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This issue contains the 2008 IAA Election Results. See page 15 for details.

## 17<sup>th</sup> IAA Symposium Held in Kuopio, Finland on 4<sup>th</sup> - 8<sup>th</sup> August 2008



↑ Delegates attending the IAA17 symposium in Kuopio, Finland this past August.

The 17<sup>th</sup> International symposium of the IAA was held in Kuopio, Finland from August 4<sup>th</sup> – 8<sup>th</sup> of this year. In total, there were 131 registered delegates from 24 different countries that attended the symposium. The meetings included 60 oral presentations and 58 posters.

### IAA17 Awards

We would like to thank everyone for making the IAA17 symposium a wonderful cray-experience in Kuopio this past August. We had only 29.5 hours of sunshine according to the local newspaper during the whole of August, but it all landed on IAA17 delegates during the IAA17 week. Thanks again to all of you.

IAA17 symposium awards were handed out during the traditional IAA banquet dinner on Thursday night (see some photos of the

award presentations on page 12). The award winners were chosen by a distinguished awards council that included: Paula Henttonen, Japo Jussila, Ravi Fotedar, James Furse, Trude Vrålstad, Lennart Edsman and Ossi V. Lindqvist.

The prize for the best talk went to Frédéric Grandjean (Université de Poitiers, France) (pg. 10, photo A, right) and Jenny Makkonen (University of Kuopio, Finland)(no photo available) received the best student talk prize. The best poster prize went to Aleksandra G. Tertitskaya and Rostislav Borisov (Russian Federal Institute of Fisheries)(photo F). Ossi V. Lindqvist (photo A, left) gave honorary prizes to Keith Crandall (Brigham Young University, USA)(photo C, right), Trude Vrålstad (Norwegian Veterinary Institute) (no photo available), Pierre Horwitz (Edith Cowan

(Continued on page 10)





James M. Furse  
IAA President (Australia)

## President's Corner

Dear IAA members:

I am deeply honoured to have been elected as President of the IAA, and back at my first IAA Symposium (IAA13 in Perth – 2000), I would have never imagined that one day I would be the guardian of the fossil. Anyway, here I am, and I am pleased to report that the fossil is safe and well after its long journey back from Europe with me. I am also pleased to inform Catherine Souty-Grosset that I did not experience any fossil related security issues while transiting various airports on the way home: airport security was far more interested in my Finnish canned moose (not mousse the desert, moose the animal) which was sadly confiscated.

I would like to take this opportunity to thank Catherine Souty-Grosset, our Immediate Past-President, for handing to me the Presidency of an Association that is strong, and in very good shape indeed. In addition to her magnificent efforts as an IAA officer over the past 6 years, and as quite rightly pointed out by Julian Reynolds at the IAA General Assembly at IAA17 in Kuopio, Catherine has done a great deal of other work for science, Astacology, and our friends the crayfish through her involvement with numerous projects including the Atlas of Crayfish in Europe, and of course CRAYNET – thank you Catherine!

In keeping with the IAA's long history of exceptional biennial symposia, the recent IAA17 held in Kuopio (Finland) was another memorable IAA meeting (and the 1<sup>st</sup>, 2<sup>nd</sup> time an IAA symposium has ever returned to a previous venue). On behalf of the IAA and attending delegates, I would like to extend thanks to Paula Henttonen, Japo Jussila and the entire IAA17 team for organizing and hosting a truly magnificent event. Like other IAA meetings, IAA17 2008 in Kuopio, and all that wonderful Savo hospitality, will be discussed and fondly remembered for many years into the future. You can read the "Outcome and Conclusions" press release on page 11 of this issue.

While on the topic of IAA symposia I would like to thank both the Auburn, Alabama and Columbia, Missouri teams for their sound bid proposals and presentations in Kuopio for IAA18 in 2010. I understand that competing bids to host IAA symposia are rare, but I think that this is a sign of a healthy and strong association. The competition was tough, and the vote tally was incredibly close, but we will be meeting in Columbia, Missouri in 2010.

While on the topic of vote tally's I would like congratulate Jim Fetzner and Leopold Füreder who were elected President-Elect, and Secretary (respectively) in the recent IAA

*(Continued on page 3)*

The International Association of Astacology (IAA), founded in Hintertal, Austria in 1972, is dedicated to the study, conservation, and wise utilization of freshwater crayfish. Any individual or firm interested in furthering the study of astacology is eligible for membership. Service to members include a quarterly newsletter, membership directory, bi-annual international symposia and publication of the journal *Freshwater Crayfish*.

### Secretariat:

The International Association of Astacology has a permanent secretariat managed by Bill Daniels. Address: IAA Secretariat, Room 123, Swingle Hall, Department of Fisheries and Allied Aquacultures, Auburn University, AL 36849-5419, USA.

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### IAA Board Members:

In addition to the IAA Officers, the board includes Arnie Eversole (USA), Paula Henttonen (Finland), Jay Huner (USA), Julian Reynolds (Ireland), Stephanie Peay (UK) and Alastair Richardson (Tasmania).

### Officers:

James M. Furse, President, Griffith School of Environment Gold Coast Campus, Griffith University, Queensland 4222, Australia.  
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*Statements and opinions expressed in Crayfish News are not necessarily those of the International Association of Astacology.*

*This issue edited by James W. Fetzner Jr.*



(Continued from page 2)

Officer Elections (election results are on page 15).

In addition to the honour of being elected President, I am so very proud to be a member of, and the President of, such a wonderful association of people. To me, the IAA is a big happy family of wonderful and remarkable people (from *all* corners of the globe), that share a similar love and passion – crayfish. As a consequence of this, IAA symposia are like big happy family reunions, where everyone catches up with old friends, and typically makes a good number of new friends. I am already planning for, and looking forward to seeing you all again in 2010 at IAA18 (if not before).

I see two main challenges as President, ensuring and facilitating the continued recruitment of new members to the association, and increasing the profile, impact and accessibility of *Freshwater Crayfish*. Of course, if members have any additional views, suggestions, ideas or concerns regarding the IAA please feel free to email or call me – I am at your service.

