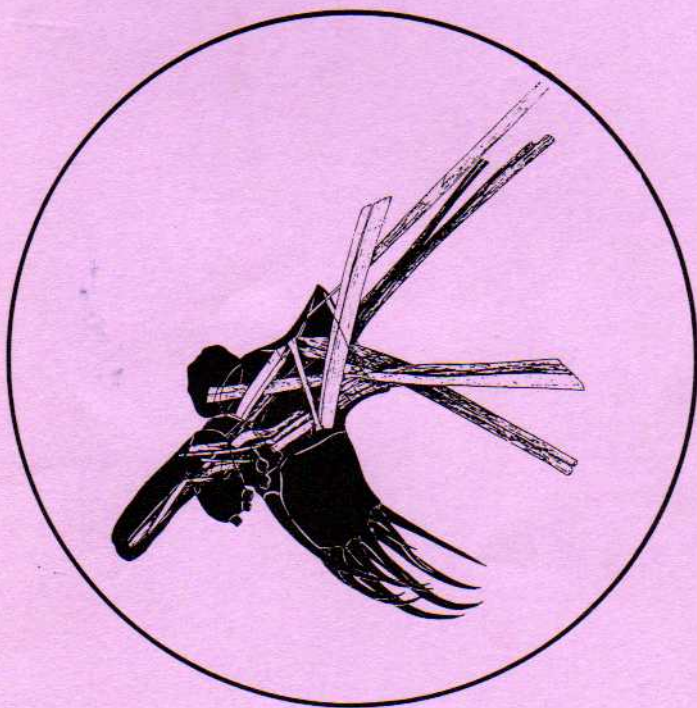


MONOCULUS

copepod Newsletter



Nr. 37



APRIL 1999

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North American Edition distributed by National Museums of Canada

MONOCULUS

Copepod Newsletter

Number 37

April 1999

Edited by: Hans-U. Dahms and H. Kurt Schminke, Fachbereich 7 (Biologie), Universität Oldenburg, D-26111 Oldenburg, Germany.

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Distributed in the U.S. by: Frank D. Ferrari, National Museum of Natural History, Smithsonian Institution, Department of Invertebrate Zoology, MRC 534, Washington D.C. 20560, U.S.A.

The following colleagues are acknowledged for substantial help in providing literature sources: Anna F. Pasternak (Russia), Shin-ichi Uye (Japan), Chad Walter (U.S.A.).

This issue has been typed by: Angelika Sievers and Herta Sauerbrey. Cover as well as cartoons by M. Pottek (Fachbereich 7, Universität Oldenburg).

Cover: Anterior view of maxillule, showing musculature (after Boxshall, 1985. Phil. Trans. R. Soc. Lond. B311: 303-377).

Birthdays in 1999:	80:	W.J.P. Smyly	Torben Wolff
	75:	E.D.S. Corner Michel B. Harding	Ted Hammer Zbigniew Kabata
	70:	Patricia L. Dudley George D. Grice Reiichiro Hirota David Kahan Livia Neagu Vernon E. Thatcher	C.H. Fernando Jan Heeg H. Perry Jeffries Vlastimil Kulhavy Taisoo Park David Tranter

The MONOCULUS homepage is available from the www-service under:

<http://www.hrz.uni-oldenburg.de/monoculus>.

We try to keep it up with the most recent information.

Deadline for the next issue of MONOCULUS: 30th September 1999.

EDITORIAL

As we heard from Rubens Lopez, preparations for this year's copepod conference are proceeding at a rising speed. We are all looking forward to this event in Curitiba this summer. The latest news are provided in this spring issue of MONOCULUS, in the MONOCULUS home page (see left side) as well as under the conference web site - <http://www.ufpr.br/eventos/icoc> - or the personal e-mail address of Rubens - copepoda@cem.ufpr.br.

We thank in particular C. Herbert Fernando, Rubens Lopes, Horst Kurt Schminke and Claudiu Tudorancea for their contributions, Angelika Sievers and Hilde Juhl for substantial help with the text, and Mark Pottek for garnishing it with caricatures.

In view of the fact that about 350 colleagues are receiving the MONOCULUS newsletter, much more active participation would be desirable. Please, don't hesitate to send us all information that you consider interesting. Candidate members - without further notice - are requested to send a short biography.

For some time, MONOCULUS has been gathering reprints in the MONOCULUS library. You will find those here under "LITERATURE" marked by an asterisk. Therefore, keep or put MONOCULUS on your mailing list.

Mailing

Looking at your address label you will find some additional information. This is to remind you of your status in relation to WAC and when to pay the next dues. **Members with dues waived will be removed from the mailing list.** Please use the opportunity of the Curitiba Conference to pay your dues - even three years in advance until the next conference.

91-99 = WAC member, dues paid including printed year

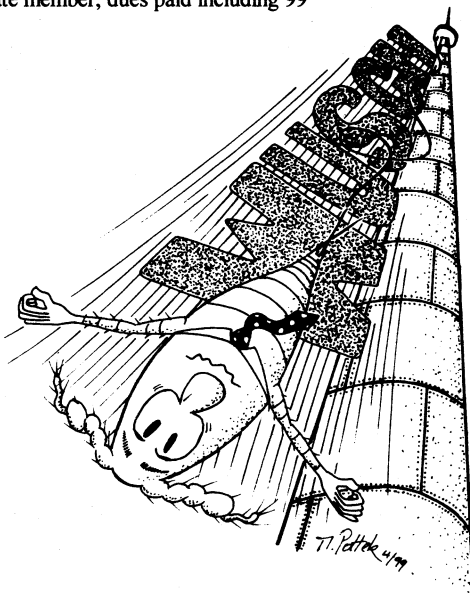
W = Membership dues waived

NM = New member, no dues paid

NM99 = New member, dues paid including 99

CM = Candidate member, no dues paid

CM99 = Candidate member, dues paid including 99



ANNOUNCEMENTS

ANNOUNCEMENTS

ANNOUNCEMENTS

... CONFERENCES ...

