# International Ichthyoparasitology Newsletter No. 18 January 2011

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# EDITORIAL

It has been a busy year for Ichthyoparasitologists, with many travelling to Melbourne, Australia in August to attend the ICOPA meeting. It was a highly successful congress and a great opportunity to catch up with colleagues. A summary of the ichthyoparasitological research presented at ICOPA is given below. It is with great sadness I report that 2 renowned fish parasitologists, Behiar Jalali and Tatiana Timofeeva, passed away in 2010. My own research on monocotylid monogeneans was inspired by the meticulous work of Tatiana and her contributions to the field of ichthyoparasitology; both she and Behiar will be missed by all. I welcome Dr Arik Diamant and Professor Jean-Lou Justine as the new Regional Representatives for Israel and France, respectively.

Anyone wishing to contribute to the next issue of the Newsletter (Number 19) should note that the deadline date for submission is **November 15, 2011**. My contact details are at the end of this Newsletter. This, and future issues will be available on David Gibson's Web Pages at: http://www.diplectanum.talktalk.net/newsletter/

# ANNOUNCEMENT

## 8th International Symposium on Fish Parasites
## September 26-30, 2011 Viña del Mar Chile

The 8th International Symposium on Fish Parasites (ISFP) will be held in Viña del Mar Chile, September 26–30, 2011. Ichthyoparasitologists worldwide are invited to join our community in this beautiful city with exceptional facilities, beautiful beaches, excellent seafood, cafes and bars; it is also less than half an hour from Valle de Casablanca, one of Chile's finest and world renowned wine-producing regions.

The theme of the conference is "Fish Parasitology: from classical taxonomy to holistic approach". We hope to develop an exciting scientific program that will provide an update in our field of research. The abstract submission form will be available late January.

An intense program is planned including preliminary talks, mini symposiums and oral presentations. So far, we have confirmed the participation of the following key note speakers: **Kurt Buchmann** (University of Copenhagen), **María Teresa González** (Universidad de Antofagasta), **Sven Klimpel** (Goethe-University), **José Luque** (Universidade Federal Rural do Rio de Janeiro), **František Moravec** (Institute of Parasitology, Czech Republic), **Barbara Nowak** (University of Tasmania), **Kazuo Ogawa** (The University of Tokyo), **Cláudia Portes Santos** (Fundação Oswaldo Cruz, Brazil), **Robert Poulin** (University of Otago), **Tomáš Scholz** (Institute of Parasitology, Czech Republic), **Juan Timi** (Universidad Nacional de Mar del Plata) and **Victor Vidal Martínez** (CINVESTAV-IPN, México).

Poster sessions will be an important aspect of the 8th ISFP. Competitive awards for students and postdoctoral scientists from developing countries will be offered. In addition, a diverse and enjoyable program of social activities will also be provided in order to showcase the best of our traditions and culture. More details will be provided in the near future.

We invite you to check the website (www.8isfp.com) for more information and to indicate your interest by submitting an online pre-registration form.

We look forward to welcoming you to our country in 2011. Chile and South America are waiting for you.

On behalf of the South American Ichthyoparasitologist Consortium

Dr. Marcelo E. Oliva (meoliva@uantof.cl)

# MEETING REPORT


## XII$^{th}$ International Congress of Parasitology (ICOPA), Melbourne Convention & Exhibition Centre, 15–20$^{th}$ August 2010, Melbourne, Victoria, Australia

provided by Ian Whittington, ian.whittington@samuseum.sa.gov.au

ICOPA XII was held in the cosmopolitan city of Melbourne. Those delegates from the northern hemisphere briefly traded their summer for a taste of Melbourne's well-known '4 seasons in 1 day': chills, rain, sun, wind, cloud and drizzle. The new Melbourne Convention & Exhibition Centre on the banks of the River Yarra hosted 1734 delegates (representing 94 countries) who attended numerous sessions of talks (up to 12 concurrent

sessions!; 678 presentations) and 1161 posters. The conference highlight for fish folk was the plenary presentation by **Janine Caira** (University of Connecticut), who gave an authoritative account of her research programme into the discovery and description of global parasite biodiversity facilitated by several funding initiatives of the US National Science Foundation. A focus of her presentation was her and collaborators' activities to assess the metazoan parasite diversity of the world's elasmobranchs highlighted by her group's productivity on cestodes.

