



The Ecdysiast

Newsletter of The Crustacean Society

Message from the President...

Welcome TCS colleagues,

Well, I do not need to tell anyone that there is a world-wide financial crisis occurring. Every time we turn around, another country hits tough financial times. TCS has not been immune from these troubles either, and even though the US markets seem to be recovering slowly and the TCS endowment funds appear to be on the rise again, we are not out of trouble just yet. It makes me a little sad to think that my term as TCS President has been one of pushing austerity and penny-pinching, but it has been for the good of sustaining a viable and financially stable future society.

As I took office in January 2012, TCS was enduring the “perfect storm” (to abuse an overused cliché) of change. This change (some good, some bad) occurred on many and diverse fronts, and included the change of publisher from Allen Press to Brill, the move to a more electronic editorial practice for JCB, JCB went from 4 issues to 6 issues per year, the establishment of the Executive Director position as part of the TCS executive, the establishment of sister society liaison officers within TCS, the availability of JCB as an optional e-journal, the continued poor performance of the US money markets, dwindling membership due to some of the above changes but also as part of a global trend hitting small societies, and a couple of expensive summer meeting venues. Not all of the above change was bad for TCS, but it did contribute to the TCS budget being in the red over the last two years (for the first time). TCS could not continue to maintain its operating budget by dipping into the endowments on a yearly basis. You do not have to be a financial whiz to see that in the long-term, that is not a sustainable practice.

The TCS executive and board acted swiftly to turn this situation around and have instigated a series of financial and policy measures to balance the budget for 2013 and to bring TCS back into the black. I am happy to report that our association with Brill is reaping the expected financial benefits, after the initial financial outlay, and that our electronic journal access agreements with JSTOR and BioOne are similarly providing much needed funds for the society. The new model for TCS meetings (winter with SICB

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Calling all crustacean workers . . . please help in our survey!

The Crustacean Society (TCS) invites you to take a few minutes to complete an online survey regarding TCS membership, benefits and meetings. The point of the survey is to gather data from the broader crustacean community in an effort to determine factors that could increase membership and participation in TCS as well as improving the benefits offered to our members.

http://s.zoomerang.com/s/Improving_TCS2013_English

http://s.zoomerang.com/s/Improving_TCS2013_Spanish

Please respond whether or not you are a current member of TCS; the survey is anonymous. The TCS board greatly appreciates your help in this effort.



and summer in conjunction with a sister society) appears to be working and has saved TCS considerable funds. The move to a 6-issue JCB is complete and is running smoothly, and the aggressive and persistent efforts of our Executive Director is bringing in a consistent stream of membership fees, page charges and publication fees, that help to keep publication of JCB a solvent venture.

We expect the financial situation of TCS to remain viable, and balanced, into the future and for the TCS endowments to regain much of what they lost in the past eight years. We also expect JCB to go from strength to strength as one of the premier carcinological journals in the world and part of the high quality suite of journals offered, both in print and electronically, through Brill Publishers. The only disappointing trend that may be more challenging to turn around is the progressive loss of TCS membership over the last decade. TCS has gone from over 500 members to approximately 380 in early 2013. Not only is this a significant loss in revenue for running TCS, but it also represents a serious challenge to having a deep and diverse pool of members available to be future TCS executive officers and to be mentors for future student members. TCS exists because of its members and for its members, and if we allow the membership to drop below an unknown critical mass, then the society and its journal, may irreparably suffer! We cannot allow this to happen.

I urge you to maintain your current membership in TCS and become active in promoting new membership amongst your colleagues and students, or renew your lapsed membership and reconnect with your society and colleagues and support TCS and JCB, or join TCS for the first time and bask in the glory and camaraderie that is TCS. However you achieve it, support TCS and your flagship journal – JCB, promote both and the benefits of membership and attend our annual meetings with your friends, family and students. I know that I will be at the TCS mid-year meeting with ALCARCINUS in San Jose, Costa Rica (July 7-12, 2013) with my family and colleagues, and then I will attend the TCS sponsored symposium on crustacean regeneration, development & reproduction at the International Congress on Invertebrate Reproduction and Development (ICIRD), in Detroit, USA (July 14-19, 2013). Perhaps I will see you at either, or both!

So, please support your vibrant society through continued attendance at our meetings (both winter and summer), your vital annual membership, and that of your students, publishing in, and reviewing for, JCB, and generally promoting TCS and its role in the greater carcinological community.

See you in San Jose!

Sincerely, your President (2012 -2013),

Chris Tudge

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 (\$1000);

The Crustacean Society Fellowship in Graduate Studies (6 awards of \$1000 each in the areas of (1) crustacean ecology and/or behavior; (2) crustacean population genetics and/or physiology; and (3) crustacean systematics, biogeography, and/or evolution).

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

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

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://www.thecrustaceansociety.org> 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

DEADLINE FOR SUBMISSION: February 15th, 2014

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.



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The Ecdysiast is published twice yearly in May and November and it is available in electronic form at http://www.thecrustaceansociety.org/Ecdysiast_Newsletter.html. 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.

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The Crustacean Society Board Members, 2013

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B. A. R. Azman
Franklin H. Barnwell
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Paul Frederick Clark
Keith A. Crandall
Neil Cumberlidge
David M. Damkaer
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JCB Editorial Report for volume 32 (2012)

Here is the report for the *JCB* publication year just concluded: volume 32 (2012), the dark-tan volume. The New Year brings in a new color – a bright burgundy.

In the last yearly report on 20 December 2011 we had logged in submission # 1065; on 27 December 2012 submission # 1219 was logged in, i.e., 154 submissions this past 12 months. Our Impact Factor nudged up to 1.116; last year it was 1.115. Our rejection rate was 35% in 2012, but I have the impression that the rate is rising (which is OK). I can no longer tell what page costs are because in the agreement with Brill we simply pay a flat rate per volume of 900 pages [see Executive Director's Report for this information]. We published 1002 pages of text in 6 issues in 2012; under Allen Press we averaged about 728 pages in 4 issues. We were allowed to exceed our contractual 900 pages at no extra cost to facilitate bringing over the small backlog from AllenTrack into Editorial Manager.

Our overall costs, however, are holding steady. At a meeting at Brill in October 2012, Michiel Thijssen, our acquisitions editor, informed me that Brill is very pleased with how well *JCB* is doing in terms of marketing. It was too early to provide concrete figures because final income will not be available until into the New Year, but he believes Brill will have no trouble meeting the forecast income as per our contractual agreement, and may exceed it (welcome news on our income side).

The subject spread of the 98 published pieces in volume 32 was:

	2010	2011	2012 (6 issues)
Review			1
Special Section1		5	4
Anatomy & Func. Morph.	4	10	8
Aquaculture			1
Behavior	1	6	5
Ecology	18	24	19
Larvae & Development	7	7	6
Paleobiology	5	3	6
Physiology	6	1	10
Population Biol & Genomics	8	5	5
Systematics, Evol. & Biog.	6	10	9
α -Taxonomy	13	5	13
Conservation	3	0	1
Short Communications	7	5	6
Book Reviews	2	3	4

I had pulled back from submissions in Aquaculture and Fisheries. It was not clear how such papers fit into our mission, especially because these fields have their own journals. However, at the Athens meeting a plenary lecture by Prof. Patrick Sorgeloos revealed how much basic biology relevant to these fields needs to be done; the path for *JCB* then became clear. Prof. Sorgeloos agreed to become an Assoc. Editor. We will see how this works out in the coming year, which so far is encouraging. I hope it may increase our outreach.

While we had two more issues in volume 32, nonetheless I had the feeling our submissions from abroad were growing in real terms. Indeed, this has proven to be the case, with submis-

sions from Latin America up noticeably. Unfortunately, this often means more copy-editing is needed in the end, and my time spent on this task has significantly increased. I've tried more intense early screening of submissions and sending things back for attention to various details such as language and house style, although this often causes more problems in trying to keep track of submissions "floating" in various stages of submission.

	2010	2011	2012
Argentina	4	8	24
Australia	3	6	13
Austria	1		
Belgium	2	3	
Bolivia		1	
Brazil	15	13	28
Canada	5	11	4
Chile		12	13
Costa Rica	1	2	2
Denmark		1	2
Egypt	2		
France	2	4	5
Germany	3	10	17
Iceland	1	2	
India	5	3	4
Indonesia		1	
Iran	2		
Ireland	1		
Israel	1		
Italy	3		
Japan	14	31	27
Korea	2	3	7
Malaysia	1		
Mexico	6	5	21
Netherlands			1
New Zealand	1	2	
Norway	1	1	
Pakistan	1	1	
Panama			2
Paraguay			3
PR China	13	14	
R China	6	10	9
Poland	1		
Portugal			4
Puerto Rico	1		
Russia			2
Serbia			2
Singapore	2	4	3
Slovenia		1	
South Africa		1	2
Spain	4	6	14
Sweden	1		3
Tahiti			1
Thailand	2	3	4
UK	3	8	11
USA	46	70	74
Venezuela	1		



JCB Editorial Report for volume 32 (2012)

Brill had some problems with on-line availability and early publication alerts that took longer to correct than we all expected. That was a problem that resided with the supplier of the Brill platform software, but it is now solved. If people sign up for the alerts, they will begin receiving them on whatever schedule they choose.

At the Leiden meeting in October, we also dealt with the matter of journal profiles, especially critical now since Brill published several things in the field of crustacean biology. I sit on the board for *Crustaceana*, which will be undergoing some changes in the coming year, chief of which will be to combine in some way the journal with the series *Crustaceana Monographs*. It is not clear yet just how this will work out, but they hope to increase their Impact Factor for the journal, which in part will entail increasing their rejection rate. *Crustaceana* has a clear profile, one that includes α -taxonomy of single species and range extensions, which they want to maintain. If both journals are increasing their rejection rates, it is not clear where some of those papers will go. The profile of *JCB* includes α -taxonomy, but only if there is “added value” beyond the basic species descriptions, and biogeography, but only in the context of a larger vision of systematics and phylogenetics. We also prefer papers in fields such as hypothesis-testing ecology, genomics, phylogeny, development, and functional morphology. We must work to maintain this.

Of course, I must give thanks to my Associate Editors: Shane Ah Yong, Antonio Baeza, Ray Bauer, Keith Crandall, Francesca Gherardi, Mark Grygier, Magnus Johnson, Won Kim, Rafa Lemaitre, Christopher Rogers, Bernard Sainte-Marie, Gerhard Scholtz, Patrick Sorgeloos, Brad Stevens, Martin Thiel, and Roger Thoma. As I have said many times, their efforts are responsible for the quality of our content. If board members encounter any of these people at a conference or other meeting, be sure to pat them on the back.

