

# PSAMMONALIA

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# Newsletter of the International Association of Meiobenthologists

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## INTERNATIONAL ASSOCIATION OF MEIOBENTHOLOGISTS – FOUNDED 1966

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Dues are £5 per year payable to Mike Gee.

“This newsletter is not deemed to be a valid publication for formal taxonomic purposes”

## EDITORIAL

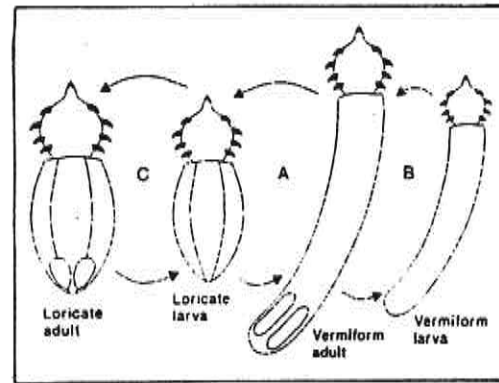
It is hard to believe that three years have passed since I wrote my first Editorial for *Psammonalia*, and that this is now the last. So, now is an appropriate time for reflection.

Apart from a number of entirely frivolous offerings, I have tried to stimulate informal scientific debate on questions which I felt were of interest to readers, by writing some articles which I felt were provocative and pointed. This has, I'm afraid, been largely an abject failure, in view of the virtually complete absence of any response. Maybe the sort of things which interest me are not those which interest the rest of the membership. Ah well, it was worth a try. However, in many of the topics covered there have been interesting developments since I wrote the editorials, and so I hope that you will bear with me just one more time while I recount some of these.

In *Psammonalia* 87 I touched on the subject of how meiobenthos might be used as models to address more general scientific and applied problems. One notable recent development in this respect is the use of meiobenthic species in both lethal and sublethal bioassays of sediment and water-borne contaminants. Several presentations at EIMCO (Chandler, Green *et al.*, DePinto *et al.*) used either laboratory-cultured or field-collected harpacticoid copepods, and researchers at the ICI research laboratory in Brixham, England, have developed an elegant bioassay technique using growth and survivorship of copepodites in a species of *Tisbe*. Many other meiobenthic taxa which are easy to maintain under laboratory conditions obviously have future potential for such work.

The lack of any written or verbal response to my assertion that Loriciferans could just be regarded as neotonous Priapulids rather than as a separate phylum (*Psammonalia* 89) really astounded me. I can only assume that, in my detached ignorance, I stumbled across the truth! The finding of a Priapulid species which does not have the lorica-larva stage (*Meiopriapulidus fijiensis*) leads to the further speculation that the ancestral Priapulid life cycle (A in the figure below) has evolved along two lines in which either the lorica (B) or the vermiform (C) stage has been eliminated.

Life-cycle A is found in most species currently included in the phylum Priapulida, life-cycle C in species regarded as being in the phylum Loricifera, and life-cycle B in *Meiopriapulidus*. Ridiculous? Then why not let *Psammonalia* know your thoughts.



With regard to the application of meiofauna to pollution detection and monitoring programmes (*Psammonalia* 90), much progress has been made over recent years. Our own studies here in Plymouth indicate that, in comparison with the macrobenthos, changes in community structure of the meiobenthos are much more sensitive as indicators of heavy-metal contamination in estuarine sediments. Hopefully the techniques which are now being explored, both at the community structure level and single-species bioassays, will be developed into a series of straightforward and easy to use protocols which can be adopted on a routine basis by statutory agencies. I think that this goal must be kept in mind, even at the expense of developing ever more sophisticated techniques requiring expensive equipment. If it can be achieved, we will not only be providing a service to the community, but also helping our students to get jobs.

The IAM global diversity study (*Psammonalia* 91 & 92) is now on a firm footing thanks to our meeting at EIMCO. I will be confirming arrangements with all the volunteers individually early in the new year, and the first batch of artificial substrata will be dispatched to them in the Spring.

