ROTIFER NEWS

A newsletter for rotiferologists throughout the world

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In this Issue:

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ROTIFER NEWS

Rotifer News is a newsletter for professional and amateur investigators of the Rotifera. The newsletter is not part of the refereed scientific literature (e.g. *Limnol. Oceanogr., Freshw. Biol., Oecologia* etc) and should not be so cited. It is a means of informal communication between widely dispersed workers with a common interest, where news, abstracts, work in progress, requests, recent publications and so on can be advertised or circulated.

Rotifer News is produced at The Murray Darling Freshwater Research Centre once or twice a year, depending on contributions from readers and regional editors. Regional editors are listed below. Back issues of the newsletter are available from Bob Wallace or Russ Shiel on request. Assistance with production and mailing cost is always appreciated!

If you know of anyone who may wish to receive *Rotifer News* who is not presently on the mailing list, please pass on their address to the nearest regional editor

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The cover:
(L) *Philodina acuticornis* (SEM's by Giulio Melone, University of Milan)
R. Head, P. nemoralis

HAPPY NEW MILLENIUM !!
MAY IT BE FILLED WITH ROTIFERS !!!

Susana Jose De Paggi

Editorial

Greetings patient global rotiferological community! This is the belated Christmas issue of 1998 carried over to the next scheduled issue....the cover notes say I can do so (!).....my apologies for the delay....I have no excuses...a deluge of rotifer people visiting my lab, finding new species, generating lots of work...that's not a reason to abandon the production schedule...(is it??)...but I *did* get to be a tourist guide for the Ricci-Melone excursion to the wilds of Tasmania...more of that later, hopefully from Claudia. I also participated in a large emergence-from-flooded-sediments project set up to entertain John Langley, visiting Oz from Middlesex University. John has been harassed to provide a brief report.

This issue of our newsletter contains articles submitted by you, the readers, a brief note only on Rot. IX, Khon Kaen, Thailand, which will be in progress when this issue is posted out in Jan. 2000, requests from several people for material, and an updated bibliography.

In view of production delays and excessive meeting commitments in the New Year, issue #33 of *Rotifer News* will be held over until June 2000. I will try valiantly to have it out on time, however must ask you all to contribute articles, requests for material, notice of published papers, and so on, by the end of May. At the the Khon Kaen meeting I will be asking for a volunteer to take over editorial duties of *Rotifer News* production after issue #33 - the newsletter has been produced in the U.S. and Australia, and could benefit from a stint on another continent. An electronic version is feasible, and would save considerable postage costs if a suitable home for it could be found.

Russ Shiel

IXth International Rotifer Symposium - Khon Kaen, Thailand

Symposium Theme:
"How far have we come? -chronicling the importance of a sense of history-"

16–23 January 2000 Hotel Sofitel Raja Orchid, Khon Kaen, Thailand

Organised by: Dr La-orsri Sanoamuang, Department of Biology, Faculty of Science, Khon Kaen University, Khon Kaen 40002, THAILAND
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HYPERLINK http://202.44.194.20/science/Rot_Sym/index.html
http://202.44.194.20/science/Rot_Sym/index.html_

Venue: The symposium will be held in the Orchid Conference-Room of Hotel Sofitel Raja Orchid, a five-star hotel in Khon Kaen.

All details, deadlines, etc for the IXth meeting have been circulated via the WWW. Approximately 100 attendees are expected at the IXth meeting of the global 'rotiferological' family. The meeting will be reported in full in the next issue of *Rotifer News* (volunteers?)

WWW Publishing - traps for the unwary!!

Russ Shiel & Claudia Ricci

The proliferation of electronic communications on the WWW is nothing short of wondrous...remember when we vialed our indeterminate rotifers, sent them off (with fingers crossed!) in the post to a knowledgeable specialist, and waited, sometimes for months, to find out what we had? Or we typed our MS on a clunky typewriter, cut and paste, consigned it to the post....and waited.....and waited....??

Technology now allows many of us to attach an electronic image of our unknown animal, or it's parts, to an e-mail, post it to the specialist, and be disappointed if we don't get a response that day...or even in half and hour if we're both in the same time zone.....(!!) Our MS', with figures and tables, go as attachments to an e-mail.....magic!!

