



NEWSLETTER OF
THE INTERNATIONAL
ASSOCIATION OF MEIOBENTHOLOGISTS
NUMBER 28 1975

P S A M M O N A L I A

Newsletter of the International Association of Meiobenthologists

Number 28

May 1975

Editor: BRUCE C. COULL, Belle W. Baruch Institute
for Marine Biology and Coastal Research,
University of South Carolina, Columbia,
South Carolina 29208 USA

This document is not part of the scientific literature and is not to be
cited, abstracted or reprinted as a published document.

Cover by Bryan Burnett, Scripps Institution of Oceanography.

OFFICERS OF THE INTERNATIONAL ASSOCIATION OF MEIOBENTHOLOGISTS

Executive Committee

Chairman: Bruce C. COULL, Belle W. Baruch Institute for Marine Biology and Coastal Research, University of South Carolina, Columbia, South Carolina 29208, U.S.A.

Treasurer: John H. TIETJEN, Department of Biology, City College of New York, 138th St. at Convent Ave., New York, N. Y. 10031, U.S.A.

Committee Members:

Günter ARLT, Sektion Biologie, Universität Rostock, 25 Rostock, Freligrathstr. 7-8, East Germany (GDR)

William D. HUMMON, Marine Laboratory, P. O. Box 101, Victoria Road, Torry, Aberdeen, AB9 8DB, Scotland

Pierre LASSERRE, Institut de Biologie Marine, Université de Bordeaux, 2, rue du Professeur Jolyet, 33120 Arcachon, France

Richard M. WARWICK, IMER, 13/14 St. James Terrace, Citadel Road, Plymouth, PL1 3AX, England

Wilfried WESTHEIDE, II. Zoologisches Institut der Universität, D-34 Göttingen, Berlinerstr. 28, West Germany (GFR)

Board of Correspondents

Alain DINET, Station Marine d'Endoume, Rue de la Batterie-des-Lions, 13007 Marseille, France

Liliana FORNERIS, Instituto de Biociências, Universidade de Sao Paulo, Caixa Postal 20.520, Sao Paulo, Brazil

John S. GRAY, Wellcome Marine Laboratory, Robin Hood's Bay, Yorkshire, YO22 4SL, England

Eike HARTWIG, Zoologisches Institut u. Museum, Universität Hamburg, D-2000 Hamburg 13, Papendamm 3, West Germany (GFR)

W. Duane HOPE, Department of Invertebrate Zoology, National Museum of Natural History, Smithsonian Institution, Washington, DC 20560, U.S.A.

L. v. SALVINI-PLAWEN, I. Zoologisches Institut/Universität, A-1010 Wien 1, Dr. Karl-Lueger-Ring 1, Austria

Franx RIEMANN, Institute für Meeresforschung, D-285 Bremerhaven, Am Handelshafen 12, West Germany (GFR)

Ryohei YAMINISHI, Kyoto University, Seto Marine Biological Laboratory, Sirahama, Wakayama-Ken, Japan

Donald J. ZINN, P. O. Box 589, Falmouth, Massachusetts 02541, U.S.A.

EDITORIAL

The Executive Committee has recommended that Dr. Jeanne Renaud-Mornant become the next Chairperson of The Association and Editor of PSAMMONALIA. Her term of office would commence January 1, 1976 and run through December 31, 1977 and Dr. Renaud-Mornant has agreed to serve as Chairperson for this period. Members wishing to comment on the nomination should contact the Editor. Should I not receive a 51% negative vote from the membership, I will consider Dr. Renaud-Mornant duly elected. Details on the new treasurer will be forthcoming in the next issue (PSAMMONALIA #29).

Since the officers of The Association will no longer be in the United States after 31 December 1975, John Tietjen has suggested that any U. S. member wishing to pay dues in advance should do so now. Once the Treasurer's office moves to another country, all U. S. members will be required to send their dues via International Money Order. To alleviate the problems associated with currency conversion The Association is willing to accept dues in advance for 1976-77 (\$6.00). Should you want to pay in advance, please make your check payable to "Association of Meiobenthologists" and send it to John Tietjen by 15 October 1975. Dr. Tietjen's address is on page 2 of this issue.

A new cover is needed for PSAMMONALIA #29 and #30. Anyone interested in preparing a cover please contact the Editor.

Bruce C. Coull
Bruce C. Coull
Editor

FINANCIAL REPORT

Credits

Balance on hand (prior to PSAMMONALIA #27)	\$699.90
Dues & contributions received, minus bank charges (1/1/75 - 4/11/75)	<u>231.01</u>
TOTAL	\$930.91

Debits

Cost of PSAMMONALIA #27	<u>\$195.00</u>
TOTAL	\$195.00
BALANCE ON HAND, 4/14/75	\$735.91

John H. Tietjen
Treasurer

NEW MEMBERS

James M. Bishop
 South Carolina Wildlife &
 Marine Resources
 Marine Resources Research Inst.
 P. O. Box 12559
 Charleston, SC 29412 USA

Gilbert Deroux
 Station Biologique
 Place Georges Teissier
 29211 Roscoff, France

N. Dubrowsky
 Biology Department
 Westchester Community College
 75 Grasslands Road
 Valhalla, NY 10595 USA

A. Eleftheriou
 Marine Lab, P. O. Box 101
 Victoria Road
 Torry, Aberdeen AB9 8DB
 Scotland

David Gettleston
 Department of Oceanography
 Texas A & M University
 College Station, TX 77843 USA

Elliott Hartman
 Physical Science Department
 Westchester Community College
 75 Grasslands Road
 Valhalla, NY 10595 USA

Alice Levy
 Department of Biology
 City College of New York
 138th St. at Convent Ave.
 New York, NY 10031 USA

