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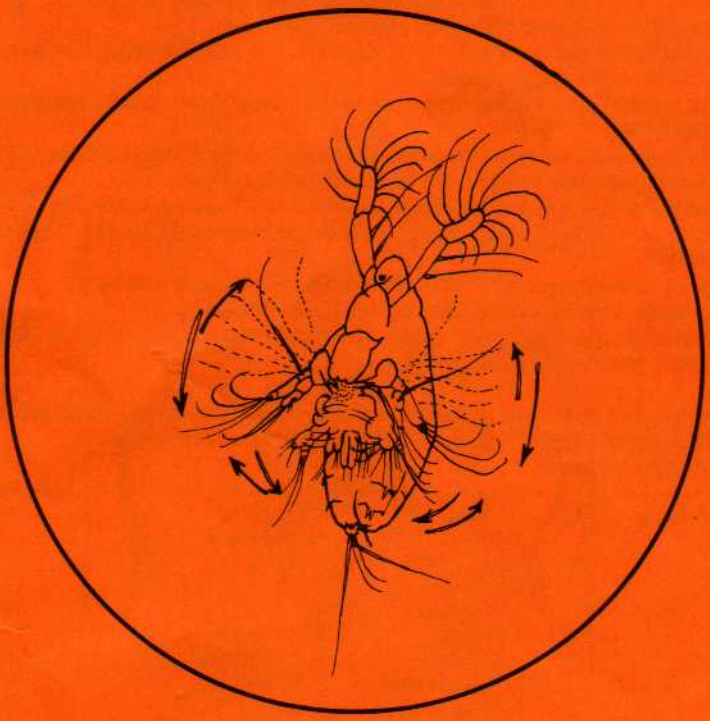
MONOCULUS

Copepod Newsletter



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MONOCULUS

Copepod Newsletter

Number 41 May 2001

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This issue has been typed by Hans-U. Dahms. Cartoons by Hans-U. Dahms and M. Pottek (Fachbereich 7, Universität Oldenburg).

Cover: The nauplius performing grazing behaviour belongs to *Eucalanus pileatus* (from T.K.S. Björnberg (1986): Aspects of the appendages in development. Syllogeus *58*: 51-66

Birthdays this year:	90:	C. Cheng	J. P. Harding
		T. Chiba	K. J. Purasjoki
	80:	Brian P. Boden	
		R.V. Gotto	
		L. B. Holthuis	
	75:	J. Bresciani	J.P. Murnane
		E.H. Grainger	K.T. Petkovski
		S. Krishnaswamy	A. Shmeleva
		F. Vives	
	70:	R.S. Anderson	S.-J. Li
		A.V. Kovalev	I.A. McLaren

Passing away: George D. Grice
Theodore Monod
Michael M. Mullin
Gail A. Sandercock

The MONOCULUS homepage is available from the www-server under:
http://www.hrz.uni-oldenburg.de/monoculus.
Deadline for the next issue of MONOCULUS: 30th September 2001.

EDITORIAL

One of the most beneficial results of conferences are there stimulating effects. We are all looking forward such an inspiring event next year when the "Eights International Conference on Copepoda (ICOC)" will take place in Keelung (Taiwan) from the 22-27th July 2002 (details on a new web side – see below). Even before, there will be other such occasions. Hopefully, many of you will have the opportunity to participate for instance at the "International Crustacean Conference (ICC5)" this July in Melbourne.

During the last annual conference of German zoologists I had the chance talking to a biologist from the US whose prime research interest is asymmetry or handedness of organisms – besides animals including protists, fungi and plants. In the animal kingdom – even among the Bilateria – partial asymmetry is a widespread phenomenon. Sometimes chance effects play their role in the development of asymmetry, in many cases the environment will trigger handedness of an individual, but more often this will be a genetically fixed character – within populations, species or taxa of higher categorial rank. In the latter cases this will probably provide characters useful for phylogenetic and evolutionary reconstructions.

Ofcause, during that meeting we talked on asymmetry of copepods. As far as I can recall there are studies discovering left- or right-side asymmetry of appendages: e.g. male antennules, used for clasping purpose, but even oral appendages and thoracic legs, in particular the P5. Caudal rami can be asymmetrical, so in calanoid nauplii. Ornamental patterns – as pores, tubes, spinules, or denticles can be asymmetrical. Internally, several organs which are symmetrically initiated during ontogenesis can become asymmetrical later in development. This holds for reproductive organs in particular. The ovaries, oviducts, spermathecae, testes and sperm ducts of one side can get amalgameted, or, more commonly reduced in many copepod taxa. Consequently, will the spermatophore be located in an asymmetric position within the *ductus deferens* of the male (and often also be placed in an asymmetric position on the genital field of the female).

Little is known about side-preferences in copepod behaviour. Spiral swimming movements, for instance, in planktonic copepods and their developmental instars are described as clockwise or counter-clockwise. Most of these observations are anecdotal, however, and lack a systematic approach and statistical back-up. It would be also interesting to know whether escape reactions have a preference to the right or the left, or other directions in cases a signal cannot be located. Shall a mate be approached from the left or from the right, from below or above? Even if some systematic approaches will suggest on random effects, others might show reproducible patterns. Stimulating was this conference meeting for me as far as I learnt that many phenomena of general biology can be transfered and applied to our taxon, the Copepoda – this way confirming phenomena known from other taxa already, or establishing new patterns or evolutionary novelties.