Information transfer has proliferated beyond our imaginings.....a quick hunt for "Rotifera" on the WWW via any search engine will produce a vast array of text, images, fact, fiction.....indeed a cornucopia of information on our favourite animals....BUT...herein lies the trap....this information may indeed be extremely valuable, and may be the result of many years of studious research...or it may be an excited 'Hey!! Look what I've found in my backyard pond!!'..without any reference to the detailed and classic monograph on that very same animal produced years previously, and published by a reputable (and refereed!!) scientific periodical. The point here is that the WWW is largely personal opinion, and is not subject to peer-review...*anyone* can say *anything*.....substantiated or not.

WWW publishing is widely touted as the way of the future...it is in fact happening now....with websites being cited as authoritative sources in the scientific literature. One of us (CR) noted some recent papers, in which website(s) were cited as a primary sources. Not so....the websites in question are compendia of collated information from a long progression of rotifer workers, not all acknowledged, such that the information appeared to be the product of the website compilers....misleading, to say the least! The other of us (RS) searched (via Altavista) for rotifer websites, and checked perhaps 30-40 of them....amongst the gems and useful information was a plethora of anomalies....in particular obsolete taxonomy, incorrect identifications of beautifully photographed rotifers, unacknowledged use of published (i.e. refereed) literature and/or images, non-citation of previous work, or complete lack of awareness by the website compiler that such work existed. One 'reputable' website even had an apology that a 'knee-jerk' and excited article from one of it's contributors in an earlier 'issue' had in fact appeared over a century earlier, and wasn't really 'new', despite the assertion of the contributor...hadn't kept up with the published literature, had he?

Our point, without belabouring the gentle reader too much, is that WWW websites are not necessarily reality, but may be the not-always-humble opinions of their owners...we have no argument that *some* websites have an invaluable store of readily-accessible information...and thank the compilers for their efforts to make this information accessible to those of us who need it..remember..no peer review!

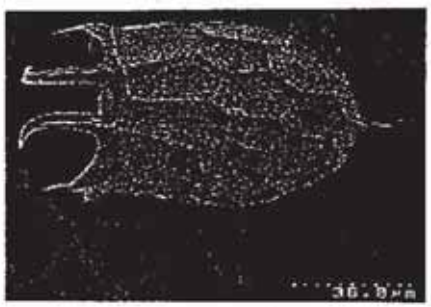
Calls for material

From Willem De Smet:
My requests: for a study on trophi morphology of Synchaetidae I seek for *Ploesoma* spp. and especially *Pseudoploesoma formosum*. If someone has some specimens of *Trichotria curta* they will be very welcome also.

I dare not ask anymore for Dicranophoridae and Proalidae (no matter which ones): the different requests in the former Rotifer Newletters resulted in 1(one) positive response. Maybe I better ask for free beer or a good bottle of wine?

Willem H. De Smet, University of Antwerp, RUCA-Campus, Department of Biology, Lab. Polar Biology and Palaeobiology, Groenenborgerlaan 171, B-2020 Antwerp, Belgium. E mail : wides@ruca.ua.ac.be

From Russ Shiel:
Northern hemisphere brachionids, particularly North American *Keratella*, to maintain the standard of SEM's set in the recent *Guides* volumes. Only a few individuals in EtOH or formalin are required. Sth American endemics also would be appreciated. *Keratella javana* and *K. procurva* from Western Australia below for comparison. [Address and e-mail inside front cover.]



News in Views

70th Birthday - L.A. Kutikova

November 22, 1998, was the date of 70th birthday of Dr. Lyudmilla Kutikova, Ph.D., D.Sc., Professor, a prominent zoologist, leader of the Russian school of rotiferologists. L. Kutikova graduated from the Leningrad State University, Department of the Invertebrate Zoology, in 1951, and since then she started her rotifer research at the Zoological Institute of the Academy of Sciences of the USSR. She defended her Ph.D. thesis in 1954, and her Doctoral thesis - in 1973. Today the list of publications including monographs published by Dr. Kutikova exceeds 100. Her books and papers on the rotifer fauna and biogeography, systematics and biology, phylogeny and evolution are well known and cited by the zoologists throughout the world.

