

# PSAMMONALIA

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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

I have received an encouraging response to my last editorial, in which I suggested that the IAM might be able to mount a truly global comparative study of meio-benthic biodiversity. Most of the letters I have received were from enthusiasts volunteering to set out and recover the artificial substrata. The global coverage looks quite good so far, with five sites in the tropics, five north-temperate, four south temperate, one north polar and one south polar (Fig. 1). Ideally, I would like to see some of the gaps filled: for example a site in the southern part of South America would be nice, and a better coverage of polar regions. Any more volunteers?

I also received some constructive criticism of the proposal, which is equally welcome. We obviously don't want to put a lot of time and effort into something which, at the end of the day, will be inconclusive or simply not get completed. Geoff Hicks raised a very valid problem. Simply by deploying the same substratum in each place does not automatically solve the problem of standardisation of habitats. The microhabitats in which the substrata are placed may clearly be an important variable. In his studies of subtidal seaweeds he found large differences in meiofaunal abundance and species richness depending on the aspect, slope, proximity to rock overhangs, adjacency to large sponge encrustations, turbidity and differences in macroexposure and microexposure (e.g. plants taken from crevices or open spaces). Since standardisation of microenvironmental conditions in our proposed study will only be possible within certain rather wide limits, Geoff concludes that the sampling problems for this project are intractable. Our own experience with artificial substrata, however, suggests that the problem might not be so alarming as he suggests. We have set out replicate substrata at a number of different sites along the south coast of Devon, England, varying quite considerably in habitat type and found that the communities developing in them were quite similar in diversity. Judi Gobin is presently doing the same sort of thing in Trinidad and Tobago, so we should soon have some idea of the kind of variability we can expect within a given geographic region. It may be that the growth-form of Geoff's seaweeds also varied with microhabitat, and this may have been at least one contributing factor to the faunal differences he observed. Two things are clear: we should not rush into a widescale study until we have a better idea of the expected variability, and several substrata should be set out at each place, spanning a good variety of microhabitats. In this way we will be able to

ascertain whether there is a global signal to be detected above the local environmental noise.

With respect to fresh waters, Koen Martens puts the problem even more starkly. "You are not only dealing with the *relative* uniformity of marine environments, but also with the enormous diversity of freshwater habitats, ranging from tropical rainpools to the abyss of Lake Baikal, and from high mountain lakes with nearly distilled water to the hypersaline Australian lakes". Come on, Koen, we're not that stupid! But the point is well taken: it would probably be much more difficult to standardise a series of freshwater sites, and since we only have one volunteer to deploy the artificial substrata (Dan Danielopol), it is clear that we must restrict this proposed study to shallow-water *marine* habitats only. Koen also harkens back to a scene from his "Power Play" (P. sammonalia No. 90), fearing that overworked taxonomists will be receiving large parcels of meiofauna to count and identify. He points out that "this aspect of the global programme can only work if you can find money to pay enough presently unemployed taxonomists to work on this material and this material only (at which stage advice from the overworked colleagues will doubtlessly be offered)". This is exactly as I hoped the project would proceed. What we need is an ecologically relevant topic of the highest scientific priority and with a strong taxonomic component which will attract funds and keep more taxonomists employed. The priority of biodiversity as a topic can no longer be in doubt, as the Ecological Society of America recently declared in a major policy statement (Ecology 72: 371-412). Koen also thinks that much information on global diversity patterns could be gained from a thorough literature review. To some extent I agree, but at present the globe has very patchy coverage by workers with differing levels of taxonomic competence using different sampling and extraction methods in a wide variety of habitats. I believe that there are severe limitations to the amount of information on global patterns that can be extracted from this data-base.

Jon Norenburg, in his capacity as Supervisor for Benthos in the Smithsonian Oceanographic Sorting Centre, feels that he may be able to help with the initial sorting problems of the project, possibly with some outside funding assistance (e.g. NSF). As a possible way of circumventing this sorting problem, Antonio Todaro (presently working in Bill Hummon's lab. in Ohio) makes some methodological suggestions which we might consider. He suggests that we set up as many substrata as there are taxa we want to study, or at least for the major and more difficult taxa, with replicates as necessary. Then each specialist could receive his own

samples and dedicate his efforts to extracting the animals of his interest. This idea has considerable merit, because some taxa may require specialised techniques (and the substrata are certainly cheap enough). The volunteers setting out and retrieving the substrata, and fixing and distributing the samples, should employ methods commensurate with the best possible initial fixation and preservation of most of the taxa. For example, gastrotrichs need to be narcotized with 7% magnesium chloride before fixation (although as yet we have not found gastrotrichs in these substrata).

