



ISIR Newsletter

Spring 2010 (or Autumn if you are in the S. hemisphere)

Editors: A. Hodgson & H.J. Ferenz

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Editorial Message

There is only 5 months to go to the next congress in Prague. I am sure that everyone is looking forward to this meeting and visiting this wonderful city. Check out more details below. We encourage you all to advertise the meeting amongst colleagues and especially students. Registration for this meeting is still a bargain! The society is also looking to finalise the hosts of the 2013 conference. If you are interested in hosting a conference of the ISIR information on how to go about bidding for the meeting is given in the newsletter. Finally to date there have been NO applications from students and postdocs for funding assistance to attend the Prague conference. We have extended the deadline date for applications.

Hans Ferenz (hans.ferenz@zoologie.uni-halle.de) and Alan Hodgson (A.Hodgson@ru.ac.za).

The Current ISIR Committee

President: Rachel Collin (STRI, Panama)
Vice-Presidents: Matt Bentley (Newcastle University, U.K.)
Amir Sagi (Ben Gurion University of the Negev, Israel)
Midori Matsumoto (Keio University, Japan)
Secretary: Alan Hodgson (Rhodes University, South Africa)
Treasurer: Hans J. Ferez (Martin-Luther-University, Halle, Germany)
Journal Editors: Hans Laufer (University of Connecticut, USA), Matt Bentley, Alan Hodgson
Conference Organiser: Frantisek Sehnal (Academy of Science, Czech Republic)

Regional Representatives: M. Krishnan (India) krish14156@yahoo.com; M. Byrne (Australia & New Zealand) mbyrne@anatomy.usyd.edu.au; P. Swiderski (Poland and Eastern Europe) z.swider@twarda.pan.pl; R. Kaufman (Canada & North America) reuben.kaufman@ualberta.ca; M. Thiel (Chile & South America) thiel@ucn.cl; V. Zupo (Italy and Mediterranean) vzupo@szn.it; C. Westley (Australia) Chantal.westley@flinders.edu.au; M. Erkan (Turkey) merkan@istanbul.edu.tr

(Note: anyone wishing to act as a regional representative should contact Alan Hodgson (A.Hodgson@ru.ac.za))

From the IRD editors

During 2009 four issues (Volume 53) containing 23 papers were published. There is plenty of space to publish good work and we encourage you to submit papers to the journal. Encourage your colleagues to use the journal as well. We are now working on the first issue of 2010 and have asked Balaban publishers once again to only put out four issues. At least one of these issues will be dedicated to papers from the conference.

CONFERENCE PROCEEDINGS – All papers presented at the ICIRD meeting in Prague can be submitted for publication in IRD.

INVERTEBRATE REPRODUCTION AND DEVELOPMENT

CALL FOR PAPERS



Invertebrate Reproduction & Development presents original research articles and notes on the reproductive and developmental biology of invertebrates. IRD welcomes papers reporting original findings. Manuscripts are encouraged in areas including: physiology, biochemistry, functional morphology, phylogeny, behavioural and regulatory mechanisms, including genetic, endocrine and molecular studies. Purely descriptive papers will be considered only if they make a significant contribution to the field of research. The journal publishes penetrating and provocative reviews, mini reviews, research papers, announcements and proceedings. New techniques and perspectives are particularly welcome. The journal also welcomes short reports on 'hot' articles appearing in the current literature.

Features of the Journal include:

- No page charges
- Rapid publication

- Authors receive a PDF of their article that can be transmitted electronically to colleagues on an unlimited basis
- Journal is cited in major databases including: Scopus; Web of Science; Current Contents; Biological Abstracts; PASCAL M & C, Current Advances in Biological Sciences; Agricola; Aquatic Sciences and Fisheries Abstracts; FISHLIT/Fish & Fisheries; Aquatic Biology; Aquaculture and Fisheries Resources

Articles for consideration should be sent to one of the following editors

M.G. Bentley, School of Marine Science and Technology, Ridley Building, Newcastle University, NE1 7RU, UK.
E-mail: m.g.bentley@ncl.ac.uk