Dr. Kutikova has always been very active in her research, as well as in teaching, she has been a mentor of a number of the university and Ph.D. students.

She travels much, both in Russia and abroad. Lyudmilla participated in 5 of the 8 International rotifer symposia (in Belgium, Sweden, Italy, Poland and the U.S.A.). She likes not only to attend conferences with presentations of her results but also initiates new meetings being a wonderful organizer of scientific seminars, workshops and symposia, both of local and international level. Dr. Kutikova proved that again, one month ago, when she was the organizer of the conference "Results and perspectives of hydrobiological studies on the continental and marine water bodies" which was held on 19-21 October 1998 at the Zoological Institute RAS, St. Petersburg. This conference was dedicated to the 50th anniversary of the St. Petersburg branch of the Russian Hydrobiological Society, and Dr. Kutikova has been the Chief of this branch since 1981.

The colleagues and friends in Russia join the global rotifer group and congratulate Lyudmilla with her 70th birthday. We all wish you, dear Lyudmilla, many more years of productive research, new papers, new books and new conferences!

Irena Telesh

Bdelloids revenge on monogonts.

Claudia Ricci

About one year ago, Liz Walsh sent me a sample of soil and detritus. She asked me to check what bdelloids were in it, as she suspected to have some strange specimens. The sample was dry, and was re-hydrated to extract the rotifers according to the common procedure. A few hours later, several species showed up, active and healthy: among them, *Adineta*, *Philodina*, *Habrotrocha*, and several huge bdelloids. The giants (more than 500 µm long) were crawling around, and these were the uncommon critters seen by Liz. I isolated and observed them: the general appearance was that of *Abrochtha*, with small trochi disks. Observations by light microscopy revealed the presence of special food in the gut: bdelloids, distinguishable from the trophi. In other occasions, when small monogononts (*Lecane*, in particular) were present, the giant ingested them. Some attempts to culture the uncommon bdelloid showed that it is an obligatory carnivore and can grow only if suitable prey are present.

Thus the strange giant is carnivorous, feeding on other rotifers, but I cannot exclude other food items such as other small metazoans (e.g., gastrotrichs) or protozoans.

Giulio prepared the carnivorous bdelloid for SEM observation, and found that its mouth is very wide, funnel-shaped, trochi and foot are similar to those of *A. intermedia*. But the trophi are deep and not extrudable.

We have video-recorded the feeding behavior of this animal: it is able to ingest a whole *Adineta*, extending the buccal funnel to capture the prey. In my opinion, its

behaviour resembles that of *Cupelopagis*, particularly in the simulation performed by Bob Wallace at Mikolajki meeting. Those who attended the symposium should remember him standing on the chair on a single leg, and wandering around. (Bob, do not be offended!! You gave an excellent idea of the predatory behavior).

Of course the species is a new one. To our knowledge, and according to the published literature, this is the first example of a carnivorous bdelloid, able to feed even on monogononts.

An Italian-Australian cultural (?!) exchange

Claudia Ricci

Hi everybody!
Giulio Melone and I have spent a marvellous two-month-period in Australia with Russell Shiel, enjoying his cat, his house and his steaks! Not to mention his huge collection of Minis, a few of them even in conditions of being driven (apart from the brakes! apparently not necessary since very few people are around).

We have been visitors at the Murray-Darling Freshwater Centre, using their facilities and enjoying the warm hospitality of the director, Terry Hillman, of the many colleagues and of the technical and administrative staff. Incredibly, we met the Pontins, who were around in Australia continuing a long series of visits to the Down Under. We also had the chance to meet John Green from New Zealand, sharing his portable computer and his office for a time. Thank you, John!

We all were visiting Russ: he is very popular and possibly a bit bored to have so many visitors hanging around so often! But since he is a true gentleman, he will never admit this.

