims to outline the methodologies of science by presenting modern parasitology in a scientific framework that incorporates hypothesis formulation, experimental design and statistical analysis through to modelling, theory and presentation of science to the public.

The course will examine evolutionary and ecological questions. We will consider how resistance to parasites has evolved in the context of other life history demands with emphasis on aspects of sexual selection. As with many life history traits, it seems likely that the cost of resistance has traded off against other characteristics requiring investment such as growth, competitive ability or secondary sexual characteristics. As such there has been a move to a new discipline of ecological immunity framed within an evolutionary context that focuses on how hosts defend themselves against infection. The course will also examine how the cost of mounting this immune response has traded off against sexual selection and shaped social organisation.

The course consists of lectures, laboratory experiments, mathematical modelling, analyses of data and presentations.
Number of students: 20 (max).
Teachers: **Prof. Peter Hudson**, **Prof. Marlene Zuk**, **Prof. E.T. Valtonen**, **Dr. Katja Pulkkinen**, MSc **Anssi Karvonen**.
For more information contact the course co-ordinator: Prof. E. Tellervo Valtonen at etvalto@cc.jyu.fi

DR GRAHAM KEARN AWARDED HONORARY MEMBERSHIP



The membership of the Helminthological Society of Washington elected **Dr Graham C. Kearn** to receive an Honorary Membership at its 671st meeting on October 11, 2000. Dr. Kearn joins a list of distinguished scientists such at **Prof. Louis Euzet** and **Prof. John F. A. Sprent** who have been so honoured in the past. Graham was recognized for his many years of outstanding research contributions and for advancing our understanding of the Monogenea, particularly with his use of *Entobdella soleae* as the model organism.

The Society limits its Honorary Memberships to ten eminent parasitologists at any one time with no more than one honorary member elected in any year. Graham will be presented with his honorary membership certificate at the forthcoming ISM4 in July, 2001. For more

information on the honorary members of the Society or its journal, *Comparative Parasitology*, please visit the Helminthological Society of Washington web site at http://www.gettysburg.edu/~shendrix/helmsoc.html

UPDATES

World Association for Advancement of Veterinary Parasitology (WAAVP):
Update on the formation of a committee for veterinary parasitological aspects of fish and fish production

by K. Buchmann (Denmark)

Introduction
Following the last WAAVP conference in Copenhagen 1999, suggestions were put forward about the establishment of a WAAVP Committee that could address important questions concerning parasitological problems in fisheries and fish farming. The role of such a Committee under the WAAVP auspices would be (in an international forum) to identify problems caused by parasites in fish and fish farming, to describe in this context the use of chemotherapeutants and problems associated with their use. In addition, alternative control measures should be addressed (quarantine, management, biological control, vaccinology). Subsequently, a catalogue of solution models could be produced and serve as guidelines for parasitologists involved in management of fisheries and fish farming. In addition, the information could provide inspiration for future research in fish parasitology.

Suggested committee members
These should include fish parasitologists representing different continents from around the world

Subjects to be addressed by the Committee
1. ***Parasitological problems in fisheries and fish production***
   World fisheries
   World aquaculture
   Identification of pathogens in wild fish
   Identification of pathogens in cultured fish
2. ***Diagnostic techniques***
3. ***Pathogenesis***
4. ***Prophylaxis***
   Quarantine measures
   Management operations
5. ***Biological control methods***
   Cleaner fish
   Others
6. ***Parasito-immunology***
   Prospects for antiparasitic vaccines
7. ***Medical control methods***
   Antiparasitic drugs
   Mode of action

Application form

8. ***Problems with resistance in parasites against antiparasitic drugs***
9. ***Research in veterinary fish parasitology***
10. ***Suggestions for future management of parasitic infections in fish***
11. ***Information to end users***

The initiative will probably be discussed at the next WAAVP meeting in Stresa, Italy (August 26-30, 2001). If people wish to participate in the WAAVP conference please contact the organiser, Professor Genchi (e-mail: claudio.genchi@unimi.it) or the Organising Secretary: (e-mail: newteam.parma@iol.it)
I suggest that the text regarding the Committee structure could be oulined in the next IIP newsletter. Any further suggestions and queries are welcome.
Please contact Kurt Buchmann (e-mail: kurt.buchmann@vetmi.kvl.dk)

LETTERS

Dear Colleagues,

We appeal to all our ichthyoparasitological colleagues. Detailed studies of monogeneans carried out by E. Dmitrieva between 1990-1997 have shown that the monogenean fauna is far richer in the Black Sea than believed previously and that many species need to be re-examined. At present my colleague Evgenija Dmitrieva and I have prepared "The Key of Monogeneans of the Black Sea Fishes". The only Key currently available is "The Key of Parasites of Vertebrates from the Black Sea and Sea of Azov" which was published in 1975. Unfortunately, many species of parasites, including monogeneans, have been described incorrectly, and many of the figures are inaccurate.