Three sessions at ICOPA were devoted to ichthyoparasitology. *Aquatic Parasitology* (Chair: **Tom Cribb**, University of Queensland) included a historical summary of aquatic parasitology by invited speaker and co-chair **Tomáš Scholz** (Institute of Parasitology, Czech Republic) that stimulated a warm fuzzy glow about what's been achieved. This was tempered by the many issues that still lie ahead (to crack life-cycles, to control pathogens, to indicate environmental change). The session also included presentations by: **Alan Lymbery** (Murdoch University, Western Australia) on the distribution, host preference and environmental factors influencing a freshwater hyriid mussel related to glochidial infections of freshwater catfish, *Tandanus bostocki*; **David Blair** (James Cook University, Australia) on spirorchiid blood flukes causing mortality of green turtles, *Chelonia mydas*; **Angela Davies** (Kingston University, U.K.) who stood in for **Nico Smit** (University of Johannesburg) and talked about blood protists in South African marine fish; and **Matthias Vignon** (Université de Perpignan) on key determinants of parasite abundance, species richness and diversity of parasites of coral reef fish. *Aquaculture and Aquatic Animal Health* was co-chaired by **Ian Whittington** (South Australian Museum) and **Kurt Buchmann** (University of Copenhagen, Denmark) and hosted papers with an applied focus. **Kurt** presented an overview of his recent studies on the ontogeny of the fish immune system and posed the question: how do different lifecycle stages of fish respond to parasite infections? **Sho Shirakashi** (Kinki University, Japan) talked about two aporocotylid blood flukes in artificially bred juvenile bluefin tuna, *Thunnus orientalis*, one in the branchial artery and the other in the heart ventricle. **Sho** also considered possible control measures. **Laura Gonzalez-Poblete** (University of Tasmania) discussed her studies of the biology of *Caligus rogercresseyi* to develop control measures against this sea louse in the Chilean salmon industry. **Gema Alama-Bermejo** (University of Valencia) talked about natural and artificial infections using a *Ceratomyxa* sp. to understand seasonality and transmission of this myxozoan in cultured Mediterranean seabream, *Diplodus puntazzo*. **Kate Hutson** (James Cook University) delivered an overview of her studies of several Australian finfish species, their metazoan parasite fauna and which taxa may threaten Australasian fish farms. *Ectoparasites of the Marine Environment* was co-chaired by **Barbara Nowak** (University of Tasmania) and **Simon Jones** (Nanaimo, British Columbia, Canada). **Simon** discussed his work using the copepod *Lepeophtheirus salmonis* as a model system to explore host specificity and compare susceptibility among Pacific and Atlantic salmon. **Magda Rokicka (**University of Gdansk, Poland) presented her published work on two *Gyrodactylus* species from Antarctic nototheniids, **Victoria Valdenegro** (University of Tasmania) discussed metazoan gill and skin parasites of ranched southern bluefin tuna, *T. maccoyi*, in South Australia, and **Barbara** presented an overview of ectoparasites such as *Neoparamoeba perurans*, *Caligus* spp. and *Chondracanthus goldsmidi* in farmed Australian marine fish.

Several other sessions were of strong interest to ichthyoparasitologists. *New Insights into Parasite Life Cycles* was chaired by **Ian Beveridge** (University of Melbourne) and **Kirsten Jensen** (University of Kansas). **Kirsten** gave a wonderful insight into her studies using molecular techniques to resolve life-cycles by matching larvae from teleosts, bivalves, gastropods and crustaceans to adult tapeworms in sharks and rays in the northern Gulf of

