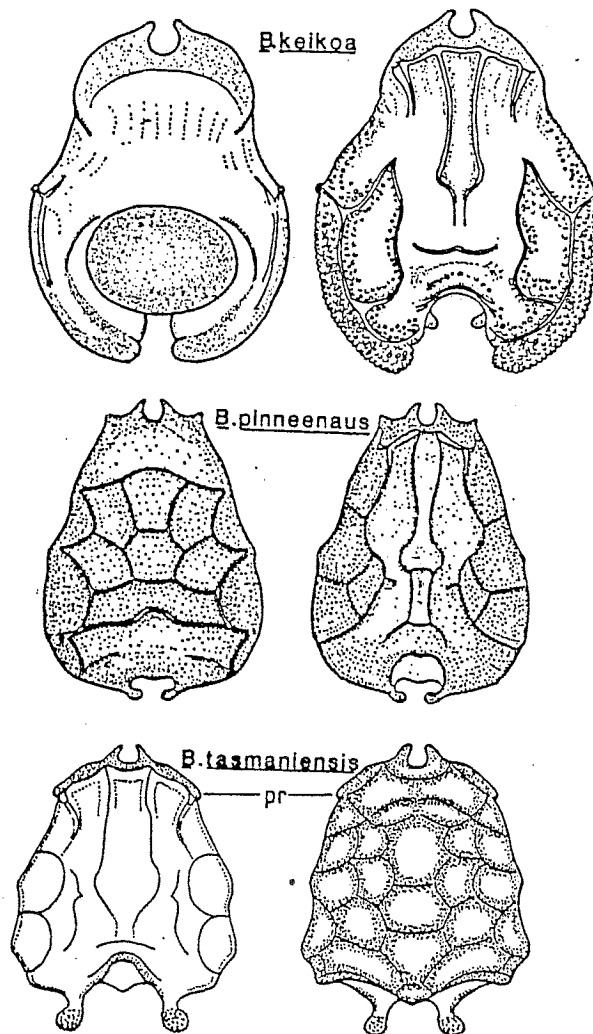


Numbers 16-17

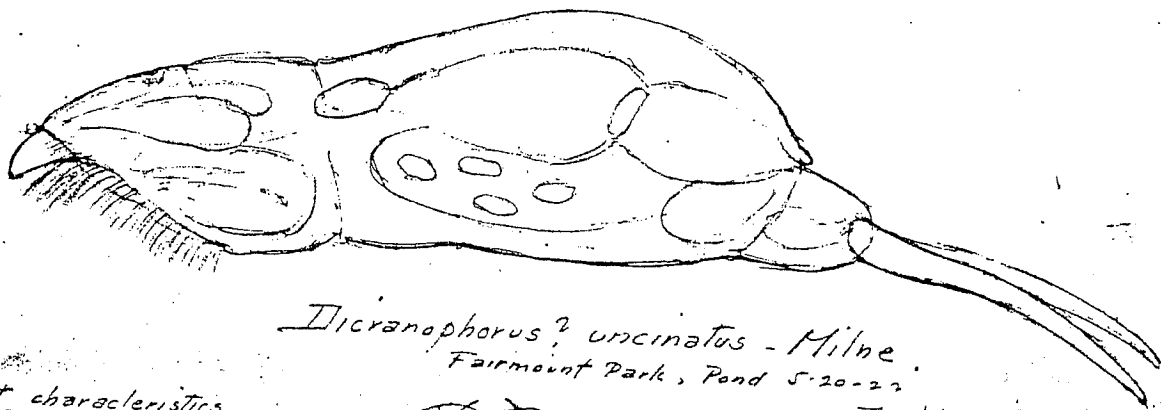
Winter 1989

## Rotifer News

A Newsletter for Rotiferologists Throughout the World.



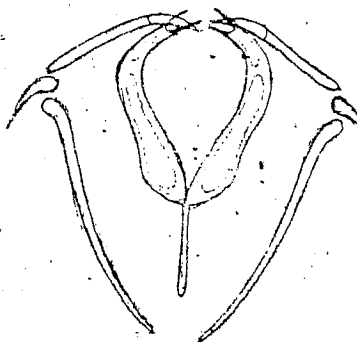
Walter Koste  
Original



*Dicranophorus? uncinatus* - Milne  
Fairmount Park, Pond 5-20-22

Salient characteristics

- Stout beak
- Trophi
- Stomach and intestine deeply divided with 2 synchital cells on constriction as in *Hydrochore* *Tetrasiphon*.
- Long stout toes
- Absence of eyes



Trophi

Trophi

The rami ending in two bristle-like points between which work the tips of the unci are characteristic

The epiphysi between the unci and manubria are characteristic only occurring in three others.

*Enc. algente*, Harring

" *ricciae* "

" *hofstani* deBeauchamp.

F.J. Myers  
Original

Editors: Robert L. Wallace & Paul N. Turner

Correspondance: R.L. Wallace, Department of Biology

Ripon College, 300 Seward Street, Ripon, WI, USA, 54971-0248.

This issue of Rotifer News has been reformatted to fit a standard 8.5" x 11" paper size (i.e., portrait layout). It was originally printed with two full pages reduced to fit sideways on US letter paper (i.e., landscape layout).

TABLE OF CONTENTS

SECTION	PAGE
INTRODUCTION .....	1
NEWS, NOTES, AND REQUESTS .....	1
WORK IN PROGRESS .....	7
DESCRIPTIONS OF NEW SPECIES, NEW FORMS .....	7
RECENT LITERATURE .....	8
INDEX .....	22

ROTIFER NEWS is not part of the normal scientific literature (e.g., journals such as ECOLOGY, HYDROBIOLOGIA, LIMNOLOGY AND OCEANOGRAPHY, and VERH INTERNAT VEREIN LIMNOL); therefore, it should not be cited as such. ROTIFER NEWS is a newsletter that prints citations of recent published literature, abstracts, news, and notes about work in progress or papers being submitted for publication in regular scientific journals as a help to professional and amateur investigators of the phylum Rotifera. ROTIFER NEWS should not be considered to be an exhaustive review of the literature; the editors are not in the position of doing that.

ROTIFER NEWS is printed twice a year (about June and December - January) at Ripon College. Please send reprints and/or references, news, notes, requests to: Robert L. Wallace, Biology Department, Ripon College, 300 Seward Street, Ripon, WI USA 54971-0248.

PLEASE BE SURE TO INFORM THE EDITORS CONCERNING OTHER INVESTIGATORS WHO MIGHT WISH TO RECEIVE ROTIFER NEWS.

PRODUCTION OF ROTIFER NEWS

A letter quality copy of ROTIFER NEWS is produced at Ripon College from text files using a DEC VAX 750 as a text editor and the system programs EDIT (editor) and RUNOFF. The progress we have made in the addition of accents and scientific notation has been lost with the switch from a PDP 11/70 to the VAX. The editors encourage authors to send us reprints so that papers may be properly cited, abstracted, and annotated for the index. PLEASE SEND ONE COPY TO EACH EDITOR!

NEWS, NOTES, AND REQUESTS

Most items received by either editor on or before 15 December 1988 have been included in this issue of ROTIFERS NEWS (combined Nos. 16-17), other items will be printed in issue No. 18, currently scheduled for Winter 1989. This issue was delayed in printing because of a computer glitch: sorry!

NB: The current editors believe that there should (must) be a change in leadership well before the next rotifer symposium (see comments under the discussion concerning the Fifth International Rotifer Symposium, below).

The editors are sorry to inform our readers that we must request support in the production of ROTIFER NEWS. As you are well aware, international and even domestic mailing costs are quite high. Production costs are also quite expensive. We are requiring that the readers of ROTIFER NEWS support us in this valuable endeavor by contributing \$ 5.00 US dollars per year. Readers of ROTIFERS NEWS who wish to may contributions beyond the suggested \$ 5.00 are encouraged to do so !!!! Make all checks payable to either RIPON COLLEGE 352.15 or ROTIFER NEWS. Rotiferologists who cannot contribute because of legal or other financial restrictions may request an exemption.

Please note & take pity on the editors (well at least RLW) my computer transformed itself over the summer from a DEC PDP 11/70 into a VAX 750. As a consequence it ate the current mailing list, does not work as well on giving accents found on non-English words, and in general is just a very large pain in the neck. My files are all over the place! But, if things go well, I will be switching over to the world of Macintosh next summer! That I see as a PLUS or TWO for me (RLW), but it may never come about.

With this issue of ROTIFER NEWS, all back information sent to either editor has been printed at some time. At least our files are empty as of about 15 December 1988. If you have sent us something over the past several months (years) & have not seen it printed in ROTIFER NEWS, please forgive, and sent it to us again!

1. Back issues of ROTIFER NEWS are still available! If you need a back issue (1-15) of ROTIFER NEWS copies are available from Bob Wallace at a cost of \$3.00 per issue to cover mailing and reproduction. Your comments on any aspect of ROTIFER NEWS is requested by the editors!

2. The Fifth INTERNATIONAL ROTIFER SYMPOSIUM: a retrospective (RLW).

Although I have edited this section, since making my initial notes, my reflections on these meetings were made at about 35,000 feet over the Atlantic, approximately 12 hours since leaving my colleagues on a walking tour of Verona, Italy.

The entire program was held at the Palazzo Feltrinelli in the small town of Gargnano in the foothills of the Italian Alps, on Largo di Gardia (12-17 September 1988). It was beautiful! Participants and accompanying persons were housed in several hotels spread throughout the town, each within a 15 minute walk of the conference center. Breakfast could be taken in several of the hotels or elsewhere, and lunch and dinner were provided at the conference center. For those who felt the urge, many excellent restaurants were within a few minutes stroll. Although the weather did not cooperate with us every day, the week was pleasant. About 80 people attended the meetings. Ten of these have been in attendance at all 5: Pierre Clement, Henri Dumont, John Gilbert, Alois Herzig, Charles King, Birger Pejler, Claudia Ricci, Agnes Ruttner-Kolisko, Terry Snell, Robert Wallace. We estimate the number who have been at 4 of the 5, to be at least 30; this number could be known exactly by comparing names of the participants from each symposium, but the editors did not have the time to investigate this aspect of our history.

Three dominant and lasting impressions of the meeting are fixed in my mind. Prominent among these is the feeling that the people who attend the meetings -- whether for the first time or the fifth -- comprise, in a very real sense, a large family. This idea is not new and I take no credit for it, but it is true. The participants and accompanying persons were as much concerned with each other as people, as with the research being discussed. Such is true with any family.

The first time the term family with regard the rotifer symposium was in Gent, back in 1979. If anything this feeling has grown and become more well established: 'who is here and who is not, and why; who has a new job; how are your children and spouse?' From my perspective the notion of family is certainly real, somewhat frightening, and somewhat wonderful. I know of no other conference of this type with this feeling, and wonder if there ever could be. I am totally persuaded that this friendship among the participants is sincere. Those readers of ROTIFER NEWS who have never attended a Rotifer Symposium have indeed missed a unique opportunity, as all five symposia have been of this sort.

My second impression is that in spite of our notion of family, or because of it, our general discussions of the presented papers were overly kind. Comments certainly lacked all traces of hostility that is sometimes found at large meetings. However, criticisms were given, although often in private, and then to improve the MS. The last impression of the meetings is that over the course of the five symposia, the general level of scientific investigations are becoming much more sophisticated and perhaps better prepared. That is not to say that the earlier programs were less well done; we are just becoming better at our science.

As in the previous symposia, Wednesday's scientific program ended at about noon and the afternoon was devoted to a short excursion on Lago di Garda by side-wheel paddle boat to a nearby town. There the group split up for sight seeing, some of which was done entirely from the chairs at local pubs. Aren't rotiferologists amazingly perceptive? Others were more serious about that and went straight to the source -- a local vintner -- where they sampled too much of the processed fruit. (Except for those few with some lame excuse about not liking wine.) An excellent dinner was provided that evening on the boat. Just prior to landing, Peter Starkweather, a member of long standing in the family of rotiferologists, presented on everyone's behalf, flowers to our hostess, Claudia Ricci, and her assistants.

So these are my general impressions of the Fifth International Rotifer Symposium, except to say to Claudia "Excellent and well done"! To the rest of the group I say that "I hope to see you at the next meetings".

On Monday evening one of the editors (R.L. Wallace) made a presentation to the symposium concerning the financial status of ROTIFER NEWS and provided information concerning its printing. I raised four issues that should be addressed here. (1) ROTIFER NEWS is a newsletter and not a journal; it does not publish papers. (2) Production of ROTIFER NEWS is dependent on contributions of money; it is subsidized, in part, by Ripon College (computer related costs); but it must be selfsufficient. However, ROTIFER NEWS does not have a dues or subscription rate (in spite of what might have been said at any time before). We request funds from all who can contribute and encourage those who can to provide double the suggested amount. Nevertheless, those who cannot support ROTIFER NEWS, but who wish to receive it can request it free of any charge. (3) The editors of ROTIFER NEWS request that you send your reprints to to both editors. An honest attempt to include all material sent to either editor will be made. (4) Wallace has been involved in one aspect of ROTIFER NEWS or another of the production of this newsletter for nearly all of the 17 issues that have been printed. I believe that a new editor should be found to replace me well before the next rotifer symposium (summer or fall 1991). Tom Nogrady voiced an interest in becoming at editor, but is not absolutely sure at the moment. In any case I (RLW) am very interested in turning my part of the editorship of ROTIFER NEWS over to someone else as soon as possible.

Several interesting discussions were held in the evenings including one on the "excessive" use of Brachionus plicatilis as a research model.

The view was presented that Brachionus plicatilis receives entirely too much attention in our collective research effort. [In support of this idea please see that about 28 of the 180+ papers listed here are on this species; 10 were on Brachionus calyciflorus and 4 on Polvarthra vulgaris. Eds.-] It was noted by Charles King that Brachionus plicatilis has become the white mouse of the rotifer world, and that this has both +s and -s. Those workers culturing Brachionus plicatilis defended its use, observing that the concentrated effort will provide a large amount of information.

Others argued that we might be missing some interesting species by concentrating our efforts on this one species and that Brachionus plicatilis does not necessarily the best generalized rotifer to study. Some argued that research directed at finding ways to grow Brachionus plicatilis in large numbers or more effectively, was just at type of phenomenology unless it has a sound basis of theory. However, the counter argument that field research that just correlates population dynamics with physical & chemical data can be accused of doing the same thing. The issue was left unresolved. Comments on these issues from the readers of ROTIFER NEWS are welcome!

Following is the program for the 5th International Rotifer Symposium as prepared for the participants. None of the last minute changes in the program are indicated. Therefore, this listing does not represent a general table of contents for the symposium volume. ROTIFER NEWS will print a list of the papers when the symposium volume is published.

## 5th International Rotifer Symposium

Palazzo Feltinelli, Gargnano, 11-17 September 1988

### PROGRAM

#### -Sunday 11th

afternoon 20.00	registration Welcome Snack
--------------------	-------------------------------

#### -Monday 12th

morning 9.00-9.30 9.30-10.20 10.20-11.00 11.00-11.20  11.20-11.40  11.40-12.00  12.00-14.30	<p>(Chairperson T. NOGRADY) Introduction W.T. EDMONDSON: Rotifer study as a way of life. -- Break -- P. L. STARKWEATHER, E. J. WALSH: Influence of cyanobacterial diet on short- and long-term predation risk in <i>Brachionus calyciflorus</i>. J. EJSMTONT-KARABIN, R.D. GULATI, J. ROTH: Is food availability the main factor controlling <i>Euchlanis dilatata lucksiensis</i> Hauer abundance in a shallow hypertrophic lake? K. O. ROTHHAUPT: Different food size preferences allow coexistence of <i>Brachionus</i> species in resource competition experiments. -- Lunch --</p> <p>(Chairperson P. L. STARKWEATHER) L. MAY: Epizootic and parasitic Rotifers. P. TURNER: Some Rotifers from coastal lakes of Brazil, with description of a new Rotifer, <i>Lepadella (Xenolepadella) curvicaudata</i> n.sp. R. J. SHIEL, W. KOSTE: Tasmania revisited: Rotifer communities and habitat heterogeneity. T. NOGRADY: Rotifer associations of some wetlands in Ontario, Canada. -- Break -- M. BRETT: The Rotifer communities of acid-stressed lakes in Maine A. HERZIG, W. KOSTE: The development of <i>Hexarthra</i> spp. in a shallow alkaline lake. A. SCHRIMPF: Effects of measures reducing eutrophication on Rotifers of the Reithen See (Tyrol, Austria) in 1971-1986. B.K. SHARMA: Species composition, taxonomic status and biogeography of Indian freshwater Rotifers, with remarks on their ecology and trophic indicators.</p>
afternoon 14.30-15.20 15.20-15.40  15.40-16.00  16.00-16.20 16.20-17.00 17.00-17.20 17.20-17.40  17.40-18.00  18.00-18.20	<p>(Chairperson P. L. STARKWEATHER) L. MAY: Epizootic and parasitic Rotifers. P. TURNER: Some Rotifers from coastal lakes of Brazil, with description of a new Rotifer, <i>Lepadella (Xenolepadella) curvicaudata</i> n.sp. R. J. SHIEL, W. KOSTE: Tasmania revisited: Rotifer communities and habitat heterogeneity. T. NOGRADY: Rotifer associations of some wetlands in Ontario, Canada. -- Break -- M. BRETT: The Rotifer communities of acid-stressed lakes in Maine A. HERZIG, W. KOSTE: The development of <i>Hexarthra</i> spp. in a shallow alkaline lake. A. SCHRIMPF: Effects of measures reducing eutrophication on Rotifers of the Reithen See (Tyrol, Austria) in 1971-1986. B.K. SHARMA: Species composition, taxonomic status and biogeography of Indian freshwater Rotifers, with remarks on their ecology and trophic indicators.</p>

18.20-18.40 G. A. GALKOVSKAJA, I.F. MITYANINA: Morphological structure and functional pattern of the *Keratella cochlearis* (Gosse) population in a stratified lake.

19.30-21.00 evening -- Dinner --

21.30 B. WALLACE & P. TURNER: Some remarks on Rotifer News

-Tuesday 13th

morning (Chairperson L. MAY)  
9.00-9.50 M. R. MIRACLE: Salinity and temperature influence in Rotifer life history characteristics.  
9.50-10.10 A. SAUNDERS-DAVIES: Horizontal distribution of plankton Rotifers in a small eutrophic lake and its relation to light distribution.  
10.10-10.30 P. CARRILLO, L. CRUZ-PIZARRO, R. MORALES-BAQUERO: Empirical evidence for a complex diurnal movement in *Hexarthra bulgarica* from a oligotrophic high mountain lake (La Caldera, Spain).

-- Break --

10.30-11.00 B. PEJLER: On choice of substrate and habitat in brachionid Rotifers  
11.00-11.20 P. SCHABER: Pelagic rotifers in high mountain lakes of the Eastern Alps (Tyrol, Austria) in relation to environmental factors.  
11.20-11.40 M. SUDZUKI, T. MATSUMOTO, K. NARITA: Occurrences of Rotifera in the field under natural and intentionally-changed conditions. II. Lake Numasawa.  
11.40-12.00 H. R. PAULI: Estimating biomass and productivity of Rotifer communities.  
12.00-12.20 -- Lunch --

12.30-15.00 afternoon (Chairperson B. L. WALLACE)  
15.00-15.50 A. DUNCAN: An ecological comparison of Planktonic Rotifers and Cladocerans.  
15.50-16.10 J. GILBERT: Competition between rotifers and small cladocerans.  
16.10-16.30 L.K. MATVEEVA: Interaction between Rotifera & Cladocera.

-- Break --

16.30-17.00 P. CLEMENT: Muscles of Rotifers.  
17.00-17.50 Posters: G.K. BRAIN: Ecological tolerances of Rotifers occurring in the Kalahari desert, Southern Africa.  
R. CHENGALATH: Composition of arctic pond rotifer communities.  
H. J. DUMONT: The Rotifers of an artificial lake in Belgium.  
I. FERRARI: Abundance and diversity of planktonic Rotifers in the Po River.  
A. J. FRANCEZ: 1) The Rotifer communities in two peat-bog lakes in the Puy-de-Dome (France). 2) Ecology and biogeography of sessile Rotifer communities in Auvergne peat-bogs (France).  
E. MIKSCHI: Rotifer distribution in relation to temperature and oxygen content.  
R. MORALES BAQUERO: Patterns in the composition of the Rotifer communities from high mountain lakes and ponds in the Sierra Nevada (Spain).  
R. PONTIN: Opportunist Rotifers: colonising species of young ponds in Surrey, England.  
S. RADWAN: Percentage of Rotifers in spring zooplankton in lakes of different trophy.  
M. SERRA: Size variation in *Brachionus plicatilis* resting eggs.  
W. ZOUFAL: The developing capacity of Rotifer population from a run-of-river station on the Danube (Austria).