Wolfgang Mielke
 II. Zoologisches Institut
 D-34 Göttingen
 Berlinerstr. 28
 West Germany

Universita di Modena
 Istituto di Zoologia
 Via Universita, 4
 41100 Modena,
 Italy

Diane R. Nelson
 Box 2739
 East Tennessee State University
 Johnson City, TN 37601 USA

Stuart L. Santos
 Department of Biology
 University of South Florida
 Tampa, FL 33620 USA

Jouha Sarvala
 Lammi Biological Station
 16900 Lammi
 Finland

Thomas D. Sleeter
 Division of Engineering and
 Applied Physics
 Pierce Hall
 Harvard University
 Cambridge, MA 02138 USA

Robert Virnstein
 Virginia Institute of Marine Science
 Gloucester Point, VA 23062 USA

CHANGE OF ADDRESS

Prof. Dr. S. Gerlach
 Marine Biological Laboratory
 DK 3000 Helsingør, Denmark

Nicole Goubault
 Laboratoire de Zoologie (Vers)
 Museum National d'Histoire Naturelle
 57, Rue Cuvier, 75005 Paris, France

Instituut voor Zeewetenschappelijk Onderzoek
 Prinses Elisabethlaan 69
 8401 Bredene, Belgium

NEWS FROM THE MEMBERS

Alice DEUTSCH-LEVY, City College of New York: I am working on my Ph. D. research under the guidance of Dr. John H. Tietjen. My work is on the digestive physiology of free-living marine nematodes: Chromadorina germanica, Monhystera denticulata, and others isolated from the New York area salt marshes and presently in culture here. The first is an algal feeder and the second is a bacterial feeder. I hope to compare the structure and function of the digestive systems of different nematode feeding types and in particular to compare their digestive enzymes using histochemical techniques. These nematodes have been shown to be selective feeders. I therefore am studying their ability to selectively digest their foods. This past summer I worked with Dr. J. B. Jennings at the Marine Biological Laboratory at Woods Hole. We were able to demonstrate the presence of β -glucuronidase, a carbohydrase, in the gut of Monhystera denticulata and its absence in Chromadorina germanica. We also noted an exopeptidase present in the seminal receptacle in some females of both these species. We concluded that the nematodes digested excess sperms to supplement their low-protein diets. This work is being published in Comparative Biochemistry and Physiology.

J.-L. D'HONDT, Paris: Since my return from North Africa in 1972, I have been working on ultrastructure and metamorphosis of Bryozoans and therefore have had to neglect, more than I would like, the part of my research dealing with the microfauna of marine sands. The last work that I did, presently in press, was an attempt to get a better understanding of Gastrotrich systematics with a tabular key to genera of marine gastrotrichs. This work has been in press since 1973 and at last, is out (see Recent Literature). I hope to return to my work on psammon as soon as my other activities give me the time and hopefully this will be during the winter of 1975-76 (translated from the French by B. C. Coull).

E. HARTWIG, Universität Hamburg: As a member of the benthos research group at the Zoological Institute & Museum Hamburg, I am working on interstitial ciliates especially from the marine eulittoral of exposed and sheltered shores. In these habitats the protozoa are represented by a great number of species and occur in considerable densities. Starting from these investigations, I am extending my studies to sublittoral biotopes (shallow subtidal sediments in different depths as well as sediments of coastal waters and the deep-sea).

My studies aim at three topics: (1) Faunistic and systematic studies of species composition from various areas of the German Bight and the wider North Sea (and areas of deep water); (2) Ecology: horizontal and vertical micro-distribution, annual fluctuations, effects of abiotic factors (in situ recordings of characteristic parameters with electrodes, e.g. temperature, salinity, redox potential, oxygen diffusion and analyses of grain size, pore volume, water content and the content of particulate organic material); (3) Productive role of interstitial ciliates in marine sediments by measuring abundance, biovolume and biomass of species and reproductive potential in cultures at different temperatures. I want to investigate the interstitial ciliates of limnic sediments in order to compare them with ciliates in marine sediments. Furthermore, I am interested in using ciliates as indicator organisms in polluted and unpolluted areas.

From February 18 to March 21, I was on a cruise on the R.V. "Meteor" to the upwelling region of the African West Coast. With Hjalmar Thiel and Gotram Uhlig, my studies were part of a benthos program of this region. I studied the interstitial ciliates and soft meiofauna (with G. Uhlig) of deep-sea sediments. Working with ciliates from sublittoral sediments is full of methodical difficulties.

N. C. HULINGS, Amman, Jordan: We have conducted some preliminary studies on beach meiofauna and its relation to sand beach macrofauna in the Gulf of Aqaba. More detailed studies on sand beach meiofauna and macrofauna will be initiated in the coming months. We have several other research programs underway including chemical and physical investigations on nutrients, primary productivity of grass flats, fishery investigations and some pollution problems, especially the effect of phosphate dust. We will start construction of the research facility soon. At present we have 6 people actively working in the Marine Science Program. We expect to have 6 more people beginning July 1975.

W. B. SIKORA, University of South Carolina: My research involves an investigation of the trophic relationships of the intertidal, Spartina salt marsh meiofauna and their possible energetic value to the macrofauna which frequent these areas. The study will encompass a delineation of the drainage area, quantification of primary productivity, hydrography, quantification of macrofauna and meiofauna and laboratory predation studies. Thus far, from preliminary samples taken in February, nematodes were found to be by far the dominant component comprising 96-99% of fauna with densities of approximately 4200 per 10 cm². Harpacticoid copepods were the second most important group with Nannopus palustris being dominant. Turbellarians and kinorhynchs were also found commonly. The samples contained quite a few mites, in addition the two species of Halacarids the families Tarsonemidae and Acaridae were represented along with a lot of orbatid debris. Only two live orbatid mites were found however. A qualitative sampling technique has been developed utilizing sieving and floatation-centrifugation with very satisfactory results.