We acknowledge in particular the contributions of D. Checkley, D. M. Damkaer, F. D. Ferrari, J. A. Fornshell, J.-S. Hwang, P. Noel, and J. Reid.

As readers of the MONOCULUS newsletter, please, don't hesitate to send us all information that you consider as 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 these here under "LITERATURE" marked by an asterisk. Therefore, keep or put the MONOCULUS as well as the Wilson Library on your mailing list.

OBITUARIES

George Daniel Grice, Jr.

October 9, 1929 – March 11, 2001

George D. Grice died March 11, 2001 from complications of a cardiac operation. He was 71 years old. His research is distinguished for the diverse questions he asked about the small crustaceans we know as copepods. Most of George's research career was spent at the Woods Hole Oceanographic Institute. After graduating with a Ph.D. in biology in 1957, he worked for the United States Fish and Wildlife Service in Juneau, Alaska for a year and spent the next year as a Guggenheim fellow at the University of Hawaii in Honolulu. He joined the Woods Hole Oceanographic Institute in 1959, and upon retirement in 1991 he worked in research management for the National Marine Fisheries Service at Woods Hole beginning in 1992 and for the Intergovernmental Oceanographic Commission in Paris beginning in 1997.

George's work, primarily on calanoid copepods, was extensive and diverse. He asked basic questions about their taxonomy, distribution and development, including dormancy, diapause and embryonic hatching, as well as more applied questions about the effects of pollutants like acid-iron waste or mercury on these crustaceans. George pioneered the use of an enclosed sea-surface water column, a precursor of today's mesocosms, as a way of controlling and manipulating calanoids, which are important species in large communities of planktonic organisms.

Twenty-five of George's 56 publications listed below are on taxonomy. Adding to these his eight papers on development of common copepods of the North Atlantic Ocean adjacent to Woods Hole, it is easy to see why George is considered a taxonomist by copepod taxonomists. He was a great explorer of the pelagic marine biosphere, describing new or rare animals from relatively unknown bathypelagic and mesopelagic waters of the Atlantic, Indian and Pacific Oceans in samples taken from surface research vessels, or later using the Deep Submergence Research Vehicle ALVIN to discover new and unusual calanoid copepods in deep water but within a few meters of the benthos. These latter he called planktobenthic species.

By himself or with others, George described 72 species of calanoid copepods and one misophrioid (Table 1) new to science which are recognized today. A number of the planktobenthic species he described subsequently have been moved to a different genus or to new genus, not an unexpected result given the unusual morphology exhibited by the numerous species from this poorly explored marine habitat. Among the new species, George discovered five new genera of calanoids. He also established the genus Paracandacia for three species of Candacia and proposed the genus name Teneriforma for the preoccupied Tanyrhinus (Table 2).

George is remembered with the specific epithet for the tharybid calanoid Undinella gricei by Ellsworth H. Wheeler in 1970, and more recently in 2000 by Lena Markhaseva and me with the genus name of an unusual arietellid calanoid Griceus buskeyi collected from George's planktobenthic habitat. A tribute to George has been posted on the Internet by the Media Relations Office of Woods Hole Oceanographic Institute at http://www.whoi.edu/media/obits/g_grice_obit.html.

Frank D. Ferrari
Smithsonian Institution
Washington, D. C., US

Publications of George D. Grice listed by year. Within any year, the publications with George as sole author appear first, followed by those in which George was first author.

Grice, G. D. 1956. A qualitative and quantitative seasonal study of the Copepoda of Alligator Harbour. - Florida State University Studies 22:37-76.

Grice, G. D. 1959. A new species of Haloptilus (Copepoda: Calanoida) from equatorial and subtropical waters of the east-central Pacific Ocean. - Journal of the