Our new Key includes much new data. It comprises 60 pages of text, keys, species inventories of 40 species, which are illustrated by original figures, host and geographical records, and diagnoses of supraspecific taxa. The Key is also accompanied by a host-parasite checklist and full bibliographical data on the Black Sea monogeneans. Our new "Key" will be useful not only to parasitologists, but also to fisheries scientists, biologists, ecologists and aquaculturists. The Russian text of this “Key” is ready as a manuscript, but we would like to publish the "Key" in English so it is more available to parasitologists from different countries.

It is no secret that we have no money to publish this book. Therefore, we ask whether anyone knows a person, fund or organisation that can help us publish this. If you have any suggestions, please contact us by e-mail: alviga@ibss.iuf.net; dev@ibss.iuf.net.

We congratulate everybody in the coming year and wish health, happiness and good luck.

Yours sincerely,
Prof. Albina V. Gaevskaya and Dr Evgenija V. Dmitrieva

CURRENT RESEARCH ACTIVITIES IN VARIOUS COUNTRIES

AUSTRALIA

provided by Ian Whittington, i.whittington@mailbox.uq.edu.au

Year 2000 has been an interesting, if somewhat nerve-wracking, year for Australian parasitologists. In 1999, not one research grant was awarded for a parasitology project in the whole of Australia by the principal source of national funding for basic academic research, the Australian Research Council (ARC). However, in late October 2000, announcements of successful ARC-funded projects for the triennium 2001-2003 included several awarded to parasitology labs. In the Marine Parasitology Laboratory at The University of Queensland (UQ), **Dr Tom Cribb** won funds for detailed analysis of the composition and evolution of parasitic helminth communities of butterfly fishes (Chaetodontidae) in collaboration with **Dr Rod Bray** (The Natural History Museum, London) and Professeurs **Serge Morand** and **Renee Galzin** in Perpignan, France. **Dr Ian Whittington**, also of the UQ Marine Parasitology Lab, won 2 new grants. One, with **Dr Leslie Chisholm**, will make a comprehensive investigation on the ecology and biology of monocotylid monogeneans using the shovelnose ray, *Rhinobatos typus*, as a model in field and lab. studies.

The other grant, with **Dr Bronwen Cribb** (Centre for Microscopy & Microanalysis, UQ) pursues investigations on the anterior adhesives used by monogenean parasites to attach to the wet, slimy, secretory tissues of their fish hosts. **Dr Lexa Grutter** (Department of Zoology & Entomology, UQ) won a grant to continue her studies on the cleaner fish-client fish symbiosis and will manipulate parasites in experiments to provide insight into the evolution of cleaning behaviour. Other grants for work on fish pathogens include further studies on why fish die from gill diseases (awarded to **Dr Powell** and **Dr Nowak**, University of Tasmania). Their project will examine bacterial and amoebic gill disease of salmonids, major sources of stock loss in the Australian salmon industry. The award of these ARC grants indicates that Ichthyoparasitology is alive and well “down under”.

Late September and early October was a busy period for fish parasitologists in the Brisbane area. Many of us attended the joint meeting of the New Zealand Society and Australian Society for Parasitology in Wellington, North Island, New Zealand. Guest speakers in a symposium entitled Host-Parasite Coevolution included Professor **Janine Caira** (University of Connecticut, USA), who presented a dynamic account of coevolution between oncobothriid tapeworms and their elasmobranch hosts, and Dr Tom Cribb (UQ), trying to solve the question: which host came first in the digenean life-cycle, in collaboration with Rod Bray and **Tim Littlewood** (Natural History Museum, London). After the successful conference, Janine Caira visited the Marine Parasitology Laboratory, UQ in Brisbane to discuss collaboration with her Parasites of Elasmobranchs from Borneo project. If successful, this project, spanning 5 years, will be a major analysis of metazoan parasites from elasmobranchs of the region and will involve a range of host and parasite taxonomists and phylogeneticists.

Throughout 2000, studies in Ian Whittington's Monogenea Group, part of the UQ Marine Parasitology Lab., have focused on worms that infect some commercially important fish. In collaboration with **Dr Ingo Ernst** and with funding from commercial partners in Japan, Yamaha Nutreco Aquatech (YNA), studies have progressed on the pathogenic monogenean, *Benedenia seriolae*, and its impact on cultivated Japanese yellowtail, *Seriola quinqueradiata* (Carangidae). Together with YNA scientists and field staff, a considerable amount of fundamental data has been collected about the life-cycle of *B. seriolae*. Currently, Ingo, Ian and YNA are using this information to develop a mathematical model to inform farmers and fishery cooperatives of the consequences of different husbandry and management practices. The other commercially important study on Monogenea was Ms **Priya Pitt's** Honours project on capsalines from billfish, funded by the New South Wales Game Fishing Association. Priya's project, supervised by Ian Whittington and Leslie Chisholm, was highly successful and her taxonomic analysis of capsalines from the skin and gills of these "athletes of the ocean" has shed some interesting light on host- and site-specificity.