H. Laufer, Department of Molecular and Cell Biology, U-125, University of Connecticut, Storrs, CT 06268, USA.
E-mail: laufer@uconnvm.uconn.edu

A.N. Hodgson, Department of Zoology and Entomology, Rhodes University, Grahamstown 6140, South Africa.
E-mail: A.Hodgson@ru.ac.za

For 'Instructions to Authors' visit –
<http://www.invertebrate-reproduction-development.com>

2010 ICIRD - August 16 - 20

International Conference on Invertebrate Reproduction and Development in the Age of Genetic Modifications

Organized by
the [Biology Centre of the Academy of Sciences of the Czech Republic](#), České Budějovice,
and
the [Crop Research Institute](#), Prague, with support of the 7FP EU project [MOBITAG](#)

FOR CONFERENCE DETAILS AND REGISTRATION VISIT

<http://icird.bc.cas.cz/>

VENUE

[Congress Centre Krystal](#), Hotel Krystal Prague, Czech republic
J. Martího 2/407, 162 00 Prague 6 - Veleslavín



Congress mission

Every three years the [International Society of Invertebrate Reproduction and Development](#) arranges organization of a congress for those interested in the development and reproduction of both terrestrial and aquatic invertebrates. The previous congresses (South Africa in 2001, UK in 2004, and Panama in 2007) dealt mainly with marine invertebrates. The congress in Prague will include

selected topics from the studies of marine, freshwater, as well as terrestrial animals. Special attention will be paid to genetic modifications that are being introduced to the control of some insects and are used routinely in agricultural crops.

Organizing Committee (extended Committee includes session convenors)

- **Oxana Habuštová** (Chairlady), Biology Centre ASCR, České Budějovice, e-mail: habustova@entu.cas.cz
- **Veronika Zázvorková** (Secretary) Biology Centre ASCR, České Budějovice, e-mail: zazvorkova@bc.cas.cz
- **Jaromír Hajer**, University of J.E. Purkyne, Ústí nad Labem, e-mail: jaromir.hajer@ujep.cz
- **Jan Hubert**, Crop Research Institute, Praha, e-mail: hubert@vurv.cz
- **František Kocourek**, Crop Research Institute, Praha, e-mail: kocourek@vurv.cz
- **Stano Pekár**, Masaryk University, Brno, e-mail: pekar@sci.muni.cz
- **František Sehnal**, Biology Centre ASCR, České Budějovice, e-mail: sehnal@bc.cas.cz
- **Jaroslav Smrž**, Charles University, Praha, e-mail: smrz@cesnet.cz

Important dates

Registration and Abstract submission NOW OPEN

Early Registration Deadline: May 31, 2010

Abstract Deadline: June 30, 2010

Late Registration Deadline: July 31, 2010

Conference Outline

August 16: registration & reception

Aug. 17: lectures 8:00 - 16:00 (with breaks), posters with beer 18:00 - 22:00

Aug. 18: lectures 8:00 - 13:00; posters 14:00 - 16:00

Aug. 19: lectures 8:00 - 13:00; fare-well party 20:00 - 22:00

Aug. 20: lectures 8:00 - 13:00

The ISIR will award prizes to the best student oral and poster presentations.

Publication of Conference Proceedings

Delegates will be able to submit their papers for publication in *Invertebrate Reproduction & Development*. These will, however, be subject to the usual peer-review process. Anyone wishing to have their paper considered for publication in an issue of IRD will need to bring their manuscript on a CD in MS Word format to the conference. The manuscripts should be given to one of the journal editors. Author instructions can be found at

<http://www.invertebrate-reproduction-development.com>

Student/Postdoc Sponsorship to 2010 ICRD—extended deadline

The ISIR aims to encourage young scientists (especially from developing countries) to present their work at the 2010 congress. The society will sponsor a number of postgraduate students and postdoctoral researchers to the conference by paying for their registration and accommodation. To qualify, applicants must be presenting work at the conference and be registered as a student or postdoctoral researcher. To apply, send a brief letter of motivation as well as an abstract to the society secretary at A.Hodgson@ru.ac.za by **May 31st 2010**. Recipients of sponsorship will be announced by the end of June.

