



# MONOCULUS Copepod Newsletter

*The Newsletter of the World Association of Copepodologists*

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**Each number of *MONOCULUS* is announced on:**

Copepoda List [copepoda@listas.usp.br](mailto:copepoda@listas.usp.br)

Crust-L [crust-l@vims.edu](mailto:crust-l@vims.edu)

ALCA [alca@ola.icmyl.unam.mx](mailto:alca@ola.icmyl.unam.mx)

Planktonnet [planktonnet@yahoogroups.com](mailto:planktonnet@yahoogroups.com)

Copepod List [copepods@yahoogroups.com](mailto:copepods@yahoogroups.com)

## Message from the President

As newly elected President I would like to introduce myself to members. Throughout my career at the National Institute of Water and Atmospheric Research in New Zealand I have had two specialties: open ocean ecosystem functioning and calanoid taxonomy and systematics based primarily on the fauna of the south-west Pacific Ocean. Over the years I have lead interdisciplinary oceanography programmes and played the role of integrator of data from several oceanographic disciplines. This work has led me to realize that copepods are rarely primary herbivores and that protozoa are very important components of the food of planktonic copepods. I have also come to see biomass and species composition of copepod populations as being the result of all processes ending in copepod death. Because of my dual research focus, it has taken me a long time to build up experience in calanoid copepod taxonomy and systematics. Now I am retired I am able to devote more time to this subject and hope to be able to contribute in a more concrete way to testing hypotheses concerning calanoid phylogeny. I intend to work with others to integrate external morphological, genetic, behavioural, anatomical and biochemical data into taxonomy and systematics.

I thoroughly enjoyed the copepod conference in Pattaya, Thailand. Professor Dr La-orsri Sanoamuang and her team pulled together a well-organised, very successful meeting. Besides conference attendees being introduced to the faunas of various regions of the globe and habitats it was pleasing to see some emphasis on aspects of copepodology that are important to humans. Prominence was given to the use of cyclopoid copepods in the biological control of larvae of disease-bearing mosquitoes, parasitic copepods, the causes and consequences of copepod mortality, the biology of *Tigriopus*, and most importantly, genomics and copepods.

Grace Wyngaard, Carol Lee, James Bron and Stewart Johnson led a workshop aimed at promoting copepods as the subject of increased genetic attention. The benefits of knowing copepod genomes were outlined as an approach to addressing questions of

broad scientific interest (e.g. evolution and development), as well as more focused problems (e.g. controlling copepod pathogens in aquaculture). Much discussion was devoted to how recent and projected advances in genomics technologies are reducing the cost and time for obtaining whole genome sequences and performing functional genomics studies that could be applied to understanding copepod biology. Early this fall, more than 10,000 ESTs and partial sequences of *Calanus finmarchicus* were posted on Genbank, an endeavor aimed at understanding the underlying drivers of their physiology. Of interest to our U.S. members is the fact that the US National Institutes of Health (NIH) have recently added *Daphnia pulex* to their list of targeted special model organisms. NIH has historically funded projects on close relatives of their model organisms, and thus new funding opportunities may benefit copepod workers. The field of copepod genomics is moving forward rapidly and the time seems ripe to engage in these efforts.

I would like to see WAC promote the use of genetics across a wide front beyond especially barcoding. The apparent simplicity of barcoding has been a major selling point, although it cannot deliver all that it promises for both theoretical and practical reasons. Barcoding is of value where a sound taxonomic framework already exists and there is a need for specific diagnostic services – forensic screening (e.g., monitoring of fish markets for illegal catch), for some biosecurity applications, and in medical screening. But barcoding needs to be seen for what it is – another source of data. Understanding the genomes of copepod models will enable a deeper set of questions to be addressed.

— Janet Bradford-Grieve, President  
National Institute of Water and Atmospheric Research,  
New Zealand



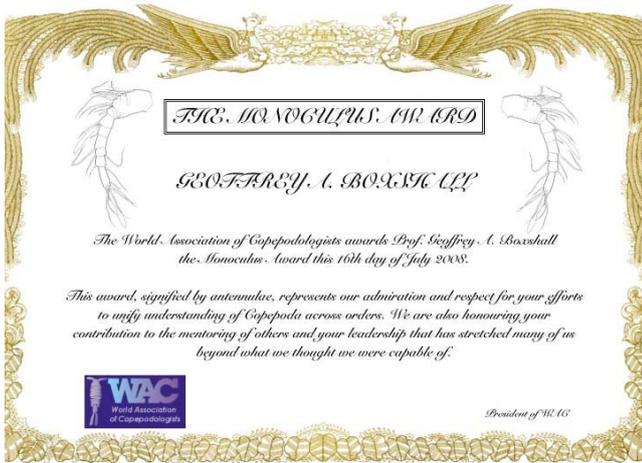
### Monoculus Award to Geoff Boxshall and Kurt Schminke

On the occasion of the 10<sup>th</sup> ICOC, a memorable milestone in the WAC history, a special “Monoculus Award” was presented to Geoff Boxshall and Kurt Schminke for their exceptionally devoted service and contributions to the activities of the WAC. The ceremony was held during the banquet in Nong Nooch Tropical Garden, after a relaxing mid-conference excursion. The certificates and glass plaques with symbolic copepod appendages (antennulae for Geoff and swimming legs for Kurt) were presented by WAC President Shin-ichi Uye. In place of Kurt, who was unable to attend the conference, Ruth Böttger-Schnack received the certificate and plaque to transmit to Kurt.