In the UK at least the importance of taxonomy as a scientific discipline (*Psammonalia* 95) is at last beginning to receive the status and recognition it deserves. The Natural Environment Research Council (the major funding body for environmental research here) has published an important report, edited by Professor John Krebs, entitled "Evolution and Biodiversity: the New Taxonomy". It recognises the need both for the preparation of up to date and comprehensive conventional keys and to exploit "new techniques and scientific opportunities arising from molecular biology and from information technology". Happily, the NERC have taken the recommendations of the report on board and released substantial funds to support taxonomic initiatives. I don't know yet whether any of this money will

be directed toward meiofauna: it depends what sort of case can be made. But the climate for taxonomic research is certainly beginning to feel more healthy. It would be interesting to hear, through *Psammonalia*, what the status of taxonomic research is in other countries.

The other day I had a phone call from John Lambhead to say that he was proposing to do some research on the question of whether supposedly widespread meiobenthic species with rather few distinctive taxonomic features really are cosmopolitan (*Psammonalia* 96). This will be a genetically based study, the outcome of which may drastically modify our ideas about meiobenthic biogeography. However, if morphological characters alone are not sufficient to distinguish between "species", this is going to give us a lot of problems, not least with the question of biodiversity.

It is in some ways frustrating that time has run out on me as editor of *Psammonalia*, as there are several things I wanted to do that I never got round to. One thing I wanted to initiate was a "What are they doing now" feature, to catch up on what some of our distinguished older colleagues are doing now that they have left the field of meiobenthic research. For example, Molly Mare (now Spooner) who first coined the term "meiobenthos" back in 1942, still lives close to Plymouth and spends a lot of her time painting very nice water-colours (mainly of Dartmoor), which she sells at ridiculously low prices in aid of the Devon Trust for Nature Conservation. When I last broached the subject of meiobenthos with her she seemed totally oblivious to the subsequent explosion of research activity in this field.

In conclusion, then, I would like to thank all the members of the Executive Committee for the support that they have given to us over the last three years, and in particular to the Board of Correspondents. Several of the latter have been especially diligent in picking up some of the more obscure references, and getting them to us regularly and on time. It would be invidious to name them, but they will know who I mean. Thank you.

Richard Warwick

### CONSTITUTIONAL CHANGES

We announced in the last issue of *Psammonalia* that at EIMCO the Executive Committee proposed the creation of a fund called the Bertil Swedmark Travel Fund to be held in Plymouth which could provide financial assistance to students and young researchers attending future meiofauna conferences. To organise this fund changes to the constitution of the IAM are necessary. Bob Higgins has drafted these amendments

which are given below. The present constitution states that the membership must be notified of amendments for free discussion and debate six months prior to a vote on their adoption.

### AMENDMENTS to CONSTITUTION:

#### CONSTITUTION:

##### ARTICLE

The association shall maintain and administer a permanent fund which shall be designated as the Bertil Swedmark Fund. At the discretion of the Executive Committee, gifts and bequests will be received for inclusion in this Fund. After deduction of the expenses necessary for the administration of the Fund, twenty-five percent of the income of the Fund shall be returned to the Fund as principal and the remaining seventy-five percent shall be used exclusively for the support of the Association. The principal of the Fund shall be invested in interest earning instruments and shall be kept inviolate, provided, however, that nothing in this Constitution or in the Bylaws shall prevent the Executive Committee at any regular meeting from transferring the Bertil Swedmark Fund to a university or other incorporated institution or organization, under such conditions as shall safeguard the permanence of the Fund and its application to the general purpose for which it was intended; such power to be vested in the Executive Committee only after securing and in obedience to the expressed will of a majority of the (constitutional) members of the International Association of Meiobenthologists, or after the constitutional failure of said Association.

