

# MONOCULUS

Copepod Newsletter



Nr. 43

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April 2002

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# MONOCULUS

Copepod Newsletter

Number 43

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Cover: Cartoon showing the "international flight" of copepods to the EICOC in Keelung 2002 (by Hans-U. Dahms)

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Birthdays this year:

85: Vervoort, W.

80: Dussart, B. H.

75: Ackman, R. G.

Conover, R. J.

Fryer, G.

Hülsemann, K.

Kajihara, J.

Marinov, T.

Oishi, S.

Saraswathy, M.

70: Chen, Q.-C.

Flössner, D.

Gooding, R. U.

Koga, F.

Minoda, T.

Mohammed, A. A.

Montschenko, V.

Naidenow, W.

Sherman, K.

Watson, N. H. F.

The MONOCULUS homepage is available from the www-server under:

<http://www.hrz.uni-oldenburg.de/monoculus>.

Deadline for the next issue of MONOCULUS: 30th September 2002

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### EDITORIAL

The EIGHTS in a series of International Copepod Conferences is approaching soon. This time it will take place for the first time in Keelung (Taiwan), and the second time in Asia after we had the FOURTH International Copepod Conference in Karuizawa, Japan in 1990. As the preliminary program shows, the upcoming conference will provide a diverse spectrum of research disciplines focussing along research themes (copepods in aquaculture, copepods and pollution), or specific habitats (the significance of small copepods in estuaries, neritic waters, and the open sea; copepods in deep-sea habitats), methodological questions (molecules *versus* morphology), and general aspects (the importance of a natural system of the Copepoda).

For me the most fascinating aspect of studying the universe of biological performances of a particular taxon is its evolutionary approach: showing the broad diversity of organismic copepod structure, as well as their molecular, physiological, and behavioural performances in the context of populations and communities adapted to their particular environments through geological time towards nowadays selection scenarios. This way the whole range of biological attributes can be studied and compared through various methodical approaches and biological disciplines using one evolutionary unit – the Copepoda – as a model. This allows a comparison of attributes of closely or distantly related taxa within a smaller evolutionary unit. Temperature acclimation for instance, besides its nongenetic plasticity, shows a genetically based taxon-dependent range. The same holds for instance for tolerance to pollutants, locomotory capability, reproductive performance or structural characters. Only a taxon-based comparison also considering geographical differences, will provide insights in the variability of such characters, the range and speed of their evolutionary transformations and the actual selection forces driving them through time and space. This way, it could be very elucidating for say a planktologist studying the interrelationship of egg-size and egg-number of her/his favoured calanoid species to compare this with its next or distant relatives (even representatives of other copepod orders) along gradients between temperature or nutritional extremes, freshwater/ seawater, benthic/ pelagic, freeliving/ associate etc. This he/she may do in order to get a better cue of the actual driving forces behind. Only this kind of approach will offer explanations for the evolutionary causes of copepod biodiversity. Such a comparative method, cautiously applied, will also provide assumptions of some generality by transferring the evidences from copepods to other taxa. Thus, providing at least conceptual models for the explanation of biodiversity within other taxa of living organisms as well.

We acknowledge in particular the contributions of J.A. Fornshell, K. Nagasawa and J.-s. Hwang. As readers of the MONOCULUS newsletter, please, don't hesitate to send us all information that you consider as interesting to the editor. Candidate members – without further notice – are requested to send a short biography.

For some time MONOCULUS has been gathering reprints in the MONOCULUS library. You will find these here under "LITERATURE" marked by an asterisk. Therefore, keep or put the MONOCULUS Library (Oldenburg) as well as the WILSON Library (Washington) on your mailing list.

## Final announcement for 8<sup>th</sup> ICOC

Dear members and non-members of World Association of Copepodologists (WAC):

We are delighted to invite you to attend the 8<sup>th</sup> International Conference on Copepoda (ICOC), to be held at the National Taiwan Ocean University (NTOU) in Keelung, Taiwan, during the period of 21-26 July, 2002.

The International Conference on Copepoda is held every three years to provide students and members of the World Association of Copepodologists (WAC) as well as any person who is concerned of copepod research with an excellent opportunity for discussing major advances and important issues in contemporary copepodology, identification of the challenges that lie ahead, and renewing old friendships and initiate new ones.

We are fortunate to have many experts from the World Association of Copepodologists (WAC), the National Taiwan Ocean University (NTOU) and the National Museum of Marine Biology & Aquarium (NMMBA) participating in planning this Conference, along with many colleagues who form the Local and International Organizing Committees. All committee members have worked diligently to identify both interesting and important subjects to be discussed, and select top-notch copepodologists from around the world to speak and/or chair the interesting sessions planned. Besides attending the daily meetings, you may also enjoy the many attractions of Taiwan in the mid-term and post-conference tours. What better place than Taiwan there is in July, 2002!

Additions and Amendments to previous Announcements:

### 1) Early Bird Registration and Abstract Submission

Some copepodologists, particularly of those from developing countries, have no access to website or received the information of the 8<sup>th</sup> ICOC very late. They asked to postpone the deadline of the early bird registration for the 8<sup>th</sup> ICOC. We have responded to this request and have, therefore, postponed the deadlines for early bird registration and abstract submission to May 1<sup>st</sup>, 2002. Please submit your abstracts and registration form according to the instructions described in the third announcement or on the website.

### 2) Hotel Accommodation

Those who have not yet made hotel reservations through the Congress secretariat but still wish to do so, are urgently asked to submit relevant details for facilitating hotel reservation. Those who prefer to save money in lodging can book the university student dormitory through the Congress Secretariat. All necessary information are available from the website

### 3) Transportation

All registrants are requested to inform the Congress Secretariat of their flight schedule, including inbound and outbound flight number and the time and date of arrival and departure.

A shuttle bus will be available from 08:00 to 21:00 on July 21, 2002 for transporting attendees from CKS International Airport to each of the contracted Congress hotels. A shuttle bus will be available from 08:00 to 21:00 again on July 27, 2002, taking attendees from each of the contracted Congress hotels to CKS International Airport. The shuttle bus will be provided free of charge by LOC on July 21 and July 27 only to the registrants of the 8<sup>th</sup> ICOC. On July 21, 2002, our staff with the ICOC logo will be at the counter of the Tourism Bureau situated on the right side as you exit from the customs. Transportation from CKS International Airport to downtown Keelung takes about one and one-half hours.

Those who do not wish to take the arranged shuttle bus, or arrive after the shuttle bus service hours, may take either the bus of            or            to the Taipei Central Railway Station (app. 60 minutes). Tickets can be purchased at the Bus Ticketing Office located on the left side after you pass through customs. Bus ticket costs NT\$120 and buses depart every 20-30 minutes. The last bus leaves the airport at 01:30 (after midnight). From the Taipei Central Railway Station you can take the bus, train or taxi to Keelung to near any of the contracted Congress hotels (app. 60 minutes). The cost for taxi fee will be about NT\$ 700 (about US\$ 20) and bus NT\$ 45 from Taipei to Keelung.

You may also take a taxi directly from CKS International Airport to your hotel in Keelung, which will cost around NT\$1,800. As taxi drivers only speak limited English, you are advised to prepare a note stating the hotel's name and address in Chinese. You will find Keelung City Map from website with full name and address of all Congress hotels in Chinese and English.

The LOC has raised enough fund to cover local transportation, mid-term conference tour (National Palace Museum and Metropolitan Taipei), proceedings of the conference, and most of the food cost during conference for all registrants. We encourage members or non-members of WAC to submit your registration form and abstract to the Congress Secretariat of the 8<sup>th</sup> ICOC as soon as possible. If you have any question, please do not hesitate to contact us.

We are looking forward to seeing you in July.

Jiang-Shiou Hwang, Ph. D.  
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Chairman, Local Organizing Committee  
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P.O. Box 68-439, Taipei, Taiwan  
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### Financial report for the WAC

This includes the dues payments through January 1, 2002. The financial statement is below:

Beginning balance January 1, 2001	\$21,237.64
Membership dues paid	1,289.15
Banking fees	30.00
Interest earned	585.34
Conversion of back issues of MONOCULUS to electronic format on The Copepod List WEB site	1,000.00
Check Returned	60.00
End of year balance December 31, 2001	22,022.13

There have been many changes in the international banking system this year. There are three (3) ways to pay your dues: (I) If your bank has an office in the Unites States, you may write a check or money order in US dollars. (II) If your bank does not have an office in the United States you may write the check in your native currency. The banking charge for such a deposit is \$3.00 US Dollars by our bank and any additional charge from the bank of origin for the check. In most cases this latter charge is relatively small or not existent. (III) You may pay your dues in U. S. dollars at the meeting.

