

PSAMMONALIA

Newsletter of the International Association of Meiobenthologists



Special 25th anniversary edition!

NUMBER 94

November 1991

Newsletter of the International Association of Meiobenthologists

editor : RICHARD WARWICK

production editor : Mel Austen

INTERNATIONAL ASSOCIATION OF MEIOBENTHOLOGISTS – FOUNDED 1966

Executive Committee

Chairperson

RICHARD WARWICK

Plymouth Marine Laboratory, Prospect Place, The Hoe, Plymouth PL1 3DH, UK

Treasurer

MIKE GEE

Plymouth Marine Laboratory, Prospect Place, The Hoe, Plymouth PL1 3DH, UK

Committee Members

MARC BERGMANS

Lab. Ekologie en Systematiek, Vrije Universiteit, Pleinlaan 2, B-1050 Brussels, Belgium

JOHN FLEEGER

Department of Zoology and Physiology, Louisiana State University, Baton Rouge, LA 70803-1725, USA

LAURENCE GUIDI

C.E.R.O.V., Station Zoologique, B.P. 28, 06230 Villefranche-sur-Mer, France

GEOFFREY HICKS

National Museum of New Zealand, P.O. Box 467, Wellington 1, New Zealand

MARGARET PALMER

Department of Zoology, University of Maryland, College Park, MD 20742, USA

Board of Correspondents

BRUCE COULL

Baruch Inst. Marine Science and Coastal Research, University of South Carolina, Columbia, SC 29208, USA

DAN DANIELOPOL

Limnol. Institut, Abteilung Mondsee, A-5310 Gaisberg 116, Austria

VALJA GALTSOVA

Zool. Inst. Akad. Sci. SSSR, Universitetskaja Embankment 1, Leningrad V-164, USSR

ANDREW GOODAY

Institute of Oceanographic Sciences, Wormley, Godalming, Surrey, GU8 5UB, UK

LAURENCE GUIDI

C.E.R.O.V., Station Zoologique, B.P. 28, 06230 Villefranche-sur-Mer, France

GEOFFREY HICKS

National Museum of New Zealand, P.O. Box 467, Wellington 1, New Zealand

RONY HUYS

Lab. Morfologie, Ledeganckstraat 35, B-9000 Gent, Belgium

CATALINA PASTOR

Centro Nacional Patagonico, 28 de Julio 28, (9120) Puerto Madryn, Prov. Chubut, Argentina

TERESA RADZIEJEWSKA

Inst. Fisheries Oceanography, Kazimiera Krolewicz 4, 71-550 Szczecin, Poland

YOSHIHISA SHIRAYAMA

Ocean Research Institute, University of Tokyo, 1-15-1 Minamidai, Nakano-Ku, Tokyo 164, Japan.

DAVID STRAYER

The New York Botanical Garden, Institute of Ecosystem Studies, Box AB, Millbrook, NY 12545, USA

ZHANG ZHINAN

Department of Marine Biology, Ocean Univeristy of Qingdao, Qingdao, Shangdong, Peoples Republic of China.

Dues are £5 per year payable to Mike Gee.

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

EDITORIAL

TEMPORAL EVOLUTION OF A
MEIOBENTHIC COMMUNITY

Introduction

Long term data on changes in community structure are rare for most groups of organisms, but can provide useful insights into the mechanisms which determine this structure, tests of ecological theory and (if clear trends can be identified) predictions of future events. Here I report a 25-year study of a widespread meiobenthic community. The analysis has been facilitated by the fact that, although sparsely distributed for most of the time, this community forms dense aggregations at more or less regular intervals, at which times a census is relatively easy to make.

Specially-timed communal displays (in this case termed "Conferences") occur in many groups of organisms but as yet only one unifying theory to explain them has been postulated. Wynne-Edwards (1962) termed this class of social behaviour "epideictic" display, which, he postulated, evolved to provide the feedback necessary for widely dispersed populations to maintain a density and structure appropriate to available resources. In other words, normally solitary organisms have a brief gregarious phase during which intense interactions result in the formulation of a future strategy for the mutual benefit of the whole population or community. This study was undertaken with a view to examining the degree to which this meiobenthic community conforms to, or refutes, this theory.

Methods

Data on community structure are available for seven communal gatherings, and have been obtained from bibliographic information compiled at the time plus a photographic census of each gathering. The latter are presented in Plates 1-7. The first aggregation occurring three years after the initial establishment of this community, and subsequent aggregations were at the following places and times:

1. Tunis, Tunisia. 1-11 July 1969
2. York, England. 7-14 July 1973
3. Hamburg, Germany. 22-27 August 1977
4. Columbia, S. Carolina, USA. 27 July - 2 August 1980

5. Ghent, Belgium. 16-20 August 1983

6. Tampa, Florida. 13-19 July 1986

7. Vienna, Austria. 21-25 August 1989

Univariate measures which have been calculated include overall population density, frequency of occurrence and sex ratio. A triangular similarity matrix comparing the specific composition of each gathering (standardised to remove the effect of sample size) was constructed using the Bray-Curtis similarity measure, and these data have been subjected to non-metric Multidimensional Scaling Ordination (MDS). This type of ordination makes no assumptions about multivariate normality of the data, and simply uses the rank orders of similarities in the triangular matrix.

Results

After an initial more or less linear increase, overall population density began to fluctuate rather widely and unpredictably after Conference 4 (Fig. 1). The absence of a clear linear trend makes it impossible to predict the expected density at the next Conference with any accuracy.

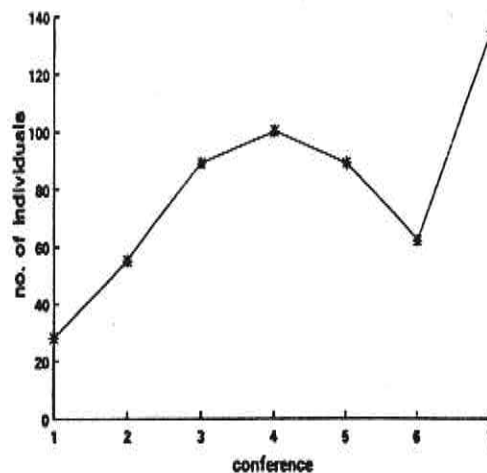


Fig. 1. Total numbers of individuals attending each Conference

More than 70% of the total of 355 individuals who have attended these Conferences have done so on only one occasion. The number of individuals attending higher numbers of Conferences decreases dramatically and exponentially (Fig. 2). No individual has attended all seven Conferences, and only three individuals have attended six Conferences (*O. Giere*, *R. Higgins*, *W. Hummon*). On average, 66.5% of those attending each Conference are doing so for the first time.

with population density. Indeed, since the generation time of these organisms is in the order of 20 y, direct feedback to the community over the period of observation could not have been observed. Further, no overt nuptial activity has been observed at these gatherings, and none of the offspring of participants has so far recruited to this community. Changes in the sex ratio do not therefore appear to be adaptive in the sense of regulating population numbers, and are more likely to have resulted from some unidentified changes in the social structure of this community. Regulation through the establishment of a social hierarchy is also unlikely, as no such hierarchy has been evidenced.

Population regulation cannot therefore be considered as the primary purpose of these gatherings. It is perhaps appropriate, therefore, to speculate on the benefits that they might accrue to the participants, since if there were no clear benefits such gatherings would not occur. Of all the mechanisms of interaction identified by Wynne-Edwards, the use of sound and of visible signals seems to predominate. Evidence points to the fact that these Conferences are for the purpose of intellectual and social stimulation which in some way sustains this community and provides an impetus and future direction for its activities. The universality of Wynne-Edwards' theory is therefore supported with the qualification that, for higher organisms at least, the advantages of gregarious behaviour may not simply be concerned with long-term survival but with rather more esoteric improvements in the well-being of the community and the quality and utility of its product.

To obtain these benefits - COME TO EIMCO!

References

- Battaglia, B. 1964. Advances and problems of ecological genetics in marine animals. pp. 451-461. In: Genetics Today, Pergamon.
- Penter, D.M. 1969. The ecology of intertidal harpacticoids in the Swale, North Kent. Ph.D. Thesis, University of London.

Wynne-Edwards, V.C. 1962. Animal dispersion in relation to social behaviour. Oliver & Boyd.

