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P S A M M O N A L I A

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Cover by Brian M. Marcotte, Dalhousie University

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EDITORIAL

As you will note by the title page, our name has changed. The membership voted in favor (61 to 2) of amending Article 1 of the Constitution to read as follows:

Article 1. Name.

The name of the Association shall be the International Association of Meiobenthologists.

John Tietjen has asked me to reiterate the need for all members to pay their dues. Those of you who paid \$3.00 for just 1974, we ask you now to remit your 1975 dues (\$3.00) to Dr. Tietjen now. A recent development of the U. S. Federal Reserve Bank has cut deeply into foreign dues payment. Under a new ruling, checks drawn on a non-U.S. bank, even if in U. S. dollars, require a \$3.00 service charge. As you can see with the \$3.00 dues, the Association gains nothing. Therefore, we are requesting that all non-U. S. members submit their dues either in cash (U. S. dollars) or by International Money Order.

Please note that the compilation of the questionnaire on "Deep Sea Meiofauna" from PSAMMONALIA #21 is appended with this issue. Hjalmar Thiel has done an excellent job compiling this data and we thank him. Anyone wishing to add to the compilation should contact Dr. Thiel. His address is on the first page of the addendum.

We plan to issue a Membership Address listing in the next issue of PSAMMONALIA. If you plan on changing your address or if the computer address label on the envelope is not correct, please inform me prior to January 1975 so your correct address will appear in the listing.

Bruce C. Coull
Bruce C. Coull, Editor

FINANCIAL REPORT

Credits

Balance on Hand (prior to PSAMMONALIA #25)	\$670.50
Dues & Contributions received; minus bank service charges (7/7/74-10/15/74)	186.74
TOTAL	\$857.24

Debits

Cost to produce PSAMMONALIA #25	\$121.68
TOTAL	\$121.68

TOTAL BALANCE on hand 15 October 1974	\$735.56
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John H. Tietjen, Treasurer

NEW MEMBERS

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(Interstitial Protozoans, particularly
ciliates)

CHANGE OF ADDRESS

Phillipe Bodin
Laboratoire d'Océanographie Biologique

R. J. Kalin

ELECTION OF OFFICERS

The 2 year terms of A. D. McIntyre and J. Renaud-Mornant as Executive Committee members expires on 31 December 1974. Below you will find the names of the candidates nominated, and who have agreed to serve if elected, to fill these 2 vacant positions. These newly elected members will serve on the Executive Committee until 31 December 1976. Please vote for your choice of two and return the ballot to me before 15 January 1975

NEWS FROM MEMBERS

P. BODIN, Brest: After defending my Ph. D. thesis (29 May), I left La Rochelle, where I was too alone. Since Sept. 1, I am at the Faculty of Sciences of Brest (near Roscoff) working with others on a cooperative program on the fauna from the continental shelf (15-200m) of the Golfe de Gascogne. Last year, about 60 samples were collected with a special corer (Rouvillois-C.R.E.O.) and sediment parameters, primary production, macrofauna and meiofauna are being studied. For my part, I am quantifying the five or six most important meiobenthic taxa and continuing my research on the systematics, biology and ecology of harpacticoid copepods. Some new species from La Rochelle will be described as soon as possible, as will some new species from Malaysia sent to me by A. Sase Kumar.

A. C. BORROR, University of New Hampshire: My area of major interest is ecology and systematics of marine benthic ciliated protozoa, particularly members of the order Hypotrichida. During the past several years, in addition to work on ciliate systematics (published in J. Protozoology), I have prepared an illustrated key to the families of marine ciliated protozoa likely to occur along the northeastern United States (NOAA Technical Report NMFS Circular 378). I have recently completed a project supported by EPA on environmental requirements of selected estuarine ciliated protozoa. Some of this work has been published (Acta Protozoologica) or is in report form. Current interests include revision of the ciliate genus Euplotes in collaboration with my colleagues Drs. Tuffrau and Dragesco. I would welcome communications from psammonalogs relative to the systematics of that group.

Mr. Edwin Martinez, working under my direction, is currently engaged in doctoral research on the ranges of sensitivity to high thermal stress among different species of marine ciliates as influenced by environmental changes. He is investigating the effect of nutrition, cell geometry, and behavior upon such sensitivities in a variety of marine species. Mr. Barry Wicklow, also working under my direction, is conducting research towards the master's degree, investigating Discotricha sp. -- a psammolittoral ciliate from beaches with freshwater runoff on the New Hampshire coast. His interests are primarily in the morphogenesis and systematics of that peculiar ciliate.