The Monogenea group at UQ has also been working hard to plan the *Fourth International Symposium on Monogenea* (ISM4), to be held at Women's College of The University of Queensland from July 9 to 13, 2001. A separate announcement for this international icthyoparasitological event can be found earlier in this newsletter.

BRAZIL

Laboratório de Helmintos Parasitos de Peixes, Departamento de Helmintologia, Instituto Oswaldo Cruz, FIOCRUZ, Rio de Janeiro, Brasil
provided by Anna Kohn, annakohn@ioc.fiocruz.br

The laboratory comprises 5 scientists including **Anna Kohn** (head of the lab); **Berenice M. Fernandes**, **Maria de Fatima Diniz Baptista-Farias**, **Simone C. Cohen** and **Antonia Lucia Santos,** and 1 doctoral student, **Maria Clara Pamplona Basilio Dias**. Our research programme covers the taxonomy and ultrastructure of helminth parasites of fish. Specific research projects include the investigation of parasitism by helminths in fish from reservoirs and from their natural habitats, studies of helminth parasites from different species of valuable tunas, and general ultrastructural studies of digenean and monogenean fish parasites. We are also compiling a catalogue of South American Digenea and a catalogue of Central American and Mexican Monogenea and investigating digeneans and nematodes of marine fishes from the coast of the State of Rio de Janeiro. Some pertinent publications on these topics include, Kohn A. & Paiva M.P.P. 2000, *Volumen Comemorativo del 70 aniversario del Instituto de Biologia, UNAM, Mexico*; Kohn A. et al. 2000, *Folia Parasitologica* 47: 279-283; and Kohn A. et al. 1999, *Systematic Parasitology* 44: 211-215, 1999.

Laboratory of Fish Parasitology, Department of Animal Parasitology, Universidade Federal Rural do Rio de Janeiro
provided by Dr José Luis Luque, jlluque@ufrrj.br

Currently we are conducting research on the taxonomy and quantitative aspects of helminth and copepod parasites of marine fishes from the coastal zone of the State of Rio de Janeiro. Emphasis is on studying the composition and structure of parasite communities from carangid

and sciaenid fish. We have also recently done work on parasites of freshwater fish. Our lab has published 22 papers the past 2 years, and related publications include: Cezar A.D. & Luque J.L. 1999, *Journal of the Helminthological Society of Washington* 66:14-20; Luque J.L. & Oliva M.E. 1999, *Journal of Parasitology* 85: 379-381; Luque J.L et al. 2000. *Contribuições Avulsas Sobre a História Natural do Brasil* 25: 1-17; and Alves D.R. & Luque J.L. *Memórias do Instituto Oswaldo Cruz, Rio de Janeiro* (in press).

Laboratory of Parasitology, Institute of Biological Sciences, Santa Ursula University, Rio de Janeiro

provided by Cláudia Portes Santos, cpsantos@alternex.com.br

The team of this lab includes **Dr. Herman Lent**, **Cláudia P. Santos**, **Cristina Mogrovejo** (MSc student), **Elizabeth Mourao**, **Carolina Dale** and **Melissa Cárdenas** (graduate students). Our research interests include the study of not only fish parasites but also vertebrate parasites. Some current ichthyoparasitological investigations involve studies on the biology of parasites from *Auxis thazard* (Lacépède) (Perciformes: Scombridae), a commercial fish in Rio de Janeiro, and their application to biological oceanography. We are also investigating the role of physical factors in the distribution of the monogenean fauna in the mid-western and southwestern Atlantic and evaluating of the "condition factor" of parasitised *Paralonchurus brasiliensis* (Sciaenidae). Diplectanids of marine sciaenid fishes in South America are also being studied by our group. Related publications include: D'Amelio S. et al. 2000, *International Journal for Parasitology* 30: 223-226; Santos C.P. et al. 2000, *Systematic Parasitology* 45: 145-153; Salgado-Maldonado G. & Santos C.P., 2000. *Systematic Parasitology* 46: 111-116; Mattiucci S. et al. 2000. *Parassitologia* 42 (Suppl 1): 175; Santos C.P. et al. 1999. *Memórias do Instituto Oswaldo Cruz, Rio de Janeiro* 94: 635-640.

An experimental interactive question and answer session using the ICQ Short Messages System over the Internet, was run successfully at the beginning of December, 2000, linking the Laboratory of Parasitology of the Universidade Santa Úrsula and the Parasitic Worms Division of The Natural History Museum, London. **Dr David Gibson** presented "The Host-Parasite Database and its use in Biological Oceanography" as part of the ichthyoparasitology lectures of the Masters Course in Biological Oceanography given by Dr Cláudia Portes Santos. Five post-graduate students interacted with London over a 1-hour period, asking a series of questions on the Host-Parasite Data-base and on marine fish and invertebrate parasites in general, giving them an opportunity to improve their knowledge. The interaction inspired the students so much, that we believe this type of link between universities and research institutes is well worth pursuing further.