##### BYLAWS:

##### SECTION

There shall be a standing committee of three members known as the Bertil Swedmark Fund Committee to take charge of the Fund and to determine how the income from it should be expended for the participation of students in the Association's conference meetings. Policy of said committee shall be subject to review and concurrence of the Executive Committee. The Chairman and two members of the Bertil Swedmark Fund Committee, shall be appointed by the Executive Committee to serve for a period of six years, renewable at the discretion of said committee. Should the Chairman be unable to serve, the vacancy shall be assumed by a member of the Bertil Swedmark Fund Committee designated by the Chairman of the Association until the next meeting of the Association at which a new Chairman shall be appointed by the Executive Committee. Should a member of the said committee be unable to serve, a new member shall be appointed by the Chair-

man of the Association until the next meeting of the Association at which time a new member shall be appointed by the Executive Committee.

### SUBSCRIPTION REMINDER

Please remember that from now on the subscription rate will be \$10 (ten U.S. dollars!). Cheques etc. should be made out to IAM and sent to the new treasurer **Bob Feller**, Belle Baruch Institute, University of South Carolina, Columbia, SC 29208, USA. No payments in UK sterling can be accepted by him.

### RESEARCH OPPORTUNITY

I am seeking a recent graduate who can identify nematodes. The individual would participate in a research program on the continental shelf in the Gulf of Mexico. The purpose of the program is to identify potential chronic or sublethal effects of long-term offshore oil and gas production. The position is available in January 1993 for a two-year term. Send a letter of application with addresses and telephone numbers of two referees to: **Dr. Paul Montagna**, University of Texas at Austin, Marine Science Institute, P.O. Box 1267, Port Aransas, Texas 78373 USA. If you need any further information or would like to discuss this opportunity please call me at (512)749-6779, or FAX (512)749-6777, or Bitnet PAUL@UTMSI, or Internet PAUL@UTMSI.ZO.UTEXAS.EDU.

### NEW MEMBERS

**Nikos Lampadariou**  
Institute of Marine Biology of Crete  
P.O. Box 2214  
710 03 Iraklion  
Crete  
GREECE

I am studying for my MSc at the University of Crete and will be specializing in marine benthic ecology. I hope to be able to continue my studies as part of a PhD project. My special interests are the ecology of the meiobenthos of the Eastern Mediterranean and the effects of pollution on them. My work is being carried out in collaboration with the Institute of Marine Biology of Crete and Plymouth Marine Laboratory and I would be interested to have contact with anyone who is interested in meiofauna from the Mediterranean.

**Yvonne Leahy**  
Institute of Marine Biology of Crete  
P.O. Box 2214  
710 03 Iraklion

Crete  
GREECE

At present I am working as a post-doc at the Institute of Marine Biology of Crete (IMBC). The project is entitled 'the Sulphide and Methane Ecosystems'. The work in IMBC is focused on a bay in the island of Milos in the South Aegean. Here, we are looking at the distribution and general ecology of the macrofauna around the geothermal seeps which occur there.

I took my bachelors degree at University College, Galway, and continued my studies there with the Benthic Research Group. My doctorate thesis, completed in May 1991, was on the benthic ecology of a small estuary on the west coast of Ireland and on the reproductive and larval ecology of the serpulid polychaete *Serpula vermicularis*.

**Patricia Clinton**  
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### CHANGE OF ADDRESS

**Brian Marcott**  
S.A.I. Foundation  
49 Lake Street  
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### NEWS FROM MEMBERS

**Ian Kinchin** writes: I am currently writing a book on the biology of tardigrades for Portland Press and am trying to ensure that my data is up to date. I would like to hear from anyone in the UK who is either working on tardigrades or who often finds tardigrades in their meiofaunal samples. Marine tardigrade records for the UK are few and far between (other than the work of Morgan from Scotland and Ireland). I would be grateful for any information sent to me. My address is:

27 Woodlands Road,  
Slyfield Green,  
Guildford,  
Surrey GU1 1RW,  
ENGLAND.

**Ilse Bartsch** sent us this note: During the past decades, my main job was taxonomy of ophiuroids. Due to an almost complete lack of funding, I have to abandon that taxon (unbelievable but true: the financial volume for a year – to cover all costs from microscope to glass ware, including travel expenses – has been about 1/3 of my monthly salary). Now, the work on halacarid mites will be extended (mainly my hobby up to now),

and next, I will begin with taxonomy on copepods, with the laterally depressed harpacticoids Tegastidae and the dorsoventrally compressed *Pelidium*. So, for my first tentative steps in that field, I would be grateful to receive reprints, material for study, and just useful hints. (Ilse Bartsch, Biologische Anstalt Helgoland, Notkestrasse 31, 2000 Hamburg 52, Germany).