R. M. WARWICK, IMER, Plymouth: I am at present preparing three papers on the free-living nematodes of the Isles of Scilly, which are about 30 miles off the southwestern tip of England. The first, which I am writing with John Coles, is an annotated species list forming part of a series of papers on the flora and fauna of these islands. The nematode fauna differs in many respects from that of mainland Britain in that many species are absent, which is in part due to the absence of certain habitats such as estuaries and mud-flats. Diversity is generally low and often the dominant species are ones which are quite rare on the mainland. This is probably due to the fact that the islands have been separated from Cornwall for the last 10,000 years and that the evolution of populations has taken place in isolation since this time. The second paper is a taxonomic one describing some new species and re-describing others which have hitherto been poorly known. One of the most interesting finds is the discovery of a new species of Notochaetosoma (Draconematidae), a genus previously known only from Australia. The third paper is a more detailed study of the nematode fauna of the small intertidal weeds. The dominant factor governing the distribution of species in these weeds appears to be the degree of coarseness of the filaments and the closeness of branching. "Coarseness" of seaweeds, unlike that of sediments, is difficult to quantify in an objective way, and any suggestions for a way of doing this will be most welcome.

My ongoing research programme mainly concerns a study of secondary production on a mud-flat in the Lynher estuary, near Plymouth. Macrofauna production here amounts to 13.3 g dry wt/m²/year which, from gut-content analysis, appears to feed mainly on meiofauna. We feel, therefore, that the meiofauna production must be high in this

area. Two approaches are being adopted to estimate this production: the first by classical techniques of monthly sampling and counting of growth stages, and the second with the application of Production:Respiration ratios. The use of P:R ratios is now achieving some popularity as a short-cut method. To obtain respiration data we are now in the process of setting up a Cartesian Diver apparatus for use with stoppered divers. This is a new departure for me, and again any advice will be welcome.

J. B. J. WELLS, University of Aberdeen: My current research is, entirely concerned with the taxonomy of harpacticoid copepods. At present I am in collaboration with Dr. G. Chandrasekhara Rao of Calcutta, working on an extremely interesting collection made by him in the Andaman Islands, Bay of Bengal. So far we have discovered a number of new genera as well as the expected crop of new species and we will have something to say on the relationships of the genus Schizopera. I do not expect early publication of these results as there is still a large amount of material to be looked at. I have also got a large collection of interstitial copepods from the Mediterranean, collected mainly by Neil Hulings and staff of MMSC, Tunisia. Analysis of this material, which is proceeding slowly, may help towards an understanding of zoogeography in this region. I also want to use this column to appeal to all workers for reprints of past, present and future papers on harpacticoids and general meiobenthic ecology from all other workers, particularly those outwith western Europe.

G. C. RAO, Calcutta: The samples of microfauna collected recently from sand and algal mud on the Andaman Islands, are now sorted out. Identification work of the diverse fauna is in progress at different stages. Preparation of the paper on Gastrotricha is nearing completion, while two new species belonging to the genera Halammohydra (Hydrozoa) and Pycnophyes (Kinorhyncha) are being described. Three species of the gastropod genera Caecum, Pseudovermis and Microhedyle are being studied in collaboration with L. V. Salvini-Plawen. Meiobenthic Copepoda, which are being studied in collaboration with Dr. J. B. J. Wells, are yielding interesting results. We have found many new species, plus a considerable number already known to science.

ANNOUNCEMENTS

Meeting Report:

FIRST INTERNATIONAL MEETING ON MEIOFAUNA PHYSIOLOGICAL ECOLOGY was held in Arcachon, France, 25-29 September 1974.

This was a highly successful meeting attended by representatives from 11 countries and one representative of the U.N.E.S.C.O. who heard contributions from 17 authors. This field of study has obviously important contributions to make to many areas of benthic research including production and pollution studies. Advances in this field will also lead to general improvement of research techniques for small, single organisms and is indeed already contributing significant information to many aspects of marine research.

The meeting resolved that the INTERNATIONAL ASSOCIATION OF MEIOBENTHOLOGISTS be asked to promote further conferences and to encourage, by this and other means, the development of meiofaunal research on an international basis.