Mexico. This session included a presentation by **Paul Brickle** (Falkland Islands), also using molecular genetics, to follow trophic transmission of tapeworms of porbeagle sharks through cephalopods. In *Parasite Evolution* (Chair: **Robert Poulin**, Otago University), co-chair **Martin Kalbe** (Max Planck, Germany) presented his experimental model to study interactions between sticklebacks, *Diplostomum* and *Schistocephalus*, **Kristin Herrmann** (Otago University) investigated environmental cues influencing progenesis in the digenean *Stegodexamene anguillae*, **Brian Fredensborg** (University of Texas-Pan American) mused on the Red Queen Hypothesis using trematodes and poeciliids, and **Robert Poulin** gave some case studies using trematodes to demonstrate phenotypic plasticity in transmission routes. In *Biodiversity* (Chairs **Janine Caira** and **Scott Snyder**, University of Nebraska), **Tom Cribb** talked on the importance of higher levels of parasite classification and implied information about lifecycles, biology and pathogenesis, and **Nicole Gunter** (CSIRO Entomology, Canberra, Australia) addressed the incredible super-rich *Ceratomyxa* and could it be among the richest of all marine metazoan genera?

Conferences as huge as ICOPA can be overwhelming, but the brief synopsis presented above indicates that there is significant activity and innovation in ichthyoparasitology worldwide. Hopefully it will serve as an appetizer for what may lie ahead at the 8th International Symposium on Fish Parasites in Chile in September, 2011.

# CURRENT RESEARCH ACTIVITIES IN VARIOUS COUNTRIES

## AUSTRALIA

provided by Ian Whittington, ian.whittington@samuseum.sa.gov.au

The report on ICOPA XII (see above) indicates that the home crowd (pictured right; **Ian Whittington**, **Emma Brock**, **Sarah Catalano**, **Kate Hutson**, **Leslie Chisholm** and **Lesley Warner**) attended Melbourne in good numbers to present their work and network with overseas delegates.

**Sarah Catalano** (University of Adelaide) embarked on a PhD in July 2010 to investigate the dicyemid diversity of the giant Australian cuttlefish, *Sepia apama*, throughout its range in southern Australian waters. This cephalopod species suffers from heavy commercial and recreational fishing pressure, and other industrial developments potentially threaten its environment. **Sarah** will use dicyemid parasites as phenotypic markers to help understand host biology. To achieve this, however, she will need to examine genetic diversity among dicyemids from several other southern Australian cephalopod species. She also intends to investigate elements of the unresolved life-cycle of dicyemids. Her project is supervised by **Bronwyn Gillanders** (University of Adelaide), **Ian Whittington** and **Steve Donnellan**

(South Australian Museum). **Sarah** has been busy writing funding applications and has already secured a grant from the Holsworth Research Endowment.

**Emma Brock** (University of Adelaide) completed her Honours degree on the parasite assemblage of King George whiting, *Sillaginodes punctatus*, and won an Australian Biological Resources Study (ABRS) Honours capacity building grant to support her during her degree. She will stay hot on the trail of an aporocotylid blood fluke to obtain sufficient specimens to enable its description. Emma was supervised by **Kate Hutson** (James Cook University), **Ian** and **Mike Steer** (SARDI Aquatic Sciences, Adelaide).

**Ian** and **Marty Deveney** (SARDI Aquatic Sciences, Adelaide) have been finishing off some systematic revisions of several benedeniine monogenean genera for submission and have revisited some taxa first discovered by **Ian** in the late 1980s from a haemulid host.

**Lesley Warner/Smales** (Honorary Researcher, South Australian Museum) won a capacity building grant from ABRS to study acanthocephalans from Australian fish. Part of this project is to work through acanthocephalan material collected by **Sylvie Pichelin** and **Tom Cribb**. Judging by the amount of material piling up on **Leslie Chisholm**'s (South Australian Museum) desk awaiting registration in the *Australian Helminthological Collection*, she is being highly productive.

## DENMARK

provided by Kurt Buchmann, kub@life.ku.dk


At present, the majority of ichthyoparasitological research is concentrated around the Danish Fish Immunology Research Centre and Network (www.dafinet.dk), which was established in January 2009. Together with the Research School SCOFDA at the University of Copenhagen, the centre runs a series of fish immunology and diseases projects. Every year a number of two-day workshops are organised and in 2010 these took place at the University of Copenhagen. By inviting parasitologists, virologists, bacteriologists, immunologists and physiologists for these mini-symposia, the organisers hope that new and creative projects and contacts can be fostered.