The certificate given to Geoff reads “This award, signified by antennulae, represents our admiration and respect for your efforts to unify understanding of the Copepod across orders. We are also honouring your contribution to the mentoring of others and your leadership that has stretched many of us beyond what we thought we were capable of.”

Kurt’s award reads ‘This award, signified by swimming legs, represents our appreciation for your untiring contribution to WAC over many years, propelling us forward. We especially honour your contribution to starting, editing and nurturing the publication of the newsletter “Monoculus”, a forum for debate and information exchange among the community of copepodologists.’

— Shin-ichi Uye, Past President



## Awards for Best Student Presentations

Five students received awards recognizing the high quality of their research and presentations at the Pattaya conference. As at past conferences, the judges were deeply impressed by the fine work of all the participants, and wished that everyone could have been equally recognized. Sakiko Sakaguchi and Shinsuke Saito, who received the best poster and oral presentation awards, have contributed articles for *Monoculus*. Their essays follow.

### Oral Presentation Awards

#### 1. Best Student Oral Presentation Award

Shinsuke Saito and Nozomu Iwasaki (Kochi University, Japan)

**Title:** Life History and Host Specificity of Harpacticoid Copepod *Idomene* sp. (Thalestridae) Associated with a Compound Ascidian *Aplidium yamazii*

#### 2. Excellent Student Oral Presentation Award

Christopher K. Ellison and Ronald S. Burton (Scripps Institution of Oceanography, U.S.A.)

**Title:** Disruption of Mitochondrial Regulatory Network in Interpopulation Hybrids of *Tigriopus californicus*

### Poster Presentation Awards

#### 1. Best Student Poster Presentation Award

Sakiko Sakaguchi, H. Ueda, S. Ohtsuka, H. Y. Soh, Y. H. Yoon, and M. Tanaka (Kochi University, Japan)

**Title:** Brackish-water Calanoid Copepod Faunas in Western Japan in Comparison with those in Neighboring Korean Waters

#### 2. Excellent Student Poster Presentation Award

Hyeon Gyeong Jeong, H. Y. Soh, and H. L. Suh (Chonnam National University, Korea)

**Title:** A New Species of *Labidocera* (Copepoda, Pontellidae) in the South Sea of Korea, with Redescription of the Closely Related Species *L. rotunda*

#### 3. Excellent Student Poster Presentation Award

Martin Krajiček and M. Cerný (Charles University in Prague, Czech Republic)

**Title:** Genetic Diversity of Central European *Cyclops* (Crustacea, Copepoda) Species

### “The Best Student Poster Award at the 10<sup>th</sup> ICOC Held in Thailand”

I am very honored to receive the Best Student Poster Award from the 10<sup>th</sup> International Conference on Copepoda

(10<sup>th</sup> ICOC). This award has given stronger confidence to my study.

My thesis was simple. The idea is to compare brackish-water calanoid copepod faunas from western Japan with those in Korean waters. However, the survey needed perseverance, to research various estuaries one by one, especially in Japan. Consequently, the study got very interesting results, that the faunas differ between the two countries, and it indicates that the Korea Strait has been a significant barrier between Japanese and Korea brackish-water copepods. This study was a collaborative research with Korea. I got a lot of input from Japanese and Korean researchers. I am grateful to them. This award has been an encouragement to continue this zoogeographical study. Now, I am dedicating to research the estuaries in the Kuroshio Current area. I am studying regional, ecological and systematic zoogeography of brackish-water copepods in this area.

I was really glad to attend the 10<sup>th</sup> ICOC. I had the opportunity to listen to many interesting studies and to exchange information about worldwide copepods. It excited me to meet and talk to copepodologists from all over the world and students similar to me. This made me even more interested in copepodology. After this award I've become even more enthusiastic about my study.

— Sakiko Sakaguchi  
Usa Marine Biological Institute  
Kochi University, Japan

### “I esteem it a great honor to receive the Best Student Oral Presentation Award at the 10<sup>th</sup> ICOC held in Thailand”

It was a great honor to receive the Best Student Oral Presentation Award from the 10th International Conference on Copepoda (ICOC) held in Thailand. It was totally unexpected, because I thought there were so many excellent oral presentations given by young researchers. I would like to express sincere thanks to all the members of the committee of the 10<sup>th</sup> ICOC for evaluating my study, and thanks are also due to all the participants who saw my presentation.

I have been working on an ecological study of the copepod *Idomene* sp., which is closely associated with the compound ascidian *Aplidium yamazii*, since I found their symbiotic relationship in 2004. *Idomene* sp. is symbiotically associated with seven species of compound ascidians, and shows the highest host specificity to *A. yamazii*. This copepod lives in common cloacal cavities of the colony of *A. yamazii*, and its life history is closely related to the seasonal occurrence of the colonies. I have an interest in their unique

relationship and the mode of life of this copepod. To present my study to the ICOC was one of my aims during my days in the doctoral course at Kochi University. I could realize my hope, and I could give a presentation on host specificity, seasonal variations, and food habit and life history of *Idomene* sp. at the 10<sup>th</sup> ICOC. Thankfully, I had the honor of receiving the Best Student Oral Presentation Award, which encourages me toward further study.