Fundação Universidade Federal Do Rio Grande. (Lip-Furg) Ictioparasitology Laboratory (Lip-Furg)

provided by Dr Joaber Pereira Jr, dmbjpj@super.furg.br

The chair of this laboratory, **Dr Joaber Pereira Jr**., oversees the following staff **Oc. Ricardo Berteaux Robaldo** (MSc.) and students **Biol. Rogério Tubino Vianna**, **Isabel Soares Chaves**, **Ana Luiza Velloso**, **Milene Miranda Fernandes** and **Francis de Mattos Almeida**. Our broad research programme covers the systematics of parasites of fish and other related host groups. We are also examining the ecology of parasitism with the aim to developing

models to characterise the structure of parasite populations and communities. Our studies also extend to parasites in aquaculture, with a view to characterising parasite associations within host groups that are potential candidates for fish culture.

Our current projects include the identification of metazoan parasites of the cultivated fish *Paralichthys orbignyanus* in the estuary of the Lagoa dos Patos–RS. We are also investigating the composition and structure of trypanorhynch communities of the Ariidae (Siluriformes) of the Estuário Lagoa dos Patos and how they can be used as an indicator of the trophic structure of the host assemblages. The community structure of endoparasitic Plathyhelminthes of *Trachinotus marginatus* in relation to ontogenetic variation of host feeding is also being studied. Recent publications include: Pereira Jr., J. 2000. *Comun. Mus. Ciênc. Tecnol. PUCRS. Sér. Zool*. 13: 99-104, Pereira Jr. et al. 2000. *Revta. bras. Zool.* 17: 681-682.

GERMANY

Institute Of Zoology, Fish Biology and Fish Diseases
Faculty of Veterinary Medicine, University of Munich
Chair: Prof. Dr. R. Hoffmann
provided by Dr El-Matbouli, Elmatbouli@zoofisch.vetmed.uni-muenchen.de

After two years of research together with **Dr Ronald Hedrick** and his staff at the University of California in Davis (Sept. 1997-Aug. 1999), **Dr El-Matbouli** is now working together with **Prof R. Hoffmann** in the following areas:

Whirling Disease (WD)
Recently in the USA, WD has gone from a manageable problem of salmonid fish reared in hatcheries to a problem of serious economic and ecological concern. This, together with an increase in the number of trout hatcheries with outbreaks of WD worldwide, has caused a renewed interest in *M. cerebralis*, the causative agent of WD.

We have been investigating host-parasite interactions in WD at the ultrastructural, molecular and organism level. In this regard, we have studied the interaction of the triactinomyxon spores of *M. cerebralis* with the fish host and the route of their penetrated sporoplasms: from the epidermis, through nerve tissue (which involves parasite multiplication and migration), to regions with cartilage (El-Matbouli et al. 1999: *Diseases of Aquatic Organisms* 35: 1-12). A further study demonstrates the interaction between *M. cerebralis* and *Tubifex tubifex* and also determines the sequential development of this myxosporean into the actinosporean-stage triactinomyxon (El-Matbouli & Hoffmann 1998: *Int. J. of Parasitol.* 28: 195-217). We also have found that the development of the triactinomyxon spores of *M. cerebralis* in the oligochaete host is significantly influenced by water temperature (El-Matbouli et al. 1999: *Int. J. of Parasitol*. 29: 627-641).

In collaboration with the U.S. Fish and Wildlife Service in Bozeman, Montana, we are studying the effect of fumagillin and TNP-470 (an analogue of fumagillin) on rainbow trout experimentally infected with whirling disease. Preliminary results indicate that an application of TNP-470 at a concentration of 50 mg / kg feed (1.5% of body weight) for 10 days post-infection reduces the infection rate by more than 50% when compared with non-medicated

fish as a control. Application of the same drug at the same concentration for longer than 10 days (28 days) was highly toxic for rainbow trout.

We have recognized recently that various trout strains differ in their susceptibility to the infectious stages of *M. cerebralis*. Currently, in collaboration with the Fish Health Lab at the University of California in Davis, we are studying comparative salmonid immunogenetics which determine clinical susceptibility or resistance to *M. cerebralis*. We also have been actively studying the molecular mechanisms which mediate the interaction between host and parasite in WD and which may be necessary to develop an efficient prevention strategy.