John A. Fornshell, treasurer (Alexandria)



## GREAT AWARD TO THE FORMER WAC PRESIDENT, PROFESSOR JU-SHEY HO

Professor Ju-Shey Ho of California State University, the former president of WAC (1996-1999), received a great award (The Science and Engineering Achievement Award), generally called "Taiwanese Nobel Prize", for his great contributions to copepodology from the Taiwanese-American Foundation (TAF) in November 2001. This prize has been awarded to those people who love Taiwan, identify Taiwan as their homeland, and who have achieved on outstanding accomplishment in their own fields or in any of the following three categories, irrespective of nationality: science/engineering, social science, and social services. The Special Contribution Award and The Youth Civil Leaders Award were also given to Dr. Ho. He had been recommended as a candidate by the North American Taiwanese Professors' Association, which resulted in his being awarded in 2001.

The Taiwanese-American Foundation was established in November 1982 in Southern California. The founder is Mr. Ken-John Wang of Long Beach, California who was originally from Taiwan. He built up his savings for running hotels in the U.S.A. and recognized that there was no prize for those who contributed to Taiwanese societies. He generously contributed one million dollars following the example of Alfred Nobel. In 2001, the former general of the Government of Taiwan, Dr. Teng-Hui Lee also won the Special Contribution Award (see website: <http://www.TAFAward.com>).

The celebration ceremony was prosperously held at the Grand Hotel in Taipei on November 17, 2001. He accompanied his dearest wife, Pao-Hie (Betty) Ho, as usual. We can see the winners' good faces in the ceremony program booklet. He thinks that his award could not be accomplished without her devoted assistance.

Dr. Ho's award is ascribed not only to his daily continuous efforts in copepodology, including activities in the WAC, but also to his warm-hearted attitudes toward his friends, colleagues and students. We can readily understand this, seeing that he has found more than 1,000 species of parasitic copepods (only several hundreds of species were published in over 150 papers), and that three genera and seven species of parasitic copepods were named in honor of him (*Hoia hoi*; *Jusheyhoea macrurae*; *Jusheus shogunus*; *Anuretes hoi*; *Heteranthessus hoi*; *Heterochondria hoi*; *Lichomolgus hoi*; *Neobrachiella hoi*). He has been extensively cooperating with other copepodologists in the world, and training up his successors such as Dojiri, Perkins, Benz, Deetz, Tang, and Kalman (see attached letters). Additionally his award evidently means that copepodology is recognized as an important field for the human society. Currently he has been busy with helping Prof. Jiang-Shiou Hwang, a chief organizer of the Eighth International Conference on Copepoda to be held in Taiwan in the summer of 2002.

One of the authors (SO) happened to be a guest researcher at Dr. Ho's laboratory, when he received the award, and could directly give blessing to him. Also, SO interviewed Dr. Ho about his award and could hear of his frank opinions about it, in which we can see his view of life. (Q): question from SO; (A) answer from Dr. J.-S. Ho.

(Q) What about your first impression to hear of your being awarded from TAF?

(A) I was deeply surprised to hear that a copepodologist could be awarded.

(Q) Do you think that both your research in copepodology and educational/social activities were highly evaluated?

(A) I think so.

(Q) What does this award mean in your life?

(A) Since I wish to continue to study until my last breathing, this award has greatly encouraged me. I will make much more efforts to educate young generations in the fields of biodiversity, in particular, in Taiwan, and basic sciences rather than molecular biology. I am now writing a textbook entitled "Sea lice of Taiwan", and am cheered up by this award.

(Q) To whom do you express your sincere thanks?

(A) First of all, I express my sincere thanks to my wife, Betty. I would not have been awarded without her assistance. When I made a speech in the ceremony party, I stressed this. Although she has always been saying that she could help him much more if she would become a biologist, I am completely

satisfied to see that she has been skillfully handling complex domestic things and been devoted to the development and growth of our two children. Moreover I must be indebted to the late Dr. Arthur G. Humes. He even now remains to be my teacher. His sincere and gentle attitude to me has brought up me. I am proud of being one of his students. I had never seen him in anger except for one time when his taxonomic paper on parasitic copepods was insulted. His spirit will be succeeded through me to the next generations forever.

Kazuya Nagasawa  
Nikko Branch, National Research Institute of Aquaculture  
Nikko, Tochigi 321-1661, Japan  
and  
Susumu Ohtsuka  
Fisheries Laboratory, Hiroshima University  
Takehara, Hiroshima 725-0024, Japan

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I met Dr. Ju-Shey Ho in the fall of 1974 while I was a master's degree candidate in the Department of Biology at California State University, Long Beach (CSULB). Initially at CSULB to study under the guidance of another parasitologist, I quickly switched to Dr. Ho after a chance meeting. My decision to choose him as my graduate advisor was influenced by his helpfulness and extensive knowledge of marine biology; however, it was his congenial personality that impressed me most at the time. After several meetings, he accepted me as his graduate student, and we quickly became close friends.

During this period, Dr. Ho and I published three papers together. His flexibility and easy acceptance of criticism (even from a "lowly" graduate student) are traits of his that are still clearly etched in my mind. He made it obvious that his main objective was to advance scientific knowledge by producing the best research that he possibly could; positive criticism was and still is readily accepted by him. It is this open-mindedness that allows him to be such an excellent scientist

I received my B.A. from the University of California, Santa Barbara, my M.A. from California State University, Long Beach, and my Ph.D. from Boston University at the Woods Hole Marine Biological Laboratory. I completed a postdoctoral fellowship at the Smithsonian Institution in Washington, D.C., taught at Georgetown University, and worked at the Smithsonian Oceanographic Sorting Center. I have met with, corresponded with, and read papers by scientists from all over the world, but none have impressed me as much as Dr. Ju-Shey Ho. He is truly a remarkable scientist and unique human being. His attributes are many; his research is superb; he has contributed greatly to science; and he is extremely deserving of the prestigious Taiwanese-American Foundation Award. I wholeheartedly recommend him for this award without hesitation and without reservations. He is one-of-a-kind; there simply can be no better person for this award. The numerous scientific achievements of Dr. Ho's are summarized below.

Dr. Ho is an internationally renowned and respected scientist, having conducted field work in Taiwan, Ecuador, Peru, Australia, Indonesia, Japan, Caribbean Sea, North Atlantic, eastern South Pacific, Thailand, Malaysia, as well as off the coasts of the United States. He has been a visiting scientist at the Smithsonian Institution in Washington, D.C., the British Museum (Natural History) in London, various institutions in Beijing and Qingdao in the People's Republic of China, the Zoologiske Museum in Copenhagen, the University of Gdansk in Poland, and various oceanographic institutes in Korea, Thailand, Malaysia, India, and Taiwan. Currently, he has joint research projects with scientists from Russia, Kuwait, India, Thailand, and Korea. In addition, he has lectured and conducted workshops in parasitology and phylogenetics (cladistics), thus educating other scientists in various universities and marine laboratories in many countries including Japan: Sado Marine Biological Station, Niigata University; Noto Marine Biological Laboratory, Kanazawa University; Seto Marine Biological Laboratory, Kyoto University; Laboratory of Marine Biology, Kochi University; Otsuchi Marine Research Center, University of Tokyo; Akkeshi Marine Biological Laboratory, Hokkaido



University. Finally, he recently completed a sabbatical leave to Taiwan to study copepods parasitic on fishes of Taiwan during the 1997-98 academic year.

A great honor bestowed upon Dr. Ho was his selection to the committee for the International Prize for Biology in honor of Emperor Hirohito of Japan. It is not surprising that out of all the scientists in the world from which to choose, one of the scientists selected for this prestigious committee was Dr. Ho. Certainly scientists from all over the world recognize his scientific stature.

California State University, Long Beach, where he has been employed as a professor since 1970, has recognized the many scientific and teaching accomplishments of Dr. Ho by awarding him the Distinguished Faculty Scholarly and Creative Achievement Award in 1986, and from 1987-89 the Meritorious Performance and Professional Promise Award. Both these awards are presented only to excellent professors at this university who have displayed exceptional qualities in research and teaching.

Dr. Ho is an active member of ten professional organizations and was on the executive council of one of them, the World Association of Copepodologists from 1987-1993 and is currently the vice-president of this organization. This is an international organization which was established in 1981 and has several hundred members. He is also an official reviewer (editor gratis) of no less than 14 internationally-recognized, peer-reviewed scientific journals which include *Science*, *Journal of Parasitology*, *Bulletin of Marine Science*, and *Journal of Crustacean Biology*. From 1996-98, Dr. Ho continued to be an Associate Editor for the *Journal of Crustacean Biology*.

Several universities and institutions have requested Dr. Ho to present seminars and workshops. He has never, to my knowledge, refused an offer, always seeming to find time from his hectic schedule to teach his various research methods and his diverse knowledge to his scientific peers. He has presented seminars on topics as diverse as parasites as biological tags, origin and dispersal of hakes (fishes), evolution of specific families of copepods, phylogeny of a single order of copepods, symbiotic organisms found on copepods, symbiotic organisms of hermit crabs, coevolution between parasites and their hosts, cladistics, and evolution of sharks and rays. These were presented all over the world: Federal Republic of Germany, Taiwan, Japan, Poland, The Netherlands, Canada, Guam, People's Republic of China, Korea, England, and Thailand. Dr. Ho is truly an international scientist in every sense of the word.