#### SAMPLES FROM GREECE

The Institute of Marine Biology of Crete is currently involved in an E.C. programme entitled 'Sulphide and Methane ecosystems'. This is being undertaken in three areas, the 'pockmarks' of the North Sea, the Kattegat, and at locations in the South Aegean Sea where gaseous seeps are known to exist.

This is a multi-disciplinary project involving four European institutes, each having responsibility for different aspects of the project:

i) the chemistry of sulphide and methane rich sediments: Dr Paul Dando, Marine Biological Association, Plymouth, U.K.

ii) the adaptations of eukaryotes to this environment: Prof. Tom Fenchel, Marine Biological Laboratory, Helsingor, Denmark.

iii) meiofauna, distribution around the 'pockmarks' and gas vents, and general ecology.: Prof. Olav Giere, University of Hamburg, Germany.

iv) macrofauna distribution around the 'pockmarks' and gas vents, and general ecology: Prof. Tasou Eletheriou, Institute of Marine Biology of Crete, Greece.

During exploratory surveys of the South Aegean, meiofaunal samples were taken as standard by IMBC personnel. These are single samples taken from fifty stations, in four locations across the South Aegean, namely, the islands of Nisyros, on the eastern shore, the islands of Santorini and Milos, in the centre, and Methana on mainland Greece, to the west. Depths range from 10-450m. The samples were taken by means of a 2.2cm diameter core from a 0.1 m<sup>2</sup> grab sampler, to a sediment depth of 6cm. The animals were relaxed in 6% MgCl<sub>2</sub>, and the samples were fixed in 10% formalin.

As they were subsampled from the grab as single unsectioned cores, these samples are not suitable for quantitative studies; nevertheless they do cover a large area of the Aegean and they could be of taxonomic interest. The prospects of analysing these samples are rather slim, consequently if there are meiobenthologists interested in analysing them they are invited to contact: **Dr Yvonne Leahy**  
Institute of Marine Biology of Crete

P.O. Box 2214  
710 03 Iraklion  
Crete  
GREECE  
(Fax no. (081) 241882)

#### MEIOFAUNA MOVIES!

A videotape on meiofauna entitled "CRYPTIC FAUNA OF MARINE SAND", has been produced by the American Society of Zoologists from research videotapes accumulated over a ten-year period by **Bob Higgins**. This videotape was introduced at EIMCO-92 so many of you have seen the tape and asked about obtaining a copy.

Copies of this videotape (colour/20 minutes) are available in the NRSC system only. It is fully narrated and professionally edited as an education videotape. The price of each tape is \$30 which includes shipping costs. Send orders to: "ASZ Headquarters, 401 N. Michigan Avenue, Chicago, IL 60611-4267, USA". The telephone number of ASZ is: 312 527-6697. The ASZ fax number is 312 527-6640.

#### THE COLLECTED WORKS OF TABLE FOUR

(some more EIMCO limericks submitted  
by David Thistle)

There once was a Dr. named Coull  
Who thought harpacticoids rule.  
De Pinto and Bell  
Irreverent students from Hell —  
To give them degrees he' a fool!

There was a young woman whose singing  
All restraint to the four winds was flinging.  
When at last she demurred,  
Not a murmur was heard  
Because everyone's ears were well ringing.

There once was a good man named Boaden  
Whose poetry kept us all goin'.  
It didn't quite rhyme,  
But we didn't much mind  
'Cause by then the beer had been flowin'.

