

# PSAMMONALIA

Newsletter of the International Association of Meiobenthologists



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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

Biodiversity seems to have become a very hot topic. With growing fears about man's effect on both the global and local environment, the need to maintain the diversity of the world's flora and fauna is becoming increasingly recognised, even among people who are not professional scientists. Although scientists are also concerned with newer concepts ranging from molecular to ecosystem diversity, it is the traditional level of taxonomic species diversity that attracts most public attention, and here too there are many fundamental questions still to be answered.

In the terrestrial situation the patterns of variation in species richness on a global scale are well documented, with a clear decrease in species richness from the tropics to high latitudes. There is no shortage of theory explaining the existence of this pattern (Pianka, 1966). However, in the marine situation such theorizing seems to be misplaced at the moment, because the empirical evidence for such gradients is still weak and contradictory. It is important that we record these patterns now if we are to monitor or predict the effects of future environmental change. The classic paper of Sanders (1968) analysed data which showed that within-habitat marine macrobenthic diversity for soft-bottoms was higher in the tropics than in boreal regions. However, Thorson (1952, 1957) reviewed a number of comprehensive faunistic papers which showed that the increases in numbers of species towards the tropics is very pronounced in the epifaunas of hard bottoms, but that the number of infaunal species of soft-bottoms was roughly the same in arctic, temperate and tropical seas. Fischer (1960) found similar trends for molluscs along the west coast of the USA and Canada. Abele and Walters (1979a,b) have criticised Sanders conclusions on the grounds that his data from different geographical regions were not strictly comparable because the sampling methods, sample sizes, habitat types and fraction of the fauna analysed all varied considerably. It certainly seems that some taxa may actually be more diverse at the poles than at lower latitudes, although any such comparisons must clearly rely on *strictly comparative studies*.

Our knowledge of diversity gradients in the macrobenthos is weak enough, but we know even less about the meiobenthos and at first sight a comparative study of their biogeography on a global scale seems even more intractable. Firstly, experts on the taxonomy of meiobenthic organisms are becoming a scarce commodity. Koen Martens "Power Play" in the last issue of *Psammonalia*

prompted a number of letters to the Editorial office from kindred spirits who were concerned about taxonomy becoming a clandestine activity, regarded as second rate science and with very few employment opportunities. However, it is amazing how quickly fashions in science can change, and I firmly believe that the perceived pressing need to produce an inventory of the globe's biota will dramatically raise the status of taxonomists if it seems at all likely that they can come up with some globally significant information on biodiversity. Another problem, though, is the one of strict comparability of data from different geographical regions. The meiobenthos are very sensitive to small variations in the structure of their habitat, which may alter their species diversity and composition very considerably. It would be very difficult to sample exactly the same habitat in tropical, temperate and polar regions, and any small habitat differences could well obscure any true biogeographic patterns. Finally, mounting a comprehensive global sampling programme would be a major and very expensive undertaking for any individual organisation.

But I think, if we really felt it was worthwhile, we could do it. Not as individuals but as the **INTERNATIONAL ASSOCIATION OF MEIOBENTHOLOGISTS**. Until now the Association has served as an invaluable means of exchanging information, but why couldn't 280 people from 36 countries around the world with a common interest mount a truly collaborative research programme? The Association is uniquely equipped to cope with the logistic problems of describing geographic patterns in the species diversity of meiobenthos, because:

1. The taxonomic expertise of the combined membership is enormous.
2. We are ourselves globally distributed.
3. We already have a well established and effective channel of communication between members (i.e. *Psammonalia*).

It would not be a major undertaking on any individual's part to take a few samples from their local area to contribute to such a study. The problem, though, would be strict standardisation of the habitat sampled. In this respect I think the best way forward would be to set out identical artificial substrates in all these areas and retrieve them when a mature meiobenthic community had become established. Judith Gobin in our laboratory is already undertaking such a study on limited geographic and taxonomic scales comparing nematode and polychaete diversity between U.K., Caribbean, Arctic, New Zealand

and (hopefully) Antarctic sites. She uses arrays of small plastic mesh pan-scrubbers, anchored to shallow subtidal rocky bottoms by steel pegs hammered into crevices. These develop mature and diverse meiobenthic (and macrobenthic) assemblages within a couple of months which are similar in species composition to those which we find in the finer seaweeds or the holdfasts of kelps. They are then retrieved for analysis.