-- Dinner --

20.00-21.30 evening Posters discussion (continued)  
21.30

-Wednesday 14th

morning (Chairperson A. RUTTNER-KOLISKO)  
9.00-9.50 T. SNELL: Reproductive isolating mechanisms in Rotifers.  
9.50-10.10 C. E. KING: Molecular evolution of the Rotifer mitochondrial genome.  
10.10-10.50 -- Break --  
10.50-11.10 E. WALSH: Genetic variation in oviposition behavior of the littoral Rotifer *Euchlanis dilatata*.  
11.10-11.30 C. RICCI, M. PAGANI, A. M. BOLZERN: Temporal analysis of a clonal structure in a moss bdelloid population.  
12.00-14.00 -- Lunch --

afternoon  
15.00-22.00 facultative excursion on the lake and banquet



-Thursday 15th

morning	(Chairperson B. PEJLER)
9.00-9.50	R. J. M. SHIEL: Classical taxonomy and modern methodology.
9.50-10.10	R. L. WALLACE: Phylogenetic relationships within the genus <i>Notholca</i> (Rotifera).
10.10-10.30	E. HOLLOWDAY: A re-appraisal of two notholcas from the Andes.
10.30-11.00	--Break--
11.00-11.20	A. RUTTNER-KOLISKO: Taxonomical problems in Rotifers exemplified on the genus <i>Filinia</i> .
11.20-11.40	W. T. EDMONDSON: Morphological variation of <i>Kellicottia longispina</i> .
11.40-12.00	K. ROSEH: Temporal variation in <i>Keratella quadrata</i> body shape.
	Poster: L. A. KUTIKOVA: The basic principles of constructing a system of Rotifers.
12.30-15.00	--Lunch--
afternoon	
15.00-16.30	workshop: problems of systematics and species concept in Rotifers chaired by R.J. SHIEL
16.30-17.00	--Break--
17.00-19.00	workshop (continued)
20.00-21.30	--Dinner--
evening	free

-Friday 16th

morning	(Chairperson K. HIRAYAMA)
9.00-9.50	E. LUBZENS: Rotifers as food in aquaculture.
9.50-10.10	A. HAGIWARA: Effect of incubation and preservation on the hatching and hatched clones from resting eggs of the Rotifer <i>Brachionus plicatilis</i> .
10.10-10.30	J. KORSTAD: Life history of <i>Brachionus plicatilis</i> fed different algae.
10.30-11.00	--Break--
11.00-11.20	K. HIRAYAMA: Nutritional effect of freshwater <i>Chlorella</i> on the growth of the Rotifer <i>Brachionus plicatilis</i> .
11.20-11.40	C. M. JAMES: Intensive Rotifer cultures using chemostats.
11.40-12.00	F. BARBATO: Simplified mass production of <i>Brachionus plicatilis</i> through a modular system in greenhouse.
	Poster: C. M. HERNANDEZ CRUZ: Survival of <i>Sparus aurata</i> larvae in critical period fed with B <sub>6</sub> and S-1 strains of <i>Brachionus plicatilis</i> .
12.30-15.00	--Lunch--
afternoon	(Chairperson J. J. GILBERT)
15.00-15.20	M. YUFERA: Biomass and elemental composition (C.N.H.) of the Rotifer <i>Brachionus plicatilis</i> cultured as larval food.
15.20-15.40	O. VADSTEIN: Filtering and ingestion rates of <i>Brachionus plicatilis</i> .
15.40-16.00	Y. OLSEN: Changes in fatty acids and total lipid content in enriched <i>Brachionus plicatilis</i> upon short-time starvation.
16.00-16.20	C. GUISANDE: Analysis of protein, glucid and lipid in Rotifers
16.20-17.00	--Break--
17.00-17.20	W. NAGATA: Nitrogen flow through a <i>Brachionus/Chlorella</i> mass culture system.
17.20-17.40	R. GULATI: A laboratory study of phosphorus and nitrogen excretion of <i>Euchlanis dilatata lucksiana</i> .
17.40-18.00	R. T. RAMAKRISHNA: Population energetics of <i>Brachionus patulus</i> Muller (Rotifera) grown at different food and temperature levels.
18.00-18.20	N. WALZ: Temperature aspects of ecological bioenergetics in <i>Brachionus angularis</i> (Rotatoria).
	Poster: M. J. CARMONA NAVARRO: Protein variability in <i>Brachionus plicatilis</i> aging, female types, and strains.
	A. ESPARCIA COLLADO: Facultative microaerobiosis in <i>Brachionus plicatilis</i> .
20.00-21.30	--Dinner--
evening	free

-Saturday 17th

8.30-18.30	optional day tour to Verona
------------	-----------------------------

No firm time or place has been reported to the editors of ROTIFER NEWS for the next meetings, although we understand that some 4 or 5 different sites were suggested and several formal proposals were sent to the 'Gang of Five' for their consideration. {NB: the 'Gang of Five' are the hosts and hostesses of all the previous meetings. They make the decision on where the next symposium will be held.}

3. Birger Pejler has 6 manuscripts in preparation: 1 with G. Morling (Acidification and zooplankton development in some west-Swedish lakes 1966-1983); 5 with the late Bruno Berzins (Rotifer occurrence in relation to temperature, Rotifer occurrence in relation to oxygen content, Rotifer occurrence and trophic degree, Rotifer occurrence in relation to water color, On choice of substrate and habitat in brachionid rotifers).

4. David Kuczynski writes to report the following. During the last Argentine Antarctic Expedition (Jan-Mar 1987), I found Brachionus havanaensis var. trachea (Murray) & Brachionus bidentatus bidentatus Anderson in 25 de Mayo (King George Island, South Shetland (62 14'S-58 38'W) & Brachionus bidentatus f. inermis (Rousselet) in Barry Islet, Marguerite Bay (68 07'S-67 08'W). The 3 taxa are new for the Antarctic continent. These records represent an important support to Dumont's (1983) hypothesis that the genus Brachionus is of Gondwanian origin; the communication entitled "On the Gondwanian origin of the genus Brachionus & its record for the Argentine Antarctic" was discussed at the Annual Meeting of the Argentine Paleontological Association (Buenos Aires, August 1987), and will be published in the next issue of Biol. Assoc. Paleontol. Arg.

5. Richard Stemberger's (1979) work (an EPA report) entitled Guide to Rotifers of the Laurentian Great Lakes may be obtained from the following source: National Technical Information Service, 5285 Port Royal Road, Springfield, VA, USA, 22161; [Phone (703)-487-4650] for about \$7.00 US for either paper or microfiche + shipping. The EPA report number is 6000479021 and the ordering number from NTIS is PB80-101280.

6. Clara Constanza Martínez <Address: CECOAL (Conicet). Castilla de Correo 291, 3400 Corrientes ARGENTINA> has the following works in press.

- Especies de Lecane (Rotifera, Monogononta) en ambientes acuáticos del Chaco Oriental y del valle aluvial del río Paraná (Argentina). (Lecane species (Rotifera, Monogononta) from waterbodies of the Eastern Chaco and the Paraná floodplain (Argentina)). Martínez, C.C. y S. José de Paggi.
- El zooplancton de un ambiente lenítico del valle de inundación del río Paraná (Chaco, Argentina). (Zooplankton from a meander-scroll lake of the Paraná river floodplain (Chaco, Argentina)). Martínez, C.C.
- Estudios ecológicos en campos de arroz (Corrientes, Argentina). Fluctuaciones cuali y cuantitativas de la fauna heleoplanctónica. (Ecological studies in ricefields (Corrientes, Argentina). Quali-cuantitative fluctuations of the heleoplanktonic fauna). Martínez, C.C. y S.M. Frutos.
- Rotíferos planctónicos en ambientes acuáticos del Chaco Oriental (Argentina). (Planktonic rotifers from waterbodies of the Eastern Chaco (Argentina)). Martínez, C.C. y S.M. Frutos.
- El zooplancton en ambientes leníticos inundables en el área de confluencia Paraná-Paraguay (lagunas Llanta, Perdida y bañado Chpui). (The zooplankton from lenitic waterbodies in the confluence area of the Paraná and Paraguay rivers (Llanta and Perdida ponds, and a small back-water). Frutos, S.M. y C.C. Martínez.
- Distribución horizontal de rotíferos planctónicos en un madrejón del valle de inundación del río Paraná (Chaco, Argentina). (Horizontal distributios of planktonic rotifers from a meander-scroll lake of the Paraná river floodplain (Chaco, Argentina)). Martínez, C.C.
- Variabilidad en Testudinella (Rotifera, Monogononta) en ambientes lóticos y leníticos de Chaco, Formosa y Corrientes (Argentina). (Morphological and anatomical variation in Testudinella (Rotifera, Monogononta) from lotic and lenitic waterbodies of Chaco, Formosa and Corrientes (Argentina)). Martínez, C.C.

She also is interested in other aspects of zooplankton: trophic relationships, effect of biotic and abiotic factors on zooplankton.

7. Howard Taylor (Address: 1812 Wood Hollow Court, Sarasota, FL, 34235, USA) has developed a new Microcompressor & will make it available to rotiferologists as described in the following 5 paragraphs. Following Howard's description we present a review of the Microcompressor by one of the editors (FNT) who used it in trials for Howard to help work out the bugs. For lack of a better term, we are calling this new Microcompressor the Taylor Microcompressor.

Please note that workers who wish to purchase the Taylor Microcompressor should write Howard directly, & not to the editors of ROTIFER NEWS.

#### NEW MICROCOMPRESSOR

Howard L. Taylor announces the availability of his new high-precision Microcompressor. The instrument is the product of many years of thought and six years of prototyping and testing in the course of working with rotifers.

The Microcompressor is designed to restrict the motion of even the smallest rotifer and to be used in rolling trophi during examination. It is compatible throughout the entire range of light microscopes equipped with high-aperture substage condensers and parfocal objectives mounted on revolving nosepieces.

The Microcompressor is basically of the Rousselet type, but it incorporates a number of very important improvements. An isolation system is built into the adjusting mechanism to prevent unwanted lateral displacement of the coverslip during vertical adjustments. The adjusting column is located at the rear, right-hand corner of a 75 x 50 mm glass base where it does not interfere with objective changes. A 12 mm diameter specimen stage is mounted on the base for a combined thickness of under 1.2 mm. The coverslip, with a thickness of under 0.17 mm, is supported under a large opening in an arm which extends from a knurled hub on the adjusting column. This hub is concentric with a knurled, vertical adjusting knob above it.

In use, all settings are made with the two controls on the adjusting column. There is no need to touch the arm. The glass base eliminates the risk of losing a specimen that may have worked its way over the edge of the stage.

The Microcompressor is priced at \$365.00 plus shipping and comes with detailed instructions for its use and maintenance. It is available from Howard L. Taylor, 1812 Wood Hollow Court, Sarasota, Florida 34235, USA.

#### Review of the Taylor Microcompressor:

First of all, I like this compressor. It is easy to use, practical and adjustable. It is big enough for large specimens, and small enough for the tiniest. The precision crafted into the design is adequate for most practical precision work.

Initially, I had trouble getting used to the glass base of the device, thinking it a bit fragile. But after what I consider harsh treatment for several days, carrying it in my briefcase wrapped in a handkerchief (forgive me), I am impressed that the compressor can withstand what I consider reasonable knocking about!

I used it no less than twenty times on separate specimens of rotifers. Each time I used it I became a little more dependent on the utility of its design and the practicality of its use for little-creature manipulations.

After using it in my laboratory at home and at the Museum, there was little doubt that it was as useful as it could be. The Rousselet compressors I am familiar with and dependent on, paled in comparison. No longer did I have to rotate the compressor 180 degrees in order to avoid banging the objectives on the five objective nosepiece of my Olympus CH. No longer did I have to slide the stage forward to rotate a higher magnification objective into place, then slide it back in hopes the specimen was still there.

The placement of the adjustment screw is out of the way for all revolving nosepieces I tried, and the breadth of the arm opening is practically perfect. One problem item I did encounter is that when I used an AO planapochromat 40/.66 objective (on an AO microscope not my own), since the shape of the objective is quite flat on the operational end, the arm of the compressor positively had to be in the closed position in order for the swivel of the objective not to bang the compressor. This was the only operational problem I encountered, however, and virtually all other lenses worked fine in a variety of compressor arm positions.

When Howard sent me the compressor for a trial, he suggested that I try to replace the coverslip using the new technique and instructions he developed. Through the procedure I had no trouble except for the epoxy application. The droplets of epoxy used to secure the coverslip needed to be much smaller than I had envisioned prior to entering the procedure. Thus, the first attempt at this item left several blobs of annoying and interfering glue on both coverslip and baseplate. Never fear though, proper solvent and enough epoxy and away we go again! I purposely and scrupulously followed the details of the instructions the second time, (with the benefit of experience), and had little trouble replacing the coverslip after the first miserable abort. The instructions for replacing the coverslip were clear, and with some minor modification (to make them idiot proof!) to the order of steps, were quite adequate.

Also, as far as I can tell, its high mechanical performance suffered no significant deviation from the precision standards the compressor arrived with. (As it turned out, Howard wrote me about the coverslip-to-stage contact after its trip by registered mail back to his laboratory. . . . it was within 0.0025 mm overall.)

Without exception, every individual at the Museum who works on small critters and to which I showed the instrument, applauded its utility. They subsequently asked how much it was and where and when they could procure one for themselves.

The only improvement I can offer in the design of the instrument might be to have a 'right' handed instrument, and a 'left' handed one. The different hands would reflect the placement of the screw on the right or left of the baseplate itself. This diversity would bring the advantage of being able to adjust the mechanical stage (and/or the fine adjustment screw) with one hand, and adjust the compressor with the other. I know that my Unitron monocular microscope mechanical stage adjusts on the upper stage in near right side, and that the right handed compressor worked fine because the adjustment for the compressor was also in the close vicinity. My Olympus CH, however, is binocular, and the stage adjustments are located under the far right hand part of the stage. I use my right hand for stage adjustments and fine focus. I would prefer a left handed compressor for use with this microscope because my right hand is occupied with fine adjustment and mechanical stage movements, and my left hand is always free.

This is the only difficulty I have with this compressor, beside the price to we who must rely on our own funds for procurement of such a splendid device. It is, however, a small price to pay for a high caliber instrument in today's world. And to the innovation of individuals such as Howard Taylor, we owe at least fair and equitable recognition and price.

Rotiferologically, PNT.

8. Diethelm Ronneberger (Address: Akademie der Wissenschaften; Zentral fuer Mikrobiologie und experimentelle Therapie, Abt. Limnologie, Aussenstelle Stechlin, DDR-1431 Neuglobsow, Altfischerhuetten, GERMAN DEMOCRATIC REPUBLIC) writes that he is planning a publication on the topic of rotifer grazing, abundance, and mass development of algae.

9. George Salt has written & has 1 work in review entitled "Competition for prey, reproduction performance, & the avoidance of exclusion in 2 rotifers, Asplanchna girodi & Asplanchna priodonta" and another in progress entitled "Comparisons of diet and reproductive output in Asplanchna sieboldi & Asplanchna brightwelli".

10. Warren Nagata has taken a job with the National Research Council of Canada and Malaspina College as an Industrial Technology Advisor. His address is Dr. W. Nagata National Research Council Canada, Industrial Research Program, Malaspina College, 900 Fifth Street, Nanaimo, B.C. V9R 5S5, CANADA.

11. William Whiteley has written to say that he is preparing a paper for the Quekett Journal on Enicentrum linnhei Scott 1974. He also is interested in Seison. His address is Midway, Chapel Hill, Truro, Cornwall, England, TR1 3BP.

12. Tom Nogrady has suggested adding a few drops of glycerine to vials in which preserved rotifers are to be stored. Thus, if the lids crack and the liquid dries up, the specimens will not be lost.

Tom also wishes to call your attention to a new series in its formative stages on a complete taxonomical review of the Rotifera. Anyone who is interested in contributing to this work on a specific group (Family level at least, & world-wide) should contact Tom directly. (Address: Dr. Tom Nogrady, Department of Biology, Queen's University, Kingston, ONTARIO, K7L 3N6, CANADA)

13. The Biennial Report (1986-1987) of Israel Oceanographic and Limnological Research, ISSN 0792-0911, has been published. Included in the descriptions of research activities are 2 works by Esther Lubzens: (1) Setting up a rotifer (Brachionus plicatilis) strain and clone "Bank" for use live or preserved in Aquaculture; (2) Oogenesis and its Hormonal control in a Penaeid Shrimp. Also described under the activities of the National Center for Mariculture, Elat is a short description of the use of Brachionus plicatilis as food for Sparus ayra larvae. This report is available from Tel-Shikmona, P.O.B. 8030, Haifa 31080, Israel.

14. For those interested in Artemia: ARTEMIA NEWSLETTER, number 10, November 1988, Editor: Patrick Sorgeloos, State University of Ghent, Faculty of Agriculture, Artemia Reference Center, Rozier 44, B-9000 Ghent, BELGIUM. In our opinion ARTEMIA NEWSLETTER is an excellent.

15. 91-Korstad, J. 1988. A selected bibliography on the biology of Brachionus plicatilis, with particular reference to feeding, life history, 7 population dynamics. SINTEF Report No. STF21 A88027, ISBN 82-595-5059-5, Division of Applied Chemistry, The Foundation for Scientific & Industrial Research at the Norwegian Institute of Technology, N-7034 Trondheim,

NORWAY) <Summary: Brachionus plicatilis is a mixohaline rotifer commonly used as start food for marine fish larvae. This bibliography contains 390 references on the biology of this organism published through December 1987. These references emphasize the feeding, life history, & population dynamics of B. plicatilis.> <Keywords: Brachionus plicatilis, rotifers as food for fish, feeding, food, life history, population dynamics, bibliography>

\*\*\*\*\*

Dr. John J. Gallagher (1914-1987)

#### In Memorium

John J. Gallagher, Zoologist, Taxonomist, and Systems Ecologist was born in Philadelphia, Pennsylvania, March 30, 1914. He received the degree of Bachelor of Arts (1949) and the degree of Doctor of Philosophy (1955) from the University of Pennsylvania. He completed post-doctoral studies in Systems Ecology at the University of Tennessee, Knoxville in 1968.

Dr. Gallagher's professional activities were related to research in the taxonomy of the Rotifers and in environmental ecology. In his research, he demonstrated the complexity of cyclomorphosis, he originated the theory of rotifer population variations; he brought together shore-influenced methods of rotifer collection, and he discovered new rotifer species in Idaho and in Louisiana. Dr. Gallagher served as consultant and made rotifer determinations for the Philadelphia Academy of Natural Sciences for many years. As Senior Research Associate at State University of New York College at Brockport, he participated in the Fancher Lake project.

He was a scientist, teacher, scholar, author. He was a member of numerous professional organizations; among them: American Association for the Advancement of Science, The American Microscopical Society, The American Society of Limnology and Oceanography; the Pennsylvania Academy of Science. He was a member of the Will-Grundy-Kankakee County Health Planning Council (1971-1974); a member of Sigma Xi; the Anglo-American Academy.

He held offices in many professional organizations. In Idaho, he was a member of the Founders Committee and of the Constitution Committee of the Idaho Academy of Sciences (1958-1959); Chairman of the Membership Committee and Secretary-treasurer (1959-1960).

