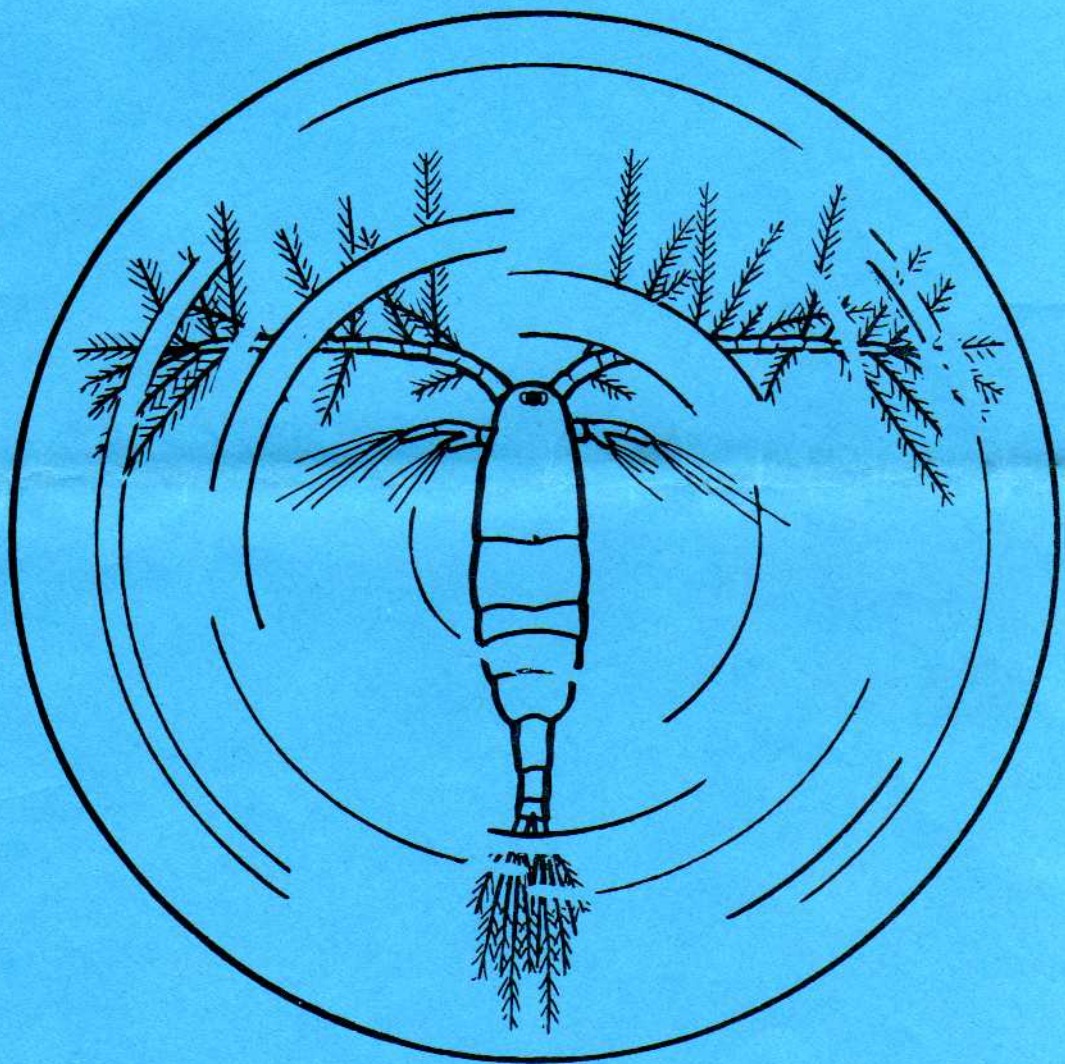


MONOCULUS

Copepod Newsletter



Nr.1

October 1980

MONOCULUS

Copepod Newsletter

Number 1

October 1980

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Cover by: Georg Siebecke, Zoologisches Museum der Universität Kiel

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"A last suggestion: how about calling the newsletter 'Monoculus' after the unfortunately obsolete synonym of Cyclops and a unifying name for all the copepods?"