During the 10<sup>th</sup> ICOC, I had much opportunity to discuss my study with eminent and young copepod researchers. They kindly gave me valuable advice on my study and information on various aspects of the symbiotic and parasitic copepods. I believe all the experience at the 10<sup>th</sup> ICOC will be valuable for my future research career.

— Shinsuke Saito  
Usa Marine Biological Institute  
Kochi University, Japan

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### All Issues of *Monoculus* Are Now Available on the WAC Website

The WAC webmaster Rubens Lopes and his team have completed the job of scanning the old numbers of *Monoculus*, and now all the issues of *Monoculus* (from No. 1 through this No. 56, in addition to supplements) are available on the WAC website. Prior to No. 44, the first on-line newsletter in 2002, the *MONOCULUS* were hardcopied booklets (being typewritten in the beginning), and were mailed to each member. The first *MONOCULUS* was published (edited by Kurt Schminke and produced by Gerd Schriever) in October 1980, a year prior to the first ICOC held in Amsterdam. Since then, the newsletter has appeared biannually, aiming to provide a means of mutual communication among copepodologists and a forum for informal discussion on copepodology. The enthusiasm of *MONOCULUS* readers established formally the World Association of Copepodologists (WAC) during the second ICOC in 1984 in Ottawa. The *MONOCULUS* newsletters are written documents of past history and current activity of the WAC, and will be continued as long as both copepods and copepodologists exist.

— Shin-ichi Uye, Past President

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WAC Past President Shin-ichi Uye, wearing the model of maxillipeds. Shin is standing in front of a poster of the giant jellyfish *Nemopilema nomurai*, which was the theme of his Maxilliped Lecture in Pattaya: “Human Forcing of the Copepod-Fish-Jellyfish Triangular Trophic Relationship.”

### History of the Maxilliped Lecture

The “Maxilliped Lecture,” given by the outgoing President of the WAC, is a traditional event at each ICOC. At Pattaya, Past President Kurt Schminke was to have introduced President Shin-ichi Uye prior to Shin’s lecture. Unfortunately, Kurt was unable to attend the conference, but he sent the following message.

#### Dear Copepodologists,

It would have been a great pleasure for me to introduce the “Maxilliped Lecture” of our President Shin-ichi Uye. Indeed, this is the last official task for a Past President and there could not be a better one. For reasons of health I am unable to do it personally today. I am very sad because I also wanted it to be a sign of friendship of which I have experienced so much from Shin. I have taken part in all conferences so far and therefore want to look back.

When last time in Hammamet I delivered the lecture myself, I remember being asked why it is called the “Maxilliped Lecture.” Most of the story can be found in earlier issues of *MONOCULUS*, except for the name of the initiator. This was Chris Corkett, the first, as the Founding President Bob Kabata used to call it, real General Secretary of our Society, who has also been very active during the founding phase. In a letter Kabata asked me what I thought about Corkett’s suggestion of instituting an Invitational Lecture at our meetings. The idea was unanimously approved by all members of the “provisional” Executive set up by the Founding President.

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As for the name, Corkett suggested to call it after Marshall and Petipa, but others argued, why these two? Why not Sars or Claus or van Beneden? So Corkett wrote to Kabata, "My proposal for naming of an Invitational Lecture after Marshall and Petipa does not appear to have general support so perhaps it is better to have a prosaic name for the Lecture as has been proposed." This was done by Kabata when he wrote 'As to the name of the lecture, it should be a name with a clarion ring to it, recognizable by all copepodologists. Should we decide to give it a special name, not name it by someone, then something like a "Monoculus Lecture", or, why not, "Maxilliped Lecture". Whatever we name it, the very fact that we consider it an honour to be invited to give, will impose on it its own splendour.' The proposal caught on and Kabata wrote 'I was delighted to hear that you liked my slightly frivolous suggestion to name the invited lecture the "Maxilliped Lecture". After all, why not? I am sure that it would catch on very quickly. A new group like ours should make its own traditions. What might seem rather crazy at first, with time will become a hallowed custom and people will give their eye teeth to be "Maxilliped Lecturers".'

Initially intended as a lecture to honour distinguished copepodologists, it ended in the combination of two honours, that of being President of WAC and that of giving the lecture. Corkett had foreseen this when he wrote "Alternatively a tradition could be developed where the President gives the Presidential Lecture as I understand has been arranged for the London meeting." So it was. The first "Maxilliped Lecture" was given by the Founding President Kabata, and this was the beginning of a trend that became the rule when the second President Jan Stock was also asked to give the Lecture. In the introduction to his "Maxilliped Lecture" Stock defined the rules as he understood them. The Lecture should be *ex cathedra*, meaning, as he ironically put it, "that someone old enough not to allow any discussion after his presentation, presents just a couple of philosophical thoughts." The Lecture should "review a broad field on some aspect of copepodology, rather than novel discoveries" and it should "follow the trend that it is helpful to be the President of the WAC." Together with the first by Kabata, seven "Maxilliped Lectures" have been delivered so far. Today we shall hear number eight. It has also become a tradition to keep the topic secret right until the beginning, so that the first excitement is to come to know what it is about.