Seventh International Conference On Copepoda**25 –31 July 1999****Curitiba, Brazil**

Dear copepodologists,

So far 215 persons from all continents have registered to the 7th ICOC, among them many colleagues who have never had the opportunity to attend the previous copepod conferences. By the time you read this newsletter you should have received our e-mail message or fax about the acceptance of submitted abstracts. The organizing committee received more than 200 abstracts, about one third of which have been accepted as oral presentations in symposia and contributed sessions. The latter will have to be performed in parallel due to the high number of submitted papers. Each contributed talk will last for 15 minutes, followed by an additional 5 minutes of discussion. Posters must cover an area of one square meter, and we expect to display all of them during the entire week. An extended version of the conference programme (including the contributed papers) will be available on the conference web site by early May. The site address is <http://www.ufpr.br/eventos/icoc>.

The conference proceedings will be published in the international journal *Hydrobiologia* and its corresponding book series, *Developments in Hydrobiology*. Guest editors of this volume are Rubens Lopes, Janet Reid and Carlos Rocha. Manuscripts must be prepared according to the guidelines published in this Newsletter. Other useful information on the preparation of manuscripts can be found at <http://www.wkap.nl/journalhome.htm/0018-8158>. We expect to publish all invited papers, but we probably won't be able to accept all contributed papers due to space constraints. Therefore, we strongly recommend that you prepare your manuscript with utmost care, since competition for space will be intense.

Three workshops will be held a week before, or right after the regular sessions of the conference. Please contact the respective organizers to participate. These are the workshops: (1) Pre-conference workshop "Copepod Diversity in Neotropis: Present knowledge and new directions for research" (20 - 23 July 1999), organized by Carlos Rocha (cefrocha@usp.br); (2) Post-conference workshop "Canthocamptidae: Discussion on the taxonomic muddle of the major family of fresh water Harpacticoida" (Saturday morning, 31 July), organized by Dov Por (dovpor@netvision.net.il) and Gisela Moura; and (3) Post Conference workshop "«hyperlink "workcrom.htm"»" (Saturday morning, 31 July), organized by Grace Wyngaard (gwyngaard@nsf.gov) and Ellen Rasch.

Further details on the workshops are available on the conference web page (<http://www.ufpr.br/eventos/icoc/workshop.htm>).

I believe there will be a fair balance between science and social activities during your stay in Curitiba, and we hope that you will enjoy your time! We plan to keep most social events and cultural attractions as a nice surprise to you, but more information on the topic will appear on the conference web site a few weeks before the meeting.

Please send us your flight information (company, flight number, and arrival time) by fax or e-mail so that we can pick you up at the Curitiba airport. There will be a conference reception

room just beside the baggage claim area. If you are coming to Curitiba by bus or car, we can explain how to get to the hotels. Just let us know if you need any assistance in that regard.

Have a nice trip to Curitiba. We look forward to meeting you here!

Rubens M. Lopes
(on behalf of the local organizing committee)

Contact information:
Phone: +55 41 455 1333 (ask for Rubens)
Fax: +55 41 455 1105
E-mail: icoc@cce.ufpr.br or copepoda@cem.ufpr.br
web site: <http://www.ufpr.br/eventos/icoc>

Proceedings of the 7th ICOC

Hydrobiologia & Developments In Hydrobiology

Guidelines for authors

General

The book series Developments in Hydrobiology reprints verbatim, but under hard cover, the proceedings of specialized scientific meetings which also appear in Hydrobiologia, with the aim of making these available to individuals not necessarily interested in subscribing to the journal itself. The proper citation of such volumes (which do not constitute a double publication) is 'Hydrobiologia/Dev. Hydrobiol.'

The scope of Hydrobiologia includes river, lake and ocean physics, hydrochemistry, palaeolimnology and palaeoceanology, methodology, taxonomy, parasitology, biogeography, and all aspects of theoretical and applied aquatic ecology, management and conservation, ecotoxicology, and pollution. Not acceptable are: purely technological papers, and all biochemical and physiological work that, while using aquatic biota as test-objects, is unrelated to limnological and marine biological problems or ecosystems. Equally unacceptable are papers that address problems of interest to a local readership only. Authors are encouraged to make clear in a cover letter why they think their paper is of interest to an international audience.

All papers should be written in English. Authors are responsible for obtaining copyright clearance wherever this applies.

Editorial policy

Hydrobiologia prefers the final submission of papers to be in LaTeX; however, papers submitted for conventional typesetting are also welcome. A LaTeX style file can be obtained from the Publishers (e-mail address: EDITDEPT@WKAP.NL, Internet: <http://www.wkap.nl/kaphtml.htm/STYLEFILES>). A guide to the Kluwer LaTeX style file is available on paper and in electronic form.

Submitted manuscripts will first be checked for language, presentation, and style. Manuscripts which are substandard in this respect (see below for more information) will be returned to their authors without review. Such manuscripts can be resubmitted only after all necessary adjustments have been made.

Papers which conform to journal scope and style are sent to referees. The guest editors decides on acceptance or rejection on the basis of the reports submitted by the referees, and the subsequent revisions by the author(s). We plan to publish the conference proceedings within 6 months after final acceptance of papers.

Preparing the manuscript

Manuscripts should conform to standard rules of English grammar and style. Either British or American spelling may be used, but consistently throughout the article.

Conciseness in writing is a major asset. It greatly improves the readability of a paper. Since competition for space is keen, wordiness, ambiguous statements, vague expressions, long series of adjectives, and passive instead of active tense should be avoided. Authors are also warned against a sloppy use of scientific expressions. Examples are the use of such terms as physico-chemistry (of water), where physical and chemical properties are meant and not the physical chemistry of water, the use of parameter (a calculated quantity) instead of variable (a measured quantity), etc. Non-Anglo-Saxon authors should remember that in English ten thousand is written 10,000 while ten, exact to three decimals, is written 10.000.

The Council of Biology Editors Style Manual (4th edition, 1978; available from the Council of Biology Editors, Inc., 9650 Rockville Pike, Bethesda, MD 20814, USA) is recommended as a *vademecum* for matters of style and form.

The ORIGINAL plus THREE COPIES of the manuscript, tables and artwork should be submitted. The original should be typewritten, free of errors and handwritten corrections, double spaced throughout, typed on only one side of the paper, with wide (2-3 cm) margins on either side. A correctly prepared typewritten page should contain about 350 words. Two such pages reduce to one journal page (not including illustrations). It is not essential to submit the originals of the figures with the first version of the text.

White paper of good quality and standard size (21 x 29 cm) should be used. Airmail and onionskin paper are not acceptable. Word-processed manuscripts should be laser-printed. Dot (matrix) printed copies are difficult to read, and will be returned.