Finally, the future of the *Journal of Crustacean Biology* and The Crustacean Society is in your hands, dear members. Our journal is doing well: we have a respectable Impact Factor that has been on the rise, we publish papers with an increasingly international author base, and we feature research across the wide spectrum of crustacean and marine arthropod biology. However, while TCS has increased membership at the student levels, we continue to erode full memberships. It is clear why this is: *JCB* is widely available on the internet with free access through institutional on-line libraries. Thus, our colleagues believe that it is “redundant” to be a member of TCS—that there is little benefit to them.

This viewpoint is unfortunate. The publication of journals by scientific societies has always depended on membership support. This business model, however, has evolved in recent decades with the rise of the internet – it had to in order for TCS to survive. Thus, TCS membership fees should be viewed not so much as a quid pro quo, but as a charitable contribution.

TCS has activities other than publishing a journal, although that publication a central focus of their mission. For example, TCS also organizes and/or co-sponsors scientific meetings in many places in the world, publishes a newsletter twice a year (The Ecdysiast), and has sponsored for some years now research scholarships for students. While *JCB* generates very modest income from paid access fees generated by platforms such as BioOne, JS-

TOR, and the Brill platform [and hopes to do better in the future], we still must make up the difference from our own funds. Those funds come from membership contributions. Without donations, TCS will indeed disappear—and so will the journal and its other activities.

It is often a tradition that either at the end of the year, or at the start of the New Year to make contributions to local charities such as Food-Banks, the United Fund, and organizations of faith; or to national and international organizations such as UNICEF, medical research, and worthy advocacy causes. So, why not think of TCS as your charity? If you have not done so already, write a check or use PayPal®, or go to <http://www.thecrustaceansociety.org> and make a contribution. The mission of TCS is to advance the study of all aspects of the biology of the Crustacea by promoting the exchange and dissemination of information throughout the world.

It is a worthy cause!

Respectfully submitted,

Frederick R. Schram
General Editor, *JCB*

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.

When you are secure about your text, manuscripts then can be submitted on line through the new link: www.editorialmanager.com/jcb.

To be open or not to be open: That is the question

Recently Taxacom posted a comment* concerning the problem “little” societies face with regard to “modern publishing” modes. Since The Crustacean Society and specifically the *Journal of Crustacean Biology* figured in that commentary, I believe some counter-comment is needed.

Specifically the issues revolve around whether or not a journal should adopt an Open Access option. This matter is spearheaded by both certain successful open access models, e.g., the BMC journals, the “demands” of public granting agencies to offer such options for the publication of research supported by them, and the big publishing houses who view such access as a marketing ploy to increase subscriptions. Indeed, any editor these days cannot help but become familiar with this subject because the pressure to “go open” is pervasive in the publishing business. And now the American federal government has publicly weighed in on the issue.

All journal editors and their society business offices, if they hope to survive, naturally have to run their operations in a business-like mode. Indeed, even before *JCB* left Allen Press there were serious discussions over not whether, but when and how an open access model would be adopted by our journal.

Several points, however, need to be made. First, in fact most scientists have open access through more than one channel. They either have memberships in scientific societies that automatically carry free access to the contents those journal websites, or their institutions carry a subscription through any one of a number of aggregators that allow staff members of those institutions free online access to subscribed journals. In fact, the widespread use of the second of these channels, library aggregators, has had serious impact on the first channel, society membership. As researchers become enamored with the ease and speed of “free and open” access to online libraries, they tend to drop their society memberships.

Second, while open access models might seem laudatory, to embrace them without certain prudent actions is to ignore “the business” of publishing. For example, consulting the BMC website will uncover a clear statement of these facts. While everything in journal publishing happens online these days, there are costs entailed in setting up and maintaining those websites on a continuing basis. Furthermore, there are costs involved in operating editorial offices for society journals, and after acceptance of an article for publication there are considerable costs in getting it online, preparing a PDF of the final product, and in insuring “eternal” archiving of the finished product that typically involves placement of the PDF in several places to insure its security. **How does one pay for this?** Again the BMC is forthright in leveling an article-processing charge, which currently for the their journals can vary between US\$1300 to \$2200. Charges can be waived if a need can be demonstrated and applied for, or if one’s home institution is a Full Member of the BMC, or can be discounted up to 15% in the institution is at least a Supportive Member. Some granting agencies recognize the validity of these costs and allow Principle Investigators to build into their budgets funds to pay for open access. Thus, the open access model is NOT free – someone is in fact paying.

Third, as mentioned above, the pressure to adopt open access often arises from several sources, but one seldom hears of the impact of these policies on the societies that produce the journals. Kent Anderson in The Scholarly Kitchen ** recently pointed out that the purported arguments that the open access model is better for non-profit societies because they are by their nature “more efficient” than big publishing houses, as many people have argued, is not true at all. The fly in the ointment is the matter of costs mentioned above. Small scientific societies simply do not have the financial and manpower resources to function totally on their own in an open access world. The Crustacean Society learned this in our negotiations with Allen Press. Anderson discovered that claims that there are 600 scholarly societies publishing OA journals uncovered that many of these societies have either stopped publishing, or are publishing very few articles – often a sign that the journal functions are collapsing.

Is OA the wave of the future? – maybe. However, we might suggest that “efficient” application of the OA model will lead to the collapse of many journals, especially those produced by small scholarly societies. One can already see what lies down the road beyond that point, something truly OA – the blogosphere! But do we want to collect our scholarly information by monitoring personal blogs. There will be no peer review, no quality control of data presentation, no fixed PDFs, no assurance that what we read represents actual work has been done as claimed.

Frederick Schram

General Editor of the *Journal of Crustacean Biology*

* From: taxacom-bounces@mailman.nhm.ku.edu [mailto:taxacom-bounces@mailman.nhm.ku.edu] On Behalf Of Dean Pentcheff

Sent: donderdag 31 januari 2013 20:56

To: taxacom@mailman.nhm.ku.edu

Subject: Re: [Taxacom] Journal of Hymenoptera Research

** <http://scholarlykitchen.sspnet.org/2013/01/31/backfire-an-argument-that-oa-is-better-for-non-profit-societies-demonstrates-just-the-opposite>



Treasurer Report for Fiscal Year 2012

Since the 2010 fiscal year, TCS has had inadequate income to cover our costs. Our society has been living off assets (the investments) and not the membership dues and page charges. In 2010, TCS lost ~\$1.3K, and in 2011, TCS lost ~\$49K, and this year, 2012, we lost another ~\$31K. This financial loss arose because of the mismanagement problem with Allen Press, which motivated our publishing transfer to Brill. In addition, TCS was not in the habit of generating an operating budget. In good years, this did not present a problem, but the world fiscal downturn created a financial crisis for TCS wherein we had no clear idea of our financial situation. After undertaking a budget analysis, we found that TCS has lost money on the printing of JCB, as the "Membership with hard copy" dues did not cover the actual cost of printing. In addition, the billing and collection of page charges and color plate charges under Allen Press were not being handled efficiently. To right this situation, the Executive Director has become more aggressive in collecting these fees and doubled this income since 2010. Dues have now been raised this year to cover the full cost of production and delivery of the print journals. Income from BioOne and JSTOR have been steady for the past couple of years, which has helped steady the ship. In 2013, we will receive additional funds from Brill from reprint sales and library subscriptions, which will further improve our financial situation in 2013.

The Treasurer has developed a balanced budget for 2013. To achieve this, the Finance Committee agreed to maintain a tight control on expenditures. One such restriction is on Officer Travel. Because most of the Executive Officers (and currently all the Finance Committee) reside within the US, the Annual Business meetings, as well as Board meeting, will take place at the TCS Winter meeting at the SICB conference. At our Summer Meeting in Greece, a capped sum of US\$1000 per year per officer for travel to the Winter Meeting was instituted. Any remaining funds could be used to attend Summer Meetings, if available. The President will be the only officer to have all meetings reimbursed, but it was made clear that he/she is expected to attend all meetings (Summer, Winter, ICCs, SICBs) as he/she is the main public face of TCS. Thus, not all summer meetings will include board meetings and thus not require board members to attend. Furthermore, regular Finance Committee interaction by SKYPE will facilitate further monitoring of income and expenditures.

The measures to increase the membership numbers are beginning to show effect, but must be kept up. The renewal campaign was begun on October 1 and many reminders sent out since that time. As December 30 neared reminders were going out about every 5 days. A slow but consistent increase in income has resulted from these efforts. Another reason that we need these renewals earlier is that Brill Publishing requires a list of all members to receive print issues at the end of the 3rd quarter. Our base membership dues remains the same and includes unlimited online access to JCB. As noted above, however, membership with hard copy + online journal access will now cover full costs. Late renewals will affect timely receipt of hard copy issues.

Currently, the student awards are coming out of the general funds, which is not tenable in our current financial situation. TCS is looking for ways of increasing the donations to the scholarship funds, whereby these funds will be able to generate suf-

ficient income to fund the scholarships directly. Thus, we need donations to these funds by making our membership aware of the many possible ways of making contributions to TCS scholarship funds. These details will now be much more prominently placed in the Newsletter and on the website homepage. It is important to continue to solicit donations from patron members. We are also soliciting ideas to generate new contributions for student support (including travel grants and research awards).

We also discovered that a fund named "JCB Support Fund" had been overlooked for years, and contained \$175. The Board decided to transfer the funds from the JCB Support fund to the Student Scholarship fund and disband the former fund altogether. A Zoomerang Survey was used as a voting mechanism and sent to the membership, thus meeting the obligations of our bylaws and constitution. The membership voted overwhelmingly to follow the advice of the board and combine the money with scholarship funds.

The Executive Director contacted GoDaddy and found out that we could get a discount and set up the website with professional assistance for around \$600. This was less than anyone had estimated previously and the board wanted the work done. The redesign was accomplished and the TCS website now sports a new look.

In summary, the near term future of TCS is improving. We are not yet "out of the woods", but TCS and our journal in better shape than some other small societies. But we need to continue to grow membership and seek regular donations to special funds.

Respectively Submitted
Brian Tsukimura, Treasurer

Financial Standing Dec. 31, 2012 for The Crustacean Society

	2012	2011
Charles Schwab Accounts Total	377,361.71	329,778.85
US Bank / 2012 Chase Bank	3.87	1,279.32
Wells Fargo Savings	8,510.44	
Wells Fargo Checking	23,894.46	62,681.01
Wells Fargo CD	31,660.85	31,470.93
Douglas County BK CD's	36,793.58	36,546.22
Douglas County BK Checking	closed 0	0
PayPal	3,026.89	
Editor's office prepaid expenses		941.70
Treasurer's office prepaid expenses	0	0
Total TCS Funds	\$481,251.80	\$466,574.62

If you are not accessing JCB online because you do not have ID and Passwords you may contact Mary Belk at tcs1921@hotmail.com and she will have Brill send you a newcontact email. You must have your membership up to date. ID and Passwords will not be sent without current membership.