One difficult problem with respect to sample standardisation, raised by both Carlo Heip and Koen Martens, is that of seasonality. Our knowledge about seasonal changes in diversity is presently rather limited, but in algal and holfast habitats such changes certainly can occur. Substrata would certainly have to be deployed in the same season, and summer is obviously the best, but what about the tropics? Maybe we can expect less seasonal variability here, but this is a problem which still requires careful deliberation.

There have been few volunteers to sort and identify individual taxa, although Ilse Bartsch has kindly agreed to help with the halacarid mites, which are an important component of the meiobenthos in these habitats. However, if the programme gains momentum and funds are forthcoming, I am sure that more specialist taxonomists can be attracted to it.

So, how do we proceed from here? Firstly, despite the above discussion, I remain convinced that the proposal is viable and could achieve its objectives. However, we clearly need to plan the programme carefully, set out exact sampling protocols, and be reasonably sure of funding so that the material will be properly analysed. In my view it would not be leaving things too long to inaugurate the project in August 1992 at EIMCO in Maryland, where we could meet to discuss it. By that time we will have the experience of two pilot studies in England and the West Indies behind us, and in the meantime can pursue funding possibilities. For my own part I am planning to convene a joint Workshop of European marine laboratories and museums in the autumn of this year to formulate a grant proposal to the CEC, and I hope that the IAM initiative will form a major element of this submission. Carlo Heip feels that the wording of such a project should very carefully take into account that large scale patterns in meiofaunal species assemblages may not be of much interest outside fundamental marine ecology. I am rather ambivalent about this, as the meiobenthos do play important roles in many biogeochemical processes in the sea, although it must be admitted that those inhabiting plastic panscrubbers might not be so important!

I would urge IAM members to ponder further on the project, to explore funding possibilities and communicate any information to the Editorial office in Plymouth.

**Richard Warwick**



Fig. 1. Locations from which IAM members have agreed to collect samples.

## NEW MEMBERS

**Joyce Landingham**  
NOAA, NMFS,  
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An old member coming back into the fold now that she can again pay her subscription in dollars.

**Annie Talley**  
Rt. 7 Box 296  
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I am a graduate student at the University of North Carolina in Greensboro and am working with Dr. Julian Lombardi. In addition to our search for a new species of gastrotrich, we are doing a comparative study on the ultrastructure of the pigmented and non-pigmented photoreceptors of gastrotrichs. Hopefully this will shed some new light (excuse the obvious pun) on the theory of diphyletic origin of photoreceptors.

**Antonio Todaro**  
Dept Zoological & Biomedical Sciences  
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USA

I am Italian and received my Laurea in Biological Sciences in 1986 from the University of Modena, preparing a thesis based on experimental research regarding "Parthenogenesis and Hermaphroditism in Chaetodontid Gastrotrichs" in the laboratory of Maria Balsamo. Since then, I have been interested in the taxonomy and reproductive biology of Gastrotricha. At the present time I work as a post-doctoral fellow in the laboratory of Bill Hummon. Our principal research activity has to do with taxonomic and biogeographical aspects of Gastrotricha. We are engaged in field research in several areas of the world, particularly the Mediterranean, northern Europe and the Atlantic and Gulf coasts of the USA. All species which we find during our work we are videotaping on Super VHS tape in order to build a videolibrary of the phylum. As this is completed, copies will be distributed to the major institutional museums.