H

My very best regards,

James M. Furse  
IAA President  
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## IAA Photo Gallery Now Online

A photo gallery has now been implemented on the IAA website in the members area. The gallery includes photos of crayfish as well as photos from past symposia (IAA16 and IAA17). If any member would like to contribute photos to the gallery they can do so by contacting the webmaster (Jim Fetzner) and submitting hi-resolution images and photo captions. Please note that if photos are received without captions (i.e., people, places and things in the photo are not identified), then the photos will not be used. An Excel spreadsheet is available from the webmaster for submitting captions and other photo details.

To access the photo gallery you must first login to the members area of the site and then click on the Photo Gallery link in the menu bar to the left of the page. You can filter the photos displayed by selecting items from the Category or Photographer dropdown boxes at the top of the gallery page.

We would like to consider this an historical archive of photos for the society, so if you have photos from past symposia or other events, please send them in. I hope that you enjoy this new addition to the website! H

Cheers, Jim Fetzner



IAA members,

We would like to thank the membership of International Association of Astacology for their vote of confidence by selecting Columbia, Missouri, USA as host city for the 2010 meeting. We are thrilled to be able to welcome this incredibly talented and friendly group of scientists to a small town in the Midwest of America. We are certain that all the delegates will enjoy Columbia and the surrounding area. The region is home to several colleges and Universities, numerous historic towns, art galleries, over 100 downtown stores and restaurants, and plenty of parks and green space to get out and walk about.

We would also like to thank Auburn University for their outstanding bid! Certainly, if the membership had selected Auburn, we would have been treated to an equally charming city. We will continue to work with their bid committee to provide delegates with the opportunity to visit Auburn University and the surrounding region in order that they may investigate the research facilities of Auburn and get out to the surrounding region to experience the diversity of crayfish in the Great State of Alabama.

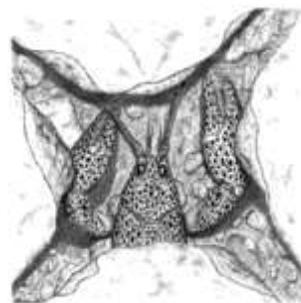
Finally, we would very much like to thank Japo, Paula, and the other members of the Kuopio organizing committee, and all those who helped make our stay in Kuopio truly wonderful. In addition to a fine scientific program, we were surrounded by kind, friendly, and fun people who made us feel at home. What a beautiful country, city and people! We left a part of our heart there and will always feel a tie to this time and place. Kiitos!

The website for IAA18 is now up and running: <http://muconf.missouri.edu/IAA18>. Please visit the site for updates about the meeting, conference tour and trips, and travel to the region! H

Sincerely,

The Columbia Organizing Committee:

Susie Adams, Annie Allert, Bob DiStefano,  
Emily Imhoff, Chris Taylor,  
Jacob Westhoff



## Short Articles

### Snip, Snip... (Snip)? An unusual 'pseudo-claw' in the Simple Crayfish, *Euastacus simplex*

Recently, while sampling a population of the Simple Crayfish (*Euastacus simplex*), I encountered a large female with a rather unusual mutation: A distinctive, claw-like growth projecting out of its dactylus (Figure 1). The growth has resulted in a considerable deformation of the dactylus, which curves strongly in an arc and crosses the propodal finger ventrally (Figure 2). The pseudo-claw has rows of setation like those of the normal claws, including a row of setae along the 'cutting edges' on each finger. It also has the distinctive tips of the true fingers. However, there is no articulation present, and as such there is no actual claw action.

There has clearly been some kind of divergence from the 'blueprint' here, but it is uncertain in exactly what way. Crayfish occasionally display aberrant spines (e.g. two spines fused at their base, or, less commonly, spines growing on other spines), although this species does not normally develop any spines near the midlength of the dactylus (it does develop marginal spines at the base of the dactylus, and these spines are present and normal). The claw on which the growth is located is slightly smaller than normal, indicating that it may be regenerating. Regenerate claws often bear atypical spination patterns, and it may be that this unusual growth is somehow related to regeneration of the main claw. There is also a small wound in the dactylus just in front of the pseudo-claw, and it may be that the growth is associated with the regeneration of this wound. On the other hand, it may also be that the pseudo-claw has caused the wound.

It would seem possible, given its size, that the growth has already been developing for several moults. The specimen was retained to observe any further development, and after 7 months in captivity it recently moulted and retained not only the claw, but also the aberrant growth. Moreover, both the growth and the deformity in the dactylus appear virtually unchanged following the moult – the 'fingers' of the growth are just ever-so-slightly longer than they were previously. It is foreseeable that ultimately the claw will be lost during a moult event, or may contribute to a moult-related mortality. Given the interest in crayfish limb regeneration, the observation (and perhaps the specimen) may be of interest to other researchers or enthusiasts. If nothing else, she serves a nice reminder that, beneath the surface, life is rather complex... kind of neat that she happens to be a 'Simple' Crayfish. H

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Figure 1. The unusual claw-like growth in the *Euastacus simplex* specimen.



Figure 2. The deformation of the dactylus as a result of the 'pseudo-claw' growth. The deformed dactylus crosses over the propodal finger. You can make out the two normal (i.e. small) dactylar basal spines on the right hand image.



Figure 3. Despite the anomaly, she is every bit *Euastacus*: a good blend of colour, spines and charm.



## A Brief Encounter with Tufa-coated Signal Crayfish Near Divonne-les-Bains, Central-eastern France

At the western perimeter of Lac Léman basin, the piedmont of the Jura range is noted for its many sources of water that feed the tributaries of rivers that flow eastward and drain into Lac Léman. To the west of the French town of Divonne-les-Bains there are some thirty such sources, with at least eight that are tufaceous.

The emerging water of those sources is rich in dissolved calcium bicarbonate which, in contact with the air, releases excess CO<sub>2</sub> and converts to the much less soluble calcium carbonate. The latter is then deposited as hard calcareous or limestone tufa on the stream's substrate, aquatic vegetation and on any debris that may be on the stream bed or suspended in the water (twigs and branches of trees, agricultural piping, discarded building materials, etc). When tufa binds limestone rubble and/or accumulations of pebbles and gravel, hard masses of calcrete are formed, which often form low-profiled cascades.

Although trout (*S. trutta fario*) and the Miller's Thumb (*Cottus gobio*) frequently inhabit tufa streams, invertebrate communities are often qualitatively and quantitatively poorly represented. Aquatic plants are also generally conspicuous by their absence.

