



# The Ecdysiast

Newsletter of The Crustacean Society

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Dear TCS members,

“Konnichiwa”, greetings from Kobe, Japan!

A massive 9 magnitude earthquake hit off the east coast of Japan on 11 March. This quake is the country's most powerful since records began and one of the largest in recorded history in the world. This earthquake also triggered extremely big tsunamis that battered Japan's coast, killing hundreds people and sweeping away cars, homes, buildings, and boats. I received warm letters of sympathy from many of you. Fortunately, my family and I (and almost all crustacean biologists in Japan) are safe, and I thank you from the bottom of my heart for your kind concern. Everything has been seriously confused in Japan, and I feel that we can't tell when and where we will get involved in a big disaster.



Akira Asakura (photo by Benny Chan at ICC7. Thanks!) President, TCS

The fall election and the membership poll are over. We welcome three new officers; Elena Mente as European Governor, Jason Williams as North American Governor, and Joanne Taylor as Indo-Pacific Governor. Most of you know Jason from his excellent papers or may have met him during his frequent attendance at TCS Meetings, ICC, or other conferences, and who sometimes serves as a reviewer for TCS Student Awards Committee. Elena is an organizer of TCS Athens Meeting in 2012 and is busy preparing the meeting. Thanks! I hope I can see many of you in Athens in 2012. Joanne (Jo) was until recently the collections manager for the crustacean collections at Museum Victoria, Melbourne, Aus-



Elena, Jason and Joanne



tralia (many of you may have dealt with her over loans etc) but, she is now a postdoc at the same institution studying “squatties” (galatheoid anomurans for the uninitiated). Elena, Jason, and Jo succeed our three officers, Jens Høeg, Regina Wetzler, and Shane Ah Yong. Our sincere thanks must go to them, all of whom have served TCS so well for many years! Mary Belk and Ole Møller will continue their valuable works as our Treasurer and Secretary, respectively. We welcome, or welcome back, these hard-working people to the TCS Board.

The Journal of Crustacean Biology, in the hands of Editor Fred Schram, thrives with its numerous papers being of consistently high quality; in which we can all take pride. I thank Diego Maruzzo for his dedication to the hard editorial work for Ecdysiast, our newsletter. I believe that Ecdysiast will become more important as a communication site and forum for all members of TCS as well as for all societies and groups focused in the crustacean world.

There are many societies or international groups in the world, which are focused on crustacean biology, and it has been a long pending issue for us to establish positions on the board, who liaise with them to enhance and coordinate communications. In 2003, TCS President Gary Poore wrote in Ecdysiast *“The Board discussed whether or not the Society should entertain subgroups. It decided not to formalize subgroups but to liaise more actively with national and taxon-based societies. We do this by holding meetings with these groups when possible and attempting to avoid meeting conflicts.”* It is very fortunate that TCS recently held its meetings with other large crustacean societies in the world, such as with the Brazilian Crustacean Society in 2004, with the Carcinological Society of Japan in 2009, and with the Chinese Crustacean Society in 2010 (held as International Crustacean Congress). Furthermore, the plan for a joint meeting of TCS and Colloquium Crustacea Decapoda Mediterranea, to be held in Athens, Greece, in 2012, is nicely underway. So, the time is ripe for creation of the positions of TCS liaisons, and I am happy to report that the first Liaison officers of their respective society or group have been elected (see a list of societies and names of the officers in another article below).

The TCS co-sponsored symposium “Population Dynamics of Crustaceans” organized by Jennifer Buhay and held at the SICB Annual Meeting, January 3-7, 2011, at Salt Lake City, was very successful. I thank Jen, all symposium speakers and attendees. At the meeting, the Best Student Award was presented to Candice Bywater (oral), Michael Rosario (oral), Tomas Hegna

and I hope many of you submit plans of symposia (see <http://www.sicb.org/index.php3> for more details).

I am happy to announce that the new web-pages of The Crustacean Society Business Office as well as the “SILO” (sign in/log on) site for the Journal of Crustacean Biology opened this January through the efforts of our Finance Committee. I thank, from the bottom of my heart, Fred Schram and Mary Belk for their hard work with Allen Press. I hope you introduce this page to your non-TCS member friends to become members and submit articles to JCB.



(poster), and David Hudson (poster). Congratulations! I sincerely thank our Program officer, Chris Boyko, who is in charge of the Student Awards Committee for his leadership and hard work.

For the SICB San Francisco Meeting (January 3-7, 2013), the “Call for Symposia” is now open (deadline: Aug. 19, 2011),

I hope to see many of you at the TCS Summer Meeting in Honolulu, Hawaii, this June. If you have not registered yet, please visit the meeting web-site at <https://ssl4.westserver.net/birenheide/crustacean/registration/index.php> and register now! The plan for the joint TCS and Colloquium Crustacea Decapoda Mediterranea meeting, to be held in Athens, Greece, in June of 2012, is well underway, and is being capably overseen by our new European Governor, Elena Mente. See <http://www.cssm2012.gr> for more details. These meetings promise to be equally impressive, and I would advise clearing your calendars well in advance and planning on being there. Furthermore, ICC8 is planned to be held at the Senckenberg Museum in Frankfurt, Germany, in 2014. Please don't miss it, and thanks, Drs. Michael Tuerkay and Stefan Koenemann!

Sincerely,

Akira Asakura, TCS President



## The Crustacean Society Board Members, 2011

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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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## Establishment of positions of Liaison Officers

It has been a long pending issue for the TCS Board to establish the positions of the board, who liaise with other societies or international groups focused on crustaceans, for the purpose of improving relationships with them based on mutual benefit as well as to promote recruitment to TCS. We intensively discussed the issue at the face-to-face Board meetings as well as on e-mail, and here, I am very happy to report to all TCS members that we have created those positions, named the "Liaison officers". This issue was accompanied by amendments to the TCS Constitution and Bylaws to reflect the inclusion of Liaison Officers (see below) and was approved by membership vote at the end of 2010. The officers will enhance and coordinate communications between these societies or groups and TCS.

### Constitution of The Crustacean Society

#### Article 6: Board of Governors

#### Section 7: Liaison Officers.

*Liaison Officers serve as short-term members on the Board, but without voting privileges. Liaison officers can consist of any member in good standing, including TCS Past Presidents or other officers, or representatives from other societies as needed. Liaison officers are appointed by the Board or Executive Committee and serve at the discretion of the Board.*

### Bylaws of The Crustacean Society

#### H. Liaison Officer.

*From time to time the Board or Executive Committee may nominate members for special roles. Such roles may include a member of the Society serving in an official capacity as liaison with other societies, or as special representatives of TCS to other organizations (e.g., Allen Press, BioOne, etc.). The Liaison Officers shall serve as representatives of TCS to enhance and coordinate communications with other societies or organizations, and to improve opportunities to recruit new members.*

I would like to express my sincere gratitude to the following people who kindly accepted our offer to serve as the first Liaison Officers (2011- ) with each respective society/group. I hope this action makes tighter relationships between TCS and these societies and more benefit for members of both.

Jianhai Xiang (President, *The Chinese Crustacean Society*)

James M. Furse (Past President, *International Association of Astacology*)

Fernando Mantelatto (Past President, *The Brazilian Crustacean Society*)

Shinji Tsuchida (member of Council, *The Carcinological Society of Japan*)

Rony J. Huys (Vice-President, *The World Association of Copepodologists*)

Renate Matzke-Karasz (President, *International Research Group on Ostracoda*)

Michel Hendrickx (President, *Associaçion Latinoamericana de Carcinologia*)

Enrique Macpherson (Representative, *Colloquium Crustacea Decapoda Mediterranea*)

Jasna Strus (Organizer, *8th International Symposium of Terrestrial Isopod Biology, 2011*)

Christopher Rogers (Editorial Board, *Anostracan News, Large Branchiopod Working Group*)

Vim Vader (Manager, "Amphipod Pages" website, Editor, *Amphipod Newsletter, Amphipod Group*)

Steffen Harzsch (Organizer, *Crustaceologen Tagung, German Carcinologist Group*).

Respectfully submitted

Akira Asakura

President

## 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 official 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](mailto: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!



## Results of the membership poll 2010

The Board members have intensively discussed venues and size of our future meetings, as we are facing some problems on this issue. For example, the recent summer (mid-year) meetings were not well attended when they were held in the USA (ca. 50 participants at Darling Harbor, ca. 100 at Mobile, 45-50 at Juneau, and 45-50 at Galveston). Furthermore, it has become a battle to find a venue and a person to take charge and organize things at the venue, and the meeting organization has become increasingly time-consuming and more technically challenging. Another serious problem is the fact that our membership continues to drift steadily downward.

We have already decided on our meetings at Hawaii in June 2011, Charleston, SC, USA (SICB) in January 2012, a joint meeting with the 10th Colloquium Crustacea Decapoda Mediterranean at Athens, Greece, in June 2012 (thanks, Elena and her team for very nice work!), and also 8th International Crustacean Congress, Frankfurt, in 2014 (thanks, Stefan and Prof. Tuerkay!). For further future meetings (perhaps after 2015), some Board members suggested that, in taking poor numbers of attendance at past mid-year meetings held in USA into consideration, we should arrange our midyear meetings when opportunities arise, for example, principally being jointly together with sister-societies (it also would serve to constantly upkeep our international profile). Other board members suggested that we should move our regular annual meetings from the midyear (TCS Summer Meeting) to SICB (TCS Winter Meeting), because that is a good opportunity to recruit new members. One argument being that when students attend our current summer meetings, they are already hooked on crustaceans, whereas at the SICB meetings we are likely to recruit young students or even researchers, both young and old, who might be trying to go into crustacean study.

To decide on policy for our meetings, the board wanted to know how TCS members felt about our past meetings and how they hope future meetings should be. For this purpose, we conducted the membership poll at the end of 2010. The results are below.

Although only 20% (ca. 100 members) responded, the following information could be gleaned - most respondents were academic scientists, who attend one meeting a year; when asked if they had recently attended a midyear (summer) meeting, a TCS winter meeting (at SICB) or an ICC etc., most indicated the mid-year meeting; most suggested they would prefer one TCS-sponsored meeting per year, they would prefer it to be a summer meeting and were equally divided between smaller (<100 people) or larger (>300 people) meetings.

### *How many meetings do you attend per year?*

No Response	17
1	45
2	27
3	13
More than 3	12

### *Have you attended a TCS midyear (summer) meeting, a TCS winter meeting [under auspices of The Society for Integrative and Comparative Biology (SICB) meeting], or International Crustacean Congress (ICC)?*

No Response	29
All of the above	14
Both TCS midyear and ICC	9
Both TCS midyear and TCS winter	11
Both TCS winter and ICC	3
ICC	16
TCS midyear meeting	20
TCS winter meeting (SICB)	12

### *If you had limited funds and could only attend one meeting per year, which would you choose, a mid-year (summer) or a winter meeting (SICB)?*

No Response	16
Midyear (summer) meeting	69
Winter meeting (SICB)	28

### *Would you prefer to have only one TCS-sponsored meeting per year?*

No Response	38
No	25
Yes	50

### *Do you prefer smaller meetings (<100 people) or larger meetings (>300 people)?*

No Response	22
Larger meeting	43
Smaller meeting	47

### *What is your current position?*

No Response	2
Academic scientist	71
Government officer	8
Graduate student	5
Industry researcher	1
Other nonacademic position	6
Postdoctoral position	10
Retired	12

Based on this result, the board will continue to discuss plans and policy on our future meetings to seek better meetings for TCS members. But, please feel free to send your opinion on this issue to any Board members!

Respectfully submitted

Akira Asakura  
President

## JCB Editorial Report for volume 30 (2010)

It is time for a report for the JCB publication year just concluded: volume 30 (2010), the green volume.

Submission number 3275 arrived right after the opening of the year, and submission 3451 came in 30 December. Our Impact Factor came in at 0.974, slipping slightly from 1.109 the year before. Our costs per page edged down to \$91.72 in 2010 from \$92.81 in 2009. Total pages published were up to 803 from 619 in 2009 and 764 in 2008.

The AllenTrack on-line submissions saw 148 entries into the system throughout 2010 vs. 139 in 2009. Currently we have 12 manuscripts out for review, 27 out for revision, 25 sent to production [31(1)], and 30 in a queue waiting for production [31(2, 3)].

The rejection rate for 2010 was 33% after peer review, down from 2009. This includes some 20-25 submissions that were simply declined by me as inappropriate for JCB and not assigned to an Assoc. Editor for review.