JCB Expenses	2012	2011	Income For	2012	2011
Editor's Stipend	15,000.00	15,000.00	Money from Meetings	0	0
Editor's Office	8,000.00	6,058.30	Contributions	8,690.00	1,795.16
Allen Track	0	1,906.25	General Fund	8,455.00	1,245.15
PDF files bought/Color Plates	7,200.00	10.00	Endowment Fund	0	0
Printing, Distribution/ print issue charge for members	80,890.59	69,321.95	Student Scholarship Fund	115.00	0
Shipping Charges	12,845.47	2,680.00	D Belk M Sch Fund	120.00	550.00
Silo Site	0	7,566.93	JCB	100,405.32	90,569.18
Total	\$123,936.06	\$96,475.13	JSTOR	5,938.52	5,042.91
			BioOne	43,823.00	45,228.00
			Color Plates	5,250.00	1,391.28
			Figures & handling fee	0	67.00
			Page Charges	45,037.00	34,130.00
			Revisions	140.00	3,295.00
			Single Issue Sales	200.00	805.00
			Submission fees	0	604.99
			Shipping	16.80	0
			Library Subscriptions	0	10,320.00
			Membership Dues	55,150.00	47,640.00
			Bank and CD interest	452.16	147.00
			Refunds	135.00	127.67
			Total Income	\$164,832.48	\$150,599.01
			Minus expenses	195,613.89	199,608.00
			Difference	\$-30,781.41	\$-49,008.99
Expenses paid	2012	2011			
Dues/Refunds/adjustments	1,735.00				
Other officer travel expenses	9,891.62	8,778.59			
Society Operations/other	5,351.83	27,323.58			
JCB, Editor office, stipend	123,936.06	96,475.13			
Executive Director's Office	32,959.52	29,570.70			
SICB Contribution	3,370.09	2,931.04			
Awards	9,166.03	9,802.03			
Summer Meeting (exp. & advances)	2,248.27	19,359.83			
Banking Fees	4,404.17	2,414.51			
Tax Preparation	581.55	2,200.00			
Website	2,333.74	725.50			
Total Expenses	\$195,613.89	\$199,608.00			

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.thecrustaceansociety.org>), 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 Executive Director) by email: (tcs1921@hotmail.com)

TCS Budget for 2013

11:38 AM
12/16/12
Cash Basis

The Crustacean Society Profit & Loss January through December 2013

Budget for The Crustacean Society for 2013

		Jan - Dec 13			Jan - Dec 13
Ordinary Income/Expense					
Income					
Contributions Income					
General Fund	100,00				
Restricted					
Denton Belk Memorial Sch Fund	100,00		Dues and Subscriptions	100,00	
Student Scholarship Fund	100,00		Executive Director's Office Exp		
Total Restricted	200,00		Bookkeeping	1.200,00	
Total Contributions Income	300,00		Office Supplies	841,57	
JCB Income			Postage	114,05	
BIO-ONE	30.000,00		Stipend	24.000,00	
Brill Share program	15.000,00		Tax Preparation	14,95	
Color Plates	5.000,00		Telephone	588,98	
JSTOR Royalties	5.858,52		Travel	1.000,00	
Page Charges	40.000,00		Total Executive Director's Office Exp	27.759,55	
Shipping Income	10,00		Professional Fees		
Single Issue Sales	50,00		Accounting	2.300,00	
Total JCB Income	95.918,52		Total Professional Fees	2.300,00	
Membership Dues			SICB Expenses		
Member Online	30.000,00		SICB Booth	500,00	
Member Online and Print	34.000,00		SICB General Expense	870,09	
Patron Online and Print	7.075,00		SICB Symposium	2.000,00	
Student Online Member	2.030,00		Total SICB Expenses	3.370,09	
Total Membership Dues	73.105,00		webiste	500,00	
Refunds	0,00		Total Crustacean Society Operations	49.852,92	
Total Income	169.323,52		Customer Refunds	15,00	
Gross Profit	169.323,52		JCB		
Expense			Editor's Stipend	15.000,00	
Crustacean Society Operations			Editors Office	5.000,00	
Other Officers Travel	4.000,00		JCB Printing & Distribution		
Awards and Scholarships	6.400,00		Color Plate charges	5.000,00	
Summer Meeting Expenses	2.000,00		Print issue/member charge	12.845,47	
Bank Service Charges			JCB Printing & Distribution - Other	80.890,59	
Bank Fees	644,76		Total JCB Printing & Distribution	98.736,06	
Bank wire fee	125,00		Total JCB	118.736,06	
Credit card charges	2.400,00		Total Expense	168.603,98	
Paypal Fees	253,52		Net Ordinary Income	719,54	
Total Bank Service Charges	3.423,28		Net Income	719,54	



Recent Meetings...

Report from the Executive Liaison between TCS and SICB

The Crustacean Society winter meeting was held in conjunction with the Society of Integrative and Comparative Biology (SICB) from January 3-7, 2013 at the Hilton near Union Square in downtown San Francisco. This venue provided many opportunities for social interactions at great restaurants and pubs. I saw TCS members at the meeting of course, but also walking the streets of San Francisco enjoying Union Square, Fisherman's Wharf, China Town and North Beach. I know many TCS members who spent a bit of time after the meeting exploring beautiful regions of California. On a scientific note, Tadashi Kawai (co-editor of *Biology of Freshwater Crayfish*) chaired a special session on the Biology of Crayfish which featured talks by Zen Faulkes, Keith Crandall, Peer Martin, Christoph Chuchold, Antonio Garza de Yta, Teresa Fera, and Francesca Gherardi. The Special Session was sponsored in part by TCS and attracted a broad audience. Additionally there was over 40 other talks and posters related to Crustacea. Todd Oakley from the University of California Santa Barbara organized a symposium (Integrating Genomics with Comparative Vision Research of the Invertebrates) which revealed multiple crustacean talks. Mary Belk, Chris Tudge and Sherry Tamone supervised the TCS booth where lots of crustacean items were auctioned off and a bit of money was made for TCS. We talked to lots of students and old friends and promoted the upcoming meetings in Costa Rica and Detroit that are coming up. On a more social note, TCS in conjunction with the Division of Invertebrate Zoology and American Microscopical Society hosted a social in conjunction with the Libbie Hyman Auction. Now I for one was supremely disappointed with the diversity of appetizers during the social and the combined contribution of all of the divisions was only sufficient to purchase carrot sticks and potato chips. While the rooms were reasonable in cost, the food was extremely expensive at the hotel. Please plan on attending next year's winter meeting in conjunction with SICB which will be held in Austin Texas in early January and dropping by the TCS booth to say hello. If you have any questions please feel free to contact me (sltamone@uas.alaska.edu).

Sherry Tamone

Special Session "Crayfish Biology" in San Francisco

The Crustacean Society (TCS) winter meeting was held in January 2013, in San Francisco. This meeting is in conjunction with the Society of Integrative and Comparative Biology (SICB) annual meeting. TCS sponsored Special Session on "Crayfish Biology; a new model organism for the field of biology" at the SICB meeting, was organized by Tadashi Kawai, Zen Faulkes, and Gerhard Scholtz. Also, Pacific Consultants Company, Japan and Mr. Mit-suaki Sunagawa sponsored this special session.

There is a long tradition in worldwide culture for crayfish as food, pets, or their images portrayed in art (e.g. paintings), and mythology. This general interest has increased by the recent detection of the parthenogenetic crayfish, *Marmorkrebs* (Fig. 1). The symposium organizers believe that freshwater crayfish are ready to become a new model organism across biology. Speakers included Gerhard Scholtz, Peer Martin, Christoph Chucholl, Antonio Garza de Yta, Francesca Gherardi, Teresa Fera, Zen Faulkes, and Keith Crandall. Many audience members were fascinated by the excellent lectures and active discussion and new collaborations were born from the session. This special session included topics from all over the world, and will be published in early summer in 2014, as a monograph entitled "Freshwater Crayfish: Global Overview" from CRC Press, Taylor & Francis Group, edited by T. Kawai, Z. Faulkes, and G. Scholtz.

Finally, the sad information that our crustacean colleague, Dr. Francesca Gherardi of Università degli Studi di Firenze, Italy,

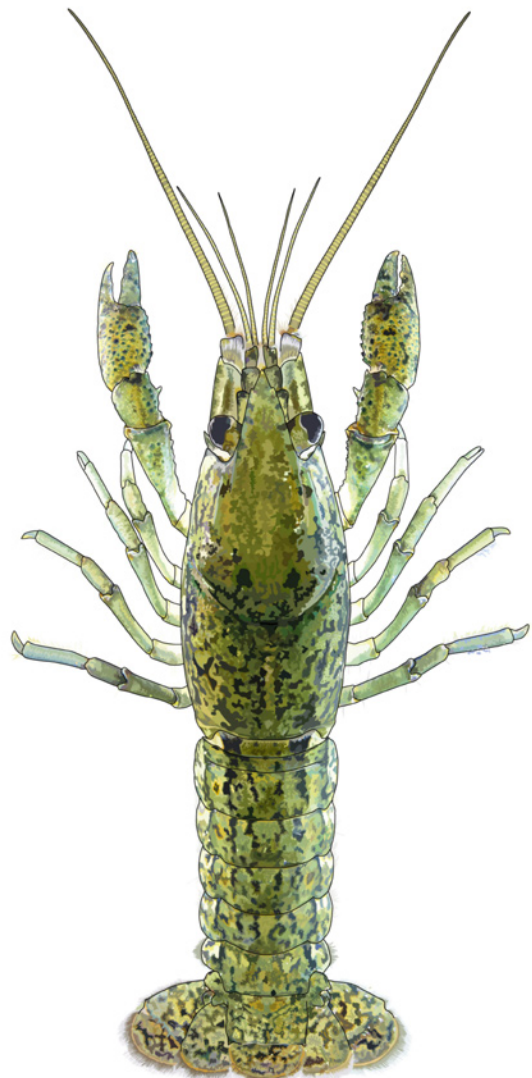


Fig. 1 *Marmorkrebs*.

Recent Meetings...

SICB student winners

passed away needs to be acknowledged. She did her last presentation as one of the fantastic speakers in this special session on crayfish. She was having a problem with her voice, she could barely whisper, but this did not diminish her presentation, once Francesca got her hands on the microphone. Our crustacean community has suffered a great loss, we will never forget her outstanding contribution to crustacean biology. She was a lovely and friendly lady, and we will always remember Francesca as an integral part of our scientific community and someone who laughed a lot. Farewell Francesca!