And not to forget, there finally is a last tradition, also suggested by Chris Corkett and put into practice a few conferences later. Kabata wrote to me 'You might be interested to know that Chris Corkett was quite ready to accept "Maxilliped Lecture" as a title for the proposed invitational event. He even went so far to suggest that we should think about making a model of a maxilliped to be presented to the speaker.' Here it is. The names of all the lecturers so far are engraved on the maxillipeds. I hand them over to today's speaker. They are meant as a sign of the

unity of all copepodologists, and also the "Maxilliped Lecture" has the task not mentioned by Jan Stock of strengthening this unity. Here are the maxillipeds, which I hand over in Shin's custody to be brought to the next meeting, where it will be his task to introduce the next "Maxilliped Lecture."

Sincerely,  
Horst Kurt Schminke

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## Crustacean Society Summer Meeting Shinagawa, Japan — September 2009

Dear Copepodologists of the world,

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/cs/j4/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 (Phyllozoa, Sarsostraca), REMIPELIA (Enantiopoda, Nectiopoda), CEPHALOCARIDA, MAXILLOPODA [Thecostraca (Facetotecta, Ascothoracida, Cirripedia), Tantulocarida, Branchiura, Pentastomida (Cephalobaenida, Porocephalida), Mystacocarida, Copepoda (Calanoida, Cyclopoida, Gelyelloida, Harpacticoida, Misophrioida, Monstrilloida, Mormonilloida, Platycopeioida, 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)]

Symposia currently planned include;

- Life History Migrations of Freshwater Shrimps: Ecological and Adaptive Significance (Raymond T.

## New Books and Websites

- Bauer, Univ. Louisiana, U.S.A. & Hiroshi Suzuki, Kagoshima Univ., Japan)
- Phylogeography and Population Genetics in Decapod Crustacea (Christoph D. Schubart, Univ. Regensburg, Germany)
  - Speciation and Biogeography in Non-Decapod Crustaceans (Christoph Held, Alfred Wegener Inst. Polar Mar. Res., Germany)
  - Crustacean Chemoreception: Identification of Cues and Their Applications (Charles Derby, Georgia State Univ., U.S.A., & Miguel V. Archdale, Kagoshima Univ., Japan)
  - Integrative Biology: Crustaceans as Model Systems (Antonio Baeza, Smith. Trop. Res. Inst., U.S.A.)
  - Ecology and Behavior of Peracarids: Progress and Prospects (Masakazu Aoki, Tsukuba Univ., Japan) and Martin Thiel (Univ. Católica Norte, Chile)
  - Reproductive Behavior of Decapod Crustaceans (Keiji Wada, Nara Women's Univ., Japan, & Satoshi Wada, Hokkaido Univ., Japan)
  - The New Perspective on Barnacle Research (Toshi Yamaguchi, Chiba Univ., Japan.)
  - Symbiosis in Crustaceans: Diversity and Evolutionary Trends (Susumu Ohtsuka, Hiroshima Univ., Japan)
  - Current Status of Fisheries and Biological Knowledge of Snow and Tanner Crabs Genus *Chionoecetes* in the World (Hiroshi Motoshima, Japan)
  - Diversity and Ecology of Thalassinidean Shrimps (Gyo Itani, Kochi Univ., Japan)
  - Impacts of Human Exploitation on Large Decapod Resources (Taku Sato, Fish. Res. Agen., Japan)
  - Conservation biology of freshwater crayfishes. New challenges from Japan, Eastern Asia (Tadashi Kawai, Wakkanai Fisheries Experimental Station, Japan)

Organizing Committee: Keiji Baba (Chair, Professor Emeritus, Kumamoto University; President, Carcinological Society of Japan), Akira Asakura (Secretary General, Natural History Museum and Institute, Chiba), Katsuyuki Hamasaki (Tokyo University of Marine Science and Technology), Keiji Wada (Nara Women's University), Michio Imafuku (Kyoto University), Kooichi Konishi (National Research Institute of Aquaculture, Fisheries Research Agency), Seiichi Watanabe (Tokyo University of Marine Science and Technology).

Local Host Organization: Carcinological Society of Japan  
[Web-site: <http://wwwsoc.nii.ac.jp/cs4/Eng/index-e.html>]

For further information, see the meeting website  
<<http://wwwsoc.nii.ac.jp/cs4/TCSFirstPage1.html>>  
or contact:

Akira Asakura, Secretary General, The Crustacean Society  
Summer Meeting in Tokyo, Japan, in 2009  
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— Susumu Ohtsuka  
Hiroshima University, Japan

**Веслоногие ракообразные отряда  
Harpacticoida Белого моря:  
морфология, систематика, экология  
(Copepod Crustaceans of the Order  
Harpacticoida of the White Sea:  
Morphology, Systematics, Ecology)  
By P. N. Kornev and E. C. Chertoprud  
2008. Biology Faculty, Moscow State University.  
Tovarishchestvo Nauchnikh Izdaniy KMK, Moscow.  
Hard cover. 379 pp. ISBN 978-5-87317-410-2. In  
Russian.**

Participants in the 10<sup>th</sup> ICOC had the opportunity to examine copies of this book, which were brought by Elena Chertoprud. The nicely produced volume principally emphasizes morphology and systematics. Of the accounts of 87 genera and 159 species that are provided, nearly all are illustrated (including, in some cases, naupliar stages), with a basic diagnosis and information on their general and local distributions. Full descriptions of 21 species that are new to science are given; 4 new genera, and 1 new family are proposed. There are keys to families and genera.

