Volume 29, Number 2 November, 2010

The Ecdysiast

Newsletter of The Crustacean Society

Inside...

Message from the President...

Dear TCS members,

"Konnichiwa", greetings from Japan!

It has been very hot in Japan for these two months since the end of the rainy season in July, although the sky is changing from the summer sky to a fall one. How have you all been?

The Seventh International Crustacean Congress in Qingdao, China (see write-up later in this issue), achieved a great success, with over 400 in attendance from 33 countries and/or areas around the world! On behalf of TCS, I hereby express my sincere thanks and congratulations to the Chinese Crustacean Society, Institute of Oceanology, Chinese Academy of Sciences, and the Local Organizing Committee, in particular, Drs. Ruiyu Liu (Honorary Chairperson), Jianhai Xiang (Chairperson), Xinzheng Li, Fuhua Li, Junying Ma, Dan Chen, and other members and advisors of the Organizing Committee, for organizing this historic congress. Qingdao is a beautiful seaside city along the Yellow Sea coast, one of the most important cities in China for international trade. Many of the participants came to China for the first time and were surprised by the city, its beautiful old, as well as modern, buildings, delicious food and warm hospitality. Both the scientific standard of the congress as well as all social programs were outstanding, and the Chinese Local Organizing Committee did a superb job in making every attendee feel welcome and comfortable! For me personally, it was a rare opportunity to meet and interact with many Chinese colleagues with whom I had corresponded but not previously had the pleasure of meeting.

The Crustacean Society Excellence in Research Award was presented to Dr Gary Charles Beresford Poore (Museum Victoria) during the Congress. He is undoubtedly one of the world's leading marine crustacean experts and has exhibited a long and distinguished career in crustacean biology. All of you know that his contribution to TCS has been enormous, as he is an inaugural member of the society and served as Indo-Pacific Governor, President, and Associate Editor of the Journal of Crustacean Biology. Furthermore he was a convener of the Fifth International Crustacean Congress, held in Melbourne, Australia in 2001.

The Crustacean Society Student Award was presented to four students for their presentations in ICC7, including Ione Madinabeitia from Hiroshima, Japan, Shihao Li from Qingdao, P. R. China, Takashi Matsuoka from Kagoshima, Japan, and Carola Becker from Frankfurt/Main, Germany. Congratulations!

I sincerely thank our Program Officer Dr. Chris Boyko and members of both TCSERA Committee and the Student Award Committee in China who dedicated volunteer judges for overseeing the judging and evaluations of candidates for these two awards.

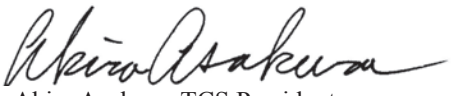
The Executive Officers of the Society have discussed several items of business over the last six months. These include the policy of future TCS meetings, recruitment strategy, role of regional governors and a possible creation of liaisons with other societies as well as international groups focused on crustaceans, a new business model of the Journal, and the other items.

Included with this Ecdysiast is an annual ballot. The 2010 fall elections are for Treasurer, Secretary, and North American, European, and Indo-Pacific Governors. Please vote! If you are interested in serving the society, please let one of us know.

As our Secretary reported in the minutes of The Crustacean Society (to be published in the *Journal of Crustacean Biology* 30(4)), it is regrettable that our membership continues to drop. If we are to remain a vital and energetic society, we must continue recruiting colleagues and students into the society. Membership applications and recruitment information are available at our website. Please take a few minutes to subscribe if you haven't already or take the time to talk to your colleagues and students about joining TCS.

I hope that many of you attend the TCS Winter Meeting at Salt Lake City, UT, on 3-7 January 2011, being held under the auspices of SICB for their annual meeting. And please don't even think about missing Honolulu, Hawaii, for the TCS summer meeting in June 2011 as well as the winter meeting at Charleston, SC, in January 2012. In summer of 2012, we plan to have the TCS Summer Meeting in Athens, Greece, as a joint meeting with Colloquium Crustacea Decapoda Mediterranea, and the Hellenic Zoological Society. The announcement of this joint meeting will appear later in Ecdysiast or CRUST-L from the chairperson of the meeting, Dr. Elena Mente (University of Thessaly, Volos).

On a personal note, I moved to one of the national universities in Japan, Kobe University. The new address is below. I look forward to hearing from you about visiting my lab, having a friendly chat on collaborative research or, if you are a student, to study in the graduate course (M.S. and Ph.D.) for crustacean biology.



Akira Asakura, TCS President

New Address

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The Crustacean Society Graduate Student Fellowships and Scholarships

The Crustacean Society Board is pleased to solicit applications from graduate students for the following monetary fellowships:

The Denton Belk Memorial Scholarship in Graduate Studies ($1500);

The Crustacean Society Fellowship in Graduate Studies (3 awards of $1000 each in the areas of (1) crustacean ecology and/or behavior; (2) crustacean population genetics and/or physiology; and (3) crustacean systematics, biogeography, and/or evolution).

All fellowships/scholarships will support the awardee's research program, including, but not limited to: supplies, travel for research, participation in off-campus research experience or training, or a specialized course of study to advance the awardee's knowledge and skills. Selection of the awardee is based on the relevance of the request ("candidate's statement") to the applicant's educational and research goals and a letter of support/recommendation from the applicant's major professor or mentor. Scholarships are awarded annually and may be received only once per awardee. Unsuccessful applicants may re-apply in subsequent years.

Please note: applicants for The Denton Belk Memorial Scholarship in Graduate Studies must be conducting or proposing research that specifically targets large branchiopod crustaceans (e.g., Anostraca, Notostraca, Conchostraca).

Currently enrolled graduate students working on either a MS or PhD degree may apply by completing and sending the appropriate application form (available at http://web.vims.edu/tcs/ under "student information") and required documentation (CV, letter of support, and candidate's statement) to:

Dr. Jeff Sheilds
The Crustacean Society Awards Committee
Virginia Institute of Marine Science
POB 1346, Gloucester Point, VA 23062

For questions: jeff@vims.edu

DEADLINE FOR SUBMISSION: February 15th, 2011

Please note: The applicant and his/her major professor or mentor must both be current members of The Crustacean Society at the time of application.

The Crustacean Society Board Members, 2010

The Ecdysiast is published twice yearly in May and November and it is available in electronic form at http://www.vims.edu/tcs/ecdysiast.htm. All the past issues are also available from the same web site. Submissions for the May newsletter should be received by mid March, while those for the November newsletter should be received by mid September. All types of crustacean related contributions are encouraged, including announcements of upcoming workshops and meetings, regional updates, meeting summaries (with photos!), new publications and any other crustacean news.

Send all material directly to the editor:
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JCB Editorial Report June 2010, Qingdao, China

The intensity of submissions rose during the winter, but has waned as we moved into the Spring – a normal cycle. The level of declines [submission not even referred to a Assc. Editor] and rejections [occurring after reviews and evaluation] have also risen as well. Right now, 30(4) will be in production when you read this in Qingdao, 31(1) is now filling and is about 1/3 full. With the increase in submissions, mostly out of Asia, a problem is occurring concerning the quality of English in submissions. We routinely send papers back now after I evaluate them with the strong advice for authors to contact American Journal Experts, a private service that assists non-native writers to get their English into acceptable form. The General and Associate Editors simply do not have time to rewrite submitted text. This is having some good effect. Of course, rewritten English does not insure any success in the review process; I sometimes reject an article after review even when the English has been reworked.

Impact Factor for this year = 0.97. Page costs last year (vol. 29) ended at $96.81 and currently are running around $92.46 (after two issues of vol. 30). All the economies of digital production instituted over the last several years have only allowed us to stay relatively flat in our costs; to my disappointment they have not significantly lowered expenses. I think we have to accept that, because without the shift to digital and on-line submissions and review our costs would have certainly risen.

The transition to digital PDFs for first page proofs has been a great success; as anticipated, it has cut 4-5 weeks off the production schedule. Instead of taking 4-5 weeks to get all hardcopy proofs back from authors, I can now turn page proofs around in a week. The issues now appear a full month earlier than they used to – a January-April-July-October schedule. I continue to deal in hardcopy to control quality page layout.

As to the possible shift to on-line publication, the information we have had so far from Allen Press has been insufficient. In my opinion we need to know more, and this summer I will attempt to elicit more concrete details as to costs and modes of operation under such a system. Thus, regrettably, I recommend we wait until we know more; we can perhaps deal with the issue at the 2011 meeting in Salt Lake City. I find this lack of progress frustrating, because I see from past editorial reports we have been anticipating some kind of move in this direction since 2008. However, as editor I refuse to commit to this until we have some clarity of the costs and administrative issues involved.

