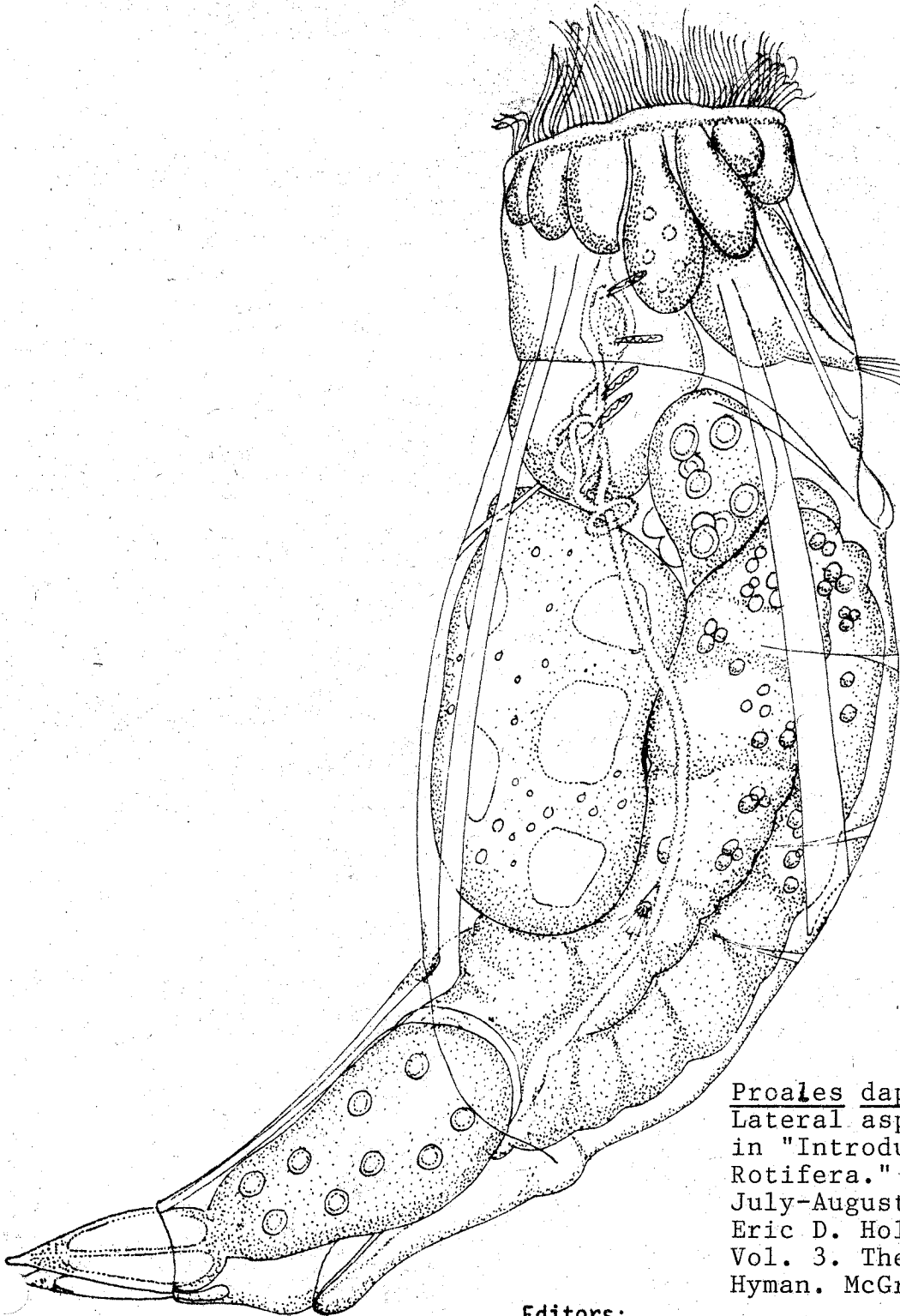


ROTIFER NEWS

A Newsletter for Rotiferologists throughout the World



Proales daphnicola. Thompson. 1892.
Lateral aspect. Originally published
in "Introduction to the study of
Rotifera." Part IX. "The Microscope"
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Eric D. Hollowday. Later as fig. 56C
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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 which prints citations of recent published literature, abstracts of papers published elsewhere, news, and notes about work in progress, or such items being submitted for publication in regular scientific journals. ROTIFER NEWS is printed twice a year (each June and December). Please send reprints and/or references, news, notes, requests to either:

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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 PDP 11/70 as a text editor and the system programs EDT (editor) and RNO (runoff). A memograph reproduction of the copy is then made and printed at St Mary's College. Although we have made considerable progress in the addition of accents and scientific notation, there are still some editing problems with the computer which we have not been able to correct. Two problems have developed now that we use BIOSIS to augment our search of the literature. (1) BIOSIS translates all titles into ENGLISH, therefore we may not be printing a correct citation of the paper, if it was published in another language. (2) BIOSIS also has been known to incorrectly or incompletely cite

abstracts, addresses, etc.). The editors attempt to correct these errors by confirming the citation independently (i.e. with the journal article, or a reprint of the paper), but we need help! Therefore, we encourage authors to send us reprints so that their papers may be properly cited, abstracted, and annotated for the index. Some of the material printed below has been copied directly from the author's abstract and/or textual material. Other material was copied from Zoological Record information, BIOSIS, or specific information provided by the author. Some items were abstracted by the editors of ROTIFER NEWS. (The editors have reserved the right to shorten or expand the material as necessary to provide adequate coverage of the reference.) Since ROTIFER NEWS is not part of the scientific literature, but is rather a newsletter providing a service to researchers, we do not believe that this practice is an infringement of any copyright laws.