Proliferative Kidney Disease (PKD)

PKD is a serious pathogen of farmed and wild salmonids; it affects mainly the kidney and spleen, but in most susceptible fish hosts, it becomes systemic. A recent discovery (Anderson et al. 1999: *Parasitology* 119: 555-561) revealed that a parasite of bryozoans (later named *Tetracapsula bryosalmonae*) shares near-identical partial 18S rDNA gene sequences with the agent of PKD. Currently, we are trying to establish an *in vivo* model comparable with that of *M. cerebralis,* in order to study the interaction between *T. bryosalmonae* and both hosts.

Porcelain disease

Microsporidiosis is a disease of freshwater crayfish and other crustacean species which has been noted as a significant problem in the farming of these animals. The condition, caused by a spore-forming protozoan parasite, has become known as “cotton-tail” or “porcelain” disease. The parasite can infiltrate muscle tissue resulting in flesh spoilage and, in advanced cases, may lead to death. *Thelohania contejeani* is the causative agent of porcelain disease in the freshwater crayfish, *Astacus astacus*. We have studied the life cycle as well as the endogenous development of this microsporean parasite using light, scanning and transmission microscopy.

Detection of porcelain disease is difficult in early infections (before sporogenesis, and before any visible discoloration occurs). However, early detection is a vital component of any effective control programme and for health certification of disease-free stocks for use by farmers. An effective, highly predictive detection method is required. Our lab is developing molecular-based diagnostic methods (PCR and *in situ* hybridization) for the detection of presporogonic stages of *T. contejeani.*

Amoebiasis

Recently, outbreaks of serious amoebic gill infection (due to a still unidentified species) have occurred in cultured rainbow trout from different hatcheries in Germany. At necropsy, the fish have most often been in good condition, usually with food present in the gastro-intestinal tract. The disease presents as a severe mucoid branchialitis. Histologically, this branchialitis is characterised by uneven epithelial metaplasia, loss of secondary lamellae, gill fusion and mucus formation. Fresh preparations of affected filaments revealed large numbers of amoebae loosely adhering to the surface of the respiratory epithelial cells.

Zoologisches Institut der Universität Karlsruhe (TH) Abt. Ökologie/Parasitologie
provided by Prof Dr H. Taraschewski, dc20@rz.uni-karlsruhe.de

This report covers the recent activities of the ichthyoparasitology group in Karlsruhe (**Horst Taraschewski, Bernd Sures and co-workers**). In a few weeks we are moving into a building surrounded by a large "garden" that has better laboratory facilities than our present floor and where we can use outdoor ponds and cages for the maintenance of larger groups of fish, rats or water birds. After being the dean of my faculty for two years, life has returned to normal, enabling me to initiate new projects on host-parasite relations of helminths in fish and other vertebrates.

Acanthocephala
This year I have published a review in Advances in Parasitology (Taraschewski H. 2000. Host-parasite interactions in Acanthocephala: a morphological approach. *Adv. Parasitol*. 46: 179 pp.) where I summarise what we know about the host-parasite relationships of the different developmental stages of acanthocephalans; surrounded by eggshells, inside the gut and haemocoel of the intermediate hosts, in paratenic hosts and finally, attaching to the intestinal wall of the final hosts. The review also comprises information on host-specificity, microhabitat selection in the gut, nutrient uptake and metabolism, as well as uptake of non-nutritional substances by the parasites. Acanthocephalans in paratenic hosts have been rather poorly studied and deserve attention. I claim that these worms possess an "oral gland zone" although they have lost their intestinal tract long ago.

We have described the ultrastructure and mode of action of the acanthor, as well as the host-parasite interface of *Corynosoma hadweni* in seals and have done a RAPD-PCR-study on the genetic polymorphism of the North American eel parasite *Paratenuisentis ambiguus* that has colonised the European eel successfully.

Swimbladder nematodes
Currently I am preparing a review on *Anguillicola* spp. parasitising eel species in different continents and regions. It includes information on the taxonomy and morphology, as well as all aspects of the host-parasite-interactions, such as pathology. It will appear in *Advances in Parasitology* in 2001. Two original papers also will be available next year: one on the genetic polymorphism of *Anguillicola crassus* from three continents and another presenting all we know about *A. papernai* in *Anguilla mossambica* and experimentally infected European eels. Three studies dealing with the immune response of European eels have appeared this year, or have been submitted Knopf K. et al. 2000. *Dis. Aquat. Org.* 42: 61-69; Knopf K. et al. 2000 *Dis. Aquat. Org*. 43: 39-48; Knopf K. et al. *Dis. Aquat. Org.* (submitted).

Klaus Knopf has succeeded in becoming an assistant professor at Berlin after finalising his PhD in our group.

Our electron microscopy study on swimbladders affected by *A. crassus* is also out now: Würtz J. & Taraschewski H. 2000. *Dis. Aquat. Org*. 39: 121-134. At the moment infected and uninfected eels have to go through water currents and high water pressures in our lab, simulating their migration to the Sargasso Sea.

Pentastomida
Our PhD student **Kerstin Junker** is investigating pentastomids of aquatic animals in South Africa (Junker K. et al. 2000. *Syst. Parasitol*. 47: 29-41).