At the spring meeting in April 2010, focus was placed on the impact of parasites on the early life cycle stages of fish. **Barbara Nowak** (Australia), **Csaba Szekely** (Hungary) and **Alf Skovgaard** (Denmark) emphasised the vulnerability of fish larvae (both in natural waters and in aquacultural enterprises) to parasitic infections (monogeneans, digeneans, nematodes and myxosporeans). The autumn meeting was particularly focused on the host reactions towards infection. Scientists exploring the host reactions from gene level to the action of effector molecules showed that this area has moved fast during the latest

decade. **Simon Jones** (Canada), **Barbara Nowak** (Australia) and **Bertrand Collett** (Scotland) demonstrated new methods for detection of specific and innate responses in fish towards various parasites (e.g. sealice). **Jiwan Kumar Chettri** (India and Denmark) showed that different pathogen associated molecular patterns initiate different reactions in fish immune cells which can explain differences in the reactions of fish to parasites compared to bacterial and viral infections. **Alf Skovgaard** (Denmark) presented evidence that *Tetracapsuloides bryosalmonae* (causing PKD) is extremely prevalent among wild brown trout in Danish streams without causing severe effects on the population. A series of additional authors presented work on viral, bacterial and purely immunological aspects in fish. Proceedings with abstracts can be down-loaded from www.dafinet.dk

## IRAQ

provided by Prof Dr Z.I.F. Rahemo, zohair_rahemo@yahoo.com

Our research on parasites of freshwater fishes continues in Iraq at three universities.

At the Department of Biology, College of Science, University of Mosul, **Prof Dr Zohair I. F. Rahemo** (pictured right) is continuing his work on fish parasites. He is now focusing on histological investigations of the leech *Cystibranchus mastacembeli* collected from the freshwater fish *Mastacembelus simach* caught in the River Tigris at Mosul. He is also currently preparing a check-list of nematode parasites collected from freshwater fishes in Iraq.

Two MSc students are writing their theses on fish parasites at the Department of Biology, College of Education, University of Tikrit. **Mr Lazem S. Sheet** is working on parasites of the freshwater carp, *Cyprinus carpio,* collected from River Tigris at both Tikrit and Mosul. He has found cestodes, nematodes and leeches. He is studying the seasonal variations of cestodes and the relationship between infection and the condition factors (weight, total length, standard length and age) of the fish**. Mr Younis Y. Hamdan** is investigating parasites of different species of freshwater fishes collected from River Tigris at Tikrit. In addition to one species of nematode, he has found many cestode species in the intestine of the fishes he has examined. He is looking for a relationship between the occurrence of parasites and intestinal contents.

At the Department of Biology, College of Scientific Education, Salahalddin University (Erbil), **Dr Shamall M. A. Abdulla,** Assistant Professor in Parasitology, and his students are doing intensive work on fish parasites. In collaboration with **Dr Abdulkarim A. A. Shwani**, they have described two new species of *Trichodina* (Ciliophora: Trichodinidae) from the Asian catfish, *Silurus triostigus,* in Iraq, and are studying the endoparasites of this fish from Greater Zab River in the Kurdistan Region of Iraq. The group has also examined the parasite fauna of the spiny eel, *Mastacembelus mastacembelus,* from Greater Zab River in collaboration with **Mr S. K. R. Bashe,** and have described the first occurrence of *Balantidium polyvacuolum* Li, 1963 (Ciliophora: Spirotricha) in the intestine of *Cyprinus carpio* from three fish farms at Erbil, Kurdistan Region, in collaboration with **Mr Karwan S.S. Al-Marjan.**

# ISRAEL

provided by Arik Diamant, diamant@ocean.org.il

A memorial session in honor of **Ilan Paperna**, eminent Israeli fish parasitologist (1937–2009), took place at the Dan Popper Annual Symposium of Mariculture on February 18, 2010 in Eilat. **Ron Dzikowsk**i, a former student of Ilan's, presented a keynote lecture on *Plasmodium falciparum* entitled "Living in a hostile environment – a perspective of a deadly killer".

The massive invasion during the last few decades of Indopacific species through the Suez Canal is steadily changing the eastern Mediterranean. There are at present over 80 known alien Indo-Pacific fish species in the eastern Mediterranean basin (in addition to many hundreds of invertebrate and algal species). Some of these have excluded native species from their original habitats, dramatically transforming the faunal composition of the eastern Mediterranean.