NEWS, NOTES, AND REQUESTS

Most items received by either editor on or before 30 May 1986 have been included in this issue of ROTIFER NEWS (No. 12), all other items will be published in issue No. 13.

The editors are sorry to inform our readers that we must require 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 paying the annual dues (\$ 5.00 US dollars per year). PLEASE FIND ENCLOSED QUESTIONNAIRE/ORDER FORM !!! NB: The dues received for ROTIFER NEWS have never covered completely the costs of production and mailing to all who receive ROTIFER NEWS! We request that you send your dues and requests for back issues and materials to be included in the next issue of ROTIFER NEWS to Bob Wallace. Readers of ROTIFER NEWS who wish to make contributions beyond the dues are encouraged to do so !!!! Make all checks payable to ROTIFER NEWS.

1. Back issues of ROTIFER NEWS are still available! If you need a back issue (1-3, 6-11) of ROTIFER NEWS copies are available from Bob Wallace at a cost of \$3.00 per issue to cover mailing and reproduction. (Currently issue number 4 is out of print.) Your comments on any aspect of ROTIFER NEWS is requested by the editors!

2. Following we have listed the English Translation of the Table of Contents of the Proceeding of the National Rotifer Symposium (Ed. L.A. Kutikova, 1985) Leningrad, pp 222. (Language: RUSSIAN). These papers are also reported in the Literature Cited section of this issue of ROTIFER NEWS. Unfortunately we have not been able to keyword all of these works into the Index section. The editors of ROTIFER NEWS thank L.A.

Kutikova for providing a copy of the symposium volume and T. Nogrady who provided this translation!

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1 Sasyk

2 Tatarbunary

3. A long over due recognition of the artist who drew the rotifer cartoons printed in issue 8/9 of ROTIFER NEWS. This information was supplied by Jolanta Ejsmont-Karabin. "As most rotiferologists may have guessed, they [the cartoons] were inspired by our attendance at the III International Rotifer Symposium [Fall 1982, Uppsala, Sweden]. The way back from Uppsala to Warsaw was so long and dull the we both (Anna Hillbricht-Ilkowska and I) amused ourselves inventing rotifer jokes. After coming back home, we asked Andrzej Karabin to illustrate these jokes. This first Rotifer Cartoon is dedicated to Professor Birger Pejler to express our gratitude to him for perfect organization of the III symposium."

4. Jolanta Ejsmont-Karabin suggests that an international organization of Rotiferologists, perhaps as the International Rotiferology Society, would be a good idea. There are two other cases of national rotiferologist organizations. One is in the Soviet Union, and was organized by Ludmila Kutikova. She also organized the II all Soviet Rotifer Symposium held in Leningrad during 18-20 October 1983, after a long hiatus. The first such symposium was held in 1963. The other organization is being developed in Poland by Stanislaw Radwan and J. Ejsmont-Karabin.

It will be an arm of the Polish Hydrobiological Society. An International Rotiferology Society could unite not only individuals, but also national organizations. --- [Several workers have suggested this idea to the editors of ROTIFER NEWS and we think it is an idea worthy of discussion. Unfortunately, neither Jim Litton nor I (RLW) have the time to put towards organizing this society. We will continue to give space in ROTIFER NEWS for comments on this subject, and will support any efforts (e.g., space in ROTIFER NEWS) towards organizing an I.R.S. -- the editors.]

DESCRIPTIONS OF NEW SPECIES

[The references listed in this section are printed also in the section RECENT LITERATURE. Numbers printed before the citation are used in the Index to refer to the papers.]

20 Chengalath, R. 1985. The rotifera of the Canadian Arctic sea ice, with description of a new species. Can J Zool 63(9):2212-2218. <Address: Invertebrate Zool. Div., National Museum Natural Sci., Ottawa, Ont., CANADA K1A 0M8.> <Abstract: BIOSIS: 81-53841. Rotifers found in ice from Frobisher Bay, Northwest Territories, Canada, are documented. A new species, Encentrum graingeri and Proales reinhardti (Ehrenberg), a species recorded for the first time in Canada, are described and illustrated. Species assemblages found in ice are similar to those of marine interstitial habitats. Adaptations of these animals to life in ice are discussed.> <Keywords: Encentrum graingeri new species, Proales reinhardti new record, adaptation, taxonomy, biogeography>