This special session was honored to host her last presentation, and we believe that this session is unforgettable because of her presence.

Tadashi Kawai
Organizer of special session

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, 2013, in San Francisco, CA. There were 23 high quality competitors. The Best Student Oral Presentation Award was presented to **Justin Havird** (Auburn University) for his talk entitled, "Using RNA-Seq and gene-specific methods to examine salinity-induced gene expression changes in an anchialine shrimp" (with co-authors R. P. Henry & S. R. Santos). The Best Student Poster Award was presented to **Laura Bagge** (Duke University) for her poster entitled "Looking at invisibility: anti-reflective structures and strategies in hyperiid amphipods" (with co-author S. Johnsen). 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*. An honorable mention was given to **Shelby Burgess** (University of Michigan) for her poster "Food choices and values for a benthic herbivore, *Idotea wosnesenskii*" (with co-authors M. E. Eisenlord,



Fig. 2 Presentation of Dr. Francesca Gherardi (Photo by Z. Faulkes).



Recent Meetings...

SICB student winners

A. W. E. Galloway & M. N. Dethier). Ms. Burgess will receive a one-year membership in The Crustacean Society that includes a subscription to the journal. TCS thanks Sherry Tamone (acting TCS Program Officer), those members who served as judges and all student participants.

Christopher B. Boyko
Program Officer

Using RNA-Seq and gene-specific methods to examine salinity-induced gene expression changes in an anchialine shrimp

Havird, J. C., R. P. Henry & S. R. Santos (Auburn University, USA)

jhavird@auburn.edu

Understanding how organisms respond to environmental variation is critical in order to comprehend how they function in their niches. Taxa from the coastal anchialine ecosystem represent good candidates for studying responses to environmental variation since their habitats undergo wide oscillations in physical and chemical properties, like temperature and salinity. Currently, little is known on how anchialine organisms cope with the environmental variation experienced in these habitats. To address this, we investigated how the Hawaiian anchialine shrimp *Halocaridina rubra* responds to changing salinity via analyses of gene expression. Illumina technology was first used to sequence transcriptomes from two *H. rubra* genetic lineages (from East Hawaii and Windward Oahu) previously identified based on divergence in their mitochondrial COI. Six known crustacean osmoregulatory genes were identified from this transcriptomic data and targeted for expression analyses using qPCR. The expression levels of these genes remained relatively constant, or decreased, when shrimp were transferred from iso-osmotic conditions (32‰) to either hyper-regulatory (15‰ and 2‰) or hypo-regulatory (45‰) conditions. This is in contrast to previously studied crustaceans, which tend to upregulate these genes during salinity transfer. These and previous results suggest that alternative or novel osmoregulatory genes, pathways, or mechanisms may be utilized by *H. rubra* to cope with the rapidly changing salinities experienced in anchialine habitats. Ongoing experiments utilizing RNA-Seq will investigate salinity-induced gene expression changes across the entire *H. rubra* transcriptome and shed light on this possibility.

Looking at invisibility: anti-reflective structures and strategies in hyperiid amphipods

Bagge, L. E. & S. Johnsen (Duke University, USA)

laura.bagge@duke.edu

Transparency is a common camouflage strategy for animals inhabiting marine pelagic environments. Transparent species are almost perfectly invisible when viewed under ambient light conditions in the mesopelagic zone; however, at shallower depths, and under the bioluminescent searchlights of potential predators, transparent

species may become visible due to reflections from their body surface. No study has yet explored whether any pelagic, transparent animals have developed specific adaptations to minimize surface reflections, though anti-reflection cuticular nanoprotuberances, which optically function as a gradient refractive index material, have been found in the eyes of butterflies and moths, and in transparent wings of moths. Our study uses scanning electron (SEM) and transmission electron (TEM) microscopy to investigate the cuticle of several species of pelagic, transparent hyperiid amphipods, *Phronima* spp. and *Cystisoma* spp. Preliminary results show that the appendages of *Cystisoma* spp. (n=2) are covered with an ordered array of papillae, 200-300nm in height. Interestingly, the dorsal surfaces of *Phronima sedentaria* (n=4) and *Cystisoma* spp. (n=2) are covered with a biofilm of densely aggregated sphere-shaped bacteria. Preliminary analysis suggests that the biofilm could effectively function to reduce reflectance of 500nm blue-green bioluminescent light, though future work is needed to further characterize and determine the refractive index of the biofilm.

Food choices and values for a benthic herbivore, *Idotea wosnesenskii*

Burgess, S. A., M. E. Eisenlord, A. W. E. Galloway & M. N. Dethier (University of Michigan and University of Washington, USA)
shelbyab@umich.edu

Spatial subsidies of aged detrital seaweed from habitats of high primary production may provide a significant source of energy to adjacent food webs. Previous studies indicate nearshore consumers use aged algal material as a food source. As aging occurs, algae are thought to increase in food value due to bacterial colonization. To test this, two experiments were conducted. The first examined preference of aged versus fresh thalli of two different kelp species, *Nereocystis luetkeana* and *Agarum fimbriatum*, in laboratory feeding experiments. Adults of *Idotea wosnesenskii*, an intertidal isopod common to the Pacific Northwest, were given four treatments of aged and fresh kelp of both species. Significantly more *N. luetkeana* was consumed than *A. fimbriatum*, but contrary to expectations, there were no significant differences in consumption of fresh versus aged tissue for either species. The second experiment was a 10 week long feeding trial with newly hatched *I. wosnesenskii* to determine growth rates on five different diets: aged *N. luetkeana*, fresh *N. luetkeana*, and fresh *Ulva* spp., *Fucus gardneri*, and *Mazzaella splendens*. Diets of algae with anti-herbivore defenses, one chemical (*F. gardneri*) and one mechanical (*M. splendens*), resulted in significantly lower growth rates than algae without these defenses. There was not a significant difference in growth rates between aged and fresh *N. luetkeana*. Our results suggest the species of algae may be more important in providing useful subsidies to benthic grazers than the degree of aging. The effects of aging on the nutritional value of algal blades needs further investigation.



Recent Meetings...

Seventh Brazilian Crustacean Congress Belém, Pará, Brazil, 11-14 November, 2012



SOCIEDADE BRASILEIRA DE CARCINOLOGIA

Centro de Ciências Agrárias, Ambientais e Biológicas – CCAAB
Universidade Federal do Recôncavo da Bahia
Rua Rui Barbosa, 710
44380-000 – Cruz das Almas - BA
www.crustacea.org.br

The Brazilian Crustacean Society (BCS) would like to express a sincere thank you to Cléverson Ranniéri Meira dos Santos and the worker team on the organizing committee for hosting a successful Seventh Brazilian Crustacean Congress (VII CBC) at Hangar - Centro de Convenções e Feiras da Amazônia, in Belém, Pará, Brazil. That was the first time that this meeting was held at the Northern region of Brazil and all participants could appreciate the beauty of the Amazon rainforest. The congress had presentations of 4 conferences, 9 round-tables, 9 rounds of oral presentations, 5 short-term courses, 1 seminar and 1 workshop. There were participants of 10 countries and 368 abstracts covering researches in (1) Biodiversity and Biogeography, (2) Behavior, (3) Conservation and Sustainability (4) Development and Reproduction, (5) Ecology, (6) Ecotoxicology, (7) Structure, Morphology and Function, (8) Evolution, Genetics and Systematics, (9) Physiology and Biochemistry, (10) Larval morphology, and (11) Fishery and Aquaculture. The Brazilian Crustacean Society bestowed honors on

Richard George Hartnoll and the Brazilian carcinologists Cristiana Serejo and Célio Magalhães in recognition for their contributions rendered to carcinology.

The Brazilian Crustacean Society in association with The Crustacean Society and ALCARCINUS is also pleased to announce the winners of the Best Student Oral and Poster Presentation competition. We congratulate the following undergraduate students: **Juliana Resende Costa** (Federal University of Santa Maria) for her oral presentation “Diferenças comportamentais entre lagostins juvenis e adultos: evidências em *Parastacus brasiliensis* (Parastacidae)” and **Gisele Rodrigues Tiseo** (University of São Paulo, Brazil), for her pôster presentation “Histoquímica e ultraestrutura da produção dos espermatozoides, espermatóforos e fluido seminal no siri chita *Arenaeus cribrarius*”; and the following graduate students: **Felipe Augusto Correia Monteiro** (Federal University of Ceará) for his oral presentation “A review of fossil decapods from Santana formation, Araripe basin, North-



Richard George Hartnoll (left), Cristiana Serejo (middle) and Célio Magalhães (right) receiving the honor

Recent Meetings...

Seventh Brazilian Crustacean Congress Belém, Pará, Brazil, 11-14 November, 2012

eastern Brazil, lower cretaceous (Albian - Aptian, 110 m.y.)”, **Anna Andressa Evangelista Nogueira** (Federal University of Rio Grande do Sul) for her pôster presentation “Ostracodes do Mioceno da formação Pirabas (Pará, Brasil) e da formação Cantaure (Falcón, Venezuela)”, **Fabrizio Lopes de Carvalho** (University of São Paulo) for his poster presentation “Status filogenético de algumas espécies de *Palaemon* e *Palaemonetes* (Decapoda, Palaemonidae) das Américas revelada com base no gene 16Sr RNA”, and **Marcelo Marchet Dalosto** (University of Santa Maria) for his poster presentation “Padrões de movimento e atividade do lagostim escavador *Parastacus pilimanus* (Decapoda: Parastacidae), monitorados por radiotelemetria”.

On November 14th an assembly of all the members of the BCS who were present at the event was held in which the final reports and advances of BCS and Nauplius were presented by Paula B. Araujo (Past President) and Dr. Fernando Mantelatto (Editor in Chief), respectively. In addition, the new Directorate (2014-2015) was elected: Dr. Sergio Schwarz da Rocha – President; Dr. Alexandre Oliveira de Almeida – Vice President; Dr. Harry Boos Junior – Secretary (1); Dr. Luis Ernesto Arruda Bezerra – Secretary (2); Dr. Cléverson Rannieri Meira dos Santos – Treasurer (1); Dr. Ricardo Lourenço – Treasurer (2); Dr. Marcelo Antonio Amaro Pinheiro – Councilor; Dra. Georgina Bond Buckup – Councilor; and Dr. Carlos Eduardo Falavigna da Rocha – Councilor.