Frederick R. Schram
Editor General, JCB

TOP 10 MOST-ACCESSED ARTICLES IN JCB DURING 2010

We present here the results of BioOne tracking of reader interest in specific articles in the Journal of Crustacean Biology – the top 10 accessed articles for 2010. Two of the articles on this year list carry over from 2009. We again offer no qualitative assessment, presenting here only a qualitative tally. Nevertheless, we congratulate the authors of these articles that have attracted such reader interest. The members of the editorial board of the Journal of Crustacean Biology are grateful to all our authors for submitting interesting and stimulating articles to the journal, all of which have contributed to our overall journal Impact Factor – this year at 0.974.

1 Jennifer E. Buhay. 2009. "COI-like" Sequences are becoming problematic in molecular systematic and DNA barcoding studies. Journal of Crustacean Biology 29(1): 96-110.

2 D. Christopher Rogers, Dana L. Quinney, James Weaver, and Jørgen Olesen. 2006. A new giant species of predatory fairy shrimp from Idaho, USA (Branchiopoda: Anostraca). Journal of Crustacean Biology 26(1): 1-12.

3 James G. Morin and Anne C. Cohen. 2010. It's all about sex: bioluminescent courtship displays, morphological variation and sexual selection in two new genera of Caribbean ostracodes. Journal of Crustacean Biology 30(1): 56-67

4 Anne C. Cohen and James G. Morin. 2010. Two new bioluminescent ostracode genera, Enewton and Photeros (Myodocopida: Cypridinidae), with three new species from Jamaica. Journal of Crustacean Biology 30(1): 1-55.

5 Amy H. Warren, Laura Saltzman, Michael A. Buckholt, and Lauren M. Mathews. 2009. Agonistic interactions differ by sex and season in the crayfish Orconectes quinebaugensis. Journal of Crustacean Biology 29(4): 484-490.

6 Matthew R. Gilg, Elvis Lukaj, Mazen Abdulnour, Mike Middlebrook, Elmer Gonzalez, Ryan Turner, and Ryan Howard. 2010. Spatio-temporal settlement patterns of the non-native Titan acorn barnacle, Megabalanus coccopoma, in northeastern Florida. Journal of Crustacean Biology 30(1): 146-150.

7 Jennifer E. Price and Shane M. Welch. 2009. Semi-quantitative methods for crayfish sampling: sex, size, and habitat bias. Journal of Crustacean Biology 29(2): 208-216.

8 Thomas A. Hegna. 2010. Photography of soft-bodied crustaceans via drying, whitening, and splicing. Journal of Crustacean Biology 30(3): 351-356.

9 Barbara C. Shock, Christy M. Foran, and Todd A. Stueckle. 2009. Effects of salinity stress on survival, metabolism, limb regeneration, and ecdysis in Uca pugnax. Journal of Crustacean Biology 29(3): 293-301.

10 David C. Culver, John R. Holsinger, Mary C. Christman, and Tanja Pipan. 2010. Morphological differences among eyeless amphipods in the genus Stygobromus dwelling in different subterranean habitats. Journal of Crustacean Biology 30(1): 68-74.

Recent Meetings...

Summary of the Seventh International Crustacean Congress (ICC7)

The Seventh International Crustacean Congress (ICC7) lasting for 5 days from June 20th to 25th was successfully closed in Huanghai Hotel of Qingdao, a beautiful coastal city of China.

More than 400 distinguished guests and delegates from 33 countries and districts around the world attended the opening ceremony presided by Prof. Jianhai Xiang, the chairperson of the organizing committee (Institute of Oceanology, CAS), Prof. Akira Asakura (the president of TCS, Kobe University, Japan), Prof. Rafael Lemaitre (the Past president of TCS, Smithsonian Institution, Washington DC, USA) and Prof. Jeffrey D. Shields (the Past President of TCS, Virginia Institute of Marine Sciences, Gloucester Point, USA), Prof. John Buckeridge (Immediate Past president of International Union of Biological Sciences, RMIT University, Australia), Prof. Ruiyu Liu (the Honorary Chairperson of the ICC7 organizing committee, Academician of CAS, Institute of Oceanology, CAS, China), Prof. Fazhen Zhao (Academician, the Yellow Sea Fisheries Research Institute, China) and regional principals of TCS were present at the opening ceremony. The Deputy Mayor Mr. Guangzheng Wang and the Director of Institute of Oceanology, CAS, Prof. Song Sun were invited to the Opening Ceremony and gave a welcome speech. China Zoological Society and Chinese Society for Oceanology and Limnology sent their congratulatory messages.

The opening ceremony

There are more than 400 delegates formally participated in the congress and 369 abstracts were collected in the abstracts book. Eight well-known Carcinologists from USA, United Kingdom, Germany, Israel and China were invited to give plenary lectures. 206 scholars and experts worldwide gave oral presentations in 5 sessions and 12 symposia. In addition, 123 scholars exhibited their achievements by poster. 4 students won the Best Student Awards which encouraged young scientists to be devoted for a brilliant future of crustacean biology.

A plenary discussion

A coffee break

The eight plenary speeches are listed as follows: “Crustacean Invasions” by Prof. James T. Carlton from Williams College of USA; “Regulation of Maleness and Sexual Differentiation in Decapods: Androgenic Glands and Insulin–Like Hormones” by Prof. Amir Sagi from Ben Gurion University, Israel; “Crustacean Relationships Revisited, with a Focus on Remipedia” by Prof. Stefan Koenemann from University of Veterinary Medicine Hannover, Germany; “Molecular Phylogeny of Decapod Crustaceans: Branches on the Tree of Life and Their Evolutionary Implications” by Prof. Darryl L. Felder from University of Louisiana, USA; “Past, Present and Future of Carcinology Studies in China” by Prof. Ruiyu Liu from the Institute of Oceanology CAS, China; “DNA Barcoding: Discovering New Species and Avoiding Molecular Errors” by Prof. Jennifer E. Buhay from Brigham Young University, USA; “The Response of Marine Crustacea to Global Climate Change: an Evolutionary Perspective” by Prof. Sven Thatje from National Oceanography Centre of University of Southampton, UK;

Recent Meetings...

The poster session

The closure ceremony

"Recent Advances in Studies of Disease Control in Shrimp Culture of China" by Prof. Jianhai Xiang, Institute of Oceanology, CAS, China.

The five symposia were respectively "**Decapod Phylogeny and Systematics**" (organized by Dr. Ka Hou Chu, The Chinese University of Hong Kong, China) "**Symbiotic Crustaceans: Diversity, Ecology and Evolution**" (organized by Dr. Viatcheslav Ivanenko, Moscow State University, Russia and Temir Britayev, A.N. Severtzov Institute of Ecology & Evolution, RAS, Russia), "**Squat lobster systematics and biology**" (organized by Dr. Gary C.B. Poore, Museum Victoria, Melbourne, Australia), and "**Advances in Crustacean Morphology**" (organized by Dr. Stefan Richter, University of Rostock, Germany), and "**Crustacean Genomics**" (organized by Dr. Bin Liu, Institute of Oceanology, Chinese Academy of Sciences, China and Dr. Nigel Preston, CSIRO Marine and Atmospheric Research-Cleveland, Australia).

The twelve oral sessions were listed as the following: "Physiology and Endocrinology"; "Freshwater Crustacean Biology"; "Morphology and Taxonomy"; "Crustacean Diseases and Control"; "Immunology"; "Larval Biology and Behaviour"; "Ecology and Biodiversity"; "Phylogeny"; "Fisheries and Aquaculture"; "Response to Environmental Change"; "Biogeography" and "Genetics and Breeding".

The congress fully exhibited the achievements in all branches of crustacean biology, boosted the exchanging and cooperation in the field and was beneficial to the development of crustacean biology. The participants enjoyed the scientific program, city tour and the performance and the organizing of the conference.

The closure ceremony

The Crustacean Society Excellence in Research Award presented to **Dr. Gary C. B. Poore**

Prof. Ruiyu Liu at the closure ceremony

The volunteers that worked for the ICC7

Recent Meetings...

TCS 2010 Student Winners

The Crustacean Society (TCS) is pleased to announce the winners of the Best Student Paper and Poster Competition held during the Seventh International Crustacean Congress, June 20-25, 2010, in Qingdao, China. There were 59 high quality competitors. The Best Student Oral Presentation Awards were presented to **Ione Madinabeitia** (Hiroshima University, Japan) for her talk entitled, "Mysterious copepods (Poecilostomatoida: Philichthyidae) parasitic in the lateral line system of Japanese sparid fishes" (with co-author K. Nagasawa) and **Shihao Li** (Institute of Oceanology and Chinese Academy of Sciences, China) for his talk entitled "Screening of genes specifically expressed in males of *Fenneropenaeus chinensis* and their potential as sex markers" (with co-authors F. Li, Y. Xie, R. Wen, and J. Xiang). The Best Student Poster Awards were presented to **Takashi Matsuoka** (Kagoshima University, Japan) for his poster entitled "Description of morphology and behavior related to water circulation of fiddler crab *Uca lactea*" (with co-author H. Suzuki) and **Carola Becker** (Senckenberg Research Institute & Natural History Museum, Germany) for her poster entitled "Female reproductive system of European Pinnotheridae (Malacostraca, Decapoda, Brachyura)" (with co-authors D. Brandis and V. Storch). Each award consists of a certificate, US$100 cash, and a one-year membership in The Crustacean Society, including subscription to *The Journal of Crustacean Biology*. TCS thanks those members who served as judges, helped in tabulating the results, and all student participants.