Dr. Gallagher was an author. His articles appeared in a number of professional publications: PROCEEDINGS OF THE PENNSYLVANIA ACADEMY OF SCIENCE, TRANSACTIONS OF THE AMERICAN MICROSCOPICAL SOCIETY, THE AMERICAN JOURNAL OF NURSING, and others. He wrote a chapter on the Rotifer in A GUIDE TO THE STUDY OF FRESH WATER BIOLOGY, by Needham and Needham. In California, he served as consultant on Rotifer Determinations for Henningsen, Durham, and Richardson Ecoscience Division, Santa Barbara, California, 1976. His publications: Doctoral Dissertation: "Cyclomorphosis in the rotifer Keratella cochlearis Gosse." University of Pennsylvania. 1955. Published by microfilm and deposited with the University of Michigan Microfilm Service, Ann Arbor, Michigan. Other publications: 1) "Collection Methods for Benthic Rotifers", 1956, PROCEEDINGS PENNSYLVANIA ACADEMY OF SCIENCE, 30:247-250; 2) "Cyclomorphosis in the rotifer Keratella cochlearis Gosse", 1957, TRANSACTIONS AMERICAN MICROSCOPICAL SOCIETY, 76:197-203; 3) "Generic Classification of the Rotifers", 1957, PROCEEDINGS PENNSYLVANIA ACADEMY OF SCIENCE, 31:183-187; 4) "Rotifers of the Snake River Valley, Idaho", 1958, PROCEEDINGS PENNSYLVANIA ACADEMY OF SCIENCE, 32:225-228; 5) "A Note to Rotifer Investigators", 1960, AMERICAN MIDLAND NATURALIST, 63:247; 6) "Study of the Amount of Search Time That Can Be Profitably Spent in the

Examination of Plankton Samples", 1960, JOURNAL ACADEMY OF SCIENCE, IDAHO, 1:35-40; 7) "World List of Rotifer Workers", 1962, TRANSACTIONS AMERICAN MICROSCOPICAL SOCIETY, 81:282-289; 8) "The Influence of Food, Predation, pH and Temperature on Invertebrate Aquatic Population Fluctuations--A Hypothesis", 1962, PROCEEDINGS LOUISIANA ACADEMY OF SCIENCES, 25:25-31; 9) "Rotifer" section in A GUIDE TO THE STUDY OF FRESH WATER BIOLOGY, Needham and Needham, 1962; 10) "Field Verifications of Two General Factors Influencing Population Variation in Euplanktonic Rotifers", 1963, PROCEEDINGS LOUISIANA ACADEMY OF SCIENCES, 26:58-65; 11) "Winter Rotifers of Bayou De Siard, Monroe, Louisiana", 1965, PROCEEDINGS LOUISIANA ACADEMY OF SCIENCES, 28:31-40; 12) "Rotifers New to Louisiana", 1966, PROCEEDINGS LOUISIANA ACADEMY OF SCIENCES, 29:59-63; 13) "Computer Assisted Instruction Program: 'The Cell'", 1969, also "Development of Performance Measures and Instructional Tasks for a College Biology Unit", State University College at Brockport, summer 1969, Grant award, U.S. Office of Education; 14) \_\_\_\_\_ and Anna Helen Gallagher, "A Phantasy--(With References)", 1970, AMERICAN JOURNAL OF NURSING, LXX, No. 3, March 1970, pp. 538-542.

Dr. Gallagher's biography is recorded in many references; among them: WORLD WHO'S WHO IN SCIENCE, 1st Edition; LEADERS IN AMERICAN SCIENCE, 6th Edition; INTERNATIONAL WHO'S WHO OF CONTEMPORARY ACHIEVEMENT, 1985/86; AMERICAN MEN AND WOMEN OF SCIENCE, 12th Edition; INTERNATIONAL BOOK OF HONOR, First World Edition; COMMUNITY LEADERS OF AMERICA, 12th Edition; WHO'S WHO IN CALIFORNIA, 14th Edition; ANGLO-AMERICAN WHO'S WHO, 1981.

JOHN J. GALLAGHER, Ph.D.

March 30, 1914 - April 27, 1987

#### PUBLICATIONS

##### DOCTORAL DISSERTATION:

Cyclomorphosis in the rotifer Keratella cochlearis Gosse.  
University of Pennsylvania. 1955. Published by microfilm  
and deposited with the University of Michigan Microfilm  
Service, Ann Arbor, Michigan.

##### OTHER PUBLICATIONS:

Gallagher, J. J. 1956. "Collection Methods for Benthic Rotifers." PROCEEDINGS PENNSYLVANIA ACADEMY OF SCIENCE. 30:247-250.

\_\_\_\_\_. 1957. "Cyclomorphosis in the rotifer Keratella cochlearis Gosse." TRANSACTIONS AMERICAN MICROSCOPICAL SOCIETY, 76:197-203.

\_\_\_\_\_. 1957. "Generic Classification of the Rotifers." PROCEEDINGS PENNSYLVANIA ACADEMY OF SCIENCE. 31:183-187.

\_\_\_\_\_. 1958. "Rotifers of the Snake River Valley, Idaho." PROCEEDINGS PENNSYLVANIA ACADEMY OF SCIENCE. 32:225-228.

\_\_\_\_\_. 1960. "A Note to Rotifer Investigators." AMERICAN MIDLAND NATURALIST. 63:247.

\_\_\_\_\_. 1960. "Study of the Amount of Search Time That Can Be Profitably Spent In The Examination of Plankton Samples. JOURNAL ACADEMY OF SCIENCE, IDAHO. 1:35-40.



- \_\_\_\_\_. 1962. "World List of Rotifer Workers."  
TRANSACTIONS AMERICAN MICROSCOPICAL SOCIETY. 81:282-289.
- \_\_\_\_\_. 1962. "The Influence of Food, Predation, pH and  
Temperature on Invertebrate Aquatic Population  
Fluctuations--A Hypothesis." PROCEEDINGS LOUISIANA ACADEMY  
OF SCIENCES. 25:25-31.
- \_\_\_\_\_. 1962. Rotifer Section in A GUIDE TO THE STUDY OF  
FRESH WATER BIOLOGY. Needham, J. G. and Needham, P. R.,  
San Francisco; Holdon-Day, Inc. 1962. (pp. 18-21).
- \_\_\_\_\_. 1963. "Field Verifications of Two General  
Factors Influencing Population Variation in Euplanktonic  
Rotifers." PROCEEDINGS LOUISIANA ACADEMY OF SCIENCES,  
26:58-65.
- \_\_\_\_\_. 1965. "Winter Rotifers of Bayou De Siard,  
Monroe, Louisiana." PROCEEDINGS LOUISIANA ACADEMY OF  
SCIENCES. 28:31-40.
- \_\_\_\_\_. 1966. "Rotifers New to Louisiana." PROCEEDINGS  
LOUISIANA ACADEMY OF SCIENCES. 29:59-63.
- \_\_\_\_\_. 1969. Computer Assisted Instruction Program:  
"The Cell." "Development of Performance Measures and  
Instructional Tasks for a College Biology Unit." State  
University College at Brockport. Summer, 1969. Grant  
Award, U.S. Office of Education.
- \_\_\_\_\_ and Anna Helen Gallagher, 1970. "A Phantasy--(With  
References)". AMERICAN JOURNAL OF NURSING LXX, No. 3,  
March, 1970; pp. 538-542.

In summary, all the articles above except two, deal with the taxonomy and ecology of the Rotifera; complexity of cyclomorphosis; shore-influenced methods of rotifer collection; generic classification of Rotatoria; rotifer population variations; new species of Rotifera. Two articles deal with the Computer in the use of teaching and in the health sciences. The 1969 publication deals with the use of Computer Assisted Instruction in teaching Biology. The article, "A Phantasy--(With References)" deals with the use of Computers in the health sciences.

#### A LIVING MEMORIAL:

Over his career, Dr. Gallagher carefully gathered more than 1,000 publications on rotifers, including original monographs, offprints, and edited works. His collection contained most of the older references on the phylum, including good coverage of the Russian literature. In addition to this bibliographic work, Dr. Gallagher also carefully recorded all species citations from all systematic works on rotifers known to him. The work has been computerized & the result is a unique index of species citations from the world literature cross-referenced to the bibliography and the species index will be published by the Carnegie Museum of Natural History in 1989 as "A Bibliographic Catalog of Rotifers." Dr. Anna H. Gallagher is editing the bibliography and bringing it up to date (1758-1987), and Dr. John E. Rawlins is editing, proofing, and making current the species citations index. The result will be a remarkably complete catalog to the literature with more than 13,000 taxonomic citations for rotifer species.

Information in the John J. Gallagher Collection is available to all interested scientists. Please direct inquiries to:

Curator in Charge, Section of Invertebrate  
Zoology, The Carnegie Museum of Natural History, 4400  
Forbes Avenue, Pittsburgh, Pennsylvania 15213, USA.

In an effort to keep the collection current and active, all persons publishing on rotifers are asked to send reprints of their recent publications to The Carnegie Museum of Natural History. [The editors of ROTIFER NEWS fully support the effort of The Carnegie Museum in this effort, and thank Dr. Anna Gallagher for her effort in continuing her husband's work.]

### 3. WORKSHOPS OF INTEREST

Several papers in WORKSHOP ON FOOD FOR LARVAL ORGANISMS IN AQUACULTURE AND MARICULTURE: Live or Inert, Elat, Israel, April 13-14, 1983. *Isr Journal Zool* 33(4). [1] Meragelman E., Lubzens E., & Minkoff, G. A modular system for small-scale mass production of the rotifer Brachionus plicatilis. [2] Minkoff, G., Lubzens, E., & Meragelman, E. Improving asexual reproduction rates in a rotifer, Brachionus plicatilis by salinity manipulations. [3] Lubzens, E., Minkoff, G., & Meragelman, E. Mass cultivation of the rotifer Brachionus plicatilis as food for larval stages in mariculture. [4] Rothbard, S. Culture of Rotifera in Japanese mariculture centers. [5] Tandler, A. The rotifer Brachionus plicatilis as food for the larva of the gilthead seabream, Sparus curata. [6] Sagi, G. Rotifers & cooled nauplii of Artemia salina as first food for the larvae of the gray mullet Liza ramada. [7] Samocha, T.M. & Browdy, C. A preliminary comparison of 2 methods for rearing larvae of green tiger prawn, Penaeus semisulcatus at Elat, Israel. (Keywords: rotifers as food for fish, rotifers as food for shrimp, aquaculture, Brachionus plicatilis)

### DESCRIPTIONS OF NEW SPECIES

14- Brownell, C.L. 1988. A new pelagic marine rotifer from the southern Benguela, Synchaeta hutchingsi, new species, with notes on its temperature & salinity tolerance and methods of culture. *Hydrobiologia* 162(3): 225-234. (Address: Oceanic Institute, Makapuu Point, Waimanalo, HI 96795, USA) (Summary: A new sp. of marine rotifer is described from the S.E. Atlantic off Cape Town: Synchaeta hutchingsi new species. Synchaeta hutchingsi is unique among the approximately 36 recognized Synchaeta sp. in exhibiting the following combination of characters: single sharply pointed toe; slender bristle along ventral midline of foot; single lateral antenna on left side near foot base; spur on dorsal side of foot used to carry egg; total length 165-200 um.) (Keywords: rotifers as food for fish, taxonomy, new species, biogeographic, Synchaeta hutchingsi new species)

154- Sharma, B.K. 1987. The distribution of the lecanid rotifers, Rotifera: Monogononta: Lecanidae, in North-Eastern India. *Rev Hydrobiol Trop* 20(2): 101-106. (Address: Department of Zoology, North-Eastern Hill University, Shillong-793014, INDIA) (Summary: 30 spp. (32 taxa) of the genus Lecane (Family: Lecanidae), including Lecane jaintiaensis sp. n., are examined from North-Eastern India. 7 taxa are new to India while 25 taxa represented new records from this region. Remarks are made on the distribution & ecology of the different taxa.) (Keywords: Lecane jaintiaensis new species, taxonomy, new records, Lecanidae, biogeography)

172- Turner, P.N. 1987. A new rotifer from a coastal lake in southeastern Brazil: Hexarthra longicornicula, new species. *Hydrobiologia* 153(2): 169-174. (Address: Department of Invertebrate Zoology, National Museum Natural History, Smithsonian Institution, Washington, DC 20560, USA) (Summary: A new rotifer is described from among samples taken from coastal lakes in southeastern Brazil. This new form belongs to the Hexarthra

mira-intermedia sp.-group by way of its general morphological configuration, the number of teeth in the trophi (5), & the 2 club-shaped caudal appendages. An extremely long dorsal antenna & very long setae extending from the bend in the ventro-lateral arm characterize this animal's speciation) (Keywords: Hexarthra mira intermedia, new description, taxonomy, Brazil)

173- Turner, P.N. 1987. Keratella rotifers found in Brazil, & a survey of Keratella rotifers from the Neotropics. Amazoniana 10(2): 223-236. (Address: see above) (Summary: 8 Brazilian lakes were examined for rotifers. Of the 57 spp. found, 4 were members of the genus Keratella. A literature search revealed about 15 spp. and subsp. of Keratella recorded from the Neotropics, 11 of these from Brazil. All known Neotropical Keratella rotifers are discussed & figured, with highlights on the endemics. Related spp. are discussed when confusion may arise with identifications. Taxonomic details of specific significance are listed in order of importance, & the state of expert consensus about this genus is given. Ecology & distribution of these rotifers also are discussed.) (Keywords: biogeography, taxonomy, neotropics)

175- Turner, P.N. 1987. A new rotifer from a coastal lake in southeastern Brazil: Hexarthra longicornicula, new species. Hydrobiologia 153(2): 169-174. (Address: see above) (Summary: A new rotifer is described from among samples taken from coastal lakes in southeastern Brazil. This new form belongs to the Hexarthra mira-intermedia sp. group by way of its general morphological configuration, the number of teeth in the trophi (5), & the 2 club-shaped caudal appendages. An extremely long dorsal antenna & very long setae extending from the bend in the ventro-lateral arm characterize this animal's speciation) (Keywords: Hexarthra mira intermedia, new description, taxonomy, Brazil)

#### RECENT LITERATURE

The literature cited below has been gleaned from several sources as noted above. We apologize for any incorrect citations which may follow! An attempt always is made to cite works completely and properly. We would like to be informed of any important errors in these citations; corrections will be printed in the next issue (Number 18) which is scheduled for Winter 1989. The editors encourage authors to send us reprints so that they can be properly cited and abstracted. Only if reprints are received can we properly annotate the citations. These references have been indexed at the end of RECENT LITERATURE section by using such keywords as the specific species names, predation, salinity, biogeography, etc. Suggestions concerning the index are welcome.

\*\*\*\*\*

\*\*\*

- 1- Adalsteinsson, H. 1987. The Veioivotn lakes. Natturfraedingurinn 57(4): 195-204. (Address: Orkustofnun, National Energy Authority, Grensasvegur 9, 108 Reykjavik, ICELAND) (Summary: Zooplankton of some of the lakes studied is characterized by a dominance of rotifers.) (Keywords: community structure)
- 2- Adamkiewicz-Chojnacka, B., Heerkloss, R., & Schnese, W. 1986. Aggregation analysis of the planktonic rotifers in brackish waters of southern Baltic. Oceanologia 24: 63-74. (Address: Department of Water & Sewage Biology, Academy of Agric. & Technology, Olsztyn-Kortowo.) (Keywords: species composition, similarity index)
- 3- Afri, R., Pagano, M., Saint-Jean, L. 1987. Zooplankton communities in a tropical lagoon: time-space variations. Rev Hydrobiol Trop 20(1): 21-36. (Summary: Zooplankton samplings were carried out in 5 areas of Ebrie Lagoon having different ecological characteristics.) (Keywords: pollution, eutrophication, salinity, season)

- 4- Amselem, J. & Clement, P. 1988. The muscle of a monogonont rotifer, Trichocerca rattus: II. the central retractor muscles. Tissue & Cell 20(1): 99-108. (Address: Laboratoire de Physiologie des Elements Excitables, Universite Lyon I, FRANCE) (Summary: This work focuses on the ultrastructural characteristics of the 2 cells of the paired, bicellular, central retractor muscles (CRM) of Trichocerca rattus. By transverse, ultra-thin serial sections, precise measurements were made on the following cytological characteristics: length, diameter & average number by unit surface area for the myofilaments; % of cell volume for the myoplasm & mitochondria; & average number of peripheral elements of the sarcoplasmic reticulum (dyads) by unit surface area. These characteristics agree with a phasic fiber type for the CRM. Muscular insertions are described, as are junctions between the 2 cells of each CRM: hemidesmosomes, desmosomes & gap junctions. The 2 symmetrical CRM are coupled by a large gap junction between 2 subcerebral sarcoplasmic processes. Some of these processes partially enter the cerebral neuropile; each CRM is innervated at this level. Functions of cytological specializations are discussed in the light of the behavior assumed by the CRM: retraction of the rotatory apparatus in the trunk of T. rattus.) (Keywords: behavior, ultrastructure, anatomy, morphology, muscle, TEM, SEM)
  - 5- Araujo-Lima, C.A.R.M. & Hardy, E. 1987. Biological aspects of Amazonian fishes: VIII. The food of alevins of the Jaraqui, Semaprochilodus insignis. Amazoniana 10(2): 127-136. (Address: Instituto Nac. Pesquisas Amazonia, DBL, C.p 478, 69000 Manaus, AM, BRASIL) (Summary: Primary food items for this fish included rotifers.) (Keywords: rotifers as food for fish)
  - 6- Arndt, H. Heerkloss, R. & Schnese. 1984. Seasonal & spatial fluctuations of estuarine rotifers in a Baltic inlet. Limnologica 15(2): 377-385. (Address: Department of Biology, Wilhelm Pieck Universitat Rostock, Sektion Biologie, DDR-2500 Rostock, Freiligrathstr.) (Summary: Patterns of seasonal & spatial distributions of planktonic rotifers were investigated in an estuary of the Baltic, Sea.) (Keywords: season, estuarine, Baltic Sea, Keratella cochlearis, Filinia longiseta, Brachionus quadridentatus, biomass, population dynamics, diurnal vertical migration, avoidance of the shore, diel, behavior, sampling)
  - 7- Arndt, H. Schroder, C., Vietinghoff, U. & Schnese. 1985. Rotifers of the genus Synchaeta - an important component of the zooplankton in the coastal waters of the southern Baltic. Proc. 9th Symposium of Baltic Marine Biologists, Turku, Finland, June 1985, abstract. (Address: see above) (Summary: This work adds to our knowledge of Synchaeta) (Keywords: Synchaeta, brackish water, estuary, season, population dynamics, species diversity, trophic, anatomy, morphology, temperature, food, salinity, Synchaeta littoralis, Synchaeta oblonga, Synchaeta cecilia, Synchaeta triophthalma, Synchaeta vorax, Synchaeta curvata)
- \*B\*
- 8- Beauvais, J.E. & Enesco, H.E. 1985. Lifespan & age related changes in the activity of the rotifer Asplanchna brightwelli: influence of curare. Experimental Gerontology 20:359-366. (Keywords: lifespan, age, activity, Asplanchna brightwelli)
  - 9- Bender, K. & Kleinow, W. 1988. Chemical properties of the lorica & related parts from the integument of Brachionus plicatilis. Comp Biochem & Physiol B comp Biochemistry 89(3): 483-488. (Address: Zoology Institute, University of Koeln, Lehrstuhl Tierphysiologie, Weyertal 119, D-5000 Koeln 41, DFR, WEST GERMANY) (Summary: The loricas

- of Brachionus plicatilis & related material from other parts of the integument of this rotifer cannot be digested by several proteases & also are resistant to treatment by Triton X-100, 8 M urea & sodium dodecylsulfate (SDS), even if heated in the presence of these agents. They can however be dissolved by the addition of agents which dissociate disulfide bonds. By gel electrophoresis of such dissolved lorica material, it has been shown that this structure consists of a material containing, as main components, 2 proteins with mol. wt. of about 39,000 & 47,000. It is suggested that the lorica of rotifers consists of intermediate filaments containing keratin-like proteins which are cross-linked and stiffened by disulfide bridges. > <Keywords: keratin, lorica, ultrastructure, biochemistry, Brachionus plicatilis>
- 10- Berzins, B & Pejler, B. 1987. Rotifer occurrence in relation to pH. *Hydrobiologia* 147:107-116. Keywords: pH, distribution
- 11- Bhardwaj, S.C. 1986. Locomotion & movements in a few colonial rotifers of the order Flosculariacea. *Uttar Pradesh Journal Zool* 6(1): 115-120. <Address: Department of Zoology, Dyal Singh College, Karnal-132001, INDIA> <Summary: Locomotion of some free-swimming colonial rotifers were studied, including Lacinularia elliptica, Sinantherina semibullata, Sinantherina spinosa. Although there is no organic connection between the individuals of a colony, yet they exhibit a good deal of coordination amongst themselves in their movements. Larvae of the various types of colonies exhibit the same type of movement.> <Keywords: Lacinularia elliptica, Lacinularia flosculosa, Sinantherina semibullata, Sinantherina spinosa, Sinantherina procera, movement, behavior, sessile rotifers>
- 12- Bielanska-Grajner, I. 1987. The comparison of rotifer communities (Rotatoria) in various types of reservoirs within Upper Silesia. *Przegląd Zoologiczny* 31(1): 37-48. <Language: Polish, with English Summary> <Address: Katedra Ekologii, Uniwersytet Śląski, ul. Bankowa 9, 40-007 Katowice, POLAND> <Summary: Rotifer communities in 11 reservoirs were compared.> <Keywords: indicators species, pollution, eutropication, Keratella cochlearis f. tecta, Anuraeopsis fissa, Brachionus angularis, Filinia longiseta, Pompholyx sulcata, Conochiloides dossuarius, Keratella cochlearis f. macracantha, Keratella quadrata, Polvarthra vulgaris, Polvarthra remata, Polvarthra major, Brachionus angularis f. hidens, community structure, stability>
- 13- Bozovic, V. & Enesco, H.E. 1986. Effects of antioxidants on rotifer lifespan & activity. *Age* 9:41-45. <Keyword: antioxidant, lifespan, activity>
- 14- Brownell, C.L. 1988. A new pelagic marine rotifer from the southern Benguela, Synchaeta hutchingsi, new species, with notes on its temperature & salinity tolerance and methods of culture. *Hydrobiologia* 162(3): 225-234. <Address: Oceanic Institute, Makapuu Point, Waimanalo, HI 96795, USA> <Summary: A new sp. of marine rotifer is described from the S.E. Atlantic off Cape Town: Synchaeta hutchingsi new species. > <Keywords: rotifers as food for fish, taxonomy, new species, biogeography, Synchaeta hutchingsi new species>
- 15- Brownell, C.L. & Horstman, D.A. 1987. Two low-maintenance culture systems for small pelagic marine animals. *Aquaculture* 65(34): 375-384. <Address: Marine Biological Research Institute, Department of Zoology, University of Cape Town, Rondebosch 7700, SOUTH AFRICA> <Summary: 2 simple, low-maintenance culture systems are described.> <Keywords: culture, aquaculture>
- 16- Brownlee, D.C & Jacobs, F. 1987. Mesozooplankton & microzooplankton in the Chesapeake Bay. Pages 217-269 in Majumdar, S.K., L.W. Hall, Jr. and H.M. Austin, (eds.). Contaminant problems & management of living