The three identical copies should be printed recto-verso in order to reduce the bulk, and figures and tables should be mounted on A4 size paper. Manuscripts not conforming to this rule will not be eligible for review.

The contents of manuscripts should be well organized. Page one should show the title of the contribution, name(s) of the author(s), address(es) of affiliation(s) and up to six key words, while the abstract should appear on page two. The body of the text should begin on page three. It should be free of footnotes and divided into sections and subsections.

A typical organisation might look as follows:

Introduction
Description of sites studied
Materials and Methods
Results
Discussion
Conclusion
Acknowledgements
References
Tables
Figure captions

Approximate locations for tables and figures should be indicated in the left margin of the text. Names of plants and animals and occasional expressions in Latin or Greek should be typed in *italics*. All other markings will be made by the publisher.

Tables

Tables are more expensive to typeset than text, and should therefore be used only when really necessary. Tables should not duplicate figures and vice versa. They should be numbered consecutively in Arabic numerals, and bear a descriptive legend on top. They are to be presented individually, on separate sheets of white paper. Authors should fit tables in one (7.5

cm wide) or two columns. Foldouts will be rejected. Vertical rules are not to be used, and horizontal lines should be kept to a minimum.

Unit abbreviations

Unit abbreviations are listed on the web page <http://www.wkap.nl/journalhome.htm/0018-8158>.

Figures

All figures should be numbered in pencil in Arabic numerals, either on top or on the back, and identified by the author's name. The top of the figure should also be indicated. Figure captions should be grouped on a separate sheet(s) of paper, appended to the manuscript. Do not type captions on the figures themselves.

While originals will always give a better quality reproduction than photographs, the latter may be used for graphs, situation maps, and similar subjects. Photographs should be page-size, on glossy paper, and with good contrast, especially in the case of S.E.M. and T.E.M. micrographs.

For finer artwork, e.g. illustrations of new or little known species, originals are preferred. Colour photographs will not be accepted unless the author agrees to pay for the cost. The lettering and scales on graphs and figures should be clear and of professional quality. In particular, they should be so designed as to remain readable after reduction. Ordinates should be labeled inside the graph, or with vertically oriented words. If figures (and tables) are distinctly substandard, a paper may be returned to its author(s) without review. The editors of the proceedings volume are, however, prepared to act as an intermediary for authors who have no access to the services of a professional artist, in which case they will be charged by the artist directly.

The number of figures should be reasonable and justified; if more than 20 of an article is taken up by illustrations, the publishers may charge the extra cost(s) to the author(s).

Note: References in text to figures and tables should be indicated, for example, as follows: (see Fig. 1), (as shown in Table 2). Quantities, units, symbols, and their abbreviations Standard international units (the S.I. system) are, in principle, the only ones acceptable.

Biological nomenclature

Authors are urged to comply with the rules of biological nomenclature, as expressed in the International Code of Zoological Nomenclature.

As far as animals are concerned Hydrobiologia will NOT print any infrasubspecific categories (var., forma, and similar categories) in a taxonomical sense.

Authors are urged to check the correct spelling of all scientific names appearing in their texts.

When a species name is used for the first time in an article, it should be stated in full, and the name of its describer should also be given. In later citations, the genus name may be abbreviated to its first letter followed by a period, and the describer's name may be omitted.

Chemical nomenclature

The conventions of the International Union of Pure and Applied Chemistry, and the recommendations of the IUPAC-IUB Combined Commission on Biochemical Nomenclature should be applied.

Descriptions of new taxa

The description of a new taxon should be taken seriously. Descriptions and illustrations should be detailed, and types (holotype and paratypes) must be clearly indicated; author's collections as repositories of holotypes (and/or allotypes) are unacceptable, as are university and local institute collections. No papers introducing taxonomic novelties will be accepted, unless accession numbers of types in internationally recognized repositories are supplied in the paper. Iconotypes will only be accepted if an author can convincingly demonstrate that

preservation of holotypes and paratypes is impossible or pointless. In addition, Hydrobiologia requires that, by submitting taxonomical papers, authors consent in supplying voucher material to referees, should these so request. The guest editors will see to it that such specimens are channelled to the proper experts.

References to the literature

1. Citation in the text:

Use of the name and year system: Adam (1983) or (Adam, 1983). For two authors, use ampersand (&): Adam & Eve (1982), not Adam and Eve or Adam et Eve. For more than two authors, use *et al.*: Adam *et al.* (1982). If repeated use is made, at short intervals, of the same reference, use Adam, *loc. cit.* or Adam, *op. cit.* from the second citation onwards. Do not cite initials, unless homonyms occur: 'A. B. Adam (1982) and C. D. Adam (1890) have shown...'. Initials, if used, should precede family names. Initials can also be used in the case of personal communications (pers. com.) or communications by letter (in litt.), which need not be repeated in the reference list. Reference can also be made to a particular page, table or figure in any published work, as follows: Brown (1966: 182) or Brown (1966: 182, Fig. 2).

2. Citation in the list of references:

The list of references should be headed 'References', not 'Literature cited', 'Bibliography', etc. All publications cited in the text, and only these, should be listed, alphabetically. Per single author, references are to be arranged chronologically. If an author published several papers in the same year, they should appear as Adam, 1980a, 1980b,... This also applies to citations in the text. If an author has published both alone and with (a) co-author(s), the papers which he authored alone should be ranked first, followed by the ones with one co-author alphabetically after the name of the co-authors (not chronologically), followed by the ones with two co-authors, etc.

Initials of first names of second and subsequent authors should precede family names: Adam, G. C., B. F. Brown & C. D. Jones, 1995. Natural selection. *Hydrobiologia* 125: 301-314.

Prospective authors are urged to give attention to details of punctuation in this example.

Compound names: alphabetization by first word of the family name is preferred (thus, Von Stroheim, Van Straelen should appear under V, De Ridder and Du Plessis under D). Authors should carefully check and conform to capitalization and spacing in such names. For non-European names, where the use of a family name is substituted by other systems (as in the Arabian and in several Asiatic cultures), authors are requested to indicate clearly on their manuscript which name they wish to use as the homologue to a family name.

Publications should always be cited in their original language, except if in a non-Latin alphabet. In the latter case, a Latin letter-by-letter transliteration is preferred, but an English translation of the title may be added with the original language indicated between square brackets at the end of the reference.