F. D. Por in a letter to H. K. Schminke

MONOCULUS finmarchicus, annulis postice quinque; capite obtuso: pedum anteriorum quatur; posteriorum vero quinque paribus: cauda recta, bifida.

This is the diagnosis given of the first marine copepod which was described in 1770 by its discoverer GUNNERUS, bishop of Nideros (Trondheim). It was taken from the sea south of Hammerfest in northern Norway. GUNNERUS' account of this tiny creature is remarkable for its accuracy and is quoted in full in MARSHALL/ORR: "The Biology of a Marine Copepod", 1972, pp. 1-2.

GUNNERUS found it to resemble certain crustaceans such as *Squilla*, *Pulex* and *Locusta*, but as he was unable to make out any chelae or palps he did not place it into the Crustacea but the Insecta aptera. Published in a rather remote journal, *Monoculus finmarchicus* had a long and complicated nomenclatorial history. It was not until GIESBRECHT's monograph of 1892 that the synonymy was cleared up. Since then, GUNNERUS' copepod is known as *Calanus finmarchicus*. The generic name *Calanus* was introduced by LEACH in 1819.

E d i t o r i a l

Here comes *MONOCULUS*, yet another newsletter and tries not only to gain a footing on your shelf where all the other newsletters have already sedimented but also to attract your attention. Due to the wide scope of your scientific interests all of you will be familiar with what newsletters normally are, especially first issues. That's at least as far as they get.

So we don't need to repeat what usually is said at the beginning, do we? That the function of this newsletter is to provide a means of contact between copepodologists and a forum for informal discussions and critique, that it aims at assuring rapid diffusion of news of general interest, that we hope it will lead to an increased degree of cooperation between workers in different fields in the way of advice on techniques, comparison of results etc.

But what for you may be a pretty normal affair is for us a rather exciting and breath-taking adventure. The only experience we have is that of producing normal scientific papers. But a newsletter, shouldn't it be a little more attractive and even entertaining? Also, our English may sometimes be quaint. To give the newsletter a good start all the same, we are happy to inform you that the first issues to appear at least until the conference in Amsterdam next year will be free of charge!

But you can't accept a present without wanting to give something in return, can you? Sure, you don't know us yet and have no idea with what to give us a surprise. Don't worry, here are a few humble suggestions:

- You could fill in the postcard attached to this newsletter and return it without delay to Gerd Schriever. He would be glad to receive it.
- Attached also to this newsletter, you find a list of those to whom we have sent this first issue of *MONOCULUS*. There may probably be more people interested in receiving the newsletter. If you know anyone we may have missed you could send his name and address also to Gerd Schriever. He would be extremely grateful. A complete directory will be published in the next issue of *MONOCULUS*.

- Mention was made repeatedly in the letters to Prof. Por of the problem of keeping pace with the literature produced by copepodologists every year. It will be one of the tasks of *MONOCULUS* to keep you informed in this respect. But for those who are on the verge of becoming active copepodologists, for future newcomers and for those who live in countries where literature is a problem we want to compile a "Bibliography of the works of living Copepodologists". This is not possible without your help. What we need from everyone of you is a complete list of all those of your published works concerned with copepods in what respect soever. If still available, copies of the works listed could also be added to help us build up a reference library open to use by all of you, either directly or by way of xerocopies sent out by us on request. The bibliography will be published as a separate volume of "Mitteilungen aus dem Zoologischen Museum der Universität Kiel" and works represented in our reference library will be marked by an asterisk. You could post list and reprints to Kurt Schminke right now. He would be absolutely delighted.