WOLFGANG & CHRISTIANE STERRER, Bermuda: We are carrying on with our work on taxonomy, systematics and biogeography of Gnathostomulida, Gastrotricha and Turbellaria. As we are presently waiting for a major project to be funded by NSF ("Population analysis, dispersal and speciation in marine interstitial fauna," submitted in collaboration with R. Rieger), we have embarked on the first stages of a non-meiofauna affair, a field guide to the "Marine Fauna and Flora of Bermuda," which will - when completed - list and document about 1500 species. Current meiofauna work, therefore, concentrates on working up older collections, especially from the Caribbean area.

R. YAMANISHI, Seto Lab, Japan: I have been searching for interstitial polychaetes living in the intertidal zone of the sandy beaches near Seto Marine Biological Laboratory. Besides archiannelids very commonly seen here, I have found two species of pisionid worm, one belonging to Pisionidens and the other to Pisione, and also two species of hesionid worm, one to Hesionides and the other to Micro-phthalmus. As the occurrence of these forms has not been reported from Japan, the results of analysis of the specimens will be published in the near future.

ANNOUNCEMENTS

INFORMATION REQUEST:

W. Duane Hope of the National Museum of Natural History (Smithsonian) has asked for information regarding slide ringing compounds other than ZUT. Dr. Hope is particularly interested in receiving information on where to purchase "Murrayite" or information on a suitable substitute for Murrayite. Any reader with this information is requested to contact Dr. Hope directly (see page 2 of this issue for address).

Announcements (cont.)

MEETINGS:

38th ANNUAL MEETING, AMERICAN SOCIETY OF LIMNOLOGY AND OCEANOGRAPHY, 23-26 June 1975, Dalhousie University, Halifax, Nova Scotia, Canada. Abstracts were due 1 January 1975. For local arrangements contact:

Dr. Robert O. Fournier
Dept. of Oceanography
Dalhousie University
Halifax, Nova Scotia, Canada

10th EUROPEAN SYMPOSIUM ON MARINE BIOLOGY, 17-23 September 1975, Ostend, Belgium. Themes: (1) Research in Mariculture at Laboratory- and Pilot Scale; (2) Population Dynamics of Marine Organisms in Relation with Nutrient Cycling in Shallow Waters. For further information contact:

Symposium Office
Institut voor Zeewetenschappelijk Onderzoek
Prinses Elisabethlaan 69
8401 Brende, Belgium

ESTUARINE AND BRACKISH-WATER SCIENCES ASSOCIATION, 23-25 September 1975, Durham, England. Persons wishing to contribute to the meeting are invited to forward titles, abstracts, etc., to the meetings secretary:

Dr. C. R. Boyden
Imperial College of Science and Technology
Applied Geochemistry Research Group
Department of Geology
Royal School of Mines
Prince Consort Road
London SW7, England

THE MEIOFAUNA SPECIES IN TIME AND SPACE, 24-30 September 1975, Bermuda. Paper presentation is by invitation only. There are a few spots open for non-paper presenting participants. For additional information contact:

Dr. Wolfgang E. Sterrer
Bermuda Biological Station
St. George's West
Bermuda

3rd INTERNATIONAL ESTUARINE RESEARCH CONFERENCE, 7-9 October 1975. Galveston, Texas USA. For further information contact:

Dr. Andrew J. McErlean
Office of Research and Development
U. S. Environmental Protection Agency
Washington, DC 20460 USA

PUBLICATIONS:

Volume 3 in "The Belle W. Baruch Library in Marine Science," has recently been published. Volume 3 is the result of a symposium held in 1973, is edited by F. John Vernberg, and is entitled Physiological Ecology of Estuarine Organisms. The volume may be ordered from the University of South Carolina Press, Columbia, SC 29208 USA for \$25.00.