Since we visited him during the Australian summer, we enjoyed also hot climate, few rains and dry billabongs. The dry sediments of the billabongs were the major scientific interest for both Giulio and myself. The original idea was to study the emergence of dry rotifers once returned to the lab and hydrated under controlled conditions. From such data we assumed to be able to predict the dynamics of the early colonization of the flooded billabongs. Well, as commonly happens to everybody dealing with investigation in general, and with rotifers in particular, we were forced to change the focus for several reasons. Among them, the sediments I analysed released only a couple of bdelloid species per billabong, and every

billabong had different species, of which one dominant and the others occasional with very few specimens. This was in contrast with the remarkable diversity of monogonont rotifers occurring in the same habitat.
Thus, I was suggested to Russ to study the Australian bdelloids in order to upgrade the list of the Oz bdelloids. So we have been sampling around Albury in the billabong sediment and reached the so-called Australian Alps (just a short note for the Europeans: nice mountains, but very different from our Alps!) where we sampled in streams, creeks, springs, lakes, mosses and soil (*Ed: Italian search-and destroy mission spotted in an alpine creek, below...and Giulio finding Philodinavus for the first time from Australia, although he didn't know that yet...!!).*

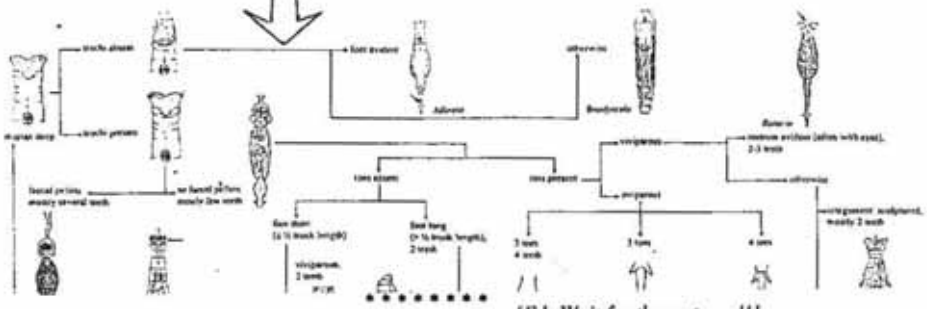
We had also a marvellous chance to visit Tasmania with Russ and John Green who were sampling tons of plankton, which fate is to increase the huge collection of plankton that Russ is accumulating and never processing, just for his pleasure. His huge collection provides him the opportunity of complaining for lack of time and for having so small a laboratory (about five time larger than mine!!). Of course, we too collected samples in Tasmania that are waiting to be processed. But on our return to Albury I was able to process a small part of the samples. *(Ed: The N.Z./Italian team hitching in Tasmania, below...Giulio starts his catalog of flat Tasmanian marsupials....there were some living Devils left!!!)*

On total from the Aussie and Tassie samples examined till now, I have been able to increase the checklist of Australia with 19 new records. I suspect that many of these taxa can be regarded as new species, but I am afraid that the scientific world will have to wait till my retirement for the new descriptions.
For the moment, we plan to write a checklist of Australian bdelloids. But Russ is very busy....

During our visit, Giulio and I prepared a simple and user-friendly key of bdelloids. Hope that it will be published in the next future.

In conclusion, we really had a great time, and Russ is a marvellous host, both for scientific collaboration and for every-day life.
Thank you Russ!!

[Ed: Getting to know the wildlife at Cradle Mt]



[Ed.:Wait for the rest.....!!]

ADDENDUM

Hendrik Segers

Addendum to De Ridder & Segers (1997): Monogonont Rotifera recorded in the World literature (except Africa) from 1960 to 1992. Studiedocumenten van het K.B.I.N. 88: 481.

Records of the genera _Anuraeopsis_ and _Mytilina_ were inadvertedly omitted from the printed work. These data can be obtained on request from Hendrik Segers. Please indicate whether you prefer a hardcopy or a electronic file, and file format. <Hendrik.Segers@rug.ac.be>

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MYERS' ROTIFER PLATES

Bob Wallace

Bob may still have some sets of Myers' plates of rotifers from Wisconsin. These are to be given away to those who want them. First in, best dressed.
<WallaceR@Mail.Ripon.EDU>

Reminiscences of Oz - to flood or not to flood a floodplain?

John Langley

After many a fine tale of billabongs from Ros and many gay memories of celebrating Rotifer Symposia with Russ and Wai, it was time to meet RJS on his home territory at the Murray-Darling Freshwater Research Centre, Albury, NSW. Courtesy of an understanding University and colleagues to whom I am greatly indebted (thanks Steve *et. al.*), a 5 month sabbatical was made available.