It goes without saying that apart from these little gifts we would welcome any comments, suggestions, announcements and accounts of works or projects under way. We would be glad to pass on any questions or requests and we would also be happy for any entertaining contribution to *MONOCULUS*. We are in definite need of artists, for example. It is our aim not only to inform but also to entertain. Hence, there are endless possibilities for you to take part in our adventure. As someone remarked in his letter to Prof. Por: *"The thing to produce must be a newsletter, not a journal, of which we have so many now."*

Looking forward to receiving baskets full of mail,

H. K. Schminke
G. Schminke

Prof. Por's campaign :

"To the attention of the Copepodologists"

The initiative

In 1979 Prof. Por started his first attempt at stimulating communication among copepodologists. In a note "To the attention of the Copepodologists" in PSAMMONALIA 43 he made two suggestions:

1. To organize in the near future a symposium on Copepoda
2. To organize and edit a Copepod Newsletter

He received 5 letters in response to this initiative.

In CRUSTACEANA 37 (3), 1979, the appeal was repeated with the result that 10 letters arrived in response to this 2nd attempt.

Finally, in March 1980, a 'First Circular Letter' was sent out to 87 colleagues in all parts of the world and there was a reply by 34 of them.

The reactions

In general, both proposals, the symposium and the newsletter, met with enthusiastic support. *"The first reaction to the proposal that you have made is, naturally, to be very enthusiastic. We have all suffered repeatedly from our inability to communicate at an adequate level and to exchange information and opinions."* *"I fully agree that there is an urgent necessity for contact between copepodologists, leading to mutual inspiration and guidance."* *"Votre initiative me parait judicieuse et de nombreux copépodologistes devraient y souscrire tant est partielle la communication entre morphologistes et physiologistes d'une part, spécialistes de la faune marine et de la faune d'eau douce d'autre part."*

There have also been reservations. *"My first reaction was 'that is a great idea', but after thinking it over I am not overly supportive of such an idea. I don't think we should segregate out the copepods from other meetings or newsletters. The Crustacean Club of the American Society of Zoologists already distributes the "Crustacean Newsletter" - perhaps we should consider be more active in it."* Yet, the majority of replies was in

favour of organizing a separate communication system among copepodologists.

1. The symposium

Of the two proposals that of an international meeting seemed to be the more appealing. Most replies were devoted to it alone.

"I agree that an international meeting would be of great benefit to copepodologists as well as a lot of fun." "It is of specialist nature, but has wide general implications for marine research as a whole." "Personally I have very little time for research and though I have not lost my interest in Copepods, I feel a bit out of date. A symposium would be marvellous to bring me up to date."

As to the scope of the first meeting, there are two parties. The one pleads for a rather narrow field to be chosen for a start rather than endeavour to cover as many subjects as possible; the other prefers the first meeting to be wide in scope and to pick up special themes in later meetings. The latter opinion seems to be more widely supported.

It was agreed that one of the main topics of the symposium should be, as suggested by Prof. Por, the evolutionary classification of the Copepoda. *"For a first Copepod symposium evolutionary classification would be a beautiful subject, but you need a couple of well versed lectures to lift this subject above the level of pure morphological systematics." "Such a symposium, even if it does not provide a new evolutionary classification scheme, would at least start people thinking."* Further topics suggested were: Interactions between species and functions in 'food webs', zoogeography, history of ecological studies on Copepoda, estuarine and brackish water copepods.

The place for the meeting should not be *"a big town but a place with interesting surroundings with regard to marine zoology"*.

On the other hand, it should also be *"a city with central position near a great airport in Europe or North America"*. The following places were suggested: Banyuls-sur-Mer, Brest, Cascais, Columbia, Helgoland, Kiel, London, Messina, Monaco, Plymouth, Robin Hood's Bay, Roscoff, Rovinj, Woods Hole.