The spread of articles in volume 30 is as follows:

Anatomy & Func. Morph.	4
Behavior	1
Ecology	18
Genomics	8
Larvae & Development	7
Paleobiology	5
Physiology	6
Systematics, Evol. & Biog.	6
$\alpha$ -Taxonomy	13
Conservation	3
Short Communications	7
Commemorative	5
Book Reviews	2

The highlight has to be the Special Section on journal history by Bernard Sainte-Marie and myself. I had wanted to get several such papers for each of our major areas of publication interest. Some additional items may be appearing in forthcoming issues. Nevertheless, our progress over the past 30 years is now a matter of record.

When we look at the number of times various countries are represented amongst the authors of these submissions, we saw in 2010 an increase in the international spread. The number of authors from the USA is down from last year; the biggest jump came from China.

Argentina	4
Australia	3
Belgium	2
Brazil	15
Canada	5
China	13
Costa Rica	1
Egypt	2
France	2
Germany	3
Iceland	1
India	5
Iran	2

Ireland	1
Israel	1
Italy	3
Japan	14
Malaysia	1
Mexico	6
New Zealand	1
Norway	1
Pakistan	1
Poland	1
Puerto Rico	1
Singapore	2
South Korea	2
Spain	4
Sweden	1
Taiwan	6
Thailand	2
UK	3
USA	46
Venezuela	1

The New Year brings in the color, violet. The shift to on-line availability I hoped for last year has taken longer than I had supposed. Nevertheless, after 1 January 2011 a sparkling new silo site will be up and running. This will allow increased member services, ease of submission, ready access to immediate past issues, and early alerts on accepted articles. We will also be able to announce forthcoming meetings and events, and accept advertisements, especially from book publishers whose books we review. More changes are in the works: I think we may shift to 6 issues a year in 2012, which will allow us to decrease the wait time between acceptance and hard publication; and to save some production costs we will shift the printing or announcements and minutes to The Ecdysiast and the silo site.

Finally, several years ago the leveling of submission fees to JCB was approved by the Exec. Comm. After a few years, that was suspended. However, the financial status of TCS makes it necessary to recoup journal operation costs; if people will continue to choose accessing the journal for free on-line rather than pay a membership fee, then we have to identify other money streams in order to survive. Beginning in 2011, we will reinstitute the submission fee [\$35 for non-members]. A PayPal option attached to the new silo site will facilitate the collection of these fees.

I must thank my Associate Editors: Shane Ah Yong, Antonio Baeza, Ray Bauer, Jen Buhay, Mike Clancy, Keith Crandall, Francesca Gherardi, Mark Grygier, Won Kim, Rafa Lemaitre, Kari Lavalli, Christopher Rogers, Bernard Sainte-Marie, Gerhard Scholtz, Tom Simon, Brad Stevens, Sherry Tamone, and Martin Thiel. They have been of immense help in maintaining content quality. Jen, Kari, and Sherry have indicated a desire to rotate off this year, and I want to extend a special thank you to them for their time and service to JCB.

Respectfully submitted,

Frederick R. Schram  
General Editor, *JCB*

## TCS Treasurer's report

TCS had a reasonable year based on the market and economic conditions. We lost \$1385.07. We changed our Lawrence Kansas bank from Douglas County Bank to US Bank. US Bank gives us better merchant account costs and Allen Press changed most of their clients over this year. We have been able to pay all our bills and have not had to dip into savings. Our membership is still dropping. We need to focus on adding membership. BioOne income at \$38,566.00 nearly exceeded our membership fees. JSTOR income was \$3,160.78. All of the indications are the economy is getting better not worse. Schwab is looking for a modestly up year. We are sitting in a nice position to enjoy the upward movement of the market. I have placed the Schwab account under fund management so we will not be following the fund names in the Treasurer's report in the future. Our overall portfolio is balanced but our Schwab funds are aggressive. As I have said in the past our outlook must be 50 to 100 years out not 2 or 3 years out.

<b>Expenses paid</b>	<b>2010</b>	<b>2009</b>
Other officer Expenses	3,563.81	7,823.39
Society Operations	15,076.39	13,312.54
JCB	94,517.99	82,084.77
Editor's Office	4,011.65	6,152.97
Treasurer's Office	11,805.83	8,504.45
Newsletter	0.00	0.00
SICB Contribution	6,063.98	250.00
Awards	6,250.00	2,550.00
Summer Meeting	2,025.77	6,000.00
Banking Fees	1,832.98	2,349.10
Tax Preparation	2,060.00	0.00
<b>Total Expenses</b>	<b>\$147,208.40</b>	<b>\$129,027.22</b>

<b>Financial Standing Oct. 31, 2010 for The Crustacean Society</b>		
	<b>2010</b>	<b>2009</b>
Charles Schwab Accounts Total	358,732.07	330,049.34
GDB Memorial Scholarship Fund (Wellington)	77,368.18	70,508.42
General Endowment Fund (Harbor Fund)	26,076.90	23,908.66
Vanguard Windsor II	232,223.52	215,199.08
Vanguard Index Growth	18,660.68	16,432.42
Investment Funds		
Harbor HY Bond Fund	3,559.84	3,157.63
Navellier Mid Cap Growth	0	0
Cash	842.95	842.95
US Bank	31,582.99	0
Wells Fargo Checking	14,673.34	83,322.63
Wells Fargo 2 CD	59,908.15	
Douglas County BK CD's	70,741.29	71,155.09
Douglas County BK Checking	666.50	23,157.54
Editor's office prepaid expenses	1,000.00	3,862.20
Treasurer's office prepaid expenses	0.00	1,500.00
<b>Total TCS Funds</b>	<b>\$537,304.34</b>	<b>\$513,046.80</b>

<b>JCB Expenses</b>	<b>2010</b>	<b>2009</b>
Editor's Stipend	15,000.00	15,000.00
BioOne Access	0.00	0
Allen Track	3,259.61	1,710.00
PDF files purchased	1,044.63	2,697.98
Printing, Distribution	75,213.75	62,676.79
<b>Total</b>	<b>\$94,517.99</b>	<b>\$82,084.77</b>

<b>Income For</b>	<b>2010</b>	<b>2009</b>
Money from Meetings	6,000.00	0.00
Contributions	3,695.00	930.00
General Fund	2,665.00	635.00
Endowment Fund	25.00	90.00
JCB	0.00	25.00
D Belk M Sch Fund	1005.00	180.00
JCB	69,522.67	64,213.32
JSTOR	3,160.78	2,924.46
BioOne	38,566.00	31,701.00
Color Plates	3,359.08	3,560.36
Figures	0.00	0.00
Page Charges	21,634.66	23,470.00
Revisions	2,667.50	2,007.50
Single Issue Sales	75.00	550.00
Tables	0.00	0.00
Shipping	59.65	0.00
Library Subscriptions	20,805.01	25,642.10
Membership Dues	43,290.00	45,455.00
Membership Label Sales	0.00	0.00
Unrealized Loses on Invest.	28,682.73	67,009.48
Bank and CD interest	1551.65	2,163.49
Refunds	959.00	215.00
<b>Total Income</b>	<b>\$174,506.06</b>	<b>\$205,628.39</b>
Minus expenses	147,208.40	129,027.22
<b>Difference</b>	<b>\$27,297.66</b>	<b>\$76,601.17</b>
Withouth Investment gain	\$-1,385.07	\$9,591.69

Respectfully Submitted  
Mary Schug Belk Treasurer, The Crustacean Society





## SICB student winners

The Crustacean Society (TCS) is pleased to announce the winners of the Best Student Paper and Poster Competition held during the annual meeting of the Society for Integrative and Comparative Biology, January 3-7, 2010, in Salt Lake City, Utah. There were 20 high quality competitors. The Best Student Oral Presentation Awards were presented to **Candice Bywater** (University of Queensland, Australia) for her talk entitled, "The physiological basis of dishonest signals of strength in males of the fiddler crab *Uca vomeris*" (with co-authors C. White & R. S. Wilson) and to **Michael Rosario** (University of Massachusetts, Amherst, USA) for his talk entitled "Comparing elastic energy structures in mantis shrimp using finite element analysis" (with co-authors S. N. Patek & E. R. Dumont). The Best Student Poster Awards were presented to **Tomas Hegna** (Yale University, USA) for his poster entitled "Fossil insights on notostracan limb differentiation & evolution" and **David Hudson** (University of Connecticut, USA) for his poster entitled "Invasive crab salinity preference: effects of acclimation and implications for estuarine distribution" (with co-authors D. J. Sexton, D. Wint & J. F. Crivello). 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 and all student participants.

Christopher B. Boyko  
Program Officer

## The physiological basis of dishonest signals of strength in males of the fiddler crab *Uca vomeris*

Bywater, C. L., C. White & R. S. Wilson (The University of Queensland, Australia)  
c.bywater@uq.edu.au

Unreliable signals of weapon strength (signals that are poor indicators of strength) are considered problematic for signalling theory and reliable signals are predicted to be the dominant form of signalling among conspecifics in nature. Despite theoretical assertions, the males of several species of crustaceans routinely utilize dishonest signals of strength during agonistic interactions. In this study, we examined the physiological basis of dishonest signals of strength in males of the fiddler crab *Uca vomeris*. Male fiddler crabs possess one enlarged and brightly colored claw that is used both as a weapon during disputes with other males and to attract females during courtship. The males of many fiddler crabs can regrow a new claw after losing it during disputes, but this new claw has less mass, is less effective as a weapon and costs less to signal to opponents. Despite the weaker nature of these regenerated claws, they can operate as effective dishonest signals of strength and can deter potential opponents before they fight. We tested the claw strength and metabolic rate of claw tissue of original- and regenerated-claw *U. vomeris* to determine the consequences of possessing a putative dishonest signal of strength for this species. In addition, we examined the biochemical basis of muscle strength for both types of fiddler crab claw to discover whether individuals with regenerated claws regrow less effective muscle. We will discuss the importance of our results for understanding the evolution of signals of strength.

## 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](mailto:marybelk@att.net))





### Comparing elastic energy structures in mantis shrimp using finite element analysis

Rosario, M.V., S. N. Patek & E. R. Dumont (University of Massachusetts, Amherst, USA)  
mrosario@bio.umass.edu

Extremely fast movements that cannot be accounted for by muscle alone require stored elastic energy. However little is known about variation in the location and distribution of this elastic energy in springs within and among lineages. The mantis shrimp (Crustacea: Stomatopoda) raptorial appendage is a highly specialized structure with spring components, but the impact of morphology on strain energy and elastic energy distribution has not been explored. To measure and compare spring mechanics and strain energy localization, we combined materials testing and finite element analysis to characterize the exoskeletal spring in mantis shrimp. We also introduce the strain energy index of delocalization to quantify the spatial distribution of elastic energy within the entire structure during deformation. Springs from two species of mantis shrimp, representing the prey capture strategies of pounding with tough hammers and stabbing with sharp spears, were measured in a materials testing machine. The spring of *Gonodactylus smithii*, which is representative of the smashing prey capture strategy, produced an average of 29.69 N (sd=7.59, n= 14) of force when compressed while *Lysiosquillina maculata*'s spring produced an average of 34.98 N (sd=11.01, n=5). We loaded finite element models of the springs with these forces and found different distributions and magnitudes of strain energy in *G. smithii* and *L. maculata*. After scaling the results to remove the effects of size, *G. smithii* yielded a smaller strain energy value (6.93E-3 J) than *L. maculata* (1.30E-2 J) as well as a strain energy index of delocalization (3E-4) that was 5 times smaller than that of *L. maculata* (1.5E-3). These results may provide insight into the relationship between prey capture strategy and different morphological configurations of elastic energy building blocks.

### Fossil insights on notostracan limb differentiation & evolution

Hegna, T. A. (Yale University, New Haven, CT, USA)  
thomas.hegna@yale.edu

Though branchiopod crustaceans are often thought of as possessing primitively homonymous trunk limbs, the typical notostracan has a unique pattern of trunk limb differentiation. This differentiation is manifest in the first thoracic limb by a much-reduced endopod and greatly elongated, pseudoannulated 4th and 5th endites. Anterior thoracic limbs also show some limited differentiation, but by the 5th thoracic limb, the endites and endopod are roughly equant. Only one, poorly-known living species, '*Lepidurus*' *batesoni* from Kazakhstan lacks this anterior limb differentiation. Furthermore, all fossil notostracans lack this thoracic limb differentiation. This suggests that virtually the entire fauna of extant notostracans had a

relatively recent ( $\geq 65$  mya) origin. Perhaps more interesting is the fact that this limb differentiation suggests a significant change in body patterning—perhaps related to a shift in Hox gene expression domains, or another downstream regulatory network. Notostracans are also characterized by another unique feature of their limb differentiation: after the 11th thoracic limb, the correspondence between dorsal and ventral segmentation is lost. Dorsally, the trunk maintains its even, ring-like segmentation, but ventrally, the limbs decrease in size and increase in number per segment. This means that there are more limbs per segment posteriorly along the body axis. The genetic mechanisms of this segmental mismatch are not yet understood, but it is suggestive of a divergent body axis. No other branchiopod clade possesses this feature. However, all fossil notostracans with preserved limbs display this feature—going back as far as the Devonian ( $\leq 360$  mya). These two examples show that the integration of fossil forms into studies of arthropod development can help identify previously unrecognized problems in body patterning and add an extra temporal dimension to their study.