Note: these are competitive awards that will be judged, by an international panel, on the quality of the science. Preference may be given to applicants from developing countries.

Need for a New Society Logo - Competition

In the last newsletter we called for ideas for a new logo for the society, a logo that would better reflect the society as a whole. Unfortunately to date we have not received any proposals. Nevertheless the committee still hopes to deal with this issue and it has been decided that such a decision will be made at the general society meeting in Prague. Anyone with an idea for a new logo is invited to bring their design to Prague and a winner will be selected then.

ISIR 2013 – Calls for Bids

A decision as to where the next conference will be held will be made at the General Assembly in Prague. As you will see from the guide below, bids to host the next conference must be received at least 3 months before the General Assembly. Therefore, please send bids to the society secretary, Alan Hodgson (A.Hodgson@ru.ac.za), by MAY 16th. All bids will be circulated amongst the Executive Committee and then placed before the General Assembly. Any group submitting a bid should have a representative at the Prague meeting who can give a presentation during the General Assembly and discuss their bid with the Executive Committee. The society also welcomes bids for the 2016 meeting.

Requirements for bids to host ISIRD Congress

Any bid to host an ISIRD Congress must come from a society member acquainted with the scope and profile of ISIRD meetings. An electronic bid addressing all points listed below must be submitted to either the President or the Secretary of ISIRD not later than three months before the preceding Congress. An opportunity to make an oral presentation to the Executive Committee and the General Society Meeting will be provided to all bidders during this prior Congress. Executive Committee will recommend and the General Meeting will approve by vote where the next Congress will take place.

The bid should include the following items:

1. **Official invitation** signed by the prospective chairman of the Organizing Committee and by a representative of the organization that will take responsibility for the selection of Congress venue.
2. **Organizing Committee:** Evidence that a robust and competent Organizing Committee can be mustered to prepare and run the Congress should be provided, including list of members that have agreed to serve on the Committee.
3. **Host summary:** Brief history and experience of Congress hosts in organizing scientific meetings, and general justification of the proposal.
4. **Letters of intent** from organizations likely to be involved in the arrangements for the Congress (the city, university, etc.) and letters of interest from prospective sponsors.
5. **Outline of the scientific program:** scientific themes should be indicated, including names of colleagues that will be invited to help with the organization of symposia and workshops.
6. **Venues and accommodation:** Facilities for Congress proceedings and accommodation, local transport and provisions for meals. Air and surface transport, including possibilities of discounts.

7. **Convention site:** Specification and justification of the selection. Be aware that the professional Congress centers are there to make profit; if you have to use their services, explain that you got the best deal possible.
8. **Tourist and cultural attractions of the Congress site.**
9. **Safety issues** related to international travel and local activities.
10. **Possible programme for accompanying partners** and suggestions for the Congress tour and possible activities before and/or after the Congress.
11. **Preliminary budget for 100 - 200 participants**, source of seed money, financial support and expected sponsoring.
12. **Preliminary assessment of the costs for the participants.**
13. **Other information:** Any additional information that the bidder feels will assist the Society in making an informed decision. Advice from the successful host of the prior Congress could prove a useful source of ideas.



ASSEMBLE



A Great Opportunity for ISIRD Members

ASSEMBLE is an integrated research infrastructure funded under the European Commission's seventh framework program. Its main aim is to provide access for European (and associated Countries) researchers to a comprehensive set of coastal marine ecosystems, to research vessels, state-of-the-art experimental facilities and to a wide variety of marine organisms, either as research visits or by shipment. In fact, ASSEMBLE partners are developing an integrated infrastructure to optimize the possibilities for European scientists to excel in research on marine ecosystems and marine biological models using the most advanced approaches in modern biology. On-site and remote access is available for marine research projects. Joint research is conducted to improve the provision of marine biological and/or ecological models with an emphasis on models for marine genomics.

ASSEMBLE Institutions

Eight Institutions, in various countries, are ready to host investigators, offering a wide set of facilities and expertise: Tjärnö, Kristineberg, Dunstaffnage, Roscoff, Banyuls, Naples, Faro, Eilat. Each ASSEMBLE infrastructure site offers access to a wide range of installations such as general laboratories, state-of-the-art experimental facilities, technological platforms, research vessels, and a wide variety of marine organisms (either on-site or by shipment). On-site access will be provided free of charge, including all logistical, technological, and scientific support, as well as any specific training that is normally provided to external researchers using the infrastructure.