A problem mentioned in many letters was that of raising sufficient funds to cover the costs for attending the meeting. Apart

from travel expenses there are other costs that normally are covered by registration fees. *"There has to be a certain critical number of attendees before the fees can cover all the expenses. I wonder whether the number of people attending copepod meetings would be sufficient for this purpose?"*

As for the time that should elapse before the next meeting, an interval of 4-5 years was deemed appropriate. *"As soon as the conferences attain a more formal status you will probably find that annual meetings are more than the group of copepodologists can cope with and I do not think that annual meetings are really necessary. To bring fresh subjects you will need an interval of a few years."*

2. The newsletter

"The idea of newsletter is timely." "I feel the newsletter would also fill a definite need. A rapid exchange of information, ideas and questions would be a welcome supplement to journals, etc. with their inherent 1-2 year publication lag."

Two people offered their help as regional correspondents. There was one offer to take over the editing of the newsletter and another to serve as coeditor.

The results

In a second circular letter, dated July 1980, Prof. Por reported on the results of his campaign:

- Prof. Stock agreed to organize a first meeting in Amsterdam in August 1981,
- Prof. Schminke is ready to start putting out a Copepod Newsletter,
- Dr. Manning is looking into the possibility of organizing a second meeting in the U.S.A. in 1983.

Didn't someone remark: *"To sum up my attitude, I can describe myself aptly, if somewhat whimsically, as an enthusiastic doubter"?*

H.K.S.

THE COPEPODTHIS UNKNOWN

There is no doubt that the order Copepoda is by far, the most numerous order of the class Crustacea, although some malacostracan chauvinists might still think otherwise. They are by right called the "insects of the aquatic world". Also, there is no argument about copepodologists being today the most numerous among the scientists toiling on the different orders of the Crustacea. Moreover, while the number of copepod species is steadfastly increasing at its primeval rate, the number of copepodologists is of late, increasing at an exponential rate. At a first glance, a very optimistic diagram would result.

But the Copepoda are not much better known today on the basic structural and functional level. Here we still have to go back to classics like Marshall and Orr. Not that the taxonomic mapping has been increasingly pursued in the last decades: we have still to rely on classics like Lang. But the fundamental fact that the Copepoda are by far the most important taxon of primary consumers in aquatic ecosystems and that many of them are extremely successful micropredators and parasites, has set, after all, the stage for the present copepodologic prosperity. It is only too natural that aquaculturists have finally discovered the copepods; that in any ecosystemic and environmental study in the aqueous world, one stumbles over the all-important copepods.

Copepodologists used to be classically divided into planktologists, benthologists, limnologists and parasitologists, with calanoids, harpacticoids, cyclopoids or caligoids and allies in the center of their preoccupations. But now, a big aureole of culturists, ecologists and environmentalists have joined our ranks. They need the taxonomic and biogeographic expertise of the elder brand of copepodologists. This expertise is available, once suitable contacts can be established. But what do the workers in the basic field know, when they are called to answer problems of feeding, environmental physiology, genetics, behaviour and even reproductive biology? This is the middle ground between taxonomy and morphology on the one hand and the applied copepodology on the other. This is our big blank spot.

To our defence we can say that there was till now, no organized way for a contact between copepodologists. The only recent attempt, to my knowledge, was a list of copepodologists compiled by R. H. Gooding in 1962. We are probably a community too big to have been naturally drawn together as the cirripedologists or the mysidologists. We do not have, like the ostracodologists, the power of king-oil behind us. Though we could easily muster lists of specialists or bibliographies, not smaller than the acarologists and the nematologists - we do not have the stimulus of the stringent problems of agronomy.

"Monoculus", our first newsletter is an attempt to join the many other taxa, where there is an organized exchange of information. The school of Kiel, with its big tradition, is a natural place for this first effort. Much primordial work has to be done -- first of all a listing of all the copepodologists eventually reaching a three digit figure, this should not be easy. Moreover, a bibliography program would be very much needed; but here the dimensions of the project are even more impressive.