### Crayfish survey of the upper "Le Clézet" valley

In connection with the assessment of development proposals for "Le Clézet" valley to the west of Villard (Divonne-les-Bains parish) this writer was invited to conduct an exploratory crayfish survey of "Le Clézet" tufa stream (Figure 1). The main objective was to determine if there was a relic population of the white-clawed crayfish (*Austropotamobius pallipes*) in that stream.

On 4 July 2008 about 900 m of "Le Clézet" stream (upstream of "Le Clézet" bridge, some 400 m south-west of Villard) was surveyed using fingers and thumbs and aquarium hand-nets. The water temperature was 10.0° to 10.5° C.

The stream bed was devoid of aquatic vegetation, except for scant clumps of Creeping Marshwort (*Apium repens*) and Water Mint (*Mentha aquatica*). With regard to the aquatic fauna, one trout and one frog were seen. Neither living crayfish, nor skeletal remains of dead crayfish were found.

The 5 July two baited crayfish traps were placed in "Le Clézet" in situations where the water was deep enough to cover them. A brief inspection was also made of the one-metre wide Golf Course rivulet, which joins "Le Clézet" stream at the road bridge (water temperature 12.0° C). That revealed the presence of several *C. gobio* and a recently dead signal crayfish (*Pacifastacus leniusculus*); an adult female (CL 53 mm; ref. GCF1). What was most surprising to this writer was that the signal was partly encrusted with tufa; probably ≥ 1.0 mm thick in some places; especially on the carapace.

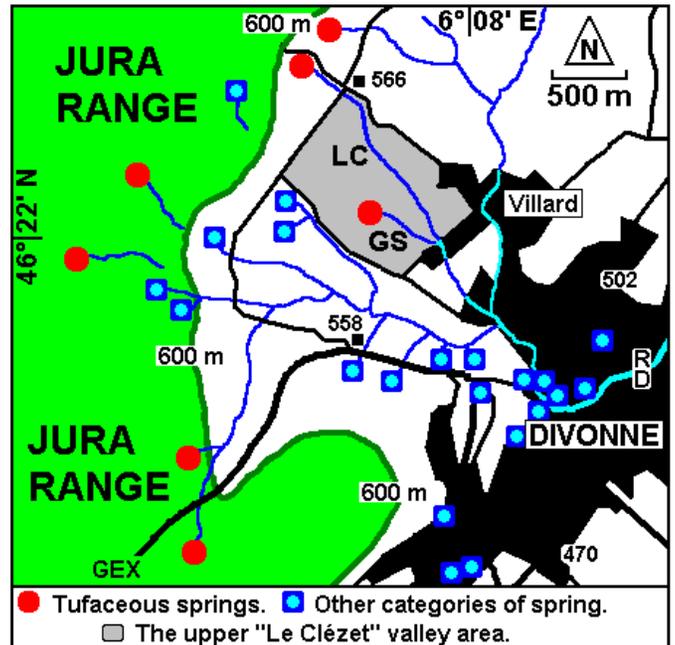


Figure 1. Map showing the hydrographical situation between Divonne-les-Bains and the piedmont of the Jura range. Abbreviations are: LC - "Le Clézet" stream; GS - Golf Course stream; RD - River "La Divonne-Versoix". (Design: David Baldry).



Photo 1. Part of "Le Clézet" stream sheltered by riverine forest, showing low cascades and clear water that has left tufa deposits on everything in its path. (Photo: David Baldry). (Continued on page 6)



(Continued from page 5)



Photo 2. The part of the Golf Course rivulet (looking upstream from its junction with “Le Clézet” stream) where signal crayfish were found. (Photo: David Baldry).

On 6 July, when the traps were examined, one contained a trout (ca 23 cm long); the other was empty. In the lower stretch of the Golf Course rivulet three signal crayfish were caught in hand-nets; a recently moulted female (CL 30 mm; ref. GCF2), a female with an almost complete coating of tufa (CL 47 mm; ref. GCF3) and a male bearing a moderate coating of tufa (CL 38 mm; ref. GCM1).

On 7 July the traps were removed from the stream, one was found to be empty and the other contained only a *C. gobio*. One trout and several *C. gobio* were seen in the Golf Course rivulet, but only one signal crayfish was found; a recently moulted female, CL 29 mm (ref. GCF4).

Searching the literature to find additional information on tufa-coated crayfish was not very productive. However, Dr David Holdich (pers. comm. 2008) soon provided information on tufa-coated *A. pallipes* inhabiting a tributary of the R. Witham near Grantham (Lincolnshire, UK). He believes that a coating of tufa is of no great consequence because it is lost each time the crayfish moults, but that a more serious situation could arise if the mouthparts become so encrusted that the crayfish is unable to feed. Accordingly, the two live tufa-coated signals from the Golf Course rivulet were put in a garden tank containing soft water and appropriate aquatic vege-



Photo 3. Dorsal (D) and ventral (V) views of the dead signal crayfish found in Golf Course rivulet. Much of its tufa “coat” has detached from its carapace. (Photo: David Baldry).



Photo 4. Dorsal (above) and lateral (below) views of the tufa-coated female signal crayfish GCF3. (Photo: David Baldry).

(Continued on page 7)



(Continued from page 6)



Photo 5. Dorsal views of the GCM1 male signal crayfish (above) and the female signal crayfish GCF3 (below). (Photo: David Baldry).



Photo 6. Dorsal (left) and ventral (right) views of the female signal crayfish GCF3 when it was in a moribund state prior to dying on 15 September 2008. (Photo: David Baldry).

tation to see what would happen to them. They were fed with dog biscuits and crab pellets.

### Follow-up observations and conclusions

About a week after capture, the male signal (GCM1) moulted in a normal fashion and was thus freed of its tufa coat.

The large female signal (GCF3), seemed to have no difficulty feeding, and was able to discard some tufa from its exoskeleton, particularly from the under surfaces of its appendages, from the dorsal tips of its claws, from the dorsal surface of its abdominal segments, and from part of its eyes.

That female died on 15 September, and the way the carapace and abdomen were separating implies that she was attempting to moult at that time. One supposes that moulting was prevented because she could not generate **enough pressure in her body to break the tufa "shell" that held her captive.** Thus, exhaustion seems the most likely cause of death.