We still know relatively little about the role of parasites in this changing ecosystem. Within the framework of an Italian/Israeli cooperative research and development project (2008-2011) studying the impacts of biological invasions and warming climate on the biodiversity of the Mediterranean, we examined of 20 invasive and native fish species for parasites. Samples from 600 fish were taken from several sites along the Israeli and Turkish coasts, and a diversity of parasites was found. The most abundant groups were nematodes and cestodes, but monogeneans, digeneans and copepods were also well represented. Comparisons of parasite faunas of alien species from both source (Red Sea) and target (Mediterranean) regions are difficult, because the parasite fauna of native Red Sea fish species is poorly studied. Nevertheless, preliminary analyses of the collected data show that the abundance levels of parasite species in the Mediterranean aliens are low. We found no link between the "success" of alien host species and a low parasite burden in them, nor were any clear trends evident upon comparison of parasites of "veteran" aliens vs. "recent" invading host species. More data are expected in the coming year, which will surely add to our understanding of the ecology of this rapidly changing zoogeographical region.

Pictured below: members of the Israeli and Turkish research teams during one of the scientific expeditions at Iskenderun Bay, Turkey in 2009.

# PERU

provided by José Iannacone, aphiaperu@gmail.com

The Peruvian Helminthologist Day, marking the fifth anniversary of the signing of the founding of the Peruvian Association of Helminthology and Associated Invertebrates (APHIA; www.aphiaperu.com), was commemorated on February 18, 2010 in the auditorium of the Ricardo Palma University, Lima, Peru. Also in February, an International Course entitled "Neotropical Ichthyoparasitology Workshop" was conducted by **Dr Ricardo Takemoto** and **Dr María de los Ángeles Pérez Lizama** from the Laboratory of Ichthyoparasitology, Núcleo de Pesquisas em Limnologia, Ictiología e Aquicultura, Universidade Estadual de Maringá, Parana, Brazil. A two-day International Symposium entitled "Parasite Diversity: Impact in Conservation and Public Health" was also held in 2010. This symposium included a number of presentations on ichthyoparasitology as follows: "Trematode infection ecology and wetland biodiversity" by **Dr Eric Wetzel**; "*Proctoeces lintoni*: a problem by molecular and experimental evidence" by **Dr Marcelo Oliva**; "Population dynamics and biodiversity of parasites of *Paralabrax humeralis* (Teleostei: Serranidae) collected off Chorrillos, Lima, Peru" by **Dr José Iannacone**; "Diversity of parasites of fishes from Paraná River, Brazil" by **Dr Ricardo Takemoto** and "Ecological interactions between ecosystem diversity and the impact of parasitism on veterinary and public health", by **Jorge Cárdenas-Callirgos**. These events were all organised by **Jose Iannacone** and **Jorge Manuel Cárdenas-Callirgos**, Directive Council of APHIA 2010–2011.

In November, 2010, APHIA, in conjunction with the International Research Development of France (IRD) and Ricardo Palma University (URP), held its biannual scientific meeting entitled "II Peruvian International Congress of Neotropical Parasitology "The Role of Neotropical Parasitology in Global Health" at the University of Ricardo Palma. Presentations on fish parasitology at the congress included those by: **José Luis Luque,** on the biodiversity of neotropical helminth parasites and its impact on global health, focusing on marine fish parasites; **María del Carmen Gómez del Prado Rosas,** on helminths of Clupeidae in Mexico; **Anderson Dias Cezar**, on the biodiversity of metazoan ectoparasite communities of Carangidae and also a report on two new species of *Acantholochus* (crustacean parasites) from the haemulid *Conodon nobilis*; **Marcelo Oliva**, on parasites and population structure of *Trachurus murphyi* (Carangidae): a comparison of the methods of analysis; **Jorge Manuel Cárdenas-Callirgos**, on ichthyohelminthology in Peru: zoonotic impact of marine-coast food preferences; **Marcelo Knoff**, on the presence of *Diphyllobothrium* species in Brazilian fishes; **Delir Corrêa Gomes** and **Marcelo Knoff**, on tapeworms of *Paralichthys isosceles* (Osteichthyes) in Brazil; **Reinaldo José da Silva**, on the diversity of monogenean parasites of fish from the Brazil; **Narda Dinis,** on parasites of *Osteoglossum bicirrhosum* from Peru; **Emer Gloria Pizango P. Marina del Aguila P**., **Carmen Reátegui B.** and **Mirle Cachique P**., on parasites of pimelodid catfish; **Lidia Sánchez**, on new records of parasites of the dolphin fish *Coryphaena hippurus* from Peru; **Enrique Serrano-Martínez**, on the first record of a *Contracaecum* species on *Astronotus ocellatus* in the Peruvian Amazon; and finally, **José Iannacone**, on the community ecology of parasites from three marine fishes, *Stromateus stellatus, Sicyases sanguineus* and *Rhinobatos planiceps,* off Peru.