So what does one do with billabongs, after the driest two years on record, towards the end of an Antipodean Summer? Answer, look at colonization of rotifers from dry sediments (of different flood history) and try to disentangle the contributions of recruitment from the eggbank and passive dispersal.

With the able assistance of Russ and Daryl Nielsen from the host institution and John Green (a Kiwi on sabbatical, who has "evolved" from rotiferologist to having an inordinate fondness for calanoids), 30 mesocosms were set up at the fabled Ryan's property. Sediments tested were from annually, triannually and approximately 30-yearly flooded (last flooded in 1974) sites. Sampling was initially daily and continued for 8 weeks. (Russ, why aren't the week 6 samples finished yet?).

Following our first sampling visit we appraised the Centre's Director of our ambitions, who responded "crass stupidity" (in jest - I hope!). Nevertheless after 4 months "chained to a microscope" I cannot entirely disagree. Highlights away from the microscope included a memorable tour of the local wineries and a trip to Mount Buffalo National Park. Highlights at the microscope included four undescribed species, one new record to Australia, and three species which had previously only been recorded from Tasmania.

In terms of monogonont rotifers, 30 year old sediments (at Ryan's), were indistinguishable from γ-irradiated sterile sediments. So to answer the ?, by all means flood the floodplain, and more frequently.

Russ is now the proud owner of a further 390 samples to practice his ciliate and testate skills upon - enjoy!!

Evidence from a Protein-Coding Gene that Acanthocephalans are Rotifers.

David Mark Welch

David writes regarding a paper he submitted to *Invertebrate Biology:* "This won't see the light of day for awhile, but I thought that the rotifer community might want to know what I found, as summarized in the manuscript" :

"The Rotifera and the Acanthocephala are generally regarded as separate phyla sharing a basal position among triploblast protostomes. This paper presents the first molecular phylogenetic examination of the relationship of the Acanthocephala to all three rotifer classes, Seisonidea, Monogononta and Bdelloidea. Inclusion of the Acanthocephala within the Rotifera, probably as a sister-taxon to a clade composed of Bdelloidea and Monogononta (the Eurotatoria), is strongly suorted by both parsimony and distance methods, using a region of the nuclear coding gene hsp82. Garey *et al.* [*J. Mol. Evol.* 43: 287-292 (1996)] reported that the Acanthocephala are a sister-taxon of the Bdelloidea, and proposed the name Lemniscea for this super class. No support is found for this clade and evidence is presented that the monogonont species used in the analysis of *Garey et al.* may be evolving in an anomalous manner."

The evidence mentioned above is that *B. plicatilis* may not be a good species to represent Monogononts in phylogenetic studies due to a much higher GC content at synonymous sites compared to other rotifers. I would not have figured this out had Bob Wallace not sent me samples of *E. ehrenbergi* and *S. socialis* (Thanks Bob!). Copies of the manuscript are available on request.

I would like to follow up on this by examining the relationship of the bdelloid families and would very much appreciate any samples of Adinetidae or Philodinavidae that anyone could spare!

Thanks,
David

David Mark Welch
Department of Molecular
and Cellular Biology
Harvard University

"Nothing makes sense except
in the light of evolution"

<welch@fas.harvard.edu>

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Rotifers on the Costa Blanca

Tony Saunders-Davies

In October the phone rang and a voice said 'This is Malcolm, Tony. Would you like to spend a week with us at one of our apartments on the Spanish Costa Blanca?'

(Dr Malcolm Thain is an old friend) One look outside at a wet, cloudy and cold England and I replied 'You bet!'. I couple of weeks later and I was basking in temperatures of 25C or so under a cloudless blue sky, before taking a dip in the warm Mediterranean.

The Costa Blanca has a wonderful climate, the Mediterranean, and superb sea-food to offer, but frankly it is not a place I would choose for a holiday. The whole coastline is one enormous building development, block after block of Disneyesque style apartments complete with false cupolas, minarets and towers. One or two would be interesting, but after mile after mile the word that comes to mind is 'grotesque'. One of our party suggested 'Naff'....