Acanthocephala and Cestodes as indicators of environmental conditions

As you will have expected, **Bernd Sures** has been rather busy in showing how parasitology and environmental toxicology can be combined. He is taking over the report from here.

Knowledge of parasites of indigenous fish is of special interest in relation to fish health and understanding of ecological problems. Therefore we investigated European eels from the River Rhine and found twelve different parasite species (Sures et al., *Parasitology* 1999, 119: 323-330). Parasites are also attracting increasing interest from parasite ecologists as potential indicators of environmental quality, due to the variety of ways in which they respond to anthropogenic pollution. We have shown in a couple of recent papers that certain parasites, particularly intestinal acanthocephalans and cestodes of fish, can accumulate heavy metals to concentrations orders of magnitude higher than those in the host tissues or in established free living bio-indicators (Sures et al.1999 *Environ Toxicol Chem* 18: 2574-2579). For example, in eels naturally infected with the acanthocephalan parasite *Paratenuisentis ambiguus* and experimentally exposed to ground catalytic converter material, the parasites take up and accumulate the catalytic active metals Pt and Rh, whereas in the examined host tissues we found no metal uptake. Therefore, the parasites can be used as very sensitive accumulation indicators in aquatic systems, reflecting even the lowest concentrations of metals emitted by automobile catalytic converters.

Parasitological Research at the Fish Disease Research Unit, School of Vet. Medicine, Hannover

reported by Professor Winfried Koerting, w.koert@fisch.tiho-hannover.de

Dieter Steinhagen, **Joern P. Scharsack** and **W. Koerting** have been investigating the common carp (*Cyprinus carpio*) and tench (*Tinca tinca*) from hatchery populations in northern Germany which are often infected with the kinetoplastid blood flagellate *Trypanoplasma borreli*. In most cases, the infection is not associated with clincal signs of disease, but carp from highly susceptible strains show anaemia, ascites, exophthalmus, swimming disorders and die within 3-4 wk post injection of the parasite into the dorsal muscle. Histo- and cytopathological studies showed that with increasing parasite numbers in the blood, a proliferation of mononuclear interstitial cells in the kidney occurred, which induced a congestion and deterioration of renal tubules and thus resulted in a severe nephritis. The cytological alterations suggested a loss of function of renal epithelium cells, which most likely might result in impaired ionic and osmotic regulation of *T. borreli*-infected fishes. Studies are underway to examine nephric function of carp under *T. borreli*-infection.

MEXICO

provided by Scott Monks, acanth@ecosur-qroo.mx

One of the big events for parasitologists in México this year was the 14th National Congress of Parasitology (XIV Congreso Nacional de Parasitología), held in Guadalajara in October. Most parasitologists work in institutions that are quite separated geographically, so the Congress gave us a chance to talk to each other in person and for students to meet other investigators and possible future graduate tutors for those continuing their studies.

A meeting of curators of Mexican collections of parasites is planned for April, 2001. The meeting was scheduled for this year, but was postponed due to delays the completion of the new building that will house the Laboratorio de Helmintología, Instituto de Biología, UNAM, and the Colección Nacional de Helmintos, the National Parasite Collection of México.

Gerardo Pérez-Ponce de León and **Luis García-Prieto** (Lab. de Helmintología, Inst. de Biología, UNAM, D.F.) attended the VII Congreso Nacional de Ictiología and spoke about patterns of species richness of helminths of freshwater fishes of México. Members of the laboratory, including **Guillermo Salgado-Maldonado** and his students, are working on both ecological and systematic aspects of helminth parasites of fishes, including molecular systematics of some groups. The laboratory is expecting to move their research facilities and the National Parasite Collection to the new building early next year.

Alicia Pérez-Chi (Escuela Nac. de Ciencias Biológicas del Inst. Politénico Nac., D.F.) presented a paper at the congress on the discovery of cystacanths of an acanthocephalan in a terrestrial crab from Isla Socorro, México and aspects of prevalence and distribution. This discovery is pertinent in that members of this genus typically infect fish-eating birds, and this is the first report involving a terrestrial (although beach-inhabiting for at least part of the year) intermediate host.

Victor M. Vidal-Martínez (Lab. de Parasitología, CINVESTAV-IPN, Merida, Yucatán) is continuing work on parasites of freshwater fishes with an emphasis on fish of economic importance in the Yucatan Peninsula. One of his students is working on an interesting project involving natural infections of helminths and the structure of parasite communities. **Leopoldina Aguirre-Macedo** presented a paper at the congress on temporal variations in the make-up of the helminth community in *Cichlasoma urophthalmus* in relation to changes in prevalence of metacercaria in the intermediate host population.