Additional meeting highlights included the traditional costume party where Jedi knights, pirates, police officers, Wally group, and even Michael Jackson and the entire cast of zombies of “Thriller” danced all night long! Furthermore, a spectacular presentation of Carimbó, Lundu, Marujada and others typical Amazon dances and a wonderful happy-hour at Estação das Docas made the stay at Belém a delight! The VII CBC ended with a dinner of Amazon’s typical food and the celebration of the 30th Anniversary of BCS.

By

Sergio Rocha – President SBC;
Cléverson Santos – Chair Man of VII CBC;
Fernando Mantelatto – TCS Latin American
Liason & Vice President ALCARCINUS

A picture from the celebration



Felipe Augusto Correia Monteiro (above) and Marcelo Marchet Dalosto (below) receiving their award



Recent Meetings...

IGOM Cologne 2012 – “The Recent and Fossil Meet Kempf Database” 11. – 14.10.2012

The regular meetings of German speaking ostracodologists are usually rather small conferences, taking place on a yearly basis to strengthen the network of participating researchers. Especially newcomers benefit from these events by personally meeting, and talking to, old stagers of ostracodology. In general, conferences of ostracodologists are interdisciplinary in that palaeontologists *and* biologists of a multitude of working fields come together to discuss their ongoing research on Ostracoda.

The 2012 German meeting, number 14 of its kind, added a new spice to the dish. Supported by funds of the German Research Foundation DFG, Finn Viehberg (Universität zu Köln) and Renate Matzke-Karasz (LMU München), together with the newly founded *Society of Friends of the International Research Group on Ostracoda* e.V., invited the entire ostracodologists' community to join the International German Ostracodologists' Meeting (IGOM) in Cologne.

Ultimate cause for the exceptional format was the 80th birthday of Eugen Karl Kempf, nestor of German ostracod science. Among ostracodologists, Prof Kempf is renowned for the always close-to-complete relational database of ostracod literature, the Kempf Database Ostracoda KDO, which was started in the early 1960ies already. The multitude of spin-offs (books and CDs) are often referred to as the *Kempf Index*. Any information request sent to Eugen privately or via OSTRACON, the community's discussion list, was and still is being replied by Eugen in his typical, competent, and all-embracing manner. Beside, the meanwhile well-established regular meeting of German speaking ostracodologists has been launched by Eugen in 1988 in Cologne.

Consequently, the motto of IGOM 2012 was “Fossil and Recent meet *Kempf Database*”. Following the special expertise of Prof Kempf, the main topic of contributions was databases. Emphasis was given on problems around merging existing smaller regional databases on ostracod (palaeo)ecology from both sides of the Atlantic to create a bigger pool of information, eventually to be used for solving problems around climate changes in past, present and future.

Three of five plenary talks, presented by Brandon Curry (USA), Dave Horne (UK) und Alison Smith (USA) dealt with database issues, while two others, given by Koen Martens und Isa Schön (Belgium), informed us on models of speciation in ancient lakes and on the potential of up-to-date genetic investigations in ostracods. Altogether 22 talks and 18 posters presented new insights into taxonomic, genetic and palaeoecologic studies in Ostracoda, clearly focusing on Quaternary to Recent faunas. Of the total of 64 participants, more than half came to Cologne from abroad.

Finn Viehberg and Burkhard Scharf (Bremen) led the conference field trip to the Laacher See, famous lake in the Eifel volcanic region, southwest of Cologne. Geological explanations as well as demonstration of limnological techniques and sediment core probing completed the conference by some practical exchange. A guided visit to the almost 1000-year-old Laach monastery nearby finally added a historical - and clearly meditative - aspect before participants said farewell.

IGOM 2012 was a big success – instructive and innovative, in a very inspiring atmosphere. Extended abstracts of conference contributions are to be found in the journal *Kölner Forum für Geologie und Paläontologie* (21/2012). A conference proceedings volume is scheduled for 2013 within the journal *Crustaceana*.

Many participants of IGOM expressed their hope that the positive and creative spirit of IGOM will be kept alive so that it can be further developed during the 17 International Symposium on Ostracoda in July 2013 in Rome.

Some links to mentioned conferences, societies and other ...

17th ISO in July 2013 in Rome: <http://www.iso17.unipr.it/>
Kempf Database Ostracoda: <http://www.ostracoda-on.tripod.com/>
IRGO: <http://www.irgo.uni-koeln.de/>
Society of Friends of IRGO: <http://www.support-irgo.net/>
Ostracon, the discussion list:
<http://www.irgo.uni-koeln.de/OSTRACON>

Peter Frenzel (FSU Jena), Renate Matzke-Karasz (LMU München) & Finn Viehberg (Universität zu Köln)



Participants of IGOM in front of the venue, Castle Wahn (from 1750) near Cologne. Prof Eugen Karl Kempf in the center of front row

Recent Meetings...

16. Crustaceologen-Tagung

The 16th meeting of carcinologists in Germany ("Crustaceologen-Tagung") was held at the Ernst-Moritz-Arndt-University of Greifswald at the Baltic Coast from the 14–17th of March. This meeting takes place every second year and this time was organised by Prof. Dr. Steffen Harzsch and his team hosting approximately 90 participants including scientists, many students, and enthusiastic laymen. The programme included 31 oral presentations in 8 sessions and an evening lecture. Additionally, 31 posters were presented. Most of the participants were from Germany, thus the majority of talks were given in German, but also scientists from the UK and Austria attended. The conference started with an Ice-Breaker Party on Thursday the 14th in the main building of the historical campus of the university, which was founded in 1456. In this historic surrounding the newly arrived participants had a socializing and chatty evening with drinks and buffet. The conference was officially opened on Friday 15th, including a welcome speech from the director of the Zoological Institute and Museum, Prof. Dr. Klaus Fischer. The second day was filled with various talks covering different topics such as ecology, genetics, morphology, phylogeny, and palaeontology of Crustacea. The day ended in a poster session including drinks, buffet and lots of professional discussions.

Saturday the 16th started with the plenary lecture of Prof. Dr. David C. Sandeman on „Brain and behaviour in the Eurentant Crustaceans“ and was followed by different talks inter alia on neuroanatomy, morphology, and physiology. The evening lecture was held by Dr. Klaus Anger who gave splendid insights into the life of decapod larvae and their role in conquering new habitats ("Larven – Hilfe oder Hindernis bei der Eroberung neuer Lebens-

räume durch dekapode Krebse?"). The conference ended with the conference dinner at the lovely "Theater Café" serving exquisite food. On Sunday morning about half of the attendees went on an excursion to Stralsund for a visit in the impressive "Oceaneum", a kind of aquatic zoo displaying the fauna of the Baltic, North Sea and Atlantic ocean, and the "Meeresmuseum", a museum on ocean life strangely located in an old Dominican monastery. In both places a tour was given for the conference participants for free, which kindly was made possible by Dr. Ines Podszuck from the Meeresmuseum.

The organizers had arranged for a number of awards including a "miles and more" price for those faithful and loyal participants who had travelled the longest distance to attend the meeting. This price went to Gabrielle Torres and Luis Gimenez from Bangor/Wales. Furthermore, the three best talks and posters of undergraduate and PhD students were selected by the conference participants and awarded prizes. The first prizes for poster and talk (each 100 Euro and 1 year membership in the Crustacean Society including online access to JCB) were sponsored by the Crustacean Society, the second prizes (100 Euro) were sponsored by the Elsevier Journal "Zoologischer Anzeiger", and the third prizes (100 Euro) were sponsored by the Elsevier journal "Zoology". The winners for best oral presentations were: Verena Kutschera (Universität Ulm, AG Biosystematische Dokumentation), Christina Nagler (Lehrstuhl für aquatische Systembiologie, Wissenschaftszentrum Weihenstephan, Technische Universität München), and Sarah Schnurr (German Centre for Marine Biodiversity Research, Senckenberg Research Institute, c. o. Biocentrum



The organizing team (upper left), the winners of prices for best student posters and oral presentations (upper right), and all participants (lower row).



Recent Meetings...

16. Crustaceologen-Tagung

Grindel). The winners of the poster prizes were Katja Jazzkowiak (Universität Rostock, Institut für Biowissenschaften, Allgemeine und Spezielle Zoologie), Julia Hämer (Alfred-Wegener-Institut für Polar und Meeresforschung, Funktionelle Ökologie, Bremerhaven), and Matthes Kenning (Ernst-Moritz-Arndt-Universität Greifswald, Zoologisches Institut und Museum, Cytologie und Evolutionsbiologie).

Report submitted by Verena Kutschera, Universität Ulm, AG Biosystematische Dokumentation, Germany

Student Winners

The Crustacean Society (TCS) is pleased to announce the award-ees of the Best Student Paper and Best Student Poster at the annual meeting of German crustaceologists (13th Crusttag), March 14-17, 2013, in Greifswald, Germany. The auditorium could choose by secrete voting between 18 posters and 17 talks, all of which represented high quality contributions.

The Best Student Poster Award was presented to **Katja Jazzkowiak** from the University Rostock (present affiliation: Humboldt University, Berlin), co-authored by Jonas Keiler, Christian Wirkner and Stefan Richter for her poster entitled "The mouth apparatus of *Lithodes maja*: functional morphology and evolution". The Best Student Oral Presentation Award was presented to **Verena Kutschera** from the University of Ulm (co-authored by Andreas Maas and Dieter Waloßek) for her talk entitled "The phylogenetic significance of proximal sclerites of malacostracan pleopods".

Both awards are endowed with 100 EUR each, a one year TCS membership including subscription to The Journal of Crustacean Biology, and a certificate.

The mouth apparatus of *Lithodes maja* – functional morphology and evolution

Katja Jazzkowiak, Jonas Keiler, Christian S. Wirkner, Stefan Richter (Universität Rostock, Institut für Biowissenschaften, Allgemeine und Spezielle Zoologie, Universitätsplatz 2, 18055 Rostock)

Within crustaceans, decapods are one of the species-richest groups. Being able to utilize many different food resources is probably an important aspect of their success. This phenomenon is facilitated by their complex mouthpart apparatus, which is able to perform various movements including transporting, aligning, crushing and cutting and processes sensory information from the food before it is swallowed. Although the main set of mouthparts is the same in many species, differences in form and function have evolved according to lifestyle. Studies into the functional morphology of mouthparts have already been carried out for some decapod species, and to complement the available taxon sampling a species of the hitherto unstudied king crabs (Lithodidae), *Lithodes maja*, was analyzed here. Individuals were filmed while being presented with different kinds of food. To obtain structural information on the individual mouthpart elements in their natural position to one another, the mouthparts were 3D-reconstructed from micro-CT scans. These data were complemented by scanning electron mi-

croscopy, permitting the surface structures, such as setae, to be analyzed in detail. As indicated by studies into other species, there is evidence that the mouthparts of *Lithodes maja* can be sorted into functional groups. By analyzing movement patterns six of these groups could be found: 1 transporting mouthparts, 2 aligning/sorting mouthparts, 3 clutching/holding mouthparts, 4 tearing/cutting/crushing mouthparts, 5 current-generating mouthparts, and 6 grooming mouthparts. According to the 3D reconstruction there seem to be only little differences in morphology and relative position - which would implicate functional differences - between the mouthparts of *Lithodes maja* and those of even closely related species. The data presented is discussed in comparison to data from the literature to create a picture of the evolutionary transformations undergone by the functional feeding apparatus in decapod crustaceans.