Papers which are unpublished or in press should be cited only if formally accepted for publication and if at least a year of publication, and a volume number of a journal can be added. Unpublished, internal reports are not acceptable in reference lists, unless they are available for general distribution and can be freely consulted by the scientific community.

Publication of a paper is sometimes considerably delayed, so that the year appearing on the published volume does not correspond to reality. If such cases do occur, they may be indicated as follows: Brown (1974) 1976.

Avoid the use of 'Anonymous'. If no author is ascertainable, list reference by name of sponsoring body, or name of editor. In a continuous series of article citations from a single journal, do not use 'ibid.' instead of the journal abbreviation. Do not use underlinings in the list of references.

3. Journal citations and abbreviations

3.1 If the title of a journal is a single word, do not abbreviate. Examples: Behaviour, BioScience, Ecology, Experientia, Growth, Hydrobiologia, Limnologia, Photosynthetica, Nature, Science. Do not insert a comma between the name of the journal and the volume number.

3.2 Journals and book series that appear on a regular basis should be abbreviated (example 1). Several systems are in use but Hydrobiologia uses a standard which is based on the 'World List of Scientific Periodicals', published by Butterworths, London, with certain simplifications. A type list of abbreviations covering most of the current journals in limnology and marine science is given on the journal web page.

Many other abbreviations can be composed from these examples. If authors feel uncertain about a journal abbreviation that does not appear in the list, they may cite the journal in full, and indicate this in pencil in the margin. The guest editors will then see to abbreviating the journal in question. Note in particular that adjectives are never capitalized, except when they are the first word of a journal's title. This includes names of countries (e.g. american = am., not Am.) and of persons (e.g. linnean = linn., not Linn.). Abbreviated words are followed by a period (Journal = J.), contracted words are not (Board = Bd, not Bd.; other examples of contractions are: Doctor = Dr, Figures = Figs, but Figure = Fig.). Notations such as Vol., nr., pp., and number of figures and tables are superfluous and should be dropped (see example of Adam et al., supra).

Issue numbers should be added only (between brackets) if every single issue starts at page one. Volume numbers should be expressed by Arabic numbers. No Latin numbers are permitted.

If editorial corrections to a reference list are needed (which is nearly always the case), and of minor importance, the guest editors will see to them without prior consultation with the authors. Authors should not change editor's corrections at the proof stage.

3.3 Edited symposia, special volumes or issues, etc., published in a periodical. Author(s), year of publication. Title of paper. In editor(s), title of special volume, periodical (abbreviated, cf. supra), vol: pp. (example two).

3.4 Books: Author(s), year. Title. Publisher, city, pp. (example three).

3.5 Multi-author books: Author(s) of chapter, year, title of chapter. in editor(s), title of book. Publishers, city: pp.

Examples:

Baker, J. H. & I. S. Farr, 1977. Origins, characterisation and dynamics of suspended bacteria in two chalk streams. Arch. Hydrobiol. 80: 308-326.

Dussart, B. H., 1980. Copépodes. In J. R. Durand & C. Lévêque (eds), Flore et faune aquatiques de l'Afrique sahélo-soudanienne, 1. O.R.S.T.O.M., Paris. Document Techqs 44: 333-356.

Hutchinson, G. E., 1975. A treatise on limnology, 3. Wiley & Sons, New York, 660 pp.
Starkweather, P. L., 1980. Behavioral determinants of diet quantity and diet quality in *Brachionus calyciflorus*. In W. C. Kerfoot (ed.), Evolution and Ecology of Zooplankton Communities. The University Press of New England, Hanover (N.H.): 151-157.

Revising a manuscript

Most manuscripts will require at least one round of revisions before being accepted for publication. The original manuscript, and two copies of the revised manuscript, should be returned to the guest editors. In a cover letter, author(s) should explain how they handled the suggestions and criticisms of the reviewers. A point-by-point explanation will facilitate the decision-making process by the editors.

IMPORTANT NOTE: Manuscripts returned to authors should be revised and sent back to the guest editors within a period of two months.

Original figures requested back

Authors wishing to recover the originals of their drawings or diagrams after publication, should make a clear statement to this effect on a separate sheet of paper, identifying the paper, its authors, and the figures requested back. This document should be mailed together with the revised manuscript.

Final recommendations

Before mailing a manuscript to the guest editors of the proceedings, proofread the final version thoroughly and correct any left-over errors. In particular, check the spelling of all scientific terms, Latin names of animals and plants, figure captions, tables (Are all units S.I.? Is all lettering properly composed and will it be readable after reduction? Are all numerical values and mathematical symbols exact?). Make certain that every reference is correctly abbreviated and appears both in the text and reference list. If possible, ask a colleague to read your text as well. He or she might capture errors or ambiguous statements that have escaped your attention.

To those scientists who use English as a foreign language, we strongly recommend that their manuscript be read by a native English-speaking colleague. While the latter have the advantage of being able to write in their native language, the former must definitely measure up, and the guest editors will, reluctantly, refuse to review papers that are written in faulty language.

Mailing

Manuscripts should be sent to the guest editors at the address below:

7th International Conference On Copepoda
Centro de Estudos do Mar
Universidade Federal do Parana
Trav. Alfredo Bufren 140 terreo (anexo PRPPG)
Curitiba (PR) 80 020-240
BRAZIL

or handed over to the editors during the conference.

Submission deadline

The submission deadline is 31 July 1999.

Offprints and proofs

Fifty offprints will be offered to authors free of charge; more copies can be obtained at the rate indicated on the order form accompanying the first proof. Corrections in the text other than typesetting errors must be kept to a minimum. Authors will be charged for excessive corrections.

Proofs should be returned to the Publishers with an imprimatur within five days. Correspondence concerning editorial matters should be directed to the guest editors, and administrative matters to the publishers.

HYDROBIOLOGIA
Kluwer Academic Publishers
P.O. Box 17
3300 AA Dordrecht
The Netherlands

If you are submitting your article in LaTeX, please use the most up-to-date versions of the stylefiles. These are available by downloading them from <http://www.wkap.nl/kaphtml.htm/STYLEFILES>. Avoid using stylefiles acquired from other sources as these may not be correct or may be out-of-date.

All Kluwer journals have a common submission format, which differs from the style of any particular journal. Formatting for this style is done using the KLUWER.CLS file, and its accompanying stylefiles. Instructions on how to use the files is contained in USRMAN.TEX.