Although the observations made on signal crayfish from the Golf Course stream were limited, it is reasonable to suppose that in highly tufaceous water:

1. small crayfish are not adversely affected by coatings of tufa, because the comparatively short interval between one moult and the next enables them to get rid of the tufa before it attains a thickness that can be detrimental to their wellbeing,
2. large crayfish, which have long intervals between one moult and the next, can accumulate tufa to the extent that, for one reason or another, it shortens their life-span. H

**David Baldry**

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## Spiders: A New? Predator of Crayfish

The documented predators of crayfish are many and include both invertebrates and vertebrates, however we are not aware of any instances where predation of crayfish by Arachnids has been documented.

The following photograph (see page 10) was taken in late January 2008 in northern New South Wales (Australia), and shows a Water Spider (*Dolomedes* sp.) that had captured a crayfish (*Cherax* sp.). It was not possible to obtain better photographs, or identify the crayfish without disturbing the spider, however the spider was quite large (we estimate body length at approximately 60mm), and estimate the crayfish at approximately 30mm OCL.

Members of genus *Dolomedes* are able to dive underwater and remain there for up to 20 minutes, and are known to prey on insects, frogs and small fish (Raven and

(Continued on page 10)



## Photos from the 17th IAA Symposium — Kuopio, Finland 2008

The next two pages include photos taken by members at IAA17 in Kuopio. Please note that due to space limitations, not all photos submitted are included here. However, all photos will be available on the IAA website in the new Photo Gallery.





(Continued from page 7)



Seeman 2007), apparently this list of prey can now be extended to include crayfish. H

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Reference:

Raven R and Seeman O (2007). Arachnids. In. Wildlife of Greater Brisbane, 2<sup>nd</sup> Edition. pp. 31-61. Queensland Museum, Brisbane, Australia.

(Continued from page 16)

Vogt G (2008). The marbled crayfish: a new model organism for research on development, epigenetics and evolutionary biology. *Journal of Zoology* 276(1):1-13.

Yeh SR, Yang JW, Lee YT and Tsai LY (2008). Static magnetic field expose enhances neurotransmission in crayfish nervous system. *International Journal of Radiation Biology* 84(7):561-567. H

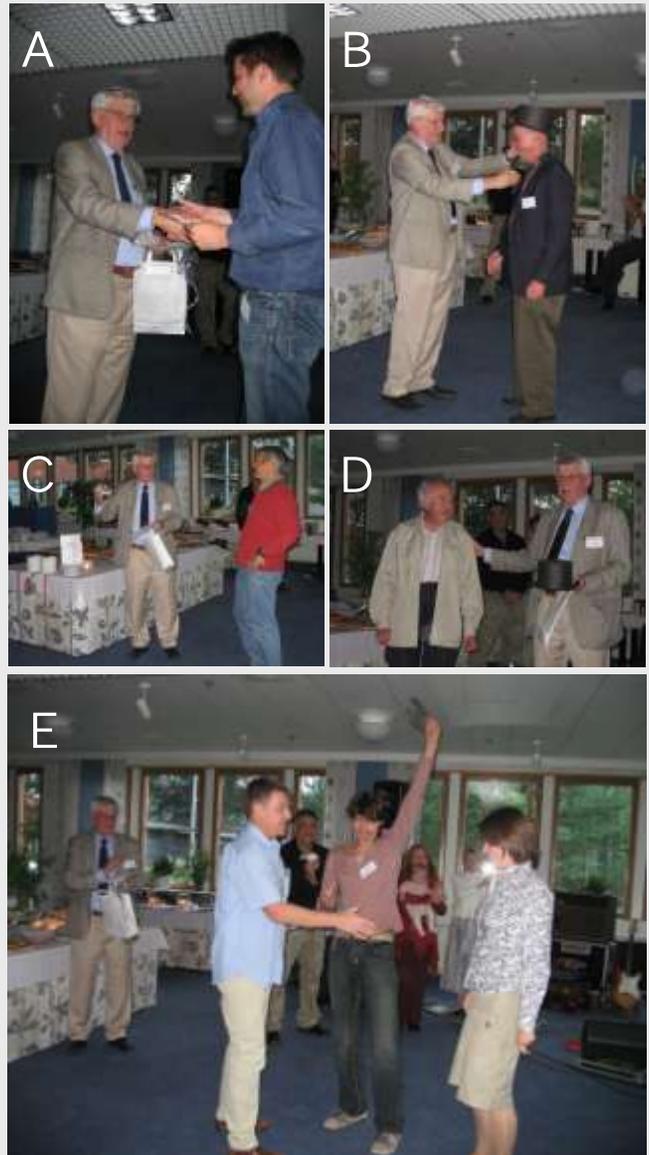
(Continued from page 1)

University, Australia)(no photo available) and to IUCN representatives Nadia Dewhurst and Mala Ram (both from the Zoological Society of London, UK)(no photo available).

Helinä and Klaus Kotschy (photo D, left) were awarded for showing "craystamina". Jay Huner (USA)(photo B, right) was awarded a special honorary crayfish doctorate accompanied by a crayfish top hat.

Scandinavian awards went to the youngest delegates and a total of five children were awarded. The Scandinavian cultural award was handed to John Bunn (Edith Cowan University, Australia)(no photo available) for the brilliant reading of the cultural nuances during the IAA17 symposium. H

The IAA17 Organizing Committee



Photos of some of the awards handed out at the IAA17 symposium. Photos submitted by Nadia Dewhurst.



2008 Bylaw Changes/Modifications Continued

#	Bylaw : Article	Online (Proxy)	Paper	TOTAL Votes	% of Votes
9	Article IV Section 2				
	Approve	39	25	64	89%
	Abstain	2	5	7	10%
	Reject	1	0	1	1%
10	Article IV Section 4				
	Approve	40	25	65	90%
	Abstain	1	5	6	8%
	Reject	1	0	1	1%
11	Article IX Section 2				
	Approve	41	25	66	92%
	Abstain	1	5	6	8%
12	Article V Section 1				
	Approve	39	25	64	89%
	Abstain	3	5	8	11%
13	Article V Section 5				
	Approve	41	25	66	92%
	Abstain	1	5	6	8%
14	Article VI Section 4				
	Approve	35	25	60	83%
	Abstain	6	5	11	15%
	Reject	1	0	1	1%
15	Article VII Section 2				
	Approve	38	25	63	88%
	Abstain	3	5	8	11%
	Reject	1	0	1	1%
16	Article VIII Section 1				
	Approve	42	25	67	93%
	Abstain	0	5	5	7%
17	Article VIII Section 2				
	Approve	42	25	67	93%
	Abstain	0	5	5	7%
18	Article VIII Section 3				
	Approve	39	25	64	89%
	Abstain	3	5	8	11%
19	Article VIII Section 4				
	Approve	42	25	67	93%
	Abstain	0	5	5	7%

IAA17 Kuopio 2008 Outcome and Conclusions

These conclusions from the international crayfish meeting held in Kuopio last week, were finalized by a commissioned working group of International Association of Astacology (IAA) delegates led by its president James Furse, in a sauna by Lake Keitele in Vesanto, Finland.