But "Monoculus" appears on the eve of the First International Copepod Conference, to be held next August in Amsterdam (vide infra). Some of these weighty problems raising with our newsletter could be discussed there.

There will be also the need to initiate basic, across-the-field reviews on basic copepodology -- phylogeny, monographs of sub-orders, anatomy, physiology and genetics of the Copepod, etc. This is the neglected "middle earth", I mentioned above. We shall then have to go down to organizational items. Should we, for instance, establish a permanent organization, or restrict ourselves to a sequence of scattered meetings? Should we content ourselves with a modest and thin newsletter or dare to think of a computer-produced bibliography and directory?

Times are, without doubt, not prosperous. But once started on this twin enterprise of the Copepod Conference and the "Monoculus", we ought to support these endeavours. After all, does anyone really believe that a postponement of our long-due organizational effort will lead us to skies more sunny?

All this being said -- we are very glad to have the comfortable organizational framework prepared by Jan Stock and his colleagues

from Holland for our first Conference; the initiative and support for "Monoculus" marshalled by Kurt Schminke and his colleagues from Germany; and last but not least - the nowadays rare opportunity to have the proceedings of our Conference printed by the well-known editing house of Dr. Backhuys. All this is both a stimulus and an obligation.

See you all, on August 24 in Amsterdam.

F. D. Por

Jerusalem, October 1980.

Mailing list

Argentina

R. Pallares
F.C. Ramirez

Australia

G.H. Arnott
J.A.E. Bayly
J. Greenwood
R. Hamond
G.C. Hawitt
A.G. Nicholls
R.R. Parker
M. Pichon
R.G. Rippingale
D.J. Tranter

Austria

I. Eiselt
H. Löffler
K. Schirl

Barbados

R.U. Gooding
E. Moore
F. Sander

Belgium

R. Capart
N. Daro
C. Heip
K. Willems

Bermuda

B. Morris

Brasil

T. Björnberg
A.F. Camaner
E.S. Fanta
H. Jakobi

Bulgaria

A. Apostolov
A. Marinov
M. Michailova

Burma

N. Taw

Canada

R.G. Aikman
S. Anderson
C.H. Carter
R.J. Conover
C.J. Corkett
M. Dadswell
C.C. Davis
C. Fernando
A.J.G. Figueira
G. Filteau
M. Fontaine
J. Fulton
G.A. Gardner
G.H. Geen
E.H. Grainger
U.T. Hammer
G.A.W. Harding
Z. Kabata
G. Lacroix
R.R. Langford
R. Le Brasseur
A. Lewis
D.C. Maclellan
B.M. Marcotte
I.A. McLaren
A.A. Mohammed
B.F. Morris
C.W. O'Connell
T.R. Parsons
K. Patalas
B. Pinel-Alloul
S.A. Poulet
J.C. Roff
C.T. Shih
B.N. Smallman
W. G. Sprules
I.I. Sutherland
N.H.F. Watson
J. Winner

China, Peoples Republic of

Qing-chao Chen
Chia-Jui Shen
D. Song
Shu-Zben Zhang
Chan-Shou Zhu

Chile

R. Arcos

Congo, R.P.

D. Petit

Cuba

I.A. Suárez-Caabro

Czechoslovakia

V. Kulhavy

A. Romanovsky

O. Sterba

Denmark

I. Bresciani

I. Lützen

T. Wolff

Finland

A. Niemi

J. Sarvala

France

M. Bernard

D. Binet (New Caledonia)

Ph. Bodin

J. Y. Bodiou

J. Boucher

Y. Bouligand

B. Bozic

Y. Carton

J. Castel

G. Champalbert

A. Dinet

C. Delamare-Deboutteville

B. Dussard

J. Forest

J.-M. Gallo

R. Gaudy

R. Glacon

I.A. Guéfédrat (New Caledonia)