87 Shiel, R.J. and Koste, W. 1985. New species and new records of Rotifera, Aschelminthes, from Australian waters. Trans R Soc S Aust 109(12):1-16. <Dep. Botany, Univ. Adelaide, Box 498, G.P.O., Adelaide, S. AUSTRALIA 5001.> <Abstract: BIOSIS: 81-14710. One hundred and sixty-seven taxa are added to the Rotifera recorded from Australian waters, bringing the total to over 600. New taxa described and figured are: Lepadella patella new variety, Lecane tasmaniensis sp. nov., L. unquitata new variety, Asplanchna brightwelli asymmetrica ssp. nov., and Testudinella hussevi sp. nov. In addition, Hexarthra oxyuris (Sernov) is redescribed and figured and its synonymy discussed.> <Keywords: Lecane tasmaniensis new species, Testudinella hussevi new species, Lepadella patella new variety, Lecane unquitata new variety, Asplanchna brightwelli asymmetrica new subspecies, Hexarthra oxyuris, taxonomy>

RECENT LITERATURE

The literature cited below has been gleaned from several sources including: BIOSIS (Dialog file 5), reprints sent to the editors of ROTIFER NEWS by the authors, information provided by various rotiferologists, Zoological Record, etc. The editors wish to thank the many researchers who have taken their time to inform us of relevant materials. We apologize for any incorrect citations which may follow! An attempt is always made to cite works completely and properly. We would like to be informed of any important errors in these citations; corrections will be published in the next issue (Number 13) which is scheduled for printing in late Fall 1986. Please note that Rotifer News (in its current home) is produced in draft and final forms using a DIGITAL PDP 11/70 computer as a text editor. This device is, unfortunately, not capable of adding all the accents found in other languages. We are sorry about this, and agree that it detracts from the overall international flavor of ROTIFER NEWS, but there is little that can be done about it at the present time.

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. Some of the abstracted material found below has been copied directly from the author's abstract and/or textual material. Other material was taken from BIOSIS, DIALOG file 5, Zoological Record, or specific information provided by the author. Still other material was abstracted by the editors. Since ROTIFER NEWS is not part of the scientific literature (see caveat on page one), but is rather a newsletter providing a service to researchers, we do not believe that this is a infringement on any copyright laws.

Most, but not all, of the following list of papers have as their major topic some aspect of rotifer biology. We believe that most of the following papers will be of interest to rotiferologists. 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.

[Numbers printed before the citation are used in the Index to refer to the papers.]

★A★

- 1 Abdulaev, Kh.T. 1985. Case of teratological change in the test of Keratella quadrata dispersa, Rotatoria. Vestn Zool 0(1):72-73. <Dagest. Div., Casp. Res. Inst. Fish., Makhachkala, USSR.> <Abstract: BIOSIS; 29-94491> <Keywords: teratologic agent,

Keratella quadrata dispersa

- 2 Abdulaev, K.T. 1985. On the teratological changes of the lorica on Rotifera, Brachionus plicatilis and B. calyciflorus Pallas. pages 66-69 in Kutikova, L.A. (Ed.) Proceeding of the National Rotifer Symposium. Leningrad, USSR, pp 222. <Keywords: teratology, Brachionus plicatilis, Brachionus calyciflorus.>
- 3 Akatsu, S., El-Zahr, C., and Al-Aradi, J. 1984. Egg and larval development of Siganus oramin obtained through induced spawning. Kuwait Bull Mar Sci 0(5):1-10. <Maeda Build. No. 205, 3-15-13 Minami Ikebukuro, Toshima-ku, Tokyo, JAPAN> <Abstract: BIOSIS; 81-11844. Eggs of Siganus oramin were obtained from induced spawning. Fertilized eggs were adhesive and had a mean diameter of 0.65 mm. Egg development is described. Embryonic development and hatching occurred within 32 to 34 hours at water temperatures of 22 to 24°C. Newly-hatched larvae have a mean total length of 2.60 mm with a myotome number of 7 + 18 = 25. Larval development to complete metamorphosis is described. Metamorphosis occurred about 25 days after hatching at water temperatures of 24 to 32°C. The larvae were fed rotifers (Brachionus plicatilis), Artemia nauplii, copepods, minced shrimp and formulated feed. Two peaks of high mortalities occurred, the first was when the larvae reached 3 mm in total length and the second was at 10 mm. The larvae grew to a total length of 100.80 mm in 90 days.> <Keywords: Brachionus plicatilis, diet, rotifers as fish food>
- 4 Akielaszek, J.J., Moring, J.R., Chapman, S.R., and Dearborn, J.H. 1984. Experimental culture of young rainbow smelt Osmerus mordax. International Symposium on the Early Life History of Fishes and the 8th Annual Larval Fish Conference, Vancouver, B.C., Canada, May 6-10, 1984. Trans Am Fish Soc 114(4):596-603. <La. Dep. Environ. Quality, Office Water Resources, 3945 North I-10 Service Road West, Metairie, La. 70002, USA.> <Abstract: BIOSIS; 30-7025. <Keywords: rotifers as fish food>
- 5 Amat, F. 1985. The utilization of Artemia in aquaculture. Inf Tec Inst Invest Pesq 0(128-129):3-59. <Address: Inst. de Acuicultura de Torre de la Sal. Ribera de Cabanes, SPAIN (ESPANA)> <Abstract: BIOSIS; 81-90805. The importance of Artemia in marine aquaculture is reviewed. Other species, including phytoplankton and the rotifer Brachionus plicatilis, are also considered for prawn and fish larvae culture.> <Keywords: Brachionus plicatilis, Rotifers as food for prawn, Rotifers as food for fish, biomass production, aquaculture>
- 6 Ambler, J.W., Cloern, J.E., and Hutchinson, A. 1985. Seasonal cycles of zooplankton from San Francisco Bay (California, USA). Hydrobiologia 129(1):177-198. <Address: Dep. Oceanography, Tex. A and M Univ., College Stn., Tex. 77843, USA.> <Abstract: BIOSIS; 81-51153. The two estuarine systems composing San Francisco Bay have distinct zooplankton communities and seasonal population dynamics. In the South Bay, a shallow lagoon-type estuary, the