Pierre Lasserre
Jeanne Renaud-Mornant

The following papers were given:

- J. H. TIETJEN AND J. J. LEE. Feeding habits and nutrition of free-living marine nematodes.
- C. CHASSE. Utilisation des relations d'allométrie en matière de production pour la détermination de l'importance énergétique relative des peuplements de la méiofaune et de la macrofaune des divers sédiments littoraux.
- F. DE BOVEE. La nématofaune des vases autopolluées des Iles Kerguelen. (Terres Australes et Antarctiques françaises).
- M. M. PAMATMAT. In situ metabolism of benthic communities.
- C. MAGUIRE AND P. J. S. BOADEN. Energy and evolution of the thiebios: An extrapolation from the marine gastrotrich Thiodasys sterreri.
- F. SCHIEMER. Metabolic levels in meiofauna.
- W. B. VERNBERG AND B. C. COULL. Multiple factor effects of environmental parameters on the physiology, ecology and distribution of some marine meiofauna.
- W. G. KRAUS AND B. W. FOUND. Preliminary observation on the salinity and temperature tolerances and salinity preferences of Derocheilocaris typica Pennak and Zinn, 1943.
- C. JEUNIAUX. Principes de Systématique biochimique et application à quelques problèmes particuliers concernant les Aschelminthes, les Polychètes et les Tardigrades
- L. LAUBIER. Morphological and biological adaptations of an interstitial aphroditoid: Pholoë swedmarki nov. sp.
- J. RENAUD-MORNANT. The metameric glands: An adaptive character of the mystacocarid Derocheilocaris remanei Delamare and Chappuis, 1951.
- P. LASSERRE. Mechanisms of salinity adaptation in the meiobenthic oligochaete Marionina achaeta Lasserre, 1965 (Enchytraeidae).
- W. WIESER. The meiofauna as a tool in the study of sediment heterogeneity.
- A. ELEFTHERIOU. The effects of exposure on beach fauna.
- H. E. SCHMIDT AND R. MACHAN. Ep-measurements in marine sediments under laboratory conditions.
- W. D. HUMMON AND M. R. HUMMON. Applicability of life table data to tolerance experiments.
- R. ELMGREN. A survey of the benthic meiofauna of the Askö Landsort area.

Meetings:

NORTH AMERICAN PALEONTOLOGICAL CONVENTION II, August 8-10, 1977, University of Kansas, Lawrence, Kansas 66045 (Sponsored by: Paleontological Society, Society of Economic Paleontologists and Mineralogists, Society of Vertebrate Paleontologists, American Association of Stratigraphic Palynologists, Paleobotanical Section of the American Botanical Society)

Format of the Convention will consist largely of invited papers and symposia. Time and space for meetings of various special interest groups (friends groups, working groups, stratigraphically or taxonomically oriented groups) will be provided. In order to keep costs low and to foster interaction, participants will be housed and fed in dormitories. The Convention is now in the early planning stage. If you would like to organize a symposium or to suggest a symposium topic, please write now. We shall also appreciate learning which special interest groups plan to schedule meetings. Plans for publication of the symposia remain to be completed, but the committee reserves first choice at publication. Please address all inquiries to Roger L. Kaesler, Department of Geology, University of Kansas, Lawrence, Kansas 66045 USA.

RECENT LITERATURE

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RESULTS OF QUESTIONNAIRE ON DEEP-WATER MEIOFAUNA
(from PSAMMONALIA #21)

During the "Second International Conference on Meiofauna" in June 1973, the membership discussed how information on current research could be disseminated. Together with PSAMMONALIA 21 a questionnaire on deep-water meiofauna was sent to all members, and the following is a short compilation of those answers received by May 1974. The questionnaire was entitled "deep-water meiofauna" to give no definite depth range, but many members may not have answered the questionnaire because of this open definition. To encourage other members to send in information it is suggested that the break of the continental shelf, about 200 m, serve as the upper limit for "deep-water meiofauna". All of you are invited to send information for a supplemental listing to be published in a later issue of PSAMMONALIA.

The compilation of literature is not a complete listing of all publications concerning deep-water meiofauna. The list contains those papers which were cited in the questionnaires by the members and a few additional ones with mainly ecological background. Since the definition of meiofauna refers to specific size group of benthic organisms we must include most of the foraminifera and this is rarely done by meiobenthologists. However, much geological research on living forams has taken into account the surface of the sediment only, usually defined as "the uppermost 1 cm". I include citations to papers concerned with forams, living off the continental shelf.