Washington Academy of Sciences 49:193-195.
Grice, G. D. 1960. Calanoid and cyclopoid copepods collected from the Florida Gulf coast and Florida Keys in 1954 and 1955. - Bulletin of Marine Science of the Gulf and Caribbean 10:217-226.
Grice, G. D. 1960. Copepods of the genus Oithona from the Gulf of Mexico. - Bulletin of Marine Science of the Gulf and Caribbean 10:485-490.
Grice, G. D. & E. C. Jones 1960. Two new species of Candacia (Copepoda: Calanoida) from the Central Pacific, with notes on two other species. - Pacific Science 14:280-291.
Grice, G. D. 1961. Candacia ketchumi, a new calanoid copepod from the north-western part of the Sargasso Sea. - Crustaceana 2:126-131.
Grice, G. D. 1962. Calanoid copepods from equatorial waters of the Pacific Ocean. – Fishery Bulletin, United States National Marine Fisheries Service 61:167-246.
Grice, G. D. 1962. Copepods collected by the nuclear submarine Seadragon on a cruise to and from the North Pole, with remarks on their geographical distribution. – Journal of Marine Research 20:97-109.
Grice, G. D. & A. D. Hart. 1962. The abundance, seasonal occurrence and distribution of the epizooplankton between New York and Bermuda. - Ecological Monographs 32:287-309.
Grice, G. D. 1963. A revision of the genus Candacia (Copepoda: Calanoida) with an annotated list of species and a key for their identification. - Zoologische Mededelingen 38:171-194.
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Grice, G. D. & K. Hulsemann. 1965. Abundance, vertical distribution and taxonomy of calanoid copepods at selected stations in the north-east Atlantic. - Journal of Zoology 146:213-262.
Calef, G. E. & G. D. Grice. 1965. A new species of Aetideus (Copepoda: Calanoida) from the equatorial Atlantic. - Bulletin of Marine Science 15:634-637.
Calef, G. E. & G. D. Grice. 1966. Relationship between the blue-green alga Trichodesmium thiebautii and the copepod Macrosetella gracilis in the plankton off northwestern South America. - Ecology 47:855-856.
Grice, G. D. & K. Hulsemann. 1967. Bathypelagic calanoid copepods of the western Indian Ocean. - Proceedings of the United States National Museum 122:1-67.
Calef, G. E. & G. D. Grice. 1967. Influence of the Amazon River outflow on the ecology of the western tropical Atlantic. II. Zooplankton abundance, copepod distribution, with remarks on the fauna of low-salinity areas. - Journal of Marine Research 25:84-94.
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Grice, G. D. 1969. The developmental stages of Pseudodiaptomus coronatus Williams (Copepoda, Calanoida). - Crustaceana 16:291-301.
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Lawson, T. J. & G. D. Grice. 1970. The developmental stages of Centropages typicus Kroyer (Copepoda, Calanoida). - Crustaceana 18:187-208.
Grice, G. D. 1971. Deep water calanoid copepods from the Mediterranean Sea. Family Spinocalanidae (I.). - Cahiers de Biologie Marine 12:273-281.
Grice, G. D. 1971. The developmental stages of Eurytemora americana Williams, 1906, and Eurytemora herdmani Thompson & Scott, 1897 (Copepoda, Calanoida). - Crustaceana 20:145-158.
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Grice, G. D. 1973. The existence of a bottom-living calanoid copepod fauna in deep water with descriptions of five new species. - Crustaceana, 23:219-242.
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Lawson, T. J. & G. D. Grice. 1973. The developmental stages of Paracalanus crassirostris Dahl, 1894 (Copepoda, Calanoida). - Crustaceana 24:43-56.
Wiebe, P. H., G. D. Grice & E. Hoagland. 1973. Acid-iron waste as a factor affecting the distribution and abundance of zooplankton in the New York Bight. II. Spatial variation in the field and implications for monitoring studies. - Estuarine and Coastal Marine Science 1:51-64.
Grice, G. D. & V. R. Gibson. 1975. Occurrence, viability and significance of resting eggs of the calanoid copepod Labidocera aestiva. - Marine Biology 31:335-337.
Grice, G. D. & T. J. Lawson. 1976. Resting eggs in the marine calanoid copepod Labidocera aestiva Wheeler. - Crustaceana 30:9-12.
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Reeve, M. R., G. D. Grice & R. P. Harris. 1982. The CEPEX approach and its implications for future studies in plankton ecology. - Pp. 389-398 in: Grice, G. D. & M. R. Reeve (eds.). Marine Mesocosms. Biological and chemical research in experimental ecosystems. Springer Verlag, New York, 430 pp.

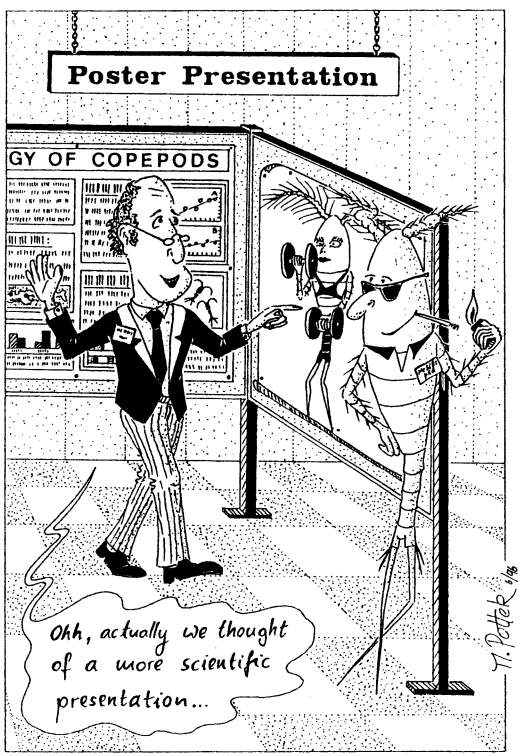

Table 1. Species of copepods described by George D. Grice, listed alphabetically by family and by genus. All are Calanoida except Benthomisophria cornuta.

Acartiidae

Acartia levequei Grice, 1964

Aetideidae

Aetideopsis magna Grice & Hulsemann, 1970
Aetideopsis retusa Grice & Hulsemann, 1967
Batheuchaeta enormis Grice & Hulsemann, 1968
Bradyetes florens Grice & Hulsemann, 1967
Bradyidius luluae Grice, 1973
Chiridiella chainae Grice, 1969
Chiridiella subaequalis Grice & Hulsemann, 1965
Comantenna recurvata Grice & Hulsemann, 1970
Euchirella speciosa Grice & Hulsemann, 1968
Pseudochirella limata Grice & Hulsemann, 1968

Augaptilidae

Euaugaptilus curtus Grice & Hulsemann, 1967
Euaugaptilus fundatus Grice & Hulsemann, 1967
Euaugaptilus longiseta Grice & Hulsemann, 1965
Euaugaptilus malacus Grice & Hulsemann, 1967
Euaugaptilus quaesitus Grice & Hulsemann, 1967
Euaugaptilus rectus Grice & Hulsemann, 1967
Euaugaptilus sarsi Grice & Hulsemann, 1965
Pontoptilus lacertosus Grice & Hulsemann, 1967