His scientific fellows have selected Dr. Ho as chairman of four symposia concerning marine biology in Long Beach (USA), Japan, Canada, and England, and also one on "Education in Taiwan". The latter symposium held in Taipei reflects his concern for education and for his continued interest and love of his native land. In fact, he has served on the Board of Governors of the North American Taiwanese Professors' Association since 1985 and was the President of the Southern California Chapter from 1985-86. Additionally, he was elected as the President of the Taiwanese-American Foundation. The above positions and the positions he held as chairman of the Marine Program (1981-84) and chairman of the East Asian Exchange Program (1988-91) at the California State University, Long Beach, indicates his experience and abilities in administration and leadership.

Dr. Ho has 180 publications either published or in press. This is a remarkable record for any scientist for an entire career, but is truly astounding when one considers that he is only 66 years old. During his graduate school years at Boston University, Dr. Ho authored 27 scientific papers before he received his Ph.D. in 1969, a feat unmatched by any graduate student. His dissertation was a monographic revision of an entire parasitic copepod family. This *magnum opus* is arguably the finest monographic revision of a copepod family ever completed; it is thoroughly researched, flawlessly written, and beautifully illustrated by him.

Dr. Ho ranks as one of the top three scientists in his specific field of interest. He is one of the most painstakingly careful and precise systematist I know. He is also one of the most versatile scientists living today, entering into specific fields of study outside his original expertise of copepodology and taxonomy. His publication list encompasses such diverse topics as descriptions of new taxa (families, genera, and species) of copepods, descriptions and life histories of marine organisms, symbionts of other marine invertebrates (mollusks, corals, polychaete worms, starfishes, sponges, tunicates, sea

anemones, hermit crabs, nautilus, sea cucumbers, and sea lillies), progenetic males, parasites as indicators of the origin and dispersal routes of the hakes (fishes), parasites of deep-sea fishes, zoogeography of mussels using parasites as indicator tags, sterility in a sipunculan worm, phylogeny and biogeography of surfperches, internal anatomy and feeding of a parasitic copepod, phylogeny of several copepod families, histological investigations of parasitic copepods, and phylogeny and historical ecology of a parasitic copepod family. The number of very different subject matters listed above are quite impressive and is the hallmark of Dr. Ho's ability to conduct excellent research on any topic. A high caliber scientist should be able to conduct research in any field, given the background knowledge. I feel that Dr. Ho is one such scientist. His interest, keen eye, insight, care, and thoroughness are his forte, but it is his love for science and research that is the core of this unique person.

Dr. Ho has a great deal of experience writing grant proposals, specifically to the National Science Foundation (NSF) in Washington, D.C. His grant proposals are well-researched and beautifully written. I have personally reviewed his proposal on a family of parasitic copepods known as the Chondracanthidae and also had the opportunity to write three grant proposals concerning cladistic analysis of the Taeniacanthidae, copepods parasitic on fishes and sea urchins. The latter proposal investigated the phylogeny of the fish order Tetraodontiformes using parasitic copepods as indicators of their evolution. All his proposals have been well-received by grant review panels and highly rated. He has also served as reviewer for many NSF grant proposals in the past.

For all the above reasons, Dr. Ho is ideal for the Taiwanese-American Foundation Award. His unique skills, unmatched knowledge, varied abilities, strong leadership, magnanimous nature, congenial personality, contributions to the Taiwanese-American Foundation and North American Taiwanese Professors.

Respectfully submitted,

Masahiro Dojiri, Ph.D.  
Regulatory Affairs Division  
Hyperion Treatment Plant  
12000 Vist del Mar  
Playa del Rey, CA 90293, USA

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To The WAC membership and beyond,

Congratulations to Professor Ju-shey Ho for recently being presented the prestigious Science and Engineering Achievement Award from the Taiwanese-American Foundation (TAF). It's been said that in some respects, organizations give their highest awards to themselves... that is, to individuals so special and deserving that the award honors both recipient and donor. I believe this to be true and admirable, and I congratulate TAF for its generosity and vision in establishing its achievement award and for its selection of Professor Ho as its most recent recipient.

While I was not a formal student of Dr. Ho, he has heavily influenced my career and personal life. Throughout the almost 2 decades of our friendship he has assisted me on numerous occasions regarding scholarly matters. Friendships developed with his former students such as Drs. Gregory Deets and Masahiro Dojiri (themselves exceptional copepodologists who were trained by Dr. Ho) have been further influential, allowing me to benefit from Dr. Ho's expertise and mentorship as promoted by his disciples. While I feel extremely lucky to have benefited in these ways, I know I'm not alone. I'm aware of the thousands of classroom students taught by Dr. Ho, of the scores of students and scientists that have profited from visits to the Ho laboratory, of the countless beneficiaries of his numerous scholarly outreach training trips both domestically and abroad, and of the worldwide impact of his exemplary scientific publications.

But beyond academic and professional matters, I'm appreciative to Dr. Ho for his friendship. It's all too often unusual for high caliber and highly productive scientists to be approachable and even sometimes cordial. However, Dr. Ho uses his gifted personality to make students feel at home and welcome as copepodologists. For example, I first met Dr. Ho in person at the Second International Conference on Copepoda in Ottawa in 1984. I will never forget our chance meeting one evening, at which time we drank beer and discussed copepods. Memories of that night remain very special to me, not just because of the subject matter of our conversation, but moreover because Dr. Ho made me feel as if my studies and interest were important. These types of experiences can represent critical punctuation marks in student development, and since that meeting I have watched Dr. Ho sincerely and seemingly effortlessly repeat this pattern with others and myself on many occasions. In short, Dr. Ho is deserving of the highest praise that can be bestowed on an exceptional scientist... good friend, solid citizen, and sincere personality.

We of course are lucky as copepodologists to have elder statesmen like Dr. Ho, and I'm overjoyed to be writing this letter of thanks and congratulations to the Taiwanese-American Foundation and to Professor Ho.

Kai, with my greatest appreciation I thank you for being there for us.

Cheers to you from us all and may your antennae always remain young,

George W. Benz, Ph.D.  
Copepodologist and Director, Tennessee Aquarium Research Institute  
Chattanooga, Tennessee 37401, USA

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I would like to personally congratulate my mentor Ju-Shey Ho, Ph.D., for being honored with the Science and Engineering Achievement Award by the Taiwanese-American Foundation (TAF).

I was a young crazed, long-haired, untamed bodysurfer, who spent more time in the water than on land back then. Hence, I was stunned that Dr. Ho asked me if I was going to continue on in academics, and if so.... he would be glad to be my advisor.

Dr. Ho was infamous in the Marine Biology Department at California State University, Long Beach for being the most demanding of all the instructors. His Invertebrate Zoology course was legendary. Just uttering those words created unfathomable anxiety throughout the student body. To just survive the class was equivalent to some spiritual experience or right of passage. But now, being a student of someone with these exalted standards must make the class a cakewalk in comparison. This is when I started drinking.

What does he see in me? Good God, what is he thinking? How in the hell am I going to pull this off?

Anyway, with his kind and gentle guidance I was forced to take a class load that equaled or superceded that required by most Doctoral programs in the most prestigious schools. Of course I balanced this with an "equally light" four years of fieldwork in the Southern California Bight and Sea of Cortez hacking up literally thousands of shark and ray gills and olfactory bulbs in search of *Kroyeria*, *Kroeyerina*, and *Eudactylina*. This was only outdone by the amount of stipples applied to stacks of vellum while learning to illustrate the minutiae on these tiny microscopic animals with Dr. Ho's constant encouragement....."do it again." Christ.

Interestingly, though I was in a parasitology lab, Dr. Ho was subtly teaching me NOT to be a parasite, but to be an independent entity, capable of trailblazing paths I had never traveled before. This was to enable me to meet any new challenges in life, including the often most important ones that lie outside of academia. Because of this hybrid mentoring between simple academics and the more convoluted nuances of sociology I was able to continue on my career and eventually finish a long and arduous Doctorate degree.

Dr. Ho's relentless tenaciousness to effort and detail rubs off on anybody who is fortunate enough to have worked with him. Yet, he is one of the most gentle and funniest people that one could find. Indeed, when I was his student and even less conservative than I am today, he once looked at me and said "Gleg, you are not of the norm." This became a hysterical running joke throughout the department about me (which he probably never knew), but after so many years I am honored to have a chance to bring this full circle and in the most flattering sense say, "Dr. Ho, you are not of the norm!" And this is absolutely true, and exactly why you are who you are and why you are receiving this honored commendation.

Congratulations, we are all so proud.

As always,

Greg

(ps. for god's sake will you dissect the nose out of a whale shark for me next time you're in Taiwan?)

Gregory B. Deets, Ph.D.  
(Water Biologist / Raving Cladist)  
Environmental Monitoring Division  
Hyperion Treatment Plant  
12000 Vist del Mar  
Playa del Rey, CA 90293, USA

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I was very pleased to hear from Dr. K. Nagasawa that Dr. Ju-Shey Ho had received a prestigious award from the Taiwanese-American Foundation. It is fantastic Dr. Ho's lifelong commitment to copepodology, particularly his research in the taxonomy and evolution of the parasitic groups, has been recognized by the TAF organization.