For the supplement on deep-water meiofauna, please send me your information and literature citations. Deadline for this supplement will be the March 1, 1975.

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INFORMATION FROM THE MEMBERS ON DEEP-WATER MEIOFAUNA RESEARCH

K. H. Becker: Systematics and phylogeny of Copepoda, especially deep-sea Harpacticoidea; problems of immigration into bathyal and abyssal regions in connection with phylogenetic questions. - Eastern North Atlantic, Iberian Deep Sea, Indian Ocean, Peru Chile Trench - Copepoda Harpacticoidea and Cyclopoidea to species level - material deposited in Zoologisches Museum der Universität Kiel - further material from the above mentioned regions appreciated.

P. Bodin: Systematics, biology and ecology of harpacticoids. To species level copepods - biomass calculated from size - other groups sorted and available to taxonomists - grain size analyses - Golf de Gascogne Atlantic Ocean Northeast - types deposited in Museum d'Histoire Naturelle, Paris - further sampling in deep water of same area.

B. R. Burnett: Quantitative analysis of the microfauna from San Diego Trough (1200 m) taken during the Quagmire Expedition and from the oligotrophic central North Pacific (5500 m). These samples include ciliates, flagellates, amoebae, forams, large procaryotes and a variety of unidentified organisms. For cooperation see R. R. Hessler.

B. C. Coull: Diversity and community structure on meiofauna between North Carolina and Bermuda - taxonomy of harpacticoid copepods from same region and from Walvis Bay, South Africa (material from H. L. Sanders, Woods Hole). - partly with macrofauna - harpacticoid copepods to species, ostracods to genus, others to phyla. - A cooperative cruise on meiofauna was done on R/V EASTWARD from May 12 to 17, 1974. Samples were taken between 400 and 4000 m depth and were partly sorted alive during the following days. Other participants in this cruise: R. Ellison, R. P. Higgins, W. D. Hope, W. H. Hummon, R. Rieger, W. Sterrer, H. Thiel, J. H. Tietjen.

A. Dinet: Ecology and taxonomy of harpacticoid copepods, to species level, personal collection - South Atlantic Ocean and Mediterranean, Golf de Gascogne (Biscay) 1500-5000 m - 1974 further sampling in the Golf de Gascogne - cooperation with J. Renaud-Mornant and P. Vitiello - environmental data from the same stations available.

R. Ellison: First sampling of benthic foraminifera off the coast of North Carolina: cooperative meiofauna cruise (see B. Coull).

R. R. Hessler: Structure and dynamics of deep-sea benthic communities, emphasizing replicate box coring and photographic studies; microfauna through megafauna. Oligotrophic abyss, primarily central North Pacific (500-6000 m), in cooperation with B. Burnett, D. Hope, P. Jumars, H. Thiel - Eutrophic bathyal community off Southern California (1200 m) (Expedition Quagmire); detailed faunal survey of 500 m triangle of bottom, using RUM (Remote Underwater Manipulator); unusually fine, deliberate control of sample quality and location; includes some respiration work; in cooperation with B. Burnett, P. Jumars, G. Rowe, K. Smith, H. Thiel, D. Thistle, & others - Systematics, biogeography, phylogeny of deep-sea isopods, particularly Asellota, relying on many programs in N & S Atlantic, primarily that of WHOI deep-sea program. Future desires: similar community analyses of trench environments.

R. P. Higgins: Kinorhyncha to species level - Peru Chile Trench, Indian Ocean, Arabian Sea, Iceland Faroe Ridge - Holotypes to United States National Museum, paratypes to other museum and personal collection - cooperative meiofauna cruise with B. Coull. --Further plans to continue taxonomic studies in support of ecological research. - collections of kinorhynchs welcomed.

W. D. Hope: Systematics, phylogeny and functional morphology of marine nematodes, especially deep-sea. Western North Atlantic and Midnorth and South Pacific. Many enoplids identified to genus and species, others to family or not identified in the National Museum of Natural History. Additional specimens, especially of Leptosomatidae, and nematode parasites of arthropods are wanted - cooperative meiofauna cruise with B. Coull.