Christopher B. Boyko
Program Officer

Mysterious copepods (Poecilostomatoida: Philichthyidae) parasitic in the lateral line system of Japanese sparid fishes

Ione Madinabeitia and Kazuya Nagasawa
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Parasitic crustaceans such as isopods, brachyurans and copepods are easily found attached to the external surfaces of finfish such as skin and fins, and to some sites in contact with the external environment such as gill cavities, mouth, nares or eye orbits. In some instances, parasitic crustaceans are found in subcutaneous spaces of the fish frequently unexplored by parasitologists. This is the case of philichtyid copepods, which occupy those spaces associated with the sensory canals of the lateral line and skull bones of marine actynopterygian fish. The lateral line system of fish detect mechanical vibrations and pressure changes in the water surrounding the fish and is used by the fish for rheotaxis (orientation of body in the current), detection of approaching conspecifics, predators or obstacles and localization of moving prey. Of the 9 genera of philichthyids, the genus *Colobomatus* Hesse, with over 56 described species, is parasitic in 19 fish families, including the family Sparidae, which is a commercially important fish group in Japan. There are 10 species of *Colobomatus* mostly infecting Mediterranean sparids but only one species, *Colobomatus mylionus* Fukui, was reported and vaguely described from Japanese waters in 1965. The same copepod species was collected and redescribed from Australian sparids. However, due to the difficulty in finding the infection site of these copepods, no other scientist since has been able to collect *Colobomatus mylionus* in Japanese waters for comparative purposes. Forty-five years from the original description in 1965, both the female and male of *C. mylionus* were discovered from black sea bream *Acanthopagrus schlegelii schlegelii* (subfamily Sparinae) in Japanese waters. This study redescribes the female, describes for the first time the male of *C. mylionus* from Japanese waters and compares the morphology of the species from Japan and Australia. In addition, the infection sites of this parasite are revealed here: the head cavities associated with the skull bones are the microhabitat for both females and males, while the tube of the lateral line scales is the preferred microhabitat by the males. Differences between the Japanese and Australian *C. mylionus* are found on the body size, proportion of the head and trunk protrusions, ornamentation of such protrusions, segmentation of the exopods of legs 1, 2 and basal seta of leg 3. Based on these differences, we can conclude that the Australian and Japanese *C. mylionus* are different species. In addition, two undescribed species of *Colobomatus* were collected from four other sparid fishes belonging to two subfamilies (Pagrinae and Denticinae). Our results show that *Colobomatus* spp. can provide information on the phylogenetic relationship of their hosts at the subfamily level. So far, little information is available on the basic aspects of the biology of these philichthyid copepods such as their infection routes, life cycle and effects on their hosts. Future studies are essential for a better understanding of this peculiar group of parasitic crustaceans.

Screening of genes specifically expressed in males of *Fenneropenaeus chinensis* and their potential as sex markers

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More and more evidence showed that androgenic gland (Ag), which is the gland unique to males, played important role in sex differentiation of crustacean. Therefore the androgenic gland is a candidate model to understand the mechanism of male development and to discover male-specific sex makers of crustacean. In the present study, a suppression subtractive hybridization (SSH) technique was applied to identify specifically expressed genes in the androgenic gland of Chinese shrimp *Fenneropenaeus chinensis*. Prepared cDNA from tissues including androgenic gland and

Recent Meetings...

part of spermatophore sac (since the androgenic glad can not be separated completely), which located at the basal part of the 5th pereopods of male shrimp, was used as tester, and the cDNA from the basal part of the 4th pereopods of these male shrimp was used as driver to construct Ag SSH library. In the library, 402 ESTs were divided into 48 contigs and 105 singlets by Contig-express software. 13 contigs and 21 singlets were identified as known genes. The identified genes encoded proteins with multiple functions, including extracellular matrix components, cytoskeleton, cell growth and death, metabolism, genetic information processing, signal transduction/transport or immunity related proteins. 13 high expressed contigs were selected to verify the Ag SHH library and to screen the sex makers of Chinese shrimp. The selected contigs were almost specifically expressed in the tissues androgenic gland and spermatophore sac. It will provide us a new clue to uncover the mechanism of male development of shrimp. A contig, which was confirmed to be expressed at the early developmental stage in the shrimp and specifically expressed in male ones, could be used as a sex maker of the shrimp. Further more, two high identified fragments encoding a crustacean hyperglycemic hormone (CHH) precursor homolog were found in Ag SSH library. The cloned full-length cDNA sequences (*Fc-CHH1*, *Fc-CHH2*) and their DNA sequences showed relatively different with other CHH family members. *Fc-CHH1*, *Fc-CHH2* were confirmed to express only at the epithelial cells in the internal wall of the spermatophore sac by RT-PCR and *in situ* hybridization. The transcripts of *Fc-CHH1* and *Fc-CHH2* begin to appear at the immature stage (115 days after the first post-larvae stage) when the spermatophore sac was first observed to appear. In the cloned DNA sequences of *Fc-CHH1* and *Fc-CHH2*, the predicted transcription factor binding sites in the 5' flanking sequences are different from those previously reported CHH family genes of crustacean. To our knowledge, these are novel CHH-like genes expressed specifically in male shrimp. Their function needs to be further investigated.

Description of morphology and behavior related to water circulation of fiddler crab *Uca lactea*

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The ocypodid crabs inhabit intertidal area and exhibit various activities such as feeding and social behavior on land during low tide.

Three students winners together with TCS President Akira Asakura (left) and TCS Program Officer Christopher Boyko (right)

Recent Meetings...

These crabs can breathe on land by water uptake from substratum via Müller's aperture and water circulation via Milne Edwards aperture (MEA). Fiddler crab belongs to ocypodid. Behavioral characters of water uptake of *Uca pugilator* and *U. pugnax* were reported by Thompson *et al.* (1989). However, morphology related to water circulation of fiddler crab has not revealed. Moreover, behavior related to water circulation of other fiddler crab species have not revealed. Therefore, morphology and behavior related to water circulation of *U. lactea* were described in this study. *U. lactea* collected from Kagoshima prefecture were used for morphological observation and behavioral observation. MEA, setal tuft between second and third walking leg, and chelipeds were cut from the body and dehydrated in ethyl alcohol (EtOH) series. After dehydration, the specimens were displaced in mixtures of tri-butyl alcohol (t-BuOH) and EtOH (tBuOH:EtOH=1:1, 2:1). Specimens in absoluted t-BuOH were refrigerated, then freeze dried (VFD-21 t-BuFreeze Dryer). Specimens were mounted on aluminum stubs, coated with gold (Eiko ION COATER IB-2) and viewed in SEM (Hitachi S4100H). Behaviors were made on live *U. lactea* using a video camera (Sony Hi-8). The plumo-pappose setae with simple tip and serrate tip were found in MEA. Constricted setae were found and dominant in setal tuft between second and third walking leg. Setal tuft were found in merus of cheliped. Denticulate setae and denticulate setae with setules were found in setal tuft on merus of cheliped. Denticulate setae were found in tip of cheliped. The setal tuft between second and third walking leg were driven into the sand. Then *U. lactea* exhausted water from mouth part. *U. lactea* exhausted water from exhalant aperture. Water flowed on pterygostomium region. Then, *U. lactea* groomed pterygostomium region by cheliped. When the setal tuft between second and third walking leg were driven into the sand, *U. lactea* rubed second and third walking leg each other. When pterygostomium region was dirtied by mud, *U. lactea* exhausted water from exhalant aperture, and groomed pterygostomium region by merus of cheliped. Then *U. lactea* exhibited behavior like removing debris from MEA by tip of cheliped. Male *U. lactea* did not use large cheliped for grooming. Based on the above results, morphological and behavioral characteristics and function were discussed.

Female reproductive system of European Pinnotheridae (Malacostraca, Decapoda, Brachyura)

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Pea crabs distributed around the coasts of Europe live commensally inside bivalves and ascidians. Not much is known about their reproductive biology, except that they have a very high reproductive output due to the great extension and fecundity of the females' gonads.