Fortunately Malcolm, who retired some years ago as A Very Senior Administrator in the British Civil Service, was trained as a chemist and retains a lively interest in science. I had taken a net and a portable Meopta microscope with me and after fishing for forams in the Mediterranean, he suggested we look at the salinas - the salt flats - that are one of the redeeming features of the local landscape. These suort a wide variety of bird life including flocks of flamingos. Many are hypersaline and fringed with flats of solid salt, coloured pink with halophile algae. Some have direct open channels to the sea. We selected one with banks of the alga *Chaetomorpha* sp. and an unidentified phaeophyte, through which I took several net sweeps. Next door was a much less prepossessing one with a virtual monoculture of a sea-grass, *Ruia* sp., I think, and covered with patches of dirty foam and the usual detritus of empty Cola cans and plastic bottles. Malcolm used a highly sophisticated technique and measured salinity by diing his finger in and tasting... He pronounced both 'Very saline'. He persuaded me to dip the second salina although I thought it looked rather unpromising.

On return to the lab (kitchen), we emptied the collecting bottles into soup plates and examined our catch. The *Chaetomorpha* provided only insects and a few copepods. To my surprise the *Ruia* collection showed a number of rotifers. Malcolm spent part of the next day devising an even more sophisticated 'salinometer' - a weighted drinking straw as hygrometer - and calibrated this against fresh and sea-water. When we went back to the second salina he measured the salinity as half-way between fresh and sea-water. I made a more thorough collection which later revealed:

Brachionus urceolaris in large numbers with parthenogenetic eggs
Testudinella clypeata
Encentrum marinum
Encentrum sp
Lecane sp
Colurella unicauda
Colurella sp
Cephalodella sp (*gibba* ?)
Synchaeta sp

All these in just a couple of hours examination in less than favourable circumstances. Unfortunately I had to return to the UK the next day, and had no formalin to fix samples.

The little Meopta portable has fixed objectives with a maximum of X20 so closer examination was not possible. (For a complete description of the microscope see the Web pages at http://www.nhm.ac.uk/hosted_sites/quekett/ - my favourite microscope.)

Several of these genera are known to include marine or brackish species, but I was very surprised to find *B.urceolaris*, the *Cephalodella*, and *Lecane* in such a saline environment. I took a sample back to England and measured the conductivity at 27mS (Sea water is ~56mS), so Malcolm's 'salinometer' was remarkably accurate.

I hope to return sometime to investigate further!

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Two rare rotifers in The Netherlands

P. Leentvaar & J.A. Sinkeldam

In the month of November 1989 a population of *Kellicottia bostoniensis* (Rousselet) was found in a moorland pool in the east of The Netherlands. The pool is shallow and the water is coloured light brown by dissolved humic matter origining from dead leaves from the surrounding forest trees. The water is a remnant of a former branch of the river IJssel situated on a country-seat near the village Hoog Keel. In the month of January 1990 another sample from this water again showed high numbers of *K. bostoniensis* carrying also eggs. Chemical analysis of the water showed the following:

Cl^-	10 mg/l
SO_4^{2-}	9 mg/l
NH_4^+	2.2 mg/l
Kjeldahl-N	0.07 mg/l
NO_3^-	0.31 mg/l
PO_4^{3-}-P	0.51 mg/l
total-P	0.89 mg/l
pH	6.3
conductivity	460 FS

K. bostoniensis was found for the first time in The Netherlands in 1960 near Ureterp (Leentvaar 1961) and later in 1961 and 1962 in the Mekelermeer (Schroevers 1962). Both locations are also situated on the higher sandy soils in the east of the country. The environment and water quality of the three lacations do

have much in common with a humic brown water and low pH. The high P-content in the Hoog Keel pool may have its origin in a temporary discharge of an effluent of a dairy factory in the past. The occurrence of *K. bostoniensis* in this case is fairly well in accordance with the observations in Sweden (see Arnemo et al 1968).
Another rotifer which was found at Hoog Keel was *Brachionus variabilis* Hempel, only in a few specimens. It has not been found before in The Netherlands as far as records go now, and it has been found for the first time in Europe (Belgium) in 1976 (see Coussement 1976).