CURITIBA 1999

Dear colleagues,

I have the pleasure to announce a post-conference workshop, organized by Dr. Grace Wyngaard (National Science Foundation, U.S.A.), to be held in Curitiba on Saturday, 31 July.

Please contact Dr. Wyngaard (gwyngaard@nsf.gov) as soon as possible if you plan to attend the workshop.

Best regards to all,

Rubens Lopes
Local Secretary, 7th ICOC/Brazil

Post-conference Workshop:

Methods for assaying for chromatin diminution, measuring genome size, and determining chromosome number

Squashes of copepod chromosomes and nuclei can yield estimates of genome size and inform us about the diploid number of chromosomes for resolution of taxonomic problems, speciation events, and presence/absence of chromatin diminution (the excision of somatic cell DNA during embryogenesis). To date, genome sizes are known for 13 freshwater cyclopoids, one marine cyclopoid, 13 marine calanoids and 1 freshwater harpacticoid species. In this workshop we will squash live adults and embryos on subbed slides for later staining and measurement of DNA content. To allow time for making squashes, a slide show will be given at the workshop that demonstrates the Feulgen staining process and very detailed laboratory protocols will be distributed. Slides of specimen squashes will be brought back to the laboratory of Ellen Rasch in the U.S., Feulgen-stained for DNA content, and measured there.

At the workshop, orcein staining which is a rapid method for counting chromosomes and assaying for chromatin diminution will be done also. After the conference, Ellen Rasch will use a scanning and integrating microdensitometer (Vickers M-86) to estimate genome size for individual species squashed at the workshop. We invite you to bring your live specimens to the workshop and join us in a publication of genome sizes in copepods. Conference trips on Wednesday should provide some opportunity to collect live plankton and Grace Wyngaard will bring a plankton net, sampling jars, and algae for keeping animals alive until Saturday. Grace will bring extra live specimens for participants who have none of their own.

Please contact Grace (e-mail: gwyngaard@nsf.gov) if you plan to participate in the workshop so that we can provide a sufficient number of high quality dissecting microscopes and supplies for the workshop.

Saturday, 31 July, morning only
(PLEASE NOTE TIME CHANGE FROM EARLIER POSTING)

Conveners:

Grace Wyngaard
National Science Foundation
Division of Integrative Biology and Neurosciences
4210 Wilson Blvd
Arlington, Va 22230, U.S.A.
Phone: (00)1-703-306-1420
Fax: (00)1-703-306-0349
E-mail: gwyngaard@nsf.gov

and

Ellen Rasch
James H. Quillen College of Medicine
East Tennessee State University, U.S.A.

SCIENCENet Bulletin Board Sampler

Coastal 30 Mar 99 leal@tu-harbu... Conference on Coastal Ecosyste...
http://www.sciencenet.com/boards/get_msg.cgi?coastal=118
INTERNATIONAL CONFERENCE ON SUSTAINABLE MANAGEMENT
OF COASTAL ECOSYSTEMS Oporto, Portugal, 3rd-5th November 1999
Sponsored by: Fernando Pessoa University and IMAR
Institute of Marine Research Conference announcement

Coral.Reef 30 Mar 99 savoris@nsu.ac... National Coral Reef Institute ...
http://www.sciencenet.com/boards/get_msg.cgi?coral.reef=134
INTERNATIONAL CONFERENCE ON SCIENTIFIC ASPECTS OF CORAL REEF
ASSESSMENT,
MONITORING, AND RESTORATION, April 14-16, 1999, Ft. Lauderdale, FL.
Plenary talks, Oral presentations in Special and Contributed Sessions,
Poster Presentations Final schedule and program

The European Society for Comparative Physiology and Biochemistry is organizing in July 2000 a large international congress including symposia on Pollutants, Aquaculture, Extremophily, and more which may be of interest to many of you. Have a look at <www.ulg.ac.be/physioan/escpb.htm> for the general programme.

EMBS

The 34th EMBS (EUROPEAN MARINE BIOLOGY SYMPOSIUM) is scheduled for September 13-17, 1999 in Ponta Delgada, Azores (Portugal). It will be hosted by the Department of Biology, University of Azores.

Papers and posters are invited under the following themes:

1. Ecology and Evolution on Island Shores
2. The Open Ocean
3. The Deep Ocean

Other contributions are encouraged for submission to an Open Session in the Symposium.

Deadline for abstracts is the end of May 1999.

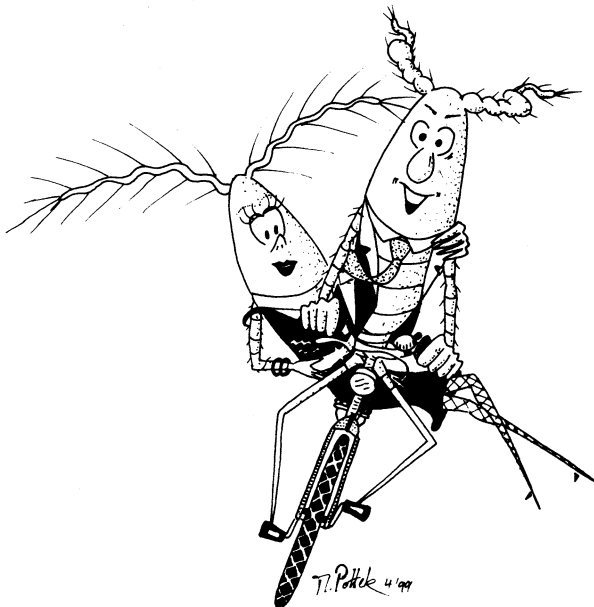
Additional information may be obtained at our web site: <http://www.uac.pt/db/embs34>.

Statement of the WAC finances for the year 1998

December 31, 1997	\$ 15,427.49
Dues payments received	\$ 1,334.00
Bank fees*	\$ 50.13
MONOCULUS	\$ 1,991.23
December 31, 1998	\$ 14,720.03

* This includes \$ 9.00 for currency transfers and \$41.13 for wiring the MONOCULUS funds to Oldenburg, Germany.

John Fornshell (Alexandria)



... INTERVIEWING COPEPODOLOGISTS ...

Professor C.H. Fernando - the promiscuous copepodologist

I was a postdoctoral fellow with the University of Manitoba (Canada) in the early 70s when I first encountered his name on a paper that I needed on Chironomidae larvae. I did not think at that time that after a quarter of a century, and two years after his formal retirement, I will be the one in his laboratory to find the same dynamic and full of challenging ideas Professor Herbert Fernando that I personally met during the fall of 1978.