Scott Monks (El Colegio de la Frontera Sur (ECOSUR) Chetumal, Quintana Roo), in collaboration with **Griselda Pulido-Flores**, presented a poster on the distribution of helminth parasites of stingrays collected from the Yucatán Peninsula. Griselda Pulido-Flores presented a paper on the phylogenetic relationships of *Decacotyle*, a genus of monogeneans from stingrays. **Teresa Valtierra-Vega** has begun studies in their laboratory that will involve systematics of helminths of freshwater fishes from the region.

Raúl Pineda-López (Lab. de Parasitología, Univ. Auto. de Querétero, Querétero) and members of his laboratory attended the National Congress of Ichthyology and spoke on transfers of parasites from introduced fishes to freshwater fishes of Querétero and the problems that introduced parasites present for conservation of endemic fishes.

Maria C. Gómez del Prado-R. (Dept. de Biología Marina, Univ. Auto. de Baja California Sur, B.C.S.) continues her work with parasites of fishes of the Gulf of California and recently co-authored a paper describing a new species of monogenean from stingrays.

Virginia León-Règagnon (Lab. de Helmintología, Inst. De Biología, UNAM, D.F.) and members of her laboratory are continuing work on parasites of fishes from the central region of México.

SOUTH AFRICA

Aquatic Parasitology Group
Department of Zoology & Entomology
University of the Free State, Bloemfontein
provided by Liesl L van As, VanAsLL@dre.nw.uovs.ac.za

The Aquatic Parasitology group consists of **Prof Jo G Van As**, **Prof Linda Basson**, **Dr Liesl L van As** and numerous post graduate students. Between September 27 and 29, 2000, the Department of Zoology and Entomology, UFS hosted the annual conference of the Parasitological Society of southern Africa in Bloemfontein, South Africa. **Prof Glen R Needham** from the Acarology lab, Ohio State University and **Prof Lotfi F Khalil**, retired in 1989 from the International Institute of Parasitology UK, presented keynote papers. Nine world-class scientists were guest speakers, including a number of fish parasite experts (**Prof Jo G van As**, **Prof Linda Basson** and **Prof Annemarié Avenant-Oldewage** from South Africa, as well as **Prof Angela Davies** from Kingston University, UK and **Prof Ju-shey Ho** from the Department of Biological Sciences, California State University). During the conference two sessions on Aquatic Parasitology were held, with papers presented by post graduate students and scientists covering mobile and sessile ciliophorans, blood parasites, myxosporideans, trematodes, monogeneans and parasitic crustaceans found associated with freshwater and marine fishes.

The 30th Annual Conference of the Parasitological Society of Southern Africa (PARSA) will be held in 2001 in the Western Cape, South Africa. [http://www.parsa.ac.za].

Since 1998 we have been busy with the Okavango Fish Parasite Project in Botswana. Two MSc students have already finished their dissertations. A third dissertation is currently in the final stages of completion. Two PhD students are busy with their theses on monogeneans and myxosporideans of Okavango fishes. Our other project deals with symbionts of marine invertebrates and tidal pool fishes. One PhD thesis and six MSc dissertations have already been completed from this project. Another PhD thesis by **Nico Smit** will be complete by the end of this year; he will continue with a post-doctorate at Kingston University in the laboratory of **Prof Angela Davies**. Other scientists, with their post graduate students currently working on fish parasites in South Africa are: **Prof Annemarie Avenant-Oldewage** (Rand Afrikaans University) [ao@na.rau.ac.za], **Dr Piet King (**Medical University of South Africa) [pking@medunsa.ac.za], and **Prof Piet Olivier** (University of the North) olivierp@unin.unorth.ac.za]

UKRAINE

Institute of Biology of the Southern Seas, Department of Ecological Parasitology
provided by Professor Albina Gaevskaya, alviga@ibss.iuf.net

Dr Evgeniya Dmitrieva has been awarded her PhD. Her thesis entitled "Monogeneans of the Black Sea fishes (fauna, ecology, zoogeography)", is a comprehensive study of the monogenean fauna from the Black Sea and includes records of 40 species belonging to 21 genera. Descriptions of 26 species, 5 of them new, are given. One genus and 6 species are recorded from the Black Sea for the first time. The distributions of monogeneans on their hosts that belong to various systematic and ecological groups are analysed. New data on the ecology, specificity and zoogeography of Black Sea monogeneans are presented. She is now studying the biology and ecology of *Gyrodactylus* from the Black Sea.

Dr Vladimir Machkevsky (senior scientist) is currently working on his DSc thesis entitled "Function of parasite systems in the coastal zone of the Black Sea". His research concerns the formation and function of parasite systems. Specifically, he is examining the biodiversity of parasites, the role of parasites in the transformation of matter and energy in ecosystems, population structure of parasites and parasitological concerns in mariculture.