Die phylogenetische Bedeutung proximaler Sklerite von malakostraken Pleopoden

Verena Kutschera, Andreas Maas & Dieter Waloßek (Biosystematische Dokumentation, Universität Ulm, Helmholtzstr. 20, 89081 Ulm)

Das hintere Tagma der Malakostraken, das Pleon umfasst im Grundmuster sieben Segmente (Pleomere) und das nicht-somitische Telson. Die vorderen sechs Pleomere besitzen Beine, die so genannten Pleopoden. Sie bestehen aus einem basalen Basipoditen, der die beiden Äste (Endo- & Exopodit) trägt. Im Gegensatz zu dem genannten Aufbau der Pleopoden bestehen die vorderen acht Thorakopoden aus einer proximalen, ringförmigen Coxa und darüber einem Basipoditen als Träger von Endo- und Exopodit. Den Pleopoden fehlt im Vergleich somit die Coxa.

Wir haben die Pleopoden verschiedener Vertreter der Malacostraca (u. a. Phyllocarida, Hoplocarida, Anaspidacea, Lophogastrida, Euphausiacea) entweder mit Alizarin gefärbt oder mit Fluoreszenzmikroskopie untersucht. Alizarin färbt verkalkte Teile der Cuticula lila, wohingegen membranöse Bereiche weißlich bleiben. Eine ähnliche Differenzierung ist durch die Fluoreszenzmikroskopie möglich, die verkalkte Teile heller erscheinen lässt als membranöse Areale. Durch diese Methoden konnten wir kleine Kalkplättchen (Sklerite) proximal des Basipoditen in der Gelenkmembran der Pleopoden detektieren und dokumentieren.

Innerhalb einer Art und wahrscheinlich eines Taxons kommen die Sklerite in konstanter Zahl und Position vor, einige weisen interne Apodeme auf. Anzahl und Position der Sklerite variieren stark zwischen den untersuchten Arten.

Unser Bestreben ist die phylogenetische Interpretation dieser Strukturen: Einmal versuchen wir die phylogenetische Relevanz dieser Sklerite für die Verwandtschaftsbeziehungen innerhalb der Malacostraca zu erörtern. Aber auch dem Ursprung der Sklerite wollen wir nachgehen, zum Beispiel der Frage, ob die Sklerite Überreste einer Coxa darstellen? Oder handelt es sich dabei um deren evolutiven Vorläufer, den proximalen Enditen? In unserem Vortrag wollen wir diese und andere Fragen aufwerfen und die Datengrundlage zu ihrer Beantwortung liefern.

Upcoming Meetings...

TCS-ALCARCINUS Summer Meeting 2013 07 – 11 July 2013, San José, Costa Rica

The preparations for the upcoming Summer Meeting of The Crustacean Society (TCS), jointly hosted with the Latin American Association of Carcinologists (ALCARCINUS), are progressing well. The meeting will be celebrated from Sunday 07 to Thursday 11 July 2013 in San José, Costa Rica (for details see conference web page www.crust-costarica2013.org).

The final deadline for submitting abstract is 15 April 2013. We have already received almost 200 abstracts from all over the world: e.g., Australia, China, Czech Republic, Denmark, France, Greece, Hong Kong, India, Israel, Italy, Germany, Japan, Norway, Pakistan, Republic of Korea, Netherlands, Portugal, Singapore, Slovenia, Spain, Taiwan, United Kingdom, USA, and of course, most of the Latin American countries. So far, most of the oral presentations will be in English, but roughly 20% of the talks will be given in Spanish (always with slides in English). All posters have to be presented in English.

We are glad that numerous well-known colleagues kindly agreed to organize special sessions. apart from topics such as **Molecular phylogeny** (organized by Rafael Robles, Brazil), **Sustainable aquaculture** (by Elena Mente, Greece, and Chris Carter, Australia), **Reproduction & development** (by Carola Becker, Germany), **Ecology** (by Luis Miguel Pardo, Chile), **Crustacean fisheries** (by Enzo Acuña, Chile), we offer also sessions on **Biology and biodiversity of Peracarida** (by Daniel Roccatagliata, Argentina, and Stefano Taiti, Italy), **Biology and biodiversity of the Branchiopoda** (D. Christopher Roger, USA), and most recently **Biodiversity** (by Rafael Lemaitre, USA). As most of you probably know, our colleague Francesca Gherardi, who started to organize a session on behaviour and conservation, recently passed away; due to this sad situation, we decided to rename the session in **Behavioral ecology and conservation biology: honoring the late Francesca Gherardi**, now organized by J. Antonio Baeza (USA).

Our six keynote speakers (Elliott A. Norse, USA; Carlos G. Jara, Chile; Patricia Briones-Fourzán, Mexico; John Christy, USA; Raymond T. Bauer, USA, and John C. McNamara, Brazil) confirmed their participation, and we are in the progress to make flight arrangements.

Two international journals agreed to publish special vol-



umes with contributions presented during the meeting in Costa Rica: Latin American Journal of Aquatic Research (www.lajar.cl) and Nauplius (<http://www.crustacea.org.br/?id=3&subid=1>). Together with the session organizers, we will decide which session will publish their contribution in which journal.

Apart from the scientific program, you should take advantage of your stay in Costa Rica to visit different places in this beautiful tropical country famous for its biodiversity. On the webpage you will find different options for tours (<http://www.crust-costarica2013.org/eng/tours.php>), and we also included a diving-tour package, especially designed for people interested in decapods (<http://www.crust-costarica2013.org/eng/diving.php>).

There are numerous possibilities for accommodations in San José. The venue is the Hotel Radisson, which agreed to offer special rates for participants of the conference (<http://www.crust-costarica2013.org/eng/venue.php>). However, on our webpage you will also find information about alternative options regarding hotels (<http://www.crust-costarica2013.org/eng/accomodations.php>). Moreover, soon we will provide a list of economic guesthouses, bed & breakfast places etc., which might be of special interest for students. Please check the webpage (www.crust-costarica2013.org) regularly.

Costa Rica is waiting for you! We are looking forward to welcome you here in Central America, and are confident that we all will enjoy having a really international meeting with interesting sessions.

Ingo Wehrtmann

Host – Summer Meeting Costa Rica 2013
TCS-Latin American Governor
ALCARCINUS-Treasurer
(ingowehrtmann@gmx.de)



Photos by Ingo Wehrtmann



Upcoming Meetings...

Come on Board the 15th International German Ostracodologists' Meeting

Venue: Schulschiff 'Deutschland' in Bremen-Vegesack, Germany
Date: October 11th – 13th, 2013

We cordially invite you to participate in the 15th International German Ostracodologists' Meeting. The conference takes place on board the *Schulschiff "Deutschland"* in Bremen- Vegesack, Germany.

The *Schulschiff "Deutschland"*, built in 1927, is a large training vessel that was converted to a youth hostel in 2002. On the training vessel, we already reserved a limited number of cabins until the 31st March and would like to have you stay onboard overnight. A cabin holds two berth beds that are stacked. We kindly ask all those who decide to participate in the meeting to make a reservation on the *Schulschiff "Deutschland"* latest by 31st March 2013. However, in the immediate vicinity of the ship are a number of hotels in different price categories. A car park is available close to the *Schulschiff*.

Preliminary programme:

Friday, October 11, noon: welcome – afternoon: presentations
Saturday, October 12, morning: presentations – afternoon: field trip to the Geest and the (salt) marshes of the River Weser.
Sunday, October 13, morning: presentations – afternoon: farewell & departure

Ursula Beddig, companion of Burkhard Scharf, offers a social programme for accompanying persons. She suggests a trip to Bremerhaven with the opportunity to visit the Emigration Museum, the Maritime Museum or the Climate Museum. A minimum number of interested participants are necessary for this program. Link to the registration form: <http://www.irgo.uni-koeln.de/igom2013/1stCircular.doc>

There is no registration fee charged. The language is German (and English). We are looking forward to seeing you again on the *Schulschiff "Deutschland"*

Burkhard Scharf and Finn Viehberg



Training vessel
"Deutschland"
(Photo by
Hannes Grobe/
AWI, creative
commons Attr.
3.0)

The Regional European Crayfish Meeting

CrayCro will be held in the town of **Rovinj, Croatia**, from the **26th to 28th of September 2013**. All of the details about CrayCro could be found on the website: <http://craycro.biol.pmf.hr/>

Ivana Maguire

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

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

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

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

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

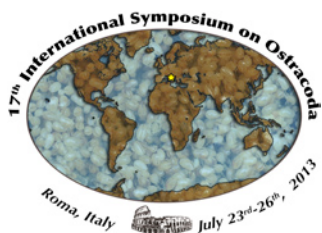
CRUST-L@VIMS.EDU is the email list server for those interested in Crustacea. It is an informal scientific forum for discussion on all aspect of the Crustacea. CRUST-L is a moderated, open list, but you have to be a member to post messages to it. You can subscribe to the list by sending SUBSCRIBE CRUST-L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

Upcoming Meetings...



Dipartimento di Scienze

Viale Guglielmo Marconi, 446 - 00146 Roma - www.uniroma3.it



17th International Symposium on Ostracoda

Back to the Future: Evolution of concepts and methods in ostracodology in the last fifty years

University of Roma Tre, Rome, Italy
July 22nd-26th, 2013

The ISO (International Symposium on Ostracoda) takes place every 4 years to gather together palaeontologists and biologists working on ostracods. This year is a particular occasion to celebrate 50 years from the first Symposium, organised in Naples in 1963.



The Symposium will be held in the Aula Magna of the University of Roma 3, close to the city centre and very easy to reach with public transportation.

The Symposium will start with the training course "Taxonomic harmonisation tool" which includes a full Scratchpads training course. Seven sessions have been organised covering all themes about fossil and living ostracod research. Additionally, three workshops will cover more specific themes. The mid symposium field trip will be a pleasant wander through the archaeological and ostracodological treasures hidden in the Appia Antica Regional Park. In the green heart of the Eternal City the researchers will find shelter to the July heat and enjoy the social dinner along the Ancient Appian Way.