So, my proposal is this. We need a number of volunteer individuals or research groups (more than 20 to make the exercise worthwhile) to set out and retrieve the artificial substrates. These should not all be concentrated in the highly worked temperate zones, but people with access to the tropics and polar regions are particularly needed. I would be happy to supply the pan-scrubbers to ensure standardization. To ensure standardisation of taxonomic analysis we would also need volunteers to take on the sorting and identification of individual taxonomic groups from all the locations once they had been initially separated from the samples. For some of the more dominant groups such as nematodes and copepods this would obviously be quite a major undertaking, but if viewed as part of a global investigation on biodiversity I feel certain that funding agencies would view applications from these taxonomists in a favourable light. Surely this is the kind of sample series that many specialist taxonomists would love to get their hands on. These people could publish the results of their work on individual taxa as they see fit, but it would be nice if they would formally acknowledge the International Association of Meiobenthologists for providing the material. The data should also be made available for a unified analysis, which could be published by the Association. The only long and possibly uninteresting task would be the initial sorting of all the samples into major taxa for dispatch to these specialists. Again I think that funding agencies in Europe (e.g. the European Community's MAST and STEP programmes) or the USA (the NSF) might provide funds for this in the context of a global biodiversity programme: they would be getting very good value for their money! I would be happy to approach European sources, at least.

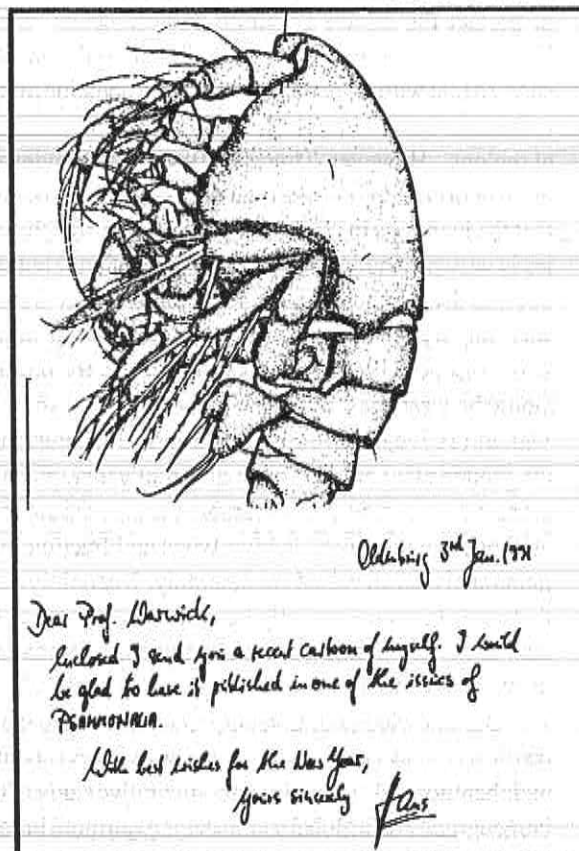
So, what does everybody think. PLEASE WRITE AND LET ME KNOW. If you feel that the whole idea is totally ill-conceived, please don't be afraid to say so. Let me know if you are prepared to deploy and retrieve the artificial substrates and/or analyse material. If enough people respond positively and the project becomes viable, I believe that it could really put the International As-

sociation of Meiobenthologists on the map, and also provide a few more jobs for taxonomists.

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Richard Warwick



Thanks to Hans for his letter which we have printed above and his real cartoon which we have also printed. We will certainly recognise Hans when we meet him.