We studied the underlying morphology of the female reproductive system of *Pinnotheres pisum*, *Pinnotheres pectunculi* and *Nepinnotheres pinnotheres* by histological methods and electron microscopy (TEM).

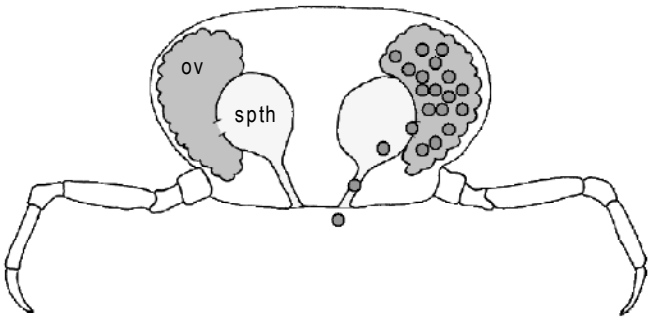
Eubrachyura have an inner fertilization: the paired vaginas enlarge into storage structures, the spermathecae which are connected to the ovaries by oviducts. Sperm is stored inside the spermatheca until the oocytes are mature. Afterwards oocytes are transported by the oviduct into the spermatheca where fertilization takes place.

In the investigated pinnotherids, the vagina is of the 'concave pattern' (sensu Hartnoll 1968) with musculature attached along one side that controls the dimension of its lumen. The genital opening is additionally enclosed by a muscular mobile operculum.

The spermatheca can be divided into two distinct regions by function and morphology. The ventral part includes the connection with vagina and oviduct and is regarded as the zone where fertilization takes place. It is lined with cuticula except where the oviduct enters the spermatheca through the 'holocrine transfer tissue'. It is glandular, performing holocrine secretion, plus being responsible for the transport of the oocytes.

The dorsal part of the spermatheca is considered as the main sperm storage area. It is lined by a highly productive apocrine glandular epithelium which is not known from heterotreme crabs so far.

So, two different ways of secretion occur in the pinnotherids' spermatheca. The definite role of secretion in sperm storage and fertilization is unknown, but it is remarkable that structure and function of secretion is more complex in pinnotherids, and probably more efficient than in other brachyurans.



Internal fertilization: female crabs have sperm storage structures, the spermathecae (spth), that are connected with the ovary (ov) by oviducts inside the body

Upcoming Meetings...

International Senckenberg Conference Biology of Freshwater Decapods

Senckenberg Research Institute and Natural History Museum
Frankfurt am Main, Germany
December 8-10, 2010
www.senckenberg.de/freshwater_decapods

Online registration has been extended to November 8, 2010
Abstract submission has been extended to November 1, 2010
e-mail: for all communications please use: freshwatercrabs@senckenberg.de

The conference features sessions on freshwater crabs (brachyurans and anomurans), freshwater crayfish, and freshwater shrimps. There will be a post-conference general meeting for those interested in focusing on general themes on freshwater decapod biology on the morning of Saturday December 11.

Social events include an 'icebreaker' reception on Wednesday evening December 8, and a reception hosted by the Senckenberg Natural Research Society on Thursday evening December 9.

There will be an opportunity to visit the crustacean collections at the Senckenberg Museum either before the conference or during the weekend after the closing session (e-mail: freshwatercrabs@senckenberg.de).

Please feel free to distribute this announcement to colleagues and suitable lists, there is still time to register!

Scientific Organising Committee:
Michael Türkay, Senckenberg Research Institute Frankfurt
Neil Cumberlidge, Northern Michigan University
Peter Ng, Singapore National University

Contact: freshwatercrabs@senckenberg.de

Society of Integrative and Comparative Biology January 3-7, 2011

The Crustacean Society winter meeting is held in conjunction with the Society of Integrative and Comparative Biology (SICB) and this year the meeting will take place from January 3-7, 2011 at the Salt Lake City Convention center in downtown Salt Lake City. Jen Buhay (USDA, Iowa State University) is organizing a symposium on Population Dynamics of Crustaceans which will focus on phylogeography, behavioral ecology, invasion biology, and ecosystem surveys. Speakers include an early-career cohort of scientists, students, post-doctoral associates, and faculty working on exciting population biology research who can take steps together toward multi-disciplinary efforts to further the field. The Symposium will take place on Thursday January 6 and the symposium-related talks will take place on Friday January 7. The Symposiium is being sponsored by the TCS and the Division of Invertebrate Zoology (DIZ) and the American Microscopical Society (AMS). Additionally there will be over 30 other talks and posters related to Crustacea. TCS in conjunction with the DIZ and AMS will host a social on Wednesday evening from 6:15 until 9:15 and there will be a TCS business meeting on Thursday January 6th from 6:15-7:15. Please plan on attending this year's winter meeting and dropping by the TCS booth to say hello.

Sherry Tamone
SICB Liaison Officer

The Crustacean Society Website

The Crustacean Society website, http://www.vims.edu/tcs, provides our members with information on meetings, society news, business, instructions for the Journal of Crustacean Biology, the Ecdysiast, and other helpful links. Features include: (1) membership applications and benefits to members; (2) society poster and page for recruitment (great pics!); (3) fliers and offical info for upcoming meetings; (4) downloads such as an official copy of Martin & Davis (2001) Classification of the Crustacea; and of course (5) the line for the online submission to the Journal of Crustacean Biology. This website is designed to serve you and your diverse interests. If you have an idea, item, link, or information of general interest, please forward it to jeff@vims.edu for inclusion in our website. We're also looking for participants to help in maintaining this site; step up if you're interested!

Upcoming Meetings...

8th International Symposium of Terrestrial Isopod Biology 19-23 June 2011

From 19 to 23 June 2011 the 8th International Symposium of Terrestrial Isopod Biology - ISTIB 2011 will be held in hotel Ribno near Bled in Slovenia.

The Symposium is a traditional meeting of people interested in terrestrial isopods from different fields of science. The Symposium was organized first in London 1983. After Urbino, Poitiers, Haifa, Crete, Aveiro and Tunis it is our turn to welcome you in Bled, Slovenia.

All up-to-date information about the meeting will be published on the Symposium web-site: http://www.istib-2011.si

For any further detailes contact: jasna.strus@bf.uni-lj.si (prof. dr. Jasna Strus) or primoz.zidar@bf.uni-lj.si

With kind regards
Primoz Zidar

Dr. Primoz Zidar, assistant professor
University of Ljubljana
Biotechnical Faculty
Dept. of Biology
Veèna pot 111
SI-1000 Ljubljana
Phone: +386 1 320 3376
Fax: + 386 1 257 3390

Upcoming Meetings...

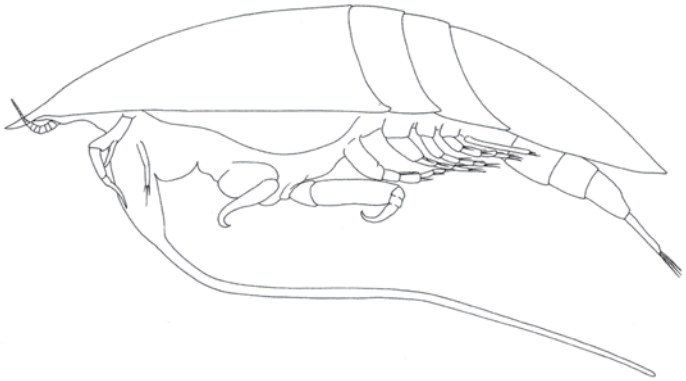
The World Association of Copepodologists (WAC) officially selected Mérida, Mexico as the next venue for the 11th Conference July 10-15 2011. After many years, the Conference will be held in the Americas; this is also a special occasion for us because next year the WAC will be celebrating its XXV Anniversary.

The scientific program will include the regular oral and poster sessions of contributed works and of course, the Maxilliped Lecture. There are now at four topics that will anchor different Symposia, now being organized: "Copepods and Human Health", "Copepods in Caves and Anchialine Environments", "Marine Copepods and Large Scale Changes" and "Morphology and Molecules Why cant we be friends?". Merida is a beautiful city and the entire Yucatan Peninsula is definitely one of the most interesting areas of Mexico, a place with unique natural and archaeological places; we hope that many of you will plan to stay more days to enjoy the marvels of this gifted region.

All colleagues interested in any aspect of the study of copepods, members and non-members, are invited to participate in the conference. The 11th ICOC has its own website: www.11thICOC.com, which is now active; a link is also posted in the WAC website. Registration of participants and submission of abstracts will be processed through the 11th ICOC website. We look forward to the pleasure of receiving our copepodologist colleagues and accompanying persons in Mérida in July 2011.