Bathypontiidae

Bathypontia regalis Grice & Hulsemann, 1967
Temorites discoveryae Grice & Hulsemann, 1965
Zenkevitchiella atlantica Grice & Hulsemann, 1965
Zenkevitchiella crassa Grice & Hulsemann, 1967

Candaciidae

Candacia giesbrechti Grice & Lawson, 1977
Candacia guggenheimi Grice & Jones, 1960
Candacia ketchumi Grice, 1961
Candacia pofi Grice & Jones, 1960
Paracandacia worthingtoni Grice, 1981

Clausocalanidae

Spicipes nanseni Grice & Hulsemann, 1965

Diaixidae

Diaixis asymmetrica Grice & Hulsemann, 1970

Discoidae

Disco inflatus Grice & Hulsemann, 1965
Disco longus Grice & Hulsemann, 1965
Disco minutus Grice & Hulsemann, 1965

Euchaetidae

Paraeuchaeta regalis (Grice & Hulsemann, 1968) [as Euchaeta regalis]
Paraeuchaeta vorax (Grice & Hulsemann, 1968) [as Euchaeta vorax]

Lucicutiidae

Lucicutia gaussae Grice, 1963
Lucicutia parva Grice & Hulsemann, 1965

Metridinidae

Metridia effusa Grice & Hulsemann, 1967

Phaennidae

Brachycalanus minutus Grice, 1973
Brachycalanus ordinarius (Grice, 1973) [as Xanthocalanus ordinarius]
Xanthocalanus dilatus Grice, 1962
Xanthocalanus macilenta (Grice & Hulsemann, 1970) [as Amallophora macilenta]
Xanthocalanus rotundus (Grice & Hulsemann, 1970) [as Amallophora rotunda]

Pseudodiaptomidae

Pseudodiaptomus galapagensis Grice, 1964

Scolecitrichidae

Amallothrix robustipes Grice & Hulsemann, 1965

Amallothrix tropica Grice, (1962) [as Scolecithricella tropica]
Scolecithricella maritima Grice & Hulsemann, 1967
Scolecithricella unispinosa Grice & Hulsemann, 1965
Scolecithrix grata (Grice & Hulsemann, 1967) [as Scolecithricella grata]
Scolecitrichopsis alvinae (Grice & Hulsemann, 1970) [as Xanthocalanus alvinae]
Scolecitrichopsis difficilis (Grice & Hulsemann, 1965) [as Xanthocalanus difficilis]
Scolecitrichopsis distinctus (Grice & Hulsemann, 1970) [as Xanthocalanus distinctus]
Scolecitrichopsis elongatus (Grice & Hulsemann, 1970) [as Xanthocalanus elongatus]
Scopalatum smithae (Grice, 1962) [as Amallophora smithae]
Scottocalanus backusi Grice, 1969

Spinocalanidae

Foxtonia barbatula Hulsemann & Grice, 1963
Mimocalanus ovalis (Grice & Hulsemann, 1965) [as Spinocalanus ovalis]
Rhinomaxillaris bathybia Grice & Hulsemann, 1967
Spinocalanus abruptus Grice & Hulsemann, 1965

Tharybidae

Neoscolecithrix magna (Grice, 1972) [as Oothrix magna]
Neoscolecithrix watersae (Grice, 1973) [as Xanthocalanus watersae]
Parundinella emarginata Grice & Hulsemann, 1970
Tharybis altera (Grice & Hulsemann, 1970) [as Undinella altera]
Tharybis compacta (Grice & Hulsemann, 1970) [as Undinella compacta]
Tharybis macrocephalon (Grice & Hulsemann, 1970) [as Xanthocalanus macrocephalon]
Tharybis paraincertus (Grice & Hulsemann, 1965) [as Xanthocalanus paraincertus]
Undinella hampsoni Grice & Hulsemann, 1970
Undinella hispidus (Grice & Hulsemann, 1967) [as Xanthocalanus hispidus]
Undinella stirni Grice, 1971

Uncertain calanoid family placement

Alrhabdus johrheae Grice, 1973
Microdisseta minuta Grice & Hulsemann, (1965) [as Disseta minuta]

Misophrioidea: Misophriidae

Benthomisophria cornuta Hulsemann & Grice, 1964

Candaciidae

Paracandacia Grice, 1963

Discoidae

Disco Grice & Hulsemann, 1965 [family placement originally uncertain]

Clausocalanidae

Spicipes Grice & Hulsemann, 1965 [originally placed in Pseudocalanidae]

Spinocalanidae

Foxtonia Hulsemann & Grice, 1963 [originally placed in Bathypontiidae]
Rhinomaxillaris Grice & Hulsemann, 1967 [originally placed in Bathypontiidae]
Teneriforma Grice & Hulsemann, 1967 [name replaces Tanyrhinus]

Family uncertain

Alrhabdus Grice, 1973 [originally placed in Heterorhabdidae]

Frank D. Ferrari
Smithsonian Institution
Washington, D.C., US

Théodore Monod
(1902-2000)

Théodore Monod died on the 22 nov. 2000 (7 hrs)
A ceremony was held on the 28 November, 10 h 30, in the temple de l'ORATOIRE du Louvre,145, rue St Honoré, Paris (1er). He was burried the same day at15 hrs in the cimetière de Châtillon (F-92330), rue pierre Brosselette.