copepods Acartia spp. and Oithona davisae dominate. Copepods of northern San Francisco Bay, a partially-mixed estuary of the Sacramento-San Joaquin Rivers, organize into discrete populations according to salinity distribution. Large numbers ($> 106 \text{ m}^{-3}$) of net microzooplankton ($> 64 \mu\text{m}$), including the rotifer Synchaeta sp. and three species of tintinnid ciliates, occur in the South Bay and in the seaward northern reach where salinity exceeds about 5-10 permill. Maximum densities of these microzooplankton are associated with high concentrations of chlorophyll. <Keywords: Synchaeta sp., estuary, San Francisco Bay, marine rotifers>

- 7 Arov, I.V. 1985. Psammon Rotifera of Lake Baikal. pages 189-198 in Kutikova, L.A. (Ed.) Proceeding of the National Rotifer Symposium. Leningrad, USSR, pp 222. <Keywords: psammon>

B

- 8 Barrows, C.H. and Kokkonen, G.C. 1985. Rotifers. pages 188-200 in Lints, F. A. (Ed.). Interdisciplinary Topics in Gerontology, Vol. 21. Non-mammalian models for research on aging. viii+288p. S. Karger AG: Basel, Switzerland; New York, N.Y., USA. Illus. ISBN 3-8055-4019-1. <Address: Gerontol. Res. Cent., Baltimore, Md. 21224, USA.> <Abstract: BIOSIS; 30-74511. <Keywords: life span, aging>

- 9 Barthelmes, D. 1985. Goals and experience up to the present with the management of lakes with silver carp and bighead carp: 1. Z Binnenfisch DDR 32(8):224-233. <Address: Institut fuer Binnefischerei Berlin-Friedrichshagen. DDR> <Abstract: BIOSIS: 30-52916. <Keywords: lake management>

- 10 Basharova, N.I. 1985. Planktonic Rotifera of the shed [?] reservoirs. pages 186-188 in Kutikova, L.A. (Ed.) Proceeding of the National Rotifer Symposium. Leningrad, USSR, pp 222.

- 11 Bergquist, A.M., Carpenter, S.R., and Latino, J.C. 1985. Shifts in phytoplankton size structure and community composition during grazing by contrasting zooplankton assemblages. Limnol. Oceanogr. 30(5):1037-1045. <Address: Dep. Biol., Univ. Notre Dame, Notre Dame, Indiana 46556.> <Abstract: BIOSIS: 81-21984. Two experiments in 120-L enclosures were used to assess the responses of the algae to two different-sized zooplankton communities. Grazing by a mixture of small copepods, Bosmina longirostris, and rotifers led to increased growth of phytoplankters with greatest axial linear dimensions ($< 25 \mu\text{m}$ and ratios of surface area to volume < 2.6 , such as Chlamydomonas and Chlorococcales. Larger phytoplankton taxa such as Asterionella formosa, Closteriopsis longissimus, and Synedra sp. declined in the presence of small zooplankters. In contrast, a mixture of large zooplankters dominated by Daphnia pulex and Diaptomus oregonensis caused declines in phytoplankters with greatest axial linear dimensions ($< 60 \mu\text{m}$ and ratios of surface area to volume < 2.75 , while larger algae such as Aphanocapsa and Dinobryon increased. Discriminant