Born in Sri Lanka on the 4th of April 1929, Professor Fernando has lived and worked in all continents except Antarctica. He has learnt about Copepoda as a parasitologist, limnologist, fishery biologist and general ecologist. A major achievement has been preparing copepod soup for over 200 people attending the fifth Copepoda Conference in Oldenburg (Germany), using *Calanus finmarchicus* from the North Sea. Surprisingly, no deaths were reported from the soup drinkers. He has written about 250 scientific papers, authored or edited three books and written popular and general articles.

Question: Could you, Professor Fernando, tell us how your scientific career started and when you fell in love with the freshwater copepods?

Answer: My scientific career began in 1952. My first research in fish food brought me in contact with copepods, although at this stage I did not concentrate on this group. Later I came in contact with copepods in my studies, because they are intermediate hosts for many aquatic organisms and at that time I was studying and teaching particularly fish parasitology. My first major involvement in this group was when I did comprehensive studies on the zooplankton of Sri Lanka. Later, working with Professor Bernard Dussart from France, I studied many copepods from different parts of the world and even described some species of free-living and parasitic copepods. During my long career I studied many animal groups from Protozoa to the parasites of elephants, I even studied obscure groups like horsehair worms and I described new species of Protozoa, Plathelminths, Rotifera, Insecta and, of course, Crustacea including copepods. The copepods and the insects are the most common invertebrate animals dominating the land, the sea, and the freshwaters. Therefore, their life cycle interacts with many organisms as food, as predators, and intermediate hosts. I came to realize the importance of copepods in all the branches of my studies as a promiscuous biologist.



Question: Although not a zooplankton specialist I was not only in your proximity, but I benefited a great deal of your assistance in many respects during about twenty years of my scientific career. What really impressed me during this time was the number and diversity of graduate students from various countries who were working under your supervision and renowned scientists in different fields benefiting from studying your unique zooplankton collection and/or consulting your scientific literature that otherwise could be hard to find in a single library. Sometimes your laboratory looked like an international limnological institute en miniature. Your contacts with other scientists seemed to be of different nature from the conventional scientific relations. I should also admit that my knowledge of zooplankton was enhanced substantially as a result of your scientific contacts. Could you explain, how you managed to create such a rewarding network of contacts internationally and what these close scientific connections meant to your scientific career?

Answer: This was accidental and circumstantial, since I worked on three continents by the age of 35 (Asia, Europe and North America). I realized from the beginning of my scientific career that there were differences between animal communities in tropical and temperate regions. Consequently, I tried to attract as many people as possible from a wide geographical area. I also wanted to train students from developing countries, because I considered that there was a need for limnologists in tropical countries. Thus I became involved in tropical limnology. Copepods became again one of my major interests. The benefits from these contacts were certainly mutual and I feel that I received more knowledge and insights than they received from me, because they had such a wide experience and diverse backgrounds. I built a very extensive collection of reprints and books which was of great use to both students and senior scientists who worked in my laboratory. Students from about 25 countries and senior scientists from about the same number of countries worked in my laboratory for a period of almost 50 years.

Question: Your tropical plankton collection was well known for its richness, diversity and zoogeographical importance. Many very well-known specialists had the fortunate chance to come to your laboratory and work on different groups of plankton of your collection. Upon your retirement you donated this wonderful collection, that I thought was like another close member of your family, to the University of Singapore. Did you have any particular feeling seeing that these zooplankton samples, that gave satisfaction to many scientists around the world who worked on them, leave your laboratory shelves?

Answer: One of the consequences of my wide geographical coverage of students and scientists was the enrichment not only of the reprint collection but of the zooplankton collection as well. Ten years before I retired I realized that this collection should be deposited in a location where it could be a benefit to the next generation of scientists. Much of the material was tropical and the tropics lack a center for the studies on zooplankton. Singapore had such a center for marine zooplankton. More importantly, they had the money to pay for the organisation, packing, and transport of the material to Singapore. Dr. Victor Alekseev and myself were invited by the National University of Singapore to set up the collection for studies in 1998.

Question: Looking back through your full and rewarding scientific career, could you mention one or two of your achievements that give you the greatest satisfaction?

Answer: The training of about 50 M.Sc. and Ph.D. students drawn from about 25 countries gives me great satisfaction. The fact that I went into so many areas of research in biology to the point of being a promiscuous biologist benefiting from the interaction of ideas from different subdisciplines enabled me to combine limnology with fishery science and to obtain sights about lacustrine fishes. Also travelling about 70 countries was great fun. I have been honored in four countries for my scientific work: Brazil, Philippines, Czech Republic, and Canada; and I feel great satisfaction that my work was appreciated internationally.

Question: How would you like to see the scientific interrelations between people in the future?

Answer: Science is a universal and borderless enterprise. It is a common interest of humanity which has to unite and not to divide people. At this time of instant global communication, science is an important vehicle for all humans regardless of where they are or what they believe in.

We sincerely hope that you will remain the same active member of the International Copepodologists Association and not only this, that you will extend the exotic range of dishes to other species of copepods and we wish you the best from the heart: Good Luck!

(Professor Fernando celebrated his 70th birthday on the 4th of April, editor)

Claudiu Tudorancea (Waterloo, Canada)

Freshwater Zooplankton and Literature at the National University of Singapore (NUS)

by C.H. Fernando, Department of Biology, University of Waterloo, Ontario, Canada
and V.R. Alekseev, Zoological Institute, St. Petersburg, Russia

Over 13,000 freshwater zooplankton samples preserved in formalin and many mounted specimens on slides were transferred to NUS in October 1997. This was accompanied by over 18,500 scientific reprints, identification guides, theses, lists of identified species, and other notes. We visited Singapore to assist in setting up the collection for use by researchers.

The samples came from forty-two countries on six continents. Over 500 samples came from each of the following countries: Canada, Ethiopia, the Indian subcontinent, Indonesia, Malaysia and Singapore, Nigeria, The Philippines and Sri Lanka.

The focus of the reprint collection is zoology and freshwater biology. It is strong in limnology, especially tropical zooplankton, aquatic invertebrates, fish parasitology, reservoir fisheries, and rice field ecology. It contains many difficult to obtain papers in Russian and Italian on rice field ecology and fish culture listed in Fernando (1993).