A. Guille

R. Hipeau

L. Laubier

J. Le Fèvre

C. Lejeune

A. Lemerrier

F. Lescher-Moutoué

I. Mazza

P. Nival

Cl. Monniot

Th. Monod

L. Nunes-Ruivo

France

M. Omori

G. Payen

A. Raibaut

C. Razouls

J. Renaud-Mornant

Ch. Roland

R. Rouch

J. F. Samain

J. Soyer

P. Vitiello

H. Zibrowius

Germany, Democratic Republic

G. Arlt

U. Brenning

D. Flößner

D. Ronneburger

S. Schulz

Germany, Federal Republic

A. Dietrich

U. Einsle

W. Greve

H.V. Herbst

H.-J. Hirche

K. Hülsemann

S. Husmann

F. Kiefer

H. Kunz

P. Martens

W. Mielke

W. Noodt

M. Rieper

P. Röben

W. Scheibel

S. Schnack

R. Schröder

H. Tiemann

G. Uhlig

B. Volkmann

H. Weikert

S. Wellershaus

Greece

M. Apostolopoulou

Great Britain

G.M. Benell

G.A. Boxhall

P.H. Burkhill

J. M. Colebrook

F. Evans

S. Fish

Great Britain

G. Fryer
J. Grahame
J. Green
R.V. Gotto
J.P. Harding
R.P. Harries
C.M. Lee
J. Mauchline
G. Moore
E.J. Perkins
S.J. Roe
B.R. Rosbury
E. Southward
M. Teare
H. Wickstead
J. Watt

India

S. Abraham
C.P. Gnanamuthu
T.C. Gopalakrishnan
S.C. Goswami
L.R. Kasturi
H. Kewalvamani
S. Krishnaswamy
C.V. Kuriangan
J.Y. Le Gall
N. Pillai
P. Pavameswavan Pillai
M. Rajendran
M. P. Rangnehar
Chandrasekhara Rao
K. Reddiak
M. Saraswathy
M. J. Sebastian
E.G. Silas
M.N. Thoma
A.N,P. Ummerkutty

Ireland

E. Benson
O'Riordon

Israel

M. Gophen
D. Kahan
B. Kimor
D. Masry
F. D. Por

Italy

B. Battaglia
A. Carli
V. Cottarelli
N. Della Croce
I. Ferrari
L. Pesce
B. Scotti di Carlo
E. Terio

Japan

M. Anraku
T. Chiba
A. Fujiki
S. Fukase
K. Furuhashi
S. Gamo
T. Hoshina
T. Ino
T. Ito
K. Izawa
S. Kasahara
Y. Kikuchi
Y. Ko
F. Koga
T. Minoda
Y. Miura
S. Motoda
S. Nishida
T. Onbe
S. Ooishi
S.M. Shiino
O. Tanaka
I. Uye
T. Yamada
S. Yamaguti