RECENT LITERATURE

- ADDY, S. K., M. EWING. 1974. A new box corer design for the investigation of manganese-nodule distribution in a sediment column. *Mar. Geol.* 17: M17-M25.
- AMOUREUX, J.-M. 1974. Etude des peuplements infralittoraux de la Côte du Roussillon. I. Présentation du milieu. *Vie Milieu* 24:159-173.
- AMOUREUX, J.-M. 1974. Etude des peuplements infralittoraux de la Côte du Roussillon. II. Faunistique et caractéristique bionomiques. *Vie Milieu* 24:209-222.
- ARNARD, P. M. 1974. Contribution a la bionomie marine benthique des régions Antarctiques et Subantarctiques. *Téthys* 6:467-653.
- ATKINSON, H. J. 1975. The functional significance of the haemoglobin in a marine nematode, *Enoplus brevis* (Bastian.). *J. Exp. Biol.* 62:1-10.
- AX, P., A. FAUBEL. 1974. Anatomie von *Psammomacrostomum equicaudum* Ax, 1966 (Turbellaria, Macrostomida). *Mikrofauna des Meeresbodens* 48:1-12.
- BACCARI, S., J. RENAUD-MORNANT. 1974. Etude du système nerveux de *Derocheilocaris remanei* Delamare et Chappuis 1951 (Crustacea, Mystacocarida). *Cah. Biol. Mar.* 15:589-604.
- BACESCU, M., I. MUELLER, M. GOMOIU. 1971. *Ecologie Marina*, Vol. 4. Cercetari de ecologie bentala in Marea neagra. Acad. Republ. Soc. Romania, Budapest. 375 pp.
- BANSE, K., K. D. HOBSON. 1974. Benthic errantiate polychaetes of British Columbia and Washington. *Bull. Fish. Res. Bd. Can.* 185:110 pp. (Ed. note: Available from Information Canada, Ottawa, Ontario, Canada KIA OS9 for \$4.50 Canadian (in North America; \$5.40 other countries) make payable to "Receiver General of Canada").
- BARTSCH, I. 1974. On the presence of epimeral pores in particular in the Rhombognathinae (Halacaridae, Acari). *Zool. Anz.* 193(3/4):266-268.
- BELOGUROVA, L. S., O. I. BELOGUROVA. 1974. *Fotolaimus marinus* gen. et. sp. n. (Nematoda, Ondrolainridae) from the Schiketan Island (Kuril Islands). *Zool. Zhur.* 53(10):1566-1567.
- BEUKEMA, J. J. 1974. Seasonal changes in the biomass on the macrobenthos of a tidal flat area in the Dutch Wadden Sea. *Neth. J. Sea. Res.* 8(1):94-107.
- BOVÉE, F. de, J. SOYER. 1974. Cycle annuel quantitatif du méiobenthos des vases terrigenes côtières distribution verticale. *Vie Milieu* 24(1B):141-157.
- BRAVO, M. A. C. 1972. Eficacia do método de flutuação centrífuga na extracção de nemátodos de pequenas dimensões. *Agron. Lusit.* 34(4):283-291.
- BRAVO, M. A. C. 1972. Modo de preparação de crivos para clarificação final das suspensoes de nemátodos. *Agron. Lusit.* 34(4):292-297.
- BUCHANAN, J. B., P. F. KINGSTON, M. SHEADER. 1974. Long-term population trends of the benthic macrofauna in the offshore mud of the Northumberland coast. *J. Mar. Biol. Ass. U. K.* 54(4):785-796.
- BURTON, W. 1974. A semiautomatic release gear for grabs and corers. *J. Fish. Res. Bd. Can.* 31(7):1244-1246.
- CADEE, G. C., J. HEGEMAN. 1974. Primary production of the benthic microflora living on tidal flats in the Dutch Wadden Sea. *Nethl. J. Sea Res.* 8(2-3):260-291.
- CHISLENKO, L. L. 1974. Relationship between geographical distribution and abundance of marine harpacticoids. *Doklady Akad. Nauk SSSR* 216:218-220 (English translation).
- CHISLENKO, L. L. 1974. Specificity of statistical characteristics of superspecific taxa (Harpacticoida, Copepoda) in USSR fresh waters (the body size taken as an example). *Zool Zhur* 53(10):1477-1485 (In Russian).

COBET, A. B., H. E. GUARD. 1973. Effect of a bunker fuel on the beach bacterial flora. Proc. Conf. Prevention and Control of Oil Spills, Washington, D.C., pp 815-819.

COOK, D. G. 1975. Cave-dwelling aquatic oligochaeta (Annelida) from the eastern United States. Trans. Amer. micros. Soc. 94(1):24-37.

COURTNAY, W. R., D. J. HERREMA, M. J. THOMPSON, W. P. AZZINARO, J. VAN MONTFRANS. 1972. Ecological monitoring of two beach nourishment projects in Broward County, Florida. Shore and Beach 40(2): 8-13.

D'AGOSTINO, A., C. FINNEY. 1974. The effect of copper and cadmium on the development of *Tigriopus japonicus*. In: Pollution and Physiology of Marine Organisms, pp. 445-463. (Eds.) F. J. Vernberg and W. B. Vernberg, Academic Press, New York.

DAY, J. H. 1974. The ecology of Morrumbene Estuary, Mocambique. Trans. Roy. Soc. S. Afr. 41(1): 43-97.

DECHEV, G. D., E. G. MATVEEVA, S. D. YORDANOV. 1974. Determining the characteristics of sea water and bottom sediments as well as their interrelations by means of redox potential. Dokl. Bolg. Akad. Nauk 27:563-565.

DECHEV, G. D., E. G. MATVEEVA, S. D. YORDANOV, G. HIBAUM. 1974. Studies of the oxygen deficit and oxygen debt in sea water and bottom sediments from the off-shore areas of the Black Sea. Dokl. Bolg. Akad. Nauk 27(4):555-558.

DECRAMER, W. 1974. Scientific Report on the Belgian Expedition to the Great Barrier Reef in 1967. Nematodes II. *Desmoscolex* species (Nematoda, Desmoscolecida) from Yonge Reef Lizard Island and Nymphe Island. Zool. Scripta 3:167-176.

DECRAMER, W. 1975. Scientific Report on the Belgian Expedition to the Great Barrier Reef in 1967. Nematodes IV: *Desmoscolex*-species (Nematoda-Desmoscolecida) from Yonge Reef and Nymphe Island with detailed study of *Desmoscolex longisetosus* Timm, 1970. Biol. Jb. Dodonaea 42:86-104.

d'HONDT, J.-L. 1974. Clés tabulaires de détermination des genres marins des Gastrotriches. Bull. Soc. Zool. France 99:645-665

d'HONDT, J.-L. 1974. Note sur *Psammodasys cambriensis* (Boaden, 1963) et *Crasiella oceanica* n.sp. (Gastrotriches, Macro-dasyoides). Bull. Soc. Zool. France 99: 675-680.

DÖRJES, J. 1974. *Haplodiscus bocki* spec. nov., Aine neue pelagische Turbellarie der ordnung Acoela von der Molukken - See mit uner Diskussion der Gattung. Ark. Zool. 23(3/4):255-266.