Chesapeake Bay resources. 152nd National Meeting of the American Association for the Advancement of Science, Philadelphia, Pennsylvania, May 26, 1986. Pennsylvania Academy of Science Publications 3. Pennsylvania Academy of Science, Easton, Pennsylvania, ISBN 0-9606670-7-5. <Address: Academy of Natural Science, Benedict Estuarine Research Laboratory, Benedict, MD, 20612, USA> <Keywords: species abundance, distribution, marine>

- 17- Buchner, H. 1987. Untersuchungen über die Bedingungen der heterogenen Fortpflanzungsarten bei den Radertieren III. Über den Verlust der miktischen Potenz bei Brachionus urceolaris. Arch Hydrobiol 109(3):333-354. <Keywords: Brachionus urceolaris, reproduction, mictic, sexual reproduction, clones, culture>

\*C\*

- 18- Campos, H., Steffen, W., Aguero, G., Parra, O., & Zuniga, L. 1988. Limnological study of Lake Llanquihue, Chile): morphometry, physics, chemistry, plankton & primary productivity. Arch Hydrobiol Suppl 81(1): 37-68. <Address: Instituto de Zoologia, Universidad Austral de Chile Casilla 567, Valdivia, CHILE> <Summary: Physical & chemical information is presented about Lake Llanquihue, including information on rotifer abundance.> <Keywords: physical, chemical, temperature, transparency, season>

- 19- Carpenter, S.R., Kitchell, J.F., Hodgson, J.R., Cochran, P.A., Elser, J.J., Elser, M.M., Lodge, D.M., Kretchmer, D., He, X., & Von Ende, C.N. 1987. Regulation of lake primary productivity by food web structure. Ecology 68(6): 1863-1876. <Address: Department of Biological Sciences, University of Notre Dame, Notre Dame, IN, 46556, USA> Rotifers were part of the food web of the studied lakes.> <Keywords: community structure>

- 20- Chauhan, R. & Singh, R. 1986. Cultural impact of fish fauna of Rewalsar lake, Himachal Pradesh. Uttar Pradesh Journal Zool 6(1): 64-68. <Address: Department of Bioscience, H.P. University of Summer Hill, Shimla-171005, INDIA> <Summary: The zooplankton population was dominated by rotifers> <Keywords: pollution indicators, oxygen, chemistry>

- 21- Chourasia, S.K. & Adoni, A.D. 1987. Rotifers as indicators of eutrophication. Pages 147-150 in Rao, K.S. & S. Shrivastava (eds.). Perspective in Hydrobiology. Symposium, Ujjain, India, February 8-10, 1986. School of Studies in Zoology, Vikram University: Ujjain, India. 35-4401 <Keywords: Brachionus angularis, Brachionus calyciflorus, Brachionus caudatus, eutrophication, pollution, indicator species, Brachionus forficula, Brachionus falcatus, Brachionus quadridentata, Brachionus plicatilis, Keratella cochlearis>

- 22- Christensen, T. 1987. Some collections of Vaucheria, Tribophyceae, from southeastern Australia. Aust Journal Bot 35(6):617-630. Address: Institute of Thallophytic Botany, University of Copenhagen, Oster Farimagsgade 2D, DK-1353 Kobenhavn K, DENMARK <Summary: Gall formation, caused by the rotifer Proales wernecki, has been observed in 4 spp. of Vaucheria. <Keywords: Proales wernecki, parasite>

- 23- Corallini Sorcetti, C. & Moretti, G.P. 1987. Contribution to the knowledge of the epibionts and parasites of Italian Trichoptera larvae. Pages 185-188 in Bournaud, M. & H. Tachet (eds.). Series Entomologica (The Hague), Vol. 39. Proceedings of the 5th International Symposium on Trichoptera, Lyon, France, July 21-26, 1986. Kluwer Academic Publishers, Dordrecht, Netherlands. ISBN 90-6193-620-9. <Address: Ist. Zoology, University Via Elce Sotto, 06100 Perugia, ITALY> <Keywords: parasites>

- 24- Crome, F.H.J & Carpenter, S.M. 1988. Plankton community cycling and recovery after drought: dynamics in a basin on a flood plain. *Hydrobiologia* 164(3): 193-212. <Address: CSIRO Division of Wildlife & Rangelands Research, Tropical Forest Research Cent., P.O.B. 780, Atherton, Qld. 4883, AUSTRALIA> <Summary: Lake Merrimajee is part of the Murray-Darling river system has a high diversity of plankton, yet often dries out. During this period 30 spp. of rotifers were recorded.> <Keywords: species diversity, ephemeral waters, temporary waters, temperature, turbidity, oxygen, succession, river>
- 25- Cross, W.E. & Martin, C.M. 1987. Effects of oil & chemically treated oil on nearshore under-ice meiofauna studied in situ. *Arctic* 40(Suppl 1): 258-265. <Address: LGL Limited, Environ. Research Assoc., 22 Fisher St., P.O.B. 280, King City, Ontario, CANADA L0G 1K0> <Summary: Rotifers were examined for the toxic effects of oil.> <Keywords: environmental toxicology, toxic agent, pollution>
- 26- Crumpton, W.G. & Wetzel, R.G. 1980. Novolacs: synthetic resins suitable for mounting biological materials. *Trans Amer Microsc Soc* 99: 347-348. <Keywords: technique, slide preparations>
- \*D\*
- 27- Dawidowicz, P. & Gliwicz, Z.M. 1987. Biomanipulation: III. The role of direct & indirect relationship between phytoplankton & zooplankton. *Wiad Ekol* 33(3): 259-278. <Address: Zaklad Hydrobiology, Institute of Zoology, Univ. Warszawskiego, ul. Nowy Swiat 67, 00-046 Warszawa, POLAND> <Summary: Interactions between phytoplankton & zooplankton are discussed.> <Keywords: interactions>
- 28- Deb, D., Ghosh, M., & Banerjee, S. 1987. Synecology of a rotifer bloom in a freshwater pisciculture pond in West Bengal. *Proc Indian Natl Sci Acad Part B Biol Sci* 53(1): 61-68. <Address: Aquaculture Research Unit, Department of Zoology, University of Calcutta, 35 Ballygunge Circular Road, Calcutta 700 019, INDIA> <Summary: A rotifer bloom was studied revealing a + correlation of Keratella tropica with dissolved oxygen. Other abiotic factors had no significant influence on the development of the bloom.> <Keywords: Keratella tropica, population regulation, population dynamics, oxygen>
- 29- Delbecque, E.J.P. & Suykerbuyk, R.E.M. 1988. A comparison of the periphyton of Nuphar lutea and Nymphaea alba: spatial & temporal changes in the occurrence of sessile microfauna. *Arch Hydrobiol* 112(4): 541-566. <Address: Laboratory of Aquatic Ecology, Catholic University, Toernooiveld, 6525 ED-Nijmegen, THE NETHERLANDS> <Summary: This study examined the spatial & temporal distribution of the most abundant sessile microfaunal sp. on 2 nymphaeids Nuphar lutea & Nymphaea alba.> <Keywords: Ptygura velata, Beauchampia crucigera, sessile rotifers, physical, chemistry, season, population dynamics>
- 30- De Paggi, S.J. & Koste, W. 1988. Rotifera from Saladillo river basin, Sante Fe province, Argentina. *Hydrobiologia* ???(?): ???-???. <Address: Institute Nacl. Limnol., Macia 1933-3016. St. Tome. Sante Fe, ARGENTINA> <Summary: 72 taxa of rotifers, belonging to 24 genera, are recorded from Saladillo river basin, including 12 that are new for Argentina: Brachionus bidentata NR (=new record), Brachionus urceolaris amazonica NR, Euchlanis propatula NR, Lecane bulla styrae NR, Lecane lunaris perplexa NR, Lecane amazoniana NR, Lecane hastata NR, Lecane ludwigi abrupta NR, Lecane unguilata NR, Lophocharis salpina NR, Macrochaetus sericeus NR, Mytilina unguipes NR. These are described & illustrated. Ecological and biogeographical information also is given> <Keywords: Brachionus bidentata, Brachionus urceolaris amazonica,

Euchlanis propatula, Lecane bulla styrae, Lecane lunaris perplexa, Lecane amazoniana, Lecane hastata, Lecane ludwigi abrupta, Lecane unguolata, Loosnocharis salpina, Macrochaetus sericeus, Mvtulina unguipes, new records, new descriptions, biogeographic distribution

- 31- De Ridder, M. 1987. Contributions to the knowledge of African rotifers. *Hydrobiologia* 150:123-131. <Address: Zoological Institute, The State University of Gent, Gent, Belgium> <Summary: The # of rotifer taxa known from Mauritania is raised from 8 to 90, with 61% of these being cosmopolitan. Most are widely distributed in Africa, but some are limited. The presence of Keratella testudo & Wolga spinifera is remarkable & is probably related to the unusual climatic conditions in the SW Sahara. <Keywords: African rotifers, Keratella testudo, Wolga spinifera, biogeography, distribution, species list, Brachionus calyciflorus f. monstruosa.
  - 32- De Wolf, P. 1988. Rotifers & pisciculture. *Ann Gembloux* 94(2): 109-112. 35-67517 <Address: Faculty of Science Agron. l'Etat, 5800 Gembloux.> <Keywords: Brachionus plicatilis, rotifers as food for fish, aquaculture, diet>
  - 33- Dodge, A.V. 1987. Pond hunting with a purpose. *Microscopy* (Lond) 35(8): 575-580. 34-100792 <Address: 61 Pewley Way, Guildford, Surrey GU1 3PZ, UK> <Keywords: Cupelopaqis vorax, sessile rotifer>
  - 34- Drenner, R.W., Hambright, K.D., Vinyard, G.L., Gophen, M., & Pollinger, U. 1987. Experimental study of size-selective phytoplankton grazing by a filter-feeding cichlid & the cichlid's effects on plankton community structure. *Limnol Oceanogr* 32(5): 1138-1144. <Address: Shiki High School, 1-1-1 Kamimuneoka, Shiki, Saitama 352, JAPAN> <Summary: Rotifers were eaten by the fish, Tilapia galilaea.> <Keywords: rotifers as food for fish>
- \*E\*
- 35- Egloff, D.A. 1988. Food & growth relations of the marine microzooplankton, Synchaeta cecilia, Rotifera. *Hydrobiologia* 157(2): 129-142. <Address: Department of Biology, Oberlin College, Oberlin, OH, 44074, USA> <Summary: Trophic interactions of the marine rotifer Synchaeta cecilia were investigated by determining its feeding & growth rates on a wide variety of marine phytoplankton & by determining its susceptibility to predation by the calanoid copepod, Acartia tonsa.> <Keywords: predator - prey, reproduction, growth, marine, Synchaeta cecilia, food, diet, culture>
  - 36- Elser, M.M., Von Ende, C.N., Sorzano, P., Carpenter, S.R. 1987. Chaoborus populations: Response to food web manipulation & potential effects on zooplankton communities. *Canadian Journal of Zoology* 65(12): 2846-2852. <Address: Department of Biological Science, University of Notre Dame, Notre Dame, IN, 46556, USA> <Summary: Chaoborus populations were studied in 2 lakes in which fish predation was experimentally reduced, & in a reference lake. Analysis of crop contents & estimates of consumption rates suggested that C. punctipennis caused declines of rotifer & copepod populations following the manipulations.> <Keywords: Chaoborus predation, predator - prey>
  - 37- Estevez, A. & Planas, M. 1987. Mass production of sea-bass fingerlings, Dicentrarchus labrax. L. *Inf Tec Inst Invest Pesq* issue 139: 3-12. <Address: Granja Atlantica de Couso, 15960 Riveira, La Coruna, FRANCE> <Summary: Rotifers were used as food for fish larvae> <Keywords: aquaculture, rotifers as food for fish>



38- Estevez, A. & Planas, M. 1988. Effect of different food sources on fatty acid composition of the rotifer Brachionus plicatilis O.F. Muller. Invest Pesq 52(1): 67-76. <Address: Granja Atlantica Couso S.A., La Grana, 15960 Riveira, La Coruna, SPAIN> <Summary: This paper describes the fatty acid composition in 5 populations of the rotifer B. plicatilis.> <Keywords: biochemistry, Brachionus plicatilis>

39- Evdokimov, V.A., Manankina, E.E., & Galkovskaya, G.A. Destruction of chlorella cells by the rotifer Brachionus calyciflorus Pallas. Doklady An BSSR 30(11): 1048-1050. <Keywords: food, Brachionus calyciflorus>

\*F\*

40- Feind, D., Zieris, F.-J., & Huber, W. 1988. Effects of sodium pentachlorophenate on the ecology of a freshwater model ecosystem. Environmental Pollution 50(3): 211-224. <Address: Institute Botanik, Lehrgebiet Systematik & Oekophysiologie, Technische University Muenchen-Weihenstephan, D-8050 Freising 12, WEST GERMANY> <Summary: An outdoor model ecosystem was designed for ecotoxicological evaluation of xenobiotics. Rotifers were part of this study.> <Keywords: environmental toxicology, pollution, toxic agents>

41- Ferrara, O. 1986. Zooplankton population of man-made lake in Abruzzi's apennines: Campotosto Lake. Riv Idrobiol 25(1-3): 19-26. <Address: Dipartimento di Biologia Animale dell'Uomo, University La Sapienza di Roma, ITALY> <Summary: Keratella cochlearis numerically dominated the rotifer fauna.> <Keywords: reservoirs, Keratella cochlearis>

42- Flik, B.J.G., Bos, M., Royackers, K., & Ringelberg J. 1987. Underestimation of primary production as indicated by measurements with size-fractionated phytoplankton in Lake Maarsseveen 1, The Netherlands. Hydrobiol Bull 21(1): 39-48. <Address: Vakgroep Aquatische Oecologie, Universiteit van Amsterdam, Kruislaan 320, 1098 SM Amsterdam, THE NETHERLANDS> <Keywords: food, diet, grazing>

43- Fores, E. & Comin, F.A. 1988. Action of malathion plus lindane pesticide on crustacean populations. Ecotoxicol Environ Saf 15(2): 180-185. <Address: Department d'Ecology, Faculty Biological, University Barcelona, Diagonal, 645, 08028 Barcelona, SPAIN> <Keywords: environmental toxicology, toxic agent, pollution>

44- Fores, E., Menendez, M., & Comin, F.A. 1986. Contribution to the study of Crustacea & Rotifera from the Ebro Delta. Misc Zool 10: 105-112. <Address: Department d'Ecology, Faculty Biological, University Barcelona, Diagonal 645, 08028 Barcelona, SPAIN> <Summary: 64 spp. of rotifers were recorded from ricefields, & other water bodies.> <Keywords: salinity, biogeography>

45- Fulton, R.S., III & Paerl, H.W. 1988. Effects of the blue-green alga Microcystis aeruginosa on zooplankton competitive relations. Oecologia (Berlin) 76(3): 383-389. <Address: Department of Biology, George Mason University, 4400 University Drive, Fairfax, VA, 22030, USA> <Summary: Experiments were conducted to test the hypothesis that blooms of Microcystis aeruginosa would shift competitive dominance away from large-bodied daphnid cladocerans toward smaller-bodied cladocerans, copepods, & rotifers.> <Keywords: Brachionus calyciflorus, food, feeding, diet, dominance, bluegreen alga, toxicity, toxic effects, bluegreen bacteria>

\*G.

46- Galkovskaya, G.A. 1985. On estimation of production of natural rotifer populations. In Production of aquatic organisms populations & communities & methods of their study. Sverdlovsk: UAC ac. Sci. USSR p48-57. <Address: Institute Ecology, Academy of Science BSSR, Akad., Minsk 220072, USSR> <Keywords: production>

- 47- Galkovskaya, G.A. 1987. Planktonic rotifers & temperature. *Hydrobiologia* 147:307-317. <Address: see above> <Keywords: temperature>
- 48- Galkovskaya, G.A. (in press). On informative value of some individual biological parameters for the optimization of rotifer culturing. *Trudy VNIRO*. <Address: see above> <Keywords: culture>
- 49- Galkovskaya, G.A., Ejsmont-Karabin, J., & Evdokimov, V.N. 1987. Relative protein metabolism in rotifer Brachionus calyciflorus Pallas, in relation to temperature. *Int. Revue Gesamten Hydrobiol* 72(1): 59-69. <Address: see above> <Summary: In the temperature range of 10-35 C relationships of oxygen consumption and nitrogen excretion rates to temperature in B. calyciflorus can be described by an exponential function where  $Q(10)$  is equal to 2.45 & 2.18, respectively.> <Keywords: oxygen, chemical limnology, temperature, metabolism>
- 50- Galkovskaya, G.A. & Mityanina, I.F. 1986. Peculiarity of birth rate in natural populations of the rotifer Keratella cochlearis Gosse. *Doklady An BSSR* 30(6): 568-570. <Address: see above> <Keywords: Keratella cochlearis, population, birth rate>
- 51- Galkovskaya, G.A. & Mityanina, I.F. 1986. Adaptation of the rotifer B. calyciflorus to survival under high temperatures. In *Organisms, populations & Communities under extreme Conditions*, Moscow, p32. <Address: see above> <Keywords: Brachionus calyciflorus, temperature>
- 52- Galkovskaya, G.A. & Mityanina, I.F. 1986. The effect of thermal shock on glycogen content & possible mechanism of adaptation to high temperatures in the rotifer Brachionus calyciflorus. Page 33, in *Organisms, populations & Communities under extreme Conditions*, Moscow, p33. <Address: see above> <Keywords: Brachionus calyciflorus, temperature, thermal shock, biochemistry>
- 53- Galkovskaya, G.A. & Mityanina, I.F. (in press). Formation of morpho-physiological distinctions in natural populations of Keratella cochlearis Gosse in heterogenous conditions. *Vestsi An BSSR, dep.* <Address: see above> <Keywords: morphology, anatomy, Keratella cochlearis>
- 54- Galkovskaya, G.A. & Mityanina, I.F., & Golovtchits V.A. (in press). Ecological & biological principles of rotifer culture. 10 p.l. "Nauka i tehnika", Minsk. <Address: see above> <Keywords: culture>
- 55- Galkovskaya, G.A. Molotkov, D.V., Smirnova, I.A., & Zarubov, A.I. 1985. Species composition & abundance of zooplankton in the Prypjat River from Lyameshevichy to Narovlya. *Vestsi An BSSR, Ser. Biol. Sci, N 3*: 92-97. <Address: see above> <Keywords: species composition, population>
- 56- Garreau, F., Rougier, C., Pourriot, R. 1988. Resource exploitation by the planktonic predator Asplanchna girodi De Guerne 1888, Rotifera, in a sand-pit lake. *Arch Hydrobiol* 112(1): 91-106. <Address: Ecole Normale Supérieure, Laboratory d'Ecologie, 46 Rue d'Ulm, 75230, Paris Cedex 05, FRANCE> <Summary: Several indices were used to interpret results of gut contents analysis of Asplanchna girodi. This predator shows a preference for small sp. of the family Brachionidae & when those prey are unavailable, for young Bosmina.> <Keywords: gut contents, size, predator - prey, Asplanchna girodi, escape, behavior, population dynamics>
- 57- Geertz-Hansen, O., Olesen, M., Bjornsen, P.K., Larsen, J.B., & Riemann, B. 1987. Zooplankton consumption of bacteria in a eutrophic lake & in experimental enclosures. *Arch Hydrobiol* 110(4): 553-564. <Address:

- Freshwater Biological Laboratory, University of Copenhagen, Helsingorsgade 49-51, DK-3400 Hillerød, DENMARK) <Summary: Small zooplankton (mainly rotifers) contributed only 20% of the total zooplankton ingestion of bacteria in the lake. In the presence of planktivorous fish, small zooplankton gradually became the dominant bacterial consumers.> <Keywords: feeding, bacteria>
- 58- Golovko, T.V. & Zhdanova, G.A. 1987. Utilization of bacterial food resources by zooplankton in Kiev Water Reservoir. *Gidrobiol Zh* 23(3): 10-15. <Address: Institute of Hydrobiology, Academy of Science Ukr. SSR, Kiev, USSR> <Summary: About 50% of the total consumption of bacteria is done by cladocerans & rotifers. Rotifer communities developing in certain sites of the Kiev reservoir> <Keywords: trophic dynamics, population dynamics, food, feeding, diet>
- 59- Golovko, T.V. & Zhdanova, G.A. 1988. Consumption of planktonic bacteria by some groups of zooplankton in the Kiev Reservoir. *Gidrobiol Zh* 24(2): 52-58. <Address: Institute of Hydrobiology, Academy of Science Ukr. SSR, Kiev, USSR> <Summary: This work examined the ability of rotifers to consume bacteria in the Kiev reservoir.> <Keywords: food, diet, feeding rate, bacteria>
- 60- Gopalarao, N. & Durve, V.S. 1988. The probable antagonism in Brachionus, Rotatoria, species & cyanobacteria in a eutrophic lake of Udaipur, Rajasthan. *Journal of Environ Biol* 9(1): 1-4. <Address: Department of Limnology Fish., Sukhadia University, Udaipur-313 001, INDIA> <Summary: Although rotifers eat cyanobacteria, they also have an antagonistic relationship with them.> <Keywords: interactions, Brachionus, cyanobacteria, eutrophic>
- 61- Gophen, M., Azoulay, B., & Bruton, M.N. 1988. Selective predation of Lake Kinneret zooplankton by fingerlings of Claris gariepinus. *Verh Internat Verein Limnol* 23:1763-1765. <Address: The Yigal Allon Kinneret Limnology Laboratory. P.O.B. 345, Tiberias 14102, ISRAEL> <Summary: Rotifers & nauplii were poorly collected by fingerlings of Claris gariepinus (E=-0.3 & -0.6, respectively). Asplanchna had E=+0.2.> <Keywords: rotifers as food for fish, predator - prey, electivity index>
- 62- Guisande, C. & Toja, J. The dynamics of various species of the genus Brachionus, Rotatoria, in the Guadalquivir River. *Arch Hydrobiol* 112(4): 579-596. <Address: Department of Ecology, Faculty Biological, University of Sevilla, Ap. 1095, 41080 Sevilla, SPAIN> <Summary: Zooplankton community of the estuary of the Guadalquivir River was studied. Brachionus was found to be an important genus in this river. Temperature was the main factor determining the composition of the Brachionus populations.> <Keywords: community structure, salinity, temperature, season, estuary, Brachionus>
- \*H\*
- 63- Hagiwara, A. & Hino, A. 1985. Combined effects of environmental conditions on the hatch of fertilized eggs of the rotifer Brachionus plicatilis. *Nippon suisan gakkaiishi* (Bulletin of the Japanese Society of Scientific Fisheries 51(5): 755-759. <Summary: Effects of 70 combinations of temperature, chlorinity, and photoperiods on the hatching of fertilized eggs of the rotifer Brachionus plicatilis were investigated in the lab.> <Keywords: Brachionus plicatilis, reproduction, eggs, resting eggs, temperature, chlorinity, salinity, photoperiods, light>

- 64- Hagiwara, A. & Hino, A. 1985. Studies on the appearance of floating fertilized eggs in the rotifer Brachionus plicatilis. Suisan zoshoku 32(4): 207-212. <Language: Japan., with English Abstract> <Address: Department of Fisheries, Faculty of Agriculture, The University of Tokyo, Yayoi, Bunkyo, Tokyo 113, JAPAN> <Summary: Floating resting eggs appeared only when fertilized eggs came into contact with air, e.g., dry treatment or aeration> <Keywords: resting eggs, eggs, sexual eggs, reproduction, Brachionus plicatilis>
- 65- Hagiwara, A., Hino, A., Hirano, R. 1988. Effects of temperature & chlorinity on resting egg formation in the rotifer Brachionus plicatilis. Bull Jpn Soc Sci Fish 54(4): 569-576. <Address: Oceanic Institute, Makapuu Point, Waimanalo, HI 96795, USA> <Summary: Effect of temperature & chlorinity on resting egg production of Brachionus plicatilis was investigated. <Keywords: swimming, behavior, life span, fecundity, aquaculture, culture, temperature, chlorinity, resting egg, Brachionus plicatilis>
- 66- Hagiwara, A., Hino, A., Hirano, R. 1988. Comparison of resting egg formation among 5 Japanese stocks of the rotifer Brachionus plicatilis. Bull Jpn Soc Sci Fish 54(4): 577-580. <Address: Oceanic Institute, Makapuu Point, Waimanalo, HI, 96795, USA> <Summary: Resting egg formation was compared among 5 stocks of Brachionus plicatilis.> <Keywords: fecundity, resting egg, Brachionus plicatilis, marine, aquaculture, culture>
- 67- Hanazato, T. & Yasuno, M. 1987. Effects of a carbamate insecticide, carbaryl, on the summer phytoplankton & zooplankton communities in ponds. Environ Pollut 48(2): 145-159. <Address: Division of Environmental Biological, National Institute of Environmental Studies, Yatabe, Tsukuba, Ibaraki 305, JAPAN> <Summary: The effects on plankton communities by 1-naphthyl-N-methylcarbamate were studied; rotifers were suppressed.> <Keywords: environmental toxicology, toxic agent, pollution>
- 68- Hangelin, C. & Vuorinen, I. 1988. Food selection in juvenile three-spined sticklebacks studied in relation to size, abundance & biomass of prey. Hydrobiologia 157(2): 169-178. <Address: University of Turku, Department of Biology, SF-20500 Turku, FINLAND> <Summary: Food selection & diet of juvenile 3-spined sticklebacks (Gasterosteus aculeatus, L.) was studied in the littoral of a brackish-water sea area.> <Keywords: rotifers as food for fish>
- 69- Havel, J.E. 1987. Predator-induced defenses: A review. Pages 263-278 in Kerfoot W. C. & A. Sih (Eds.). Predation: Direct and indirect impacts on aquatic communities. University Press of New England, Hanover, NH. ISBN 0-87451-376-6 <Address: Department of Biology, Central MI University, Mt. Pleasant, MI, 48859, USA> <Keywords: predator-prey relationships>
- 70- Havens, K.E., III & Decosta, J. 1987. Freshwater plankton community succession during experimental acidification. Arch Hydrobiol 111(1): 37-66. <Address: Department of Biological Science, Kent State University, Kent, Ohio 44242, USA> <Summary: Total zooplankton abundance increased with acidification to pH 6, where edible algal biomass was high, & decreased in pH 5 & 4.5 bags. Only 1 rotifer, Lecane luna, persisted at pH 4.5.> <Keywords: Lecane luna, community structure, pH, environmental toxicology, toxic agents, pollution>
- 71- Hawkins, P.R. 1988. The zooplankton of a small tropical reservoir, Solomon Dam, North Queensland: seasonal changes and the influence of water quality management measures. Hydrobiologia 157(2): 105-118. <Address: Department of Botany, James Cook University, North

Queensland, Townsville, Qld 4811, AUSTRALIA) (Summary: Seasonal changes in the density & taxonomic composition of the zooplankton of a small tropical impoundment were examined in relation to factors of water temperature, food supply and reservoir flushing. Planktonic rotifers were diverse, but generally unimportant.) (Keywords: reservoir, temperature, physics)

- 72- Hebert, P.D.N. Genotypic characteristics of cyclic parthenogens and their obligately asexual derivatives. Pages 175-196 in Stearns, S.C. (Ed.). *Experientia Supplementum* (Basel), Vol. 55. The evolution of sex & its consequences. Birkhaeuser Verlag, Basel, Switzerland. (Address: Department of Biological Sciences, University of Windsor, Windsor, Ontario, N9B 3PA, CANADA) (Keywords: genetics, review)
- 73- Helgen, J.C., Larson, N.J., & Anderson, R.L. 1988. Responses of zooplankton & *Chaoborus* to temephos in a natural pond & in the laboratory. *Arch Environ Contam Toxicol* 17(4): 459-472. (Address: Department of Biology, St. Olaf College, Northfield, MN, 55057, USA) (Summary: Application of temephos to a natural pond in central Minnesota was studied, including its effect on *Keratella cochlearis*.) (Keywords: insecticide, pollution, *Keratella cochlearis*, environmental toxicology, toxic agent)
- 74- Hermanutz, R.O., Hedtke, S.F., Arthur, J.W., Andrew, R.W., Allen, K.N., & Helgen, J.C. 1987. Ammonia effects on microinvertebrates & fish in outdoor experimental streams. *Environ Pollut* 47(4): 249-284. (Address: US Environmental Protection Agency, Environmental Research Laboratory-Duluth, Monticello Ecological Research Station, Monticello, MN, 55362, USA) (Summary: Populations of 4 major invertebrate groups (including rotifers) were studied with respect to certain chemical parameters.) (Keywords: chemical limnology, environmental toxicology, pollution, toxic agent, temperature, season)
- 75- Hirano, K. 1987. Studies on the culture of the rotifer, *Brachionus plicatilis* O.F. Mueller. *Bull Fac Agric Miyazaki Univ* 34(1): 57-122. (Address: Faculty of Agric., Miyazaki University, Miyazaki, JAPAN) Mass production of *Brachionus plicatilis* is sometimes unstable. This study attempted to clarify culturing techniques for mass production of *Brachionus plicatilis*. (Keywords: temperature, food, diet, mass production, *Brachionus plicatilis*, culture)
- 76- Holman, E.W. 1987. Recognizability of sexual & asexual species of rotifers. *Syst Zool* 36(4): 381-386. (Address: Department of Psychology, University of California, Los Angeles, CA, 90024, USA) (Summary: Total # of published synonymous sp. & genus names were counted for all sp. of bdelloid rotifers & monogonont rotifers. Synonymous genus names are about equally frequent in both groups, but synonymous sp. names are less frequent in bdelloids. This difference is not a secondary effect of differences in time since first publication of sp. effort or competence of systematists, size of genera, or taxonomic complexity of sp.) (Keywords: Bdelloida, Monogononta, taxonomic synonymy,
- 77- Huber, W. 1977. Comparison between single-species & multi-species test systems. (Address: Lehrstuhl Botanik, Lehrgebiet Systematik Oekophysiologie der Technischen University der Muenchen-Weihenstephan, 8050 Freising 12, WEST GERMANY) Pages 34-41 in H. Becker (ed.). *Mitteilungen aus der Biologischen Bundesanstalt fuer Land- und Forstwirtschaft Berlin-Dahlem*, Heft 234. Untersuchung und Bewertung von Belastungen in Oekosystemen; BMFT (Bundesminister fuer Forschung und Technologie, West Berlin, West Germany, November 4th, 1985. 71p. Kommissionsverlag Paul Parey, Berlin, West Germany. Paper.

ISEN 3-489-13400-6. (Address: Biologische Bundesanstalt Land-Forstwirtschaft, Institute Chemikalienprüfung, WEST GERMANY) (Keywords: pollution, toxic agent, environmental toxicology)

\*J\*

- 78- James, C.M. & Abu-Rezeq, T.S. 1988. Effect of different cell densities of Chlorella capsulata & a marine Chlorella sp. for feeding the rotifer Brachionus plicatilis. Aquaculture 69(12): 43-56. (Address: Mariculture & Fisheries Department, Food Resources Division, Kuwait Institute for Scientific Research, P.O.B. 1638, 22017 Salmiya, (KUWAIT)) (Summary: Brachionus plicatilis production depends on algal cell density & quality of the sp. used in the culture system. The fatty acid content in algae produced using a thin-layer culture system is described. The nutritional quality of algae-fed rotifers for aquaculture is discussed.) (Keywords: aquaculture, production, Brachionus plicatilis, nutrition, biochemistry)
- 79- Jana, B.B., Manna, A.K., Kundu, G. 1987. Effect of oil-cake, Brassica latifolia, piscicide on the physico-chemical & biological spectrum of waterbodies. Limnologica 18(2): 431-440. (Address: University of Kalyani, Department of Zoology, Fisheries & Limnology Laboratory, Kalyani-741 235, West Bengal, INDIA) (Summary: A study on the environmental toxicology of a toxic agent.) (Keywords: environmental toxicity, pollution, toxic agent)
- 80- Juwana, S., Aswandy, I., Panggabean, M.G.L. 1987. Larval development of the Indonesian blue swimming crab, Portunus pelagicus, L. (Crustacea: Decapoda: Portunidae, reared in the laboratory. Mar Res Indones 0(26): 29-50. (Address: Center for Oceanology & Research Dev. - LIPI, P.O.B. 580 DAK, Jakarta, INDONESIA) (Summary: The combination of Brachionus plicatilis & newly hatched nauplii of Artemia salina were fed to the larvae of Portunus pelagicus (Crustacea).) (Keywords: Brachionus plicatilis, rotifers as food for crabs, aquaculture)

\*K\*

- 81- Kar, G.K., Mishra, P.C., Dash, M.C., & Das, R.C. 1987. Pollution studies in river Ib: plankton population & primary productivity. Indian Journal Environ Health 29(4): 322-329. (Address: Department of Zoology, Gandhi Mahavidyalaya, Rourkela, Orissa, INDIA) (Summary: Rotifers were less abundant in the downstream water of the river Ib which was polluted with paper mill effluent compared to other taxa.) (Keywords: pollution, eutrophication, toxic agents, environmental toxicology)
- 82- Karabin, A. 1986. Zooplankton in Lake Zarnowieckie. Pol Ecol Stud 12(34): 293-306. (Address: Department of Hydrobiology, Institute Ecology, Polish Academy Science, Dziekanow Lesny n. Warsaw, 05-092 Lomianki, POLAND) (Summary: Abundance, biomass, sp. composition, & trophic structure of rotifers and microcrustaceans were characteristic for mesotrophy. On the other hand, increasing importance of rotifers or appearance of Keratella cochlearis (Gosse) var. tecta should be considered as symptoms of progressing eutrophication of the lake.) (Keywords: Keratella cochlearis tecta, community structure, eutrophication)
- 83- Keshmirian, J. & Nogrady, T. 1987. Histofluorescent labelling of catecholaminergic structures in rotifers, Ascheiminthes, in whole animals. Histochemistry 87(4): 351-358. (Address: Department of Biology, Queen's University, Kingston, Ontario, Can. K7L 3N6) (Summary: Catecholaminergic neuronal structures were investigated in the rotifers Brachionus plicatilis, Asplanchna priodonta, & Asplanchna herricki,

using 3 different aqueous histofluorescent methods. Adrenergic receptors were labelled using the dansyl analog of propranolol, a beta-adrenergic blocker. Catecholamine neurotransmitters were visualized by derivatizing with glyoxylic acid & formaldehyde respectively. All 3 methods lead to similar results, dansyl-propranolol gave the most rapid & strong fluorescence. Results reveal a complex & highly developed catecholaminergic neuronal system in all adult organs & sensory structures. While developed embryos in the egg show strong fluorescence, immature eggs do not) (Keywords: Brachionus plicatilis, Asplanchna priodonta, Asplanchna herricki, Histofluorescent labelling, biochemistry, histotechnique)

- 84- Keshmirian, J. & Nogrady, T. 1988. Histofluorescent labelling of catecholaminergic structures in rotifers, Aschelminthes): II. males of Brachionus plicatilis & structures from sectioned females. Histochemistry 89(2): 189-192. (Address: Department of Biology, Queen's University, Kingston, Ontario, K7L 3N6, CANADA) (Summary: Catecholaminergic structures in the male Brachionus plicatilis were investigated. All major organs of the male are innervated by catecholaminergic systems, that also may be involved in the regulation of copulatory behavior. Cryostat-sectioned preparations of the female B. plicatilis also were investigated. They provided additional information to findings on whole animals reported in a previous paper by the authors.) (Keywords: sex behavior, neuropharmacology, male, female, Brachionus plicatilis)
- 85- Keshmirian, J. & Nogrady, T. 1988. Rotifer neuropharmacology V. catecholaminergic pharmacology of the abnormal sessile behavior of Brachionus plicatilis. Comp Biochem Physiol C Comp Pharmacol Toxicol 90(2): 367-372. (Address: Department of Biology, Queen's University, Kingston, Ontario K7L 3N6, CANADA) (Eds. Notes: Due to a printing error this paper was printed with the following title: Rotifer neuropharmacology vs catecholaminergic pharmacology of the abnormal sessile behavior of Brachionus plicatilis. Note how the V (meaning the fifth in a series was misprinted by the publisher as vs.) (Summary: The catecholaminergic pharmacology of the abnormal sessile behavior of B. plicatilis was investigated. Cross-reactivity between the adrenergic & dopaminergic systems in regulating sessile behavior also were investigated.) (Keywords: neuropharmacology, pharmacology, behavior, Brachionus plicatilis)
- 86- Kiss, I. 1987. Ecological studies on zooplankton species important for fish farms: II. interspecific relations between zooplankton species. Misc Zool Hung 4: 93-102. (Address: Department of Zoology, University of Agric., H-2103 Godollo, HUNGARY) (Summary: Some cases of competition and predation were examined in rotifers & cladocerans. Brachionus calyciflorus appeared 1st followed by Asplanchna spp. Brachionus calyciflorus, in the presence of Asplanchna spp. showed increased spine length, which resulted in the protection adult animals, & most of the young ones.) (Keywords: Brachionus calyciflorus, Asplanchna spp. filter feeding, reproduction, competition, predator - prey, behavior, spines, cyclomorphosis, population dynamics, community structure)
- 87- Kitajima, C., Hayashida, G., Yasumoto, S. 1988. Early development of the laboratory-reared flounder, Pleuronichthys cornutus. Jpn Journal Ichthyol 35(1): 69-77. (Address: Fisheries Research Laboratory, Kyushu University, Tsuyazaki, Fukuoka Pref. 811-33, JAPAN) (Summary: Larvae were fed successively with rotifers, Artemia nauplii & a harpacticoid copepod.) (Keywords: rotifers as food for fish)
- 88- Kleinow, W. & Bender, K. 1986. Zur chemischen Zusammensetzung des Hautpanzers von Brachionus plicatilis (Rotatoria). Vern Dtsch Zool Ges 79:339. (Keywords: Brachionus plicatilis, biochemistry)