### Invasive crab salinity preference: effects of acclimation and implications for estuarine distribution

Hudson, D. M.<sup>1</sup>, D. J. Sexton<sup>2</sup>, D. Wint<sup>1</sup> & J. F. Crivello<sup>1</sup> (<sup>1</sup>University of Connecticut, USA; <sup>2</sup>Georgia State University, USA)  
david.hudson@uconn.edu

In areas where it has invaded, the shore crab *Hemigrapsus sanguineus* has become ubiquitous in the rocky intertidal zone of the Western North Atlantic, restricting its competitor, *Carcinus maenas*, to the subtidal. Itself an invader, *C. maenas* is still present in the intertidal zone along its invasion front in northern Canada and in its native range in Europe. A possibility for this pattern is that *H. sanguineus* hypoosmoregulates and as such is more likely to adequately defend shelter within the mid and upper intertidal. Since *H. sanguineus* shows low mortality across a broad range of salinities, we hypothesize that it will be behaviorally indifferent when presented with a choice of salinities, regardless of acclimation salinity of 5 ppt or 35 ppt. Initial results show preference to exist when a greater difference in salinities are presented, but indifference as the choice gradient is lowered. This implies a hardiness for rapid changes in salinities which happen in the intertidal zone, enhancing their competitiveness as an invader, and partially explaining its dominance in this habitat type.



## Recent Meetings...

### VII Reunión Alejandro Villalobos, Cozumel, Mexico, 24–30 October 2010

The **VII Reunión Alejandro Villalobos** was held at Universidad De Quintana Roo – Unidad Académica Cozumel, Mexico. The first edition was in 1983, in honor of Dr. Alejandro Villalobos Figueroa (1918-1982), one of the pioneers on crustacean research. This meeting occurs at two-year interval, and this 7th edition, was organized by Dr. Luis M. Mejía Ortiz and Dra. Marilú López-Mejía. There were over 100 participants, including scientists and many students. Most of the participants were from Mexico but also included people from U.S.A., Brazil, and Spain. In total, 112 contributions were presented, including 57 oral presentations in 7 sections and 52 posters, totalizing 212 authors. These covered all different biological fields of crustacean research, including biogeography, population genetics, taxonomy, biodiversity, phylogeny, evolution, morphology, aquaculture, ecology, reproductive biology, parasitology, physiology, and conservation.

In addition to the presentations, three major conferences were presented by Keith Crandall (Brigham Young University – USA), Jill Yager (Antioch College – USA), and Luis Soto (UNAM – Mexico), and two short-courses were organized during the meeting: “Fundamentals and applications of molecular phylogenetic” by Dr. Keith A. Crandall and Dr. Marcos Pérez-Lozada and “Morphology and taxonomy of Peracarids: Amphipods, isopods, cumaceans and tanaidaceans” by Dr. Ignacio Winfield, Dr. Manuel Ortiz and Dra. Ma. del Socorro García Madrigal.

The organizing committee did a great job in making everybody feel welcome and comfortable during the meeting activities, which included a wonderful social event during the unforgettable welcome together at the hotel beach, with a very nice Mexican cuisine and drinks.

Fernando Mantelatto  
Latin American Governor



#### Best Student Oral and Poster Presentations

The Crustacean Society (TCS) is pleased to announce the winners of the Best Student Oral and Poster Presentations Competition held during the **VII Reunión Alejandro Villalobos** in Cozumel. The TCS thanks all students who participated, and also thanks members and colleagues who served as judges, especially Dr. Fernando Alvarez and Dr. Jose Luis Villalobos (UNAM - Mexico), with TCS Latin American Governor Dr. Fernando Mantelatto (University of São Paulo), served on the executive judging committee. TCS congratulates the following winners: **Nancy Mercado Salas** (Colegio de la Frontera Sur Unidad Chetumal, Mexico), for her poster entitled, “Diversity and distribution of cyclopoids (Copepoda) in the arid zones of Central-North of Mexico” (with co-authors Eduardo Suárez-Morales and Marcelo Silva-Briano – Universidad Autónoma de Aguascalientes, Mexico); and **Cynthia Dinora Flores Aguirre** (Facultad de Ciencias de la UNAM, Mexico) for her oral presentation “Evaluation of different strategies for acquisition of shells by hermit crabs: where obtaining it?” (with co-authors Karla Kruesi Cortés and Guillermina Alcaraz Zubeldia - Facultad de Ciencias de la UNAM, Mexico). Winners received a certificate, US\$100, and a one-year membership in TCS (including journal subscription). In addition to the TCS positioning, other similar awards were offered by ALCARCINUS (Latin American Crustacean Society), SBC (Brazilian Crustacean Society) and Villalobos Family.



## Recent Meetings...

### VI Brazilian Crustacean Congress, Ilhéus, Bahia, Brazil, 07–10 November 2010



The **VI Brazilian Crustacean Congress** was held at the Praia do Sol Hotel, State of Bahia, north of Brazil. Additional assistance and resources during the preparation were provided by Universidade Estadual de Santa Cruz, Universidade Federal da Bahia and Universidade Federal do Recôncavo da Bahia. This region is an important touristic, historical and ecological place, with an Atlantic Forest preservation area and beautiful beaches and mangroves. This meeting, promoted by The Brazilian Crustacean Society (SBC), occurs at two-year interval, and this 6th edition, organized by Dr. Alexandre Almeida, Dr. Rodrigo Johnsson, and Dr. Sergio S. da Rocha, was the largest in the history of the SBC meetings in terms of number of participants. There were over 370 participants, and the students' participation at this meeting was especially impressive.

Aside from being a “national” crustacean congress, with most of the participants from Brazil, this meeting received many international people from Argentina, Chile, Germany, Netherlands, Spain, U.S.A., United Kingdom, Uruguay, and Venezuela. In total, 380 contributions were presented, including oral and posters presentations. These covered all different biological fields of crustacean research, including biogeography, population genetics, taxonomy, biodiversity, phylogeny, evolution, morphology, aquaculture, ecology, reproductive biology, parasitology, physiology, and conservation. All authors who presented (talk or poster) contributions during the meeting were invited to submit their full manuscript to a special issue of *Nauplius* (The Brazilian Crustacean Society Journal, [www.crustacea.org.br](http://www.crustacea.org.br)) for appreciation of the editorial board for publication.

In addition to the presentations, three major plenary lectures were presented, nine round-tables, four short-courses and 12 symposia with 60 oral presentations were organized during the meeting. This scientific meeting was accompanied by wonderful social events, as the welcome together, fun costume party, and close dinner ceremony, all of them including a very nice local cuisine and traditional Brazilian alcoholic drink “Caipirinha”. At the meeting banquet, The SBC bestowed honors on Brazilian researchers in recognition of the quality and impact of their contributions on decapod crustacean. The organizing committee did a great job in making everybody feel welcome and comfortable. Mark your calendars! The 7th Brazilian Crustacean Congress will be held in Belém, State of Pará, North of Brazil in November 2012.

#### Best Student Oral and Poster Presentations

The Crustacean Society (TCS) is pleased to announce the winners of the Best Student Oral and Poster Presentations Competition held during the **VI Brazilian Crustacean Congress** in Ilhéus, Brazil. The TCS thanks all students who participated, and also thanks members and colleagues who served as judges, especially Dr. Rodrigo Johnsson (Universidade Federal da Bahia) and Dra. Laura Lopez-Greco (Universidad de Buenos Aires, Argentina), with TCS Latin American Governor Dr. Fernando Mantelatto (University of São Paulo), that served on the executive judging committee. TCS congratulates the following winners: **Gabriela Hollmann** (Instituto de Biofísica – Universidade Federal do Rio de Janeiro), for her poster entitled, “Effects of seasonality and moult cycle on the proliferation of nerve cells on the labelling of ecdysone receptors in an estuarine crab.” (with co-authors Silvana Allodi - UFRJ, Duane Barros Fonseca - FURG, Pablo Elías Martínez - FURG, and Luiz Eduardo Maia Nery - FURG, Brazil); and **Bárbara Luciana da Conceição** (Instituto de Biologia - Universidade Federal da Bahia) for her oral presentation “Effect of the carcinoculture effluents on the structure of the planktonic decapod crustaceans community in two estuaries of north coast of Bahia” (with co-authors Catarina Marcolin, Rodrigo Johnsson & Paulo Mafalda Jr - Universidade Federal da Bahia). Winners received a certificate, US\$100, and a one-year membership in TCS (including journal subscription). In addition to the TCS positioning, other similar awards were offered by SBC (Brazilian Crustacean Society) and ALCARCINUS (Latin American Crustacean Society).



Gabriela Hollmann receiving the award from Fernando Mantelatto



## Upcoming Meetings...



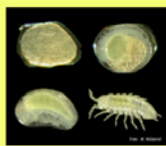
### TCS Summer Meeting June 6-9, 2011

**The Ala Moana Hotel, Honolulu, Hawaii!**

<http://web.vims.edu/tcs/hawaii2011.htm>

### 8<sup>th</sup> International Symposium of Terrestrial Isopod Biology

19 – 23 June 2011  
Bled, Slovenia



We invite you to join us at the **8<sup>th</sup> International Symposium of Terrestrial Isopod Biology – ISTIB 2011** to be held in the hotel Ribno in Bled, Slovenia from 19 – 23 June 2011. For further information about the symposium please visit the website: <http://www.istib-2011.si>.

Jasna Strus and Primož Zidar  
(On behalf of the organizing committee)



### ILBS-7 2011, Taipei

**The 7th International Large Branchiopods Symposium**



We are pleased to announce that the 7th International Large Branchiopods Symposium (ILBS7) is now planned to be held in Taiwan, September 9-12, 2011 at National Taiwan University (NTU), and a **workshop** for beginners' training at Yang-Ming-Shan National Park (YMSNP), **September 6-8, 2011**. This symposium includes a two days workshop (primarily for local researchers) and a three days conference meeting (for all branchiopods). We are also planning a one day field trip to visit local large branchiopod habitat. Let's cross our fingers and make a wish that the local pools will be inundated during those days. Specific requirements for abstract submission for both oral and poster presentations will be forthcoming. All fields of branchiopod biology are welcome. If you are interested in coming, please fill the attached registration form and email it back to us (before May 1, 2011), or go to website: <http://www.ilbs7.tw/>. The fee for symposium will be around 120 USD. We look forward to seeing you in Taiwan!

Sincerely Yours,

Lien-Siang Chou, Ph D.

Professor of Institute of Ecology & Evolutionary Biology,  
Life Science Building Rm 635, National Taiwan University  
No.1, Sec. 4, Roosevelt Rd., Taipei 106, Taiwan, R. O. C.  
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Email:[chouls@ntu.edu.tw](mailto:chouls@ntu.edu.tw)

### JCB language service

Before you submit a manuscript to JCB, and if you are not fully fluent or a native speaker of English, we recommend the following. American Journal Experts (AJE) provides professional language editing services to authors around the globe who wish to publish in scientific, technical, medical, and humanities journals. We urge authors who are not well versed in the English language to use this service to improve a paper's English and, therefore, its overall quality. Seeking this assistance is suggested before an article is submitted to JCB for peer review and certainly before it is finally accepted for publication.

AJE has over 500 editors from Harvard, Stanford, MIT, Berkeley, and Duke; these editors are native English speakers and subject-matter experts in a wide variety of fields. They will check your manuscripts not only for terminology and language specific to your field but also for proper English usage, grammar, punctuation, spelling, verb tense, and phrasing. In addition, AJE's professional editors will make sure the text reads naturally and the sentences are well constructed. The cost for this service is very reasonable. Visit AJE's website for more information, or to submit a document for their scientific proofreading service use this link: [www.JournalExperts.com?rcode=JCB1](http://www.JournalExperts.com?rcode=JCB1).

When you are secure about your text, manuscripts then can be submitted on line through the regular link: <http://www.jcbonline.org/>.





## Upcoming Meetings...

### 7th European Ostracodologists' Meeting 25.–28. July, 2011, Graz, Austria

At the end of July, EOM 7 takes place in Graz. EOM 7 is open for any contribution related to ostracods and is not restricted to the European researcher's community.