**Alexander Tzetlin**  
Department of Invertebrate Zoology  
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For a few years now I have been working in the field of morphology and taxonomy of interstitial and meiofaunal Polycheta mainly in the area of the White Sea but also in the Japan Sea, Sakhalin Isl., Kamchatka etc.. During the last three months I have been working with Prof. Westheide at the University of Osnabruck who told me about the International Association of Meiobenthologists and the newsletter Psammonalia. It would be a great help if we could receive the newsletter in our department in a regular way as besides myself there are a number of people working in the field of taxonomy and morphology of free-living marine Nematoda (Dr. Malakhov & Dr. Tchesunov). We would be glad to supply some of our reprints (but unfortunately they are in Russian).

**Molly Sturdevant**  
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Another lapsed member coming back to the fold from the wilds of Alaska.

## CHANGE OF ADDRESS

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## NEWS FROM THE MEMBERS

**Valja Galtsova** writes:

I have been working at the National Museum of Natural History, Smithsonian Institution Washington D.C. as a foreign scholar from 25 January to 20 February 1991. My research which was in collaboration with Dr W.D. Hope was concerned with the systematics of representatives of the free-living marine nematode genus *Sabatieria* (order Chromadorida, Comesomatidae). I became familiar with techniques used by Dr Hope and I will be able to use these techniques in my own research. In particular, I made use of modern light microscopes, used the SEM and became familiar with some of the computer programs used in his research.

Access to the library of the Museum of Natural History was also an important part of my visit. Not all of my visit was spent in the laboratory as I also had an opportunity to take part in a field trip with Dr Hope during which we were able to collect specimens of a species of *Sabatieria* in St. Leonard Creek, a tributary of the Patuxent River near Solomon's Island, Maryland.

As a result of my visit to the Smithsonian Dr Hope and I are planning to write a joint paper concerning the problem of distinguishing closely related species of the genus *Sabatieria*. This research project is related to a second, very important cooperative project, which has to do with the zoogeographic distribution of separate species of nematodes, especially trans-Atlantic distributions.

In connection with our joint research, the Zoological Institute of the Academy of Sciences of the USSR is planning to invite Dr Hope to visit me and my colleagues in Leningrad.

Of course I am very grateful to the Director of the Fellowship and Grants Programme for the opportunity I have had to work at the Smithsonian Institution, and their financial support for my visit. I hope that scientists of our institutions will be able to continue fruitful collaboration in the near future.

**Krystyna Prejs writes;**

I have now fully recovered from my illness and am still working on my freshwater nematodes. For about two years I have been participating in the Dokka-delta project run by the Norwegian Institute for Nature Research. Here, apart from qualitative and quantitative descriptions of nematode assemblages, I would like to shed more light on the problem of biotic control in benthic communities, precisely on predator-prey interactions in the meiobenthos. I was lucky to find a nematode community distinctly dominated by the predatory species *Anatonchus dolichurus*. It is the largest known predator within freshwater nematodes, capable of attacking not only other nematodes, but also Oligochaeta (Naididae, Enchytreidae) and other small-sized animals. Preliminary results of the experiments carried out last autumn during my short stay in Norway, seem to be very promising. Give my regards to all those colleagues who contribute to making Psammonalia so interesting and vivid.

**Brian Marcotte writes:**

Absence makes meio heart grow fauna.

My absence at the last meeting of the Association and at other events in the last three years has led some colleagues to think that (1) I had been consumed body and soul by an errant harpacticoid or furtive salmon; (2)

the cold blast that swept me from "that rocky promontory at the top of the earth" had thrown me senseless on the wave swept coast of Maine; (3) or, worst of all, I had been transmuted from meiobenthologist to beurocrat. None of the above.

The laboratory I direct is the primary state agency in marine research and development on the Gulf of Maine. We are home to the state's marine fisheries research and to one of the world's most extensive seafood toxin monitoring and research programmes. The existing lab is composed of 18 buildings in various stages of disrepair. During 1990, the state provided \$14mil. to expand and renovate the facilities. As Director, this project, not a copepod or fish, has consumed me. When the dust settles (literally), I will be returning to my studies of copepod and fish behaviour. Until then, I hope to keep in touch with you all at least through reprints. Vicarious science is better than no science at all.

### OBITUARY: W.G.INGLIS

I am sorry to have to announce that Dr William G. Inglis (known to his colleagues and friends as Grant) died of a heart attack around Easter time. He had been in hospital with heart trouble only a few months before, and died at a hospital in Edinburgh, Scotland. John Coles, formerly his colleague at the Natural History Museum in London, wrote to tell me the news.