There are also three young post-graduate parasitologists at the Institute. **Juliya Kornijchuk** is doing research on the trematode *Helicometra fasciata* from the Black Sea fishes, including its life-cycle, ecology, specificity and phenotypes. **Nataljya Pronkina** is investigating the life-cycle, ecology and pathology of the trematode *Parvatrema duboisi*, which parasitises seabirds. **Irina Belofastova** is examining the taxonomy, morphology, ecology and life-cycles of marine gregarines and parasitic turbellarians.

POSITION AVAILABLE

PARASITE ASSEMBLAGES AS INDICATORS OF THE HARVEST LOCATION OF FISH

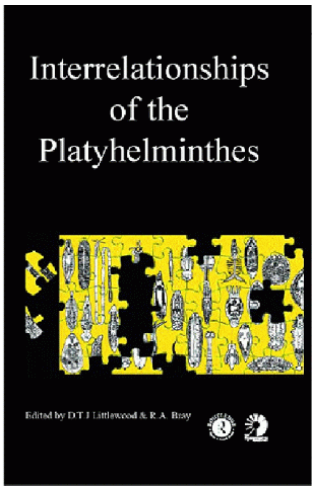
A Marie Curie Development Postdoctoral Fellowship is available immediately at the Cavanilles Institute of Biodiversity and Evolutionary Biology of the University of Valencia, Spain. The position is offered for 2 years. The successful candidate will develop and optimise methods to establish legally indisputable evidence for the harvest location of marine fish based on statistical analysis of parasite assemblages. He/she is also expected to contribute, develop and consolidate new research lines in marine fish parasitology at the host institution. The appointee must hold a doctoral degree or have at least 4 years of full-time research experience at the postgraduate level and be competent in identification, taxonomy and ecology of helminths, crustaceans and protozoons of marine fish. Good knowledge of multivariate statistical techniques, particularly those concerning statistical classifiers, is also highly desirable. The salary will be EUR 44,904 pa. Applicants must be nationals of an EU Member State or an Associated State or have been residents in the EU for at least 5 years, and fulfil additional requirements regarding age, mobility and previous fellowships.

For further details, please contact Dr Juan Antonio Balbuena, Tel.: +34 96 398 3658, Fax: +34 96 398 3670, E-mail: j.a.balbuena@uv.es

Closing date: 2 February 2001. The University of Valencia is an equal opportunities employer. Female candidates in particular are encouraged to apply.

BOOKS

Interrelationships of the Platyhelminthes
D.T.J. Littlewood and R.A. Bray (editors)
2001. Taylor & Francis; ISBN: 0748409033, 350pp, ill+colour plates. £75 / US$125



Published and distributed in January, but already available for order, is a 27 chapter volume on the phylogenetics, systematics and evolution of flatworms. The book is divided into four sections. The first deals with the early origins of the flatworms, the phylum's likely relationships with other Metazoa and the controversial acoelomorph groups. The second section concentrates on the free-living 'turbellarian' groups and third, on symbionts and parasites. Readers of this newsletter may be particularly interested in this section, as it deals in great depth with the interrelationships of amphilinids, gyrocotylideans, digeneans, aspidogastreans and the monogeneans. The final section reviews characters and techniques used in constructing character matrices, from ultrastructural (protonephridia, sperm, neuromusculature) to molecular, developmental and ecological (life-cycle). Fifty-one authors have contributed to the volume and a bibliography of over 1400 references indicates the depth and breadth of coverage. Explicit character matrices devised and discussed by experts are available throughout the book.

Order directly from Taylor and Francis through:
http://www.tandf.co.uk
http://www.taylorandfrancis.com

EDITORIAL POLICY

Please note that material for the next issue should be sent to the Editor, Dr Leslie Chisholm [e-mail: l.chisholm@mailbox.uq.edu.au], Department of Microbiology & Parasitology, The University of Queensland, Brisbane, Queensland 4072, Australia: Fax: +61 7 3365 4620, before the end of September, 2001.

The Newsletter is issued once a year and the persons listed on the cover page act as regional representatives. Each representative may write or collect information from the members of

their country or region. Naturally, direct contributions from any recipient to the Newsletter will also be welcome. However, bear in mind that the Newsletter is intended for any news, notices, comments, etc. that you feel would be of interest to the world's ichthyoparasitologists, rather than detailed reviews of personal research. Images, preferably saved as Jpeg files, are welcome. Hard copies of images can also be sent directly to the editor for scanning.

In order to save postal charges, national representatives are asked to download a copy of each issue of the Newsletter and make this available (photocopies, e-mail, URL, etc) to his or her domestic members, where necessary. When it is impossible to download a copy, please advise the editor. In addition, the information in the Newsletter can be made available via E-mail. It is hoped that the use of electronic formats rather than hard-copy will enable us to distribute information on ichthyoparasitology throughout the world quickly and cheaply.

Thank you

Leslie Chisholm

Download a copy of this Newsletter
(Word 97 file)

Previous Issue

Parasitological URLs

Fish Parasitologist of the Month