Attached to the main EOM meeting, three special workshops will be held, which aim to strengthen, improve or even initiate intra- as well as inter-continental research cooperation. These workshops are:

1. *Quaternary and living ostracods in the seas of central Eurasia: taxonomy and distribution*
2. *The OMEGA project: a global metadatabase for the calibration of Quaternary nonmarine Ostracoda as palaeoclimate proxies*
3. *Northern hemisphere Quaternary and modern nonmarine Ostracoda: Developing international research initiatives.*

Immediately after EOM 7 a fourth workshop follows: **"Methods in Ostracodology 2"** (29–31., July). It will offer lectures and practical sessions in a summer school like atmosphere. The topics are:

1. *Geometric morphometrics in ostracods*
2. *Stable isotopes in ostracod research*
3. *Transfer functions*
4. *Dissection of Recent ostracods*

Please visit the following homepages:

[www.museum-joanneum.at/en/geology/events-10/meetings/7th-european-ostracodologists-meeting](http://www.museum-joanneum.at/en/geology/events-10/meetings/7th-european-ostracodologists-meeting)

<http://museum-joanneum.at/en/geology/events-10/workshop-methods-in-ostracodology-2>

Dr. Martin Gross, Graz



### MEB Conference, Palermo, Italy, 27-29 Sept. 2011



Dear Colleagues and Friends,

we are pleased to announce and invite you to the forthcoming conference **"NEW FRONTIERS FOR MONITORING EUROPEAN BIODIVERSITY: THE ROLE AND IMPORTANCE OF AMPHIPOD CRUSTACEANS"**, which will be held in September 27th-29th, 2011 in Palermo, Italy.

The meeting is supported by the AIT (Ateneo Italo-Tedesco/Deutsch-Italienisches Hochschulzentrum) and the University of Palermo. It is organized by the Department of Environmental Biology and Biodiversity of the University of Palermo (Italy) and the Universität Potsdam (Germany). The aim of the congress is to promote cultural and scientific exchanges among scholars interested in all the aspects of amphipod research.

The themes of the meeting range from pure to applied topics, regarding both inland-water and marine taxa; six main sessions are scheduled:

*Session 1* - New needs, Old tools: how taxonomy can help in monitoring the present-day biodiversity changes.

*Session 2* - How much diversity in Amphipoda (morphotypes, ecotypes, trophic categories).

*Session 3* - Novel interactive tools recently developed and based on morphological characters.

*Session 4* - Novel interactive tools recently developed and based on molecular characters.

*Session 5* - Examples of the use of the taxon Amphipoda in environmental monitoring.

*Session 6* - How decline in popularity of traditional taxonomy could impact on biology and society and which agencies support taxonomic research.

We are looking forward to meet you in Palermo!

All the kindest regards

Sabrina Lo Brutto

Valerio Ketmaier

For more information about this meeting, visit our website (<http://www.meb-conference.com>). You can also follow us on Facebook "Zoology in Sicily".

Sabrina Lo Brutto – Dipartimento di Biologia Ambientale e Biodiversità – University of Palermo -Via Archirafi, 18 - 90123 Palermo – ITALY- Tel. 091.23891835 - Fax 091.23860855/60751 - [sabrilob@unipa.it](mailto:sabrilob@unipa.it)

Valerio Ketmaier - Universität Potsdam - Karl-Liebknecht-Str. 24-25, D-14476 Potsdam, Germany- Tel: +49-331-977-5604 [ketmaier@uni-potsdam.de](mailto:ketmaier@uni-potsdam.de)

## Upcoming Meetings...



**03-07 June 2012**  
Athens, Greece

**10th Colloquium Crustacea Decapoda Mediterranea**

TCS Summer Meeting

10th Colloquium Crustacea Decapoda Mediterranea

**3rd - 7th June, 2012**  
**Royal Olympic Hotel, Athens Greece**

Call for papers and proposals for Symposia topics

The Crustacean Society invites submissions of papers for oral and poster presentation and proposals for Symposia topics at its Annual Conference jointly hosted with the Colloquium Crustacea Decapoda Mediterranea in June 2012, in Athens • GREECE.

The event will place particular emphasis on innovating research from all areas of crustacean science including systematics, taxonomy, evolution, phylogeny, ecology, behavior, sociobiology, development and larval biology, physiology, symbiosis, parasitology, genetics, molecular biology, biogeography, fossils and ichnology, taphonomy, palaeobiology, conservation and introduced species.

Further focus on issues regarding safety, quality, health, nutrition and other themes related to crustacean farming.

Aim of the joined organization is the promotion of meetings, exchange of scientific knowledge and potential collaborations among carcinologists from different regions of the world.

You are most welcome to join us for the TCS summer meeting and the 10th Colloquium Crustacea Decapoda Mediterranea in Athens, Greece.

**Further information [www.cssm2012.gr](http://www.cssm2012.gr)**

**Organizing Committee**

- \_ Dr. E. Mente, Assistant Professor, University of Thessaly, Greece
- \_ Dr. I. Nengas, Research Director, Hellenic Centre for Marine Research, Athens, Greece
- \_ Dr. M. Thessalou-Legaki, Associate Professor, University of Athens, Greece
- \_ Dr. G. Rigos, Researcher, Hellenic Centre for Marine Research, Athens, Greece
- \_ Dr. K. Kormas, Associate Professor, University of Thessaly, Greece
- \_ Dr. K. Grigorakis, Researcher, Hellenic Centre for Marine Research, Athens, Greece
- \_ Dr. S. Sfenthourakis, Assistant Professor, Hellenic Zoological Society, Greece



**03-07 June 2012**  
Athens, Greece

**10th Colloquium Crustacea Decapoda Mediterranea**

TCS Summer Meeting

10th Colloquium Crustacea Decapoda Mediterranea

**3rd - 7th June, 2012**  
**Royal Olympic Hotel, Athens Greece**

**Conference Programme**

1. Two Invited Plenary Lectures
2. Three Parallel Scientific Sessions
3. Workshops/Meetings (TSC meeting)
4. Poster display
- and two special viewing sessions
5. Students awards

**Sessions**

1. Taxonomy, Phylogeny, Biogeography
2. Larval Biology
3. Behavior and Ecology
4. Physiology and Endocrinology
5. Exotic Crustaceans species
6. Advances in Decapod Crustacean Research
7. Crustaceans and Global Climate Change
8. Freshwater and Marine Decapods
9. Crustacean Diseases
10. Genetics, Genomics and Proteomics
11. Crustacean Nutrition
12. Fisheries
13. Aquaculture

**Participating Institutions**

- \_ National and Kapodistrian University of Athens
- \_ University of Thessaly
- \_ National Center for Marine Research
- \_ The Hellenic Zoological Society

## 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** (6 awards of \$1500 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 Shields  
The Crustacean Society Awards Committee  
Virginia Institute of Marine Science  
POB 1346, Gloucester Point, VA 23062

For questions: [jeff@vims.edu](mailto:jeff@vims.edu)

**DEADLINE FOR SUBMISSION: February 15th, 2012**

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.



## Upcoming Meetings...

### The 86th Annual Meeting of the American Society of Parasitologists

Sheraton Anchorage Hotel and Spa, Anchorage, AK  
June 1-4, 2011  
<http://asp.unl.edu>

### 96th Ecological Society of America ANNUAL MEETING

Meeting theme "Earth Stewardship: Preserving and enhancing earth's life-support systems"  
Austin Convention Center, Austin, Texas  
Sunday, August 7- Friday, August 12, 2011  
<http://www.esa.org/austin/>

### 12th European Ecological Federation

Ávila, Spain  
From 25 till 29 September in 2011  
[www.europeanecology.org](http://www.europeanecology.org)

### 21st Biennial Conference of the Coastal and Estuarine Research Federation

Societies, Estuaries and Coasts: Adapting to Change  
Ocean Center, Daytona Beach, Florida  
6-10 November 2011  
<http://www.sgmeet.com/cerf2011/>

will include sessions on:  
Benthic Ecology, Coral Reefs, Food Webs, Plankton Ecology,  
Population Ecology and Invasive Species

### World Conference on Marine Biodiversity

Aberdeen, Scotland (UK)  
26-30 September 2011  
<http://www.marine-biodiversity.org/>



### 2nd International Congress on Invertebrate Morphology (ICIM)

The 2nd ICIM will be hosted by the Museum of Comparative Zoology, the Department of Organismic and Evolutionary Biology, and the Harvard Museum of Natural History, at Harvard University, from June 20th to June 23rd 2011.  
<http://icim.harvard.edu/>

Including:  
Arthropod evolution controversies symposium

### Evolution 2011

The joint annual meeting of the Society for the Study of Evolution (SSE), the Society of Systematic Biologists (SSB), and the American Society of Naturalists (ASN)  
Host Institution: The University of Oklahoma  
John Q. Hammonds Embassy Suites Hotel and Conference Center, Norman, Oklahoma, USA  
June 17 - 21, 2011  
<http://www.evolution2011.ou.edu/>

### 7TH International Conference on Arthropods: Chemical, Physiological, Biotechnological and Environmental Aspects

Stefan Kopeć Memorial Conference, Białka Tatrzańska, Poland  
September 18-23, 2011

### 2nd World Conference on Biological Invasions and Ecosystem Functioning

Mar del Plata, Argentina  
November 21-24 2011  
<http://www.grieta.org.ar/biolief/>

### Canadian Society of Zoologists Annual Meeting 2011

The 50th annual meeting of the Canadian Society of Zoologists will be held from Monday, May 16th to Friday, May 20th, 2011 at the University of Ottawa in the nation's capital.  
University of Ottawa  
May 16-20, 2011  
<http://www.csz2011.uottawa.ca/e/>





## New Publications...

### ***Integrative Zoology*, Vol. 60(1), 2011**



include original articles from the Seventh International Crustacean Congress. <http://onlinelibrary.wiley.com/doi/10.1111/inz.2011.6.issue-1/issuetoc>

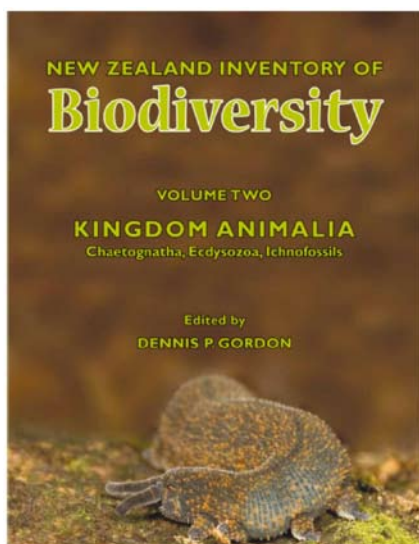
### **New Zealand Inventory of Biodiversity. Volume 2.**

**Chaetognatha, Ecdysozoa, Ichnofossils.**  
**Canterbury University Press, Christchurch.**  
**Dennis Gordon (editor).**

This volume is the second in a trilogy. Volume 1 (Radiata, Lophotrochozoa, Deuterostomia) was published in 2009 and volume 3 (Bacteria, Protozoa, Chromista, Plantae, Fungi) is scheduled for publication in December 2011. The aim of the project behind the volumes, launched at a millennial symposium in Wellington in 2000, was a review and inventory of New Zealand's entire Phanerozoic biodiversity, i.e. "all of life through all of time", from bacteria to blue whales and from all environments, plus naturalised-alien species and fossils.

The inventory determined that New Zealand has 2842 described species of Chelicerata, 164 of Myriapoda, 2488 Crustacea and 12,573 Hexapoda, with another 3351-3717 known undescribed species in collections. Almost 75% of all NZ's arthropods, polled across all environments, are endemic. January 2011, \$89.95, Hardback, 280 x 210 mm 544 pp incl. 32 pp colour ISBN 978-1-877257-93-3.

Dennis Gordon [d.gordon@niwa.co.nz](mailto:d.gordon@niwa.co.nz)



### **Les invertébrés marins du golfe de Gascogne à la Manche orientale 2011, Éditions Quæ, 300 pp., French by Jocelyne Martin (2011)**

Marine invertebrates from the Bay of Biscay to the Eastern English Channel.

The guide describes, per family, over five hundred species of invertebrates likely to be picked up by a trawl. Broken down into eight divisions, these species belong mainly to the groups of crustacea decapoda (prawns, hermit crabs, galatheids and crabs), molluscs (gasteropods, bivalves, cephalopods) and echinoderms (starfish, sea urchins, sea cucumbers). A few data sheets have supplementary boxes giving the characteristics of species of the same genus. The book is illustrated with over one thousand photos, mostly in colour, and line drawings.

It will be an invaluable handbook to help biologists identify macro-fauna from the Bay of Biscay and the English Channel, and seeing the type of species covered, will also be quite useful for marine biologists and amateur naturalists.