The food was presented in mounds  
And new knowledge in great leaps and bounds.  
On our heads wisdom rained,  
And we each of us gained  
Greater insight and several pounds.

Though far be it from even a snob  
 Someone else of decorum to rob,  
 It was worth it just seein'  
 That poor European  
 Use a fork to eat corn on the cob.

## OBITUARY

### Kenneth A Wright 1936–1992

Ken earned his B.A. and M.Sc. degrees from the University of Toronto in zoology, and his PhD degree from Rice University in Houston, Texas in 1962. He was a postgraduate research zoologist at the University of California at Riverside during the 1962–63 academic year and an assistant research nematologist the following year at the University of California in Davis. Ken returned to Toronto to take a research position in the Ontario Research Foundation between 1964 and 1966. Throughout the remainder of his professional career he held research positions in the University of Toronto, first in the Department of Microbiology and Parasitology and then the Department of Zoology, where he was promoted to full professor in 1982. He was also a visiting researcher at Leeds University (1973), Cambridge University (1980) and the Rothamstead Research Station (1982–83).

Ken made contributions in research on parasite biology, life cycles, host pathology, techniques in transmission electron microscopy and especially on the ultrastructure and cytochemistry of invertebrates. The latter investigations include the structure of a leucocytozoon in various stages of its life cycle, pellicle and filopodium of trypanosomes, integument of acanthocephalans, attachment organs of monogenetic trematodes, numerous aspects of nematode morphology, gut of mites, salivary glands of mosquitos, and nephrocytes in the gills of decapod crustaceans.

Ken's principal interest in research was nematode morphology as evidenced by the fact that 50 of his 73 published papers plus three chapters in books, were on that subject. His doctoral dissertation, "Cytology of the Bacillary Bands of the Nematode *Capillaria hepatica* (Bancroft, 1893)" is testimonial to his very early conviction that transmission electron microscopy was to be a very productive technology for understanding the structure of nematodes. The tenacity with which he held that conviction was to be tested by the disappointing and unpredictable results often obtained with early

techniques proven to be much more satisfactory for vertebrate tissues. As the payoff improved with the introduction of glutaraldehyde, new embedding resins, diamond knives and improved stains, Ken continued to explore many aspects of nematode morphology including the ultrastructure of the cuticle, chemo- and tango-receptors, bacillary bands, neuron-hypodermis relationships, somatic muscles and their cytoplasmic bridges, pseudocoelomic membranes, buccal apparatus, intestine and copulatory structures. He also conducted research on the processes of moulting and spermatogenesis.

Whereas Ken's research was mostly concerned with nematodes parasitic in other animals, he also did research on *Xiphinema*, *Aphelenchoides*, *Caenorhabditis* and two marine nematodes, namely *Acanthonchus duplicatus* Weiser, 1959 and *Deontostoma californicum* Steiner and Albin, 1933. Although Ken's research may not be familiar to those whose interest in marine nematodes does not go beyond their taxonomy and/or ecology, Ken has benefited all of nematology by his many substantive contributions to our understanding of how nematodes are put together, and how they function. He had a profound knowledge of vertebrate and invertebrate ultrastructure and cytochemistry, which combined with his ability for careful observation and intellectual prowess, has earned him a place among the best of scholars in nematology.

In May of this year Ken was awarded the Wardle Medal by the Canadian Society of Zoology for the excellence of his research. Because of failing health Ken received the award *in absentia*, and his acceptance speech was video-taped for the presentation ceremony. Ken Wright died on July 6, 1992 at the age of 56, after several months of illness due to complications resulting from haemophilia. He is survived by his wife Elaine, and their three children, Andrew, Eric and Lori.

W Duane Hope  
 November 12 1992

## SOCIAL NEWS

Judith Gobin gave birth to a healthy 7lb 12oz baby boy, Graeme Daniel Araujo, on December 8th. Since he's the first meiobenthic baby to be produced here in Plymouth we felt we had to delay production of Psammonalia so that we could share the good news with you. Best wishes and congratulations to Judi from all her colleagues here in Plymouth!

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