Authors' address: Institute for Forestry and Nature Research (IBN-DLO), P.O.Box 23, NL 6700 AA WAGENINGEN, The Netherlands

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Leentvaar, P. 1961. Quelques rotateurs rares observés en Hollande. Hydrobiologia 18(3): 245-251.
Schroevers, P. 1962. Eutrofiëring in een Drentse heiplas Het Mekelermeer. De Levende Natuur 65: 221-228.
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ROTIFERA FROM SURINAM 1963/ 1964

P. Leentvaar writes:

The samples were taken before and after closing of the Brokopondo-dam in the Suriname river and the connected Sarakreek. The list is left behind by the late Bruno Berzins and has not been published. In: *Amazonia* VI, 4,1979: 521-528 : "Additions and corrections to the Brokopondo study (Surinam)", the data are used for a short review with a design of the s.sp. nov. mentioned in the list of Berzins. For details I refer to this article and my study on Brokopondo: Leentvaar , 1975, in: Studies on the Fauna of Suriname and other Guyanas,Vol. XV, 173 .

frequentie : 1-10 + = dead	1	2	3	4	5	6	7
Ascomorpha saltans BARTSCH	3	-	3	-	-	-	-
Ascomorpha ovalis (BERG.)	1	-	-	-	-	-	-
Anureopsis fissa fissa (GOSSE)	1	3	-	-	-	2	-
Asplanchna priodonta GOSSE	1	1	-	-	-	-	-
Bdelloidea	5	3	-	-	-	4	1
Brachionus falcatus ZACH.	2	-	-	-	-	-	-
Conochiloides coenobasis SKOR.	1	6	2	-	-	3	-
Cephalodella cf. *belone* MYERS	1	-	-	-	-	-	-
Dissotrocha sp.	2	1	-	-	-	-	-

Filinia longiseta (EHRBG.)	2	2	3	2	2	3	-
Hexarthra insulina (intermedia)(HAUER)	2	6	6	4	-	5	-
Keratella americana CARLIN	5	-	-	-	1	1	-
Lacinularia flocculosa (MUELLER)	1	-	-	-	-	-	1
Lecane hastata (MURRAY)	1	2	-	-	-	3	-
Lecane crepida HARRING	4	-	-	-	-	1	-
Lecane luna praesumpta AHLSTROM	1	-	-	-	-	-	-
Lecane papuana(MURRAY)	3	-	-	-	-	1	-
Macrochaetus rossicus (MICH.)	4	-	-	-	-	-	-
Mniobia sp.	1	-	-	-	-	-	-
Polyarthra vulgaris CARLIN	5	7	5	-	-	2	-
Polyarthra remata SKORIK.	5	3	5	-	-	3	-
Polyarthra cf. *dolichoptera* IDEL.	2	-	-	-	-	1	-
Rotatoria sp.	1	-	1	-	1	1	1
Sinantherina sp.	1	-	-	-	-	-	-
Synchaeta oblonga EHRBG.	1	-	-	-	-	-	-
Synchaeta stylata WIERZ.	2	-	-	-	-	-	-
Testudinella brycea HAUER	1	-	-	-	-	-	-
Trichocerca mucosa HAUER	4	3	1	-	-	1	-
Trichocerca pusilla (JENN.)	1	-	2	-	-	-	-
Cephalodella gibba (EHRBG.)	-	1	-	-	-	2	-
Colurella uncinata bicusp. (EHRBG.)	-	1	-	-	1	-	-
Lecane bulla bulla (GOSSE)	-	3	3	-	1	4	-
Lecane luna luna (MUELLER)	-	1	-	-	1	-	-
Lecane bulla goniata (H&M)	-	1	-	-	-	-	-
Lecane closterocerca (SCHMARDA)	-	1	-	-	1	4	-
Lecane hamata (STOKES)	-	2	-	-	2	2	-
Lecane rotundata (OLOFS.)	-	1	-	-	-	-	-
Lecane ungulata ungulata (GOSSE)	-	1	-	-	-	-	-
Lecane leontina (TURNER)	-	2	1	-	-	-	-
Platyias quadricornis (EHRBG.)	-	2	1	-	-	7	-
Ptygura sp.	-	1	-	-	-	-	-
Synchaeta pectinata EHRBG.	-	3	1	-	-	-	-
Testudinella patina patina (HERM.)	-	2	-	-	-	-	-
Testudinella p. trilobata (AND.& SHEP.)	-	1	-	-	-	-	-
Trichocerca birostris (MINK.)	-	2	2	-	1	2	-
Testudinella reflexa (GOSSE)	-	1	-	-	-	-	-
Ascomorpha ecaudis PERTY	-	-	8	-	-	1	-
Brachionus quadridentatus (MUELLER)	-	-	2	-	-	-	-
Itura viridis (STENROOS)	-	-	1	-	-	-	-
Platyias patulus macracanthus (DADAY)	-	-	1	-	-	-	-
Sinantherina spinosa (THORPE)	-	-	4	5	-	-	-
Trichocerca montana HAUER	-	-	1	-	-	-	-
Colurella adriatica EHRBG.	-	-	-	1	-	-	-
Lacinularia sp.	-	-	-	7	-	-	-
Brachionus angularis chelonis AHLSTR.	-	-	-	-	1	-	-
Cephalodella forficula (EHRBG.)	-	-	-	-	1	-	-
Dicranophorus cf. *caudatus* (EHRBG.)	-	-	-	-	1	-	-
Dissotrocha macrostyla (EHRBG.)	-	-	-	-	1	-	-
Lecane lunaris (EHBRG.)	-	-	-	-	2	1	-