Apply and Fly

Research visits can be up to 4 weeks long and should be finished within the call period (6-month project periods). Calls for applications are launched twice a year, except for shipment of

samples. (remote access). For call deadlines and selection criteria see <http://www.assemblemarine.org>. The selection panel will base its selection on scientific merit. No preexisting scientific contacts between applicants and scientists at the hosting institutes are needed; on the contrary new connections and new users are favored. On-site access including travel costs (economy tickets, reimbursed only after the visit) and accommodation costs at fixed rates will be covered for 1-2 users per group. Basic laboratory consumables are included.

Or order what you need

Remote access to marine samples will be provided free of charge, except for the actual shipment costs that will be charged to the user. Requests for smaller volumes of marine samples can be all year around for most of the sites.

Get Information

The first call was published in May 2009 with a deadline September 15, 2009. The second call had a deadline in Feb 15, 2010. The next deadline for presentation of projects should be September 15 and it might be a great opportunity for the European (and associated) ISIRD members, to apply for a period of collaborative researches funded by the European Commission. Further details, information on the deadlines and submission forms can be found on line, accessing <http://www.assemblemarine.org>. In addition, information may be requested through info@assemblemarine.org.

(Dr. Valerio Zupo, Investigator, Stazione Zoologica "A.Dohrn", Benthic Ecology Laboratory, Punta San Pietro, 80077 Ischia – Italy; e-mail vzupo@szn.it, Voice: 0039 081 5833 503, 0039 081 991410; Fax 0039 081 984201

Spotlight on Research I

Investigations on Shrimp's Sex Reversal and Other Stories from the Bay of Naples

C. Maibam & V. Zupo



Hippolyte inermis is a benthic shrimp that is largely distributed in *Posidonia oceanica* meadows and other Mediterranean sea grasses. It is characterised by a peculiar mechanism of sex reversal that is influenced by diatom foods. Two main periods of recruitment, spring and summer, were detected in the life cycle of *H. inermis*. Individuals born in spring grow quickly and developed as either females or males, while individuals born in fall grow slowly and develop as males, changing sex in the next spring (*alpha* females). The spring recruitment period, when the number of primary females is abundant, coincides with the maximum abundance of diatoms of the genus *Cocconeis* in the leaf stratum of *Posidonia oceanica*. Previous studies demonstrated a direct effect of diatoms on the androgenic gland (AG) and the testis of these shrimps. The AG is quickly destroyed by apoptosis after the ingestion of *Cocconeis neothumensis* and *C. scutellum parva* by young postlarvae (PL 2-8). The process is followed by the disruption of the testes and, consequently, by the differentiation of an ovary, starting from stem cells still present in young individuals. Therefore an ovotestis is never produced in this species and the sex



change process is very fast: it is exhibited during a single molt cycle, without any reduction of the masculine appendage, as observed in other protandric shrimps.

Panorama from the Benthic Ecology Laboratory in Ischia, part of the Stazione Zoologica Anton Dohrn of Naples. Photo V. Zupo



For these reasons it has been postulated that micro- and macro-algae produce a wide spectrum of secondary metabolites, triggering defined effects on consumers. In fact a complex web of trophic, physiological, spatial and chemical relationships is built by the stable coexistence of associated plant and animal populations. Besides the above-mentioned direct effects on the physiology of selected grazers, secondary metabolites may represent information means, triggering reactions of escape or attraction due to the production of wound-activated odour compounds. Several studies indicated that benthic invertebrates detect and recognize volatile organic compounds (VOC) released from diatoms and utilize them as food-finding cues. In our case, the diatom-produced infochemicals were classified as foraging kairomones