STATEMENT OF ACCOUNTS FOR 1990**INCOME**

funds transferred on 15.12.89	\$1000	=	£ 585.81	
funds transferred on 23.4.90	\$4095.56	=	£2480.46	
total balance received				£3066.81
subscriptions			£ 707.58	
contributions			£ 27.00	
bank interest (to 15.1.90)			£ 85.08	
				£ 819.66
<b>TOTAL INCOME</b>				<b><u>£3886.47</u></b>

**EXPENDITURE**

Psammonalia No.87	printing	£104.42		£ 344.42
	postage	£240.00		
Psammonalia No. 88	printing	£ 94.15		£ 304.41
	postage	£210.26		
Psammonalia No. 89	printing	£100.87		£ 349.69
	postage	£248.82		
Psammonalia No. 90	printing	£132.97		£ 344.18
	postage	£211.21		
<b>TOTAL EXPENDITURE</b>				<b><u>£1342.70</u></b>
<b>BALANCE CARRIED FORWARD</b>				<b><u>£2543.77</u></b>

The production costs of Psammonalia during this year are considerably in excess of the income in the form of subscriptions and bank interest. Theoretically the present subscription rate of £5 per annum for approximately 280 paying members should yield an annual income of £1400. However, in 1989 many members paid subscriptions for more than one year at the old rate of \$5 (which is only half the present rate.) It is expected that over the three years that editorship of Psammonalia is based in the UK things should even themselves out and the balance of the International Association of Meiobenthologists funds should not be eroded too much. I should point out that the use of the desk top publishing system and hence the printing of Psammonalia is free, the "printing costs" given above are only for photocopying.

**PAYMENT OF SUBSCRIPTIONS BY MEMBERS IN THE U.S.A.**

During this year I have received many cheques for subscriptions from American members made out in U.S. dollars. To present these cheques to our bank would cost more than one years subscription in bank charges on each cheque and this is obviously not acceptable. I understand

that it is not easy for many members in small towns in America to obtain foreign currency due to the nature of your banking system.

Therefore, for those Americans who are due to pay their subscriptions this year (see below), I have made arrangements for BOB FELLER to act as an intermediary. Your annual subscription is \$10 (equivalent to £5 sterling at present exchange rates) and you may therefore send a cheque *WHICH MUST BE MADE OUT TO BOB FELLER PERSONALLY* for \$10 or \$20 to:-

Bob Feller, Belle Baruch Institute for Marine Science, University of South Carolina, Columbia, Sc 29208, U.S.A.

For 1991 this arrangement applies to the following members:-

Aller; Blake; Cammen; Cordell; Dean; Decho; DeMartini; Diaz; Dow; Findlay; Foreman; Frey; Gradek; Hakenkamp; Hessler; Kern; Kolba; Levy; Lyke; Montagna; Mountford; Nelson; Norenburg; Pennak; Reid; Rudnick; Sharma; JPS Smith III; Tietjen; Toal; Turner; Tyler; Venn; Webb; William-Howze; Woods.

Mike Gee

## NEW MEMBERS

**Willem Goedkoop,**  
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Box 557  
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As a graduate student, I have been studying the profound benthic biocenosis of temperate Lakes (Lake Malaren and Lake Erken) for about a year and a half. I am doing basic ecological research on interactions between different groups of benthic organisms, including macrofauna, sediment bacteria and the meiofauna, and their response to phytodetrital inputs after spring diatom blooms. Microdistribution patterns of meiofauna, i.e. associations with macroinvertebrate burrow structure and fecal depositions, as well as competition between transient meiofauna invaders (e.g. early instar chironomids) and more permanent meiofauna are of special interest to me.

**Fernando Pardos and Letizia Herrera,** both of:-  
Universidad Complutense de Madrid  
Facultad de Biología  
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28040 Madrid  
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We are part of a recently formed research team for the study of Spanish meiobenthos, a very poorly studied field in our country. Our main interests are the morphology and systematics of Kinorhynchs and also the comparative study of meiofaunal populations for later ecological purposes. Our first step has been sampling some localities along the north and north-west coast of Spain.

## CHANGE OF ADDRESS

**Howard Platt**  
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I am leaving the Natural History Museum, London. In April 1991 I will take over as manager of Marengo Ltd., a company providing marine and environmental

services, ranging from specific chemical analyses to a comprehensive package for environmental impact assessments. The company is currently based at the Marine Station, Portaferry, Northern Ireland. However Marengo is also an associated company of a Belfast-based engineering company, Kirk McClure and Morton, which has extended Marengo's capabilities to cover hydrodynamic modelling and marine engineering studies.