Three international post-congress courses related to fish parasites were held on November 13–20, 2010. These included "Biology of parasitism: general approach" by Prof. **María del Carmen Gómez del Prado Rosas** (Mexico)**,** "Helminth parasites of marine

chondrichthyan fish: techniques and taxonomy" and "Ichthyohelminthology: necropsy of fish and collection of helminths" both run by Prof. **Marcelo Knoff** (Brazil).
During 2010, the Fish Parasitology Research Group headed by **Jose Iannacone** (joseiannacone@gmail.com), at the Federico Villarreal University and Ricardo Palma University, began work on the marine fish parasites off the Cheilodactylidae, Haemulidae and Scienidae collected from the coast of Lima, Peru. The group is focusing on the biodiversity and community ecology of these parasites. We would welcome research fellows and students who wish to join our warm research group.

## PORTUGAL

provided by Maria João Santos, mjsantos@fc.up.pt

The **Animal Pathology Group** of the Department of Biology / CIIMAR – CIMAR Associated Laboratory, University of Oporto, headed by **Aurélia Saraiva** (amsaraiv@fc.up.pt) and **Cristina Cruz** (cfcruz@fc.up.pt) includes other senior research team members: **Jorge Eiras** (jceiras@fc.up.pt) and **Maria João Santos**. We hosted the XIV Portuguese Parasitology Meeting on September 8 – 10, 2010, in Porto (http://www.wix.com/mjsantos/XIV-CPP-2010).


Professor **Jorge Eiras**, one of Portugal's most the dynamic ichthyoparasitologists, retired this year, but he will remain active in research. His work as a fish pathologist is internationally renowned, especially in Brazil, where strong collaborations have been longstanding.

**Claire Francisco** (supervised by MJ Santos), defended her PhD thesis last September, entitled: "Parasites of the mussel *Mytilus galloprovincialis* Lamark, 1819 (Bivalvia: Mytilidae), with relevance to the Trematoda: life cycle, morphology and molecular features". Several students or collaborators are also currently working on their theses or other projects in fish and invertebrate parasitology, including: **Margarida Hermida** (PhD), **Francisca Cavaleiro** (PhD), **Luis Rangel**, **Inês Reisinho** (MSc), **Daniel Gerónimo** (MSc), **Ana Costa e Silva** (MSc), **Ana Barbosa** (MSc), **Mafalda Correia, Ricardo Castro** (BSc) and **Ana Moreira Silva** (BSc). The main objectives of this research team are to contribute to the knowledge of fish and invertebrate parasites, especially those with a greater impact in fisheries, aquaculture and public health. The following projects are currently running:

1. Parasites of the blackspot seabream (*Pagellus bogaraveo*) from the Portuguese ZEE (southern North East Atlantic).
2. Impact of parasites in farmed turbot (*Psetta maxima*).
3. Apicomplexa from seabass (*Dicentrarchus labrax*) and seabream (*Sparus aurata*).
4. Myxozoa from estuarine Polychaeta.
5. Cephalopoda parasites from the Portuguese Coast.

More detailed information about our previous work and publications can be seen at http://www.fc.up.pt/zoo-ant/seccoes/patol/patol.html

# IN MEMORIAM

## Behiar Jalali Jafari

Iran lost one of its great scientists when Prof. Behiar Jalali Jafari died unexpectedly of a heart attack in Tehran on January 28, 2010 at the early age of 56.