Jocelyne Martin, a 1974 graduate of the École nationale supérieure féminine d'agronomie, is a researcher at Ifremer. The experience she acquired in studying zooplankton on sites near nuclear power plants led to the publication of her first identification guide on Decapod crustacean larvae on the French coasts of the English Channel in 2001. She then became interested in adult crustaceans and all invertebrate species that are collected in trawls and which were previously not taken into account during cruises and surveys.



<http://www.quae.com/fr/livre/?GCOI=27380100813760>



## New Publications...

### Chemical Communication in Crustaceans Breithaupt, Thomas; Thiel, Martin (Eds.)

1st Edition., 2011, XVIII, 565 p.

173 illus., 37 in color.

Hardcover

ISBN: 978-0-387-77100-7

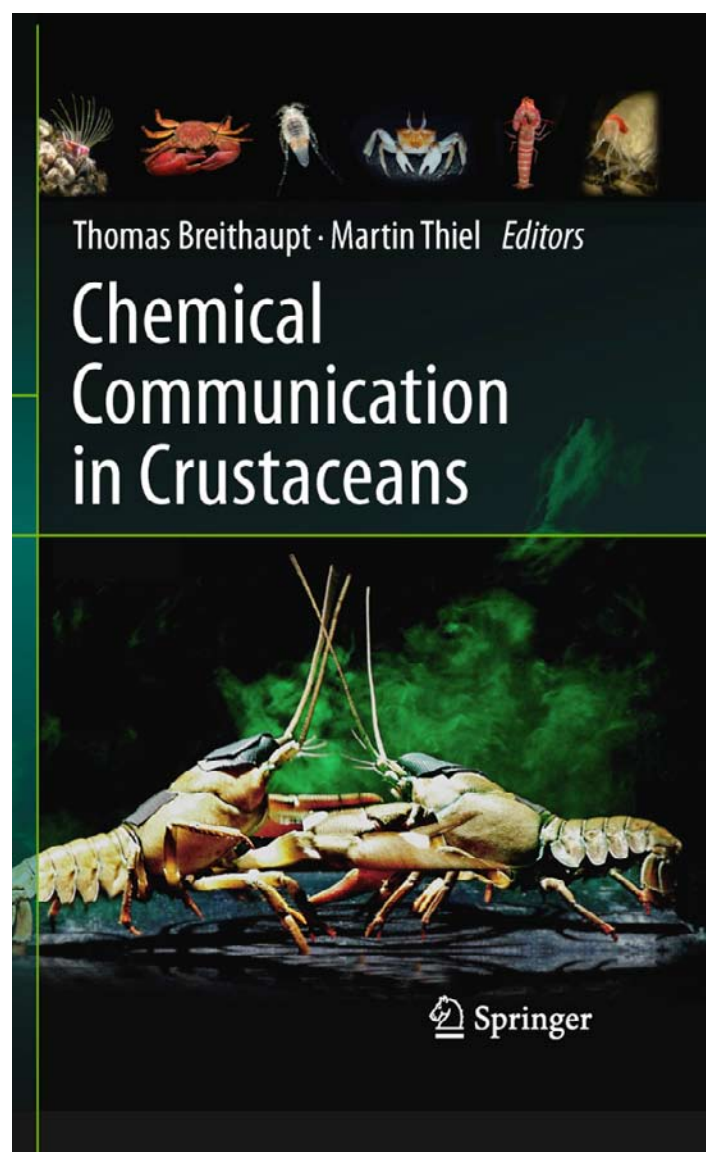
Crustaceans are ecologically and economically important. They are fished and farmed extensively for food and are model organisms for scientific research. However, as invasive species, some crustaceans also threaten native communities world-wide. Social interactions of these primarily aquatic invertebrates are generally mediated through chemicals. Hence, the study of chemical communication by crustaceans is fundamental to understanding their biology and developing strategies to manage and protect them. Research in this area also promises discoveries of new waterborne natural products.

This book provides the first comprehensive synthesis of current knowledge on crustacean chemical communication. Leading experts review different aspects of chemical communication and share their fascination with their research with the reader. Opening with an overview of the challenges and concepts of crustacean chemical communication research, the book proceeds to explore signal transmission and reception, and neural processing. The behavioral context of chemical communication is reviewed for the best-studied species. Recent advances in the molecular identification of crustacean chemical signals are presented, followed by discussions of their possible applications in aquaculture and management. Additional chapters provide complementary knowledge from other taxa (fish, insects) and topics (multimodal communication, deception, ecotoxicology), highlighting opportunities for future research.

The book is richly illustrated and avoids technical jargon, making it accessible to a broad readership including researchers and students of ecology, evolution, behavior, and neurobiology, as well as non-scientists interested in fisheries, aquaculture, and environmental management. "This excellent and comprehensive volume fills a major gap in the field of chemical ecology and behavioral physiology. The editors assembled an outstanding group of expert contributors." - Bert Hölldobler, Arizona State University and University of Würzburg. "The topics are timely, the reviews current and the approach refreshingly synthetic. I see this book being useful for many years to come to the entire community of aquatic chemical ecologists." - Peter W. Sorensen, University of Minnesota. "The chapters are lucidly written by the outstanding experts in their fields. The book is a must-read for all those interested in the underwater world." - Jelle Atema, Boston University and Woods Hole Oceanographic Institution.

About the editors. Thomas Breithaupt is a lecturer in the Department of Biological Sciences at the University of Hull (UK) where he studies the mechanisms and evolution of chemical communication and orientation in crustaceans and fish. Martin Thiel is professor of Marine Biology at Universidad Católica del Norte in Coquimbo (Chile) where together with his students he uses crustaceans as model organisms to study the evolution of social behavior in the sea.

<http://www.springer.com/life+sciences/ecology/book/978-0-387-77100-7>

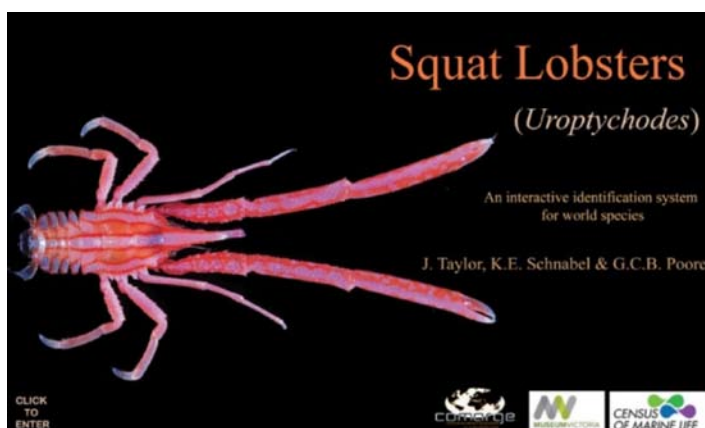
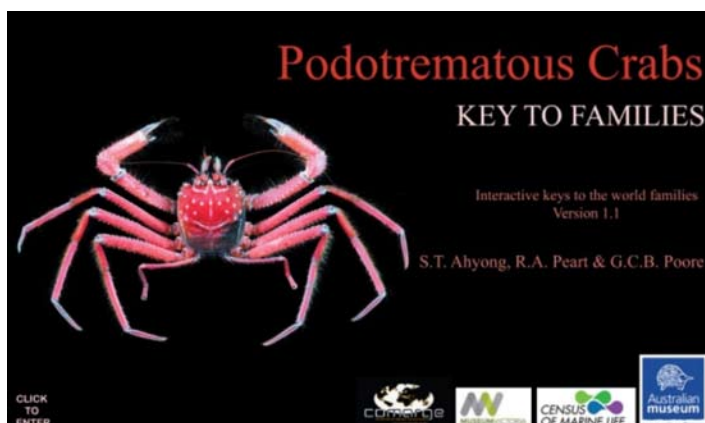




## On-line Publications...

### Online Identification Tools for marine squat lobsters and primitive crabs

Delta keys to aid in the identification of families, genera and species of marine squat lobsters (Chirostyloidea and Galatheoidea), and families and genera of primitive (podotreme) crabs are now available for download and testing at: <http://researchdata.museum.vic.gov.au/crustacea/index.htm>



For the past 18 months Continental Margin Ecosystems (COMARGE), one of the Census of Marine Life field projects, has been funding research fellow Joanne Taylor to complete the keys that were instigated at the Marine Squat Lobster Workshop held in Wellington in 2007. Additional funding was provided by COMARGE to Shane Ahyong to complete keys to podotreme crab genera. Your feedback is very welcome.

Joanne Taylor. [jtaylor@museum.vic.gov.au](mailto:jtaylor@museum.vic.gov.au)

Shane Ahyong. [Shane.Ahyong@austmus.gov.au](mailto:Shane.Ahyong@austmus.gov.au)

### 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](mailto: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](mailto:LISTPROC@VIMS.EDU). You can unsubscribe by sending UNSUBSCRIBE CRUST-SOC to [LISTPROC@VIMS.EDU](mailto: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](mailto:LISTPROC@VIMS.EDU). You can unsubscribe by sending UNSUBSCRIBE CRUST-L to [LISTPROC@VIMS.EDU](mailto:LISTPROC@VIMS.EDU). Use [LISTPROC@VIMS.EDU](mailto:LISTPROC@VIMS.EDU) to post administrative commands such as SUBSCRIBE, INFO, HELP. Use [CRUST-L@VIMS.EDU](mailto: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.



## News from Liaison Officers...

Dear All,

I am very pleased to introduce myself as the Liaison Officer for the **International Association of Astacology** (the IAA; Astacology is the study of Freshwater Crayfish) and the Crustacean Society. I look forward to doing whatever I can to help facilitate increased communication and collaboration between our Societies, please feel free to contact me if there is anything I can do to help you.

I am also pleased to announce the publication of volume 17 of the IAA's journal, *Freshwater Crayfish* (table of contents below). In addition, *Freshwater Crayfish* is now being published on an annual basis and any authors interested in submitting manuscripts for consideration should visit the *Freshwater Crayfish* manuscript submission and tracking website for details: <http://iz.carnegiennh.org/FCEditor/>

Best Regards

James M. Furse

Environmental Futures Centre, Gold Coast campus, Griffith University, Queensland 4222, Australia.

E-Mail: [j.furse@griffith.edu.au](mailto:j.furse@griffith.edu.au)

### Freshwater Crayfish 17

Papers from the Seventeenth International Symposium on Freshwater Crayfish held in Kuopio, FINLAND  
4 - 8 August, 2008.

Edited by: Japo Jussila, James M. Furse & James W. Fetzner Jr.

Published: 2010

#### Keynote Address

1. Horwitz P (2010). The conservation status of freshwater crayfish: The basis for concern, listing and recovery processes, and community involvement. *Freshwater Crayfish* 17: 1-12.

#### Aquaculture and Fisheries

2. Coccia E, Santagata G, Malinconico M, Grazia-Volpe M, Di Stasio M and Paolucci M (2010). *Cherax albidus* juveniles fed polysaccharide-based pellets: Rheological behavior and effect on growth. *Freshwater Crayfish* 17: 13-18.
3. González A, Celada JD, González R, Garca V, Carral JM and Sáez-Royuela M (2010). Increasing density in artificial incubation of crayfish eggs (*Pacifastacus leniusculus*, Astacidae). *Freshwater Crayfish* 17: 19-21.
4. Gutierrez ML and Rodríguez EM (2010). Effect of protein source on growth of early juvenile redclaw crayfish *Cherax quadricarinatus* (Decapoda, Parastacidae). *Freshwater Crayfish* 17: 23-29.
5. Huner J and Jeske C (2010). Crayfish and waterbirds: A review of what we do and do not know about their interactions in aquaculture systems. *Freshwater Crayfish* 17: 31-35.
6. Kouba A, Kanta J, Buřič M, Policar T and Kozák P (2010). The effect of water temperature on the number of moults and growth of juvenile noble crayfish, *Astacus astacus* (Linnaeus). *Freshwater Crayfish* 17: 37-41.
7. McClain WR (2010). Seasonal influences on growth of *Procambarus clarkii* in Louisiana. *Freshwater Crayfish* 17: 43-49.

8. Policar T, Smyth J, Flanigan M, Kozák P and Kouba A (2010). Optimum water temperature for intensive production of *Austropotamobius pallipes* (Lereboullet) juveniles. *Freshwater Crayfish* 17: 51-55.
9. Ramalho RO, McClain WR and Anastácio PM (2010). An effective and simple method of temporarily marking crayfish. *Freshwater Crayfish* 17: 57-60.
10. Romaine RP and Beecher LE (2010). Evaluation of a rotational trapping strategy in procambarid crayfish aquaculture. *Freshwater Crayfish* 17: 61-65.