Richard Warwick

25th ANNIVERSARY OF PSAMMONALIA

Don Zinn and I have the following item for the twenty-fifth anniversary issue of PSAMMONALIA:

On 10 November 1966, twenty-five years ago, we distributed the first copy of PSAMMONALIA.

A long line of credits, names of colleagues who invested in the future, which is now, should appear here instead of these few words of reflection. Suffice to say that the International Association of Meiobenthologists has become a viable and productive professional organization which continues to be a catalyst in meiofaunal research. Those of us who were once the new generation, challenged by a remarkable assemblage of sediment-inhabiting invertebrates, still consider ourselves no more than slightly more experienced students of meiobenthology. Yet, we feel a great sense of collective accomplishment for we know we have come a long way.

We who have been privileged to contribute to this field since the first issue of PSAMMONALIA appeared are confident that our younger colleagues will continue to expand the study of meiofauna throughout the next century with equal vigour. We trust that twenty-five years hence an issue of PSAMMONALIA will assure its membership that such has been the case. Thus, with considerable pride in what we helped initiate, we invite all who read this, and especially those colleagues who have made PSAMMONALIA and the International Association of Meiobenthologists a continuing success, to join us in a libation to this anniversary, and to the memory of friends who are no longer among us.

Bob Higgins and Don Zinn

*Meiobenthologists, so they say,
Are sedimentological about their prey;
They dig and delve on sandy shore,
Or scrape the bottoms of ocean floor.
Their grainy (brainy?) business employs porosity
To search the contiguous (aqueous) lacunarity!*

Donald Zinn

Facsimile of the first edition of Psammonalia, kindly provided by Bruce Coull

PSAMMONALIA

Bulletin No. 1

10 November 1966

At the informal meeting of psammonologists following the very successful symposium on the biology of marine interstitial fauna at the AIBS Meetings in College Park, Md., last August, it was suggested that an informal means of communication be established among kindred interests of the interstitial fauna. This issue of 'Psammonalia' is the first item of dialogue!

The object of this bulletin, which will be issued on an irregular schedule, hopefully at least twice a year, is to maintain communication among American psammonologists and to note research items and papers, of psammic interest, personal and personnel news and meetings and conferences harboring papers on the interstitial fauna and its milieu. Comments, suggestions and brief notes for inclusion will be welcomed by the editors, Dr. Robert P. Higgins, Dept. of Biology, Wake Forest College, Winston-Salem, N.C. 27106 and Dr. Donald J. Zinn, Dept. of Zoology, University of Rhode Island, Kingston, R. I. 02881. It is particularly important for each scientist to communicate such information to the editors. We can be of much service if research papers, etc. are noted in subsequent issues of one bulletin and, indeed, the continuance will depend upon the response of those who receive it.

It is hoped that we will be able to schedule a meeting much like the post-symposium session August, at the AAAS meetings in Washington. The tentative time for this gathering is the afternoon of Wednesday, 28 December. The AAAS program will include a note on this meeting and provide time and place information. At that

-2-

time we will be able to discuss plans for future gatherings and perhaps additional symposia and enjoy an opportunity to exchange ideas on current investigations of the mysteries of the fauna, flora and waters of the intertidal and subtidal sediment lacanae.

The mailing list has been included with this bulletin. Please respond by card upon receipt of this bulletin, giving us zip code or corrected address information, area of interest (if not already noted), etc. New names will be added by request.

The papers presented at the symposium are collecting slowly at the University of Rhode Island for eventual formal publication as a unit in an acceptable journal.

Recent Publications:

- Renaud - Mornant, J. 1966. Problemes d'echantillonnage de la microfaune des sediments meubles marins. La Terre et La Vie, Annee 1966 (2): 176-201.
- Jansson, B-O. 1966. Microdistribution of Factors and Faunas in Marine Sandy Beaches. Veroff. Inst. f. Meeresforsch Bremerhaven 11: 77-86.
- Bush, L. 1966. Distribution of Sand Fauna in Beaches at Miami, Florida. Bull. Mar. Sci. 16(1): 58-75.

CHANGE OF ADDRESS

Institute for Marine Scientific Research (IZWO)
 Dr. ir. E. Jaspers – Director
 Victorialaan 3
 B-8400 Oostende
 BELGIUM
 Tel. +32-59-32 10 45
 Fax. +32-59-32 11 35

Teresa Radziejewska
 c/o Dept Zool. & Physiol.
 Louisiana State University
 Baton Rouge, LA 70803
 USA

Laurent Villiers
 S.P. 91427
 00229 Armées
 TAHITI-POLYNESIE FRANCAISE

John Wells
 Faculty of Science
 Victoria University of Wellington
 P.O. Box 600
 Wellington
 NEW ZEALAND

NEWS FROM MEMBERS

Rudi Herman from Gent in Belgium has left the Zoology Department and switched to a paper-pushing job at the board of higher education and scientific research in the Ministry of Education. Rudi is a project executive, dealing with such matters as how to optimize the yearly shrinking research and education budgets, promoting interdisciplinary research and maintaining diversity – including basic classical science – as a necessity for obtaining higher quality science.

We have heard via the grapevine (**Derek Murison** of DAFFS) that **Eugenia Riadou** who was working on meiofauna at the Institute of Marine Biology in Crete, has now given up marine science for a job in the family business.

Teresa Radziejewska has been awarded a Fullbright Research Grant for one year, from November 1991, and is at Baton Rouge working with **John Fleeger** and **Kevin Carman** on food resources of benthic copepods.

John Wells has been appointed Dean of the Faculty of Science at Wellington University. This posting will leave him little or no time for research, a sad loss to the meiofauna research community in general and to harpacticoid copepod taxonomy in particular.

NEW OR REINSTATED MEMBERS

Although it is always sad to hear of the loss of good meiofauna scientists to administration and industry, it is a pleasure to welcome new members, many of whom are just beginning their research careers.

Candice Hinkle-Conn
 Dept Zoology and Physiology
 202 Life Sciences Building
 Louisiana State University
 Baton Rouge LA 70803-1725
 USA.

"I am working on a PhD degree under Dr. John Fleeger at LSU and my area of interest is gobies that feed on meiofauna in estuarine and saltmarsh areas. I look forward to being a member of I.A.M and doing research on meiofauna".

Mark Holmes
 National Museum of Ireland
 Kildare Street
 Dublin 2
 EIRE

Stephen Jarvis
 University of Wales
 School of Ocean Sciences
 Menai Bridge
 Gwynedd LL59 5EY
 U.K.

"As a graduate of Bristol University I am now at the School of Ocean Sciences studying phytal meiofauna. I am especially interested in the microarthropods and am at present looking at community differences at three sites on Anglesey. By using a combination of artificial substrata, transplanting and culturing I shall be examining some of the effects of pollution on these communities"

Nadia Papadopoulou
 Marine Ecology Group
 Institute of Marine Biology of Crete
 P.O. Box 2214
 71003 Iraklio
 CRETE, GREECE

"I am a benthic ecologist collaborating in several multi-disciplinary projects in the Aegean Sea coordi-

nated by the Institute of Marine Biology of Crete (Director Prof. A. Eleftheriou). My particular interests are macrobenthic polychaetes and meiobenthos (general). Almost nothing is presently known about the meiofaunal assemblage in Cretan waters (Bill Hummon has recently described some littoral gastrotrich assemblages from Crete and mainland Greece) and consequently much of our current and future effort must involve the analysis of poorly or totally undefined benthic communities with the additional constraint of a limited specialist literature base. Hopefully, I and my colleagues may benefit from future collaboration with and advice from other experienced meiobenthic ecologists".

Ann Vanreusel
 Zoology Institute
 Morphology Laboratory
 University of Gent
 Ledeganckstraat 35
 B-9000 Gent
 BELGIUM

Dominick Vershelde
 University of Gent
 Zoology Institute
 Marine Biology Section
 Ledeganckstraat 35
 B-9000 Gent
 BELGIUM

"The purpose of my PhD study is a systematic and morphological revision of the Desmodoroidea (Nematoda). For that, the nematode collection of the University of Gent is at my disposal. Nevertheless, I would be very grateful to everyone who could lend me some nematodes of the families Draconematidae, Epsilonematidae and Desmodoridae for examination. Also, I can be helpful in solving systematic problems in this taxon".