- 89- Kleinow, W., Wethmar, C. & Karisch, M. (in press). Proteinases from Brachionus plicatilis (Rotatoria): characterization by means of gel electrophoretic methods. Verh Dtsch Zool. Ges. <Keywords: Brachionus plicatilis, technique, biochemistry, proteinases, gel electrophoresis>
- 90- Kokova, V.E., Spitskaya, N.I., & Furyaev, E.A. 1988. Specific growth rate of Philodina acuticornis cultivated under different conditions. Hidrobiol Zh 24(1): 80-82. <Address: Institute of Biophysics, Academy of Science USSR, Krasnoyarsk, USSR.> <Keywords: Bdelloida, growth, Philodina acuticornis>
- 91- Korstad, J. 1988. A selected bibliography on the biology of Brachionus plicatilis, with particular reference to feeding, life history, 7 population dynamics. SINTEF Report No. STF21 A88027, ISBN 82-595-5069-5, Division of Applied Chemistry, The Foundation for Scientific & Industrial Research at the Norwegian Institute of Technology, N-7034 Trondheim, NORWAY <Summary: Brachionus plicatilis is a mixohaline rotifer commonly used as start food for marine fish larvae. This bibliography contains 390 references on the biology of this organism published through December 1987. These references emphasize the feeding, life history, & population dynamics of B. plicatilis.> <Keywords: Brachionus plicatilis, rotifers as food for fish, feeding, food, life history, population dynamics, bibliography>
- 92- Koval'chuk, A.A. 1988. Oxygen consumption by Gordius sp., Gordiacea, Cephalorhyncha. Biol Nauki (Mosc) issue 2: 48-51. <Address: Institute of Hydrobiology, Academy of Science Ukr. SSR, Kiev, USSR> <Summary: Respiration of Gordiacea is compared to Nematoda and Rotifera.> <Keywords: oxygen consumption>
- 93- Kosztarab, M. 1987. Status & needs of invertebrate studies in Virginia. Va Journal Sci 38(4): 266-280. Symposium on sp. of Special Concern in Virginia held at the 1987 Annual Meeting of the Virginia Academy of Science, Norfolk, Virginia, USA, May 19-22, 1987. <Address: Department of Entomology, Virginia Polytechnic Institute & State University, Blacksburg, VA, 24061, USA> <Keywords: biogeography>
- 94- Koste, W. & Shiel, R.J. 1987. Rotifera from Australian inland waters: II. Epiphanidae & Brachionidae, Rotifera: Monogononta. Invertebr Taxon 1(7): 949-1021. <Address: Ludwig-Brill-Str. 5, Quakenbrueck, WEST GERMANY> <Summary: Diagnostic features of phylum Rotifera (Monogononta) are summarized, & a dichotomous key to the ploidate families is followed by detailed diagnostic keys to the planktonic & facultatively planktonic representatives of the Epiphanidae (Proalides, Epiphanes, Cyrtonia, Rhinoglena & Microcodides) and Brachionidae (Platvias, Brachionus, Keratella, Kellicottia, Notholca & Anuraeopsis). All sp. known from Australian inland waters are described and figured, as are some widely distributed taxa not yet recorded from the continent.> <Keywords: biogeography, new records, taxonomy, key, Epiphanidae, Proalides, Epiphanes, Cyrtonia, Rhinoglena, Microcodides, Brachionidae, Platvias, Brachionus, Keratella, Kellicottia, Notholca, Anuraeopsis>
- 95- Koussouris, T. & Satmadjis, J. 1987. Changes in plankton assemblages from spring to summer in a Greek lake. Rev Int Oceanogr Med 8788: 51-56. <Address: National Center for Marine Research, GR-166-04 Hellinikon, GREECE> <Summary: Anuraeopsis fissa was found in the samples.> <Keywords: season, Anuraeopsis fissa>
- 96- Kuczynski, D. 1985. The rotifer fauna as a limnological indicator in the Argentine's Patagonia. National Geographic Society Research Reports 21: 239. <Address: Facultad de Ciencias Exactas y Naturales, Universidad de Moron, Moron, ARGENTINA> <Keywords: indicator species>



- 97- Kuczynski, D. 1987. Rotíferos del Género Brachionus nuevos para la Antártida. Contrib Inst Antart Arg 360:1-11. <Summary: Presence of Brachionus havanaensis trahea (Murray) and Brachionus bidentatus bidentatus Anderson in 25 de Mayo (King George Island, South Shetland and Brachionus bidentatus inermis (Rousselet) in Barry Islet, Marguerite Bay is reported. Descriptions with figures and comments are given) <Keywords: Brachionus havanaensis trahea, Antarctic, Brachionus bidentatus bidentatus, Brachionus bidentatus inermis>
- 98- Kutikova, L. & Haberman, J. 1983. Synchaeta verrucosa Nipkow (Rotatoria) in Lake Vortsjarv. <Address: Zool. Inst., Leningrad, 199034, USSR> <Keywords: Synchaeta verrucosa>

\*L\*

- 99- Lampert, W. 1987. Laboratory studies on zooplankton-cyanobacteria interactions. N Z Journal Mar Freshwater Res 21(3): 483-490. <Address: Department of Physiological Ecology, Max Planck Institute of Limnology, Plön, WEST GERMANY> <Keywords: food, diet, filter feeding, grazing, toxins, bluegreen bacteria, bluegreen algae>
- 100- Lebedeva, L.I. & Gerasimova, T.N. 1987. Habitat dependent life cycle & realization of reproductive potential in bdelloid rotifer Philodina roseola. Zool Zh 66(9): 1293-1303. <Address: Biology Faculty, Moscow State University, Moscow, USSR> <Summary: Data are reported on growth, development & reproductive potential of Philodina roseola> <Keywords: food, growth, development, fecundity, reproduction, culture>
- 101- Lebedeva, L.I. & Gerasimova, T. 1988. Survival & reproduction potential of Philodina roseola, Ehrenberg, (Rotatoria, Bdelloida, under various temperature conditions. Int Rev Gesamten Hydrobiol 72(6): 695-707. <Address: Department of General Ecology & Hydrobiology, Biology Faculty, Moscow State University, 117234 Moscow, Lininskie Gory, USSR> <Summary: Data on survival, growth, length of life span & reproduction, were obtained at temperatures ranging from 9-35 C for Philodina roseola.> <Keywords: growth, culture, life span, mortality, survival, reproduction, temperature, Philodina roseola>
- 102- Legendre, M., Pagano, M., & Saint-Jean, L. 1987. Zooplankton populations & biomass in brackish aquaculture ponds, Lavo, Ivory Coast): Recolonization after liming & filling. Aquaculture 67(34): 321-342. <Address: Center for Recherches Oceanographiques, B.P. V 18, Abidjan, COTE D'IVOIRE> <Keywords: rotifers as food for fish, aquaculture>
- 103- Lovett, D.L & Felder, D.L. 1988. Evaluation of the rotifer Brachionus plicatilis as a substitute for Artemia in feeding larvae of Macrobrachium rosenbergii. Aquaculture 71(4): 331-338. <Address: Department of Biology, University of Southwestern Louisiana, P.O.B. 42451, Lafayette, LA, 70504, USA> <Summary: Addition of the rotifer Brachionus plicatilis to an Artemia-based diet yielded no significant increase in larval survival or rate of larval development in Macrobrachium rosenbergii.> <Keywords: aquaculture, rotifers as food for crustaceans>
- 104- Lubzens, E. & Minkoff, G. 1988. Influence of the age of algae fed to rotifers, Brachionus plicatilis O.F. Mueller, on the expression of mixis in their progenies. Oecologia (Berl) 75(3): 430-435. <Address: Israel Oceanographic & Limnology Research, Tel-Shikmona, P.O.B. 8030, Haifa 31080, ISRAEL> <Summary: Sequence of appearance of mixis in Brachionus plicatilis was followed among descendants of amictic rotifers transferred from a high salinity media to a low one. All neonates that

hatched from amictic eggs, after being transferred to a low salinity, were amictic. Each one of these neonates was cultured individually & its offspring removed periodically every 8-10 h.) <Keywords: reproduction, sex, mixis, food, salinity>

- 105- Luerftenegger, G., Petz, W., Foissner, W., & Adam, H. 1988. The efficiency of a direct counting method in estimating the numbers of microscopic soil organisms. *Pedobiologia* 31(12): 95-101. <Address: Institute fuer Zoology der University Salzburg, Helibrunnerstr. 34, A-5020 Salzburg, AUSTRIA> <Summary: A direct microscopic method for the estimation of the numbers of active ciliates, testacea, nematodes & rotifers is described. Counting is performed in an aqueous soil suspension. The efficiency of the method was tested with "recovery" experiments: 47% of rotifers were recovered.> <Keywords: sampling, technique>

\*M\*

- 106- MacIsaac, H.J., Hutchinson, T.C., & Keller, W. 1987. Analysis of planktonic rotifer assemblages from Sudbury, Ontario, area lakes of varying chemical composition. *Can Journal Fish Aquat Sci* 44(10): 1692-1701. <Address: Department of Biological Science, Dartmouth College, Hanover, NH, 03755, USA> <Summary: Plankton rotifer samples were collected from 47 lakes in the Sudbury (Ontario, Canada) area to determine factors influential to sp. distributions. Rotifer abundance was substantially higher in non-acid (pH >5.2) than in acid (pH <5.2) lakes, although differences in sp. distributions were evident.> <Keywords: species composition, heavy metal pollution, pollution, acid, toxic agent, environmental pollution>
- 107- Maier, G. 1987. Limnological studies on the eutrophication of gravel pits near rivers: III. Studies on the Rotatoria and Crustacea plankton in 5 gravel pits of varying trophic levels. *Jahresh Ges Naturkd Wuerttemb* 142: 243-266. <Keywords: species composition, season>
- 108- Mamedov, R.A. 1987. The species composition of zooplankton in Nakhichevan Reservoir. *Izv Akad Nauk Az Ssr Ser Biol Nauk* 0(2): 133-137. <Address: Nakhichevan Science Cent., Academy of Science Az. SSR, Baku, USSR> <Summary: The following sp. are new records for the Nakhichevan ASSR: Asplanchna henrietta, Asplanchna intermedia, & Colurella hindenburqi> <Keywords: Asplanchna henrietta new record, Asplanchna intermedia new record, Colurella hindenburqi new record>
- 109- Mangalo, H.H. & Akbar, M.M. 1988. Limnological investigation on the Al-Latifayah common carp, *Cyprinus carpio*, pond, Baghdad, Iraq): II. Food and feeding habits of *Cyprinus carpio* L. *J Environ Sci Health Part A (Environ Sci Eng)* 23(6): 513-524. <Address: Hay Al-Riyadh, 9084312, Baghdad, IRAQ> <Summary: Rotifers were found to be eaten by the carp, Cyprinus carpio.> <Keywords: rotifers as food for fish>
- 110- Marsh, P.C. & Langhorst, D.R. 1988. Feeding & fate of wild larval razorback sucker. *Environ Biol Fishes* 21(1): 59-68. <Address: Center for Environmental Studies, Arizona State University, Tempe, AR, 85287, USA> <Summary: Reservoir larvae of the razorback sucker, avoided rotifers as prey.> <Keywords: rotifers as food for fish>
- 111- Martinez, C.C. y Frutos, S.M. 1986. Fluctuacion temporal del zooplancton en arroyos y esteros del Chaco Oriental (Argentina). *Ambiente Subtropical* 1:112-133. <Address: CECOAL (Conicet). Castilla de Correo 291, 3400 Corrientes ARGENTINA> <Keywords: season>
- 112- Masteller, E.C. The influence of oil drilling operations & crude oil on the biological community. Pages 164-181 in Majumdar, S.K., F.J. Brenner, & E.W. Miller (eds.). *Pennsylvania Academy of Science Publication, Vol. 7. Environmental consequences of energy production:*

problems & prospects. Pennsylvania Academy of Science, Easton, Pennsylvania, USA. ISEN 0-9606670-6-7. (Address: Division of Science & Eng. Technol., PA State University, The Behrend College, Station Road, Erie, PA, 16563, USA) (Keywords: environmental toxicology, pollution, toxic agent)

- 113- Mirabdullaev, I.M. & Khagai, V.N. 1987. Formation of the natural food supply on green fertilizers in fingerling ponds. *Uzb Biol Zh* 0(3): 57-60. (Address: Research Institute of Fish. Tashkent, USSR) (Keywords: rotifers as food for fish)
- 114- Moore, M.V. 1988. Density-dependent predation of early instar Chaoborus feeding on multispecies prey assemblages. *Limnology & Oceanography* 33(2): 256-268. (Address: Department of Zoology, Miami University, Oxford, OH, 45056, USA) (Summary: Prey selectivity & predation rates by 2nd-instar Chaoborus punctipennis feeding on a three-sp. rotifer assemblage were determined in a laboratory experiment. Chaoborus became less selective at the 2 highest of 5 total prey densities which ranged from 180-2880 prey/L. This change in selectivity seemingly contradicts optimal foraging theory, but may have occurred because Chaoborus used different search tactics at different prey densities. Digestion was particularly rapid with crop evacuation times as brief as 15-30 min for a food bolus of soft-bodied Synchaeta pectinata.) (Keywords: Synchaeta pectinata, behavior, predator - prey)
- 115- Moore, M.V. 1988. Differential use of food resources by the instars of Chaoborus punctipennis. *Freshwater Biology* 19(2): 249-268. (Address: Department of Zoology, Miami University, Oxford, OH, 45056, USA) (Summary: Differential use of food resources by instars I-IV of Chaoborus punctipennis was examined. Relative abundance, %-biomass, & %-frequency of occurrence of soft & hard-bodied rotifers, & other zooplankton were quantified using crop content analyses. All instars consumed rotifers, mainly Kellicottia, Gastropus, & Polyarthra. Small rotifers (Gastropus spp., Keratella cochlearis, & Trichocerca similis) occurred more frequently & were more abundant in early instar diets than late instar (III & IV) diets, whereas large rotifers (Asplanchna priodonta & Keratella crassa) were eaten only by instars III & IV. Zooplankton with gelatinous sheaths (e.g. Ascomorpha, Collotheca & Holopedium) were rarely ingested. All 4 instars of C. punctipennis selected soft-bodied, or weakly loricate, rotifer prey over crustaceans and phytoplankton. Early instars preferred the small rotifer T. similis to other rotifers.) (Keywords: Kellicottia, Gastropus, Chaoborus predation, Polyarthra, Keratella cochlearis, Trichocerca similis, Asplanchna priodonta, Keratella crassa, Ascomorpha, Collotheca, predatory - prey)
- 116- Morales-Baquero, R. 1988. Body size variability of Euchlanis dilatata Ehrenberg in high mountain lakes of Sierra Nevada, Spain. *Arch fuer Hydrobiologie* 112(4): 597-610. A study of Euchlanis dilatata body size variability in 27 high mountain lakes of Sierra Nevada has principally shown interlake variability. Although temperature showed a negative relationship with size, the % of variance explained by temperature is low, suggesting the existence of other intervening factors.) (Keywords: temperature, size, Euchlanis dilatata lakes (high mountain))
- 117- Munqoma, S. 1988. Horizontal differentiation in the limnology of a tropical river-lake, Lake Kyoga, Uganda. *Hydrobiologia* 162(1): 89-95. (Address: Uganda Freshwater Fisheries Res. Organ., P.O.B. 343, Jinja, UGANDA) (Summary: Physical & chemical data are reported. Rotifer & microcrustacean zooplankters are recorded. (Keywords: river, physical, chemical)
- 118- Murata, H., Yamauchi, K., Goto, T., Nasu, T. 1987. Changes in the levels of omega3-polyunsaturated fatty acids & in the 2-thiocardituric

acid values in rotifers during frozen storage. Bull Jpn Soc Sci Fish 53(10): 1835-1840. <Address: Faculty of Agric., Miyazaki University, Miyazaki 889-21, JAPAN> <Summary: This study evaluated the dietary value of the rotifer Brachionus plicatilis as a live feed, through levels of important biochemicals after storage by freezing at -15 C for up to 120 days.> <Keywords: Brachionus plicatilis, rotifers as food for fish>

- 119- Muroga, K. Asunobu, H. 1987. Uptake of bacteria by rotifers. Bull Jpn Soc Sci Fish 53(11): 2091-2092. <Address: Faculty of Applied Biological Science, Hiroshima University, Fukuyama 720, JAPAN> <Keywords: food, diet, feeding, bacteria>

\*N\*

- 120- Neumann-Leitao, S. & Souza, V.A.D. 1987. Planktonic rotifers, Rotatoria, from Apipucos reservoir Recife, Pernambuco, Brazil. Arq Biol Tecnol (Curitiba) 30(3): 393-418. <Address: Department of Oceanografia da University Federal de Pernambuco, Avenida Bernardo Vieira de Melo, 986 Piedade, Recife, 50.000 Pernambuco, BRASIL> <Summary: 17 sp. 1 subsp. & 2 forms were found: Rotaria rotatoria, Epiphanes clavatula, E. macrourus, Platygaster quadricornis, Brachionus patulus, B. quadridentatus, B. falcatus, B. calyciflorus calyciflorus, B. calyciflorus anuraeiformis, B. angularis, B. caudatus, Keratella tropica f. brehmi, Lecane lunaris, Ascomorpha, Polyarthra vulgaris, Asplanchna priodonta, Testudinella patina, Conochilus dossuarius, & Filinia longiseta> <Keywords: Rotaria rotatoria, Epiphanes clavatula, Epiphanes macrourus, Platygaster quadricornis, Brachionus patulus, Brachionus quadridentatus, Brachionus falcatus, Brachionus calyciflorus calyciflorus, Brachionus calyciflorus anuraeiformis, Brachionus angularis, Brachionus caudatus, Keratella tropica f. brehmi, Lecane lunaris, Ascomorpha, Polyarthra vulgaris, Asplanchna priodonta, Testudinella patina, Conochilus dossuarius, Filinia longiseta>

- 121- Nielsen, C. 1987. Structure & function of metazoan ciliary bands and their phylogenetic significance. Acta Zool (Stockh) 68(4): 205-262. <Address: Zoology Museum, University of Copenhagen, Universitetsparken 15, DK-2100 Copenhagen, DENMARK> <Summary: Ciliated epithelia, especially ciliary bands used in swimming & filter feeding, of representatives of Porifera, Cnidaria, Annelida, Mollusca, Sipuncula, Nemertinea, Platyhelminthes, Entoprocta, Ectoprocta, Rotifera, Pterobranchia, Phoronida, Brachiopoda, Echinodermata, & Enteropneusta were investigated to determine if the trends fit the trochaea theory. The observations generally fit predictions of the theory; the exceptions are discussed.> <Keywords: ultrastructure, evolution, Trochaea theory>

- 122- Nogrady, T. 1988. The littoral rotifer plankton of the Bay of Quinte, Lake Ontario, & its horizontal distribution as indicators of trophic: I. A full season study. Arch fur Hydrobiol (Suppl.) 79(23): 145-166. <Address: Department of Biology, Queen's University, Kingston, Ontario, K7L 3N6, CANADA> <Summary: A survey of the littoral rotifer fauna of the Bay of Quinte was completed during the ice-free period at 5 stations in 1985. Seasonal succession of the total rotifer population at each the stations, timing of occurrence, & quantity of individual sp. reflects known trophic status of these stations. Quantitative changes in the rotifer assemblage of the 8 dominant sp., Keratella earlinae K. cochlearis tecta & cochlearis, Polyarthra vulgaris, P. dolichoptera, P. remata, Synchaeta spp. & Notholca spp., were evaluated for all 5 stations at 5 times during the year, and were also found to reflect trophic status.> <Keywords: Keratella earlinae, Keratella cochlearis tecta, Keratella cochlearis cochlearis, Polyarthra vulgaris, Polyarthra dolichoptera, Polyarthra remata, Synchaeta spp., Notholca spp., autecology, taxonomy, statistics>

\*O\*

- 123- O'Connell, M.F. & Andrews, C.W. 1987. Plankton ecology in relation to flushing rate in 4 Newfoundland ponds. *Int Rev Gesamten Hydrobiol* 72(4): 487-515. <Address: Department of Fisheries & Oceans, P.O.B. 5667, St. John's Newfoundland, A1C 5X1 CANADA> <Summary: A seasonal quantitative study was conducted on the plankton of 4 Newfoundland ponds. The most important rotifers found were Polvarthra dolichoptera, Conchilus unicornis, Keratella cochlearis, Kellicottia longispina, Kellicottia bostoniensis, Pelosoma truncatum, Synchaeta sp., & Trichocerca sp.> <Keywords: Polvarthra dolichoptera, Conchilus unicornis, Keratella cochlearis, Kellicottia longispina, Kellicottia bostoniensis, Pelosoma truncatum, Synchaeta sp., & Trichocerca sp., community structure, pollution, environmental toxicology, toxic agents>
- 124- Okamoto, S., Tanaka, M., Kurokura, H., & Kasahara, S. 1987. Cryopreservation of parthenogenetic eggs of the rotifer Brachionus plicatilis *Bull Jpn Soc Sci Fish* 53(11): 2093-2094. <Address: Faculty of Applied Biological Science, Hiroshima University, Fukuyama 720, JAPAN> <Keywords: cryopreservation, eggs, Brachionus plicatilis>