DUNCAN, A., F. SCHIEMER, R. J. KLEKOWSKI. 1974. A preliminary study of feeding rates on bacterial food by adult females of a benthic nematode, *Plectus palustris* De Man 1880. Polskie Arch. Hydrobiol. 21 (2):249-258.

ELLIOTT, J. M., H. DÉCAMP. 1973. Guide pour l'analyse statistique des échantillons d'invertébrés benthiques. Ann. Limnol. (Paris) 9:79-120.

FAUCHALD, K. 1974. Polychaete phylogeny: A problem in protostome evolution. Syst. Zool. 23(4):493-506.

FLOOD, P. R. 1973. A simple technique for the prevention of loss or damage to planktonic specimens during preparation for transmission and scanning electron microscopy. Sarsia 54:67-74.

GALE, W. F., J. D. THOMPSON. 1974. Aids to benthic sampling by SCUBA divers in rivers. Limnol. Oceanogr. 19(6):1004-1007.

GALHANO, M. H. 1974. Sur les relations trophiques probables de quelques éléments benthiques de l'estuaire du douro. Bull. Soc. d'Hist. Natur., Toulouse 110(1/2): 21-25.

- GALLAGHER, J. L., F. C. DAIBER. 1974. Oxygen consumption at the soil-water interface in a Delaware salt marsh. *Ches. Sci.* 15:248-250.
- GIERE, O. 1974. *Marionina istriae* n.sp., ein mariner Enchytraeide (Oligochaeta) aus dem mediterranen Hydrogypsammal. *Helg. wiss. Meeresunters.* 26:359-369.
- GRAY, J. S. 1974. Synergistic effects of three heavy metals on growth rates of a marine ciliate protozoan. In: *Pollution and Physiology of Marine Organisms*, pp. 465-485. (Eds.) F. J. Vernberg and W. B. Vernberg, Academic Press, New York.
- GROOTAERT, P., P. L. LIPPENS. 1974. Some ultrastructural changes in cuticle and hypodermis of *Aporcellaimellus* during the first moult (Nematoda: Dorylaimoidea). *Z. Morph. Tiere* 79(4): 269-282.
- GUARD, H. E., A. B. COBET. 1973. The fate of a bunker fuel in beach sand. *Proc. Conf. Prevention and Control of Oil Spills*, Washington, D.C., pp. 827-834.
- FAUBEL, A. 1974. Macrostromida (Turbellaria) von einem Sandstrand der Nordseeinsel Sylt. *Mikrofauna Meeresbodens* 45:1-32.
- FILATOVA, Z. A. 1973. A contribution to the bottom fauna biocenoses in the Gulf of Alaska bathyal zone. *Tr. Inst. Okeanol.* 91:80-92 (In Russian).
- FREUDENHAMMER, J. 1975. Desmoscolecida aus der iberischen Tiefsee, zugleich eine Revision dieser Nematoden-Ordnung. "Meteor". *Forsch. Ergebnisse, Reihe D* 20:1-65.
- HAUSPIE, R., R. POLK. 1974. Some observations on harpacticoid populations, in relationship to the competitive exclusion principle. *Hydrobiologia* 45(4):423-429.
- HEIP, C. 1974. A note on the life-span of r-Strategists. *Biol. Jb. Dodonaea* 42:117-120.
- HEIP, C. 1974. A comparison between models describing the influence of temperature on the development rate of copepods. *Biol. Jb. Dodonaea* 42:121-125.
- HEIP, C. 1974. A rapid method to evaluate nematode density. *Nematologica* 20: 268-270.
- HEIP, C., N. SMOL, W. HAUTEKEIT. 1974. A rapid method of extracting meiobenthic nematodes and copepods from mud and detritus. *Marine Biology* 28:79-81.
- HICKLEY, P. 1975. An apparatus for subdividing benthos samples. *Oikos* 26(1): 92-96.
- HOLMQUIST, C. 1974. On *Alexandrovla ongensis* Hrabe from Alaska, with revision of the *Telmatodrilinae* (Oligochaeta, Tubificidae). *Zool. Jahrb. Abt. Syst. Oekol. Geogr. Tiere* 101(2): 249-268.
- HUGHES, B. D. 1975. A comparison of four samples for benthic macroinvertebrates inhabiting coarse river deposits. *Water Res.* 9:61-69.
- HUMMON, W. D. 1974. SH': a similarity index based on shared species diversity, used to assess temporal and spatial relations among intertidal marine Gastrotricha. *Oecologia* 17:203-220.
- HUSMANN, S. 1972. Das ökologische Gleichgewicht in Grundwasser sandigkiesiger Ablagerungen und seine Störung durch versickernde Verunreinigungen; mit besonderer Berücksichtigung vertikaler Infiltrationsvorgänge. *Gesellschaft für Ökologie, Giessen* 1972:89-96.
- HUSMANN, S. 1973. *Bathynella stammeri* Jakobi, 1954 (Syncarida) aus dem Stygorhithral der Alpen; Studien zur morphologie, ökologie und verbreitungsgeschichte. *Crustaceana* 25(1):21-34.
- HUSMANN, S. 1974. Die ökologische Bedeutung der Mehrzellerfauna bei der natürlichen und künstlichen Sandfiltration. *Wissenschaftliche Berichte über Untersuchen u. Planungen der Stadtwerke Wiesbaden AG* 2:173-183.