CORRECTION

The title and reference to the polychaete volume reviewed by Gunter Purschke on page 6 of Psammonalia No. 93 should have read as follows:-

Petersen, M.E. & Kirkegaard, J.B. (eds.). 1991. *Systematics, Biology and Morphology of World Polychaeta*. Proceedings of the 2nd International Polychaete Conference, Copenhagen 1986. *Ophelia* Suppl. 5, 723pp. (Ophelia Publications/Apollo Books, Kirkeby Sand 19, DK-5771 Stenstrup, Denmark. Price 1490 DKK; appr. 210 US\$).

FUTURE MEETINGS

FIFTH INTERNATIONAL CONFERENCE ON COPEPODA

The World Association of Copepodologists will hold its Fifth International Conference on Copepoda at the University of Maryland, Baltimore Campus at Catonsville on 5-10 June 1993. A conference program existing of platform presentations integrated with poster sessions and focusing on contemporary problems in copepod biology is planned. Members of the local organizing committee are: Brian P Bradley, Chairman, Thomas E Bowman, Frank D Ferrari, John A Fornshell, Janet W Reid, T Chad Walter and Grace A Wyngaard.

For more information about conference topics, registration, etc. contact:

Dr Brian P Bradley
 Fifth International Conference on Copepoda
 Department of Biological Sciences
 University of Maryland, Baltimore Campus
 Catonsville, MD 21228 USA
 Fax: (301) 455-3875

CALL FOR PAPERS FOR SPECIAL EIMCO SESSION

"USE OF MEIOFAUNA IN APPLIED RESEARCH"

There will be a special session devoted to presentations on the use of meiofauna in environmental research on Friday morning during the conference. The objective of this session is to promote the use of meiofauna in applied studies. Topics will include: Field Pollution Studies, Laboratory Toxicity Studies, Meiofauna as Stress Indicators, and Comparison of Meiofaunal Responses With Other Groups. Please send a duplicate copy of your abstract to:

Paul Montagna
 University of Texas at Austin
 Marine Science Institute
 P.O. Box 1267
 Port Aransas, Texas 78373 USA
 You can also submit the duplicate abstract via electronic mail using
 Internet: PAUL@UTMSI.ZO.UTEXAS.EDU,
 or Bitnet: PAUL@UTMSI.

CURRENT LITERATURE

- Abe, H. 1991. A new genus and species of the family Halacaridae (Acari, Prostigmata) from Japan. *Zoologische Jahrbücher. Abteilung für Systematik, Ökologie und Geographie der Tiere*, 118, 247–256.
- Abou-Ouf,., Sayed, and Ahmed, M. 1991. Recent benthic foraminifers from Tarut Bay, Arabian Gulf coast of Saudi Arabia. *Journal of Micropalaeontology*, 10(1), 33–38.
- Adrianov, A.V. and Malakhov, V.V. 1991. The fine structure of spermatozooids and peculiar features of spermatogenesis in *Pycnophyes kielensis* (Homalorhagida, Pycnophyidae). *Zoologicheskij Zhurnal*, 70, 28–36. (in Russian – English abstract)
- Adrianov, A. V. and Malakhov, V.V. 1991. The nervous system of *Cephalorhyncha*, Kinorhyncha. *Zoologicheskij Zhurnal*, 70, 5–12. (In Russian – English abstract)
- Adrianov, A.V. and Malakhov, V.V. 1991. Fine structure of the reproductive system in *Cephalorhyncha*. *Zoologicheskij Zhurnal*, 70, 28–38.
- Akimoto, K., Tanaka, T., Hattori, M. and Hotta, H. 1990. Recent foraminiferal assemblages around Calyptogena colony off Hatsushima Island, Sagami Bay, central Japan. In: Japan Marine Science and Technology Center. Technical reports presented at the 6th symposium on deep-sea research using the submersible "Shinkai 2000" system. p.205–220. Japan Marine Science and Technology Center. Yokosuka.
- Akimoto, K., Tanaka, T., Hattori, M. and Hotta, H. 1990. Recent benthic foraminiferal assemblages from the hydrothermal deposits in the Okinawa Trough, Ryukyu Islands, Japan. In: Japan Marine Science and Technology Center, Technical reports presented at the 6th symposium on deep-sea research using the submersible "Shinkai 2000" system. p.205–220. Japan Marine Science and Technology Center. Yokosuka.
- Al-AbdulRazzaq, S. 1991. The Ostracoda community in hypersaline channels in Al-Khiran, Arabian Gulf. *Journal of Micropalaeontology*, 10(1), 17–21.
- Apostolov, A.M. 1991. *Maraenobiotus parainsignipes* sp.n, a new species of Copepoda Harpacticoida from a cave in Bulgaria. *Zoologicheskij Zhurnal*, 70, 138–141. (In Russian – English abstract)
- Austen, M.C. and Wibdom, B. 1991. Changes in and slow recovery of a meiobenthic nematode assemblage following a hypoxic period in the Gullmar Fjord basin, Sweden. *Marine Biology*, 111(1), 139–145. X
Bibel
- Benzie, J.A.H. 1991. Genetic relatedness of foraminiferal (*Marginopora vertebralis*) populations from reefs in the Western Coral Sea and Great Barrier Reef. *Coral Reefs*, 10(1), 29–36.
- Benzie, J.A.H. and Pandolfi, J.M. 1991. Allozyme variation in *Marginopora vertebralis* (Foraminifera: Miliolidae) from coral reef habitats in the Great Barrier Reef, Australia. *Journal of Foraminiferal Research*, 21(3), 222–226.
- Biserov, V.I. 1991. An annotated list of Tardigrada from European Russia. *Zoologische Jahrbücher. Abteilung für Systematik, Ökologie und Geographie der Tiere*, 118, 193–216.
- Bongers, T., Alkemade, R. and Yeates, G.W. 1991. Interpretation of disturbance-induced maturity decrease in marine nematode assemblages by means of the Maturity Index. *Marine Ecology Progress Series*, 76(2), 135–142. X
Vosth
- Brown, A.F. 1991. Outbreeding depression as a cost of dispersal in the harpacticoid copepod, *Tigriopus californicus*. *Biological Bulletin*, 181(1), 123–126.
- Bussau, C. 1991. Freelifving nematodes from coastal dunes and adjoining biotopes of the German and Danish coasts. IV. Rhabditida and Tylenchida (Nematoda). *Zoologischer Anzeiger*, 226, 114–148. (In German)
- Bussau, C. 1991. Freelifving nematodes from coastal dunes and adjoining biotopes of the German and Danish coasts. III. Dorylaimida (Nematoda). *Zoologischer Anzeiger*, 226, 33–63. (In German)
- Buzas, M.A. and Culver, S.J. 1991. Species diversity and dispersal of benthic foraminifera. *BioScience*, 41(7), 483–489.

Carman, K.R., Thistle, D., Ertman, S.C. and Foy, M. 1991. Nile red as a probe for lipid-storage products in benthic copepods. *Marine Ecology Progress Series*, 74(2/3), 307-311.

B! X
Cedhagen, T. 1991. Retention of chloroplasts and bathymetric distribution in the sublittoral foraminiferan *Nonionellina labradorica*. *Ophelia*, 33(1), 17-30.

Corliss, R.H. 1991. Morphology and microhabitat preferences of benthic foraminifera from the northwest Atlantic Ocean. *Marine Micropaleontology*, 17, 195-236.

Culver, S.J. 1990. Benthic foraminifera of Puerto Rican mangrove-lagoon systems: potential for paleoenvironmental interpretations. *Palaios*, 5(1), 34-51.

Denne, R.A., Sen Gupta, B.K. 1991. Association of bathyal foraminifera with water masses in the northwestern Gulf of Mexico. *Marine Micropaleontology*, 17, 173-193.

Definova, N.N. 1989. Polychaetous annelids from the hydrothermal vent area on axial seamount, Juan de Fuca Ridge. *Trudy Instituta Okeanologii*, 123, 71-80.

Erseus, C. 1991. Records of the marine genus *Bathydriulus* (Oligochaeta: Tubificidae) from California, with descriptions of two new species. *Proceedings of the Biological Society of Washington*, 104, 622-626.

Erseus, C. 1991. Two new deep-water species of the gutless genus *Olavius* (Oligochaeta: Tubificidae) from both sides of North America. *Proceedings of the Biological Society of Washington*, 104, 627-630.

Faber, W.W. 1991. Distribution and substrata preferences of *Peneroplis planatus* and *P. arientinus* from the *Halophila* meadows near Wadi Taba, Eilat, Israel. *Journal of Foraminiferal Research*, 21(3), 218-221.