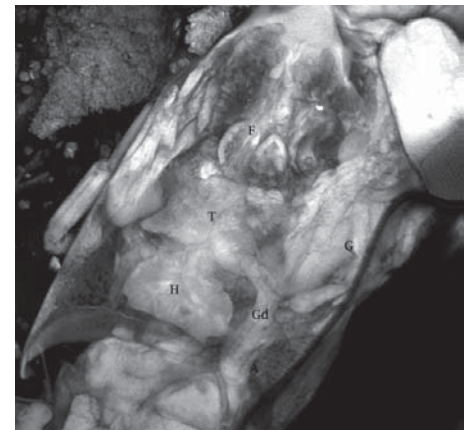


Figure 1: an adult female of the shrimp *Hippolyte inermis* (A) and the diatoms of the genus *Cocconeis* triggering its sex reversal (B)

Figure 2: confocal microscopy image of a postlarva of *H. inermis*, to show its main organs. E: foregut, T: testis, GD: vas deferens, G: gills, H: heart, A: position of the Androgenic Gland.

We found that odour compounds produced by *Cocconeis scutellum parva* are recognized by several invertebrates and trigger different, often unpredicted reactions in each species. The same signal may represent an attractant for some invertebrates that need to maximise the search for food, and a repellent for other invertebrates, for which mimicry and defense from predators represent the most important behavioral constraints. The mosaic of results obtained at various concentrations, in different species, indicates that wound-activated infochemicals are well recognized by most invertebrates living in seagrass meadows and they play a variable but important role, producing complex patterns of reactions.

The research project presently running aims at identifying the most important elements of regulatory networks influencing the physiology and the behavior of selected benthic and planktonic organisms, in order to obtain a simple (at least preliminary) mathematical model describing the above-mentioned relationships. In addition, we aim at elucidating the structure of the apoptogenic

compound influencing the sex reversal of *Hippolyte inermis* and we could now be close to reach this ambitious result, thanks also to the previous, successful cooperation (within the EU project *Pharmapox*) with the Ben Gurion University (Prof Amir Sagi and his research group) and the present cooperation with the Zurich Institute of Limnology (Prof. F. Jüttner) and the Zoological Institute of Cologne (Prof. E. Von Elert).

Our data have been published in various journals, e.g.:

Zupo V, Messina P, Carcaterra A, Aflalo E D., Sagi A (2008) Experimental evidence of a sex reversal process in the shrimp *Hippolyte inermis*. *Invertebrate Reproduction and Development*, 52(1–2): 93–100.

For a complete list please contact Valerio Zupo: vzupo@szn.it

Chingoleima Maibam is presently a PhD student of the Open University at the Stazione Zoologica of Naples, with V. Zupo as director of studies and G. Romano and E. Von Elert as supervisors.

Dr. Valerio Zupo is investigator at the Stazione Zoologica Anton Dohrn.

Spotlight on Research II

Research In East Australia - Professor Maria Byrne

Integrative Biology and Evolution of Marine Invertebrates



Professor Maria Byrne's laboratory at the University of Sydney investigates the biology of invertebrates in multidisciplinary projects on the reproduction and development of echinoderms and molluscs. Maria is Director of One Tree Island Research Station, the University's facility in the southern Great Barrier Reef (GBR). She works with a team of enthusiastic students and postdoctoral associates Dr Paulina Selvakumaraswamy and

Dr Paula Cisternas and colleague Dr Valerie Morris have long been involved in this research as well. It is never a dull moment in the Byrne Lab.

Australia has a wonderful diversity of marine invertebrates and she has utilized this rich antipodean fauna for her research on evolution of development (Evo-Devo). Her research on species from the GBR involves species that have a tropical Indo-Pacific distribution as well as narrow range endemics. Her research with the Echinodermata has involved species



from all the echinoderm classes. The most famous species used for the research are the echinometrid sea urchins (*Helicoidaris*) and the asterinid sea stars (*Patiriella*, *Meridiastra*). Echinoderms have a fascinating array of beautiful larval forms and the species that Maria investigates present the full array of life history patterns present in marine invertebrates. The asterinids include two genera of viviparous species from tropical and temperate regions that give birth to crawl away juveniles. Depending on the species, they have reduced or normal looking larvae in the gonad interspersed with eggs and sperm. This is the most extreme life history mode seen in the Echinodermata. In several of the echinoderm species that Maria investigates, the adults are so similar that some of them were revealed to be new previously undetected cryptic species. By contrast, their life history – gender, brooding -vs- broadcasting, feeding -vs- non-feeding larvae differs. It is clear that change in reproduction and development has been an important mechanism underlying speciation in these species. Documenting the cellular and molecular mechanisms underlying developmental

change with respect to phylogenetic relationships of the species is key to understanding evolutionary phenomena such as formation of new species.