There are also chapters on the morphology and general ecology of harpacticoids, the geographical area covered, and the regional biogeographical relationships. The bibliography and index are detailed and carefully done. This is a valuable addition to the growing body of compendia on regional faunas. For anyone who is interested in the taxonomy and systematics of the Harpacticoida, even for those who do not read Russian, the many high-quality illustrations make this an essential addition to the professional library.

— Jan Reid

## A Manual of Zooplankton Kareem Altaff, Editor

**2004. Compiled for the National Workshop on  
Zooplankton, Chennai, 5-10 July 2004. Unit of  
Reproductive Biology and Live Feed Culture,  
Department of Zoology, The New College,  
Chennai, India. 155 pp.**

This competently produced manual is a fine example of the many handbooks that are produced locally and do not usually receive the general distribution that they deserve.

# Guide to the Marine Zooplankton of south eastern Australia

By Kerrie M. Swadling, Anita S. Slotwinski,  
David A. Ritz, John A. E. Gibson and Graham  
W. Hosie

Version 1.0 June 2008  
www.tafi.org.au/zooplankton

*From the website:* “an interactive tool providing a comprehensive, fully illustrated means of identification for the major zooplankton located in south eastern Australia. This interactive key enables rapid identification of over 50 zooplankton taxa. Also included are fact sheets covering taxonomic information, descriptions, photographs, diagrams, distribution information and ecology.”

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## Minutes of the WAC Business Meeting on July 18, 2008, in Pattaya, Thailand

The President called the Business Meeting to order at 16:45. First of all, he acknowledged all officers of the WAC in this term, for their continuous support of various activities of the WAC. He mentioned that the triennial International Conference on Copepoda (ICOC) is the most important activity of the WAC, where members of the WAC in good standing can present papers. However, it appears that the numbers of members in good standing are limited and many nominal members have not paid their dues on a regular basis. He asked all attending members to pay their dues on this occasion. He also emphasized the necessity to amend some WAC by-laws because they are out of date.

The President chaired the Business Meeting following the agenda printed in the WAC Business Report, which was distributed to all members during the meeting.

### 1. Major activities of the WAC for the term 2005-2008

The President read the following activities.

- 1) Support for Thai local organizing committee of the 10<sup>th</sup> ICOC
- 2) Handling of membership and membership fees
- 3) A special project: updating the WAC membership database
- 4) Updating the WAC website
- 5) Publication of the WAC newsletter (*Monoculus*)

### 2. Financial statement (see Page 8)

The President explained the major expenses.

### 3. Proposal of auditor post (amendment of WAC By-Laws)

The President explained that it is a general practice for an organization such as the WAC to have Auditors, and

proposed the creation of this position. The appointment of Auditors is clarified in a new Article 7. He also proposed the amendment of the current Article 3, to clarify which positions are to be elected by members and which are to be appointed by the President.

### Article 3: Officers

The officers of the WAC shall be a President, a Vice-President, a Past President, a General Secretary, a Treasurer, a Local Secretary, an Editor, a Webmaster and up to five Council Members, comprising the Executive Council. The term of office of all officers will be coincident with the interval between two successive meetings of the WAC. The President, Vice-President, General Secretary, Treasurer and Council Members shall be elected by the membership. The Local Secretary, Editor and Webmaster shall be appointed by the new President. After completion of one elected term as President, the President will serve a second term as Past President. All officers shall be eligible for re-election, but the Vice-President and Council Members shall serve no more than two consecutive terms.

### Article 7: Auditors

Two Auditors shall be appointed by the new President. The Auditors shall audit the accounts of the Treasurer and report the status of the accounts at the business meeting of the WAC.

(Addition of this Article 7 makes the current Articles 7-14 slide to Articles 8-15)

The proposed amendments were approved unanimously.

### 4. Proposal of amendment of WAC by-laws about Membership

The President commented that the current process to become a WAC member is out of date and needs to be simplified.

### Article 1: Membership

Any person interested in any aspect of the study of Copepoda is eligible for membership in the WAC. Applicants for membership must send an application form by mail to the General Secretary, and pay the annual dues two years in advance to the Treasurer. The Executive Council confers on those who have completed these processes the status of a member.

The proposed amendment was approved unanimously.

### 5. Report from the General Secretary

#### 5-1. Approval of candidate members

The General Secretary read the names of 43 candidate members. All of them were approved as Regular Members by acclamation.

#### 5-2. Statistics of the WAC membership

The General Secretary explained, using a PowerPoint presentation, the year-to-year changes and geographical distribution of the membership.

#### 6. Report from the *Monoculus* Editor

The Editor encouraged all attendees to submit any news to the newsletter *Monoculus*. Numbers of *Monoculus* published in this term: 50, 50 supplement, 51, 51 supplement, 51A supplement, 52, 52 supplement, 52A supplement, 53, 53 supplement, 53A supplement, 54, 54 supplement, 54A supplement, 55, 55 supplement, 55A supplement

#### 7. Report from the Webmaster (see Pages 8-10)

In the absence of the Webmaster, the President summarized the excellent work of updating the WAC website and membership database conducted by the Webmaster and his team. The generous financial support (i.e., 3,037 USD) from the University of São Paulo for this project was greatly appreciated. He also emphasized the importance of continuously updating this project, for which the WAC should provide support.

#### 8. Report from the Local Secretary

The Local Secretary reported that there are 203 participants from 38 countries. She also announced that the manuscripts presented in this Conference will be published in a special issue of *Hydrobiologia*, following appropriate peer review.