Fournier, J.A. 1991. New species of *Microphthalmus* (Polychaeta, Hesionidae) from the Pacific northwest. *Bulletin of Marine Science*, 48, 208-213.

Gibbons, M.J. 1991. Rocky shore meiofauna: a brief overview. *Transactions of the Royal Society of South Africa*, 47(4/5), 595-603. X B!

Gieskes, J.M., Gamo, T. and Brumsack, H. 1991. Chemical methods for interstitial water analysis. *Ocean Drilling Program Technical note 15*, pp 1-60, Texas A&M University, USA. X B!

Gooday, A.J. 1990. Recent deep-sea agglutinated foraminifera: a brief review. In: Hemleben, C., et al, editors. *Paleoecology, biostratigraphy, paleoceanography and taxonomy of agglutinated foraminifera*. p.271-304. Kluwer Academic Publishers. (NATO ASI Series)

Gooday, A.J. 1991. Xenophyophores (Protista, Rhizopoda) in box-core samples from the abyssal northeast Atlantic Ocean (BIOTRANS area): their taxonomy, morphology and ecology. *Journal of Foraminiferal Research*, 21(3), 197-212.

Gradek, C.L. 1991. A new species of the interstitial genus *Pisione* (Polychaeta: Pisionidae) from coastal beaches in Sonoma county, California, U.S.A. *Transactions of the American Microscopical Society*, 110, 212-225.

Grelet, Y. 1985. Vertical distribution of meiobenthos and estimation of nematode biomass from sediments of the Gulf of Aqaba (Jordan, Red Sea). *Proceedings of the Fifth International Coral Reef Congress, Tahiti*, 5, 251-256.

Grelet, Y., Falconetti, C., Thomassin, B.A., Vitiello, P. and Abu-Hilal, A.H. 1987. Distribution of the macro- and meiobenthic assemblages in the littoral soft-bottoms of the Gulf of Aqaba (Jordan). *Atoll Research Bulletin*, 308, 1-14. X vob

Gundersen, J.K. and Jorgensen, B.B. 1991. Fine-scale in situ measurements of oxygen distribution in marine sediments. *Kieler Meeresforschungen, Sonderheft 8*, 376-380. X B

Hedqvist-Johnson, K. and Andre, C. 1991. The impact of the brown shrimp *Crangon crangon* L on soft-bottom meiofauna. An experimental approach. *Ophelia*, 34, 41-50.

Herbert, D.G. 1991. Foraminiferivory in a *Puncturella* (Gastropoda: Fissurellidae). *Journal of Molluscan Studies*, 57, 137-140.

- Hicks, G.R.F., Huaki, M.J., Webber, W.R. and Yaldwyn, J.C. 1991. Inventory of cnidarian, pycnogonid and crustacean type specimens in the National Museum of New Zealand. National Museum of New Zealand Miscellaneous Series, 22, 23p.
- Hilbig, B. and Blake, J.A. 1991. Dorvilleidae (Annelida: Polychaeta) from the U.S. Atlantic slope and rise. Description of two new genera and 14 new species, with a generic revision of *Ophryotrocha*. *Zoologica Scripta*, 20, 147–183.
- Jensen, P. 1991. Bodonematidae fam n (Nematoda, Monhysterida) accommodating *Bodonema vossi* gen et sp n from the deep-sea benthos of the Norwegian Sea. *Sarsia*, 76, 11–16.
- Jensen, P. 1991. Nine new and less known nematode species from the deep-sea benthos of the Norwegian Sea. *Hydrobiologia*, 222(1), 57–76.
- Kamenskaya, O.E. 1990. Preliminary data on *Komoki* (Foraminifera, Komokioidea) from the transatlantic section 31 S–36 S. In: Biological and Geological Bottom Investigations in the South Atlantic. Transactions of the P.P. Shirshov Institute of Oceanology, 126, 62–66.
- Kojima, S. and Ohta, S. 1990. Seasonal variations of the deep-sea macrobenthos communities in the central and bathyal zones off Sanriki, northeastern Japan. *Journal of the Oceanographical Society of Japan*, 46, 250–260.
- Kregger, K.E., Kreeger, D.A., Langdon, C.J. and Lowry, R.R. 1991. The nutritional value of *Artemia* and *Tigriopus californicus* (Baker) for 2 Pacific mysid species, *Metamysidopsis elongata* (Holmes) and *Mysidopsis intii* (Holmquist). *Journal of Experimental Marine Biology and Ecology*, 148, 147–158.
- Kudinova-Pasternak, R.K. 1990. Tanaidacea (Crustacea, Malacostraca) of the southeastern part of the Atlantic Ocean and the region north of Mordvinov (Elephant) Island. In: Biological and Geological Investigations in the South Atlantic. Transactions of the P.P. Shirshov Institute of Oceanology, 126. 90–107.
- Levin, L.A. 1990. A review of methods for labelling and tracking marine invertebrate larvae. *Ophelia*, 32(1–2), 115–144.
- Levin, L.A. and Huggett, D.V. 1990. Implications of alternative reproductive modes for seasonality and demography in an estuarine polychaete. *Ecology*, 71(6), 2191–2208.
- Levin, L.A., McCann, L.D. and Thomas, C.L. 1991. The ecology of polychaetes on deep seamounts in the eastern Pacific Ocean. *Ophelia*, Supplement 5, 467–476.
- Levin, L.A., Zhu, J. and Creed, E. 1991. The genetic basis of life-history characters in a polychaete exhibiting planktotrophy and lecithotrophy. *Evolution*, 45(2), 380–397.
- Lubel, M.A.A., Murillo, M.E.M. and Estrada, R.M. 1990. Manuel de ciliados psamofilos marinos y salobres de Mexico. Publication of the Institute of Biology, Universidad Nacional Autonoma de Mexico, Mexico D.F., (in Spanish).
- Meyer-Reil, L.A. and Koster, M. 1991. Fine-scale distribution of hydrolytic activity associated with foraminiferans and bacteria in deep-sea sediments of the Norwegian–Greenland Sea. *Kieler Meeresforschungen, Sonderheft 8*, 121–126.
- Miliou, H. and Moraitou-Apostolopoulou, M. 1991. Combined effects of temperature and salinity on the population dynamics of *Tisbe holothuriae* Humes (Copepoda, Harpacticoida). *Archiv fur Hydrobiologie*, 121, 431–448.
- Miliou, H. and Moraitou-Apostolopoulou, M. 1991. Variations of respiratory rate of *Tisbe holothuriae* Humes (Copepoda, Harpacticoida) in relation to temperature, salinity and food type. *Comparative Biochemistry and Physiology*, 100A(1), 169–174.
- Nicholas, W.L. 1991. Interstitial Meiofauna. in: Bryant, C. Editor. *Metazoan life without oxygen*, p129–146, Routledge Chapman & Hall (London)
- Olafsson, E. and Elmgren, R. 1991. Effects of biological disturbance by benthic amphipods *Monoporeia affinis* on meiobenthic community structure – A laboratory approach. *Marine Ecology Progress Series*, 74, 99–
- Olausson, E. 1991. Carbon and oxygen isotope composition of foraminifera in two cores from the Bannock Basin area, eastern Mediterranean. *Marine Geology*, 100(1/4), 45–51.