W. D. Hummon: Gastrotricha to species level from Gay Head - Bermuda transect (Howard Sanders - Woods Hole: macrofauna) to depth of 2000 m - other meiofauna sorted to higher taxa available to taxonomists. - cooperative meiofauna cruise (see B. Coull).

A. D. McIntyre & D. J. Murison: Meiofauna, macrofauna and grain size analysis from South East Arabian upwelling region. - Nematodes (see R. M. Warwick).

F. Moniot: Benthic tunicates to species level - Atlantic Ocean, North Pacific Ocean, Mediterranean - deposition in Museum National d'Histoire Naturelle, Paris. - Specimen from beneath 2000 m are welcomed.

A. Z. Paul: Deep water benthos including meiofauna - interested in quantitative and qualitative distribution and ecology - just returned from 1 of 5 planned baseline cruises to the equatorial Pacific manganese nodule area - meiofauna methods as used

by H. Thiel - objective of this interdisciplinary study is to determine the environmental impact of planned manganese nodule mining.

J. Renaud-Mornant: Tardigrades to species level - North Eastern (Golf de Gascogne) and South Eastern (Walvis Ridge) Atlantic Ocean. - other meiofauna sorted to higher taxa - any deep water tardigrades from any part of the world appreciated (material is sent back to the country's collection if desired, I would like to keep reference material).

R. Rieger & W. Sterrer: Systematics to species level, morphology, zoogeography and biology of Turbellaria, Gnathostomulida and Gastrotricha - Norwegian fjords to 700 m, Adriatic Sea to 800 m (hard fauna available to specialists), off North Carolina to 600 m, off Bermuda. - cooperative meiofauna cruise with B. Coull.

H. Thiel: Number and biomass (volume) from deep-water meiofauna, all taxa to phyla level only - faunal size distribution in deep-water communities - Norwegian Sea (75°N) to Atlantic Ocean (20°N), 2 Seamounts, Mediterranean, Indian Ocean off Somalia, central North Pacific Ocean, depth to 5000 m - for some of the collections parallel data on macrofauna, bacteria, fungi, and sediment - San Diego Trough, 1200 m, cooperation with R. R. Hessler - cooperative meiofauna cruise with B. Coull - cruise plan for 1975: total community study off West Africa to 3000 m parallel sampling of bacteria, fungi, ciliates and soft meiofauna (G. Uhlig and E. Hartwig), macrofauna, fishes, geological and geochemical data, photography - Biological material collected from board R/V METEOR is owned by 4 German museums (rule of the Deutsche Forschungsgemeinschaft). Other meiofauna collections go to same museums. Specific groups can be requested for taxonomic purposes.

D. Thistle: Ecological and systematic studies of the harpacticoid copepods of the San Diego Trough (1200 m) taken during the Quagmire Expedition (see Hessler). Studies of smallscale spatial distribution of individual species, total harpacticoid numbers, and species diversity as well as correlations of these patterns to environmental parameters. - for cooperation see R. R. Hessler.

J. H. Tietjen: Quantitative and qualitative investigations off North Carolina to Florida to a depth of 4000 m - cooperative meiofauna cruise with B. Coull - cruise planned off Atlantic coast further north. Nematodes to species, other groups to higher taxa level - collections available to other investigators - biomass by volume or weight - sediment grain size, organic C, temperature, salinity, dissolved O₂, bacteria.

G. Uhlig: Living meiofauna, especially soft meiofauna and ciliates collected down to 2000 m depth. - Ciliata, Heterotricha, Folliculinidae to species level, other ciliates and soft meiofauna to genus or family - off Portugal, Iberian deep sea, 2 Seamounts - photographic documentation - publications on folliculinids from the deep sea in preparation - cruise plan 1975 (see H. Thiel).

J. van der Land: Priapulids and their larvae - taxonomy and zoogeography - off Northern South America and Caribbean Sea - material appreciated from all localities.

P. Vitiello: Systematics, biogeography and ecology of deep sea nematodes - cooperation with A. Dinet - Mediterranean, North Atlantic Ocean (Golf de Gascogne), South Atlantic Ocean (Gulf of Guinea to Walvis Bay) - personal collection, Station Marine d'Endoume, Marseille.

R. M. Warwick: Nematodes to species level from collection of A. D. McIntyre - South East Arabian upwelling region - deposition in British Museum (Natural History) - material belonging to the Enoploidea (particularly Enoplidae) is welcome for taxonomic work.

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