- analyses showed that volume and surface area were the most effective characters for determining the response of algae to grazers. Zooplankton community structure was important in determining the responses of algal assemblages to grazing.) <Keywords: dimension, growth, discriminant analysis, community structure>
- 12 Bhardwaj, S.C. 1985. Studies on the morphology of five species of colonial rotifers. Uttar Pradesh J Zool 5(1):6-13. <Address: Dep. Zool., Dyal Singh Coll., Karnal-132001, INDIA.> Abstract: BIOSIS; 81-63443. Morphology of five species of colonial rotifers has been described. Lacinularia elliptica, Sinantherina semibullata, and S. procera are being reported for the first time from India. <Keywords: Lacinularia elliptica new record, Lacinularia flosculosa, Sinantherina semibullata new record, Sinantherina procera new record, Sinantherina spinosa, biogeographic distribution, colonial rotifer, sessile rotifer>
- 13 Bird, D.F. and Kalff, J. 1986. Bacterial grazing by planktonic lake algae. Science (Wash D.C.) 231(4737):493-495. <Address: Dep. of Biol., McGill Univ., Montreal, Quebec H3A 1B1, CANADA.> <Abstract: BIOSIS; 81-80587. Six common species of lake algae were found to ingest bacteria. The ingestion rates measured were of the same magnitude as those recorded for marine microflagellates totally dependent on external sources of carbon. A large biomass of Dinobryon species removed more bacteria from the water column of a lake than crustaceans, rotifers, and ciliates combined.> <Keywords: Dinobryon, microflagellates, Protozoa, ciliates, ingestion rates, carbon source, biomass>
- 14 Bilgrami, K.S., Munshi, J.S.D., Yadava, R.N., and Bhowmick, B.N. Limnological studies of thermal springs of Bihar, India. Proc Indian Natl Sci Acad Part B Biol Sci 51(1):70-77. <Post-Graduate Dep. Botany, Bhagalpur Univ., Bhagalpur 812007 INDIA> <Abstract: BIOSIS; 80-102940. In the 2 thermal springs Bhimbandh (63-39°C) and Rishikund (46-31°C) located in Munger district, Bihar, the temperature at the source of emergence as well as at other points was consistent throughout the year. Chlorophyceae and Bacillariophyceae appeared below this temperature. Protozoans, nematodes, rotifers, and insects species were recorded between 38 and 45°C, fishes were found below 45°C.> <Keywords: temperature>
- 15 Billets, B.D. and Osborne, J.A. 1985. Zooplankton abundance and diversity in Spring Lake, Florida [USA]. Fla Sci 48(3):129-139. <Fla. Dep. Environ. Regulation, Southwest District, 7601 Highway 301 N., Tampa, Fla. 33610 USA> <Abstract: BIOSIS; 81-2365. Seasonal variation in zooplankton abundance and diversity in Spring Lake, Florida was studied between 1973 and 1976. This clear, and bottom lake is among Florida's lakes that have the highest water quality. The zooplankton community in Spring Lake was characterized by low abundance (monthly means < 100 individualsl) and high Shannon diversity (monthly means were 3.0-4.0). A rich

rotifer fauna was mainly responsible for variation in monthly mean values for the Shannon and Simpson indices. Eighty-three zooplankton species were collected: 60 were rotifers, 16 were cladocerans, and 7 were copepods. Forty-one zooplankton species (27 rotifers, 7 cladocerans, and 7 copepods) were common between years. The pattern of low abundance and high diversity for the zooplankton in Spring Lake is considered an indication of oligotrophic-like conditions. <Keywords: season>

- 16 Boltovskoy, D., Pedrozo, F.L., Mazzoni, H.E., and Diaz, M. 1985. Effects of net, pump and bottle sampling on the abundance estimates of planktonic Rotifera. J Plankton Res 7(2):295-302. <Address: Dep. Ciencias Biologicas, Fac. Ciencias Exactas Naturales, Univ. Buenos Aires, 1428 Buenos Aires, ARGENTINA.> <Abstract: BIOSIS: 81-51162. Eight-seven freshwater plankton samples collected by means of two different nets, a submersible centrifugal pump and a 5.8L water bottle were compared with respect to their ability to catch the rotifer Keratella cochlearis. Sample size, illumination (daynight), the presence of bridles ahead of the net mouths (versus unbridled nets), and different mouth diameters (0.2 and 0.5 m) did not affect abundance estimates. Slight differences were found between the yields of pushed nets versus towed nets; these are probably due to uneven distribution of the animals in the 0-3 m layer. Both pump and bottle volumes strongly affected abundance estimates ($K. cochlearis \cdot L^{-1}$ in pump samples = 164.84 volume of water filtered $^{-1}$; $K. cochlearis \cdot L^{-1}$ in bottle samples = 84.74 + 2336.6 volume of water filtered $^{-1}$). Net sample results were always considerably higher (4.6-12.3 times) than pump and bottle estimates; these differences are most probably due to evading reactions of the rotifer.> <Keywords: Keratella cochlearis, avoidance behavior>
 - 17 Boshko, E.G. 1985. Rotifera-obligate simbiotes of branchial cavities of river crayfish of the Ukraine reservoirs. pages 177-179 in Kutikova, L.A. (Ed.) Proceeding of the National Rotifer Symposium. Leningrad, USSR, pp 222. <Keywords: symbiosis, crayfish, reservoirs>
 - 18 Brain, C.K. 1985. Rotifer research. S Afr J Sci 81(9):536. <Address: Transvaal Museum, Pretoria. SOUTH AFRICA> <Abstract: BIOSIS; 30-81787.> <Keywords: Brachionus plicatilis, freshwater food chain, parthenogenic reproduction, South Africa>
- *C*
- 19 Cestone, P. and Jones, R.C. 1985. Seasonal and spatial changes in the zooplankton fauna of Gunston Cove and the nearby Potomac River (USA). 63rd Annual Meeting of the Virginia Academy of Science, Williamsburg, VA, USA, May 14-17, 1985. Va J Sci 36(2):141. Abstract.
 - 20 Chengalath, R. 1985. The rotifera of the Canadian Arctic sea ice, description of a new species. Can J Zool 63(9):2212-2218.