- Palacin, C., Martin, D. and Gili, J.M. 1991. Features of spatial distribution of benthic infauna in a Mediterranean shallow-water bay. *Marine Biology*, 110(2), 315–321.
- Pawlowski, J. 1991. Distribution and taxonomy of some benthic tiny foraminifers from the Bermuda Rise. *Micropaleontology*, 37(2), 163–172.
- Pawlowski, J. and Lee, J.J. 1991. Taxonomic notes on some tiny shallow-water foraminifera from the north Gulf of Elat (Red Sea). *Micropaleontology*, 37(2), 149–162.
- Reverts, S.A. 1991. The generic revision of the Reussellids (Foraminiferida). *Journal of Micropaleontology*, 10(1), 1–15.
- Reverts, S.A. 1991a. The reclassification of *Tremachora* Lipps and Lipps 1967 in the suborder Delosinina. *Journal of Foraminiferal Research*, 21(3), 252–254.
- Rice, A.L., Billett, D.S.M., Thurston, M.H. and Lampitt, R.S. 1991. The Institute of Oceanographic Sciences benthic biology programme in the Porcupine Seabight: background and general introduction. *Journal of the Marine Biological Association U.K.*, 71, 281–310.
- Rieper-Kirchner, M., Hinz, K. and Biddanda, B. 1991. Ingestion of microbially-synthesized organic aggregates and egestion of fecal pellets by marine harpacticoid copepods. *Kieler Meeresforschungen, Sonderheft 8*, 257–263.
- Rohde, K. and Watson, N. 1991. Ultrastructure of the flame bulbs and protonephridial capillaries of *Prorhynchus* (Lecitopitheliata, Prorhynchidae, Turbellaria). *Zoologica Scripta*, 20, 99–106.
- Sachsenberg, S., Klenke, T. and Krumbein, W.E. 1991. Influence of microbial mats on heavy metal interstitial water gradients in versicolored tidal flat sediments of the North Sea. *Kieler Meeresforschungen, Sonderheft 8*, 164–167.
- Saidova, K.M. 1990. Foraminiferal communities of the Chukchi Sea. *Oceanology*, 30(3), 325–328.
- Sanchez, E.L. 1991. Stygofauna of the Canary Islands, 22. *Bogidiella (Stygogidiella) atlantica* n.sp. (Amphipoda) from interstitial waters on the western Canary Islands. *Crustaceana*, 61(2), 113–124.
- Sandulli, R., De, and Nicola, M. 1991. Responses of meiobenthic communities along a gradient of sewage pollution. *Marine Pollution Bulletin*, 22(9), 463–467. X
B!
- Sharifi, A.R., Croudace, I.W. and Austin, R.L. 1991. Recent foraminiferids as pollution indicators in Southampton Water, southern England, U.K.. *Journal of Micropaleontology*, 10(1), 109–113.
- Shen, S. and Wu, B. 1991. A new family of Polychaeta-Euniphysidae. *Acta Oceanologica Sinica*, 10, 129–140.
- Shiozawa, D.K. 1991. Microcrustacea from the benthos of 9 Minnesota streams. *Journal of the North American Benthological Society*, 10, 286–299.
- Shoshin, A.V. 1991. 2 new species of Baikal nematodes of the Enoplida order. *Zoologicheskij Zhurnal*, 70, 132–135. (In Russian – English abstract)
- Smolyanko, O.I. and Belogurov, O.I. 1991. Description and taxonomic position of *Expressonema granulata* gen. et sp. n. and structural analysis of the family Dorylaimopsidae (Nematod a, Comesomatidae). *Zoologicheskij Zhurnal*, 70, 117–127.
- Snimschikova, L.N. 1991. Two new species of genus *Baikalodrilus* (Oligochaeta, Tubificidae). *Zoologicheskij Zhurnal*, 70, 134–137.
- Soetaert, K., Heip, C. and Vincx, M. 1991. Diversity of nematode assemblages along a Mediterranean deep-sea transect. *Marine Ecology Progress Series*, 75(2/3), 275–282. X
Sibl.
- Sokolova, M.N. 1990. Macrobenthic trophic structure on the Atlantic Ocean floor. In: *Biological and Geological Investigations in the South Atlantic*. Transactions of the P.P. Shirshov Institute of Oceanology, 126, 20–39.
- Sopott-Ehlers, B. 1991. Electron microscopical observations on vitellocytes and germocytes in *Nematoplana collogynoporoides* (Platyhelminthes, Proseriata). *Zoomorphology*, 110, 239–

~~Q~~ Sterrer, W. 1991. Gnathostomulida from Fiji, Tonga and New Zealand. *Zoologica Scripta*, 20, 107-128.

~~X~~ Sterrer, W. 1991. Gnathostomulida from Hawaii. *Zoologica Scripta*, 20, 129-136.

~~X~~ Sterrer, W. 1991. Gnathostomulida from Tahiti. *Zoologica Scripta*, 20, 137-146.

Sterrer, W. 1991. *Triplignathia adriatica*, a new genus and species, and a typology of mouth parts in Austrognathiidae (Gnathostomulida). *Proceedings of the Biological Society of Washington*, 104, 640-646.

Thistle, D., Ertman, S.C. and Fauchald, K. 1991. The fauna of the HEBBLE site: patterns in standing stock and sediment-dynamic effects. *Marine Geology*, 99(3/4), 413-422.

Trueblood, D.D. 1991. Spatial and temporal effects of terebellid polychaete tubes on soft-bottom community structure in Phosphorescent Bay, Puerto Rico. *Journal of Experimental Marine Biology and Ecology*, 149, 139-159.

Tschesunov, A.V. 1991. On the structure of the cephalic cuticle in free-living nematodes of the family Linhomoeidae (Nematoda, Chromadoria, Siphonolaimoidea). *Zoologicheskij Zhurnal*, 70, 21-27.

Valbonesi, A. and Luporini, P. 1990. A new marine species of *Euplotes* (Ciliophora, Hypotrichida) from Antarctica. *Bulletin of the British Museum of Natural History, Zoology*, 56, 57-61.

Vandermerwe, D. and Mclachlan, A. 1991. The meiofauna of a coastal dune slake. *Journal of Arid Environments*, 21, 213-228.

~~B!~~
~~X~~
→ R. conspurcator
Vanreusel, A. 1991. Ecology of free-living marine nematodes in the Voordelta (Southern Bight of the North Sea). 2. Habitat preferences of the dominant species. *Nematologica*, 37, 343-359.

Vinogradova, N.G., Galkin, S.W., Kamenskaya, O.E., Levenstein, R.Y. and Romanov, V.N. 1990. Some data on the quantitative characteristic of the bottom fauna in the Mordvinov Island region, South Shetland Islands. In: *Biological and Geological Bottom Investigations in the South Atlantic*. Transactions of the P.P. Shirshov Institute of Oceanology, 126, 40-44.

Vinogradova, N.G., Galkin, S.W., Kamenskaya, O.E., Levenstein, R.Y. and Romanov, V.N. 1990. The distribution of deep-sea bottom fauna in the transatlantic sector of the South Atlantic along 31°30'S. In: *Biological and Geological Bottom Investigations in the South Atlantic*. Transactions of the P.P. Shirshov Institute of Oceanology, 126, 7-19.

Vinogradova, N.G., Galkin, S.W., Kamenskaya, O.E., Romanov, V.N. and Savilova, T.A. 1990. The characteristic of the bottom fauna from the continental coast of Namibia in the Benguela upwelling region (17.5°S-26°S) according to the data of the 43rd cruise of R/V "Akademic Kurchatov". In: *Biological and Geological Bottom Investigations in the South Atlantic*. Transactions of the P.P. Shirshov Institute of Oceanology, 126, 45-60.

Wang, P. and Zhao, Q. 1991. Paleobiogeography of Ostracoda and Foraminifera in the China Sea area. *Acta Oceanologica Sinica*, 10, 93-105.

Warren, A. and Paynter, J. 1991. A revision of *Cothurnia* (Ciliophora: Peritrichida) and its morphological relatives. *Bulletin of the British Museum of Natural History, Zoology*, 57, 17-59.

Watson, N.A. and Rohde, K. 1991. Ultrastructure of spermatogenesis and sperm of *Multicotyle purvisi* (Platyhelminthes, Aspodogastrea). *Zoomorphology*, 110, 347- .

Webb, D.G. and Parsons, T.R. 1991. Impact of predation-disturbance by large epifauna on sediment-dwelling harpacticoid copepods - field experiments in subtidal seagrass bed. *Marine Biology*, 109, 485-492.

Weinberg, J.R. 1991. Rates of movement and sedimentary traces of deep-sea Foraminifera and Molluscs in the laboratory. *Journal of Foraminiferal Research*, 21, 213-217.

Westheide, W. 1990. Polychaetes: interstitial families. *Synopses of the British Fauna (New Series)*, (44), 152p.



Plate 1 International Meiofauna Conference No. 1 – Tunisia

STATE OF TEXAS

1998-1999

THE COMMISSIONERS OF THE STATE BOARD OF EDUCATION

AND THE COMMISSIONERS OF THE STATE BOARD OF HEALTH

AND THE COMMISSIONERS OF THE STATE BOARD OF CHARTER SCHOOLS

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL ENGINEERING

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL ARCHITECTURE

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL LAND SURVEYING

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL ACCOUNTANCY

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL INTERIOR DESIGN

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL PHOTOGRAPHY

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL JOURNALISM

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL MUSIC

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL DANCE

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL THEATRE

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL FILM

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL TELEVISION

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL RADIO

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL MUSIC

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL DANCE

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL THEATRE

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL FILM

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL TELEVISION

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL RADIO

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL MUSIC

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL DANCE

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL THEATRE

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL FILM

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL TELEVISION

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL RADIO

AND THE COMMISSIONERS OF THE STATE BOARD OF PROFESSIONAL MUSIC



Plate 2 International Meiofauna Conference No. 2 - York

1968

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

...