I was introduced to Dr. Ho when I enrolled in his invertebrate zoology course as an undergraduate student. His course was considered to be the most intensive and demanding subject within the entire biological sciences department, and thus many biology students feared him. In contrast, I found Dr. Ho's course extremely interesting and exciting, and as a person he is approachable, easy-going, and always has a smile on his face.

I feel fortunate and honored to have had Dr. Ho as a thesis advisor. His expertise, generosity, and patience tremendously benefited my graduate studies in the U.S. I am grateful for his continued guidance and helpful insights regarding my current research interests.

Congratulations to Dr. Ho for receiving the 2001 TAF Science and Engineering Achievement Award!

Sincerely,

Danny Tang  
Department of Zoology  
The University of Western Australia  
Crawley, Western Australia 6009

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I was not surprised when I heard Dr. Ju-Shey Ho was receiving an award for his contributions to science, particularly his research of the taxonomy and phylogeny of parasitic copepods.

I first met Dr. Ho as an undergraduate student at California State University, Long Beach when I enrolled in his Invertebrate Biology course. Although I heard it was the hardest and most difficult class on campus, I enrolled in it anyway (never mind it was required for me to graduate). And to my surprise I loved the class and was absolutely fascinated with Dr. Ho. My interest in parasitic copepods began and shortly after I became Dr. Ho's last graduate student.

I feel extremely lucky and honored to have studied under him. His guidance and support (and sense of humor) has motivated me to continue my research at University of California, Los Angeles. And to this day I still swamp him with questions and pick his brain with research ideas and he always seems to find time for me. I always leave his office with a smile and look forward to our next visit. I look at Dr. Ho as a role model, not only for my self, but also for every biologist who aspires to make a difference in their field.

Congratulations to Dr. Ho for receiving the Taiwanese-American Foundation Science and Engineering Achievement Award.

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## BOOK REVIEW

16. **Introduction to the Copepoda** (2<sup>nd</sup> edition) by **B. H. Dussart** and **D. Defaye**. Guides to the Identification of the microinvertebrates of the Continental Waters of the world. Coordinating editor H. J. F. Dumont (344 pp)

Copepods are associated with the aquatic environment. In oceans and lakes, they proliferate in pelagic waters as well as on, and even within the sediments. In freshwaters too, they are present in many different biotopes, as well as in the humid litter of deciduous forests, in decaying leaf-mould of hollow trees, inside ant nests and so forth. There is hardly any controversy that copepods play an important role in ecosystems, by virtue of their place in food webs, as parasites, as well as their potential to be used by man in various ways. Whether free-living or parasitic, copepods have adapted themselves to aquatic and humid ecosystems, irrespective of altitude, area or continent. In spite of the constant increase of knowledge of this group, the continuous discovery of new species, genera and even families, their relationships are still under discussion. In inland waters, copepods are relatively well known, at least at the family level, but numerous species remain to be discovered particularly in deep interstitial waters and in tropical regions.

There is hardly any other comprehensive account for the Copepoda of inland waters than the 1<sup>st</sup> edition of the "Introduction to the Copepoda" being revised and enlarged by the second edition presented here. This is an impressive compendium that introduces and discusses the whole range of organismic diversity of copepods from continental waters written by two established experts in the field - Drs. Bernard H. Dussart and Danielle Defaye. These two authors give a rather general introduction to all major research areas dealing with the organismic biology of the Copepoda in general and particular those from continental waters including some relevant cytological and biochemical aspects. It is appreciable that both authors had the mettle and perseverance to put together the scattered literature and to present it in an easy-to-use tome for the convenience of other workers in the field who are less familiar with copepod biology.

This monograph contains twelve chapters, ranging from methodological aspects to the morphology, anatomy, biology, reproduction, ecology, dispersal and distribution of copepods from continental waters. Besides and most valuable there are keys to orders, families and genera, as a description of practical methods for identification, as well as brief diagnoses of genera of the Calaniformes, Cyclopiformes and Gelyelliformes providing the bulk of planktonic copepod species of inland waters. Most instructive is a general index to terms and names of taxa.

The book profits from an ample glossary including all major morphological terms currently in use as well as those which should be avoided. The bibliography is not exhaustive - nevertheless, it provides a wide base for the initial reader or even expert in certain fields of freshwater copepodology. Concluding from the available information, major bias and gaps in our present knowledge of copepods are identified and discussed as to their potential significance in future research. A natural approach is adopted, in which copepods are viewed as active players in the complex network of interactions within communities of organisms.

The 2<sup>nd</sup> edition profits especially from an addition of new literature sources and an update of systematic alterations and amendments. The taxonomic treatment of the genera and species are clinical and sharp, and all are well illustrated in as far as their diagnostic characters are concerned. It would have been useful, of course, if overall descriptions of more taxa were provided - notwithstanding the fact that many do resemble each other closely.

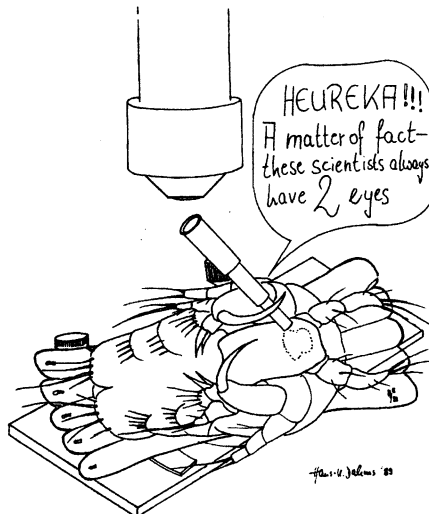
In general, the book is well written, and it clearly benefits from the research experience of the authors. It contains a wealth of useful information for the freshwater biologist doing systematic, biological or ecological research in this field. It is unfortunate that all illustrations are taken from published results. It would have been instructive to add newly generated diagrammatic illustrations, e.g. for methodological approaches, habitats, geographical and seasonal distributions, population biology *etc.*

This book is primarily a practical guide, intended to provide the reader, both, with a general idea of what a freshwater copepod is, and in particular as an identification aid to major taxa. It will also serve as an introduction to the literature and as a basis for further study. The bibliography is not exhaustive, but has been constructed to pave the way for further research.

Regardless of minor shortcomings the book represents a valuable and timely resource. All in all Bernard Dussarts and Danielle Defayes effort is a major contribution to limnology and another milestone in our ongoing endeavours to provide copepod information for a broader field of users. It will certainly not run the risk of not having the impact expected in addressing only a small audience of systematic experts. Libraries with a focus on biological limnology and oceanography and organismic biology should have this book on their shelves. For the moment, scholars of organismic life sciences are well advised to recommend the acquisition of this book to their institution libraries. I guess the book will be widely read and influential in the field.

However, as the authors admitted themselves: "Such a guide is a shortlived tool in time: our knowledge of freshwater copepods has increased considerably during the last few years in systematics, as in physiology, behaviour, ecology, and biogeography, and it is likely that this second edition will soon be outdated." Stating this, on the other hand, is a promising indication of proliferative research itself.

Hans-U. Dahms (Oldenburg)



**... LITERATURE LITERATURE LITERATURE ...**

(Sources marked by an asterisk\* have been donated to the MONOCULUS library)

**1983**

- \*Hoffmeyer, M.S. 1983.  
Zooplankton del area interna de la Bahia Blanca (Buenos Aires – Argentina).  
I –Composicion Faunistica. Hist. Natural, Corrientes, Argentina, 3, 8:  
73-94.

**1986**

- \*Hoffmeyer, M.S. 1986.  
Algunas observaciones sobre la alimentacion y tolerancia a la temperatura en larvas  
y juveniles Atherinidae (Pisces: Teleostei) de la bahia Blanca. Spheniscus, 4: 33-37.

**1990**

- \*Hoffmeyer, M. S. 1990.  
Algunas observaciones sobre la alimentacion de Mnemiopsis mccradyi Mayer, 1900  
(Ctenophora, Lobata). Iheringia, Ser. Zool., Porto Alegre (70): 55-65.

**1994**

- \*Hoffmeyer, A.S. 1994.  
Seasonal succession of Copepoda in the Bahia Blanca estuary. Hydrobiologia  
292/293: 303-308.
- Ranga Reddy, Y. 1994.  
Copepoda: Diaptomidae. Guides to the identification of the microinvertebrates  
of the continental waters of the world. SPB Publishers, The Hague, 5: 1-221.

**1996**

- \*Vilela, M.H. & Lopez-Ruiz, J. 1996.  
Primeiros ensaios de utilizacao de produtos de natureza zeolitica no crescimento  
do copepode Tigriopus brevicornis Müller. Cienc. Biol. Ecol. Syst. (Portugal), 16  
(1/2): 119-130.