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After finishing my PhD (on the effect of salmon predation on harpacticoids) at the University of British Columbia in August 1989, I was a Postdoctoral Fellow with Paul Montagna at the Marine Sciences Institute of the Univ. of Texas at Austin. I stayed in Texas until September 1990. Whilst there, I collaborated with Paul on a study of the reproductive patterns of selected harpacticoid copepod species on the California continental shelf. I also started research (which I am continuing with Jon Grant at Dalhousie) on meiofaunal vs macrofaunal influences on the degradation and burial of sedimented phytoplankton.

**Cecilia Lopez Canovas**  
Santovenia 136 esq  
Patria Cerro  
Ciudad Haba  
CUBA

I have a lot of samples from different regions of my country and I'm studying the quantitative distribution of meiofauna in different biotopes and ecosystems, such as coral reefs, mangroves and estuaries. I am particularly interested in the systematics and ecology of free-living marine nematodes. I have already found some genera but the difficulty is with species identification because I do not have the necessary literature.

**Jeannette Whitehorn**

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**NEWS FROM THE MEMBERS****"INTRODUCTION TO THE STUDY OF MEIO-FAUNA"**

Bob Higgins writes:

Currently, there are only about 100 copies of *Introduction to the study of Meiofauna* in stock. The Smithsonian Institution Press is now considering a second printing. In anticipation of this, Hjalmar Thiel and I would be most grateful if noted errors, omissions, or important additions were called to our attention so we can try and update the book as much as practical. Essentially, we can make corrections if page contents are not affected, in some cases, much could be added, in other cases only minor corrections could be made, but send everything you would like to see added or corrected.

We ask that you send a copy of the page needing correction with the correction marked in *red* pencil or ink so that there is no doubt as to what is being corrected. Send this to Robert Higgins, NHB 163, Smithsonian Institution, Washington DC, USA 20560 before 1 June 1991. Your assistance in making the second printing as useful as possible will be appreciated.

**POWER PLAY**

In many letters received by the Chairperson, the writers have said how much they enjoyed Koen's contribution to the last issue.

Janet Reid, a Research Associate at the Smithsonian Institution in Washington DC, comments:

I have been chuckling over Koen Martens "Power Play" and am passing it around the Department. As an unemployed taxonomist, I feel the present situation acutely. I too have received appeals for help by well-funded (or at least employed) ecologists, in numerous instances in the form of a large package arriving with no warning. A related problem is that funding for taxonomic work here is mostly going to "systematics" (=cladistics) projects rather than alpha-level species discrimination studies, or, God help us, surveys. Our best keys to many groups of North American freshwater fauna remain those in Ed-

monson, thus are more than 30 years out of date, rendering non-specialists increasingly helpless. Thus the incidence of obvious errors of species determination in the ecological literature has been rising as more work in non-lacustrine wetlands is published. Personally I don't think the situation will turn around until taxonomists are able to review the project proposals of ecologists!

*This may be the place to remind members that the Chairperson and editorial board do not write Psammonalia - the members do. Therefore the quality and depth of the Newsletter is directly proportional to the amount of effort which members put into supplying us with contributions, comments and ideas. If you think the Newsletter is thin and uninteresting it is up to you to supply us with material.*

**SENDING ITEMS TO PSAMMONALIA VIA ELECTRONIC MAIL**

If you wish to send references, news or information to Psammonalia via electronic mail we have two addresses you can use:

To Richard Warwick

RMW@UK.AC.NPM.IA

To Mel Austen

MELA@UK.AC.NPM.IA

This sends mail to our IBM mainframe which is on the JANET network. If you have difficulty reaching us via electronic mail please resort to humble postage and let us know!