TIMCO
Third International Mesozoic Conference
Hamburg, August 22-27, 1977

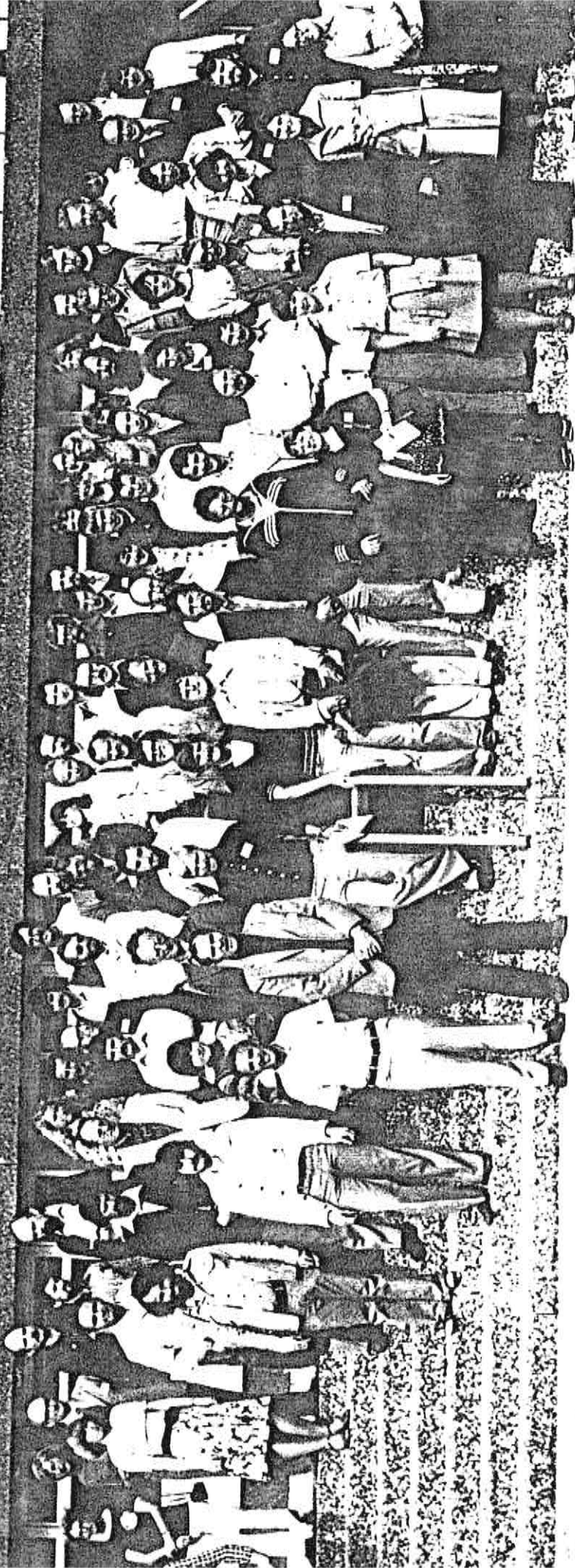


Plate 3 International Meiofauna Conference No. 3 – Hamburg

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

51

52

53

54

55

56

57

58

59

60

61

62

63

64

65

66

67

68

69

70

71

72

73

74

75

76

77

78

79

80

81

82

83

84

85

86

87

88

89

90

91

92

93

94

95

96

97

98

99

100

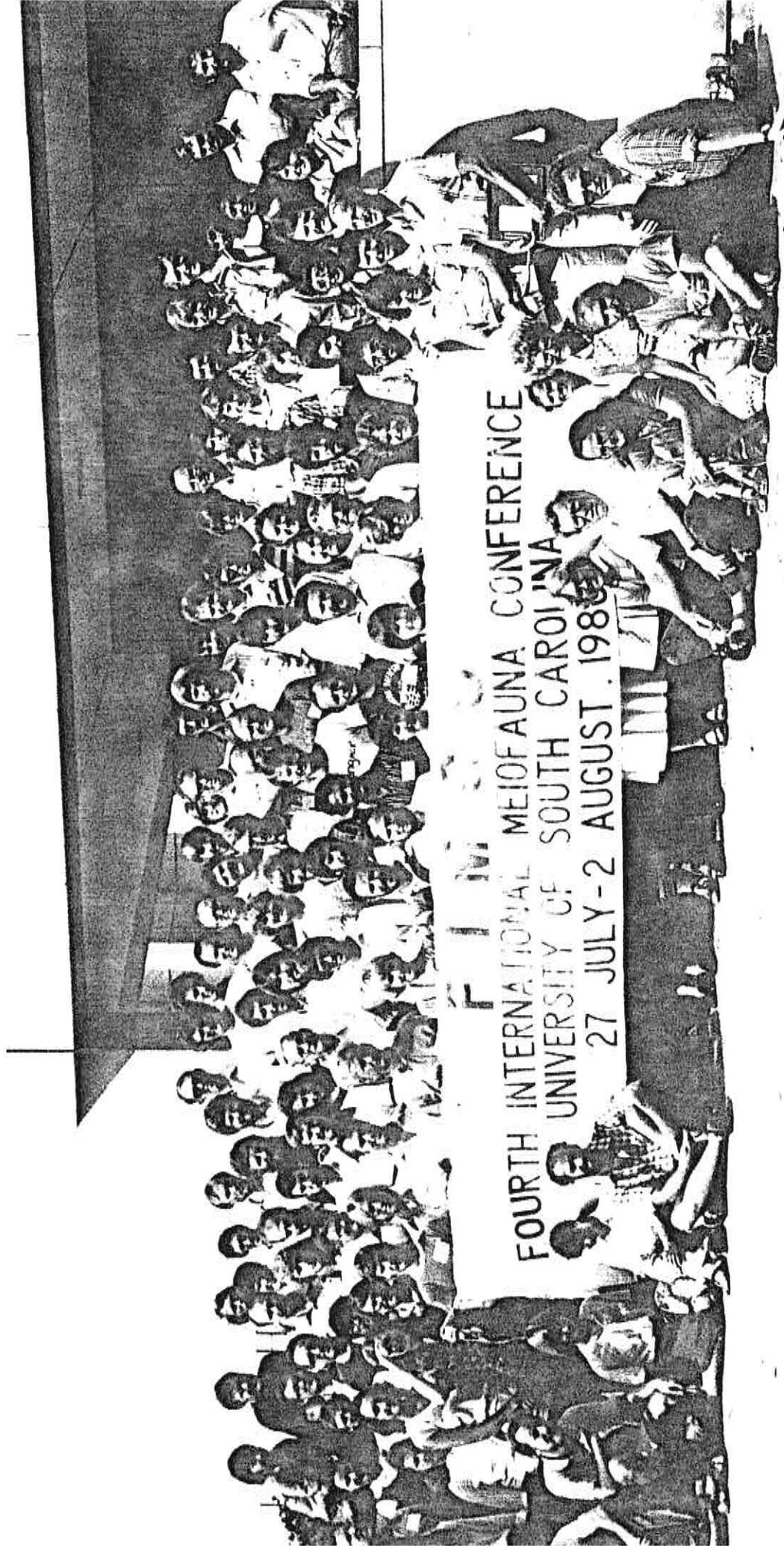


Plate 4 International Meiofauna Conference No. 4 – South Carolina

STATE OF TEXAS
COUNTY OF []