**1997**

- \*Ban, S, Burns, C., Castel, J., Chaudron, Y., Christou, E., Escribano, R., Umani, S.F.,  
Gasparini, S., Ruiz, F.G., Hoffmeyer, M., Ianora, A., Kang, H.-K., Laabir, M.,  
Lacoste, A., Miralto, A., Ning, X., Poulet, S., Rodriguez, V., Runge, J., Shi, J.,  
Starr, M., Uye, S.I. & Wang, Y. 1997.  
The paradox of diatom-copepod interactions. Mar. Ecol. Prog. Ser. Vol. 157: 287-293.
- \*Hoffmeyer, M.S. & Figueroa, P.M. 1997.  
Integumental structures in the oral field of Eurytemora affinis and Acartia tonsa  
(Copepoda, Calanoida) in relation to their throphic habits. Crustaceana 70 (3): 257-  
271.

**1999**



- \*Galassi, D.M.P., Laurentiis, de, P., Dole-Olivier, M.-J. 1999.  
Nitrocrellopsis rouchi sp.n., a new ameirid harpacticoid from phreatic waters in France (Copepoda; Harpacticoida: Ameiridae). *Hydrobiologia* 412: 177-189.
- \*Tang, K. W., Dam, H.G., Visscher, P.T. & Fenn, T.D. 1999.  
 Dimethylsulfoniopropionate (DMSP) in marine Copepods and its relation with diets and salinity. *Mar. Ecology Progress Series*, Vol. 179: 71-79.

## 2000

- \*Hoffmeyer, M.A., Frost, B.W. & Castro, M.B. 2000.  
Eurytemora americana Williams, 1906, not Eurytemora affinis (Poppe, 1880), inhabits the Bahia Blanca estuary, Argentina. *Sci. Mar.*, 64(1): 111-113.
- \*Lacuna, D.G. & Uye, S.-I. 2000.  
 Effect of UVB radiation on the survival, feeding, and egg production of the brackish-water copepod, Sinocalanus tenellus, with notes on photoreactivation. *Hydrobiologia* 434: 73-79.
- \*Ohtsuka, S., Nagasawa, K. & Gejima, K. 2000.  
 Review of parasites of marine zooplankton. *Bull. Plankton Soc. Jpan* 47 (1): 1-16.
- \*O'Reilly, M. 2000.  
 Notes on copepod parasites of phyllocoid polychaete worms in Scottish Waters; including the first UK records of the Mediterranean copepod Phyllocoida petiti (Delamare-Deboutteville & Laubier, 1960). *Glasgow Naturalist* 23 (5): 39-44.
- \*O'Reilly, M. 2000.  
 The copepod Hemicyclops aberdonensis (Poecilostomatoida: Clausidiidae) and its suspected host the burrowing chrimps Calocaris macandreae in the Firth of Clyde. *Glasgow Naturalist*, 23 (5): 45-47.
- \*Park, T. 2000.  
 Taxonomy and distribution of the calanoid copepod family Heterorhabdidae. *Bull. of the Scripps Institution of Oceanography of the University of California, San Diego, La Jolla, California*, 31. :1-269.
- \*Ranga Reddy, R.Y. 2000.  
Neodiantomus meggitti Kiefer, 1932: A rare, south-east Asian species from the Andaman islands, India (Copepoda, Calanoida, Diaptomidae). *Crustaceana* 73 (3): 257-272.
- Stoch, F.. 2000.  
 New and little known Parastenocaris (Copepoda, Harpacticoida, Parastenocarididae) from cave waters in Northeastern Italy. *Bollettino del Museo Civico di Storia Naturale di Verona Botanica Zoologica* 24: 223-234.
- \*Tang, K.W., Fenn, T.D. Visscher P.T. & Dam H.G. 2000.  
 Regulation of body dimethylsulfoniopropionate (DMSP) content by the copepod Temora longicornis: a test of four mechanisms. *Mar. Biol.*, 136: 749-757.
- Ueda, H., N. Iwasaki & Y. Fuji. 2000.  
 List of copepods and branchiopods (Crustacea) in Uranouchi Inlet, Kochi, Japan. *Bulletin of Marine Sciences and Fisheries Kochi University* 20: 77-79.
- \*Uye, S. 2000.  
 Why does Calanus sinicus prosper in the shelf ecosystem of the Northwest Pacific Ocean ? *ICES Jour. of Marine Science*, 57: 1850-1855.
- \*Uye, S., Nagano, N. & Shimazu, T. 2000.  
 Abundance, biomass, production and trophic roles of micro- and net-

zooplankton in Ise Bay, central Japan, in Winter. *Journ. of Oceanography*, 56: 389-398.

\*Uye, S., Shimazu, T., Yamuro, M., Ishitobi, Y. & Kamiya, H. 2000.

Geographical and seasonal variations in mesozooplankton abundance and biomass in relation to environmental parameters in Lake Shinji-Ohashi River-Lake Nakaumi brackish-water system, Japan. *Journ. of Marine Systems* 26: 193-207.

## 2001

Albert, A.Y.K., D.J. Borkent, S.L. Duquette, M.J. Voordouw & B.R. Anholt. 2001.

Effects of an introduced mosquito on juvenile Tigriopus californicus (Copepoda: Harpacticoida) in supratidal pools. *Archiv fuer Hydrobiologie* 152 (2): 203-213.

Alonzo, F., P. Mayzaud & S. Razouls. 2001.

Egg production and energy storage in relation to feeding conditions in the subantarctic calanoid copepod Drepanopus pectinatus: An experimental study of reproductive strategy. *Marine Ecology Progress Series* 209: 231-242.

Amado, M.A.P.M., & C.E.F. Rocha. 2001.

Useful characters in identifying copepods of the genus Ergasilus from plankton, with the description of male and female of E. sergipensis n. sp. *Hydrobiologia* 450: 149-157.

Ara, K.. 2001.

Length-weight relationships and chemical content of the planktonic copepods in the Cananea Lagoon estuarine system, Sao Paulo, Brazil. *Plankton Biology and Ecology* 48 (2): 121-127.

Attayde, J.L. & L.A. Hansson. 2001.

Fish-mediated nutrient recycling and the trophic cascade in lakes. *Canadian Journal of Fisheries and Aquatic Sciences* 58(10): 1924-1931.

\*Avdeev, G. V. 2001.

The factors causing the invasion of Alaska kollock in the Okhotsk Sea by the parasitic copepod Haemobaphes diceraus. *Izv. Tinro. Vol. 128*: 278-286.

\*Avdeev, G.V., Smirnov A.V. & Fronck S.L. 2001.

Interannual dynamics of pollock abundance in the northern Okhotsk Sea in 1990s. *Izv. Tinro. Vol. 128*: 207-221.

Avenant-Oldewage, A.. 2001.

Argulus japonicus in the Olifants River system: Possible conservation threat? *South African Journal of Wildlife Research* 31 (1-2): 59-63.

Balanov, A.A.. 2001.

Feeding and vertical distribution of Scopelosaurus adleri and S. harryi (Notosudidae) in the north-western part of the Pacific Ocean. *Voprosy Ikhtiologii* 41 (2): 199-209. (Russian)

Barthélémy, R.M., C. Cuoc, X. Caubit & M. Brunet. 2001.

The shell glands in some calanoid copepods (Crustacea). *Canadian Journal of Zoology* 79 (8): 1490-1502.

\*Boëttger-Schnack, R. 2001.

Taxonomy of Oncaeidae (Copepoda, Poecilostomatoida) from the Red Sea. II. Seven species of Oncaea s.str. *Bull. nat. Hist. Mus. London. (Zool.)* 67(1): 25-84.

Bouvy, M., M. Pagano & M. Troussellier. 2001.