Pierre Noël,
Biologie des invertébrés marins (ESA CNRS 8044),
Muséum National d'Histoire Naturelle.

Michael M. Mullin
(1937-2000)

Mike Mullin died unexpectedly on 19 December 2000 at the age of 63. Mike was a long-time copepodologist. His initial work with Alan Hastings of Harvard concerned the size of particles grazed by Calanus, and his final studies included variation in phytoplankton size off Southern California and its relation to copepod grazing. In the intervening years, Mike not only performed ground-breaking research on the zooplankton, but taught generations of students on this subject.

Mike was born on 17 November 1937 in Galveston, Texas, to Alma and Joseph Mullin. He regularly performed as a 'Quiz Kid' on national radio and TV, his specialty being natural history. He received undergraduate biology degrees from Shimer College, in Illinois, and Harvard University. His PhD (1964), on the feeding of calanoid copepods, was from Harvard and involved work there and at the Woods Hole Oceanographic Institution with George Grice and Bob Conover. Mike was a postdoctoral investigator on the International Indian Ocean Expedition, once again studying copepod feeding, and in New Zealand, and then moved to the Scripps Institution of Oceanography of the University of California, San Diego, where he remained as professor. While at Scripps, he held various administrative posts, most recently Director of the Marine Life Research Group and member of the CalCOFI Committee.

Research by Mike included laboratory and field investigations of plankton and fish. His work on the feeding and, particularly, growth of calanoid copepods is seminal. Rearing experiments at Scripps provided valuable knowledge of the feeding, growth, and development of *Calanus* and *Rhincalanus*. Subsequent work involved investigations of food web dynamics, from experiments in the Scripps Deep Tank, and the ecology of the plankton of La Jolla Bay, the Southern California Bight, the California Current, and the North Pacific Central Gyre. Studies were also conducted on the zooplankton off Australia and Japan. Scale occupied much of his time, manifest in both papers and his book, Webs and Scales. Mike's later work focused on egg production by Calanus, phytoplankton size variation in relation to its food of grazing zooplankton, and various aspects of the zooplankton as food of larval hake and other fish species, including its long-term change and relation to climate change.

Mike was an important mentor to many. He chaired and cochaired approximately 21 PhD committees at SIO. He advised numerous postdoctoral and visiting investigators and mentored undergraduates. He attracted visitors from far and wide to Scripps, many of whom dined with him and his lovely wife, Connie, and their children, Keith, Stephen, and Laura, at their La Jolla home, often with Scripps students or researchers. As Charlie Miller of Oregon State University so eloquently wrote, "Mike was one of the fraternity of real zooplankton ecologists, the people who know the animals, know a lot about water as a place to live, know the arcane language, understand why anyone would care. A visit with Mike was like being home again, where people really understand what you are saying, what you are about."

Scripps benefited from Mike in numerous ways, but especially his teaching and administration. He taught graduate courses in Biological Oceanography, Pelagic Ecology, and Fisheries Oceanography. With Paul Dayton he taught Scientific Ethics (graduate) and Marine Ecology (undergraduate). He was central to the Food Chain Research Group and led the Marine Life Research Group and the academic part of the CalCOFI. For the past five years, Mike was Editor-in-Chief of Fisheries Oceanography, following Tim Parsons, the founding editor. Mike took great pride in the ascent of this journal in international rankings under his leadership.

Mike was influenced our lives in many ways. He was uncommonly fair as a colleague and administrator. He was simply a scholar, gentleman, and friend to many.

Dave Checkley, Jr.
Scripps Institution of Oceanography
La Jolla

Vladimir Sergeyevich Shuvalov
(1930-1980)

Vladimir "Volodya" Sergeyevich Shuvalov was born on April 29, 1930 into a family of governmental employees in Leningrad. None of his relatives had ever been related to science and research, so Shuvalov was the first in the family to have a scientific career. He received his education at the Biological Faculty, Hydrobiological Department, Leningrad State University. After graduation in 1954, he worked for 2 years at a technical institute on the problem of ship-hull marine growth (fouling). In 1956, Shuvalov came to the Zoological Institute (ZIN) as a doctoral student, and in 1959 obtained a position as a research scientist in the Department of Plankton and Copepods in the Laboratory of Marine Research. He completed the work on his Ph.D. thesis in 1966 and defended it successfully on May 18 that year. During the years of his work at ZIN, he was engaged primarily in research on systematics of Copepoda Cyclopoida (Oithonidae), but his broader research interests made him an expert on zooplankton in general. Shuvalov was never just a bench scientist; he eagerly participated in numerous expeditions aboard research vessels in the Barents Sea, the White Sea, the North Atlantic, the Caribbean Sea, and the Gulf of Mexico. Shuvalov's collections still comprise a valuable part of the plankton materials preserved at the Zoological Institute. Altogether, Shuvalov published over 30 papers, including a monograph "Cyclopoid copepods of the family Oithonidae of the World Ocean". In the latter, 12 papers co-authored or written solely by Shuvalov are mentioned in the references.

In the 1960s, Shuvalov's health sadly deteriorated — this was due to the childhood days spent in the besieged Leningrad during WWII. Shuvalovsuffered four cardiac seizures and a stroke that left him half-paralyzed. The state of his health forced him to retire in 1975. Despite these severe blows, Shuvalov kept on working at home: he supervised the work of undergraduate and doctoral students, and several times was invited to edit and write supplemental material for Russian translations of books.