#### 9. Elections of Officers

The President asked for further nominations from the floor, in addition to the previously nominated candidates whose names were preprinted on a paper ballot. There was no nomination. The President informed the members that the election would be by plurality of the votes, and appointed Mark Ohman to supervise the counting of the votes.

The following officers were elected:

President: Janet Bradford-Grieve

Vice-President: Rony Huys

General Secretary: Eduardo Suárez-Morales

Treasurer: John Fornshell

Council Members: Victor Alekseev, James Bron, Dagmar Frisch, Erica Goetze, and La-orsri Sanoamuang.

Mark Ohman read the names of the elected officers, and the President congratulated them.

#### 10. Venue of the 11th ICOC

India and Mexico both proposed hosting the 11<sup>th</sup> ICOC. After presentations about venues, conference facilities, supporting organizations, local food and tourism, etc., Mexico was chosen to be the next host country by a majority of votes. The city of Mérida in the Yucatán Peninsula is the proposed venue. The President expressed his thanks to the Indian delegates.

The President adjourned the Business Meeting at 18:15.

### WAC Financial Statement for the period 2005 through June 1, 2008

(by John Fornshell, Treasurer)

Beginning balance January 1, 2005.....	USD\$28,127.31
Membership dues paid.....	3,656.92
Interest earned.....	275.21
Postage for mailing <i>MONOCULUS</i> .....	(14.27)
Charge for wiring travel grants.....	(80.00)
Charge for tracing seed money sent to the 9 <sup>th</sup> ICOC	
Organizing Committee.....	(45.00)
Student travel grants.....	(1,884.55)
Student Awards at the 9 <sup>th</sup> ICOC.....	(1,600.00)
Balance December 31, 2005.....	28,435.62

Beginning balance January 1, 2006.....	28,435.62
Membership dues paid.....	791.88
Interest earned.....	611.69
Postage for mailing <i>MONOCULUS</i> .....	(43.46)
Balance December 31, 2006.....	29,795.73

Beginning balance January 1, 2007.....	29,795.73
Membership dues paid.....	280.00
Interest earned.....	712.91
Postage for mailing <i>MONOCULUS</i> .....	(20.63)
Seed money for the 10 <sup>th</sup> ICOC in Thailand.....	(1,500.00)
Support of updating the WAC website and membership	
database.....	(3,300.00)
Banking fees.....	(40.00)
Balance December 31, 2007.....	(25,928.01)

Beginning balance January 1, 2008.....	25,928.01
Membership dues paid.....	310.00
Postage for mailing <i>MONOCULUS</i> .....	(13.23)
Interest earned.....	156.99
Balance June 1, 2008.....	\$26,381.77

#### WAC Website and Database Update Report (by Rubens Lopes, Webmaster, submitted July 10, 2008)

**José Eduardo Martinelli Filho, Márcio H. Ohkawara, Caio Caciporé Ferreira, Newton A. Aquino, Ana Freitas, and Rubens Mendes Lopes (WAC website and membership database update team)**

##### 1. A brief introduction

The WAC has a primary objective: to unite people with common interests in the diverse research fields on copepods, by facilitating communication between scientists and providing various environments for discussion of up-to-date copepodological themes. For this reason, updating the WAC website and WAC membership database is fundamental.

However, they were not revised or uploaded since 2002-2003.

The database is now updated, clearer and has an easy access from a link on the WAC homepage (<http://www.monoculus.org/public.htm>). A member can be searched either by his or her surname, institution, country or research field. The WAC website (<http://www.copepoda.uconn.edu/index.htm>) has gone through some minor changes in design, but has been updated in most of its topics.

### 2. Updating the WAC website

Several minor changes were done in the website design. Font size was increased and colors were standardized. Links as *Wac Home*, *Officers*, *Meetings*, *Copepod resources*, *Related Websites* among others were renewed with additional material and information. The *Monoculus Newsletter* and literature supplies were regularly posted as pdf files at the proper link (<http://www.copepoda.uconn.edu/newsletter.htm>). Diverse homepages were added in Related Websites and all the links were tested, so old references or changes in domains were updated and are working perfectly.

The WAC homepage has been constantly updated with news about meetings, courses and publication of the *Monoculus Newsletter*. Announcements of the 10<sup>th</sup> ICOC had a special place between the news on the WAC homepage. At last, some old links and files were removed and website is lighter now.

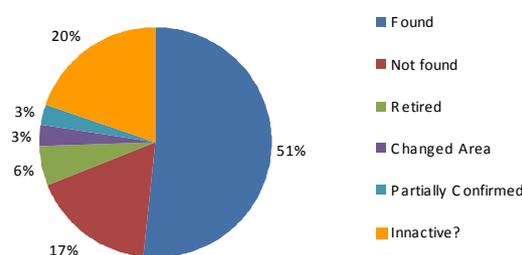
### 3. Updating the membership database

The database is hosted in Germany (dzmb1.biologie.uni-oldenburg.de). Using the software My SQL Query Browser, we were able to export the old database and create a backup, clean the old records and insert the new ones as spreadsheet files (csv format). The database was updated by converting the old database into a xls extension using Microsoft Excel. Most of the scientist information were searched using Google or scientific databases such as Web of Science, Ocean Experts, Zoological Records, Biological Abstracts, Oceanic Abstracts, Wilson Biological and Agricultural Index and ASFA. The requested format is: *name, surname, title, institution, address1, address2, address3, city, state, postal code, country, research field, e-mail, login, password, membership status, membership amount for this year, year of first membership, total years of membership, dues paid, and observations*.