Libanon

S. Lakkis

Mexico

S.G. Aguirre
M.u.C. Flores

Netherlands

W. Backhuys
L. B. Holthuis
W.C.M. Klein Breteler
J.H. Stock
J.C. von Vaupel Klein
W. Vervoort

Netherlands Antilles

I. Kristensen

New Zealand

J. Bradford

C.W. Burns

M.A. Chapman

J.D. Green

G.C. Hewitt

G.F.R. Hicks

D.E. Hurley

J.B. Jillet

I. B. Jones

M. Lewis

J.B.J. Wells

Norway

A. Fosshagen

I.H. Hesthagen

C.C.E. Hopkins

P. Johansen

J.B.L. Matthews

J.P. Nilssen

E. Oug

H.-R. Skjoldahl

D. Slagstad

F.K. Wiborg

K. Tande

Pakistan

S.M. Haq

F. Ur-Rehman

Poland

J. Chojnachi

P. Ciszewski

I. Drzycimski

Portugal

A. Candeias

M.H. Galhano

E. Marques

S. Mazaron

I. Paiva de Costa

Puerto Rico

J.G. Gonzalez

Rumania

M. Bacescu

A. Damian-Georgescu

A. Marcus

C. Plesa

Rumania

F.I. Porumb

M. Serban

South Africa

G.M. Branch

A.D. Connell

A. De Decker

J.R. Grindley

A. Mc Lachlan

N.F. Paterson

Spain

E. Carreno-Russi

J. Corral-Estrada

J. Garcia-Braun

F. Vives

Sweden

U. Bamstedt

R. Elmgren

H. Enckell

S. Erichsson

L. Henroth

L. Silen

Switzerland

M. Vincx

Trinidad

J.L. Price

Uruguay

A. Milestein

U.S.A.

S. Bell

P. Blades

T.E. Bowmann

D. Causey

A.C. Cohen

B. Coull

R. Cressey

D.M. Damkaer

G.B. Deevey

M. Dojiri

P. Dudley

J. Ellmore

F. Ferrari

H.R. Fernandez

J.W. Fleeger

A. Fleminger

M. Foyo

U.S.A.

W. Frost
V.R. Gibson
P. Gray
G.D. Grice
O. Hartman
R. Hammer
D. Heinle
G.A. Heron
J.S. Ho
T.L. Hopkins
A.G. Humes
P. Illg
M.S. Ivester
H.P. Jeffries
M.W. Johnson
J.B. Jones
H. Kobayashi
E.M. Kramer
T. Lawson
W.Y. Lee
E.W. Lindgren
B. Manning
H.B. Michel
B. Miller
P. Montagna
M.M. Mullin
J.P. Murnane
M. Omori
T. Park
W. Peterson
G.A. Pfaffenhöfer
L.S. Roberts
D.C. Rosenfield
H.D. Rounds
K. Sherman
D. Thistle
M. Trinast
J.T. Turner
L. Walker
E.H. Wheeler
P. Wiebe
S.N. Wilkes
H.C. Yeatman
M. Youngbluth
E.J. Zillioux
Z. Zo

USSR

V.N. Andronov
Y.G. Arashevich
K.A. Brodskii
A. Gayaevskaya
Y.V. Geletin
K.T. Gordejeva
A.K. Heinrich
M.V. Heptner
A. Jankowski
W.A. Jaschnov
M. Kos
M.S. Kun
A.P. Markevitsch
W.I. Montschenko
T.S. Petipa
A.A. Shmeleva
I. Tschiskenko
J. Veldre
N.M. Voronina
J.A. Zvereva

Yugoslavia

J. Hure
T.K. Petkovski
T. Vucetic

First Announcement

Marine and freshwater scientists are invited to attend to this conference which will deal with all aspects of Copepodology. In addition to a number of invited lectures on two selected topics, open presentation of current research will be possible in several parallel sessions and in poster sessions. The plenary sessions with invited speakers will deal with (1) The position of the order Copepoda in the Crustacea and the macrosystematics of the order, and (2) The function of the Copepod as individual and its role in the ecosystem.

The sections for open presentation of current research will be:

- I. Taxonomy, phylogeny and zoogeography (non-descriptive research only; alpha-taxonomical work may be presented as a poster).
- II. Reproduction, development and genetics.
- III. Population dynamics and aquaculture.
- IV. Plankton.
- V. Parasites and associates.
- VI. Anatomy, physiology, histology, ultrastructure.

Each section will be preceded by a general apperçu of the current state of knowledge of the field concerned.

Due to space limitations, a maximum of 20 poster presentations will be possible.

The Proceedings of the Conference will be published (if possible with a short summary of the discussion following each presentation) by Dr. Backhuys' publishing company, Rotterdam. When properly presented, poster presentations will be included in the Proceedings.

Interested persons are requested to complete the accompanying form and return it before January 1, 1981 to the chairman of the Organizing Committee, Professor Jan H. Stock, Institute of Taxonomic Zoology, P.O. Box 20125, 1000 HC Amsterdam, The Netherlands.