Vladimir Shuvalov died on October 8, 1980. His colleagues and friends keep the memories of him as a bright scientist, a person with a rare sense of justice, and a true and devoted friend.[Prepared by Sergey Shuvalov (son of V. S. Shuvalov), with Elena Markhaseva and Vladislav Khlebovich, May 1999.]

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9) Shuvalov V. S. 1976. Suborder Cyclopoida (Oithonidae, Oncaeidae, Sapphirinidae, Corycaeidae). Keys to Plankton (Leningrad) 2:1-16.
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14) Shuvalov V. S. 1980. Cyclopoid copepods of the family Oithonidae of the World Ocean. Fauna of the USSR (Leningrad, Nauka Publishers) 125:1-198.

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1) Jacques-Yves Cousteau and Philippe Diole. 1975. La Vie et la Mort des Coraux. (Editors, foreword — V. S. Shuvalov, M. A. Dolgolenko). Gidrometeoizdat Publishers, Leningrad.
2) E. R. Ricciuti. 1979. Killers of the Seas. (Editor, afterword — V. S. Shuvalov). Gidrometeoizdat Publishers, Leningrad.
3) Francois Ramade. Elements de Ecologie Appliquee Action de l'Homme sur la Biosphere. (Editor — V. S. Shuvalov).

NOTE added by D. M. Damkaer: The first qualities that impressed me about Vladimir Shuvalov were his open, friendly manner and very good English. In June 1966, while working for the Smithsonian Institution, I attended the Second International Oceanographic Congress in Moscow. Afterward, I visited the Zoological Museum in Leningrad. I had hoped to look at some copepods that were thought to be present on both sides of Bering Strait, but of which we in the United States had no specimens from the western side. Even though I had corresponded with Dr. K. A. Brodsky (1907-1991), and he seemed to be a cordial and willing colleague, I truly had no idea what kind of reception I might have, nor how I was going to get along without good knowledge of the language, the people, and the Zoological Institute. At that time, I had recently studied the Russian language, and could ask for directions to the train station, but that was the extent of my fluidity.

"Volodya" Shuvalov graciously provided everything that I was lacking. The Zoological Museum was under reconstruction, but he took me through it from top to bottom, which as a lone tourist I could not have seen. More important, he introduced me to the senior scientists and curators that I needed to work with for my project. That morning, I had met Dr. Brodsky (who spoke English fairly well). My assumption has always been that Shuvalov was given the assignment to take care of me (I myself have had such an "assignment" many times!!), but because Volodya was so genuinely interested and interesting, this was not perceived by me to be a chore he had to deal with. He appeared to enjoy our few days together in Leningrad every bit as much as I did. My visit would not have been so rewarding without his assistance and care, and I have never forgotten his kindness. I heard some years afterward that he was in poor health, and was grieved to later hear of his untimely passing. He would yet count me among his many friends.

Copepodologists will recall that the siege of Leningrad brought about the deaths of Vyacheslav Rylov (1889-1942) and his student Sergei Smirnov (1907-1942). It is distressing to know that the direct personal effects of that hideous ordeal could still overpower an accomplished copepodologist of the following generation.

David M. Damkaer,
Monroe, Washington

Annual Financial Report of the WAC (2000)

Beginning balance January 1, 2000	$21,668.63
Membership dues paid	$ 1,586.55
Banking fees	$ 30.00
Interest earned	$ 609.46
MONOCULUS	$ 2500.00
Invalid check returned	$ 97.00
End of year balance December 31, 2000	$21,237.64

The bank will no longer accept checks in US dollars from foreign banks lacking a US office unless it is for more than $50.00 US dollars. It would be best for the WAC if the people using such a bank would pay with checks in their national currency equivilant to the US dollar amount of their dues.

It is now possible for me to accept checks drawn on foreign banks in foreign currency. The charge for such a deposit is $3.00 US Dollars by our bank and any additional charge from the bank of origin for the check. In most cases this charge is relatively small or non existent. It is, however, best for the WAC, if dues payments are made in US Dollarss at the meetings or in US Dollars drawn on a United States Bank. The Association must assume responsibility for any charges on a foreign bank deposit. Please do not send a check for US dollars if your bank does not have an office in the United States. If it is not possible to pay in US Dollars, please make sure that the foreign currency is equivalent to the dues owed. I must also ask that foreign currency checks be for a minimum of three years dues, $60.00 US Dollars.

John A. Fornshell
(Treasurer of the WAC)
Alexandria, U.S.A.

...WEBSITE ANNOUNCEMENT.....WEBSITE ANNOUNCEMENT...

The website of 8th ICOC : http://8thicoc.ntou.edu.tw/

Dear members and friends of the World Association of Copepodologists (WAC):

It is our pleasure and honor to welcome you to the National Taiwan Ocean University (NTOU), Keelung, Taiwan, for the 8th International Conference On Copepoda (ICOC), which will be held here during the period of 22-27 July 2002.