During the five-day IAA17 symposium, talks and posters covered the topics of conservation, management, diseases, ecology, genetics, aquaculture and environmental economics as they applied to freshwater crayfishes.

Of great concern was the widespread negative consequences of movements and translocations of crayfish within and between countries as well as between continents. Trade and introductions of non-native crayfish species for economic reasons have had a severe impact on native species and habitats by spreading disease and parasites and through altering the original ecosystem. For instance, this situation has occurred in Lake Sorsavesi in Leppävirta, Finland.

The consequences have been serious, since the total impacts of translocations are always difficult to judge beforehand. The symposium delegates also expressed their concern that climate change would further jeopardize the survival of species in their native habitats. Higher temperatures may change disease risk profiles for crayfish and alter the resilience of the natural ecosystem to invasions by non-native species. Drought and rainfall decline will increase pressure on water resources and threaten locally restricted crayfish. Very few countries in the world will be unaffected by these sorts of changes.

Founded in 1972, the IAA is open to professional and scientific individuals and organizations from across the world. The IAA has a membership of more than 500. The symposium in Kuopio, Finland was its 17th, and was attended by more than 130 members from 24 countries. H

On behalf of the IAA.  
Harinkaa, Vesanto, Finland  
11-Aug-2008.

James Furse  
IAA President



# Meeting Announcements

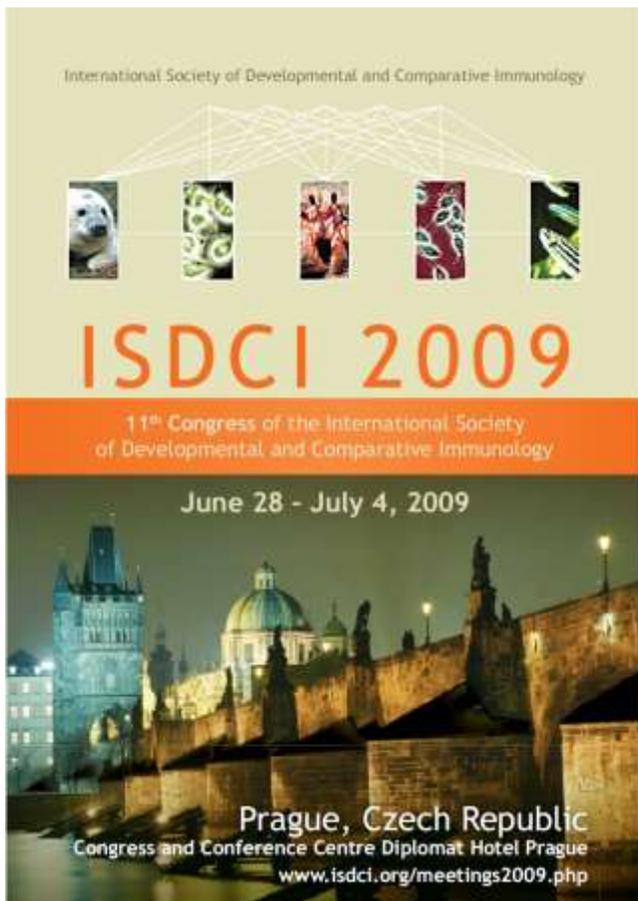
## ASF Crayfish Symposium Call For Oral Presentations

Hello Everyone,

Last year's crayfish symposium at the Southern Division of The American Fisheries Society in Wheeling, WV was so successful that we're going to do it again. I know this is short notice, but abstracts are due October 24. The meeting will take place at the beautiful Royal Sonesta Hotel (<http://www.sonesta.com/RoyalNewOrleans/>), January 15-18, 2009 in New Orleans, Louisiana. Please use the online submission form (<http://www.sdafs.org/meetings/2009/>) and notify me with a copy of your abstract and contact information. Each speaker will be given 20 minutes, 15 minutes for the talk and 5 minutes for questions. H

Thank you,  
Shane Welch  
[shanemwelch@gmail.com](mailto:shanemwelch@gmail.com)

## International Society of Developmental and Comparative Immunology Prague, Czech Republic. June 28 — July 4, 2009.



Dear Colleagues,

The Organizing Committee of The Crustacean Society Summer Meeting in Japan in 2009 is pleased to announce that registration is now open for the Meeting to be held on September 20-25 at Tokyo University of Marine Science and Technology in Shinagawa, Tokyo. Electronic registration and submission of abstracts is available through the meeting website at <http://wwwsoc.nii.ac.jp/csj4/TCSFirstPage1.html> Please visit this site for general information and check back often, as it will be updated regularly.

For general sessions, we invite contributions in all areas of crustacean biology including systematics, taxonomy, evolution, phylogeny, ecology, behavior, sociobiology, development and larval biology, physiology, symbiosis, parasitology, genetics, molecular biology, biogeography, fossils and ichnology, taphonomy, palaeobiology, conservation, introduced species, fisheries and culture; and any taxa of crustaceans including BRANCHIOPODA (Phyllopoda, Sarsostraca), REMIPEDIA (Enantiopoda, Nectiopoda), CEPHALOCARIDA, MAXILLOPODA [Thecostraca (Facetotecta, Ascothoracida, Cirripedia), Tantulocarida, Branchiura, Pentastomida (Cephalobaenida, Porocephalida), Mystacocarida, Copepoda (Calanoida, Cyclopoida, Gelyelloida, Harpacticoida, Misophrioida, Monstrilloida, Mormonilloida, Platycopioida, Poecilostomatoida, Siphonostomatoida), OSTRACODA (Myodocopa, Podocopa), and MALACOSTRACA [Phyllocarida (Leptostraca), Hoplocarida (Stomatopoda), Eumalacostraca (Syncarida, Peracarida including Spelaeogriphacea, Thermosbaenacea, Lophogastrida, Mysida, Mictacea, Amphipoda, Isopoda, Tanaidacea & Cumacea, Eucarida including Euphausiacea, Amphionidacea & Decapoda)]

For further information, see the meeting web-site <http://wwwsoc.nii.ac.jp/csj4/TCSFirstPage1.html> or contact; H

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### A Complete Crayfish Book Appears in Japan

This book was published in February 2007 in Japanese:

Kawai, T. 2007. Zarigani no Hakubutsu-shi (Natural history and conservation of freshwater crayfish in Japan). Tokai University Press, Hadano (Kanagawa, Japan). xvi + 167 p. [in Japanese]. ISBN 978-4-486-01754-7, Price: 3200 Yen + tax [=US \$33.00].