- <Address: Invertebrate Zool. Div., National Museum Natural Sci., Ottawa, Ont., CANADA K1A 0M8.> <Abstract: BIOSIS: 81-53841. The rotifers found in ice from Frobisher Bay, Northwest Territories, Canada, are documented. A new species, Encentrum graingeri and Proales reinhardtii (Ehrenberg), a species recorded for the first time in Canada, are described and illustrated. Species assemblages found in ice are similar to those of marine interstitial habitats. The adaptations of these animals to life in ice are discussed.> <Keywords: Encentrum graingeri new species Proales reinhardtii new record, adaptation, taxonomy, biogeography>
- 21 Chuikov, Iu.S. 1985. Some data on the ecology of Rotifera in eutrophic reservoirs of the lower parts of the Volga River. pages 167-171 in Kutikova, L.A. (Ed.) Proceeding of the National Rotifer Symposium. Leningrad, USSR, pp 222. <Keywords: Eutrophication, reservoirs>
- 22 Chuikov, Iu.S., Kolesnichenko, Iu.A., Merkulov, A.G., and Khaldar, G.Ch. 1985. Fauna of Rotifera of the Ilmenite Volga Delta. pages 209-213 in Kutikova, L.A. (Ed.) Proceeding of the National Rotifer Symposium. Leningrad, USSR, pp 222.
- 23 Claps, M.C. 1984. Zooperiphyton on Scirpus californicus, Rio de la Plata Punta Atalaya [Argentina]. Neotropica (La Plata) 30(83):79-88. <Abstract: BIOSIS; 80-96204. During April 1978-March 1982, 52 species belonging to 9 phyla were recognized: 14 spp. of Protozoa; 16 species of Ciliophora; 1 species of Nematoda, Gastrotrichia and Tardigrada, respectively; 10 species of Rotifera; 3 species of Annelida, Arthropoda and Mollusca, respectively. Most of the recorded fauna is represented by planktonic as well as benthonic species. Pseudobiotus augusti is a new record from Argentina.>
- 24 Clement, P. and Amsellem, J. 1985. Neurological-ethological analysis of elementary behavior: The alimentary behavior of Rotifera feeding on filamentous algae. Meeting of the Association des Physiologistes (Association of Physiologists), Bordeaux, France, Mar. 5-8, 1985. J Physiol (Paris) 80(3):21A-22A. <Address: Equipe de neuro-ethologie, Universite Lyon 1, F-69622 Villeurbanne Cedex, FRANCE> Abstract: BIOSIS; 30-79114. <Keywords: Abstract, Notommata copeus, Trichocera rattus, muscular insertion, innervation, ethology, nervous system, behavior>
- 25 De La Cruz, S.A. 1984. Method of culturing marine rotifers in volume of 4000 liters. Rev Invest Mar 5(2):69-80. <Cent. de Investigaciones Marinas, Univ. de la Habana.> <Abstract: BIOSIS; 81-2562. A method for the cultivation of the rotifer Brachionus plicatilis in volumes of 10E3-10E4 L, is described. Culturing was done outdoors in concrete tanks and tanks formed with a polyethylene sheet. It is determined that the initial concentration of algae is the most important factor for the highest rotifer yield. With this method 4.0-8.0 x 10E6 rotifers are obtained in 3-8 days from the beginning of the productive phase.>

<Keywords: Brachionus plicatilis, culture, aquaculture>

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- 28 Dunstall, T.G., Haymes, G.T., and Kwik, J.K. 1985. Influence of a thermal electric general station on water chemistry and distribution of plankton. J Great Lakes Res. 11(4):530-539. <Address: Ontario Hydro Research Division, 800 Kipling Ave., Toronto, Ontario M8Z 5S4, CANADA> <Abstract: BIOSIS; 81-96636. Thirty-one locations within a 3- by 6-km area, bordering Lennox Generating Station (Bay of Quinte, Lake Ontario, USA, Canada), were sampled during the summer thermal stratification period. Distributions of crustacean zooplankton, rotifers, phytoplankton, and selected chemical parameters in near-surface waters were determined prior to, during, and following capacity pumping of the station, over a 2-week period.> <Keywords: species composition, abundance, summer thermal stratification, water chemistry, cooling water, Lake Ontario>

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- 30 Francez, A.-J. and Devaux, J. 1985. Distribution of Rotifera in 2 peat bogs of the Central Massif, France. Hydrobiologia 128(3):265-276. <Address: Station Biologique de Besse-enChandesse, B.P. 45, F-63170 Aubiere, FRANCE.> <Abstract: BIOSIS: 81-41551. In rotifer communities of two french peat-bogs, characteristic species associations can be described for each stage in the formation of this ecosystem. The oligotrophic lowmoor with