After the 7th ICOC, the Local Organizing Committee (LOC) and International Organizing Committee (IOC) for the 8th ICOC were established. The LOC members are Drs. Tin-Yam Chan, Wen-Been Chang, Shin-Hong Cheng, Jiang-Shiou Hwang (LOC Chairman and Local Secretary of IOC), Wen-Tseng Lo, Chang-tai Shih, J. Rudi Strickler, and Shu-Shen Young. The IOC members include Drs. Ruth Böttger-Schnack, Ju-shey Ho (IOC coordinator), Rony Huys, Ruben Lopes and Shin-ichi Uye. Four LOC meetings have been held to discuss matters related to the preparation of the 8th ICOC. Four symposia have been organized. They are **Symposium I : The Role of Copepods in Aquaculture,** organized by **Ju-shey Ho; Symposium II: Copepods and Pollution,** organized by **Shin-ichi Uye; Symposium III: The Significance of Small Copepods in Estuaries, Neritic Waters, and the Open Sea,** organized by **J. Rudi Strickler and Gus Paffenhöfer;** and **Symposium IV: The Deep-sea Copepoda,** organized by**, H. Kurt Schminke.** As usual, all symposia will be held in the morning. We invite contributions from all conference participants, by oral presentation or

poster, in all areas of copepodology, including ecology, behavior, systematics, physiology, biochemistry, fisheries etc.

A preconference training course in **Copepod Taxonomy** has been organized by Dr. Geoff A. Boxshall. Also before the conference, we arrange a one-day sampling trip to the Kuroshio Current with the research vessel, Ocean Researcher II. For those who are interested in freshwater copepods, we also arrange a sampling trip to some local lakes and ponds. The mid-conference tour will visit the National Palace Museum and the metropolitan Taipei. Three-day and six-day post-conference tours will be offered. Detailed information of the above–mentioned activities is available from our website, http://8thicoc.ntou.edu.tw/. Please visit our website whenever you need the information of the 8th ICOC. If you have any further questions, please do not hesitate to contact me at jshwang@mail.ntou.edu.tw or fax no. 886-2-24629464. visit our website whenever you need the information of the 8th ICOC. If you have any further questions, please do not hesitate to contact me at jshwang@mail.ntou.edu.tw or fax no. 886-2-24629464.

We are looking forward to seeing you in July, 2002, at the NTOU, Keelung, Taiwan

Jiang-Shiou Hwang

LOC Chairman and Local Secretary to the IOC

Mailing address:

Institute of Marine Biology

National Taiwan Ocean University, Keelung, 202 Taiwan

... LETTERS LETTERS LETTERS ...

First "Independent" Meeting of the Brazilian Society of Carcinology, October 2000

Since its founding in 1982, The Brazilian Society of Carcinology (SBC) has sponsored scientific meetings, mainly the "Brazilian Symposia on Carcinology" held from 1982 through 1992, within the framework of the annual Brazilian Congress of Zoology. Recently, the SBC independently organized and sponsored the 1st Brazilian Congress on Crustacean (ICBC), from 16-20 October 2000 at the very comfortable Hotel Fazenda Fonte Colina Verde in Sao Pedro, a small town in the interior of the state of Sao Paulo about 2.5 hours' drive from the capital. This was also the venue for the first meeting of ALCA (Associacion Latinoamericana de Carcinologia).

The ICBC was quite successful, with more than 300 professional scientists and postgraduate and undergraduate students participating from Brazil and Argentina, Canada, Chile, Colombia, Germany, Mexico, Mozambique, Portugal, Singapore, Spain, U.K., U.S.A., Uruguay, and Venezuela. The principal language was Portuguese, with a strong representation of Spanish and English-language reports. About 263 projects were presented either as posters (250) or orally as invited seminars (13). The copepodologist community was well represented by 23 papers.

Tentative plans are to hold the next Congress during the second half of 2002, again in the city of Sao Pedro.

Nauplius, the Society's journal

Nauplius, the official scientific publication of the SBC, has been published annually at regular intervals. The latest volume 7, for the year 1999, was distributed in October 2000. This was the last volume edited by Dr. Monica Montu at the Federal University of Rio Grande. The new editor is Dr. Maria Lucia Negreiros-Fransozo at the State University of Sao Paulo-Botucatu. Certain changes are envisioned, such as:

1) The journal will have a new format, A4 size, with double-column text, to allow for more efficient arrangement of articles.
2) All articles will be published in English. Abstracts may be in English or another language (Portuguese, Spanish, or French).
3) A strong effort will be made to publish two numbers per annual volume, at least in the beginning. The eventual goal is four numbers per volume.
4) The SBC also intends to publish special numbers of *Nauplius*. The first special number will include many of the reports presented during the ICBC.
   The norms for publication are available on the SBC homepage.
   SBC governing members (through 2002) are: Executive Committee: Sergio Luiz de Siqueira Bueno

President; Carlos Eduardo Falavigna da Rocha, Treasurer; and Maria Lucia Negreiros-Fransozo, Secretary. Board: Fosca Leite Pedini, Adilson Fransozo, and Fernando Luis Medina Mantelatto. At present, the SBC has about 250 dues-paying members. SBC address and contact information:

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Janet Reid,
Washington

Could you have a short notice about **donating library collections** to research centers in devaloping countries in the next issue of MONOCULUS (C. H. Fernando, Waterloo)?

Dear Dr. Kirchner

I saw your notice in MONOCULUS of October 2000. I retired 4 years ago and distributed my books, reprints and equipment to nine countries: Ethiopia, Rumania, Czech Republic, Laos, Philippines, Singapore, Brazil and Sri Lanka. My reprint collection of about 20,000 items was sent to NUS, Singapore together with my freshwater zooplankton collection (12,000) samples. I have written in SILNEWS about helping to set up research centers and in SILNEWS 25, 1 May 1998, we set about organizing a center for tropical reservoir fisheries and limnology in The University of Kelaniya, Sri Lanka. This center has received books and equipment since and in addition to my donation, large donations have come from the collections of Professor S.S. de Silva and Dr. Nan Duncan. An appeal will appear in the next issue of SILNEWS.