(Tokai University Press: [tupcustomer@press.tokai.ac.jp](mailto:tupcustomer@press.tokai.ac.jp)).

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The book can be considered "An introduction to the study of the Japanese crayfish". It contains information about biogeography, systematics, alimentation, behavior, parasitology, etymology, relationships with humans and conservation. Although this is a monograph on the Japanese crayfish *Cambaroides japonicus*, it is highly useful for any specialist who studies crayfish. It is nicely written and is actually intended to be read by amateurs and beginners. One quarter of the book is devoted to crayfish protection, which shows the importance of public participation and education of children (in the text, children are depicted as future soldiers of crayfish protection).

This is a complete book on the Japanese crayfish. We can learn about the biology of *C. japonicus* and its present situation in Japan. And also we can learn about:

- the distribution of *C. japonicus* (with nicely ex-

plained biogeography).

- the etymology of *C. japonicus* in Japanese and "Ainu" words.
- the history of non-native crayfish (several species) in Japanese territories.

There are many other topics of interest to crayfish biologists, but the list is too long to present here. There is so much information on crayfish that, with this single book, any reader can be a true astacologists, as well as a Japanese crayfish specialist. As the book omits most of the basic **carcinological introduction, it is not "heavy" to read. The book** is written in Japanese because it is intended as educational material for children in Japan, but many topics could be translated into English and diffused internationally. For instance, the book details the methods of crayfish protection carried out in Japan (it certainly gives new ideas that could be implemented in Europe). The scientific information available to the world's astacologists on *Cambaroides japonicus* is severely lacking, and only a few Japanese specialists have access to this important data. H

Book Reviewer:

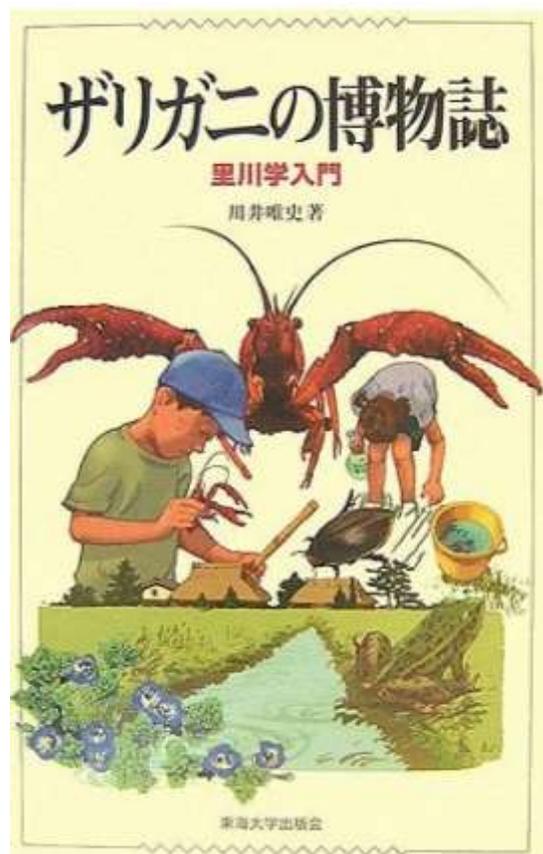
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## IAA Related News

### Still Time to Get Involved and Lend a Claw

Many of you who were able to attend IAA17 will be aware that here at the Zoological Society of London we are currently performing conservation assessments on all species of crayfish for the IUCN Red List of Threatened Species.



As part of the Convention on Biological Diversity (CBD), 188 Nations have committed to significantly reduce the current rate of biodiversity loss by 2010. The Red List Index (RLI) has been adopted by the CBD as one of the global biodiversity indicators by which to measure progress toward the target. It has also been selected by the United Nations as a measure for its Millennium Development Goals. By carrying out repeated Red List assessments over time, a trend in extinction risk can be obtained by monitoring the movement of species between the categories of conservation status. However, RLIs are currently being calculated for only a few fully assessed vertebrate groups, which do not truly represent global biodiversity.

To remedy this issue, ZSL has led the development of a sampled approach to the RLI, making it more indicative of all biodiversity. The sampled approach selects species from a broad range of taxonomic groups (from vertebrates and invertebrates, to plants and fungi), for inclusion into this indicator, rather than just using data on the more well studied species, such as birds. In addition, the sampled RLI will identify which taxonomic groups, biogeographic realms, and habitats are deteriorating most rapidly, why species are threatened, and what conservation actions are needed or are already in place. The assessments and index will provide a much needed source of information for policy makers, resource managers, scientists, educators, and conservation practitioners, as well as the general public.

Since June 2008, a small team of researchers have been collating publicly available literature on the *Parastacidae*, *Astacidae* and non-American *Cambaridae* species. This literature has now been entered into species' reports, from which we are able to determine suitable conservation listings (e.g., Data Deficient, Least Concern, Near Threatened, Vulnerable, Endangered or Critically Endangered). Before these reports can be submitted to the IUCN for publication, they must be checked by an expert to ensure that the data contained in the assessment, and used to decide on an appropriate conservation listing, are the most up to date.

We currently have 200 species reports to be reviewed before publication at the end of December 2008. It typically takes between 5 and 10 minutes to review 5 short paragraphs within each report. Everyone involved in reviewing these species reports shall be credited as an expert for that particular species and shall appear in the 2009 Red List online database ([www.redlist.org](http://www.redlist.org)).