You can find more details here:

<http://www.iso17.unipr.it/>

Although the registration deadline is over, for those willing to join the meeting without presenting their research it is possible to register until the 24th of July.



New Publications...

The Biological Secrets of Salt: Its Diversity in Organisms and Impacts on Humans



Frank P. Conte (Author), Craig Conte (Contributor), Paul Conte (Contributor)

CreateSpace Independent Publishing Platform

The purpose of this book is to coalesce in a single volume the general scientific knowledge we have about salt and its biological role in animals, including humans. The intent is to inform student and layman and, perhaps more importantly, pique the interest of future scientists on what lies ahead in this important field of comparative

biology. The authors wish to share their current knowledge with others who may be curious about salt as basic to life, about the historical role of salt in human civilization, and about our present understanding of the molecular, cellular, and organismic pathways animals and humans utilize to regulate body fluid balance needed to sustain life. We hope to stimulate our readers to explore further the recent genetic discoveries in these ion-transporting cells that are still completely unanswered but are cited in the text and listed in the references.

Request for Donations to The Crustacean Society

The Crustacean Society is a non-profit, 501 © 3, organization and survives through raising funds from memberships, institutional memberships, meeting organizational activities and donations. Donation can come in several forms. We ask for donations with the payment of your membership, any time during the year, and in estate planning. Donations to TCS as general unrestricted gifts are the most flexible type of donation for the society and can be used for any purpose. Restricted funds can only be used for the purpose they are restricted for or for the time they are restricted to. Accounting regulations allow a slow disbursement of restricted funds into the general fund based on a discount rate the day of donation. Due to the disbursement regulations, a considerable amount is needed to fund one scholarship per year. Most donations are combined to achieve one scholarship.

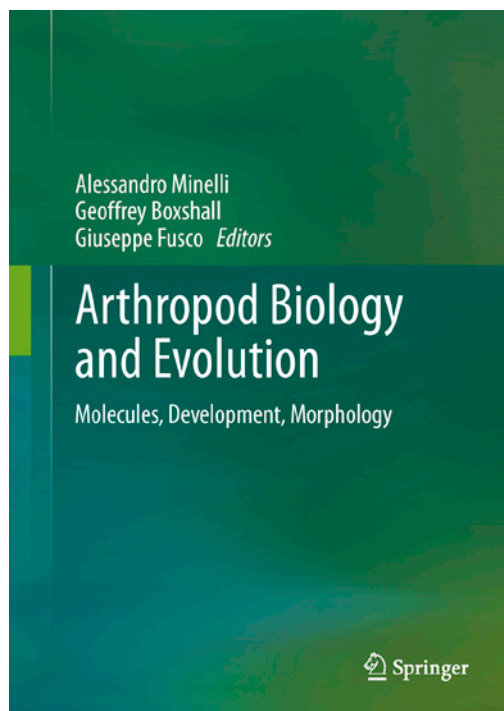
The Crustacean Society would like to urge its members to please donate at any point possible. Remember supporting this society and the students in it, are very worthy goals. We are creating the next generation of crustacean scholars by your donations. We wish to urge members to consider mentoring as an important contribution to young science oriented students.

Thecrustaceansociety.com web site can accept donations by credit card over the internet. Checks can be mailed to Mary Schug Belk at 1320 Winding Way, New Braunfels, Texas 78132 USA. Please make checks out to The Crustacean Society.



New Publications...

Arthropod Biology and Evolution Molecules, Development, Morphology



Minelli, Alessandro; Boxshall, Geoffrey; Fusco, Giuseppe (Eds.)
Springer

- First book to cover arthropod structure and evolution of all relevant major lineages within the Arthropoda
- Written by renowned experts in the field
- Richly illustrated

The Arthropoda is by far the largest living phylum, comprising over 1.2 million living species, and its unique evolutionary success is the primary focus for this up-to-date and comprehensive overview of the biology of the group. This astonishing species richness is matched by a spectacular diversity in body forms and adaptations. To counter the largely unavoidable trend towards increased specialization within a particular group, this volume adopts a comparative viewpoint across the entire phylum, encompassing both extant and fossil forms. The phylum-wide perspective allows us to appreciate the wave of recent advances in knowledge of arthropod biology and evolution and to identify emerging themes and priorities for future research.

As ever in the history of science, this wave of advances is driven by the rapid development of new methods and techniques. New methods of extracting and studying fossils have vastly improved understanding of Palaeozoic arthropods. New non-invasive, non-destructive techniques, such as micro-computed tomography, have revolutionised anatomical analysis and imaging. Arthropod comparative genomics is still in its infancy but high-throughput sequencing together with next-generation sequencing has facilitated spectacular growth in volumes of sequence data, which in

turn has driven advances in bioinformatics. These novel methods have generated a wealth of data which has been critically reviewed by the chapter authors, to provide a new perspective on arthropod biology and evolution.

The concise factual summaries and the questions articulated in this book will be of interest to evolutionary biologists, palaeontologists, developmental geneticists and invertebrate zoologists. It will be of special interest to advanced graduate and post-graduate students and have the potential to stimulate younger researchers to address questions in arthropod biology from the vantage point of a phylum-wide comparative perspective.

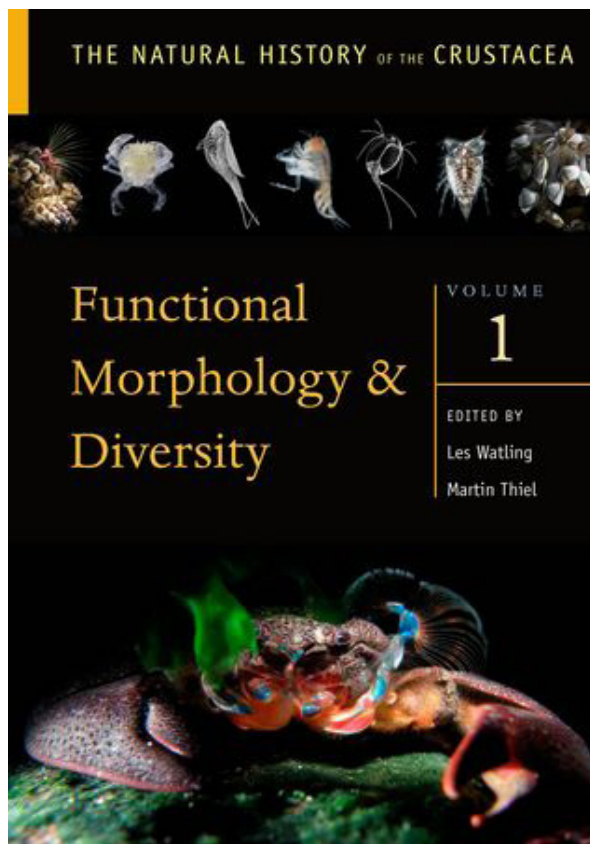
Table of Contents:

An Introduction to the Biology and Evolution of Arthropods (Alessandro Minelli, Geoff Boxshall, and Giuseppe Fusco)
 The Arthropoda: A Phylogenetic Framework (Gonzalo Giribet and Gregory D. Edgecombe)
 An Overview of Arthropod Genomics, Mitogenomic, and the Evolutionary Origins of the Arthropod Proteome (Davide Pisani, Robert Carton, Lahcen I. Campbell, Wasiu A. Akanni, Eoin Mulville, and Omar Rota-Stabelli)
 Arthropod Embryology: Cleavage and Germ Band Development (Gerhard Scholtz and Carsten Wolff)
 Arthropod Post-embryonic Development (Alessandro Minelli and Giuseppe Fusco)
 Arthropod Developmental Endocrinology (H. Frederik Nijhout)
 Arthropod Regeneration (Diego Maruzzo and Francesca Bortolin)
 The Arthropod Cuticle (Bernard Moussian)
 Arthropod Segmentation and Tagmosis (Giuseppe Fusco and Alessandro Minelli)
 The Arthropod Head (Stefan Richter, Martin Stein, Thomas Frase, and Nikolaus U. Szucsich)
 Arthropod Limbs and their Development (Geoffrey Boxshall)
 Insect Wings: The Evolutionary Development of Nature's First Flyers (Michael S. Engel, Steven R. Davis, and Jakub Prokop)
 Architectural Principles and Evolution of the Arthropod Central Nervous System (Rudolf Loesel, Harald Wolf, Matthes Kenning, Steffen Harzsch, and Andy Sombke)
 The Arthropod Circulatory System (Christian S. Wirkner, Markus Tögel, and Günther Pass)
 The Arthropod Fossil Record (Gregory D. Edgecombe and David A. Legg)
 Water-to-Land Transitions (Jason A. Dunlop, Gerhard Scholtz, and Paul A. Selden)
 Arthropod Endosymbiosis and Evolution (Jennifer A. White, Massimo Giorgini, Michael R. Strand, and Francesco Pennacchio)
 The Evolvability of Arthropods (Matthew S. Stansbury and Armin P. Moczek)



New Publications...

The Natural History of Crustacea Functional Morphology and Diversity



Edited by Les Watling and Martin Thiel
Oxford University Press

- The first volume in a new series that will treat all aspects of crustacean biology, physiology, behavior, and evolution
- Ideal for researchers and students studying crustacea, as well as for biologists studying other taxa
- Synthesizes the state of the field in crustacean functional morphology

Crustaceans are increasingly used as model organisms in all fields of biology, including neurobiology, developmental biology, animal physiology, evolutionary ecology, biogeography, and resource management. One reason for the increasing use of crustacean examples is the wide range of phenotypes found in this group and the diversity of environments they inhabit; few other taxa exhibit such a variety of body shapes and adaptations to particular habitats and environmental conditions. A good overview of their functional morphology is essential to understanding many aspects of their biology.

This volume is the first in *The Natural History of Crustacea* series, a ten-volume series that will treat all aspects of crustacean biology, physiology, behavior, and evolution. The series updates

and synthesizes a growing wealth of information on the natural history of this remarkable group. *Functional Morphology and Diversity* explores the functional morphology of crustaceans, which cover the main body parts and systems. The book brings together a group of internationally recognized and up-and-coming experts in fields related to systematics and morphology. Contributing authors study a range of crustacean taxa and topics, and thus the volume provides a compact overview of the great phenotypic diversity and their function found among crustaceans. The first broad treatment of Crustacea in decades, the book will be invaluable for researchers and students in this and related fields.

Readership: Researchers and students working on Crustacea, as well as biologists studying other taxa.