- JOUIN, C. 1975. Etude de quelques Archiannélides des côtes d'Afrique, du Sud; description de *Saccocirus heterochaetus* n.sp. (Arannélide, Saccocirridae). Cah. Biol. Mar. 16: 97-110.
- KHUSID, T. A. 1973. The distribution of benthic Foraminifera in the Gulf of Alaska and the eastern Aleutian trench. Tr. Inst. Okeanol. 91:104-107 (In Russian).
- KHUSID, T. A. 1974. The standing crop of benthic Foraminifera in the South Sandwich trench and Falkland areas. Okeanologiya 14(2): 341-344 (In Russian).
- KIRSTEUER, E. 1973. Occurrence of the interstitial opisthobranch *Unela remanei* Marcus, in the Caribbean Sea. Mitt. Inst. Colombo-Aléman Invest. Cient. (Santa Marta) 7: 41-46.
- KIRSTEUER, E. 1974. Description of *Poseidonemertes caribensis* sp.n., and discussion of other taxa of Hoplonemertini Monostilifera with divided longitudinal musculature of the body wall. Zool. Scripta 3:153-166.
- KRITZLER, H., R. M. HISKEY, P. J. THOMAS. 1974. A system for the quantitative sampling of shallow water benthos. Int. rev. ges. Hydrobiol. 59(5):621-627.
- KUZNETSOV, A. P., E. A. ROMANKEVICH, Yu. G. GIGINYAK. 1973. Data on the trophic structure of the bottom fauna in the Gulf of Alaska. Tr. Inst. Okeanol. 91:93-103 (In Russian).
- LAYBOURN, J. E. M., J. M. STEWART. 1974. Effect of food consumption and temperature on reproduction in the ciliate *Colpidium campylum*. J. Zool. (Lond.) 174:277-283.
- LAYBOURN, J. E. M., J. M. STEWART. 1975. Studies on consumption and growth in the ciliate *Colpidium campylum* Stokes. J. Anim. Ecol. 44(1):165-175.
- LEE, J. J. 1974. Towards understanding the niche of the Foraminifera. In: Foraminifera, Vol. I, pp. 207-260. (Eds.) R. H. Hedley and C. G. Adams, Academic Press, London.
- LEE, J. J., J. H. TIETJEN, R. J. STONE, W. A. MULLER, M. McENERY, N. SAKS, C. MASTROPAOLO, E. KENNEDY. 1974. Effects of environmental stress on the community structure, productivity, energy flow, and mineral cycling in salt marsh epiphytic communities. In: Radionuclides in Ecosystems, Vol. 2, pp. 816-828. Proc. 3rd. Nat. Symp. on Radioecol., 10-12 May, 1971, Oak Ridge, TN.
- LENA, H., F. FREIRE. 1974. Estudios citológicos en *Allogromia laticollaris* Arnold (Protozoa, Foraminifera). Physis (Buenos Aires) 33C(86):123-133.
- LIPPENS, P. L. 1974. Ultrastructure of a marine nematode, *Chromadorina germanica* (Buetschli, 1874) II. Cytology of lateral epidermal glands and associated neurocytes. Z. Morph. Tiere 79(4):283-294.
- LOOF, P. A. A. 1973. Freshwater nematodes from Suriname collected by J. van der Land. Zool. Verhandl. (Leiden) 129:1-46.
- LORENZEN, S. 1974. *Glochinema* nov. gen. (Nematodes, Epsilonematidae) aus Südchile. Mikrofauna Meeresbodens 47:1-22.
- LYONS, W. G., S. B. COLLARD. 1974. Benthic invertebrate communities of the eastern Gulf of Mexico. In: Proc. Mar. Environ. Implication Offshore Drill, pp. 157-165. (Ed.) R. E. Smith, St. Univ. Sys. Fla. Inst. Oceanogr., St. Petersburg, FL.
- MALAKHOV, V. V. 1974. Postembryonic development of free-living marine nematode *Pontonema vulgare* Bast. In: Biology of the White Sea. Trudy Belomorsk Biol. St. 5:148-153.
- MALAKHOV, V. V., V. G. TSCHERDANTSEV. 1974. Early stages of embryonic development of free-living marine nematode *Anoplostoma viviparum*. In: Biology of the White Sea Trudy Belomorsk Biol. St. 5:154-161.
- MALAKHOV, V. V., V. G. TSCHERDANTSEV. 1975. Embryogenesis of a free-living marine nematode *Potonema vulgare*. Zool Zhurn. 54(2): 165-174 (In Russian, English Summary).