Sphagnum angustifolium has the highest proportion of characteristic species. The affinity between the open water fauna (used as a standard) and the Sphagnum fauna decreases with a gradient in water content. The latter was a dominant factor in the distribution of rotifer species in the peat-bog. <Keywords: Sphagnum, species association, bog>

- 31 Fukusho, K., Okauchi, M., Tanaka, H., Kraisingdecha, P., Wahyuni, S.I., and Watanabe, T. 1985. Food value of the small S-strain of a rotifer Brachionus plicatilis cultured with Tetraselmis tetrathele for larvae of black sea bream Acanthopagrus schlegeli. Bull Natl Res Inst Aquacult 0(8):5-14. <Address: Natl. Res. Inst. Aquaculture, Nansei, Mie 616-01, JAPAN> Abstract: BIOSIS; 81-61371. A minute alga Tetraselmis tetrathele is 20-30X larger than Chlorella sp. in cell volume, however, T. tetrathele was found to be suitable as food organism for the small strains (S-strain) of rotifer, Brachionus plicatilis rotundiformis as well as the large strain (L-strain) B. p. typicus, although the dietary value of S-strain cultured with T. tetrathele remains unknown. The dietary value of S-strain of Brachionus plicatilis cultured with T. tetrathele (TR) or both T. tetrathele and Chlorella sp. (TCR) was compared with those cultured with Chlorella sp. (CR) by feeding these rotifers to larval black sea bream Acanthopagrus schlegeli for 15 days. <Keywords: Brachionus plicatilis rotundiformis, Brachionus plicatilis typicus, Chlorella sp., rotifers as fish food>

G

- 32 Galkovskaia, G.A. 1985. Peculiarities of the production of natural populations of plankton Rotifera. pages 69-83 in Kutikova, L.A. (Ed.) Proceeding of the National Rotifer Symposium. Leningrad, USSR, pp 222.
- 33 Gilbert, J.J. 1985. Competition between rotifers and Daphnia. Ecology 66(6):1943-1950. <Address: Dep. Biol. Sci., Dartmouth Coll., Hanover, N.H. 03755, USA.> <Abstract: BIOSIS: 81-41499. This study examined the ability of two rotifers to coexist with a large cladoceran. Laboratory competition experiments using daily renewed batch cultures showed that Brachionus calyciflorus and Keratella cochlearis were excluded by Daphnia pulex from mixed-species cultures in 1-3 wk. Daphnia populations removed increasing disproportionate shares of the daily algal food supply, leaving the rotifer populations to gradually starve to extinction, and also may have mechanically interfered with the Keratella. Daphnia appeared unaffected by the presence of the rotifers. Rotifers, whose food niches are included within those of cladocerans, may be rapidly excluded by large cladocerans through both exploitative and interference competition; they are unlikely to abound in zooplankton communities with large cladocerans unless food is abundant or environmental factors differentially inhibit the cladocerans.> <Keywords: Brachionus calyciflorus, Keratella cochlearis, starvation, competition, extinction.>

- 34 Golovchits, V.A. 1985. The effect of the photoperiod on the population and individual parameters of growth and development of Rotifera of the genus Brachionus. pages 88-96 in Kutikova, L.A. (Ed.) Proceeding of the National Rotifer Symposium. Leningrad, USSR, pp 222. <Keywords: photoperiod, growth, development, Brachionus sp.>
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- 38 Hessen, D.O. and Nilssen, J.P. 1985. Factors controlling rotifer abundances in a Norwegian eutrophic lake: An experimental study. Ann Limnol 21(2):97-106. <Address: Univ. Oslo, Dep. Biol., Div. Zool., P.O. Box 1050, Blindern 0316 Oslo 3, NORWAY.> <Abstract: BIOSIS; 81-80528. Strong oscillations in the rotifer community are frequently observed in eutrophic lakes, where rotifers are important components of the zooplankton community. Manipulations with increased level of fertilizers, presence or absence of fish, abundances of competitors (cladocerans) and predators (Asplanchna) were performed in polyethylene-enclosures. The experiments provided evidence for pure eutrophication effects (e.g. elevated pH) and predation from Asplanchna as the main controlling factors. The influence from potential competitors such as Daphnia and Bosmina was found to be of less importance, at least during these short-term experiments.> <Keywords: Asplanchna, fish, pH, fertilizer, competition, predation>
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Fisheries, Fac. Agric., Univ. Tokyo, Yayoi 1-1, Bunkyo, Tokyo 113, JAPAN> <Abstract: BIOSIS; 80-95938. Temperature given at the time of fertilized (resting) egg formation in the rotifer B. plicatilis was discussed, from a point of view that it may cause great difference in bisexual reproductivity among the deriving strains. Fertilized eggs were produced at 5 temperatures (17, 20, 25, 27 and 30°C) in sea water. Neonates from the eggs were employed as stem mothers of respective experimental strains. Every strain consisted of isogenic individuals through keeping parthenogenesis, which was ensured by the individual culture in 0.1 ml sea-water medium. Media were renewed at regular intervals of 12, 24, or 36h at 30, 25, or 20°C, respectively, in order to prevent the accumulation of metabolites which is an exciting cause of bisexual reproduction. The temperature given in the process of fertilized egg formation determines the bisexual reproduction pattern of deriving strains. Among the strains derived from the fertilized eggs which were produced at high temperature over 25°C, the appearance rate of mictic females has no relation to temperature. Among those derived from the eggs originating in low temperature below 25°C, it varies inversely with temperature below 25°C, but not affected above 25°C. <Keywords: temperature, resting eggs, reproduction, Brachionus plicatilis>