The fields of membership status, membership amount for this year and observations were replaced with a numerical code (Table 1). A total of 1185 members are presently included on the database (Fig. 1). The major countries in terms of number of membership are listed in Table 2.

**Table 1: Code used to insert the data into the spreadsheet files and databank.**

<b>Membership status</b>	1	Paid or waived
	2	Dues pending
	3	Former active member
	4	Not a WAC member
<b>Membership amount for this year</b>	0	Not paid
	1	Paid
<b>Observations</b>	0	Active copepodologist
	1	Non copepodologist
	2	Retired
	3	Deceased
	4	Unknown whereabouts



**Figure 1: Percentage of scientists in each category created during the database update.**

A total of 1185 members are presently included on the database. 51% are active members with full information, 3% are lacking some of the fields, 20% are inactive and 6% are retired or passed away, 3% moved to another field and 17% were not found.

**Table 2: Number of copepodologists found in the major countries listed above.**

USA	222	Ukraine	20
Brazil	84	Belgium	19
Japan	77	Netherlands	17
Germany	70	Argentina	16
Canada	64	Korea	16
United Kingdom	61	Mexico	15
India	55	Denmark	14
France	51	South Africa	14
Australia	33	Chile	11
Italy	33	China	11
Russia	25	Turkey	11
Taiwan	24	Sweden	10
Spain	23	New Zealand	10
Norway	22		

### 4. Chronology

A chronological table provides the activities performed and the time consumed in each of the tasks.

**Table 3: Tasks concluded and time used in each of them.**

Tasks performed	Approximate time consumed (h)
Website design	25
Website update	20
Files uploads (e.g. Monoculus)	5
Databank Troubleshooting	30
Members searching and updating	400
Spreadsheet formatting	40
Database testing and uploading	5
Monoculus scanning	80

**Table 4: Tasks to perform and estimated time.**

Website design	30
File uploads	6
Database testing and troubleshooting	5
Monoculus scanning	30

*5. Expenses*

Cost per hour	15.00 BRL / 9.37 USD (very low!)
Total of hours:	676 (performed + estimated)
Total cost:	10,140.00 BRL / 6,337.00 USD
WAC support:	5,280.00 BRL / 3,300.00 USD
LAPS/USP support:	4,860.00 BRL / 3,037.00 USD (donation to WAC)

*6. Future activities*

Further work is necessary to improve the website functionality. A new design is under construction using the Dreamweaver software.

## Revised WAC Bylaws

As described in the text of the “Minutes,” the President and WAC Executive Committee recommended several changes in the “Bylaws” (the WAC Constitution). All of the changes were approved unanimously, and the revised Articles 1 and 3, and the new Article 7 now read as follows. The current Bylaws will be posted on the WAC Website.

**Amendment of “Article 1: Membership”**

*Any person interested in any aspect of the study of Copepoda is eligible for membership in the WAC. Applicants for membership must send an application form by mail to the General Secretary, and pay the annual dues two years in advance to the Treasurer. The Executive Council confers on those who have completed these processes the status of a member.*

**Amendment of “Article 3: Officers”**

*The officers of the WAC shall be a President, a Vice-President, a Past President, a General Secretary, a Treasurer, a Local Secretary, an Editor, a Webmaster and up to five Council Members, comprising the Executive Council. The term of office of all officers will be coincident with the interval between two successive meetings of the WAC. The President, Vice-President, General Secretary, Treasurer and Council Members shall be elected by the membership. The Local Secretary, Editor and Webmaster shall be appointed by the new President. After completion of one elected term as President, the President will serve a second term as Past President. All officers shall be eligible for re-election, but the Vice-President and Council Members shall serve no more than two consecutive terms.*

**New “Article 7: Auditors”**

*Two Auditors shall be appointed by the new President. The Auditors shall audit the accounts of the Treasurer and report the status of the accounts at the business meeting of the WAC.*

**(Addition of this Article 7 makes the current Articles 7-14 slide to Articles 8-15)**

## New WAC Treasurer

**John Fornshell** has resigned as Treasurer. He was only the second member to hold this office, having succeeded **Gerd Schriever**. The new Treasurer is **Chad Walter**. John’s and Chad’s reports follow.

**Dear WAC Membership:**

It is not possible for me to execute my function as Treasurer without attending the tri-annual conferences. It now appears that financial changes are being considered, which will make significant changes in the WAC's future activities. It would be better if someone who can attend conferences and interact with the Officers/Executive Council directly while the changes are being made were to become the Treasurer. I am therefore resigning as of Friday August 8, 2008.

I will transfer the WAC's Bank account to the new Treasurer after the account has been audited.

I wish to thank the membership of the WAC for electing me to this position five times. It has been an honor to serve the World Association of Copepodologists.

Sincerely,

**John A. Fornshell, Ph.D.**

Beginning balance January 1, 2008 .....	\$25,928.01
Membership dues paid .....	\$770.00
Postage for mailing <i>MONOCULUS</i> .....	\$26.05
Banking fees .....	\$7.00
Interest earned .....	\$238.82

Balance on September 30, 2008 ..... \$26,903.78

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### From the New Treasurer

An audit of the books of the World Association of Copepodologists was conducted by Grace Wyngaard and T. Chad Walter during November 2008. This audit considered the books held by the past Treasurer John Fornshell during his tenure from 1997 to 2008. The audit found that the books and finances of the Association were maintained properly and followed standard financial procedures.