- MATHEKE, G. E. M., R. HORNER. 1974. Primary productivity of the benthic microalgae in the Chukchi Sea near Barrow, Alaska. *J. Fish. Res. Bd. Can.* 31(11):1779-1786.
- McLERRAN, C. J., C. W. HOLMES. 1975. Deposition of zinc and cadmium by marine bacteria in estuarine sediments. *Limnol. Oceanogr.* 19(6): 998-1001.
- MENZIES, R. J., R. Y. GEORGE, G. T. ROWE. 1973. *Abyssal Environment and Ecology of the World Oceans*. New York, 488 p.
- MENZIES, R. J., R. Y. GEORGE, A. Z. PAUL. 1974. The effects of hydrostatic pressure on living aquatic organisms. 4. Recovery and pressure experimentation on deep-sea animals. *Int. Rev. Gesamt. Hydrobiol.* 59:187-197.
- MICHARD, G., D. GRIMAUD, D. LAVERGNE. 1974. Concentrations of manganese dissolved in the interstitial water of sediments from the equatorial Pacific. *C. R. Acad. Sci., Paris, Ser. D* 278(25):3157-3160.
- MILLS, D. H., J. T. WYATT. 1974. Ostracod reactions to non-toxic and toxic algae. *Oecologia (Berl.)* 17(2):171-177.
- MITZKEVICH, I. N. 1974. The number of heterotrophic microorganisms in bottom deposits of the South Sandwich trench and adjacent regions of the Atlantic Ocean. *Mikrobiologiya* 43:721-725 (In Russian, English Summary).
- MOORE, P. G. 1974. The kelp fauna of northeast Britain. III. Qualitative and quantitative ordinations and the utility of a multivariate approach. *J. Exp. mar. Biol. Ecol.* 16(3): 257-300.
- MORACZEWSKI, J., A. CZUBAJ. 1974. Muscle ultrastructure in *Catenula lemnia* (Dug.) (Turbellaria, Archaeophora). *J. Submicrosc. Cytol.* 6(1):29-38.
- NICHOLS, F. H. 1974. Sediment turnover by a deposit-feeding polychaete. *Limnol. Oceanogr.* 19(6): 945-950.
- NYHOLM, K.-G. 1974. New Monothalamous Foraminifera. *Zoon* 2(2):117-122.
- O'CONNOR, J. F. 1974. An apparatus for sampling gravel substrate in streams. *Limnol. Oceanogr.* 19(6):1007-1011.
- ORRHAGE, L. 1974. Über die Anatomie, Histologie und Verwandtschaft der Apistobranchidae (Polychaeta Sedentaria) nebst Bemerkungen über die systematische Stellung der Archianneliden. *Z. Morph. Tiere* 79(1):1-46.
- PAINE, R. T. 1974. Intertidal community structure. Experimental studies on the relationship between a dominant competitor and its principal predator. *Oecologia* 15: 93-120.
- PARKER, R. H. 1975. *The Study of Benthic Communities: A Model and a Review*. Elsevier, New York. 279 pp.
- PERKINS, E. J. 1974. Meiobenthos. In: *The Biology of Estuaries and Coastal Waters*, pp. 219-238. Academic Press, New York.
- PHILIP, K. P. 1972. The intertidal fauna of the sandy beaches of Cochin. *Proc. Indian Natl. Sci. Acad.* 38B:317-328.
- PHILLIPS, O. M. 1974. The equilibrium and stability of simple marine biological systems. 2. Herbivores. *Arch. Hydrobiol.* 73:310-333.
- PODAMO, J. 1974. Essai de bilan annuel du transfert de l'azote dans le Bassin de Chasse d'Ostende. III. Recyclage de l'azote dans les sediments. *Hydrobiol. Bull.* 8:67-75.
- POLLOCK, L. W. 1975. Observations on marine Heterotardigrada including a new Genus from the Western Atlantic Ocean. *Cah. Biol. Mar.* 16:121-132.
- PONDER, R. W. 1975. Notes on the foraminiferal genus *Haverina* and three of its species from North Queensland, Australia. *J. Natur. Hist.* 9:1-28.

PROBERT, P. K. 1975. The bottom fauna of China clay waste deposits in Mevagissey Bay. *J. mar. biol. Ass. U. K.* 55(1):19-44.

PULSIFER, J. 1975. Some techniques for mounting copepods for examination in a scanning electron microscope. *Crustaceana* 28:101-105.

REES, C. P. 1974. A device for determining substratum selection under flowing-water conditions. *Limnol. Oceanogr.* 19(6):1012-1014.

REISINGER, E., I. CICHOCKI, R. ERLACH, T. SZYSKOWITZ. 1974. Ontogenetische Studien an Turbellarien: ein Beitrag zur Evolution der Dotterverarbeitung im ektolecithalen Ei. Teil 2. *Z. Zool. Syst. Evol.* 12(4):241-278.

RIEMANN, FRANZ. 1974. On hemisessile nematodes with flagelliform tails living in marine soft bottoms and on micro-tubes found in deep sea sediments. *Mikrofauna Meeresbodens* 40:1-15.

ROBBINS, C. E. 1973. Gastrotricha from Illinois. *Trans. Ill. St. Acad. Sci.* 66(3/4):124-126.

RODRIGUEZKABANA, R., P. S. KING. 1975. Efficiency of extraction of nematodes by flotation-sieving using molasses and sugar and by elutriation. *J. Nematol.* 7(1):54-59.

ROUCH, R. 1974. Recherches sur les eaux souterraines-24-Le système karstique du Baget. III. Étude des sorties d'harpacticides au niveau de las Hountas lors de plusieurs crues des cycles hydrologiques 1971-1972 et 1972-1973. *Ann. Spéléol.* 29(3):351-372.

ROWE, G. T., P. T. POLLONI, S. G. HORNER. 1974. Benthic biomass estimates from Northwestern Atlantic and Northern Gulf of Mexico. *Deep Sea Res.* 21(8):641-650.

SAKS, N. M., J. J. LEE, W. A. MULLER, J. H. TIETJEN. 1974. Growth of salt-marsh microcosms subjected to thermal stress. In: *Thermal Ecology, Proc. of Symposium, Augusta, Ga., 3-5 May 1973*, pp. 391-398. (Eds.) J. W. Gibbons, R. R. Sharitz, U.S. Atomic Energy Comm., Washington, D. C.

SARNTHEIN, M., W. RICHTER. 1974. Submarine experiments on benthic colonization of sediments in the western Baltic Sea. I. Technical layout. *Mar. Biol.* 28(3):159-164.

SASSEVILLE, D. R., A. P. TAKACS, S. A. NORTON, R. B. DAVIS. 1974. A large-volume interstitial water sediment squeezer for lake sediments. *Limnol. Oceanogr.* 19(6):1001-1004.

SCHALLREUTER, R. 1974. New names for Ostracode genera. *Geol. Foren. Stockh. Forh.* 96(3):278.

SCHEIBEL, W. 1974. Submarine experiments on benthic colonization of sediments in the Western Baltic Sea. II. Meiofauna. *Mar. Biol.* 28:165-168.