Behiar, the son of a railroad engineer, was born on July 27, 1953 in Tehran. He received his primary and secondary education in Tehran, followed by a degree in Veterinary Medicine from Faculty of Veterinary Medicine, University of Tehran in 1977. Behiar's professional life in aquatic animal health began when working for the Iranian Fisheries Organisation as a Chief Veterinary Officer at the Shahid Beheshti Sturgeon Hatchery Centre. For over a decade (1977–1990), he served as an Executive Director of Aquaculture and Deputy Chief Executive of the Iranian Fisheries Organisation, where he was responsible for aquaculture research and development, research on marine and freshwater fish health and disease, environmental assessment and other aspects of fisheries biology.

In 1994 he completed his PhD on ''Monogenean parasites of freshwater fishes in Iran' under the supervision of Dr Kalman Molnár at the Veterinary Medical Research Institute of the Hungarian Academy of Sciences in Budapest. In his thesis, he described 17 new species and reported 53 other species of monogeneans; this work resulted in seven published papers in peered-reviewed journals.

His significant and productive scientific work in Iran is recorded in the form of 13 books (in Persian) and 86 published papers (26 in English and 60 in Persian). His publications have become an invaluable guide for the growing number of scientists developing an interest in fish parasitology in Iran. Active until the last, he had nine papers in press at his death, including a monograph of monogeneans of freshwater fishes in Iran.

Behiar was one of those rare scientists who held high, exacting standards and yet was modest, kind and generous. He was a true, noble gentleman and, to his students, a caring, conscientious mentor. He had the love and respect of many friends and colleagues in Iran, attracted to him by his knowledge, strength of character and warm personality. His death will leave a huge void, not only in the Iranian scientific community but also in the hearts of all who knew him. Although we mourn his loss, we take comfort knowing that his legacy to science, and particularly to our knowledge of monogenean parasites, will long be remembered, not only by his colleagues and students but also by future generations of scientists. He enriched the lives of those who had the privilege of knowing him.

A more detailed version of this can be found in: Shamsi, S. (2010) PROFILE: Behiar Jalali (1953–2010). *Systematic Parasitology* 76:235–236.

Shokoofeh Shamsi

## Tatiana Alexandrovna Timofeeva

When Tatiana Timofeeva passed away on May 22nd, 2010, fish parasitology lost a major figure. Although her many contributions are familiar to all monogenean workers, she also made advances in our understanding of digenean and aspidogastrean groups. Indeed, she developed her own ideas on the relationships and position of the Aspidogastrea.

Tatiana (Tanya) was born during the Second World War in a devastated St Petersburg (then Leningrad), a city in which she spent most of her life. After acquiring a degree in Soil Biology and a master's degree in Invertebrate Zoology, she entered the Zoological Institute in St Petersburg to undertake a PhD on the Aspidogastrea under the supervision of Academician B.E. Bychowskyi, which she completed in 1972. After several years of working in the Arctic, Tatiana returned to the Zoological Institute to work on monogeneans alongside Alex Gusev and other students of Bychowskyi. Her work included major revisions and phylogenetic studies of the families Capsalidae and Monocotylidae, studies on the enigmatic *Udonella*, and papers on a wide range of topics, including digeneans and acanthocephalans. Many of her publications are still widely used.

Tatiana was a quiet, single-minded, meticulous and very kind lady, who is sadly mourned by her colleagues and the many international visitors whom she helped.

A more detailed version of this can be found in: Gerasev, P. (2010) PROFILE: Tatiana Alexandrovna Timofeeva (1944–2010). *Systematic Parasitology* 77: 161.

David Gibson & Pavel Gerasev

# EDITORIAL POLICY

Please note that material for the next issue should be sent to the Editor, Dr Leslie Chisholm [e-mail: leslie.chisholm@samuseum.sa.gov.au] Parasitology Section, The Science Centre, South Australian Museum, North Terrace, Adelaide 5000, South Australia, Australia; before November 15, 2011.

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 are also welcome. The Newsletter is intended for any news, notices, comments, etc. that you feel would be of interest to the world's ichthyoparasitologists. Please note that publication lists are not accepted. The editor would be grateful if submissions would follow the format similar to that of the present Newsletter. Images are welcome. Please send images as separate JPG files (do not incorporate them in your text file and do not send image files as PDFs).

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.

Thank you

**Leslie Chisholm**

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