\*P\*

- 125- Parmley, D., Alvarado, G., Cortex, M. 1987. Food habits of small hatchery-reared Florida largemouth bass. *Prog Fish Cult* 48(4): 264-267. <Address: MSU Museum, MI State University, East Lansing, MI 48824, USA> <Summary: No rotifers were found in gut contents of fish even though they were present in high numbers in ponds> <Keywords: rotifers as food for fish>
- 126- Pascual, E. & Yufera, M. 1987. La alimentacion en el cultivo larvarió de peces marinos. Pages 251-293 in J. Espinosa de los Monteros & U. Labarta (eds.). *Alimentacion en acuicultura. Serie: Plan de Formacion de Tecnicos Superiores en Acuicultura. CAICYT, Madrid.* <Address: Instituto de Ciencias Marinas de Andalucia (C.S.I.C). Poligono Rio San Pedro s/n. Apdo. oficial 11510 Puerto Real, Cadiz, SPAIN> <Keywords: rotifers as food for fish>
- 127- Perez Benavente, G. & Gatesoupe, F.-J. 1988. The continuous distribution of rotifers increases the essential fatty acid reserve of turbot larvae. Scophthalmus maximus. *Aquaculture* 72(12): 109-114. <Address: Ifremerinra, Centre de Brest, BP 70, 29263 Plouzané, FRANCE> <Summary: Brachionus plicatilis enriched with fish oil emulsion were fed to turbot larvae. > <Keywords: Brachionus plicatilis, aquaculture, rotifers as food for fish>
- 128- Philippart, J.-C., Gillet, A., & Micha, J.-C. 1988. Fish & their environment in large european river ecosystems: the river Meuse. *Sci Eau* 7(1): 115-154. <Address: Laboratory Fish Demography Experimental Fish Culture, Department of Animal Ethology & Aquarium, quai Van Beneden, 22, B-4020 Liege, BELGIUM> <Keywords: pollution, water quality, heavy metal pollution, temperature>
- 129- Pinel-Alloul, B., Methot, G., Codin-Blumer, G. 1987. Spatial structure of the zooplankton in the lakes of Quebec: relationship with acidity. *Nat Can (Que)* 114(3): 295-306. <Address: Department of Biological Sciences, University of Montreal, C.P. 6128, Succ. A, Montreal, Quebec H3C 3J7, CANADA> <Keywords: Keratella taurocephala, Conochilus unicornis> chemistry>
- 130- Pontin, R.M. 1978. A key to the freshwater planktonic and semiplanktonic rotifera of the British isles. *Freshwater Biological Association, S.P.* 38, ISBN 0 9000395 33 9. <Keywords: key>

- 131- Ponton, D. & Stroffek, S. 1987. Diet of roach fry, Rutilus rutilus, L., in a port of Lake Geneva Switzerland: Comparison with available food. Schweiz Z Hydrol 49(3): 329-342. <Address: Seenforschungs Laboratory der Eawageth, CH-8047, Kastanienbaum> <Summary: Gut contents of roach fry were examined and compared to the zooplankton composition in a littoral area of Lake Geneva> <Keywords: rotifers as food for fish>
- 132- Pourriot, R. & Rougier, C. 1986. Rhythms of production of sexual females in the rotifer Brachionus calyciflorus in culture at constant temperature. Bull Soc Zool Fr 111(34): 203-210. <Address: Ecole Normale Supérieure, Laboratory d'Ecology, 46 rue d'Ulm, 75230 Paris Cedex 05, FRANCE> <Summary: A regular decrease of the mictic females rate with the age of the mother has been observed at 20 C. At 14 & 10 C, a rhythmic production of these mictic females in relation to the age of the mothers. After an initial regression, the mixis rate increase up to a second maximum observed at half egg laying & then drop again. > <Keywords: age, sex, Brachionus calyciflorus, culture, temperature, mictic>
- 133- Pratt, J.R., Ladzick, M., Cairns, J., Jr. 1987. Colonization of artificial substrates by micrometazoa. Arch Hydrobiol 110(4): 519-532. <Address: University Center, Environmental Studies, V.P.I. & State University, Blacksburg, VA, 24061, USA> <Summary: Research examined colonization of polyurethane foam artificial substrates by micrometazoa, including rotifers; in fact, the major metazoan colonists were rotifers.> <Keywords: community structure, island biogeography>
- 134- Pujin, V. & MALETIN, S. 1987. Diet of Prussian carp, Carassius auratus gibelio Bloch, in the Carska Bara. Tiscia (Szeged) 22: 93-98. <Address: Institute of Biological, Faculty of Science, Novi Sad. HUNGARY> <Summary: Diet of Prussian carp was studied and included rotifers. > <Keywords: rotifers as food for fish>
- \*Q\*
- \*R\*
- 135- Remm, K. 1987. A statistical method for the assessment of ecological relationships on the example of Filinia longiseta, Ehr., (Rotatoria). Eesti Nsv Tead Akad Toim Biol 36(4): 319-326. <Address: Institute of Zoology & Bot., Academy of Science Est. SSR., Tallinn, USSR> <Summary: A natural populcation of Filina longiseta was studied > <Keywords: season, salinity, Filinia longiseta, temperature, pH>
- 136- Rendon, A. & Yufera, M. 1985. Evaluacion de la production total de rotíferos en relacion al sistema de cultivo durante el periodo de cria larvaria en una de produccion de alevines. Acta del I Congreso Nacional de Acuicultura. (in press) <Address: Instituto de Ciencias Marinas de Andalucia (C.S.I.C). Poligono Rio San Pedro s/n. Apdo. oficial 11510 Puerto Real, Cadiz, SPAIN> <Keywords: production, rotifers as food for fish>
- 137- Ricci, C., Vaghi, L., & Manzini, M.L. 1987. Desiccation of rotifers, Macrotrachela quadricornifera: survival & reproduction. Ecology 68(5): 1488-1494. <Address: Claudia has moved her professional affiliation, therefore the address listed on the paper is incorrect, the correct address is: Department of Biology, An. Un. Torino, Via Accademia Albertina 17, I- Torino, ITALY> <Summary: Eggs & adults of M. quadricornifera (bdelloid) of various ages were dried to determine ability to recover. The highest % recovery was obtained with 3 day old rotifers stressed for 4 days. Age-specific survival & fecundity of

animals that recovered from drying generally were similar to controls. Age-specific fecundity & survivorship of stressed rotifers also were similar to the control group. Age affected ability to recover, but not the remaining life of the recovered animals. The life cycle seems to follow a fixed program regardless of the time spent in the anhydrobiotic state. <Keywords: eggs, age, aging, fecundity, reproduction, anhydrobiosis, bdelloids>

138- Ross, P.E. & Munawar, M. 1988. Zooplankton filtration rates in Lake Huron, Georgian Bay & North Channel. *Hydrobiologia* 163: 173-178. <Address: Illinois Natural History Survey, 607 East Peabody Drive, Champaign, IL, 61820, USA> <Summary: <Keywords: feeding rates>

139- Rothhaupt, K.O. 1988. Mechanistic resource competition theory applied to laboratory experiments with zooplankton. *Nature (Lond)* 333(6174): 660-662. <Address: Max-Planck-Institute fuer Limnologie, Postfach 165, D-2320 Ploen, WEST GERMANY> <Keywords: Brachionus rubens, Brachionus calyciflorus, Lotka-Volterra, competition, culture>

\*S\*

140- Salonen, K. & Latja, R. 1988. Variation in the carbon content of two Asplanchna species. *Hydrobiologia* 162(1): 79-88. <Address: Lammi Biological Station, University of Helsinki, SF-16900 Lammi, FINLAND> <Summary: Asplanchna sp. were sampled 4x during the summer from 8 lakes of different types, & the mean individual carbon content determined for A. priodonta & for A. herricki.> <Keywords: Asplanchna herricki, Asplanchna priodonta, biomass, body size, season>

141- Saint-Jean, L. & Pagano, M. 1987. Individual size & weight of main zooplankton species from the Ebrie Lagoon & aquaculture ponds in Ivory Coast. *Rev Hydrobiol Trop* 20(1): 13-20. <Address: Cent. Orstom, 2051 Val de Montferrand, 34032 Montpellier, FRANCE> <Summary: Ests. of individual weights have been made on the main sp. of the zooplankton of the Ebrie lagoon, including Brachionus plicatilis.> <Keywords: Brachionus plicatilis, size>

142- Sarkka, J. 1987. Meiobenthos of a lake chain affected by pulp mill effluent. *Aqua Fenn* 17(1): 35-42. <Address: Department of Biology, University of Jyväskylä, Yliopistonkatu 9, SF-40100, Jyväskylä> <Summary: This study examined diversity of the meiobenthos in waters near a pulp mill in Finland. Rotifers were dominant in the most polluted regions (sedimentation of organic matter).> <Keywords: environmental toxicology, eutrophication, toxic agents, pollution>

143- Sarma, S.S.S. 1988. New records of freshwater rotifers, Rotifera, from Indian waters. *Hydrobiologia* 160(3): 263-270. <Address: Department of Zoology, University of Delhi, Delhi-7, INDIA> <Summary: This study adds 25 rotifer sp. to the fauna of India: Cyrtocia tuba (Ehrb.); Epiphanes macrourus (Barrois & Daday), Liliferotrocha subtilis (Rodewald), Microcodides chleana (Gosse), Brachionus dimidiatus (Bryce), Keratella ticinensis Carlin, Notholca labis (Gosse), Platylabus lelousi (Gillard), Euchlanis incisa Carlin, Mytilina bisulcata (Lucks), Nolga spinifera (Western), Lecane (=Lecane) althausi Rudescu, Lecane doryssa Harring, Lecane elongata Harring & Myers, Lecane (=Monostyla) bifurca (Bryce), Lecane (M) lamellata thalera (Harring & Myers), Lecane (=Hemimonostyla) blachei Berzins, Cephalodella gigantea Remane, Monommatia arnoldi Remane, Trichocerca pusilla (Lauterborn), Tetradinella emarginula (Stenroos), Ptygura melicerta Ehrb., Ptygura tacita Edmondson, Filinia cornuta (Weisse), Collotheca mutabilis (Hudson), Collotheca ornata (Ehrb.) & Collotheca trilobata (Collins). Brachionus dimidiatus & Platylabus lelousi are new records from Delhi Region.> <Keywords: new records, biogeography, distribution, Indian fauna>

- 144- Sarma, S.S.S. & Rao, T.R. 1987. Effect of food level on body size & egg size in a growing population of the rotifer Brachionus patulus Muller. Arch Hydrobiol 111(2): 245-254. <Address: Department of Zoology, University of Delhi, Delhi - 110007 INDIA> <Summary: Brachionus patulus were grown at different food levels and body size (lorica area) of individual rotifers & the size of eggs borne by them were measured. Body size & egg size were larger at higher food levels. A significantly + correlation was observed between the adult body size & the size of egg produced> <Keywords: egg size, population growth, food level, size, egg, Brachionus patulus>
- 145- Schlosser, H.J. 1987. Assessment problems in working on the "study concerning criteria for ecotoxicological investigations relating to stress on ecosystems". Pages 6-15 in H. Becker (ed.). Mitteilungen aus der Biologischen Bundesanstalt fuer Land- und Forstwirtschaft Berlin-Dahlem, Heft 234. Untersuchung und Bewertung von Belastungen in Oekosystemen; BMFT (Bundesminister fuer Forschung und Technologie, West Berlin, West Germany, November 4th, 1985. 71p. Kommissionsverlag Paul Parey, Berlin, West Germany. Paper. ISBN 3-489-23400-6. <Address: Biologische Bundesanstalt Land- Forstwirtschaft, Institute fuer Chemikalienpruefung, WEST GERMANY> <Keywords: Brachionus rubens, indicator organisms, pollution, environmental toxicology, toxic agent>
- 146- Schlueter, M., Groeneweg, J., & Soeder, C.J. 1987. Impact of rotifer grazing on population dynamics of green microalgae in high-rate ponds. Water Res 21(10): 1293-1298. <Address: Institute fuer Biotechnol., Kernforschungsanlage Juelich GmbH, P.O.B. 1913, D-5170 Juelich 1, WEST GERMANY> <Summary: Grazing activity of Brachionus rubens or B. calyciflorus often leads to a replacement of Scenedesmus spp. by Microactinium pusillum. Microactinium pusillum with fully developed spines (setae) cannot be eaten by Brachionus. Ecological conditions for population shifts between Scenedesmus & Microactinium are interpreted as a response of the rotifers rather than being due to physiological properties of the algae. Another effect of rotifer grazing on the microbial flora of high-rate ponds is the development of large stable flocs consisting of bacteria & microalgae.> <Keywords: Brachionus rubens, Brachionus calyciflorus, algae, food, diet, population shifts, population dynamics>
- 147- Schoenberg, S.A. 1988. Microcrustacean community structure & biomass in marsh & lake habitats of the Okefenokee Swamp: Seasonal dynamics & responses to resource manipulations. Holarct Ecol 11(1): 8-18. <Summary: Microcrustacean community and biomass dynamics were studied for 2 years in a Nymphaea-Eriocaulon macrophyte marsh & a nearly shallow lake which lacked macrophytes in the Okefenokee Swamp. Rotifers were occasionally important, constituting up to 55% of total biomass. <Keywords: macrophytes>
- 148- Schubert, R. 1987. Ecotechnology: Tasks & possibilities in the association of ecology with technology. Wiss Z Martin Luther Univ Halle-Wittenberg Math-Naturwiss Reihe 36(5): 138-146. <Address: Section Biowissenschaften, Martin-Luther-University Halle-Wittenberg, Wissenschaftsbereich Geobotanik Botanischer Garten, Neuwerk 21, Halle 4050, WEST GERMANY> <Keywords: Polyarthra, eutrophication, herbicides, toxic agents>
- 149- Schwoerbel, J. 1987. Dr. h.c. Walter Koste zum 75. Geburtstag. Arch Hydrobiol 110(4):631-638. <Summary: This paper related Dr. Koste's life and work with rotifers, listed 102 of his papers!> <Summary: bibliography> <Keywords: biography>



- 150- Scott, J.M. 1988. Effect of growth rate on the physiological rates of a chemostat-grown rotifer Encentrum linnhei. Journal Mar Biol Assoc UK 68(1): 165-178. <Address: Scottish Marine Biological Association, Dunstaffnage Marine Res. Laboratory, P.O.B. 3, Oban, Argyll PA 34 4AD, SCOTLAND> <Summary: Physiological rates of a normally omnivorous marine rotifer, Encentrum linnhei, were measured under the steady-state chemostat conditions in which the physiological state of the food-algae was kept constant while rotifer growth rate was changed to preset levels. Specific clearance rate ranged between 50-100 ul/ug rotifer-C/day (1.5-3.0 uL/rotifer/day). Mean respiration rate was 0.45 ug-C/ug rotifer-C/day.> <Keywords: food, oxygen, marine, growth, culture, chemostat, feeding rates, clearance rates>
- 151- Seikai, T., Shimozaki, M., Watanabe, T. 1987. Estimation of larval stage determining the appearance of albinism in hatchery-reared juvenile flounder Paralichthys olivaceus. Bull Jpn Soc Sci Fish 53(7): 1107-1114. <Address: Fisheries Research Station, Faculty of Agric., Kyoto University, Maizuru, Kyoto 625, JAPAN> <Summary: The larval stage of the flounder P. olivaceus, was fed Brazilian Artemia nauplii & rotifers which induce albinism easily in a high %. Feeding wild zooplankton & rotifers usually induces normal coloration.> <Keywords: rotifers as food for fish>
- 152- Sen, D. 1988. Investigation of the Kalecik, Karakocan-Elazig, pond & water products. Doga Biyol Serisi 12(1): 69-85. <Address: Firat University, Su Urunleri Yuksekokulu, Elazig, TURKEY> <Summary: Rotifers composed 65.98%, of the zooplankton.> <Keywords: Turkey>
- 153- Serra-Galindo, M. 1987. Variacion morfometrica, isoenzimatica y demografica en poblaciones de Brachionus plicatilis. Diferenciacion genetica y plasticidad fenotipica. Ph.D. Dissertation, Departamento de Ecologia, Universitat de Valencia, SPAIN, Numero de Serie: 220-1, ISBN 84-370-0377-6. "Morphometric, isoenzymatic, & life history variation in Brachionus plicatilis populations. Genetic differentiation and phenotypic plasticity." <Language: Spanish, English summary provided to the editors of ROTIFER NEWS> <Summary: This work examines intraspecific variation among and within several populations of the planktonic rotifer Brachionus plicatilis. Specimens were collected from a geographic area centered in the Spanish Mediterranean coast. The thesis begins with a characterization of Brachionus plicatilis distribution, that stresses (1) the preference of this rotifer for waters of intermediate salinities &, especially for atalashaline ones, (2) the tolerance of B. plicatilis to low oxygen concentrations, & (3) the wide tolerance ranges of this rotifer to a few important physical & chemical parameters. Intraspecific variation was studied in different ways. Morphometric variation was evaluated in both field & laboratory populations, & indicates the influence of genotype & temperature on size and shape of Brachionus plicatilis, as well as the influence of salinity on the shape of the anterior side of the lorica. Biometric analysis revealed existence of cyclomorphosis & a close relationship between morphometry & both seasonal & geographical origin of the samples. Differences between Atlantic & Mediterranean populations were demonstrated, as well as the arrangement of the latter in a north-south cline. The isoenzymatic analysis showed Brachionus plicatilis to be a polytypic sp. in the area of study. This analysis also suggests a low level of intrapopulation variability & the existence of genotypic polymorphisms maintained by an excess of heterozygotic individuals. A life history analysis was carried out using models. This analysis showed the interaction among genotype, temperature, & salinity, & demonstrates that the strains are adapted to the dominant conditions in the water they inhabit, & to the level of fluctuation of the major physical & chemical parameters. Relationships between the main demographic parameters & their ecological & evolutionary aspects were

discussed. The thesis closes with a discussion of the results & with suggestions for further work.) <Keywords: size, shape, anatomy, morphology, Brachionus plicatilis, biogeography, PhD-thesis, salinity, oxygen concentration, intraspecific variation, genotype, temperature, cyclomorphosis, isoenzyme, heterozygotic, life history, evolution>

- 154- Sharma, B.K. 1987. The distribution of the lecanid rotifers, Rotifera: Monogononta: Lecanidae, in North-Eastern India. Rev Hydrobiol Trop 20(2): 101-106. <Address: Department of Zoology, North-Eastern Hill University, Shillong-793014, INDIA> <Summary: 30 sp. (32 taxa) of the genus Lecane (Family: Lecanidae), including Lecane jaintiaensis sp. n., are examined from North-Eastern India. 7 taxa are new to India while 25 taxa represented new records from this region. Remarks are made on the distribution & ecology of the different taxa.> <Keywords: Lecane jaintiaensis new species, taxonomy, new records, Lecanidae, biogeography>
- 155- Shcherbina, M.A., Burlachenko, I.V., Sergeeva, N.T. 1988. Egg chemical composition & the requirements of the 2 Black Sea species Mugil cephalus & Liza aurata for amino acids. Vopr Ikhtiol 28(1): 132-137. <Address: All-Union Res. Institute Pond Fish., Rybnce, USSR> <Keywords: rotifers as food for fish>
- 156A- Shoemaker, J., Davis, S.H., & Williams, R.K. 1987. Notommata allantois, new record in northeastern Texas lakes: A rotifer previously known only from Europe. Tex Journal Sci 39(2): 194-196. <Address: Department of Biological Science, East Texas State University, Commerce, Texas, 75428> <Keywords: biogeography, Notommata allantois>
- 156B- Shorrocks, B. and M. Begon. 1975. A model of competition. Oecologia (Berlin) 20:363-367. <Keywords: competition>
- 157- Siegfried, C.A., Sutherland, J.W., & Quinn, S.O. 1987. Plankton community response to the chemical neutralization of 3 acidified waters in the Adirondack Mountain Region of New York State. Lake Reservoir Manage 3: 444-451. <Address: Biological Survey, NY-State Museum & Science Serv., Albany, NY, USA> <Keywords: acid, pollution, environmental toxicology>
- 158- Silina, N.I. 1987. Technique of quantitative registration of rotifers. Gidrobiol Zh 23(5): 97-102. <Summary: This study compared capture of rotifers by a plankton net (mesh-100-120  $\mu$ m) & by the sedimentation method.> <Keywords: sampling methods> [Eds. unconfirmed report from a colleague.]
- 159- Snell, T.W., Childress, M.J., Winkler, B.C. 1988. Characteristics of the mate recognition factor in the rotifer Brachionus plicatilis. Comp Biochem Physiol A Comp Physiol 89(3): 481-486. <Address: Division of Science, University of Tampa, Tampa, FL, 33606, USA> <Summary: Brachionus plicatilis males attempted to mate with live & freeze-killed females with equal probability. Heating females to 100 C gradually destroyed the mate recognition factor (MRF) & reduced the probability of male copulation. Exposure of freeze-killed females to the general proteases, proteinase K & pronase E, degraded the MRF. Specific proteases (trypsin and carboxypeptidase A) did not significantly degrade the MRF, but chymotrypsin caused a linear decline of MRF activity. Of 8 glycohydrolases tested, only beta-amylase significantly degraded the MRF. Because of its heat lability & susceptibility to protease & glycohydrolase degradation, the B. plicatilis MRF is most likely to be a glycoprotein.> <Keywords: mate recognition factor (MRF), Brachionus plicatilis, biochemistry, reproduction, sex, male>