- Effects of a cyanobacterial bloom (*Cylindrospermopsis raciborskii*) on bacteria and zooplankton communities in Ingazeira reservoir (northeast Brazil). *Aquatic Microbial Ecology* 25 (3): 215-227.
- Boxaspen, K. & J.C. Holm. 2001.  
The development of pyrethrum-based treatments against the ectoparasitic salmon lice *Lepeophtheirus salmonis* in sea cage rearing of atlantic salmon *Salmo salar* L. *Aquaculture Research* 32 (9): 701-707.
- Brander, K.M., R.R. Dickson & J.G. Shepherd. 2001.  
Modelling the timing of plankton production and its effect on recruitment of cod (*Gadus morhua*). *ICES Journal of Marine Science* 58 (5): 962-966.
- Breitholtz, M. & B.E. Bengtsson. 2001.  
Oestrogens have no hormonal effect on the development and reproduction of the harpacticoid copepod *Nitocra spinipes*. *Marine Pollution Bulletin* 42 (10): 879-886.
- Bulboa, C.R. & J.E. Macchiavello. 2001.  
The effects of light and temperature on different phases of the life cycle in the carrageenan producing alga *Chondracanthus chamissoi* (Rhodophyta, Gigartinales). *Botanica Marina* 44 (4): 371-374.
- Buynak, G.L., B. Mitchell, L. Kornman, A.F. Surmont, B. Reeder & S. Malvestuto. 2001.  
Responses to artificial fertilization at Grayson Lake, Kentucky. *North American Journal of Fisheries Management* 21 (2): 393-403.
- Caley, M.J., L. Schwarzkopf & R. Shine. 2001.  
Does total reproductive effort evolve independently of offspring size? *Evolution* 55 (6): 1245-1248.
- Chang, C.Y. & T. Ishida. 2001.  
Two new species of the *Canthocamptus mirabilis* group (Copepoda: Harpacticoida: Canthocamptidae) from South Korea. *Proceedings of the Biological Society of Washington* 114 (3): 667-679.
- \*Clément, M. & E. Olafsson. 2001.  
A redescription of the common harpacticoid *Pseudobradya arctica* (Olofsson, 1917) comb. nov. (Crustacea, Copepoda) from the Baltic Sea with ecological notes. *Sarsia* 86 (3): 221-228.
- \*Dam, G.H. & K.W. Tang. 2001.  
Affordable egg mortality : constraining copepod egg mortality with life history traits. *Journ. of Plankton Research*, 23 (6): 633-640.
- De Troch, M., F. Fiers & M. Vincx. 2001.  
Alpha and beta diversity of harpacticoid copepods in a tropical seagrass bed: The relation between diversity and species' range size distribution. *Marine Ecology Progress Series* 215: 225-236.
- Defaye, D. 2001.  
A new *Mesocyclops* (Copepoda, Cyclopidae) from New Caledonian fresh waters. *Crustaceana Leiden* 74 (7): 647-658.
- Donald, D.B., R.D. Vinebrooke, R.S. Anderson, J. Syrgiannis & M.D. Graham. 2001.  
Recovery of zooplankton assemblages in mountain lakes from the effects of introduced sport fish. *Canadian Journal of Fisheries and Aquatic Sciences* 58 (9): 1822-1830.
- El-Din, N.M. & M.A.R. Abdel-Moati. 2001.  
Accumulation of trace metals, petroleum hydrocarbons, and polycyclic aromatic hydrocarbons in marine copepods from the Arabian Gulf. *Bulletin of Environmental Contamination and*

- Toxicology 66(1): 110-117.
- El-Rashidy H. & G.A. Boxshall. 2001.  
The mesoparasitic genera of the Ergasilidae (Copepoda): With descriptions of new species of Paeonodes Wilson and Therodamas Kroyer. Systematic Parasitology 50 (3): 199-217.
- Etchegoin, J.A., V.A. Ivanov & J.T. Timi. 2001.  
Resurrection of Perissopus galeorhini (Yamaguti, 1936), with notes on the genus Perissopus Steenstrup & Lutken, 1861 (Copepoda: Pandaridae) parasitic on sharks. Systematic Parasitology 50 (1): 31-39.
- \*Ferrari, F.D. & Ivanenko V.N. 2001.  
Interpreting segment homologies of the maxilliped of cyclopoid copepods by comparing stage-specific changes during development. Org. Divers. Evol. 1: 113-131.
- Fisk, A.T., G.A. Stern, K.A. Hobson, W. Strachan, M.D. Loewen & R.J. Norstrom. 2001.  
Persistent organic pollutants (POPs) in a small, herbivorous, Arctic marine zooplankton (Calanus hyperboreus): Trends from April to July and the influence of lipids and trophic transfer. Marine Pollution Bulletin 43 (1-6): 93-101.
- \*Fosshagen, A., Boxshall, G.A. & Iliffe, T.M. 2001.  
The Epacteriscidae, a cave-living family of calanoid copepods. Sarsia 86: 245-318.
- Fossi, M.C., R. Minutoli & L. Guglielmo. 2001.  
Preliminary results of biomarker responses in zooplankton of brackish environments. Marine Pollution Bulletin 42 (9): 745-748.
- Franks, J.L., G.A. Clyde & K.L. Dickson. 2001.  
Zooplankton community structure and seasonal dynamics in Lake Texoma (Oklahoma-Texas). Texas Journal of Science 53 (3): 203-220.
- Frost, P.C. & D.A. Culver. 2001.  
Spatial and temporal variability of phytoplankton and zooplankton in western Lake Erie. Journal of Freshwater Ecology 16 (3): 435-443.
- Galassi, D.M.P. 2001.  
Groundwater copepods: diversity patterns over ecological and evolutionary scales. Hydrobiologia 453/454: 227-253.
- Galli, P., G. Crosa, L. Mariniello, M.D. Ortis & S. D'Amelio. 2001.  
Water quality as a determinant of the composition of fish parasite communities. Hydrobiologia 452: 173-179.
- Giddings, J.M., K.R. Solomon & S.J. Maund. 2001.  
Probabilistic risk assessment of cotton pyrethroids: II. Aquatic mesocosm and field studies. Environmental Toxicology and Chemistry 20(3): 660-668.
- \*Gómez, S. 2001.  
Longipedia corteziensis sp. nov. (Copepoda, Harpacticoida, Longipediidae) from a coastal lagoon in northwestern Mexico, with the definition of the helgolandica species-group of the genus Longipedia Claus, 1863. Hydrobiologia 453/454: 483-496.
- Guérin, J-P., Kirchner, M. & Cubizolles, F. 2001.  
Effects of Oxyrrhis marina (Dinoflagellata), bacteria and vitamin D<sub>2</sub> on population dynamics of Tisbe holothuriae (Copepoda). Journ. of Experim. Mar. Biology and Ecology 261: 1-16.

- Gubanova, A.D., I.Y. Prusova, U. Niermann, N.V. Shadrin & I.G. Polikarpov. 2001.  
Dramatic change in the copepod community in Sevastopol Bay (Black Sea) during two decades (1976-1996). *Senckenbergiana Maritima* 31 (1): 17-27.
- Halsband, C. & H.J. Hirche. 2001.  
Reproductive cycles of dominant calanoid copepods in the North Sea. *Marine Ecology Progress Series* 209: 219-229.
- Hart, R.C.. 2001.  
A baseline limnological study of Wagendrift Dam (Thukela basin, KwaZulu-Natal). *Water SA Pretoria* 27 (4): 507-516.
- Hasegawa, T., I. Koike & H. Mukai. 2001.  
Fate of food nitrogen in marine copepods. *Marine Ecology Progress Series* 210: 167-174.
- \*Heuch, P.A & Mo A.T. 2001.  
A model of salmon louse production in Norway: effects of increasing Salmon production and public management measures. *Dis. Aquat. Organ.* Vol. 45: 145-152.
- Hirazawa, N., S.I. Oshima & K. Hata. 2001.  
In vitro assessment of the antiparasitic effect of caprylic acid against several fish parasites. *Aquaculture* 200 (3-4): 251-258.
- Ho, J.S., S. Gomez & A.E. Fajer. 2001.  
Lepeophtheirus simplex sp. n., a caligid copepod (Siphonostomatoida) parasitic on "botete" (bullseye puffer, Sphoeroides annulatus) in Sinaloa, Mexico. *Folia Parasitologica Ceske Budejovice* 48 (3): 240-248.
- \*Hoffmeyer, A.S. & Torres E.R. 2001.  
Morphometric variables and individual volume of Eurytemora americana and Acartia tonsa females (Copepoda, Calanoida) from the Bahia Blanca estuary, Argentina. *Hydrobiologia* 459: 73-82.
- Hook, S.E. & N.S. Fisher. 2001.  
Sublethal effects of silver in zooplankton: Importance of exposure pathways and implications for toxicity testing. *Environmental Toxicology and Chemistry* 20(3): 568-574.
- \*Horiguchi, T. & S. Ohtsuka. 2001.  
Oodinium inlandicum sp.nov. (Blastodiniales, Dinophyta), a new ectoparasitic dinoflagellate infecting a chaetognath, Sagitta crassa. *Plankton Biol. Ecol.* 48 (2): 85-95.
- \*Ishida, T. 2001.  
Eucyclops borealis sp. nov. from Alaska, and E. tsushimensis sp. nov. from Tsushima Island, Japan (Crustacea, Copepoda, Cyclopoida). *Biogeography* 3: 51-57.
- Ishii, H. & F. Tanaka-Fusako. 2001.  
Food and feeding of Aurelia aurita in Tokyo Bay with an analysis of stomach contents and a measurement of digestion times. *Hydrobiologia* 451: 311-320.
- James-Pirri, M.J., K.B. Roposa & J.G. Catena. 2001.  
Diet composition of mummichogs, Fundulus heteroclitus, from restoring and unrestricted regions of a New England (U.S.A.) salt marsh. *Estuarine Coastal and Shelf Science* 53 (2): 205-213.
- \*Jersabek, C.D., Brancelj, A., Stoch, F. & R. Schabetsberger. 2001.  
Distribution and ecology of copepods in mountainous regions of the Eastern Alps. *Hydrobiologia*, 453/454: 309-324.
- Jones-Simon, R.M.. 2001.