A second announcement will be mailed in February 1981 to all those responding to this announcement. A third announcement, listing chairmans of the various sections and a list of papers to be presented will be mailed in June 1981.

Place and Programme

The Conference will be held in Amsterdam, the capital of The Netherlands, in various lecture rooms of the University and of the Royal Zoological Society "Natura Artis Magistra", centered around the Amsterdam Zoo. Several excursions, with a cultural character, and visits to scientific institutions in the Netherlands, will be scheduled.

The preliminary programme runs as follows:

Monday August 24, morning. Registration.

afternoon. Opening ceremony, plenary sessions.

evening. Informal reception.

Tuesday August 25, morning. Plenary sessions (continued).

afternoon. Open lectures.

evening. Poster session.

Wednesday August 26, all day. Open lectures.
evening. Bussiness Meetings; session of history of copepodology.
Thursday August 27, morning. Open lectures.
afternoon. Excursion to the country-side North of Amsterdam
(17th-18th century architecture).
evening. Evening party (informal dress).
Friday 28 August, morning. Open lectures.
afternoon. Departure or visits to scientific institutions.

Travel and Accomodation

Amsterdam International Airport ("Schiphol" airport) is located at only 15 km from the town center, where the zoo is located. Frequent bus and train services connect the airport with the city. Railway passengers best book to Amsterdam Central Station. No special vaccinations are required.

Hotel accomodation in Amsterdam will be arranged by Wagons-lits/Thomas Cook and ranges from f 45.- to f 80.- (Dutch florins; f 1.- is approx. 0.50 US\$) for single rooms, depending on the degree of luxury desired. Popular meals can be used in the restaurant of the zoo or in one of the numerous small cafetaria in the neighbourhood.

Fees

The Conference Fee will be f 150.- (ca. US\$ 75.-) for Regular participants. Presumably, this fee includes the right to obtain a copy of the Proceedings at a reduced price. Accompanying persons pay a registration fee of f 20.-. If a room reservation through the Conference offices is required, the conference fee must be prepaid. Make cheques payable to the Organizing Committee, Professor Jan H. Stock, Amsterdam. When personal cheques are used, please add 10% for handling costs. Payment of fees in cash at the Registration desk is possible.

The Organizing Committee welcomes any suggestions, contributions to the sections mentioned before, or to the poster session, by preference through the enclosed registration form.

The Organizing Committee,

F.D. Por, Jeruzalem, President	
J.H. Stock, Amsterdam, Chairman	
J.C. von Vaupel-Klein, Leiden, Secretary	
R. Cressey, Washington	
R. Rouch, Moulis	} Members
H.K. Schminke, Oldenburg	
G. Schriever, Kiel	
W. Vervoort, Leiden	

October 1980.

RETURN THE COMPLETED FORM BEFORE JANUARY 1, 1981 to:

First International Conference on Copepoda
c/o Professor Jan H. Stock, Institute of Taxonomic Zoology, P.O. Box 20125,
1000 HC Amsterdam, The Netherlands

+++++

Please send me the SECOND ANNOUNCEMENT of the 1st International Conference on Copepoda (August 24 - 28, 1981) in Amsterdam.

Name _____

Mailing address _____

City _____ State _____ Country _____ Mail code _____

Scientific affiliation _____

Area of Research/Interest _____

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I/we would be interested in participating in the 1st International Conference on Copepoda (August 24 - 28, 1981) in Amsterdam.

I/we would be interested in the following sections:

I/we would like to present an open paper (maximum of 15 minutes)/poster paper (please delete) on (provisional title):

(Send Abstract before March 15, 1981; full text by the start of the Conference)

Name _____

Mailing address _____

City _____ State _____ Country _____ Mail code _____

Scientific affiliation _____

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Remarks _____

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Make me hotel reservations for person (s), from to August 1981.
Approximate price-class f