#### Biogeography

11. Burba A (2010). The dispersal of the invasive spinycheek crayfish, *Orconectes limosus*, throughout Lithuanian waters. *Freshwater Crayfish* 17: 67-72.
12. Rakauskas V, Ruginis T and Arbačiauskas K (2010). Expansion of the spinycheek crayfish, *Orconectes limosus* (Rafinesque 1817), in the Nemunas River basin, Lithuania. *Freshwater Crayfish* 17: 73-76.

#### Conservation and Management

13. Erkamo E, Ruokonen T, Alapassi T, Ruokolainen J, Järvenpää T, Tulonen J and Kirjavainen J (2010). Evaluation of crayfish stocking success in Finland. *Freshwater Crayfish* 17: 77-83.
14. Hamr P (2010). The biology, distribution and management of the introduced rusty crayfish, *Orconectes rusticus* (Girard), in Ontario, Canada. *Freshwater Crayfish* 17: 85-90.
15. Litvan ME, DiStefano RJ, Walker KJ and Gao X (2010). A recreational fishery for longpincer crayfish, *Orconectes longidigitus* (Faxon, 1898), in Table Rock Lake, Missouri, USA: Effects of environmental factors on trapping success. *Freshwater Crayfish* 17: 91-101.
16. Maguire I, Lucić A, Schletterer M, Sint D, Erben R and Freder L (2010). Fecundity of indigenous stone crayfish, *Austropotamobius torrentium*, populations: Implications for crayfish conservation in Austria and Croatia. *Freshwater Crayfish* 17: 103-107.
17. Peay S, Holdich DM and Brickland J (2010). Risk assessments of non-indigenous crayfish in Great Britain. *Freshwater Crayfish* 17: 109-121.
18. Reynolds JD, Lynn D, O'Keeffe C, Lucey J, Clabbey K, McGarrigle M and King J (2010). Conservation assessment and current status of protected white-clawed crayfish, *Austropotamobius pallipes* (Lereboullet), in Ireland. *Freshwater Crayfish* 17: 123-127.
19. Souty-Grosset C, Hardy V, Raimond R and Ollivier L (2010). Land use in headwaters and the distribution of native white-clawed crayfish, *Austropotamobius pallipes* (Lereboullet), in a stream from the Poitou-Charentes region, France. *Freshwater Crayfish* 17: 129-134.
20. Tulonen J, Erkamo E, Mannonen A and Jussila J (2010). The mortality of juvenile noble crayfish, *Astacus astacus*, under conditions of water level regulation and predator pressure. *Freshwater Crayfish* 17: 135-139.
21. Zimmerman JKM and Palo RT (2010). Influence of water regulation and water flow on noble crayfish (*Astacus astacus*) catch in the River Ljungan, Sweden. *Freshwater Crayfish* 17: 141-144.



## News from Liaison Officers...

### Diseases

22. Imhoff EM, Mortimer RJG, Christmas M and Dunn AM (2010). Non-lethal tissue sampling allows molecular screening for microsporidian parasites in signal, *Pacifastacus leniusculus* (Dana), and vulnerable white-clawed crayfish, *Austropotamobius pallipes* (Lereboullet). *Freshwater Crayfish* 17: 145-150.
23. Makkonen J, Kokko H, Henttonen P and Jussila J (2010). Crayfish plague (*Aphanomyces astaci*) can be vertically transferred during artificial incubation of crayfish eggs: Preliminary results. *Freshwater Crayfish* 17: 151-153.
24. Makkonen J, Kokko H, Henttonen P, Kivistik M, Hurt M, Paaver T and Jussila J (2010). Fungal isolations from Saaremaa, Estonia: Noble crayfish (*Astacus astacus*) with melanised spots. *Freshwater Crayfish* 17: 155-158.
25. Quaglio F, Galuppi R, Capovilla P, Santoro D, Bonoli C, Tampieri AP, Marcer F, Fioretto B and Gelder SR (2010). Saprolegniaceae and two epibiont infections of the white-clawed crayfish, *Austropotamobius pallipes* complex, at an experimental hatchery in northern Italy. *Freshwater Crayfish* 17: 159-165.

### Ecology and Behavior

26. Alves N, Merrick JR, Kohen J and Gilligan D (2010). Juvenile recruitment of the Murray crayfish, *Euastacus armatus* (Decapoda: Parastacidae), from Southeastern Australia. *Freshwater Crayfish* 17: 167-175.
27. Bjurström L, Ruokonen TJ, Pursiainen M, Jones RI and Hämäläinen HO (2010). Impacts of the invasive signal crayfish on littoral macroinvertebrates of large boreal lakes: A pilot study in Lake Päijänne, Finland. *Freshwater Crayfish* 17: 177-182.
28. Buřič M, Kouba A and Kozák P (2010). Seasonal migrations of introduced *Orconectes limosus* (Rafinesque) to a small tributary of a large river. *Freshwater Crayfish* 17: 183-186.
29. Burmistrov Y and Shuranova Z (2010). Beating of flagellar exopods in crayfish as an overt expression of excitation. *Freshwater Crayfish* 17: 187-188.
30. Musil M, Buřič M, Policar T, Kouba A and Kozák P (2010). Comparison of diurnal and nocturnal activity between noble crayfish (*Astacus astacus*) and spinycheek crayfish (*Orconectes limosus*). *Freshwater Crayfish* 17: 189-193.
31. Reynolds J, Lynn D and O'Keeffe C (2010). Methodology for monitoring Irish lake populations of white-clawed crayfish *Austropotamobius pallipes* (Lereboullet). *Freshwater Crayfish* 17: 195-200.
32. Salkonen L, Pursiainen M, Tynkkynen K (2010). Response to simulated stream velocities by the noble crayfish, *Astacus astacus* (Linnaeus) and the signal crayfish, *Pacifastacus leniusculus* (Dana). *Freshwater Crayfish* 17: 201-205.
33. Shuranova Z and Burmistrov Y (2010). The crayfish *Procambarus cubensis*: Behavioural studies in the laboratory. *Freshwater Crayfish* 17: 207-211.
34. Sint D and Füreder L (2010). Interspecific competition between two endangered European freshwater decapods, the stone crayfish (*Austropotamobius torrentium*) and white-clawed crayfish (*Austropotamobius pallipes*). *Freshwater Crayfish* 17: 213-219.
35. Weinländer M and Füreder L (2010). The ecology and habitat

requirements of *Austropotamobius torrentium* in small forest streams in Carinthia (Austria). *Freshwater Crayfish* 17:221-226.

### Ecotoxicology

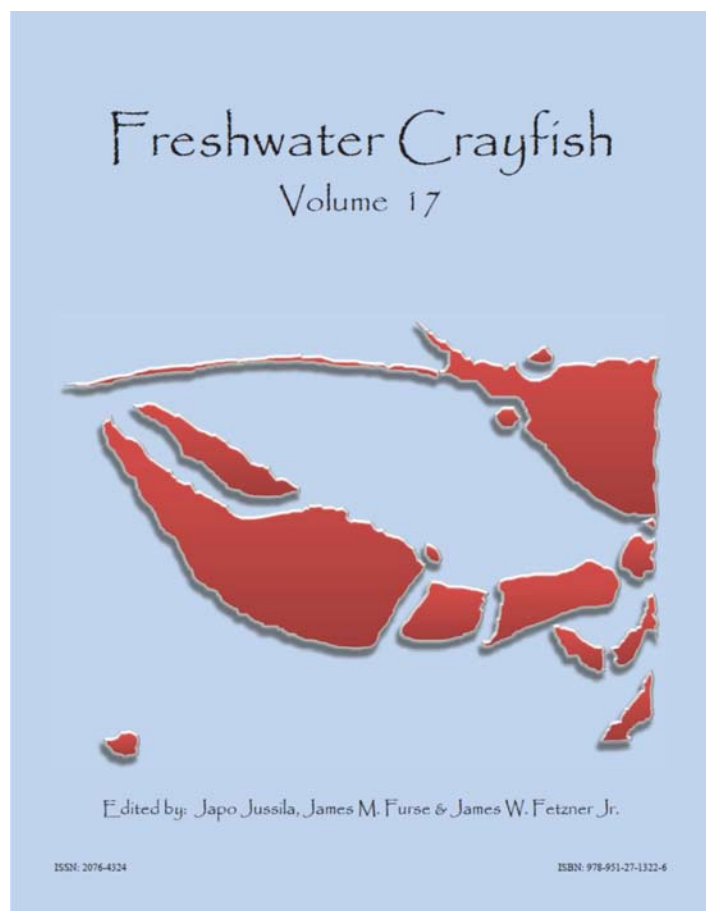
36. Barbee GC, Miles MS, Umejuru O and Hall SG (2010). Acute toxicity (LC50) of south Louisiana crude oil, mineral oil and peanut oil to the red swamp crayfish *Procambarus clarkii*. *Freshwater Crayfish* 17:227-233.

### Development

37. Borisov R and Tertitskaya A (2010). The process of caudal fan formation in freshwater crayfish. *Freshwater Crayfish* 17:235-238.
38. Pawlos D, Korzelecka-Orkisz A, Formicki K, Durkowski T and Winnicki A (2010). Egg volume and membrane resistance during embryogenesis of the marbled crayfish (*Procambarus* sp.). *Freshwater Crayfish* 17: 239-242.

### Life History

39. Johnston K, Robson BJ and Austin CM (2010). Population structure and life history characteristics of the freshwater crayfish *Gramastacus insolitus* and *Geocharax falcata* (Parastacidae) in the Grampians National Park, Australia. *Freshwater Crayfish* 17: 245-253.
40. Maguire I, Cerjanec D and Lucić A (2010). Life history of narrow-clawed crayfish (*Astacus leptodactylus*) in two Croatian rivers. *Freshwater Crayfish* 17: 255-260.







## News from Liaison Officers...

### News of ALCA and ALCARCINUS in Latin America

The list of people interested in carcinology in Latin America and registered in ALCA has recently increased, mostly thanks to new students who have subscribed to the list. Number of members is now set at 390, although it appears that a large proportion of members is not very active. They probably read the news but fail to communicate with other carcinologists. The list is now more frequently used by colleagues and students who have a hard time finding specific references for their work or to complete a paper. This has turned out to be very positive and increasing collaboration among Latin America colleagues has been observed. A very good news!! The association itself (ALCARCINUS, Asociación Latino-americana de Carcinólogos) remains with a low profile, with reduced recruitment and problems to transfer membership fees to our Treasurer in Costa Rica. But we are trying hard. Money obtained from the fees has been used to provide some grants to register to lectures on Crustacea, provide awards for best student posters or oral contributions in meetings within Latin America, and to encourage publication of results obtained by graduate students (Best Published Paper Awards on Crustaceans by graduate students). ALCARCINUS also pays for fees for yearly subscription to IAMSLIC, which has provided good opportunities to obtain duplicates of literature on Crustacea.

Another action which has recently increased is the mailing of DVDs with large series of PDFs of papers on selected groups of crustaceans, for personal use. The Crustacean Society has provided some funds for mailing and also provided series of DVDs to be used for this purpose. Access to literature remains one of the most critical issues in some countries, particularly literature related to taxonomy and species identification. In order to reduce stocks, TCS is also sending excess of issues of the Journal of Crustacean Biology to selected libraries in the region.

Michel E. Hendrickx  
Liaison Officer TCS-ALCARCINUS

### News from IRGO

IRGO is the abbreviation of "International Research Group on Ostracoda" – which is an informal association of ALL ostracod workers, neontologists and palaeontologists. IRGO was founded in 1977 as the successor of the "Committee on Recent Ostracoda" which had been formed in 1963 already at the occasion of a first international meeting of ostracod workers in Naples.

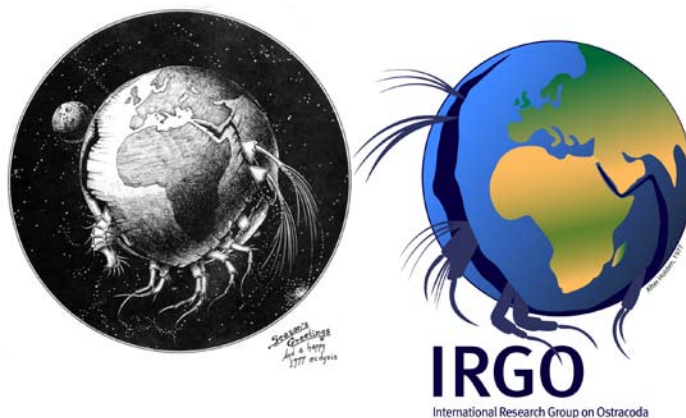
Every four years, researchers from all over the world meet for the International Symposium on Ostracoda, or ISO; the next meeting, ISO17, is scheduled for summer 2013 in the wonderful city of Rome. Besides, the European Ostracodologists' Meeting, EOM, has become a good opportunity for exchange about, and presentation of, ongoing ostracod research in the long periods between two ISO events. In spite of its name, the EOM welcomes of course ostracod researchers from all over the world. Previously, you found an invitation to EOM7, taking place this summer in Graz, Austria.