No.	NAME	RESIDENCE	DATE	AMOUNT
1	[]	[]	[]	[]
2	[]	[]	[]	[]
3	[]	[]	[]	[]
4	[]	[]	[]	[]
5	[]	[]	[]	[]
6	[]	[]	[]	[]
7	[]	[]	[]	[]
8	[]	[]	[]	[]
9	[]	[]	[]	[]
10	[]	[]	[]	[]
11	[]	[]	[]	[]
12	[]	[]	[]	[]
13	[]	[]	[]	[]
14	[]	[]	[]	[]
15	[]	[]	[]	[]
16	[]	[]	[]	[]
17	[]	[]	[]	[]
18	[]	[]	[]	[]
19	[]	[]	[]	[]
20	[]	[]	[]	[]
21	[]	[]	[]	[]
22	[]	[]	[]	[]
23	[]	[]	[]	[]
24	[]	[]	[]	[]
25	[]	[]	[]	[]
26	[]	[]	[]	[]
27	[]	[]	[]	[]
28	[]	[]	[]	[]
29	[]	[]	[]	[]
30	[]	[]	[]	[]
31	[]	[]	[]	[]
32	[]	[]	[]	[]
33	[]	[]	[]	[]
34	[]	[]	[]	[]
35	[]	[]	[]	[]
36	[]	[]	[]	[]
37	[]	[]	[]	[]
38	[]	[]	[]	[]
39	[]	[]	[]	[]
40	[]	[]	[]	[]
41	[]	[]	[]	[]
42	[]	[]	[]	[]
43	[]	[]	[]	[]
44	[]	[]	[]	[]
45	[]	[]	[]	[]
46	[]	[]	[]	[]
47	[]	[]	[]	[]
48	[]	[]	[]	[]
49	[]	[]	[]	[]
50	[]	[]	[]	[]
51	[]	[]	[]	[]
52	[]	[]	[]	[]
53	[]	[]	[]	[]
54	[]	[]	[]	[]
55	[]	[]	[]	[]
56	[]	[]	[]	[]
57	[]	[]	[]	[]
58	[]	[]	[]	[]
59	[]	[]	[]	[]
60	[]	[]	[]	[]
61	[]	[]	[]	[]
62	[]	[]	[]	[]
63	[]	[]	[]	[]
64	[]	[]	[]	[]
65	[]	[]	[]	[]
66	[]	[]	[]	[]
67	[]	[]	[]	[]
68	[]	[]	[]	[]
69	[]	[]	[]	[]
70	[]	[]	[]	[]
71	[]	[]	[]	[]
72	[]	[]	[]	[]
73	[]	[]	[]	[]
74	[]	[]	[]	[]
75	[]	[]	[]	[]
76	[]	[]	[]	[]
77	[]	[]	[]	[]
78	[]	[]	[]	[]
79	[]	[]	[]	[]
80	[]	[]	[]	[]
81	[]	[]	[]	[]
82	[]	[]	[]	[]
83	[]	[]	[]	[]
84	[]	[]	[]	[]
85	[]	[]	[]	[]
86	[]	[]	[]	[]
87	[]	[]	[]	[]
88	[]	[]	[]	[]
89	[]	[]	[]	[]
90	[]	[]	[]	[]
91	[]	[]	[]	[]
92	[]	[]	[]	[]
93	[]	[]	[]	[]
94	[]	[]	[]	[]
95	[]	[]	[]	[]
96	[]	[]	[]	[]
97	[]	[]	[]	[]
98	[]	[]	[]	[]
99	[]	[]	[]	[]
100	[]	[]	[]	[]

FIFTH INTERNATIONAL MEIOFAUNA CONFERENCE

GENT 16/8-21/8

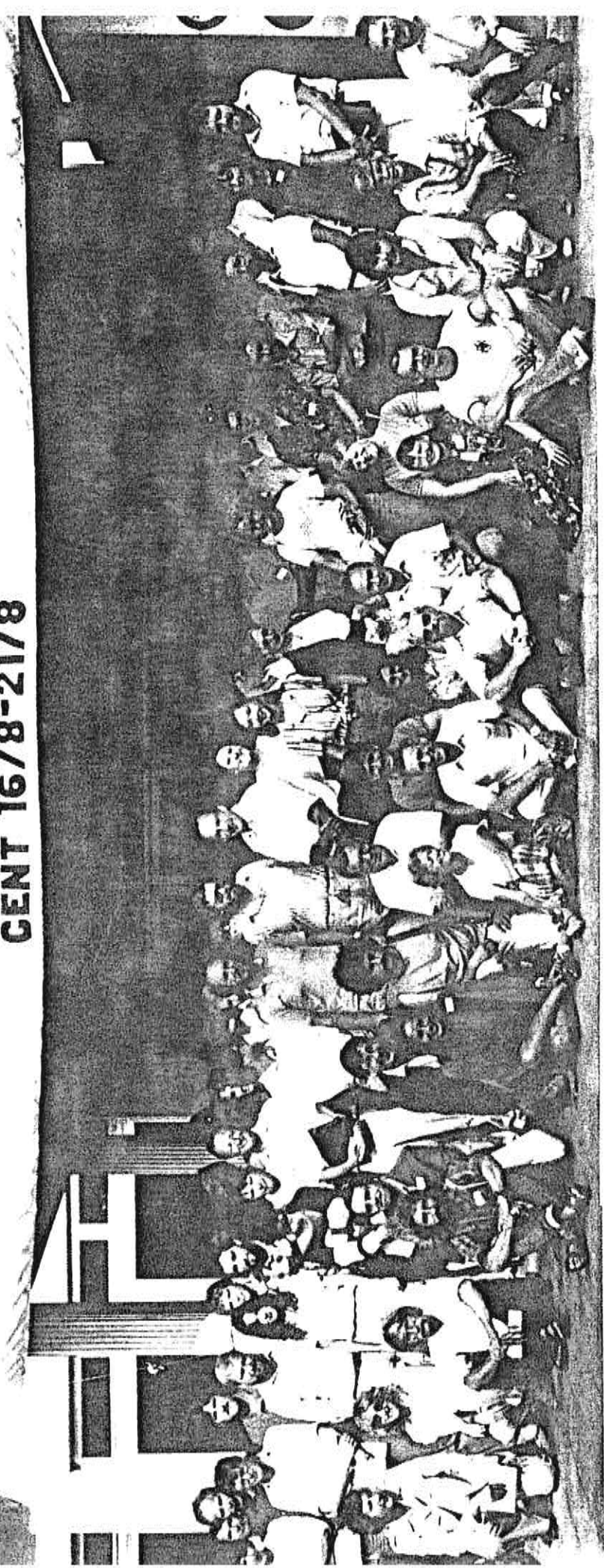


Plate 5 International Meiofauna Conference No. 5 – Ghent

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This ensures transparency and allows for easy verification of the data.

2. The second part of the document outlines the various methods used to collect and analyze data. It includes a detailed description of the sampling process, which was designed to be representative of the entire population. The analysis then focuses on identifying trends and patterns within the data set.

3. The final part of the document provides a summary of the findings and offers recommendations for future research. It suggests that further studies should be conducted to explore the underlying causes of the observed trends and to test the effectiveness of the proposed interventions.

4. The data collected over the course of the study shows a clear upward trend in the number of transactions. This increase is attributed to a combination of factors, including improved infrastructure and a growing economy. The analysis also reveals that the majority of transactions are concentrated in the urban areas, which may have implications for resource allocation and service delivery.

5. The findings of the study have several practical implications. For instance, the identified trends can be used to inform policy-making and to guide the development of targeted programs. Additionally, the data can be used to monitor the progress of ongoing initiatives and to evaluate their impact on the community.

6. In conclusion, this study has provided valuable insights into the current state of the economy and the challenges it faces. The data clearly indicates that there is a need for continued investment in infrastructure and social services to support sustainable growth. The recommendations provided in the report offer a clear path forward for addressing these challenges and for improving the overall quality of life for the population.

7. The study also highlights the importance of data quality and the need for robust data management systems. It is essential to ensure that all data is accurately recorded and stored in a secure and accessible format. This will allow for more effective analysis and reporting in the future.

8. The research team would like to thank the following individuals and organizations for their support and assistance throughout the project:

- Dr. Jane Doe, Principal Investigator
- Mr. John Smith, Data Analyst
- Ms. Sarah Lee, Research Assistant
- The National Institute of Statistics, for providing access to the national database
- The local government, for providing the necessary resources and facilities

9. The following table provides a summary of the key findings from the study:

Category	Value
Total Transactions	1,234,567
Urban Area Transactions	789,012
Rural Area Transactions	456,789
Year-over-Year Growth	15.2%

10. The data presented in the table above clearly shows that there is a significant concentration of transactions in the urban areas. This is likely due to the higher population density and the greater number of commercial activities in these areas. The rural areas, while showing a steady increase in transactions, still lag behind the urban areas in terms of total volume.