Over twenty M.Sc. and Ph.D. theses and over sixty scientific papers are based on material from the collection extending from 1971-1998. They include monographs on the zooplankton composition in Sri Lanka (Fernando 1980), identification guides to zooplankton of the Philippines (Mamaril and Fernando 1978) and Nigeria (Jeje and Fernando 1986). Many papers deal with groups like Ostracoda of India (Victor and Fernando 1979), Copepoda of Ethiopia (Defaye 1988), Malaysia (Lim and Fernando 1985) and Sri Lanka (Dussart and Fernando 1985). Individual species and genera from a wide area of the tropics were studied, e.g. *Brachionus calyciflorus* by Kutikova and Fernando (1995), tropical *Daphnia* (Fernando et al. 1987) and some tropical *Diaphanosoma* (Korovchinsky 1998), to list only a few. Rajapaksa and Fernando (1987) studied the chydorid *Notoalona* gen. nov. over its geographic range. This is one of many such studies in a series. In 1997 the aquatic Oligochaeta were sorted out for study by a Tonolli Fellowship holder. Cyanobacteria from the collection were used in the compilation of a monograph on this group. Specialists from many countries have used material from the collection in their taxonomic studies. The developmental stages of copepods were studied in a series of papers (e.g. Dahms and Fernando 1995).

There is a very active research programme based in The Zoological Reference Collection (NUS) under the leadership of Dr. Peter Ng on higher Crustacea and fishes. We did not find adequate optical equipment or supplies for the study of zooplankton. Also the recent guides to zooplankton published by Elsevier were not available. More importantly, there was only a minimal interest in zooplankton studies. The main interest was to store the material and reprints at the present time. Hopefully there will be an interest in research on freshwater zooplankton in the not too distant future. Local and international research interest in the

collection and financial support both national and international are needed to make this valuable acquisition a base for research and teaching.

The material and reprints are very adequately housed in The Zoological Reference Collection. There is a card index to samples and reprints, but this is being computerized. Those wishing to have access to the collection and literature should contact The Director, Department of Biological Sciences, National University of Singapore, Lower Kent Ridge Road, SINGAPORE 119260. Fax: 65 774 8101 or 779 2486, E-mail: zoosec@leonis.nus.sg

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Everybody interested should contact Prof. Dr. H.K. Schminke at the University of Oldenburg (his e-mail address: SCHMINKE@HRZ1.UNI-OLDENBURG.DE).

... **ESSAY** **ESSAY** **ESSAY** **ESSAY** **ESSAY** ...

The Cholera Lesson

by
Catherine Dold

Last year microbiologist Rita Colwell was visiting a rural village in Bangladesh with a crew from Maryland public television station. The crew asked Colwell to show them a new method she had devised for filtering plankton and bacteria from drinking water. The cameras focused on a woman standing at the edge of the local "tank" - a large pond that in one corner is used as a latrine and in the other as a source of drinking water. In traditional fashion, the woman bent down and dipped her clay bottle into the water. "After she collected the water, we poured it into a clear beaker and held it up to the sunlight", recalls Colwell. "You could see the brown discoloration, things swimming in it." Next Colwell asked the woman to collect water again, this time while holding a few layers of sari cloth over the mouth of the clear beaker. When the sample was held up to the light, the water was practically clear.

It was a simple demonstration, but a pivotal moment for Colwell. After years of studying *Vibrio cholerae*, a notorious bacterium that can contaminate unchlorinated water supplies and cause massive epidemics of sickness and death, she could see that one of her ideas to help prevent the disease just might work. For more than two decades Colwell has labored in the field and in the laboratory to tease out the ecology of this tiny microbe. Her discoveries have overturned some long-held notions about how *V. cholerae* travels the world, how it is transmitted to humans, and where it lurks in the years between outbreaks. She hopes to use these ecological lessons to prevent future outbreaks, or at least to blunt their impact. Her sari-cloth filter, for example, may provide poor, cholera-prone communities with an effective low-tech weapon to fight infection. A more technologically sophisticated strategy is to use satellites to predict future outbreaks, so the woman in Bangladesh and others like her can be warned to take precautions. "Some call me the lady from sari to satellites", Colwell says, smiling.

Snow suspected that something in the water was being transmitted from person to person, but he didn't know what it was. It wasn't until the 1880s that legendary microbiologist Robert Koch published the first papers describing the disease-causing bacterium, which he found while investigating cholera outbreaks in Egypt and India.

Since Koch's time, it was assumed that *V. cholerae* traveled to new areas by hitching a ride in the guts of travelers. Then it was let loose in the new environment through the voluminous diarrhea it caused in its victims. Scientists believed that epidemics typically occurred when the bacteria spread to others through contaminated food and water supplies and that its passage was made easy by inadequate sanitation systems.

Since the days of John Snow, scientists learned much about how cholera is transmitted by feces, food, and water. But an enigma remained: Where did the bacteria go between epidemics, when they didn't appear to occupy anyone's intestinal tract or water supply for years on end? How could the disease arise seemingly spontaneously around the world? How could it hit three ports in South America - each many miles from the others - almost simultaneously?

Rita Colwell suspected that *V. cholerae* persisted in an environmental reservoir - living somewhere far from its human hosts - and that the reservoir was the ocean. She had already found the bacteria in the Chesapeake Bay, even if no one believed her. Maybe, she thought, the problem was simply that no one could see them. Or maybe nobody had looked for them hard enough. Perhaps for some reason the bacteria weren't always detectable by traditional culture methods - that is, they couldn't be grown in a petri dish. "I thought, 'Doggone it, I wonder if it goes into a dormant state'", says Colwell.

Colwell suspected that in regions like Bangladesh, where cholera is endemic or recurs seasonally, the dormant bacteria were hiding among the plankton, the microscopic plants and animals that inhabit many bodies of water. So she hunted for both the bacteria and various types of plankton in water samples from several Bangladesh rivers and ponds. She found a clear association between *V. cholerae* and one form of zooplankton, tiny crustaceans known as copepods. Apparently, wherever one goes, so goes the other: Whenever copepods were abundant, so were the bacteria. The bacteria cruise the world's ocean currents, clinging to the backs of copepods and colonizing their microscopic guts.