Eduardo Suàrez-Morales

Chair, 11th ICOC Organizing Committee



BIOLIEF 2011
2nd World Conference on Biological Invasions and Ecosystem Functioning. Mar del Plata, Argentina, November 21-24, 2011.

BIOLIEF 2011 will be a forum for the presentation, discussion, and synthesis of research on biological invasions in its broadest sense. The conference will place a particular emphasis on studies concerning the impact of invasive species on ecosystem functioning and/or services, irrespective of taxonomic groups or ecosystem types. However, studies on any other ecological aspect of biological invasions will also be welcome. Topics such as the spread of invasive species into ecosystems, the biogeography and history of species introductions, and the community- or species-level impact of biological invasions will also have an important coverage in the final conference program.

Contact: Jorge L. Gutiérrez

E-mail: biolief@grieta.org.ar

For more information about this meeting, visit our website (http://www.grieta.org.ar/biolief/). You can also follow us in Facebook for news and updates (http://www.facebook.com/?ref=home#!/pages/BIOLIEF-2011/126444150720221?ref=sgm).

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Jorge L. Guti Gutiérrez
Grupo de Investigación y Educación en Temas Ambientales (GrIETA)
Cervantes Saavedra 1875, Mar del Plata (7600), Argentina

Eighth International Crustacean Congress Frankfurt, Germany, 2014

Dear Colleagues,

It is a great pleasure for us to announce that the Eighth International Crustacean Congress (ICC8) will be held at the Senckenberg Museum in Frankfurt, Germany, in 2014. Our objective will be to invite contributions from all areas of crustacean biology, and bring together a multidisciplinary scientific community from across the world. Further details will be conveyed to you as soon as the Organizing Committee has established a website. We will greatly acknowledge all parties for support to make the conference successful.

We look forward to welcoming you in Frankfurt.

With kind regards,

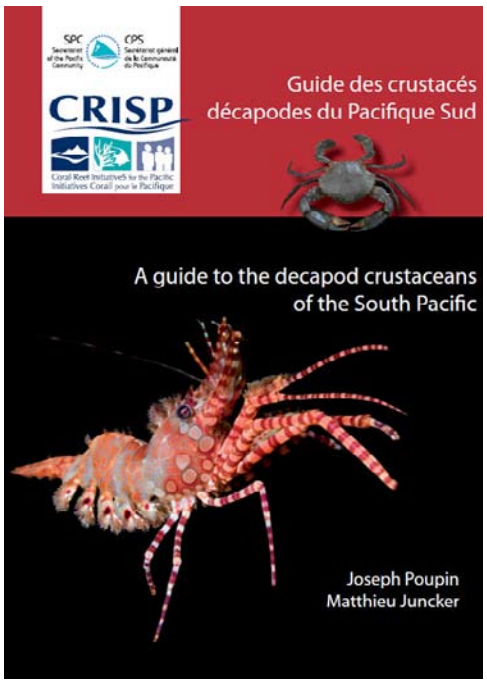
Michael Tuerkay
Stefan Koenemann

New Publications...

Guide des crustacés décapodes du Pacifique Sud / A guide to South Pacific's decapods crustaceans
Editions CRISP, SPC, Nouméa, 317 pp. (French/English)
by Poupin J. & M. Juncker (2010)

This project was sponsored by the CRISP (Coral Reef Initiatives for the Pacific) and SPC (Secretariat of the Pacific Community), Nouméa, New Caledonia. Only a few hundred copies were printed for the institutions of the South Pacific: fisheries departments, universities marine research centers, libraries ...). The book, 15x21 cm, 317 pages, 343 photographs, is bilingual (French/English). For institutions only (libraries, museums ...) a few copies are still available on request to J. Poupin (joseph.poupin@ecole-navale.fr). The PDF is available free on the Internet at the CRISP page (http://www.crisponline.net/) and AToL Decapoda (http://decapoda.nhm.org/ - see uploaded PDF Files).

The guide includes identifications cards for 223 species. In complement of the photographs, some key morphological characteristics are given for each species to facilitate the identification. The cards include also: the scientific name and taxonomic classification; a common name, often difficult to select in Oceania where many local names may exist; some ecological observation; worldwide distribution with details of records available in the tropical South Pacific; and, when relevant, some remarks about economic interest, fishing methods or toxicity. To help field determination, the identification cards are presented by biotope: forest, river, mangrove, beach, rocky shore, coral bottom, with species associated (with corals, anemones, fishes …) treated as belonging to a distinct 'biotope'.



CRUST-SOC@VIMS.EDU, the Crustacean Society's Listserver

The Crustacean Society has an email list server that is only open to members of the society. This list server is designed to provide you with timely official society business and important society announcements. CRUST-SOC is moderated and closed and is not a forum for discussion. It is not meant to replace CRUST-L because the latter is open to nonmembers and is for broader discussion on Crustacea. For suggestions, contact jeff@vims.edu, your TCS Secretary, or any member of the board (listed at our website http://www.vims.edu/tcs).

You can subscribe to CRUST-SOC by becoming a member of the society. Members who aren't subscribed can send SUBSCRIBE CRUST-SOC YOUR NAME (not your email address) as the message body to LISTPROC@VIMS.EDU. You can unsubscribe by sending UNSUBSCRIBE CRUST-SOC to LISTPROC@VIMS.EDU.

We have taken every effort to ensure that your email address has been correctly entered into CRUST-SOC. However, several members have changed email addresses or have made mistakes in entering email addresses. Thus, if you are a member and are not on the list, please enter your correct email address on the annual subscription form, and please subscribe as detailed above. Remember, CRUST-SOC is the official email list server for society information and not a forum for discussion.

CRUST-L@VIMS.EDU, the Discussion List for Crustacea

CRUST-L@VIMS.EDU is the email list server for those interested in Crustacea. It is an informal scientific forum for discussion on all aspect of the Crustacea. CRUST-L is a moderated, open list, but you have to be a member to post messages to it. You can subscribe to the list by sending SUBSCRIBE CRUST-L YOUR NAME (not your email address) as the message body to LISTPROC@VIMS.EDU. You can unsubscribe by sending UNSUBSCRIBE CRUST-L to LISTPROC@VIMS.EDU. Use LISTPROC@VIMS.EDU to post administrative commands such as SUBSCRIBE, INFO, HELP. Use CRUST-L@VIMS.EDU to post messages to CRUST-L. The listproc software includes several features such as searchable archives, and a digest mode for intermittent mailings.

Obituary

Lilly King Manning

Many in the crustacean community will be saddened to hear that Lilly King Manning died earlier this year, here in Washington, D.C. Lilly was the wife of the late and great Raymond Manning, a world-renowned carcinologist.

Lilly was a successful independent artist but also illustrated dozens of Ray Manning's papers over his productive career.

For those of you who possess a Lilly Manning hand-painted crustacean silk tie, some of her colorful crustacean cards or a piece of her beautiful nature art (much of it marine themed) this is a particularly great loss.

Lilly and Ray were a dynamic duo in carcinology and for many years were regular faces at most crustacean conferences or congresses. They will both be greatly missed. The details of much of their carcinological life together was recently expressed in the fine appreciation of Raymond Manning, published in JCB (29(4):431) in November 2009.

A few facts about Lilly King Manning follow:

Lilly King Manning (3 June, 1935 – 13 March, 2010)

She was born Lilly Dagmar King 6/3/35 at Jackson Memorial Hospital, in Miami.

She was the oldest of the 3 surviving children.

She married Ray Manning on 8/1/1957, and she sewed her own wedding gown.

She graduated with a degree in Biology, probably from University of Florida in Gainesville.

She was a crowned beauty queen.

Lilly with Ray at the deep sea conference, Brest, 1998

She died at home after a short fight with an extremely rare cancer, esophageal adenocarcinoma.

Lilly's memory will live on through her prolific artwork, both in her husband's papers and on the walls (and chests) of carcinologists the world over.

Chris Tudge
(ctudge@american.edu)

The Denton Belk Fund

The Crustacean Society would like to remind our readers that it is soliciting contributions to an endowed fund to honor the memory of Denton Belk, a founding member and past treasurer of TCS. The endowment will be used to fund scholarships for students performing large branchiopod research, a field in which Denton excelled and made significant contributions. Students will be able to use funds to support research costs and/or travel (either to scientific meetings or for research purposes).

Denton was exceptionally generous in his lifetime to students in need who expressed an interest and passion for large branchiopods. We feel it is a fitting tribute to our colleague and friend to continue this tradition in his passing. We encourage and appreciate your contribution!

Please note that you do not need to become a member of TCS to make a donation!

Personal checks (in U.S. Dollars) may be made out to "TCS – The Denton Belk Fund". Alternatively, contributions using Visa or Master Card can be made by printing out a copy of the membership application from the Society's website (http://www.vims.edu/tcs), indicating the amount (in U.S. Dollars) that you are willing to contribute on the appropriate line, and mailing the form to the Business Office at the address below.