SCHOCKAERT, E., T. G. KARLING. 1974. Three new anatomically remarkable Turbellaria Eukalyptorhynchia from the North American Pacific coast. *Ark. Zool.* 23(3/4):237-253.

SCHULENBERGER, E., R. R. HESSLER. 1974. Scavenging abyssal benthic amphipods trapped under oligotrophic central North Pacific Gyre waters. *Mar. Biol.* 28:185-187.

SENGUPTA, B. K., R. T. KILBOURNE. 1974. Diversity of benthic Foraminifera on the Georgia continental shelf. *Bull. Geol. Soc. Amer.* 85(6):969-972.

SHER, S. A., A. H. BELL. 1975. Scanning electron micrographs of anterior region of some species of Tylenchoidea (Tylenchida-Nematoda). *J. Nematol.* 7(1):69-83.

- SMITH, K. L. 1974. Oxygen demands of San Diego Trough sediments: an in situ study. *Limnol. Oceanogr.* 19(6): 939-944.
- SMOL, N., C. HEIP. 1974. The culturing of some harpacticoids from brackish water. *Biol. Jb. Dodonaea* 42:159-169.
- SOPOTT-EHLERS, B., P. SCHMIDT. 1974. Interstitielle Fauna von Galapagos. XII. Myozona Marcus (Turbellaria, Macrostromida). *Mikofauna Meeresbodens* 46:
- SOYER, J. 1974. Contribution a l'étude des copépodes harpacticoides de Méditerranée Occidentale. 9. Le genre *Hastigerella* Nicholls (Ectinosomidae, Sars Olofsson). *Systématique, Écologie. Vie Milieu* 24(1B):175-192.
- SUDHAUS, W. 1974. Nematoden (insbesondere Rhabditiden) des Strandanwurfs und ihre Beziehungen zu Krebsen. *Faun.-ökol. Mitt. (Kiel)* 4:365-400.
- SURYA RAO, K. V. 1972. Intertidal amphipods from Indian-coast. *Proc. Indian Natl. Sci. Acad.* 38:190-205.
- TOPPING, G., R. JOHNSTON. 1974. The Marine Laboratory, Aberdeen, studies pollution. *Scott. Fish. Bull.* 40: 12-15.
- TURNER, B. D., R. A. STEVENSON. 1974. An electrolytic, digital recording, multichannel micro-respirometer. *J. Exp. Biol.* 61:321-329.
- VERNBERG, W. B., G. S. MOREIRA. 1974. Metabolic-temperature responses of the copepod *Euterpina acutifrons* (Dana) from Brazil. *Comp. Biochem. Physiol.* 49A:757-761.
- VITIELLO, P. 1974. Peuplements de nématodes marins des fonds envasés de Provence. I. Sediments vaseux de mode calme et vases terrigenes côtiers. *Ann. Inst. Océanogr. Paris* 50:145-172.
- VON OERTZEN, J.-A. 1973. A quantitative phytal sample. *Oikos, Suppl.* 15:81-82.
- WARWICK, R. M., R. PRICE. 1975. Macrofauna production in an estuarine mud-flat. *J. mar. Biol. Ass. U. K.* 55(1):1-18.
- WHELAN, T. 1974. Methane, carbon dioxide and dissolved sulfate from interstitial water of coastal marsh sediment. *Estur. Coast. Mar. Sci.* 2(4):407-416.
- WIEBE, P. H., C. C. REMSEN, R. F. VACCARO. 1974. *Halosphaera viridis* in the Mediterranean Sea: size range, vertical distribution, and potential energy source for deep-sea benthos. *Deep Sea Res.* 21(8):657-667.
- WOLFF, W. J., A. J. J. SANDEE, H. STEGENGA. 1974. *Halammohydra vermiformis* and *H. coronata* (Hydrozoa), new to the fauna of the Netherlands. *Netherlands J. Sea Res.* 8(4):407-409.
- YEATES, G. W. 1973. Morphometrics and growth in eight New Zealand soil nematode populations. *N. Z. J. Sci.* 16:711-725.
- YEATES, G. W. 1973. Nematoda of a Danish beech forest II. Production estimates. *Oikos* 24:179-185.
- YEATMAN, H. C. 1975. Two rediscovered species of littoral copepods from Barbados collections. *J. Tenn. Acad. Sci.* 50(1): 2-6.
- YETKA, J. E., W. J. WIEBE. 1974. Ecological application of antibiotics as respiratory inhibitors of bacterial populations. *Appl. Microbiol.* 28(6):1033-1039.
- YOUNG, J. O. 1974. The occurrence of diapase in the egg stage of the life cycle of *Phaenocora typhlops* Vejdovsky (Turbellaria: Neorhabdocoela). *J. Anim. Ecol.* 43(3):719-732.
- YOUNG, J. O. 1975. The population dynamics of *Phaenocera typhlops* (Vejdovsky) (Turbellaria: Neorhabdocoela) living in a pond. *J. Anim. Ecol.* 44(1): 251-262.

ZABLOTSKII, A. A. 1974. Benthic food resources of Karelian lakes in which fishes have been killed by chemical means. Tr. Karel. Otd. GOSNIORKH 5(1): 383-393, 395-396.

ZAKHIDOV, M. T. 1974. Nematodes from sand ooze biotops of the Kurshky Bay USSR of the Baltic Sea. Zool. Zh. 53: 280-282 (In Russian).

ZAVODNIK, D. 1973. Premieres observations sur la meiofaune vagile des fonds vaseux-orgileux à *Nephrops norvegicus* dans la zone de iles de l'Adriatique du nord-est. Comm. Int. l'Exp. Sci. Mer. Med. 22(4):67.