This is not a formal obituary, and I am certain that Grant would not want anything too solemn written about him. His character can best be described as flamboyant: he enjoyed public speaking a great deal and wryly confided in me once that he enjoyed the sound of his own voice. His exuberance and enjoyment in what he was doing came across clearly in his writing. In other respects, though, he seemed to be something of a "loner". As a Scot he had a passion for the mountains and climbing, but even in the late '60s his health curtailed this activity somewhat.

But I know most of you will be thinking "Grant who?". I don't think he was ever a member of the IAM and his contribution to the study of meiobenthos is limited to a dozen or so papers on marine nematode taxonomy and systematics. He had very broad interests in systematics and evolution and wrote a lot about parasitic nematodes as well. He did some very painstaking work on the comparative anatomy of marine nematodes, and to me the highlight was his elegant study of the head in enoplid nematodes (Bull. Brit. Mus. Nat. Hist. 11: 263-376); the nomenclature he introduced has now been universally adopted. Other papers are characteristically idiosyncratic. His attempt at an outline classification of the Nematoda (Aust. J. Zool. 31:

243-55) did not meet with universal acclaim, and I found a lot of his more recent work difficult to follow, e.g. his paper on "stratigraphy" (Aust. J. Zool. 34: 411-37).

He was appointed to the Natural History Museum in 1953, to take responsibility for the "Nemathelminthes" part of the Parasitic Worms section, as well as several other small invertebrate groups, and he left the museum in 1968 to become the director of the South Australian Museum in Adelaide. He retired about two or three years ago, and was about 62 or 63 when he died.

I regard Grant as one of my mentors. My first acquaintance with him was in 1965 when I appeared at the Museum as a hesitant young student just beginning my PhD, and asked him to teach me how to identify marine nematodes. Perhaps rather taken aback by the idea that a student might even be vaguely interested in such things, he gave very generously of his time for a couple of weeks. On that, and on subsequent even briefer visits, I learned a great deal. Little did I know what it would lead to: he has a lot to answer for!

Richard Warwick

## FUTURE MEETINGS

### EIMCO

Possibly the most important date in your diaries for 1992! EIMCO - The Eighth International Meiofauna Conference will be held from August 9-15, 1992 at the University of Maryland's College Park conference site in Maryland, USA. The conference site is easily reached from Washington National Airport or Baltimore-Washington International airport so see your travel agent now! Margaret Palmer will be organising this exciting event and is already talking to people interested in organising special sessions so if you have any ideas/interests for this meeting please contact her NOW (or at least as soon as possible).

Margaret Palmer  
Department of Zoology  
University of Maryland  
College Park  
MD 20742  
USA

## SECOND CONFERENCE ON GAS IN MARINE SEDIMENTS

This conference is to be held at the North Sea Center, Hirtshals, Denmark from Monday 24th - Friday 28th August 1992. The conference is concerned with methane, carbon dioxide and hydrogen sulphide which occurs as 'shallow gas' in marine sediments throughout the world. These are generated as a result of the biogenic degradation of organic matter and the thermogenic cracking of kerogens. Subjects will include ECOLOGY - impact on benthic ecosystems and MARINE BIOLOGY - animal-bacterial symbioses and detoxification systems.

## SOCIAL NEWS

Margaret Palmer writes: 'My husband (Michael) and I had our first child on February 19. He is James William ("Will") Nussman, he weighed 7lb 7 oz and was born at 3:30 pm after only 4 hours of labor!!! At 11 am in the morning I was still saying to my husband "Do you think this could be labor?" We then went to the grocery store and to the mechanic to drop off our truck to get fixed! The funniest event during the birth: I received a fax about a meeting at work while in the delivery room. The best gift received: 10 coupons from my "meiopeople" (alias graduate students) for free baby-sitting good until Will is 18 or they graduate. The biggest surprise: discovering parenthood is the hardest thing I've ever done (including getting a Ph.D.). The neatest part of it all: discovering that Paul Montagna's description of having his first child, Kate, was really true ... "You get to fall in love over and over again."

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