As of September 30, 2008, the WAC has \$30,433.78 in funds. This includes the dues collected at the 10<sup>th</sup> International Conference on Copepoda held in Thailand last July, totaling \$3,530.

I was appointed as Treasurer of WAC last month. I hope to be able to serve the Association by attempting to increase our financial basis, and updating and maintaining the membership list on the WAC website. This membership list will allow us to know who the current members are, and the members will also be able to update their own information as needed. I have experience at being a treasurer, having just completed a 15-year term as the treasurer of the Biological Society of Washington. In the next newsletter, I will be able to further explain the plans being formulated to help improve the Association's financial status.

— T. Chad Walter  
Washington, D.C., U.S.A.

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### News from or about Members

**Ryuji Machida** was awarded the 2007 Okada Prize of the Oceanographic Society of Japan for his paper "Evolutionary genetic studies of marine zooplankton with future perspective." The article was published in 2008 in the *Journal of Oceanography* 17(2):115-132. Many congratulations!

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### New Addresses or E-mails

#### **Maria Cristina Bruno**

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Centro di Ricerca  
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#### **Eduardo Suárez-Morales**

esuarez@ecosur.mx  
*Note: This is a change of domain, applicable to all staff members at ECOSUR.*

#### **Diana Galassi**

dianamariapaola.galassi@univaq.it

#### **Samuel Gómez**

samuelgomez@ola.icmyl.unam.mx

### New Members

Melanie Andrews, Australia; Apostol Apostolov, Bulgaria; Jinwook Back, Korea; Ashley Bush, U.S.A.; Paulo Henrique Corgosinho, Germany; Elena Fefilova, Russia; Claudia Halsband-Lenk, U.K.; Jung-Ho Hong, South Korea; Koorosh Jalilzadeh, India; Samba Kâ, Senegal; Renuga Kasi, India; Kichoon Kim, South Korea; Deng-Ju Lee, South Korea; Jae-Seong Lee, South Korea; Seughan Lee, South Korea; Ione Madinabeitia, Japan; Luiz Felipe Mendes de Gusmao, Australia; Nancy Mercado-Salas, Mexico; Seong Yong Moon, Korea; Takumi Nonomura, Japan; Agun Arif Ozak, Turkey; Ajcmapaporn Piumsambaan, Thailand; Ramanibai Ravichandran, India; Marina Shedko, Russia; Helena Smith, U.S.A.; Lauree Stober, U.S.A.; Jennifer Roberds, U.S.A.; Patricio de los Ríos, Chile; Phong Tran Vu, Vietnam; Marianne Wootton, U.K.

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### Editor's Notes

In the wake of the landmark 10<sup>th</sup> International Conference on Copepoda, this number of the Newsletter is largely given over to news from the Conference and business matters of the WAC. I take the opportunity to express my own thanks and appreciation for the great efforts of La-orsri Sanoamuang, her colleagues, and all the students in organizing the Conference in Pattaya. It was a profitable and enjoyable occasion in many ways, like all the conferences before; and was marked especially by the impressive contributions of the younger colleagues and students. Those of us who were able to participate will always remember the kind hospitality of the Thai people, and especially the staff of the Asia Pattaya Beach Hotel.

For their contributions and assistance for this number, I am very grateful to Janet Bradford-Grieve, John Fornshell, Susumu Ohtsuka, La-orsri Sanoamuang and her students, Sakiko Sakaguchi, Shinsuke Saito, Kurt Schminke, Eduardo Suárez-Morales, Shin-ichi Uye, Chad Walter, and Grace Wyngaard; and as always to Rubens Lopes for his essential help and invaluable advice. Thanks to Rubens' students, especially José Eduardo Martinelli Filho, for their help in editing and posting the Newsletter and Supplements.

— Jan Reid, Editor  
Martinsville, U.S.A.

**WAC Executive Committee  
2008-2011 Term**

**President:**

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National Institute of Water & Atmospheric Research  
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**Past-President:**

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**Appointed Positions:**

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**Webmaster:**

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**Membership in the WAC:** Any person interested in any aspect of the study of Copepoda is eligible for membership in the WAC. Contact the General Secretary for an application form and other information.

**Dues:** Dues of US \$20.00 per annum are payable by all members. Members who have difficulty paying dues may apply to the President and the Executive Council for a waiver or reduction. Dues may be paid in advance. WAC accepts personal checks issued in local currencies, made payable to WAC. Checks should be sent by mail to the Treasurer of the WAC. Dues may also be paid in person at WAC conferences. Members who are more than two years in arrears will automatically have their membership terminated.

**Newsletter:** All members receive the newsletter *MONOCULUS*, which appears at least once a year, in electronic or printed versions.

**Copepod Libraries: Monoculus-Library:** C/o Prof. Dr. Pedro Martínez Arbizu, Forschungsinstitut Senckenberg, DZMB-Forschungsinstitut Senckenberg, Monoculus-Library, Suedstrand 44, D-26382 Wilhelmshaven, Germany.

**C. B. Wilson Library:** C/o Mr. T. Chad Walter, Smithsonian Institution, Museum Support Center, MRC 534, 4210 Silver Hill Road, Suitland, MD 20746, U.S.A.