The influence of evolution on animal life histories is a multi-faceted one and Professor Byrne's research has ranged from molecular and cellular studies of the genes involved with development to morphological evolution of the different larval forms. The focus of her current research is development of the contrasting bilateral and radial adult body plans and development of the nervous system. Due to the position of echinoderms at the base of the chordate line, comparative embryology and developmental genetics in these organisms provides insights into chordate origins.

For years Maria has also been involved in toxicology using echinoderm gametes and larvae. In recent times this research has taken a new angle as she investigates the influence of anthropogenic stressors from climate change – warming, acidification and hypercapnia on fertilization and development. This work addresses current urgent need to understand how marine life histories will respond to ocean change.

ISIRD-Web Site

To keep up to date with society activities, remember to visit our web site (<http://www.isird.org>) Please feel free to submit information for the web site. Information should be submitted to either Joris Koene (joris.koene@falw.vu.nl) or Alan Hodgson (A.Hodgson@ru.ac.za)

Conference Diary

The following information has been sent by our members. If you know of more meetings and conferences in 2010 onwards please let us know. We will be happy to publish this in the next newsletter.

2010

World Malacology Congress, 18-24 July, Phuket, Thailand. Organised by Prof. S. Panha, som-sak_panha@yahoo.com, <http://www.wcm2010.com>.

12th ICIRD August 16-20 (SEE ABOVE)

9th larval biology symposium, 23-27 August, Wellington, New Zealand. Contact Nicole Phillips, Larval2010@vuw.ac.nz

Third International Workshop on Opisthobranchs, Vigo, Spain, 1-4 September. <http://webs.uvigo.es/3iwo10/> Contact, 3iwo10@uvigo.es

Journal
INVERTEBRATE REPRODUCTION & DEVELOPMENT

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Are your colleagues members of our society? Ask them to join!

What a bargain!

Are your colleagues already member of the *INTERNATIONAL SOCIETY OF INVERTEBRATE REPRODUCTION AND DEVELOPMENT*? Ask them to join our society.

Benefits of membership

- **Reduced registration fees** at the International Congress (usually by more than the cost of the membership!) and at meetings of affiliated societies.
- **Discounted price** on the journal *Invertebrate Reproduction & Development*
- Society Newsletter
- Web site
- Competitive **travel grants** for graduate students and young professionals to attend the International Congress

For an international society the dues are very reasonable. The dues are paid on a 3-year basis, at only US \$ 20 or € 20 per year, and even less for students. Members wishing to receive the journal *Invertebrate Reproduction & Development* can obtain it for a special discounted price. Furthermore, members can obtain a 3-year subscription to the journal at an even further discounted rate.

Membership Form

(for online application see ISIR homepage)



INTERNATIONAL SOCIETY OF INVERTEBRATE REPRODUCTION AND DEVELOPMENT

To
Prof. Dr. H.-J. Ferenz
Treasurer ISIRD
Institute of Biology/Zoology
Martin-Luther University
D-06099 Halle
Germany

Membership Application

Name: **First Name:**

Title: **Birthday:**

Position:

Address:

.....

.....

E-mail:

Phone:..... **Fax:**

Research interests:

.....

Membership category: 3 year Regular membership (US \$ 60 or € 60)

3 year Student membership (US \$ 30 or € 30)

IRD-Journal subscription: I wish to subscribe

1 year subscription (US \$ 125)

3 year subscription (US \$ 345)

Payment: You can pay with a check (US\$, drawn on a US bank, payable to ISIR), in Europe by transfer of the €-amount to our German bank) or with credit card (VISA or MASTERCARD). Payment details will be sent after acceptance of your membership application.

Mail or fax your application: FAX +49 345 55 27152