Please send contributions to:
Business Office, The Crustacean Society
P.O. Box 1897, Lawrence, Kansas 66044-8897
U.S.A.

For additional inquiries, please contact Mary Belk (TCS Treasurer) by email: (marybelk@att.net)

Spotlight on...

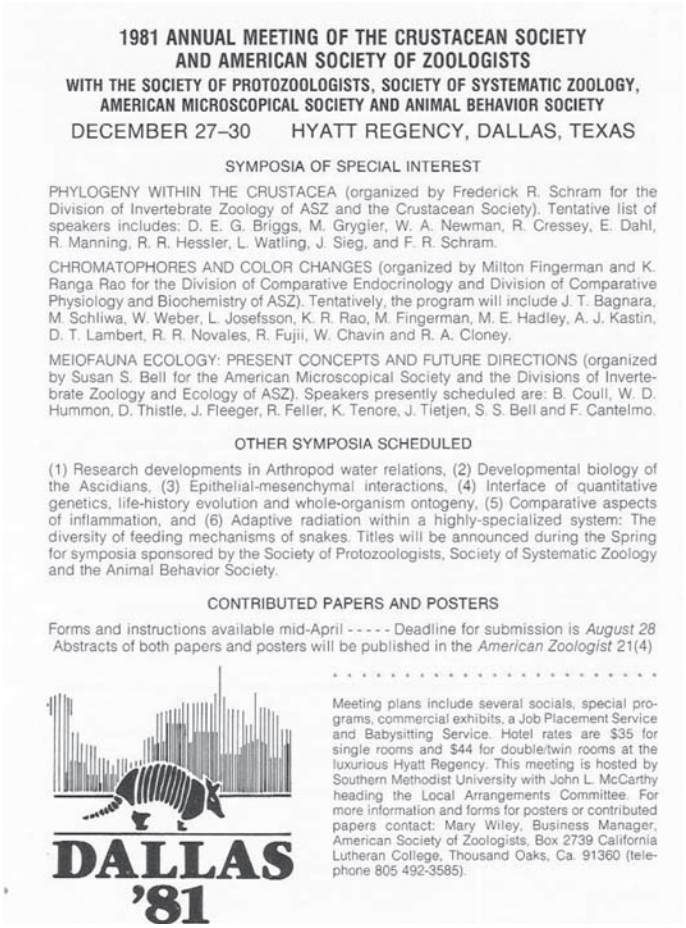
30 years of The Crustacean Society

This year, 2010, marks the 30th anniversary of The Crustacean Society. The mission of TCS is to advance the study of all aspects of the biology of crustaceans by promoting the exchange and dissemination of information throughout the world. TCS has been working hard diligently to grow and improve as a society, to change with the times, to offer more to its membership, and to advance crustacean biology. And now, we accommodate the Society's growing international base, holding the meetings often with other societies focused on crustaceans in the world. Many of you know how much TCS has accomplished in 30 years. Journal of Crustacean Biology has published the thousands of peer reviewed, important articles, we have organized or financially supported many scientific meetings and symposia, and we presented the awards to the numerous colleagues and students whom we have recognized.

In the previous Ecdysiast issues we celebrated this anniversary showing pictures of all past TCS presidents. Here we show some pictures from past meetings as well as pictures of other relevant TCS things. We also received some messages of congratulations on the 30th Anniversary and carry them below. Thank you!

Akira Asakura
President, The Crustacean Society

Diego Maruzzo
Editor, The Ecdysiast



1981 ANNUAL MEETING OF THE CRUSTACEAN SOCIETY
AND AMERICAN SOCIETY OF ZOOLOGISTS
WITH THE SOCIETY OF PROTOZOOLOGISTS, SOCIETY OF SYSTEMATIC ZOOLOGY, AMERICAN MICROSCOPICAL SOCIETY AND ANIMAL BEHAVIOR SOCIETY

DECEMBER 27–30 HYATT REGENCY, DALLAS, TEXAS

SYMPOSIA OF SPECIAL INTEREST

PHYLOGENY WITHIN THE CRUSTACEA (organized by Frederick R. Schram for the Division of Invertebrate Zoology of ASZ and the Crustacean Society). Tentative list of speakers includes: D. E. G. Briggs, M. Grygier, W. A. Newman, R. Cressey, E. Dahl, R. Manning, R. R. Hessler, L. Watling, J. Sieg, and F. R. Schram.

CHROMATOPHORES AND COLOR CHANGES (organized by Milton Fingerman and K. Ranga Rao for the Division of Comparative Endocrinology and Division of Comparative Physiology and Biochemistry of ASZ). Tentatively, the program will include J. T. Bagnara, M. Schliwa, W. Weber, L. Josefsson, K. R. Rao, M. Fingerman, M. E. Hadley, A. J. Kastin, D. T. Lambert, R. R. Novales, R. Fujii, W. Chavin and R. A. Cloney.

MEIOFAUNA ECOLOGY: PRESENT CONCEPTS AND FUTURE DIRECTIONS (organized by Susan S. Bell for the American Microscopical Society and the Divisions of Invertebrate Zoology and Ecology of ASZ). Speakers presently scheduled are: B. Coull, W. D. Hummon, D. Thistle, J. Fleeger, R. Feller, K. Tenore, J. Tietjen, S. S. Bell and F. Cantelmo.

OTHER SYMPOSIA SCHEDULED

(1) Research developments in Arthropod water relations, (2) Developmental biology of the Ascidians, (3) Epithelial-mesenchymal interactions, (4) Interface of quantitative genetics, life-history evolution and whole-organism ontogeny, (5) Comparative aspects of inflammation, and (6) Adaptive radiation within a highly-specialized system: The diversity of feeding mechanisms of snakes. Titles will be announced during the Spring for symposia sponsored by the Society of Protozoologists, Society of Systematic Zoology and the Animal Behavior Society.

CONTRIBUTED PAPERS AND POSTERS

Forms and instructions available mid-April - - - - - Deadline for submission is *August 28*
Abstracts of both papers and posters will be published in the *American Zoologist* 21(4)

DALLAS '81

Meeting plans include several socials, special programs, commercial exhibits, a Job Placement Service and Babysitting Service. Hotel rates are $35 for single rooms and $44 for double/twin rooms at the luxurious Hyatt Regency. This meeting is hosted by Southern Methodist University with John L. McCarthy heading the Local Arrangements Committee. For more information and forms for posters or contributed papers contact: Mary Wiley, Business Manager, American Society of Zoologists, Box 2739 California Lutheran College, Thousand Oaks, Ca. 91360 (telephone 805 492-3585).

Our enthusiastic compliments on the celebration of the 30th anniversary of this most prestigious and respectable Scientific Society that has played a vital role in the development of Carcinology around the world. On behalf of the Brazilian Crustacean Society, I would like to congratulate The Crustacean Society for the outstanding success, which stems from many talents natured over the past 30 years. Congratulations!

Paula Beatriz de Araujo
President, Brazilian Crustacean Society

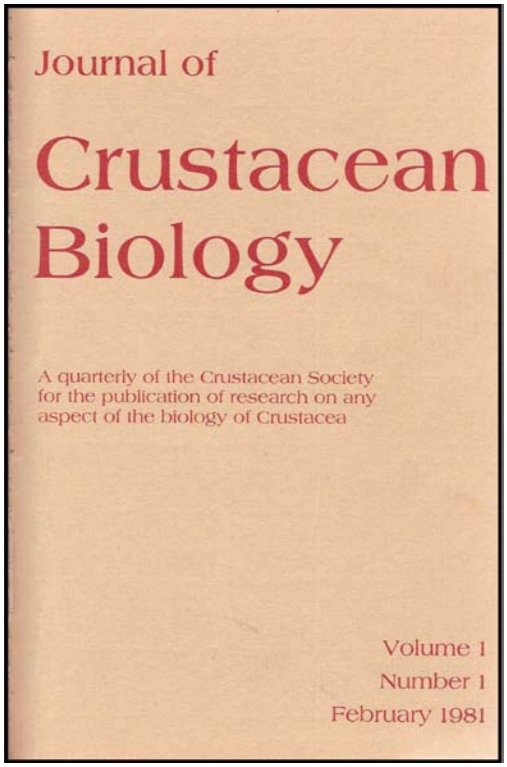
Although I have only been a member for about 1/2 as long as TCS has been in existence, I have been drawn deeper into the workings of the Society as time has passed. In 2005, Trisha Spears literally twisted my arm to make me agree to run for Program Officer and, since then, I have been doing my best to help see TCS grow & prosper in order to set the stage for the 40th & 50th anniversaries and beyond. Having seen the Society from both sides (member & officer), I can say that of all the societies I belong to, none have the enthusiastic & congenial camaraderie that I see in TCS members. It is wonderful to see such a group of people, dedicated to their scientific interests, freely share information with such openness and good will. The Society was founded by like-minded scientists who put "crustaceans first" and this admirable goal continues today. I have met many wonderful colleagues, collaborators and friends through TCS, starting from my student days when I attended my first TCS/ICC meeting in Amsterdam in 1998. 30 years may be nothing in geological time, but for the people in TCS, it is nothing less than 10950 days of having a good time! Best wishes to TCS and here's to 30(+) more!