All it takes are the right conditions - whether in a human gut or in the environment - for *V. cholerae* to come out of dormancy, multiply, and spread its misery. No one knows exactly what conditions awaken the bacteria from their metabolic slumber, says researcher Anwarul Huq, who works with Colwell at the Biotechnology Institute. But such a scenario might explain how the 1991 cholera epidemic arose in several South American ports at the same time. The bacteria were there all along, and for some reason the conditions were finally right for them to spread back into the human population. The critical factor could have been anything from the temperature of the water to the amount of salt.

Colwell has already stumbled across one correlation that she says gave her chills. A graph of the seasonal peaks in sea-surface temperatures in the Bay of Bengal, gleaned from satellite data, almost exactly matches a graph of the seasonal peaks in admissions for cholera in nearby hospitals. Some four to six weeks after the sea temperature goes up, so do cholera admissions.

"It's exactly what I would have predicted", says Colwell with grim satisfaction. "A dramatic correlation. As the sea-surface temperature rises, the sea-surface height rises, which drives seawater up into the estuary." The seawater may bring in plankton or it may simply create the right environmental conditions for plankton to thrive. A rise in phytoplankton, ecologists know, typically fosters a boom in zooplankton, the "cattle of the sea", which feed on the photosynthesizing phytoplankton. The rise in zooplankton, in turn, figures Colwell, might trigger a rise in the cholera-causing bacteria around the Bay of Bengal. The more zooplankton there are to colonize, the more opportunities for *V. cholerae* to thrive.

If sea-surface warming does indeed spawn cholera outbreaks, it is yet another scenario to add to the worries about global warming. Many scientists, including those on the United Nations Intergovernmental Panel on Climate Change, say that global warming has begun, and many believe it will have a significant impact on human health. But few care to predict how severe that impact might be. One possible scenario is that the range for mosquitoes and other temperature-sensitive disease carriers will increase as the world slowly warms. Likewise, a warming climate could increase the number of floods. And that could shake up local ecological systems. If the changes increased the food supply of rats, for example, the rat population could swell. And that could increase diseases transmitted by rats, such as hantavirus and even the

plague. In the case of cholera, many scientists say that global warming has already increased sea-surface temperature and heights. And that could contribute to more phytoplankton blooms and more cholera cases - if, indeed, that hasn't already happened.

In the meantime, as researchers wrestle with the long-term threat of global warming, Colwell's work could have a local impact. Her sari-cloth filter, which so impressed the young woman in Bangladesh, is now being tested by 4,000 families. A four-layer thickness of old sari cloth removes 99 percent of *V. cholerae*. "It doesn't remove all the cholera bacteria", says Colwell. "But the numbers go way down. Therefore we expect to be able to curb the massive epidemics." And if the filter is rinsed in clean water and dried in the sun, it can be used over and over. "I have my fingers crossed about the success of these low-cost filtering systems", Colwell adds. "When you walk through the hospital and see those little babies, it really gives you the impetus to do something."

... CURRENT ACTIVITIES ...

My main interest in copepods remains centred on commensal and parasitic species associated with marine invertebrates which I have now been collecting for twelve years. I was recently involved in the revision of the Copepoda section of the Cullercoats Fauna produced by the Dove Marine Laboratory, Cullercoats, Newcastle. Twenty associated copepod taxa, new to the Cullercoats area, have been added including preliminary notes on a new species of *Entobius* endoparasitic in the Medusa worm *Polycirrus plumosus* and a bizarre endoparasite of the Top Shell *Calliostoma zizyphinum* exhibiting some affinities with the Chitonophilidae. Other interesting finds include the "Californian" copepod *Spiophanicola spinosus* Ho, 1984 from the polychaete *Spiophanes kroyeri* and the re-discovery of the amphipod parasite *Sphaeronella metopae* apparently unrecorded since Hansen's type description over 100 years ago from West Greenland. Coincidentally the revised Cullercoats Fauna is being published (hopefully before the end of 1999) to mark the centenary of the Dove Marine Laboratory.

O'Reilly, East Kilbridge

... CANDIDATE MEMBERS ...

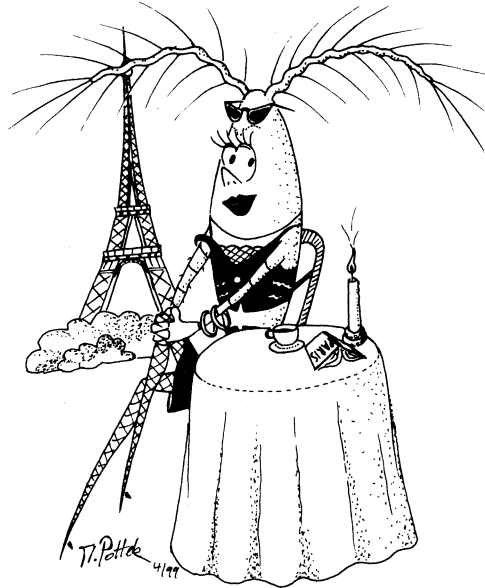
I have been working as a researcher at the Institute of Biology for five years. During this period I have been occupied with zooplankton of the north reservoirs of Russia: about seven articles and propositions. To my understanding, they will not be interesting to you as Harpacticoida expert. I have developed zooplankton through some grants and Komi Pipeline Emergency Rehabilitation funded by the World Bank. In addition, I have collected considerable material concerning Harpacticoida, ecology and fauna of which are the matter of my dissertation. At present I am a competitor. As yet, some propositions of my dissertation project, namely about the location of Harpacticoida in the north-east of Russia, have been published. My material of Harpacticoida includes the samples of fresh- and salt-water species, the latter ones from the Petchora river delta. I am not sure about the determination of some of them.

DAAD is organizing the support of those competitors, who need consultations from German experts. I think that this will be some kind of training in your university for two months under your supervision. To my mind, it might be an excellent possibility for me to master the determination of Harpacticoida and compare the river delta fauna.

Elena Fefilova

It will be a pleasure to become a new member of WAC. I am a Ph.D. student at the University of Sao Paulo under the advisorship of Dr. Tagea Björnberg. I am studying the *in situ* diet of four copepod species (*Paracalanus crassirostris*, *P. quasimodo*, *Temora stylifera*, and *Temora turbinata*) and comparing their differences. I am also examining the carbon content of their fecal pellets. My particular research interest is the feeding behaviour of copepods and the fecal carbon flux in tropical coastal waters. Additionally, I am trying to elucidate taxonomical aspects of tropical freshwater zooplankton.

Eneida Eskinazi



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