**FUTURE MEETINGS**

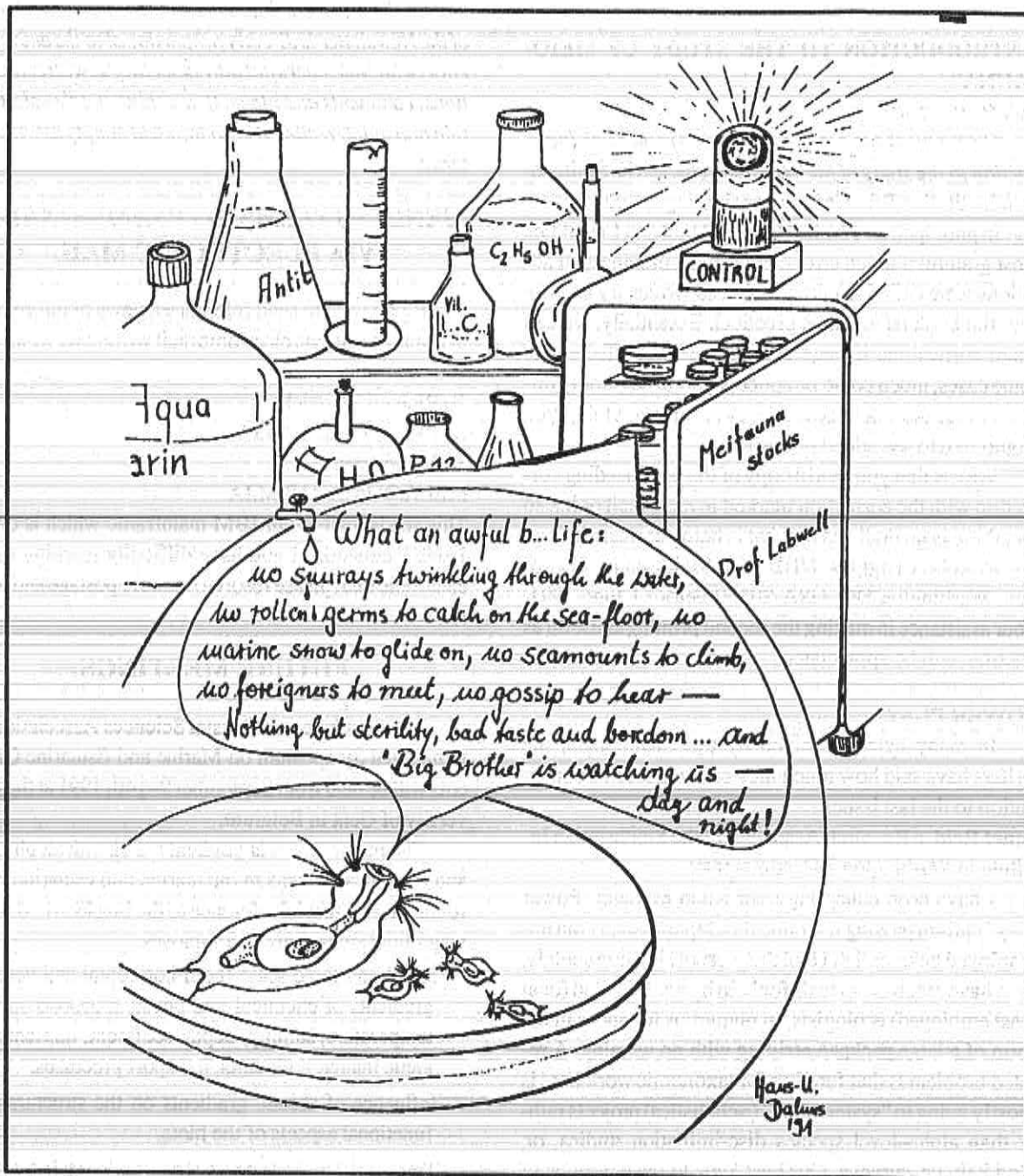
The Estuarine and Coastal Sciences Association International Symposium on Marine and Estuarine Gradients will be held from September 9-14th 1991 at the University of Gent in Belgium.

The major theme is gradients in chemical, physical and biological aspects in the marine and estuarine environment with special reference to the brackish and freshwater tidal areas. This encompasses:

- Small and large scale (both horizontal and vertical) gradients of chemical and physical aspects such as temperature, salinity, depth, sediment, nutrients, organic matter, pollutants, transport processes.
- Influence of abiotic gradients on the structural and functional aspects of the biota.
- Transport, fate and effects of contaminants in tidal waters.

- Features of brackish/fresh water tidal systems, including the processes of the estuarine turbidity maximum, denitrification etc.
- Conservation and restoration of the estuarine gradient.
- The role of multivariate statistical methods in gradient studies and statistical and methodological problems in the use of correlation and multivariate analysis.

For further information contact:  
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