Christopher Boyko
Program Officer

Spotlight on...
30 years of The Crustacean Society

Birth of the Crustacean Society
by Rick Brusca

With much wine imbibed
Tom Bowman in his rabbit Jammies
On the beach in Beaufort, 1978
TCS was born



Dear TCS friends and freshwater crayfish fellows,

The year 2010 marks the 30th Anniversary of The Crustacean Society, and we commemorate this landmark event. During the past three decades, TCS's Journal of Crustacean Biology has published many papers on freshwater crayfish, and many presentations have been made at the Summer and Winter Meetings of TCS - sincere thanks to all contributors. These contributors are an important part of TCS history, and the President and members of International Association of Astacology were invited and presented a series of lectures at a satellite Symposium on freshwater crayfish at the TCS Summer Meeting in Tokyo, 2009. This was the first International conference of freshwater crayfish to be held in Asia and as such, it was a memorable event for both the IAA and TCS. As the organizer of this unforgettable conference, I hope that Astacologists from around the world keep up their good work well into the future.

Tadashi Kawai
Fisheries Research Department
Wakkanai Fisheries Research Institute

In 1980, something really enormous, decuman, and staggering happened in the USA, and the world held its breath. The Crustacean Society ..... was just about to be formed, when Mount St. Helens exploded with a gigantic blast and eruptions of ash and rock debris, claiming 57 victims!

Thirty years later, the volcano has become quiet, but The Crustacean Society becomes louder than ever. After three decades of continuous work in favour of dissemination of knowledge on Crustacea, TCS has decided to become an active hub for crustacean knowledge by creating a net with other societies in the field of crustacean research. IRGO, the International Research Group on Ostracoda, is happy to take part in this new networking. We are looking forward to the coming decades of joint work on our favourite animal taxon, the Crustacea.

Happy anniversary, TCS!

Renate Matzke-Karasz,
Ludwig-Maximilians-University Munich,
current chair of the IRGO steering committee

Spotlight on...

30 years of The Crustacean Society

As the President of the Carcinological Society of Japan (CSJ), I would like to extend my cordial congratulations to the Crustacean Society (TCS) on the occasion of its 30th anniversary. TCS has made possible the great progress in the field of crustacean biology. Last year (2009), the TCS Summer Meeting was jointly held with the 47th Annual Meeting of the CSJ, in what became a groundbreaking and memorable event. May the TCS continue to expand its membership, importance to the scientific community, and contributions to knowledge and society.

President of the Carcinological Society of Japan
Dr. Seiichi Watanabe
Professor Emeritus
Tokyo University of Marine Science and Technology

As a contributor to Volume 1, number 1 of the Journal of Crustacean Biology, I'm pleased to see the continuing success of the Crustacean Society and the many examples of good research published in the journal. I was stimulated by interactions with many people from around the world at meetings in Mexico and Scotland. I remember the canoe full of crawdads in Louisiana ! I think some of my colleagues still talk about the belt-busting seafood sampler meal at Gaido's in Galveston. Here's to another successful 30 years! Keep on scuttling!

Mary Wicksten

Dear Colleagues

Congratulations to The Crustacean Society for weathering the last 30 years successfully. I pay tribute to the great crustaceologists who started the society but who have regrettably passed on: Ray Manning, Arthur Humes and Denton Belk. I served with them on the council in the late 80's and admired their efforts to shepherd TCS through the difficult first years. That the society and the Journal of Crustacean Biology is strong today owes much to their foresight and leadership. The next 30 years of research on crustaceans should be just as exciting.

Best wishes

George D.F. (Buz) Wilson

Spotlight on...

30 years of The Crustacean Society

Become a Member NOW

There are many benefits to being a member in The Crustacean Society:
Members receive savings on page charges in the Journal of Crustacean Biology (JCB).
Members receive online access to JCB through www.BioOne.org and electronic access to back issues of the journal through JSTOR!
Members receive complimentary pdf files of their publications in JCB.
Members can receive the Journal at a great price, essentially at cost!
Members receive lower registration fees at SICB and regular TCS functions.
Members receive biannual mailings of the society's newsletter, the Ecdysiast.
Members receive breaking news on CRUST-SOC, a members-only list for the society.
Student members are eligible for two different fellowships for research or travel.
Students are also eligible for Best Student Paper and Poster awards at several scientific meetings (e.g., SICB, TCS, ECC, ICC).
Students receive the journal at an excellent price, below cost!

But best of all, members enjoy the camaraderie of their fellow crustaceophiles!

If you are a NPR listener, you know the bi-annual pledge drive drill. Just like supporters of NPR, you'd be surprised how many of our crustacean colleagues are not members. In your lab, are your crustacean colleagues members of this venerable society? Are the students? How about your crusty colleagues outside your institution? Encourage them to become a member today. Print out the membership form (http://www.vims.edu/tcs/form.html) and leave it on their chair.

If you don't need another copy of JCB in your lab, sign up for membership without the journal – only $35 – and such a bargain.

rwetzer@nhm.org
Regina Wetzer, North American Governor

TCS Board Election, 2010

Board of The Crustacean Society Nominations for Officer Vacancies (2011-2012)

The following have been nominated for positions on the Board of The Crustacean Society for the period 2011-2012:

Treasurer:

Mary Belk - Belk Consulting, San Antonio, Texas, USA (incumbent).

Write in nomination: _____

Secretary:

Ole Møller - Post. Doc., Allgemeine und Spezielle Zoologie, Institut für Biowissenschaften, Universität Rostock, Universitätsplatz 2, D-18055 Rostock (acting incumbent).

As "acting Secretary", I have been asked to introduce myself to the TCS community in lieu of the up-coming elections. I studied biology at the University of Copenhagen and in the last part of my studies it became clear to me how fantastic a group the crustaceans would be to work with. Thus, I did my MSc thesis with Prof. Dr. scient. Jens Høeg (whom you know as long-time Officer and Past President of TCS), on the subject of larval development in the Notostraca, specifically *Triops cancriformis*. I did my PhD-thesis with Dr. Jørgen Olesen (Curator of Crustacea) at the Zoological Museum (also Univ. of Copenhagen), on the subject of phylogeny and evolution in the Branchiura. This fascinating group of parasitic crustaceans has also been the subject of my postdoctoral research, and since late 2007 I have had the great pleasure of working in Prof. Stefan Richter's lab in Rostock, Germany. I have mainly worked with morphology (e.g., ontogeny and nervous systems) and how to apply these data in phylogenetic reconstructions. I proudly consider myself an "evolutionary morphologist", and a true carcinologist at heart. I look forward to serving the TCS as Secretary, should you elect me.

Write in nomination: _____

North American Governor:

Jason Williams - Department of Biology, Hofstra University, Hempstead, NY 11549-1140.

Jason received his B.A. in Biology from Franklin and Marshall College, where he began research on hermit crabs and their associates. He then went to the University of Rhode Island, earning a M.S. in Zoology and a Ph.D. in Biological Sciences based on research conducted in the Philippines. He is currently an Associate Professor at Hofstra University where he teaches courses such as Invertebrate Zoology, Parasitology and Scanning Electron Microscopy. His research focuses on the symbioses between hermit crabs and commensal polychaete worms, barnacles and parasitic isopods worldwide. For his studies he has been awarded the Douglas Nolan Award for academic achievement in the sciences (University of Rhode Island) and the Lawrence A. Stessin Prize for outstanding scholarly publication (Hofstra University). His work has been funded by the National Science Foundation, the Sigma-Xi Scientific Society, and the Lerner-Gray Fund for Marine Research. He has published over 25 peer-reviewed publications and regularly presents at national and international scientific meetings on the biology of hermit crabs and their symbionts.

Write in nomination: _____

European Governor:

Elena Mente - Assistant Professor, University of Thessaly, School of Agricultural Science, Department of Ichthyology and Aquatic Environment, Ionia Magnisias, Volos, Greece.