- The occurrence and mechanisms of innate immunity against parasites in fish. *Developmental and Comparative Immunology* 25 (8-9): 841-852.
- Juttner, F.. 2001.  
Liberation of 5,8,11,14,17-eicosapentaenoic acid and other polyunsaturated fatty acids from lipids as a grazer defense reaction in epilithic diatom biofilms. *Journal of Phycology* 37 (5): 744-755.
- \*Karanovic, T. & G.L. Pesce. 2001.  
A new genus and species of the family Ectinosomatidae (Crustacea: Copepoda: Harpacticoida) from the groundwaters of India. *Ann. Limnol.* 37 (4): 281-292.
- \*Karanovic, T., Pesce G.L. & W.F. Humphreys. 2001.  
Copepods from ground waters of Western Australia, V. *Phyllopodosyllus wellsi* sp. nov. (Crustacea: Copepoda: Harpacticoida) with a key to world species. *Rec. of the Western Australian Museum* 20: 333-344.
- Karlsbakk, E.. 2001.  
Didymozoid larvae (Trematoda) in the body musculature of cultured Atlantic herring larvae (*Clupea harengus*). *Acta Parasitologica* 46 (3): 164-170.
- \*Kim, I.H.. 2001.  
*Foliomolgus cucullus*, a new genus and species of Clausidiidae (Crustacea: Copepoda: Poecilostomatoida) associated with a polychaete in Korea. *Proceedings of the Biological Society of Washington* 114 (3): 660-666.
- \*Kim, I.H. 2001.  
A new species of *Clausia* (Copepoda, Poecilostomatoida, Clausiidae) Associated with the polychaete *Arenicola brasiliensis* Nonata in Korea. *Hydrobiologia* 452: 217-223.
- Kiorboe, T. & U.H. Thygesen. 2001.  
Fluid motion and solute distribution around sinking aggregates. II. Implications for remote detection by colonizing zooplankters. *Marine Ecology Progress Series* 211: 15-25.
- Kobari, T. & T. Ikeda. 2001.  
Life cycle of *Neocalanus flemingeri* (Crustacea: Copepoda) in the Oyashio region, western subarctic Pacific, with notes on its regional variations. *Marine Ecology Progress Series* 209: 243-255.
- \*Lacuna D.G. & S.-I. Uye. 2001.  
Influence of mid-ultraviolet (UVB) radiation on the physiology of the marine planktonic copepod *Acartia omorii* and the potential role of photoreactivation. *Journ. of Plankton Research*, 23 (2): 143-155.
- Lapernat, P.E. & C. Razouls. 2001.  
Taxonomie et repartition des Copepodes pelagiques profonds de Mediterranee (au large de Malte). *Taxonomy and distribution of bathypelagic copepods from the Mediterranean Sea (off Malta)*. *Vie et Milieu* 51(3): 123-129. *French*
- Laybourn-Parry, J., W.C. Quayle, T. Henshaw, A. Ruddell & H.J. Marchant. 2001.  
Life on the edge: The plankton and chemistry of Beaver Lake, an ultra-oligotrophic epishelf lake, Antarctica. *Freshwater Biology* 46 (9): 1205-1217.
- Lee, H.W., T. Ikeda & S. Ban. 2001.  
Metabolism, body composition (C and N) and estimated net growth

- efficiency of a calanoid copepod *Pseudocalanus newmani* raised at different temperatures in the laboratory. *Plankton Biology and Ecology* 48 (2): 114-120.
- Lieberman, D.M., M.J. Horn & S. Duffy. 2001.  
Effects of a temperature control device on nutrients, POM and plankton in the tailwaters below Shasta Lake, California. *Hydrobiologia* 452: 191-202.
- Lin, C.L. & J.S. Ho. 2001.  
Sea lice (Copepoda, Caligidae) parasitic on pelagic fishes of Taiwan. *Journal of the Fisheries Society of Taiwan* 28 (2): 119-142.
- Liu, Z.W. & Y.H. Hu. 2001.  
Vertical distribution of the dominant planktonic crustaceans in a mesotrophic reservoir, Xujiahe Reservoir (Central China). *Limnologia* 31 (3): 171-178.
- Loot, G., P. Francisco, F. Santoul, S. Lek & J.F. Guegan. 2001.  
The three hosts of the *Ligula intestinalis* (Cestoda) life cycle in Lavernose-Lacasse gravel pit, France. *Archiv fuer Hydrobiologie* 152 (3): 511-525.
- \*López-Gonzales, P.J. & J. Bresciani. 2001.  
New Antarctic records of *Herpyllobius* Steenstrup and Lütken, 1861 (parasitic Copepoda) from the EASIZ-III cruise, with description of two new species. *Sci. Mar.*, 65 (4): 357-366.
- Marcus, N.H. & M. Murray. 2001.  
Copepod diapause eggs: A potential source of nauplii for aquaculture. *Aquaculture* 201 (1-2): 107-115.
- Mariani, S. 2001.  
Cleaning behaviour in *Diplopus* spp.: Chance or choice? A hint for future investigations. *Journal of the Marine Biological Association of the United Kingdom* 81 (4): 715-716.
- \*Martinez Arbizu, P. 2001.  
*Psammocyclopinidae* fam. n., a new monophyletic group of marine Cyclopoida (Copepoda, Crustacea), with the description of *Psammocyclopina georgei* sp. N. from the Magellan Region. *Revta bras. Zool.* 18(4): 1325-1339.
- \*Martinez Arbizu, P. 2001.  
*Hemicyclopinidae* n. fam., a new monophyletic group of marine cyclopinid Cyclopoida, with description of one new genus and two new species. *Senckenbergiana biologica*, 81 (1/2): 37-54.
- Mikheev, V.M., A.F. Pasternak, E.T. Valtonen & Y. Lankinen. 2001.  
Spatial distribution and hatching of overwintered eggs of a fish ectoparasite, *Argulus coregoni* (Crustacea: Branchiura). *Diseases of Aquatic Organisms* 46(2): 123-128.
- \*Mirabdullayev, I.M. & F. Fiers. 2001.  
Redescription of two Iranian cyclopoids: *Thermocyclops tinctus* Lindberg, 1936 and *Th. hyalinus persicus* Lindberg, 1936 (Copepoda, Cyclopidae). *Bull. Inst. Roy. Sci. Nat. Belg., Biologie*, 71: 83-92.
- \*Mirabdullayev, I.M. & H. Ueda. 2001.  
A redescription of *Thermocyclops uenoi* (Crustacea, Copepoda). *Vestnik zoologii*, 35 (4): 17-22.
- \*Nagasawa, K., Ohtsuka, S., Saeki, S., Ohtani, S., Zhu, G.H. & A. Shiomoto. 2001.  
Abundance and *In-situ* Feeding habits of *Neocalanus cristatus* (Copepoda: Calanoida) in the Central and Western North Pacific Ocean in Summer and Winter.

- Bull. Nat. Res. Inst. Far Seas Fish., 38: 37-52.
- Neira, C., J. Sellanes, L.A. Levin & W.E. Arntz. 2001.  
Meiofaunal distributions on the Peru margin: Relationship to oxygen and organic matter availability. Deep Sea Research Part I Oceanographic Research Papers 48 (11): 2453-2472.
- O'Driscoll, R.L., J.D. Parsons-Morag & G.A. Rose. 2001.  
Feeding of capelin (Mallotus villosus) in Newfoundland waters. Sarsia 86 (3): 165-176.
- Ohman, M.D. & H.J. Hirche. 2001.  
Density-dependent mortality in an oceanic copepod population. Nature (London) 412 (6847): 638-641.
- \*Ohtsuka, S. & R. Huys. 2001.  
Sexual dimorphism in calanoid copepods: morphology and function. Hydrobiologia 453/454: 441-466.
- Ojha, J. & G.M. Hughes. 2001.  
Effect of branchial parasites on the efficiency of the gills of a freshwater catfish, Wallago attu. Journal of Zoology London 255 (1): 125-129.
- \*Olafsson, E., Ingolfsson, A. & A.B. Steinarsdottir. 2001.  
Harpacticoid copepod communities of floating seaweed: controlling factors and implications for dispersal. Hydrobiologia 453/454: 189-200.
- \*O'Reilly, M. 2001.  
A new species of parasitic copepod Sphaeronella gottoi n.sp. (Siphonostomatoida; Nicothoidae) from an ostracod collected off the east coast of Scotland. Glasgow Naturalist, 23 (6): 43-46.
- \*O'Reilly, M., Hamilton, E. & L. Heaney. 2001.  
New records of amphipods and leptostracans from the Forth sea Area, with notes on their copepod parasites (Siphonostomatoida: Nicothoidae). Glasgow Naturalist 23 (6): 35-42.
- Pages, F., H.E. Gonzalez, M. Ramon, M. Sobarzo & J.M. Gili. 2001.  
Gelatinous zooplankton assemblages associated with water masses in the Humboldt Current System, and potential predatory impact by Bassia bassensis (Siphonophora: Calycophorae). Marine Ecology Progress Series 210: 13-24.
- Pane, L., R. Capelli, L. Paganelli & A.M. Carli. 2001.  
Inorganic mercury in the rock pool environment (Ligurian Sea). Journal of Biological Research Naples 77 (1-3): 7-12.
- Parent, S., A. Morin & D. Gagnon. 2001.  
Are meiofauna transient or resident in sand filters of marine aquariums? Water Research 35 (15): 3625-3634.
- Pastore, M. 2001.  
Copepods associated with Phallusia mamillata and Ciona intestinalis (Tunicata) in the area of Taranto (Ionian Sea, southern Italy). Journal of the Marine Biological Association of the United Kingdom 81 (3): 427-432.
- Pastorinho, M, M.L. Pereira, I.K. Pai, U. Azeiteiro, J. Fonseca & F.M. Morgado. 2000.  
Técnicas histológicas e ultraestruturais em estudos de ecofisiologia planctónica.  
Histological and ultrastructural techniques in plankton ecophysiological studies. Revista de Biologia Lisbon 18 (1-4): 167-176. (Portuguese)
- Payne, M.F. & R.J. Rippingale. 2001.