11. The year-over-year growth rate of 15.2% is a strong indicator of economic expansion. This growth is driven by a combination of factors, including increased consumer spending, improved infrastructure, and a growing private sector. However, it is important to note that this growth is not uniform across all sectors and regions.

12. The study concludes that the current economic conditions are favorable, but there are still challenges that need to be addressed. The uneven distribution of transactions between urban and rural areas is a key concern. To promote more balanced growth, it is essential to invest in infrastructure and social services in the rural areas.

13. The research team is committed to continuing its work and to providing more detailed reports in the future. We will continue to monitor the economy and to identify new opportunities for research and innovation.

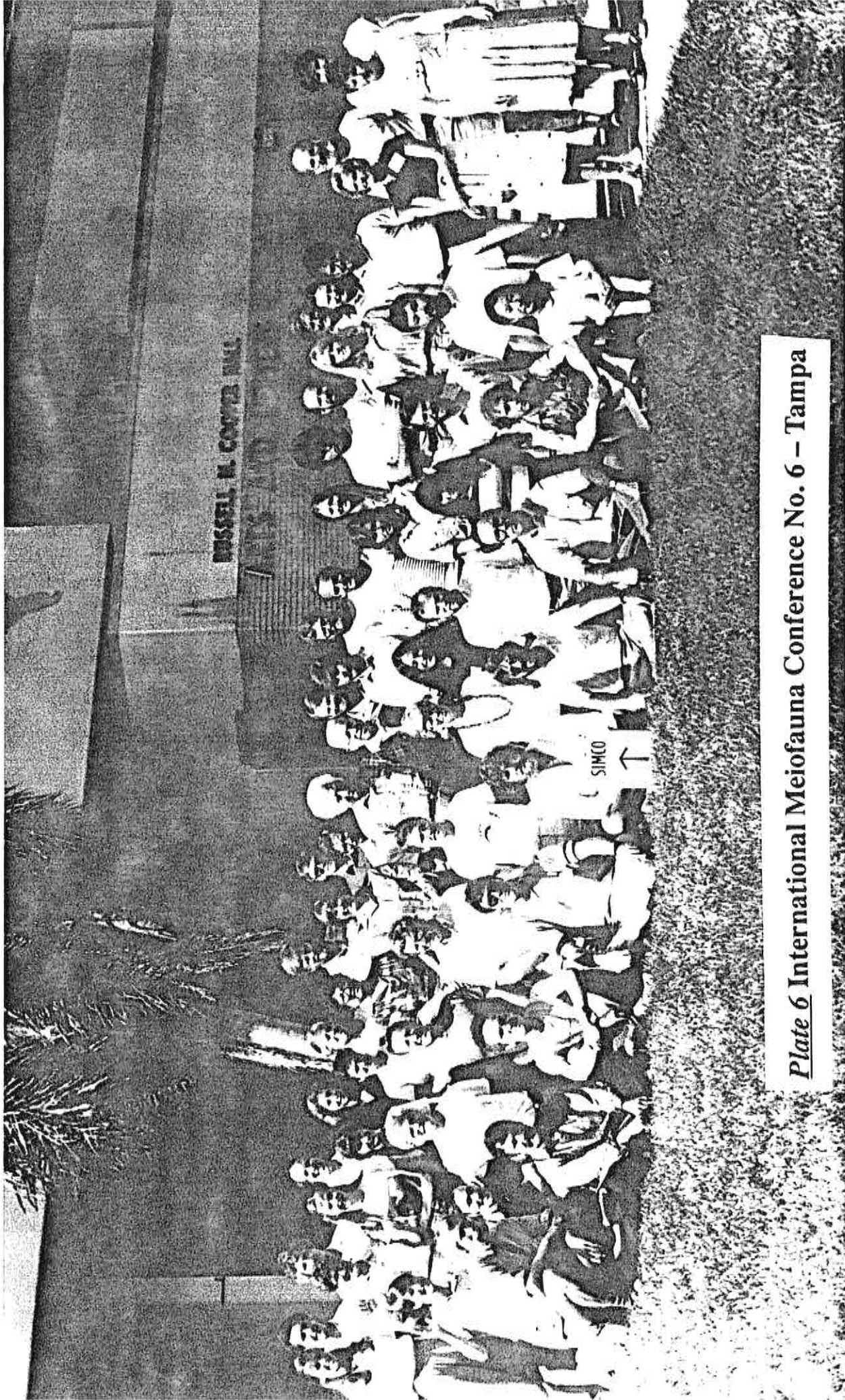


Plate 6 International Meiofauna Conference No. 6 – Tampa

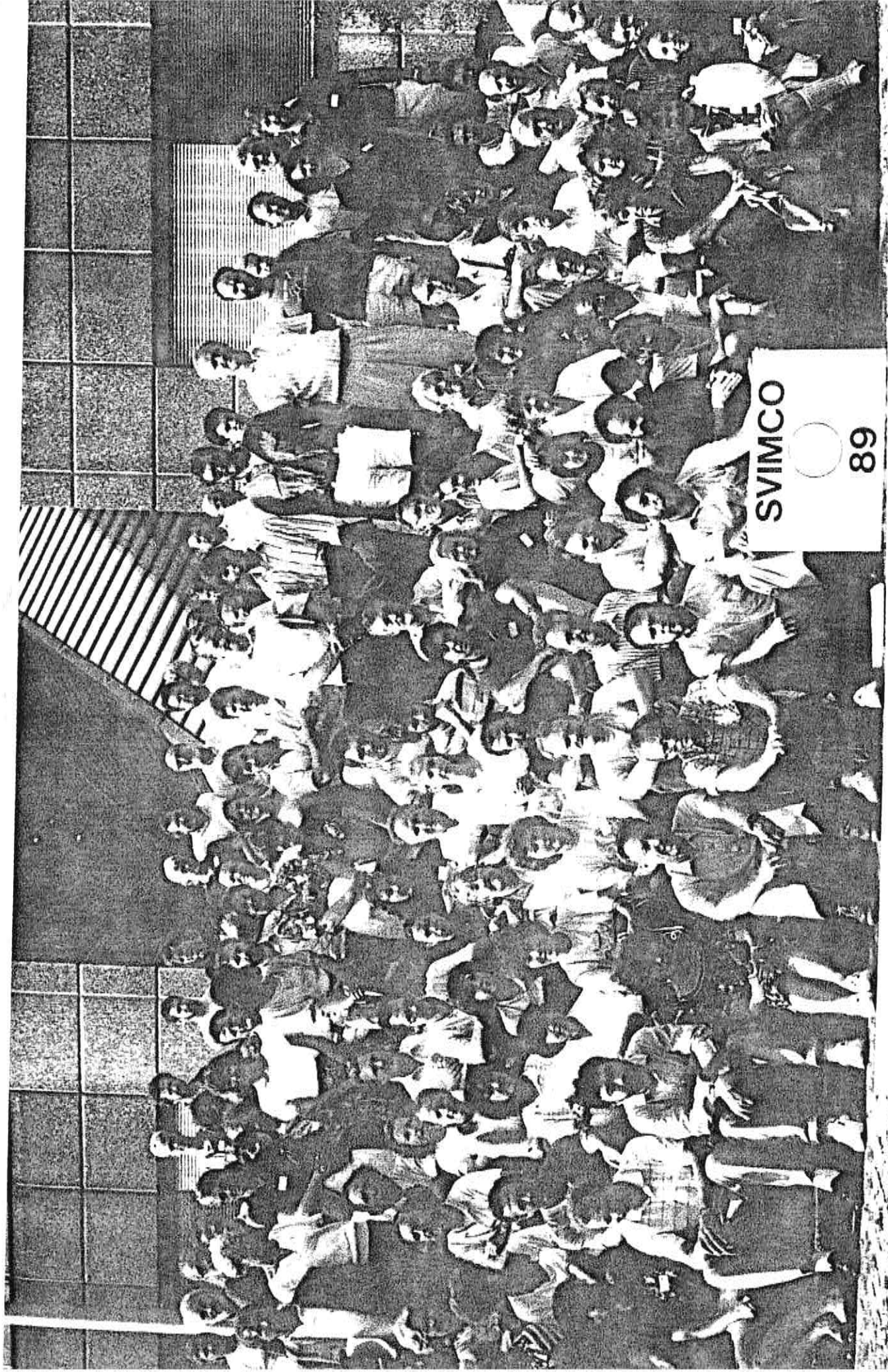


Plate 7 International Meiofauna Conference No. 7 – Vienna