IRGO's discussion platform is OSTRACON, an email discussion list which has been established as early as 1996 and soon became a valuable tool for immediate contact to more than 300 colleagues.

IRGO's first website (<http://userpage.fu-berlin.de/~palaeont/irgo/irgohome.html>) has already moved from Houston, where it has been created in 1994 by Rosalie Maddocks (Univ. Houston) to Berlin, where Michael Schudack (FU Berlin) continued and enlarged this service. At the moment, a new website is under construction and I hope to come up with good news from this department in the next Ecdysiast. As a small preview, I would like to here present IRGO's first logo, approved by online votes of ostracod workers last year. The logo is based on a humorous drawing created by John C. Holden in 1977 as a season's greeting to fellow ostracod workers.

We are happy to be amongst TCS' liaison partners and hope to contribute to an improved information exchange with TCS members and those of other liaison partners.

Dr. Renate Matzke-Karasz, Munich  
Chair IRGO steering committee 2009-2013



### Recent activities in the Carcinological Society of Japan

The 48th annual meeting of the Carcinological Society of Japan was held in 12-14 November 2010 at the University of Ryukyus, Okinawa, Japan. Twenty-four orals and Thirty-five posters were presented, and two symposia "Recent studies of the coconut crab in Japan: Approaches to the conservation" and "History of the carcinological studies" were held at the meeting. The 49th annual meeting is planned at Tokyo University of Marine Science and Technology (Tokyo) in autumn 2011.

Journal information:

Crustacean Research No. 39 and Cancer No. 19 were published at 2010 including papers below as.

#### Crustacean Research No. 39

Tomikawa, T., N. Kobayashi, and S. F. Mawatari. 2010. Phylogenetic relationships of superfamily Gammaroidea (Amphipoda) and its allies from Japan. Crustacean Research 39: 1-10.

## News from Liaison Officers...

- Tanaka, H., T. Saruwatari, and Takashi Minami. 2010. Larval development of two Atergatis species (Decapoda, Xanthidae) described from laboratory-reared material. *Crustacean Research* 39: 11-35.
- Fujita, Y. 2010. Larval stages of the crinoid-associated squat lobster, *Allogalathea elegans* (Adams & White, 1848) (Decapoda: Anomura: Galatheididae) described from laboratory-reared material. *Crustacean Research* 39: 37-53.
- Fujita, Y., and P. F. Clark. 2010. The larval development of *Chirostylus stellaris* Osawa, 2007 (Crustacea: Anomura: Chirostylidae) described from laboratory reared material. *Crustacean Research* 39: 55-66.
- Wada, K., and N. Yoshihara. 2010. Geographical variation in morphological characters of *Ilyoplax pusilla* (De Haan, 1835) (Brachyura: Dotillidae). *Crustacean Research* 39: 67-70.

### Cancer No. 19 (in Japanese)

- Ota, Y. 2010. Seasonal fluctuations of the sponge-dwelling gnathiid *Elaphognathia nunomurai* (Isopoda; Gnathiidae). *Cancer* 19: 1-9.
- Kikkawa, T., and Y. Itoh. 2010. Acute lethal toxicity of hexavalent chromium on nauplii of the harpacticoid copepod *Tigriopus japonicus*. *Cancer* 19: 11-14.
- Saito, N., and H. Motoh. 2010. Note on a bopyrid isopod infected on the abdomen of the hippolytid shrimp, *Lebbeus kuboi* Hayashi, 1992. *Cancer* 19: 15-17.
- Ito, M. 2010. Individual identification of the fiddler crab *Uca arcuata* by the markings on the carapace. *Cancer* 19: 19-26.
- Konishi, K., and N. Nanjo. 2010. The lost morphological character - arrangements of maxillipedal exopod setae in the caridean zoae suggested by Dr. Yokoya in 1957. *Cancer* 19: 27-29.
- Konishi, K. 2010. Some topics on pea crabs of Japan - additional summary after 1996. *Cancer* 19: 31-38.
- Kawai, T. and M. Sunagawa. 2010. New discovered information on the Japanese freshwater crayfish *Cambaroides japonicus* for Emperor Yoshihito during Taisho Era. *Cancer* 19: 39-40.
- Fujita, Y. 2010. Folkloric research of the coconut crab *Birgus latro* (Linnaeus, 1758) in the Ryukyu Islands. *Cancer* 19: 41-51.
- Ito, M. 2010. Collection method of the fiddler crabs *Uca arcuata* and *U. lactea*. *Cancer* 19: 53-55.
- Okuno, J., and S. Nakano. 2010. First record of a solenocerid shrimp, *Solenocera pectinulata* Kubo, 1949 (Dendrobranchiata: Solenoceridae) from Suruga Bay. *Cancer* 19: 57-59.
- Usami, Y., and S. Watanabe. 2010. List of Kubo collections stored in the Tokyo University of Marine Science and Technology. *Cancer* 19: 61-69.
- Matsuzawa, K. 2010. Crustacean decapods sucked up by an intakepipe of Muroto Deep Sea Water Aqua Farm. *Cancer* 19: 71-74.
- Niwa, N. 2010. Invasion and dispersion routes of alien alive freshwater shrimps *Neocaridina* spp. (Caridea, Atyidae) and *Palaeomonidae* spp. (Caridea), imported into Japan. *Cancer* 19: 75-80.

Respectfully submitted, Shinji Tsuchida (JAMSTEC)

## News from Regional Governors...

### News from the Indo-Pacific Region

Summer in the Indo-Pacific region has been a busy time for TCS members. There has been some interesting field work happening and great collaborations underway. You might also be interested to hear that marine researchers in the region have a new research vessel to look forward to as well! To follow are a few highlights contributed by some long term and recently joined TCS members in the region.

#### Future Research Vessel

Australia's ocean, climate and geoscience research capability will more than double when its latest ocean-going research vessel joins the national fleet in 2012. Capable of operating continuously for 55 days at sea, cruising at 12 knots over a range of 10 000 nautical miles, the new vessel is expected to be complete by 2012. CSIRO will own and manage the new vessel and its operation will be guided by an independent steering committee and funded by the Australian Government to support voyages mounted by Australian scientists and their overseas collaborators. The vessel is promised to "provide a safe working environment in the world's most challenging oceans, from the Roaring Forties of the Southern Ocean and Antarctica's ice edge, to the cyclones of Australia's tropical north". This project is an initiative of the Australian Government being conducted as part of the Super Science Initiative and financed from the Education Investment Fund. Further info can be found at: <http://www.csiro.au/science/Future-Research-Vessel.html>

#### Branchiopod Research

Brian Timms refers to himself as a 'retired academic' but by all accounts has never been busier. He is currently tackling the taxonomy of the largely undescribed and poorly defined large branchiopod fauna from Australia that includes many undescribed and poorly defined species. He has some allies in this task, including Stefan Richter and Martin Schwentner of Rostock University, Germany. At the time of writing, the three adventurers are on a month's field trip in the sizzling hot Australian Outback after all the recent flooding rains have awakened resting eggs after 10 years of drought.

#### Jumping across the ditch

In July 2010, Shane Ahyong moved to the Australian Museum after almost five years at the National Institute of Water and Atmospheric Research, Wellington, New Zealand. Getting setup and established has been fast and furious, with numerous projects on hand, including recent completion of *The Biology of Squat Lobsters* (co-edited with Gary Poore and Jo Taylor) and several major pushes into decapod and stomatopod phylogenetics.

#### Western Australia's Kimberley region

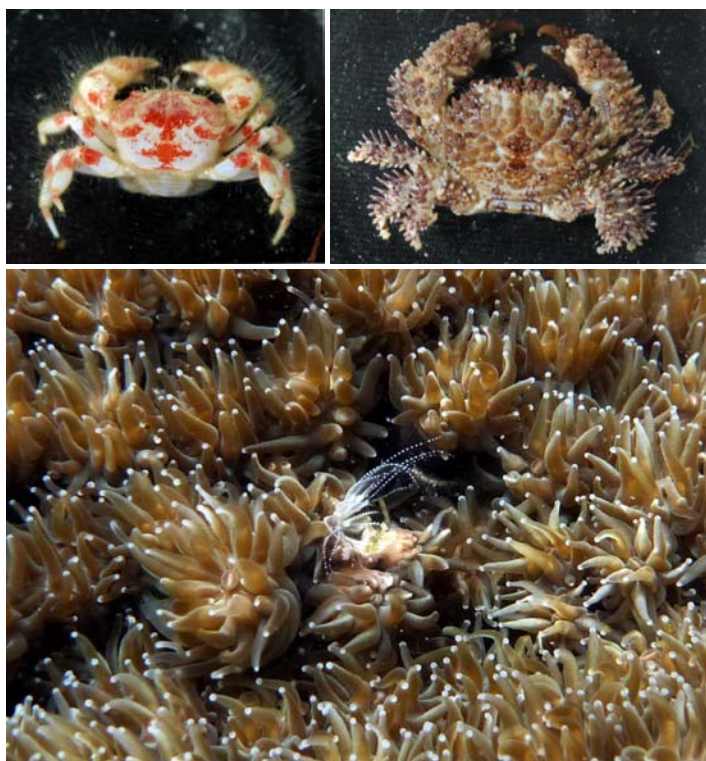
The Western Australian Museum, with sponsorship funding from Woodside Energy, conducted its second biodiversity survey of the waters of the Kimberley region of northern Western Australia in



## News from Regional Governors...

October 2010. The survey targeted major marine taxa: crustaceans, molluscs, echinoderms, fish, marine plants, polychaetes, hard and soft corals. Using the time-honoured methods of rubble smashing, around 2,000 crustacean lots representing more than ten orders have been collected. The mammoth task of identifying the material is in collaboration with researchers and institutions around the world. The WA Museum welcomes requests by researchers to examine material, especially alpheidids, xanthids and hermit crabs (contact Andrew Hosie: [Andrew.hosie@museum.wa.gov.au](mailto:Andrew.hosie@museum.wa.gov.au)). Initial results are expected to be published in late 2011.

Website: <http://www.museum.wa.gov.au/kimberley/marine-life-kimberley-region>



*Heteropilumnus* sp. (top left) and *Actaea* sp. (top right) collected from the Kimberley region of Western Australia. The coral barnacle *Nobia* sp. embedded in the host coral *Galaxia* sp. (bottom). Photographer Andrew Hosie, WA Museum.

### Student Profile: Chad Buxton

PhD candidate Chad Buxton (Museum of Tropical Queensland and School of Marine and Tropical Biology, James Cook University) is researching the asellote isopod family Stenetriidae on shallow-water, coral reefs. Historically, work on this family began in Australia with the first ever species described by Haswell in 1881 from Port Jackson, Sydney. The few subsequent descriptions in Australia have primarily represented deep-water and temperate-water habitats. Funded by ABRS and through the CoML-CReefs program, Chad is utilizing both morphological and molecular techniques in his study of this under-documented but highly diverse taxonomic group.

Focus is on fresh material collected over a three-year period from the Great Barrier Reef and Ningaloo Reef, Western Aus-

tralia, as part of the CReefs expeditions. Only 8 species in 2 genera are known from Australia to date, with no previously recorded tropical species despite this family being “large” and ubiquitous in samples collected on the reefs. So far, Chad has discovered more than 30 new species across seven existing and new Stenetriidae genera which are awaiting description, suggesting this may be the tip of a taxonomic iceberg! Any specimen donations from tropical collections around the world would be much appreciated and would greatly contribute to this project. For enquiries and/or support, please contact Chad at [chad.buxton@qm.qld.gov.au](mailto:chad.buxton@qm.qld.gov.au).



Chad Buxton looking for Isopods. Photographer Gary Cranich, Queensland Museum

### Post-Doc Profile: Lauren Hughes

We are very pleased to welcome new TCS recruit Dr Lauren Hughes, Postdoctoral Research Fellow (Australian Museum, Sydney). Lauren’s research focus is on the dominant shallow-water amphipod families around the Australian coast and offshore territories based on an exhaustive four year survey of recent and historic museum collections. Taxonomic work within the families Ampithoidae, Aoridae, Ischyroceridae, Maeridae, Melitidae, Podoceridae and Photidae includes the development of online interactive keys, to facilitate/encourage amphipod species identification. Systematic work on these dominant amphipod families provides the opportunity to investigate Indo-Pacific biogeography using a brooding Crustacean as a model organism. Lauren’s research is supported by a three year postdoctoral grant from the Australian Biological Resource Study.