- Intensive cultivation of the calanoid copepod Gladioferens imparipes. *Aquaculture* 201 (3-4): 329-342.
- Payne, M.F. & R.J. Rippingale. 2001.  
Effects of salinity, cold storage and enrichment on the calanoid copepod Gladioferens imparipes. *Aquaculture* 201(3-4): 251-262.
- Pinnegar, J.K., N. Campbell & N.V.C. Polunin. 2001.  
Unusual stable isotope fractionation patterns observed for fish host-parasite trophic relationships. *Journal of Fish Biology* 59 (3): 494-503.
- Pohn, M., K. Vopel, E. Grunberger & J. Ott. 2001.  
Microclimate of the brown alga Feldmannia caespitula interstitium under zero-flow conditions. *Marine Ecology Progress Series* 210: 285-290.
- Ramarani, S. & K. Ramalingam. 2001.  
On the ecobiological features of Velachery lake on a lunar eclipse day. *Uttar Pradesh Journal of Zoology* 21 (1): 89-91.
- Ramdani, M., N. Elkhiati, R.J. Flower, H.H. Birks, M.M. Kraiem, A.A. Fathi & S. T. Patrick. 2001.  
Open water zooplankton communities in North African wetland lakes: The CASSARINA project. *Aquatic Ecology* 35 (3-4): 319-333.
- Rand, G.M., J.R. Clark & C.M. Holmes. 2000.  
Use of outdoor freshwater pond microcosms: II. Responses of biota to pyridaben. *Environmental Toxicology and Chemistry* 19(2): 396-404.
- \*Ranga Reddy, Y. 2001.  
Discovery of Parastenocarididae (Copepoda, Harpacticoida) in India, with the description of three new species of Parastenocaris Kessler, 1913, from the River Krishna at Vijayawada. *Crustaceana Leiden* 74 (8): 705-733.
- Rautio, M.. 2001.  
Zooplankton assemblages related to environmental characteristics in treeline ponds in Finnish Lapland. *Arctic, Antarctic and Alpine Research* 33(3):289-298.
- Rebstock, G.A.. 2001.  
Long-term stability of species composition in calanoid copepods off southern California. *Marine Ecology Progress Series* 215: 213-224.
- Schnack-Schiel, S.B., D.N. Thomas, C. Haas, G.S. Dieckmann & R. Alheit. 2001.  
The occurrence of the copepods Stephos longipes (Calanoida) and Drescheriella glacialis (Harpacticoida) in summer sea ice in the Weddell Sea, Antarctica. *Antarctic Science* 13 (2): 150-157.
- \*Soh, H.Y., Suh, H.-L., Yu, O, H. & S. Ohtsuka. 2001.  
The first record of two demersal calanoid copepods, Pseudodiaptomus poplesia and P. nihonkaiensis in Korea, with remarks on morphology of the genital area. *Hydrobiologia* 448: 203-215.
- \*Soh, H.Y., Suh, H.-L., Ohtsuka, S., Yoon Y.H. & S.D. Choi. 2001.  
Taxonomic studies on brackish copepods in Korean waters - II. Ontogeny and phylogeny of appendages in copepodid stages of Tortanus derjugini Smirnov, 1935 (Copepoda, Calanoida). *Journal of Plankton Research*, 23 (10): 1157-1169.
- St. John, M.A., C. Clemmesen, T. Lund & T. Koester. 2001.  
Diatom production in the marine environment: Implications for larval fish growth and condition. *ICES Journal of Marine Science*

- 58 (5): 1106-1113.
- Suárez-Morales, E. 2001.  
Taxonomic report on a collection of monstilloids (Copepoda: Monstilloida) from Banco Chinchorro, Mexico with description of a new species. *Anales del Instituto de Biología Universidad Nacional Autónoma de México Serie Zoológica*. 72 (1): 9-28.
- Suárez-Morales, E. 2001.  
An aggregation of monstilloid copepods in a western Caribbean reef area: Ecological and conceptual implications. *Crustaceana Leiden* 74 (7): 689-696.
- Sutherland, T.F., C.D. Levings, C.C. Elliott & W.W. Hesse. 2001.  
Effect of a ballast water treatment system on survivorship of natural populations of marine plankton. *Marine Ecology Progress Series* 210: 139-148.
- Tanabe, T. 2001.  
Feeding habits of skipjack tuna *Katsuwonus pelamis* and other tuna *Thunnus* spp. juveniles in the tropical western Pacific. *Fisheries Science Tokyo* 67 (4): 563-570.
- \*Tang, K.W. 2001.  
Defecation of dimethylsulfoniopropionate (DMSP) by the copepod *Acartia tonsa* as functions of ambient food concentration and body DMSP content. *Journal of Plankton Research* 23 (5): 549-553.
- \*Tang, K.W., P.T. Visscher & H.G. Dam. 2001.  
DMSP-consuming bacteria associated with the calanoid copepod *Acartia tonsa* (Dana). *Journ. Experim. Mar. Biol. Ecology*, 256: 185-198.
- Timms, B.V.. 2001.  
A new species of *Calamoecia* (Copepoda: Calanoida) from arid Australia, with comments on the calanoid copepods of the Paroo, northwestern Murray-Darling Basin. *Memoirs of the Queensland Museum* 46 (2): 783-790.
- Torgersen, T.. 2001.  
Visual predation by the euphausiid *Meganycitiphanes norvegica*. *Marine Ecology Progress Series* 209: 295-299.
- \*Ueda, H., Ohtsuka, S., Seike, Y. & S. Ohtani. 2001.  
Second record of *Cyclopina kiraensis*, a small, brackish-water cyclopoid copepod, in Japan. *Limnology* 2: 49-50.
- Varella, A.M.B. & J.C.O. Malta. 2001.  
*Brasergasilus mamorensis* sp. n. (Copepoda: Ergasilidae) from the nasal cavities of *Hydrolycus pectoralis* (Guenther, 1866) (Characiformes: Cynodontidae) from the Brazilian Amazon, and considerations about Abergasilinae. *Acta Amazonica* 31 (2): 323-330.
- Walseng, B., G. Halvorsen & S.E. Storeid. 2001.  
Littoral microcrustaceans (Cladocera and Copepoda) as indices of recovery of a limed water system. *Hydrobiologia* 450: 159-172.
- Wang, J.H., J.L. Lee, H.Y. Chang, C.T. Wang, C.H. Wu & K.H. Tasi. 2001.  
A survey of the diseases in cultured brood grey mullet (*Mugil cephalus* Linnaeus) in the Yun-Chia-Nan area of Taiwan. *Journal of the Chinese Society of Veterinary Science* 27 (2): 89-93. (Chinese)
- Wang, W.X., D.C.H. Dei & Y. Xu. 2001.  
Cadmium uptake and trophic transfer in coastal plankton under contrasting nitrogen regimes. *Marine Ecology Progress Series*

211: 293-298.

Willett, C.S. & R.S. Burton. 2001.

Viability of cytochrome c genotypes depends on cytoplasmic backgrounds in Tigriopus californicus. *Evolution* 55 (8): 1592-1599.

Xu, Y. & W.X. Wang & D.P.H. Hsieh. 2001.

Influences of metal concentration in phytoplankton and seawater on metal assimilation and elimination in marine copepods. *Environmental Toxicology and Chemistry* 20(5): 1067-1077.

Yamaguchi, A. & T. Ikeda. 2001.

Abundance and population structure of three mesopelagic Paraeuchaeta species (Copepoda: Calanoida) in the Oyashio region, western subarctic Pacific Ocean with notes on their carcasses and epizoic ciliates. *Plankton Biology and Ecology* 48 (2): 104-113.

Youngbluth, M.J. & U. Bamstedt. 2001.

Distribution, abundance, behavior and metabolism of Periphylla periphylla, a mesopelagic coronate medusa in a Norwegian fjord. *Hydrobiologia* 451: 321-333.

## 2002

Uye, S., Aoto, I. & Onbé, T. 2002.

Seasonal population dynamics and production of Microsetella norvegica, a widely distributed but little-studied marine planktonic harpacticoid copepod. *Journal of Plankton Research*, 24 (2): 143-153.

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