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I

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30-18423. <Keywords: Kellicottia, Keratella, Polyarthra, Synchaeta, pollution, environmental toxicology, toxic agent>

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- 46 Kertesz, G. and Czegledy, B. 1985. Taxonomic and ecological studies of the planktonic Rotifera in the western part of Lake Velence [Hungary]: 2. *Opusc Zool (Budap)* 21(0):83-94. <Address: Lehrstuhl Tiersystematik Okol. Eotvos-Larand-Univ., 1088 Budapest, Puskin-u. 3. HUNGARY> <Abstract: BIOSIS: 81-24323. The authors give an account of their investigations on the Rotifera plankton of

western part of the Lake Velence in Hungary.) <Keywords: Hungary, Lake Velence>

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- 50 Kosova, A.A. 1985. Ecological characteristics of Rotifera of reservoirs of the Volga Delta. pages 199-204 in Kutikova, L.A. (Ed.) Proceeding of the National Rotifer Symposium. Leningrad, USSR, pp 222.
- 51 Koste, W. 1985. The morphology, anatomy, ecology and taxonomy of Paradicranophorus wockei, Aschelminthes, Rotatoria, Dicranophoridae. Senckenb Biol 66(1-3):153-166. <Ludwig-Brill-Str. 5, D-4570 Quakenbrueck.> <Abstract: BIOSIS; 80-105200. The rotifer P. wockei Koste 1961 was discovered in 1959 on sandy mud at the shore of the Bohlenbach, a stream in the low lands (catchment area of the rivers Hase-Ems) of northwest Germany. After the canalization of this running water this species was not seen again until it was rediscovered in 1981 in 2 flowing waters, tributaries of the river Fulda. Additional studies on the morphology, anatomy, ecology, and taxonomy of this species were made. Results of these investigations complete the 1st description of 1961.> <Keywords: Paradicranophorus wockei>
- 52 Kozhova, O.M., Mel'nik, N.G., and Riapenko, L.N. 1985. An estimate of the number of plankton Rotifera in Lake Baikal. pages 83-88 in Kutikova, L.A. (Ed.) Proceeding of the National Rotifer Symposium. Leningrad, USSR, pp 222. <Keywords: Lake Baikal>
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- 66 Morozov, A.M. 1985. Comparative characteristics of the development speed and thermal stability of Rotifera Brachionus calyciflorus pallas from natural and experimental populations. pages 97-104 in Kutikova, L.A. (Ed.) Proceeding of the National Rotifer Symposium. Leningrad, USSR, pp 222. <Keywords: temperature, Brachionus calyciflorus>
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- 67 Naef, J. and Martin, P. 1985. Plankton of Lake Lemman (Switzerland, France):, X. 1984. Arch Sci (Geneva) 38(2): 177-199. <Address: Laboratoire de Physiologie vegetale, 3, place de l'Universite-CH 1211 Geneve 4 SWITZERLAND> <Abstract: BIOSIS; 81-80594. Sixty one pelagic samples have been examined in 1984. The dominant macroplanktic species were the following: Asterionella formosa (January to May), Closterium aciculare (January, end of November and December), Synedra acus (end of May-June), Daphnia longispina and Bosmina longirostris (end of June), Eudorina elegans (July), Ceratium hirundinella (August to December), Staurostrum sebaldi (beginning of August), Fragilaria crotonensis (end of August to end of September). Four new species for Lake Lemman have been observed, including the rotifers Colurella uncinata (Mull.), Trichocerca rousseleti Voigt> <Keywords: Colurella uncinata new record, Trichocerca rousseleti, seasonality, Lake Lemman>
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albinic portions. Feeding with Artemia from the earlier stages (5.57 mm and 8.67-8.86 mm TL) resulted in the especially high frequency occurrences of albinism 97.0-97.6%, and the albinic portions extended over almost all of the ocular side. Feeding with Artemia from later stages (10.21-10.43 mm and 12.98-13.23 mm TL) reduced those of albinism (83.5-82.9% and 22.9-24.1% respectively), and their albinic portions restricted to rather limited part of ocular side. The close relationship between albinism occurrence of juvenile flounder and giving a particular kind of food during larval stage is suggested. > <Keywords: Artemia salina, Brachionus plicatilis, diet, rotifers as fish food>

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