Sri Lanka has a rather long record of scientific work in natural history from the work of Emerson Tennent, Haeckel and Kelaart (a local) in the nineteenth century . There is a comprehensive book (compilation) on the freshwater fauna and fisheries of Sri Lanka published in 1990 by the National foundation of Sri Lanka (444pp) by C.H.Fernando and co-workers since 1962.

The University of Kelaniya has a number of young scientists working on Limnology and inland fisheries. They are training students for MSc and PhD degrees.

Developed countries have the funds and literature at their disposal for research workers but developing countries are starved for basic background literature and specialized literature for researchers. Many research

projects cannot be even started because of the lack of background literature. Local scientists must be trained locally both to strengthen research organizations and to do research in the countries they live in.

Perhaps you would consider donating your reprints and any other limnological literature to the center in Sri Lanka. Apparently the University of Kelaniya has funds to transport the literature. Also there may be some organizations in Germany like GTZ who may be able to help.

If you have some interest in donating the collection to The University of Kelaniya please contact Professor U.S.Amarasinghe, Department of Zoology, University of Kelaniya, Kelaniya, Sri Lanka. yo who I am sending a copy of this letter.

C.H.Fernando
Waterloo, Canada

Dear Dr. Fernando,

I was enormously pleased to receive your e-mail message from Dec. 15th. There was surprisingly little response to my reprint offer, and those that answered were mostly from within Germany. In the meantime, I promised a lot of my reprints to several groups (most of this is marine literature anyway, not limnological), but didn't mention all my books, monographs, and samples of journals which I have accumulated during my career. Some of these would hopefully be useful to Prof. Amarasinghe and his students in Sri Lanka. I will write to him this week.

To avoid unnecessary bureaucracy, I would send the material at my own expense directly to Sri Lanka in small parcels by surface mail. Because I am still working until June 2001 and have one last manuscript to publish, I can't send away all my literature at once anyway.

Thank you again for your suggestion, Sincerely,

Marianna Kirchner
BAH-AWI, Helgoland

PS – note added in proof: meanwhile, most of the reprints of Marianna Kirchner are handed over to the editor of MONOCULUS, H.-U. Dahms, to be used by his students.

Information to the Members of Copepodologists

It is a great pleasure to inform my new address to the members of the WAC through the Monoculus Copepod Newsletter. I am continuing my research on the production ecology of microzooplankton at Japan under the STA postdoctoral research fellowship program at the address given below:
My current research project and objectives:
Project title, "Application of microzooplankton communities to assess the health of the marine coastal ecosystem" (March 2000 to March 2002)
Objectives:
1. To study geographical variations in abundance, biomass and estimated production rate of microzooplankton in marine coastal waters
2. Estimation of fluxes of carbon and cycling of nutrients in marine waters
3. Measure the toxic effects of heavy metals on microzooplankton communities
4. To develop a new approach to classify the health condition of the marine coastal ecosystem by using microzooplankton as a tool.

Thanking you,
Yours sincerely,

N.Godhantaraman
Hiroshima, Japan

... LITERATURE LITERATURE LITERATURE ...

(Sources marked by an asterisk* have been donated to the MONOCULUS library)

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Corrections to:

„Grievella shanki, a new genus and species of scolecitrichid calanoid copepod (Crustacea) from a hydrothermal vent along the southern East Pacific Rise" –
Proceedings of the Biological Society of Washington 113: 1079-1088 (Frank D. Ferrari & E. L. Markhaseva, 2000). **Page 1080**, column 2, line 4: an extra digit was inadvertently added to

the catalogue number of the holotype; the correct catalogue number is USNM 261784. The length of the female holotype and only specimen was omitted; the dissected female is 2.15 mm with a prosome of 1.61 mm and a urosome of 0.54 mm. **Page 1081**: the last sentence of the figure legend should read: "Scale lines for A & B are 1.0 mm, for C-J 0.1 mm".

2001

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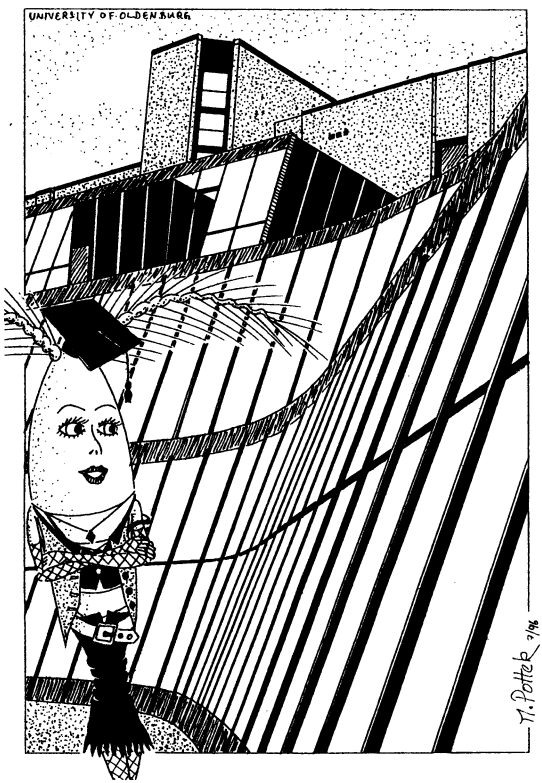

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