So if you have any knowledge of a particular species or genus, and would like to be involved in the IUCN Red List, then please contact me for more information. It doesn't matter if you are a fishery scientist, researcher, environmental consultant, museum curator, PhD candidate or just a general crayfish enthusiast. If you have anything to contribute then please do get in touch and help us improve the conservation status of this lesser known, but important species group. H

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Dear Members:

Following the recent Board Meeting held in Kuopio, we are able to report on the current financial position of the IAA.

There are a number of IAA bank accounts worldwide, and these are:

1. The main IAA Accounts in the USA - administered by the Secretariat, Bill Daniels,
2. The European satellite account in France - administered by Catherine Souty-Grosset, and
3. The Antipodean satellite account in Australia – administered by Glen Whisson

The balances in these accounts (in local currency), as of the 24<sup>th</sup> of September 2008, are as follows:

- USA - \$ 20,895.06
- France - € 4785.45
- Australia - \$ 3119.78

When the foreign balances are converted to US Dollars, the total amount of funds held by the IAA is US \$ 29,425.00. H

Yours Sincerely,  
The Officers and Secretariat of the IAA

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### Join the CRAYFISH-L List Server and the Freshwater Crayfish Forum

To get news and information related to crayfish and the IAA you should join the CRAYFISH-L e-mail list server. This is a way to communicate with other people interested in freshwater crayfish and is a service that is similar to CRUST-L. CRAYFISH-L is hosted by Bill Perry at Illinois State University. To join, direct your web browser to the following address (<http://listserv.ilstu.edu/cgi-bin/wa?SUBED1=crayfish-l&A=1>) and enter your name and e-mail address. That's is all there is to it! When someone posts a message to the board, you will receive an e-mail containing the message. It is a great way to keep in touch with your crayfish colleagues. You can also join the Freshwater Crayfish Forum at <http://iz.carnegiemnh.org/crayfish/phpbb3/index.php>. H

Cheers,  
Jim Fetzner



## Members, Membership and Membership Fees

Currently, the membership of the IAA is a respectable 506 members (418 IAA and 164 FF), but of course we are always keen to recruit new members and increase this number, so please continue to spread the IAA "word".

Membership fees for the IAA are very reasonable (only US \$20.00 yr<sup>-1</sup> for regular members, and half that for students – what a bargain!), however it has recently come to my attention that many members are overdue (or in some cases extremely overdue) with payment of their membership fees.

The IAA Officers and Board are aware of the difficulty, inconvenience, and high costs often associated with transferring funds (both telegraphic transfer and money orders) from place to place, and understand that this may in the past have been an impediment to the timely payment of IAA membership fees.

Considering that fact, I am pleased to announce that in the very near future it will be possible to pay your membership fees online, using your credit card, via the IAA website. Big thanks to Jim Fetzner and Bill Daniels who have been toiling quietly in the background setting up a PayPal facility for the IAA. When operational, this facility will allow seamless on-line payments to be made for IAA membership fees, purchase of IAA publications, and any other IAA items or services should the need arise in future.

We will advise you via e-mail, and *Crayfish News*, as soon as the online payment facility is operational. In the meantime I would ask that you please kindly check your records and determine your current status regarding your membership fees.

If you are not able to establish the payment history of your membership fees (or lack thereof), please contact the IAA Secretariat (Bill Daniels), who will be able to provide information in that regard.

Yours Sincerely,  
James Furse  
IAA President

## 2008 IAA Election Results

Below are the results from the 2008 IAA elections. The data include ballots cast using the online voting system, as well as paper ballots filled out at the IAA17 symposium. In total, 76 IAA members cast ballots in the elections, which is a voter turnout of about 18.2% based on current calculations of active members. Officers elected were: James Furse (President), James Fetzner (President-Elect) and Leopold Füreder (Secretary). The IAA18 venue selected by members was Columbia Missouri by a slim margin (3 votes). All bylaw changes were also approved.

<i>Office of President</i>		Online		TOTAL		
#	Candidates	Write-in	(Proxy)	Paper	Votes	% of Vote
1	James Furse		42	29	71	93%
2	Write-In	"Orconectes bob"	0	1	1	1%
3	Abstain		1	3	4	5%
TOTAL			43	33	76	100%

<i>Office of President-Elect</i>		Online		TOTAL		
#	Candidates	Write-in	(Proxy)	Paper	Votes	% of Vote
1	James Fetzner		42	30	72	95%
2	Write-In		0	0	0	0%
3	Abstain		1	3	4	5%
TOTAL			43	33	76	100%

<i>Office of Secretary</i>		Online		TOTAL		
#	Candidates	Write-in	(Proxy)	Paper	Votes	% of Vote
1	Javier Diéguez Uribeondo		10	3	13	17%
2	Leopold Füreder		13	21	34	45%
3	Pavel Kozák		13	4	17	22%
4	Write-In	Amie Eversole	0	1	1	1%
5	Abstain		7	4	11	14%
TOTAL			43	33	76	100%

<i>IAA18 Venue Selection</i>		Online		TOTAL		
#	Locations	Write-in	(Proxy)	Paper	Votes	% of Vote
1	Auburn, Alabama, USA		15	14	29	39%
2	Columbia, Missouri, USA		19	13	32	43%
3	Abstain		8	6	14	19%
TOTAL			42	33	75	100%

## 2008 Bylaw Changes/Modifications

#	Bylaw : Article	Online (Proxy)	Paper	TOTAL Votes	% of Votes
1	Article III Section 10				
	Approve	42	25	67	93%
	Abstain	0	5	5	7%
2	Article III Section 11				
	Approve	39	25	64	89%
	Abstain	3	5	8	11%
3	Article III Section 2				
	Approve	34	25	59	82%
	Abstain	6	5	11	15%
	Reject	2	0	2	3%
4	Article III Section 3				
	Approve	42	25	67	93%
	Abstain	0	5	5	7%
5	Article III Section 4				
	Approve	42	25	67	93%
	Abstain	0	5	5	7%
6	Article III Section 5				
	Approve	42	25	67	93%
	Abstain	0	5	5	7%
7	Article III Section 6				
	Approve	34	25	59	82%
	Abstain	7	5	12	17%
	Reject	1	0	1	1%
8	Article IV Section 1				
	Approve	40	25	65	90%
	Abstain	1	5	6	8%
	Reject	1	0	1	1%