Table of Contents:

- Chapter 1: Comments on Crustacean Biodiversity and Disparity of Body Plans (Frederick S. Schram)
- Chapter 2: Evolution of Crustacean Appendages (Joachim T. Haug, Andreas Maas, Carolin Haug and Dieter Waloszek)
- Chapter 3: Mechanisms of Limb Patterning in Crustaceans (Terri A. Williams)
- Chapter 4: The Crustacean Carapace - Morphology, Function, Development, and Phylogenetic History (Jørgen Olesen)
- Chapter 5: The Crustacean Integument: Structure and Function (Richard Dillaman, Robert Roer, Thomas Shafer and Shannon Modla)
- Chapter 6: The Crustacean Integument: Setae, Setules and other Ornamentation (Anders Garm and Les Watling)
- Chapter 7: Antennules and Antennae in the Crustacea (Geoff Boxshall & Damià Jaume)
- Chapter 8: Feeding and Digestive System (Les Watling)
- Chapter 9: Appendage Diversity and Modes of Locomotion: Walking (Jim Belanger)
- Chapter 10: Morphological Adaptations of Crustaceans for Digging and Burrowing (Zen Faulkes)
- Chapter 11: Appendage Diversity and Modes of Locomotion: Swimming at Intermediate Reynolds Numbers (Jeannette Yen)
- Chapter 12: Swimming Fast and Furious: Body and Limb Propulsion at Higher Reynolds Numbers (Michel Boudrias)
- Chapter 13: Adaptive Modification of Appendages for Grooming (Cleaning; Antifouling) and Reproduction in the Crustacea (Raymond T. Bauer)
- Chapter 14: Circulatory System and Respiration (Christian S. Wirkner & Stefan Richter)
- Chapter 15: Functional Anatomy of the Reproductive System (Laura S. López Greco)
- Chapter 16: Structure of the Nervous System: General Design and Gross Anatomy (Jeremy M. Sullivan & Jens Herberholz)



News from Liaison Officers...

The new Isopod Newsletter

<http://isopodnewsletter.wordpress.com/>

Edited by Gipo Montesanto from Italy.

It has news about terrestrial isopod research and informations about the recent meetings such as the Second European Workshop on Terrestrial Isopod Biology - Biogeography, Biodiversity and Environmental Change" in Salzburg organized by Martin Zimmer.

Jasna Strus

ALCARCINUS Best Student Papers Awards

Since 2008 the Latin America Association of Carcinology (ALCARCINUS, "Asociación Latino Americana de Carcinología") has given away annual awards to the best three papers on any type of study dealing with crustaceans published by graduate students. The aim of the awards is to promote publication of their results by young students who have recently completed their graduation thesis, as first author, either alone or with members of their thesis committees. Indeed, "grey literature" includes a large series of small projects published in university thesis manuscripts of which a significant part is never to be published anywhere, not even in local journals.

The 2011-2012 awards went to three young students from Colombia, Mexico and Venezuela for the following contributions:

To **Bibian Martínez Campos** (Universidad Nacional de Colombia, Colombia) for her contribution: Martínez Campos, B., N. H. Campos & A. Bermúdez Tobón. 2012. Biología y patrones de distribución de los cangrejos ermitaños (Crustacea: Decapoda: Anomura: Paguridea) en el mar Caribe colombiano. *Revista de Biología Tropical* 60(1): 233-252.

To **Lorenzo Díaz-Jiménez** (Instituto Tecnológico de Boca del Río, Veracruz, México) for his contribution: Díaz-Jiménez, L., C. I. Pérez-Rostro & M. P. Hernández-Vergara. 2012. Heritability and response to selection for growth in the F1 in the crayfish *Procambarus (A.) acanthophorus*. *Tropical and Subtropical Agroecosystems* 15 (Sup. 2): S57-S62.

And to **Joxmer G. Scott-Frías** (Universidad Central de Venezuela, Venezuela) for his contribution: Scott-Farías, J. & E. Zoppi de Roa. 2010. Primer registro de huevo de resistencia en *Penilia avirostris* (Crustacea: Ctenopoda: Sididae) para aguas costeras venezolanas. *Boletín del Instituto Oceanográfico, Venezuela* 49 (2): 103-107.

Congratulations to all!!

Although participation has been very reduced over the years, we still hope that actions like these will have a positive impact on the students community in the region in order to promote publication of their results.

Michel E. Hendrickx
President of ALCARCINUS

News from Regional Governors...

News from the North American Region

Meetings:

Evolution 2013

(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))
21-25 June 2013, Snowbird, UT

88th Annual Meeting of the American Society of Parasitologists

June 27-30, 2013, Loews Hotel Le Concorde, Quebec City, Quebec

<http://amsocparasit.org/node/79>

13th International Congress on Invertebrate Reproduction and Development

Includes a symposium on: Crustacean reproduction and development (organized by Penny Hopkins, Amir Sagi, and Chris Tudge)
14-19 July 2013, Wayne State University, Detroit, MI, USA

<http://icird.med.wayne.edu/>

98th Ecological Society of America Annual Meeting 2013

4-9 August 2013, Minneapolis Convention Center, Minneapolis, MN

<http://www.esa.org/minneapolis/>

<http://www.evolutionmeeting.org/>

22nd Biennial Conference of the Coastal and Estuarine Research Federation

3-7 November 2013, San Diego, California, USA

<http://www.erf.org/cerf2013>

American Society of Naturalists

Conference entitled "Next generation naturalists: new perspectives on integrating evolution ecology and behavior"

13-15 January 2014, the Asilomar Conference Center, CA

<http://www.asnamnat.org/node/302>



News from Regional Governors...

Society of Integrative and Comparative Biology Annual Meeting 2014 (joint meeting with TCS)

January 3-7, 2014

Austin, TX

<http://www.sicb.org/meetings/2014/>

Includes a symposium on: Parasitic manipulation of host phenotype, or how to make a zombie (Organizers: Kelly Weinersmith, Zen Faulkes)

Notes:

In March 2013, The American Institute of Biological Sciences (AIBS) released a report outlining recommendations for creating a Network Integrated Biocollections Alliance (NIBA) in the next ten years. The report can be found at: http://www.aibs.org/public-policy/news/scientists_call_for_greater_access_to_biodiversity_resources_data.html#032972

In an impressive multi-authored paper by Appeltans and colleagues entitled "The Magnitude of Global Marine Species Diversity" was recently published in *Current Biology*. Among the 121 authors(!) are many TCS members and officers, including (but not limited to): Shane Ah Yong, Christopher Boyko, and Rafael Lemaitre. The paper can be found at: <http://www.sciencedirect.com/science/article/pii/S0960982212011384>

Funding Opportunities:

National Science Foundation

Dimensions of Biodiversity

Full Proposal Deadline Date: May 6, 2013

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503446&org=BIO&from=home

National Science Foundation

Advancing Digitization of Biodiversity Collections (ADBC)

Full Proposal Deadline Date: October 18, 2013

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503559&org=BIO&sel_org=BIO&from=fund

Jason D. Williams

TCS North American Governor

TCS Fellowship Winners

The TCS Graduate Student Fellowship was awarded to six finalists in 2013. Congratulations to the award winners listed below.

2013

Adeline Yong, Singapore, \$1000, Scholarship in Anatomy/Paleobiology

Joey Pakes, UC Museum of Paleontology, Berkeley, CA, \$1000, The Loligo Student Scholarship in Ecology/Behavior

Justin Havird, Auburn University, Auburn, AL, \$1000, Scholarship in Genetics/Physiology

Nathaniel Evans, FL, \$1000, Scholarship in Systematics/Biogeography

Rebekah Horn, Las Cruces, NM, \$1000, The Denton Belk Memorial Scholarship in Large Branchiopods

Natalie Pitts, Fort Collins, CO, \$1000, Scholarship in Genetics/Physiology

The Crustacean Society sponsors several fellowships in support of graduate student research; this year one fellowship was sponsored by Loligo Systems. Fellowships can be used to purchase supplies, travel for research, participation in off-campus research experience or training, or to take a specialized course of study to advance the awardee's knowledge and skills. Scholarships are awarded annually and may be received only once per awardee. For details go to <http://www.thecrustaceansociety.org>. Deadline is 15 February annually.





Minutes of The Crustacean Society...

TCS Business Meeting Minutes (SICB, San Francisco, January 3-7, 2013)

The meeting was opened by President Chris Tudge at 6:15 pm on Sunday January 6, 2013.

1. A summary of the Treasurer/Executive Director's report was given reviewing 2012 finances for the Society.

2. The projected 2013 TCS budget was also presented. It was noted that it is a balanced budget with a slight surplus for the year, as opposed to the budgets that have been in the red for two years.

3. Some of the proposals that were passed by the TCS executive board to help balance the 2013 budget were:

Increasing Patron dues for 2014 from \$165 to \$185

Limited officer travel is in place now to save TCS money

A concerted membership drive has been suggested to replace lost members and membership revenue

JCB page charges were increased to \$110/page (which for the first time will actually recoup the printing costs per page).

4. Increasing donations to TCS was also suggested as a way to increase funds and take the pressure from TCS endowments. Some suggestions were: putting donation information on the new TCS website; increasing donation solicitations via e-mail and Crust-L; and actively pursuing named donations to cover the annual student award categories.

5. It was agreed by the TCS executive to remain with JS-TOR to retrieve some funds from electronic paid access to JCB papers. It is to the advantage of TCS to not go through Brill to recover this money. It was noted that Bio-One money, from this source, will diminish over time and the contribution to replace it from Brill will only increase.

6. A summary of the Editor's report for 2012 was presented.

7. Plans for the Costa Rica meeting were presented, as well as a mention of future TCS meeting venues out to 2015.

8. We held the, now traditional, crustacean bazaar at the SICB TCS booth and a few crustacean-related items were put up for silent auction. The auction of these items, along with a couple of donation checks from generous members and non-members netted greater than \$500 for TCS. This money was immediately put into the TCS student poster and oral presentation awards to TCS students.

The meeting was closed by President Chris Tudge at 7:00 pm on Sunday January 6, 2013.

Board of The Crustacean Society Call for Nominations for Vacancies (2014-2015)

The Crustacean Society officers and governors serve two-year terms, half being elected each year. The President and President-Elect serve 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 2014-2015: 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.

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 play an important role as the regional face of TCS. They are to represent the best interests of membership in all activities of the Board, actively promote the Society through recruitment of new members, and promote Institutional subscriptions to the Society's journal in their respective regions. Regional governors are expected to attend regional carcinology-related meetings, promote the Society at these meetings, and promote relations between regional societies and TCS. Regional Governors may serve up to two consecutive terms and 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 Shane Ah Yong, TCS President-Elect (shane.ahyong@austmus.gov.au).

The elections will be called in November 2013, announced in the Ecdysiast, Crust-L and via email to members. Ballots will be cast electronically, with voting open until 31 December 2013.

Shane Ah Yong, TCS President-Elect