- 160- Spoon, D.M. 1978. A new rotary microcompressor. Trans Amer Microsc Soc 97(3): 412-416. [Eds note: see also information on the Taylor Microcompressor in News etc.] (Keywords: microcompressor)
- 161- Stemberger, R.S. 1988. Reproductive costs & hydrodynamic benefits of chemically induced defenses in Keratella testudo. Limnology & Oceanography 33(4 Part 1): 593-606. (Address: Department of Biological Science, Dartmouth College, Hanover, NH, 03755, USA) (Summary: Food concentration differentially affected reproductive rates & hydrodynamic characteristics of spined & unspined phenotypes of the polymorphic rotifer Keratella testudo. Intrinsic rate of population growth (0.15 d<sup>-1</sup>) of the predator-induced phenotype was less than half that of the unspined morph (0.39 d<sup>-1</sup>) at high food concentrations. The spined phenotype had considerably lower survivorship & fecundity than the unspined one after the first 3-4 days of life. Sinking rates and swimming speeds of both morphs were significantly and negatively correlated ( $r = -0.96$ ). Attached eggs increased sinking rates regardless of food level. Changes in sinking rate occurred within 6 hours of transferring animals acclimated to high food to conditions of starvation. Food concentration greatly influenced the center of gravity of the morphs and affected orientation during sinking. Rotifers sank posterior-end downward in high food conditions and in a more horizontal plane in low food treatments. Lorica densities of both phenotypes were  $>1.3 \text{ g/cm}^3$  suggesting that this structure may contribute significantly to body mass & may be energetically costly to produce or maintain. (Keywords: anatomy, morphology, food, reproduction, fecundity, survivorship, sinking, energetics, Keratella testudo)
- 162- Stemberger, R.S. & Gilbert, J.J. 1987. Defenses of planktonic rotifers against predators. Pages 227-239 in Kerfoot, W.C. & A. Sih (Eds.) Predation: Direct and indirect impacts on aquatic communities. University Press of New England, Hanover, NH. ISBN 0-87451-376-6. (Address: Department of Biological Science, Dartmouth College, Hanover, NH 03755) (Keywords: anatomy, morphology, behavior, season, predator-prey relationships)
- 163- Stewart, L.J. & George, D.G. 1988. An in situ experimental column for the study of vertical migration in plankton. Freshwater Biol 19(2): 275-280. (Address: Freshwater Biological Assoc., The Ferry House, Ambleside, Cumbria LA22 0LP, UK) (Summary: An experimental column that can be installed in situ to manipulate the behavior of planktonic organisms is described.) (Keywords: behavior, vertical migration, oxygen, temperature, light, enclosures)
- 164- Stockner, J.G. 1988. Phototrophic picoplankton: an overview from marine and freshwater ecosystems. Limnology & Oceanography 33(4)(Part 2): 765-775. (Address: Canada Fisheries & Oceans, West Vancouver Laboratory, 4160 Marine Drive, West Vancouver, British Columbia V7V 1N6, CANADA) (Keywords: light, size, marine)
- 165- Stoecker, D.K. & Egloff, D.A. 1987. Predation by Acartia tonsa Dana on planktonic ciliates & rotifers. Journal Exp Mar Biol Ecol 110(1): 53-68. (Address: Department of Biology, Woods Hole Oceanographic Institute, Woods Hole, MA, 02543, USA) (Summary: Adults & nauplii of the calanoid copepod A. tonsa feed on planktonic ciliates & rotifers.) (Keywords: predator-prey)
- 166- Strong, K.W. 1987. The effect of lime on the zooplankton population of Sandy Lake, Halifax County, Nova Scotia. Proc N S Inst Sci 37(2): 65-70. (Summary: The rotifer Keratella taurocephala was less numerous subsequent to liming a lake in N.S. Other sp., particularly rotifer sp., were either more numerous or were collected for the first time in the 2 years immediately following the liming.) (Keywords: Keratella

- saurocephala, environmental toxicology, pollution, toxic agent, pH, acid, population dynamics, community structure)
- 167- Sudzuki, M. 1986. Some notes on Rotifers from a mixo-haline lake, Harutori (Hokkaido). Proc 57th Annual Meet of the Zool Soc of Japan, Oct 10-12, 1986. <Keywords: haline>
- 168- Sudzuki, M. 1988. Comments on the antarctic Rotifera. Hydrobiologia 165: 89-96. <Address: Biology Laboratory, Nihon Daigaku University, Omiya-Shi, Saitama-ken, JAPAN 330> <Summary: This paper reconsiders the taxonomy and distributional ecology of the antarctic free-swimming Rotifera with special reference to Notholca and Keratella. Notholca verae is a valid sp. separate from the squamula group. N. salina may be different from N. squamula in that the former has a smooth pectoral margin and the shortest occipital spines located at the lateral region. The new sp. of Dartnall (1983) is included within those of N. marina. A sp. of Keratella from Kerguelen, identified as K. sancta, is clearly different in the dorsal sculpturing on the lorica from the original description by Russel (1944). The occurrence of Filinia spp. species with large numbers of nuclei in the vitellarium and relatively long bristles is noteworthy.> Keywords: Notholca verae, Notholca squamula, Notholca salina, Notholca marina, Keratella sancta, Filinia, anatomy, taxonomy, biogeography, Antarctica>
- 169- Sudzuki, M. & Ohki, S. 1987. Some additions to systematically interesting microscopical animalcules in Japan. Zool Sci (Tokyo) 4(6): 1118. 58th Annual Meeting of the Zoological Society of Japan, Toyama, Japan, October 7-9, 1987. <Address: Biological Laboratory, Nihon Daigaku University, Omiya, JAPAN> <Keywords: systematics>
- \*T\*
- 170- Taira, M. & Hogetsu, K. 1987. Species composition of phytoplankton & zooplankton communities in fertilized & non-fertilized paddy fields. Jpn Journal Limnol 48(2): 77-84. <Address: Shiki High School, 1-1-1 Kamimuneoka, Shiki, Saitama 352, JAPAN> <Summary: Seasonal changes of numbers & sp. composition of phyto- & zoo-plankters in fertilized & non-fertilized paddy fields were studied. > Keywords: rice paddy fields, season, Japan>
- 171- Turner, P.N. 1986. Some rotifers from Republic of Korea. Hydrobiologia 137: 3-7. <Address: Department of Invertebrate Zoology, National Museum of Natural History, Washington, D.C. 20560, USA> <Keywords: Korea>
- 172- Turner, P.N. 1987. A new rotifer from a coastal lake in Southeastern Brazil: Hexarthra longicornicula n. sp. Hydrobiologia 153: 169-174. <Address: see above> <Keywords: new species, Brazil, Hexarthra longicornicula>
- 173- Turner, P.N. 1987. Keratella rotifers found in Brazil, & a survey of Keratella rotifers from the Neotropics. Amazoniana 10(2): 223-236. <Address: see above> <Summary: 3 Brazilian lakes were examined for rotifers. Of the 57 spp. found, 4 were members of the genus Keratella. A literature search revealed about 15 spp. and subsp. of Keratella recorded from the Neotropics, 11 of these from Brazil. All known Neotropical Keratella rotifers are discussed & figured, with highlights on the endemics. Related spp. are discussed when confusion may arise with identifications. Taxonomic details of specific significance are listed in order of importance, & the state of expert consensus about this genus is given. Ecology & distribution of these rotifers also are discussed.> <Keywords: biogeography, taxonomy, neotropics>

- 174- Tucker, J.W., Jr. 1987. Snook & tarpon snook culture & preliminary evaluation for commercial farming. Prog Fish-cult 49(1): 49-57. <Address: Harbor Branch Oceanographic Institution, 5600 Old Dixie Highway, Fort Pierce, FL 33450, USA> <Summary: Snook & tarpon snook reared to market size using Brachionus plicatilis & Artemia nauplii> <Keywords: rotifers as food for fish, Brachionus plicatilis>
- 175- Turner, P.N. 1987. A new rotifer from a coastal lake in southeastern Brazil: Hexarthra longicornicula, new species. Hydrobiologia 153(2): 169-174. <Address: see above> <Summary: A new rotifer is described from among samples taken from coastal lakes in southeastern Brazil. This new form belongs to the Hexarthra mira-intermedia sp. group by way of its general morphological configuration, the number of teeth in the trophi (5), & the 2 club-shaped caudal appendages. An extremely long dorsal antenna & very long setae extending from the bend in the ventro-lateral arm characterize this animal's speciation> <Keywords: Hexarthra mira intermedia, new description, taxonomy, Brazil>
- 176- Twombly, S. & Lewis, W.M., Jr. 1987. Zooplankton abundance & species composition in Laguna la Orsinera, a Venezuelan floodplain lake. Arch Hydrobiol Suppl 79(1): 87-107. <Address: Department of Zoology, University of Rhode Island, Kingston, RI, 02881, USA> <Summary: Rotifers were abundant including the genera Filinia, Hexarthra, Polyarthra, Brachionus, Keratella, & Asplanchna.> <Keywords: chemistry, physical, population dynamics, Filinia, Hexarthra, Polyarthra, Brachionus, Keratella, Asplanchna>
- \*U\*
- 177- Ustaoglu, M.R. 1987. Zooplankton, Metazoa, of the Karagol, Yamanlar, Izmir-Turkey. Biol Gallo-hell 12: 273-282. 3rd International Congress on the Zoogeography and Ecology of Greece & Adjacent Regions, Patras, Greece, April 23-27. <Address: Aegean University, Science Faculty, Biological Division, Department of Hydrobiology, Bornova-Izmir-Turkey> <Keywords: Turkey>
- \*V\*
- 178- Van Der Wal, E.J. & Nell, J.A. 1987. Effect of food concentration on the survival & growth of Australian bass, Macquaria novemaculeata, larvae. Prog Fish Culturist 48(3): 202-204. <Address: Department of Agric., Brackish Water Fish Culture Research Station, Salamander Bay, New South Wales 2301, AUSTRALIA> <Summary: Larvae of Australian bass were offered Brachionus plicatilis as food.> <Keywords: Brachionus plicatilis, rotifers as food for fish, aquaculture>
- 179- Verma, P.K. & Munshi, J.D. 1987. Plankton community structure of Badua reservoir, Bhagalpur, Bihar. Trop Ecol 28(2): 200-207. <Address: Post-Graduate Department of Zoology, Bhagalpur University, Bhagalpur 812007, INDIA> <Summary: Zooplankton were dominated by copepods (84%) & rotifers (35%).> <Keywords: species diversity, community structure, reservoir>
- 180- Vinyard, G.L., Drenner, R.W., Gophen, M., Pollinger, U., Winkelman, D.L., & Hambricht, K.D. 1988. An experimental study of the plankton community impacts of 2 omnivorous filter-feeding cichlids, Tilapia galilaea & Tilapia aurea. Can Journal Fish Aquat Sci 45(4): 685-690. <Address: Department of Biology, University Nevada-Reno, Reno, NV, 89557, USA> <Summary: Laboratory grazing experiments & outdoor mesocosm experiments assessed the impact of 2 cichlids on plankton from Lake Kinneret, Israel. > <Keywords: rotifers as food for fish>

181- Vuorinen, I. & Ranta, E. 1987. Dynamics of marine meso-zooplankton at Seili, Northern Baltic Sea, in 1967-1975. *Ophelia* 28(1): 31-48. (Address: Finnish Institute of Marine Research, P.O.B. 33, SF-00931, Helsinki, FINLAND) (Summary: The most abundant rotifers were Synchaeta spp. (S. baltica and S. monopus). There is considerable year-to-year variation in meso-zooplankton composition. For example, biomass in the summers of 1968 & 1974 was dominated (40-60%) by rotifers, while in 1967, 1970 & 1973 rotifers were less important (10-15%) in the biomass.) (Keywords: Synchaeta baltica, Synchaeta monopus, season, salinity, temperature, marine)

\*W\*

182- Weglenska, T., Bownik-Dylinska, L., Ejsmont-Karabin, J., & Spodniewska, I. 1987. Plankton structure & dynamics, phosphorus & nitrogen regeneration by zooplankton in Lake Glebokie polluted by aquaculture. *Ekol Pol* 35(1): 173-208. (Address: Department of Hydrobiology, Institute of Ecology, Polish Academy of Science, Dziekanow Lesny, 05-092 Lomianki, Poland) (Keywords: trophic structure, eutrophication, nutrient loading)

\*X\*

\*Y\*

183- Yamasaki, S., Secor, D.H., & Hirata, H. 1987. Population growth of 2 types of rotifer, L & S, Brachionus plicatilis at different dissolved oxygen levels. *Bull Jpn Soc Sci Fish* 53(7): 1303-1304. (Address: Laboratory of Fish Cultivation Physiology, Faculty of Fisheries, Kagoshima University, Kagoshima, 890, JAPAN) (Keywords: growth, Brachionus plicatilis, oxygen, aquaculture, strain differences)

184- Yasuno, M., Hanazato, T., Iwakuma, T., Takamura, K., Ueno, R., & Takamura, N. 1988. Effects of permethrin on phytoplankton & zooplankton in an enclosure ecosystem in a pond. *Hydrobiologia* 159(3): 247-258. (Address: Division of Environ. Biology, National Institute Environ. Studies, Yatabe, Tsukuba 305, JAPAN) (Summary: This study examined effects of an insecticide on Keratella valga (etc.)) (Keywords: Keratella valga, environmental toxicology, pollution, indicator species, toxic agent)

185- Yousuf, A.R., Stamatiadis, A., Alliot, E. 1987. Effect of a variable addition of nitrates to a culture medium of the alga Chlamydomonas uva maris on a short food chain, alga-rotifer-fish larva. Meetings of the Group for the Advancement of Marine Biochemistry. Biochemical Processes in the Coastal & Lagoonal Food Web, L'Houmeau, France, November 19-22, 1986. *Oceanis* 13(45): 557-570. (Address: Station de Recherche Halieutiques, I.R.Z.-P.M.B. 77 Limbe, FRANCE) (Keywords: growth, production, culture)

186- Yonekawa, K. 1988. Simulation of seasonal change in plankton biomass in Lake Teganuma. *Denryoku Chuo Kenkyusho Hokoku* 0(U87044): 1-24. (Summary: Rotifers dominated in the spring & fall in this lake, but calculated peaks of rotifer abundance were higher than observed ones.) (Keywords: model, population dynamics)

187- Yousuf, A.R. & Qadri, M.Y. 1986. Distribution of Polyarthra vulgaris Carlin, Rotifera: Monogonata, in a warm monomictic lake of Kashmir, India. *Journal Indian Inst Sci* 66(6): 405-410. (Address: Department of Zoology, University of Kashmir, Srinagar 190 006, INDIA) (Summary: Seasonal changes in the abundance of Polyarthra vulgaris in a warm monomictic lake are described.) (Keywords: population density, India, Polyarthra vulgaris, temperature, season)

Brachicrus patulus: 120,144  
Brachicrus quadridentatus: 6,11,120  
Brachicrus rubens: 139,145,146  
Brachicrus sp.: 60,61,94,176  
Brachicrus urceolaris: 17  
Brachicrus urceolaris amazonica: 30  
 brackish water: 7  
 Brazil: 172,175  
Cephalciella gigantea: 143  
Chaoborus predation: 36,115  
 chemical limnology: 18,20,29,50,74, 117,129,176  
 chemostat: 150  
 chlorinity: 63,65  
 clearance rate (see feeding rate, etc.): 151  
 clones: 17  
Collotheca mutabilis: 143  
Collotheca ornata: 143  
Collotheca sp.: 115  
Collotheca trilobata: 143  
Colurella hindenburgi: 108  
 community structure: 1,12,19,61,70, 82,86,123,133,166, 179  
 competition: 86,139  
Conochilus dossuarius: 12,120  
Conochilus unicornis: 123,129  
 cryopreservation: 124  
 culture: 15,17,35,48,54, 65,66,75,100,101, 132,139,151,185,188  
Cupeloparis vorax: 33  
 cyclomorphosis: 86,154  
Cyrtonia sp: 94  
Cyrtonia tuba: 143  
 development: 100  
 diel: 6  
 diet: 32,35,39,42,58, 59,75,99,119,146, 188  
 distribution: 10,16,31,143  
 diurnal: 6  
 dominance: 45  
 dynamics: 6  
 egg: 63,64,124,137  
 egg size: 144  
 electivity: 61  
Encentrum graindgeri:  
 enclosure experiments: 163  
 energetics: 161  
 environmental toxicology: 25,40,43,67,70, 73,74,77,79,81,  
 106,112,123,142,145, 157,166,184  
 ephemeral waters: 24  
 Epiphaniidae: 94  
Epiphanes sp: 94  
Epiphanes clavatula: 120  
Epiphanes macrorus: 120,143  
 escape behavior: 36  
 estuary: 6,7,61  
Euchlanis dilatata: 116  
Euchlanis inriza: 143  
Euchlanis orosatula: 30  
 eutrophication (incl. eutrophic): 3,12,21,60,81, 82,142,148,182  
 evolution (incl. speciation): 121,154  
 fecundity: 65,66,100,137,161  
Filinia cornuta: 143  
Filinia longiseta: 6,12,120,135  
Filinia longiseta passa:  
Filinia sp.: 168,176  
 feeding: 45,57,58,91,119  
 feeding rates: 57,58,59,138,151

18a- Yurera, M. 1987. Effects of algal diet & temperature on the embryonic development time of the rotifer Brachionus plicatilis in culture. Hydrobiologia 147: 319-322. <Address: Instituto de Ciencias Marinas de Andalucía (C.S.I.C). Polígono Río San Pedro s/n. Apdo. oficial 11510 Puerto Real, Cadiz, SPAIN> <Keywords: diet, Brachionus plicatilis, culture>

#### INDEX

The index to ROTIFER NEWS is prepared using keywords followed by the access numbers from the list of recent literature: NNC = News notes & comments; WIP = Work in Progress.

#### KEYWORDS & ACCESS NUMBERS

acidity (acid): 106,157,166  
 activity: 13  
 Africa: 31  
 aging (life history studies; see also life span): 8,13,132,137  
 alage: 27,146  
 anatomy: 4,7,53,151,161, 162,168  
 anhydrobiosis: 137  
Anuraeopsis fissa: 12,95  
Anuraeopsis sp: 94  
 antioxidant: 13  
 aquaculture: 15,32,37,65,66, 78,80,102,103,127, 178,183  
 arctic regions (incl. antarctic): 97,168  
Ascomorpha sp: 115,120  
Asplanchna brightwelli: 8  
Asplanchna girodi: 56  
Asplanchna herricki: 83,108,140  
Asplanchna intermedia: 108  
Asplanchna priodonta: 83,115,120,140  
Asplanchna sp.: 86,176  
 autecology: 122  
 avoidance behavior: 6  
 avoidance of the shore: 6  
 bacteria: 57,59,119  
 Baltic Sea: 6  
Beauchampi crucigera: 29  
 behavior: 4,6,11,56,65, 84,85,86,114,162, 163  
 Bdelloida: 76,90,137  
 biochemistry: 9,38,52,78,83, 88,89,159  
 biogeography (distribution): 14,30,31,44,93, 94,143,149,154,156, 168,173  
 bibliography: 91  
 biomass (production): 6,140  
 birth rate: 50  
 body size: 140  
 bluegreen bacteria/algae: 45,60,99  
 Brachionidae: 94  
Brachionus angularis: 12,21,120  
Brachionus angularis bidens: 12  
Brachionus bidentatus bidentatus: 97  
Brachionus bidentatus inermis: 97  
Brachionus caudatus: 21,120  
Brachionus calyciflorus: 21,39,45,51,52, 86,120,132,139,146  
Brachionus calyciflorus anuraeiformis: 120  
Brachionus calyciflorus monstruosa: 31  
Brachionus dimidiatus: 143  
Brachionus falcatus: 21,120  
Brachionus forticula: 21  
Brachionus havanensis trahea: 97  
Brachionus plicatilis: 9,21,32,38,63, 64,65,66,75,78, 80,83,84,85,88, 89,91,118,124,127, 141,154,159,174,178, 183,188

toxic agent: 25,40,43,67,70, 73,74,77,79,81, 99,106,112,123,142,145,