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- Allana TN and Lin J-W (2008). Effects of increasing Ca<sup>2+</sup> channel-vesicle separation on facilitation at the crayfish inhibitory neuromuscular junction. *Neuroscience* 154 (4):1242-1254.
- Auld JR and Relyea RA (2008). Are there interactive effects of mate availability and predation risk on life history and defence in a simultaneous hermaphrodite? *Journal of Evolutionary Biology* 21(5):1371-1378.
- Baker N, De Bruyn M and Mather PB (2008). Patterns of molecular diversity in wild stocks of the redclaw crayfish (*Cherax quadricarinatus*) from northern Australia and Papua New Guinea: Impacts of Plio-Pleistocene landscape evolution. *Freshwater Biology* 53(8):1592-1605.
- Bertocchi S, Brusconi S, Gherardi F, Bucciatti A and Scalici M (2008). Morphometrical characterization of the *Austropotamobius pallipes* species complex. *Journal of Natural History* 42(31-32):2063-2077.
- Bi K, Huang H, Gu W, Wang J and Wang W (2008). Phylogenetic analysis of *Spiroplasma* from three freshwater crustaceans (*Eriocheir sinensis*, *Procambarus clarkia* and *Penaeus vannamei*) in China. *Journal of Invertebrate Pathology* 99(1):57-65.
- Campaña-Torres A, Martínez-Cordova LR, Villarreal-Colmenares H and Civera-Cerecedo R (2008). Carbohydrate and lipid digestibility of animal and vegetal ingredients and diets for the pre-adult redclaw crayfish, *Cherax quadricarinatus* (von Martens). *Aquaculture Research* 39 (10):1115-1121.
- Chucholl C, Stich HB and Maier G (2008). Aggressive interactions and competition for shelter between a recently introduced and an established invasive crayfish: *Orconectes immunis* vs. *O. limosus*. *Fundamental and Applied Limnology / Archiv für Hydrobiologie* 172(1):27-36.
- Fero K and Moore P (2008). Social spacing of crayfish in natural habitats: what role does dominance play? *Behavioral Ecology and Sociobiology* 62(7):1119-1125.
- Galeotti P, Rubolini D, Pupin F, Sacchi R and Fasola M (2008). Sperm removal and ejaculate size correlate with chelae asymmetry in a freshwater crayfish species. *Behavioral Ecology and Sociobiology* 62(11):1739-1745.
- Genise JF, Bedatou E and Melchor RN (2008). Terrestrial crustacean breeding trace fossils from the Cretaceous of Patagonia (Argentina): Palaeobiological and evolutionary significance. *Palaeogeography, Palaeoclimatology, Palaeoecology* 264(1-2):128-139.
- González A, Celada JD, González R, García V, M. CJ and Sáez-Royuela M (2008). *Artemia* nauplii and two commercial replacements as dietary supplement for juvenile signal crayfish, *Pacifastacus leniusculus* (Astacidae), from the onset of exogenous feeding under controlled conditions. *Aquaculture* 281(1-4):83-86.
- Gotow T and Nishi T (2008). Simple photoreceptors in some invertebrates: Physiological properties of a new photosensory modality. *Brain Research* 1225:3-16.
- Hirsch PE, Nechwatal J and Fischer P (2008). A previously undescribed set of *Saprolegnia* spp. in the invasive spiny-cheek crayfish (*Orconectes limosus*, Rafinesque). *Fundamental and Applied Limnology / Archiv für Hydrobiologie* 172(2):161-165.
- Homberg U (2008). Evolution of the central complex in the arthropod brain with respect to the visual system. *Arthropod Structure and Development* 37(5):347-362.
- Jones JPG, Andriamarivololona MM, Hockley N, Gibbons JM and Milner-Gulland EJ (2008). Testing the use of interviews as a tool for monitoring trends in the harvesting of wild species. *Journal of Applied Ecology* 45(4):1205-1212.
- Kholodkevich SV, Ivanov AV, Kurakin AS, Kornienko EL and Fedotov VP (2008). Real Time Biomonitoring of Surface Water Toxicity Level at Water Supply Stations. *Environmental Bioindicators* 3(1):23-34.
- Larson ER, DiStefano RJ, Magoulick DD and Westhoff JT (2008). Efficiency of quadrat sampling for riffle-dwelling crayfish. *North American Journal of Fisheries Management* 28(4):1036-1043.
- Liu Q, Wei F, Liu W, Yang S and Zhang X (2008). Paragonimiasis: an important food-borne zoonosis in China. *Trends in Parasitology* 24(7):318-323.
- Luo W, Zhao Y-L and Yao J-J (2008). Biochemical composition and digestive enzyme activities during the embryonic development of the redclaw crayfish, *Cherax quadricarinatus*. *Crustaceana* 81(8):897-915.
- Mathews LM, Adams L, Anderson E, Basile M, Gottardi E and Buckholt MA (2008). Genetic and morphological evidence for substantial hidden biodiversity in a freshwater crayfish species complex. *Molecular Phylogenetics and Evolution* 48(1):126-135.
- Mazurová E, Hilscherová K, Jálová V, H.-R. Köhler, R. Trieb-skorn, Giesy JP and Bláha L (2008). Endocrine effects of contaminated sediments on the freshwater snail *Potamopyrgus antipodarum* in vivo and in the cell bioassays in vitro. *Aquatic Toxicology* 89(3):172-179.
- McClain WR and Romaine RP (2008). Water budgets for a rice-crawfish aquaculture system. *North American Journal of Aquaculture* 70(3):296-304.
- Melero Y, Palazón S, Bonesi L and Gosálbez J (2008). Feeding habits of three sympatric mammals in NE Spain: The American mink, the spotted genet, and the Eurasian otter. *Acta Theriologica* 53(3):263-273.
- Scalici M, Belluscio A and Gibertini G (2008). Understanding population structure and dynamics in threatened crayfish. *Journal of Zoology* 275(2):160-171.
- Shechter A, Glazer L, Cheled S, Mor E, Weil S, Berman A, Bentov S, Aflalo ED, Khalaila I and Sagi A (2008). A gastrolith protein serving a dual role in the formation of an amorphous mineral containing extracellular matrix. *Proceedings of the National Academy of Sciences, USA* 105 (20):7129-7134.

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