*Podocerus dentatus* (Haswell, 1879), male, 7.1 mm, SEM photo by Sue Lindsay (AM).

Jo Taylor  
TCS Indo-Pacific Governor

## Obituary

### In Memoriam: Patsy A. McLaughlin (1932-2011)

I am saddened to report that Dr. Patsy A. McLaughlin passed away from heart failure at a clinic near her home in Sedro Woolley, Washington, on April 4. Pat, as she preferred to be called, was less than 2 months short of her 80th birthday. She had a most distinguished career, and it is not an exaggeration to state that she was one of the most influential carcinologists in history, men or women. Her modest character belied her great intellect and enormous knowledge on crustaceans. She was born in Seattle on May 27, 1932, and got her Ph.D. in 1972 on the other side of the USA at George Washington University, Washington, DC. Her dissertation was a monumental monograph on the hermit crabs from north-western North America, a phenomenal work that still stands as one of the most indispensable, and beautifully illustrated single works on the taxonomy of these decapods. She worked early in her career as a Fishery Biologist at the Seattle Biological Laboratory, Bureau of Commercial Fisheries (1957-1960) where she first became acquainted with king crabs and hermit crabs, the two groups on which she later became a worldwide authority. She then worked as Assistant Zoologist (1960-1963) at the Department of Oceanography, University of Washington, Seattle, where she met her mentor and famous barnacle specialists, Dr. Dora Henry. Pat went on to study barnacles as well, and became a specialists on these crustaceans. She worked as Supervisor for Invertebrates at the Smithsonian Oceanographic Sorting Center, Smithsonian Institution, Washington, DC. (1965-1968), and then went south to be Research Assistant Professor & Research Associate at the Rosenstiel School of Marine and Atmospheric Science, University of



*Calcinus mclaughlinae* Poupin & Bouchard, 2006 (photo courtesy of J. Poupin)

Miami, Florida (1969-1973), where she worked with Anthony J. Provenzano, Jr., completing numerous taxonomic works on hermit crabs and other crustaceans. She married Mr. Emmanuel J. McGeorge while at the Rosenstiel School, and eventually moved across town to be Research Scientist and Courtesy Professor at the Department of Biological Sciences, Florida International University, Miami (1975-1989). She finally moved in 1987 with her retired husband to Sedro Woolley, where she became associated as Resident Scientist with the Shannon Point Marine Center, Western Washington University, at Anacortes. Overall she published many seminal articles, catalogs, and book chapters, on many groups of crustaceans, and was the author of the classic manual "Comparative morphology of Recent Crustacea" (1980, W.H. Freeman & Co.).

Aside from her modest personality, sense of humor and generosity, Pat will be remembered—among many other reasons—for her productivity and unsurpassed knowledge of the anatomy of crustaceans, influential ideas about the evolution of anomurans (especially hermit crabs), superb writing, great intellectual honesty and scientific curiosity, a total dedication to promote the study of crustaceans, and immense love for her Schnauzer dogs. She also leaves behind a long legacy of carcinologists and students that she unselfishly helped and trained.

Pat has left a great void, and we will miss her dearly and surely increasingly so as time passes. A formal obituary will be published in our JCB.

Rafael Lemaitre  
Department of Invertebrate Zoology  
National Museum of Natural History  
Smithsonian Institution  
4210 Silver Hill Road  
Suitland, MD 20746 USA



Pat in Paris, 2007





## *Minutes of The Crustacean Society...*

### **TCS 2011 Executive/Board Meeting**

**Tuesday January 4, 2011**

### **Society of Integrative and Comparative Biology (SICB) Meeting, Salt Lake City, Utah (3-7 Jan. 2011)**

Present: Akira Asakura, Fred Schram, Mary Belk, Sherry Tamone, Chris Boyko, Brian Tsukimura & Chris Tudge (visitors = Sue Burke and Lori Strong - Sue Burke & Associates). Meeting was opened by Akira at 5:15 pm.

Primary on the agenda was the establishment of a new business model for TCS and JCB and the investigation into a possible co-publishing agreement with Allen Press (AP). The finance committee (Akira, Mary and Fred) provided a power point presentation of the current state of TCS and its finances, and the reasoning behind the suggested adoption of the new business model, and the establishment of the pinnacle website (hosted by AP).

The finance committee outlined TCS income versus expenditures and noted that in 2010 TCS was approx. \$7,000 in the red. This model cannot be sustained. They also noted that membership is declining, library subscriptions are declining, meetings are not economically productive, donations and bequests are low to non-existent, use of TCS investment income is trouble and in the long term unsustainable, and finally that the only increasing income is from BioOne, JSTOR via JCB.

Some solutions are to: increase membership fees, increase subscription fees, increase membership, make the meetings pay for themselves and possibly provide money back to TCS, get more people to donate or bequest, set up better bequest and donation procedures, increase investment income, and continue to increase BioOne & JSTOR & JCB income.

New membership fees were suggested at:

Student Membership	\$35.00
Regular online membership	\$95.00
Regular online and print member	\$125.00
Patron online and print member	\$150.00

New subscription fees were suggested at:

US, Mexico, etc.	\$230.00
Overseas	\$250.00

All mid-year meetings must be organized and operated in a business sense by TCS and its appointed agents. Hawaii (June 2011) will be run by TCS and so should turn a profit. SICB meetings will never produce an income for TCS but does give TCS wide exposure and camaraderie. It is vital that TCS remain associated with SICB and always have a presence at their annual meetings. Each member must promote TCS among their colleagues. Each member should sign up one new member per year (especially your students). Each member should be promoting TCS scholarships to students. The new liaison officers must promote co-memberships among the societies they represent.

Donations to TCS for general purposes and for scholarships and bequests should be encouraged. In the meantime the executive committee is currently formulating TCS policy on donations and bequests (both for money or materials).

The following action items were passed by the executive committee pursuant to the above information and the establishment of a new business model for TCS to make us more economically competitive and to ensure our long-term survival as a vibrant, member-run, economically viable society.

1. Passed a resolution to increase TCS scholarships from 4 to 6 (increasing award from \$1K to \$1.5K each);
2. Passed a resolution to convert the Treasurer position to an Executive Director (ED) position of TCS;
3. Also increasing the Treasurer/ED stipend from \$10,000 (currently paid to the Treasurer) to \$24,000 (for the ED position), effective immediately.

The executive committee also charged the finance committee to continue to investigate the following:

1. the adoption of a new business model;
2. move forward with the pinnacle web site;
3. continue to pursue a co-publishing agreement with Allen Press & other publishers;
4. craft possible Constitution and By-Laws changes to cover the above (to be presented to TCS in the future).

Visitors from Sue Burke and Associates made a short presentation about the planning for the TCS Hawaii meeting in June 2011, and brought us up to date on event planning and some costs etc.

The meeting was closed by Akira Asakura at 9:30 pm.

Respectfully submitted by TCS President-Elect, Chris Tudge

### **TCS 2011 Business Meeting**

**Thursday January 6, 2011**

### **Society of Integrative and Comparative Biology (SICB) Meeting, Salt Lake City, Utah (3-7 Jan. 2011)**

Present: Fred Schram, Mary Belk, Sherry Tamone, Chris Boyko, Brian Tsukimura, Chris Tudge & other TCS members. In the absence of the TCS President the meeting was opened by Chris Tudge at 6:30 pm and a general welcome extended to those present.

The results of recent 2010 fall election were announced. The new 2011-2012 officers being: Treasurer – Mary Belk; Secretary – Ole Møller; North American Governor – Jason Williams; European Governor – Elena Mente & Indo-Pacific Governor – Joanne Taylor. The appointees were congratulated and thanked for their service to TCS.

The results of the recent TCS member survey were announced and briefly discussed. Based on a poor response of only ~100 members or so the following information was gleaned. Most respondents were academic scientists, who attend one meeting a year. When asked if they had recently attended a TCS midyear (summer) meeting, a TCS winter meeting (at SICB) or an ICC,



## Minutes of The Crustacean Society...

most indicated the summer meeting. Most suggested they would prefer one TCS-sponsored meeting per year, they would prefer it to be a summer meeting and were equally divided between smaller (<100 people) or larger (>300 people) meetings.

The recent amendments to the TCS Constitution and By-laws (passed by ballot in December) were summarized.

The new liaison officers for 12 TCS sister societies were introduced. These are: The Chinese Crustacean Society (Jianhai Xiang, President of CCS), International Association of Astacology (James M. Furse, Past President of IAA), The Brazilian Crustacean Society (Fernando Mantelatto, Past President of BCS), The Carcinological Society of Japan (Shinji Tsuchida, member of Council of CSJ), The World Association of Copepodologists (Rony J. Huys, Vice-President of the WAC), International Research Group on Ostracoda (Renate Matzke-Karasch, President of IRGO), Asociaçao Latinoamericana de Carcinologia (Michel Hendrickx, President of ALCARCINUS), Colloquium Crustacea Decapoda Mediterranea (Enrique Macpherson), Terrestrial Isopod Group (Jasna Strus, Organizer of 8th International Symposium of Terrestrial Isopod Biology, 2011), Large Branchiopod Working Group (Christopher Roger, Editorial Board, Anostracan News), Amphipod Group (Vim Vader, Manager of "Amphipod Pages" web-site, Editor of Amphipod Newsletter, Database manager of "Amphipod Literature"), German Carcinologist Group (under discussion!).

Fred Schram presented the JCB Editor's report which was followed by Chris Boyko with the Program Officer's report. This latter report highlighted the up-coming TCS meetings listed below.

*TCS Summer Meeting 2011.* Venue: Ala Moana Hotel (Honolulu, Hawaii). Date: 6- 9 June, 2011.

*TCS Winter Meeting (SICB) 2012.* Venue: Charleston, SC, USA (TCS Symposium on barnacle biology. Date: 3-7 January, 2012.

*TCS Summer Meeting 2012.* Venue: Royal Olympic Hotel, Athens, Greece. Chairperson: Elena Mente (University of Thessaly, Volos). Date: 3-7 June 2012. This meeting is a joint meeting with Colloquium Crustacea Decapoda Mediterranea (Enrique Macpherson). Call for proposal of symposia! Please contact: Elena Mente.

*TCS Winter Meeting (SICB) 2013.* Venue: San Francisco, CA, USA (TCS Symposium ideas welcome -deadline Aug. 2011). Date: January 3-7, 2013.

*TCS Summer Meeting 2013.* Possible venue: Caribbean??

*TCS Winter Meeting (SICB) 2014.* Venue: Austin, TX, USA. Date: January 3-7, 2014.

*8th International Crustacean Congress 2014.* Venue: Senckenberg Museum in Frankfurt, Germany (Chairpersons: Michael Tuerkay, Stefan Koenemann). Date: summer, 2014.

A summary of the recent TCS Executive meeting was given via power point presentation describing the new business model of JCB and TCS and incorporating the Treasurer's report by Mary Belk.

The meeting was opened for items/discussions from the floor and a short discussion ensued about the proposed submission

fee for JCB articles and the best way to recoup this outlay imposed by Allen Press.

The meeting was closed by President-Elect Chris Tudge at 7:30 pm.

Respectfully submitted by President-Elect Chris Tudge.

### Board of The Crustacean Society Call for Nominations for Vacancies (2012-2013)

The Crustacean Society officers and governors serve for two-year terms, half being elected each year. The term of the President and President-Elect is limited to a single term, but governors and other officers may serve multiple terms. Nominations are now called for the following positions on the Board of The Crustacean Society for the period 2012-2013: **President-Elect, Program Officer, SICB Liaison Officer, Asian Governor, Latin American Governor.**

The President-Elect serves for 2 years before assuming the role of President, who presides over meetings and represents the Society's interests in external affairs. The President-Elect also runs the TCS elections during his term. The Program Officer is responsible for arranging and/or coordinating all symposia, workshops, etc. The SICB Liaison Officer is responsible for coordinating the activities of TCS with the SICB executive and the SICB annual meeting.

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).

Members of TCS may nominate themselves or another member, provided the nominee agrees in writing to the nomination. Nominations should include name, position, institution and e-mail address, plus a 200-word curriculum vitae, and be addressed to Chris Tudge, TCS President-Elect (ctudge@american.edu).

Voting for the election will be done electronically at <http://tcs.allenmm.com>. Ballots can be cast anytime after November 1, 2011. An announcement for the starting of ballots will appear in the November 2011 edition of 'Ecdysias' and will also be sent through CRUSTSOC to remind people to vote. Voting will close on 25 December 2011.

Chris Tudge, TCS President-Elect



## 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](http://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.