Elena is an Assistant Professor at the University of Thessaly in Greece and an Honorary Research Fellow at the University of Aberdeen, UK. Her PhD research on crustacean physiology at the University of Aberdeen was funded by a European Commission Training and Mobility Fellowship. Her research interests lie in aquatic animal nutrition and physiology with a main focus on decapod crustacean physiology and nutrition. Her publications include edited volumes, chapters in books and research papers in many peer-reviewed journals. She has also published two books on titled 'Reproductive Biology of Crustaceans' and 'Nutrition, Physiology and Metabolism of Crustaceans'. She has been a member of the coordinating team for a European Commission funded project on aquaculture and coastal, economic and social sustainability project (AQCESS). She has received several grants on issues of organic aquaculture and nutrition and reproduction of Norway lobster.

Steffen Harzsch - Zoologisches Institut und Museum, Cytologie und Evolutionsbiologie, Universität Greifswald, Soldmannstrasse 23, D - 17487 Greifswald.

I obtained my PhD in 1995 from the University of Bielefeld/Germany with a thesis on the development of the nervous system in zoea and megalopa larvae of *Hyas araneus* and *Carcinus maenas* tutored by Ralph Dawirs, an expert in larval ecophysiology. I did much of the experimental work for my thesis in the lab of Klaus Anger at the Biologische Anstalt in Helgoland.

During a postdoctoral period in Barbara Beltzs lab at Wellesley College/Massachusetts I worked on embryonic neuro-

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genesis in the brain, ventral nerve cord and visual system of the American lobster with immunohistochemical methods, fluorescence and confocal laser-scan microscopy and with mitosis markers.

I then moved to the University of Ulm/Germany where I was hosted by Dieter Waloszek (Dept. Biosystematic Documentation), a renowned crustacean paleaeontologist, and Harald Wolf (Neurobiology) an arthropod neurobiologist. In Ulm, I expanded my studies to comparative developmental studies (Evo/Devo) on the nervous system of e.g. *Artemia salina*, *Triops cancriformis, Leptestheria dahalacensis* and the parthenogenetic marbled crayfish, but also to other arthropod taxa such as *Limulus polyphemus* (with Barbara Battelle at the Whitney Lab, Florida), scorpions (with Harald Wolf) and myriapods.

In these years, I promoted the discipline neurophylogeny (the term being coined by Dorothy Paul), that is a synthesis of neurobiological studies and phylogenetic aspects, much fueled by my hosts which as experts in paleontology versus neurobiology inspired my multidisciplinary approach. Since Ulm, much of my research is centered around the question What can structure and development of the arthropod nervous system tell us about arthropod phylogeny?

I obtained my habilitation in 2001 and continued to work in Ulm on a Heisenberg stipend by the Deutsche Forschungsgemeinschaft. A study on neurophylogeny of remipede crustaceans together with Martin Fanenbruck and Wolfgang Waegele brought about a new hypothesis on these animals phylogenetic affinities. Side projects concerned muscle development in lobster and isopod embryos.

In 2006, I moved to Bill Hanssons group Evolutionary Neuroethology at the Max Planck Institute for Chemical Ecology in Jena/Germany as group leader in neuroanatomy. Bill is primarily interested in the evolution of arthropod olfactory systems and his group applies a broad spectrum of methods from immunohistochemistry, imaging, 3D reconstruction across molecular methods to neurophysiology and behavioral essays. My work in Jena focused on the crustacean olfactory system during the evolutionary transition from sea to land. To that end, I compared the central olfactory pathway between marine and terrestrial isopods, marine and terrestrial brachyurans, and, most notably, marine and terrestrial anomurans. In the course of these studies I had the chance to work on the giant robber crab *Birgus latro* on Christmas island/ Indian Ocean. I was not only responsible for studying the brain structure of this remarkable beast but also coordinated a telemetric study on these animals behavior using GPS transponders. I will be on Christmas Island again this coming December with new GPS tags to study olfactory driven behaviors and migrations of these animals and I am thrilled about this perspective!

In 2008, I obtained tenure as professor in Cytology and Evolutionary Biology at the Zoological Institute of the University of Greifswald/Germany, a quaint small town at the Baltic coast with a university that goes back to 1456. Although the neighboring University Rostock is some ten years older, I maintain a fruitful collaboration with Stefan Richters group in Rostock. Greifswald is also strategically well situated for interactions with other carcinologists such as Gerhard Scholtz group in Berlin or Jens Høeg's lab in Copenhagen as well as colleagues e.g. in Lund, Stockholm and Helsinki.

We are also actively establishing scientific contacts to Poland (Stettin, Posznan, Warsaw) and further East. And fortunately, my labs here in Greifswald are not as old as 1456. My department uses methods such as immunoflourescence, confocal laser-scan microscopy, 3D reconstruction (Amira, Imaris) TEM and SEM to analyze the nervous systems of crustaceans (currently e.g. *Nebalia bipes*, *Saduria entomon*, *Coenobita clypeatus*, more *Birgus*) but also of myriapods (centipedes and millipedes) in an evolutionary context. We also try to integrate ethological aspects wherever possible and to that end maintain a strong collaboration with Bill Hanssons group at the MPI in Jena. A list of my publications can be found here:
http://www.mnf.uni-greifswald.de/institute/fr-biologie/zool-institut-museum/cytologie-und-evolutionsbiologie/ag-leiter.html

Write in nomination: _____

Indo-Pacific Governor:

Joanne Taylor - Comarge Research Fellow, Museum Victoria, Australia

Joanne commenced her career in Marine Science as a Research Assistant in the Crustacea Department at Museum Victoria in 1994. Her first role was to deliver one of the museum's earliest web development projects, the Marine Crustaceans of Southern Australia site. Since then she has contributed to a variety of research projects all broadly focussed on the taxonomy of marine invertebrates. In 2003 she completed a PhD under the supervision of Dr Gary Poore (Museum Victoria) and Prof. David Macmillan (The University of Melbourne) focused on the taxonomy of the amphipod family Phoxocephalidae, resulting in the publication of many papers on the Australian fauna. From 2001-2009 she held the role of Collection Manager, Marine Invertebrates in which she managed the collection and conducted original research on the crustacean fauna of Australia (including the caridean shrimp family Crangonidae). Over this period she supported the research activities of a wide network of local and international colleagues through the provision of specimens and data for loan and exchange. Her recent appointment to the position of COMARGE Research Fellow gives her the opportunity to liaise with international colleagues to compile a book about the squat lobsters of the world. Her recent research activities can be viewed at: http://researchdata.museum.vic.gov.au/squatlobster/

Kareen Schnabel - Scientist and Collection Manager, NIWA Invertebrate Collection, Biodiversity & Biosecurity, Na-

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tional Institute of Water & Atmospheric Research, Wellington, New Zealand

Born in Germany with university degrees in Germany (BSc) and New Zealand (MSc and PhD) and with carcinological research experience in Canada (working on Arctic peracarids in 2001–2002), The Bahamas (spiny lobster recruitment and grow-out in 2003) and New Zealand (Amphipod phylogenetics MSc study, 1997–2000 and ongoing Anomuran crab taxonomy, systematics and biogeography research, since 2005). Working as a scientist in the NIWA Biodiversity and Biosecurity group and managing the NIWA Invertebrate Collection in Wellington for the last four years, with a primary focus on deep-sea collections around the southwest Pacific and Ross Sea. Actively engaged in international science collaborations, most recently around squat lobster research, and an active member of the New Zealand Marine Science Society. If elected governor, I would like to take on the task of increasing student numbers in the TCS. It's crucial to raise awareness and promote networking between the next generation of carcinological scientists.

Write in nomination: _____

The Treasurer shall be in charge of funds, make necessary disbursements, direct and oversee fund-raising activities, and keep the financial records of the Society. The Treasurer shall present a statement of financial accounts, audited by the Financial Committee, at the time of the annual business meeting. The Treasurer chairs the Financial Committee.

The Secretary shall keep the Society calendar of events, advise officers of deadlines, record minutes for all Board and Annual meetings, issue notices for meetings of the Board and the Society, conduct the correspondence of the Society and Board, be responsible for mailing ballots, and present a written yearly summary of the Society's activities to the Membership. The Secretary shall compile and edit the Society newsletter, or shall supervise this activity if it is delegated by the Secretary to a newsletter editor.

Regional Governors shall serve to represent the best interests of membership in all activities of the Board. In addition they shall serve to actively promote the Society through recruitment of Society members and Institutional subscriptions to the Society's journal in their respective regions. Regional governors are expected to attend regional carcinology-related meetings, advertise and promote the Society at these meetings, and promote relations between regional societies and the Crustacean Society. Governors are expected to file a yearly report to the Board of Governors (or the Society newsletter) on their activities (e.g., meetings attended, awards given, new members, important liaison issues).

Voting for the election is done electronically at http://tcs.allenmm.com.
Ballots can be cast anytime after November 1, 2010.
Voting will close on 25 December 2010.

Chris Tudge, TCS President-Elect