Lepadella patella (MUELLER)	-	-	-	-	2	4	-
Lophocharis salpina (EHRBG.)	-	-	-	-	1	2	-
Lecane pyriformis (DADAY)	-	-	-	-	1	1	-
Lecane furcata furcata (MURRAY)	-	-	-	-	1	-	-
Lecane monostyla (DADAY)	-	-	-	-	1	-	-
Lecane cornuta cornuta (MUELLER)	-	-	-	-	1	-	-
Lepadella ovalis (MUELLER)	-	-	-	-	1	-	-
Lepadella cfr.*venefica* MEYERS	-	-	-	-	1	-	-
Lecane pusilla HARR.	-	-	-	-	1	1	-
Lecane cfr. *copeis* (HARR.& MYERS)	-	-	-	-	1	-	-
Trichocerca cfr. *rattus* (MUELLER)	-	-	-	-	1	-	-
Beauchampiella eudactylotum (GOSSE)	-	-	-	-	+	1	-
Cephalodella gracilis gracilis (EHRBG.)	-	-	-	-	+	1	-
Colurella uncinata (MUELLER)	-	-	-	-	+	1	-
Colurella obtusa (GOSSE)	-	-	-	-	+	1	-
Collotheca cf. *pelagica* (ROUSS.)	-	-	-	-	+	4	-
Cupelopagis vorax (LEYDI)	-	-	-	-	+	1	-
Dipleuchlanis propatula (GOSSE)	-	-	-	-	+	1	-
Euchlanis triquetra EHBRG.	-	-	-	-	-	1	-
Lecane sylvatica (HARRING)	-	-	-	-	-	5	-
Lecane quadridentata (EHRBG.)	-	-	-	-	-	2	-
Lepadella sp.	-	-	-	-	-	1	-
Lepadella imbricata HARRING	-	-	-	-	-	2	-
Lepadella cryphaea HARRING	-	-	-	-	-	1	-
Lepadella rhomboides leentvaari n.ssp.	-	-	-	-	-	1	-
Monommata longiseta (MUELLER)	-	-	-	-	-	1	-
Proales cryptopus WULFERT	-	-	-	-	-	1	-
Taphrocampa clavigera STOKES	-	-	-	-	-	1	-
Trichocerca brachyura (GOSSE)	-	-	-	-	-	1	-
Trichocerca tetractis (EHBRG.)	-	-	-	-	-	1	-
Octotrocha speciosa THORPE	-	-	-	-	-	-	1
Sinantherina socialis (LINNAEUS)	-	-	-	-	-	-	3

1= Suriname river at Afobaka 4-12-1963 before closing of the dam, temp 29.8 °C, pH 6.7, O_2 7.2 mg/l, K18 24 µS .

2= Same station after dam closing 11-3-1964 (dam closed February 1), temp 27.9 °C, pH 5.8, O_2 1.5 mg/l, K18 29 µS .

3= Same station at 8-4-1964, temp. 30.8 °C, pH 5.6, O_2 4.3 mg/l, K18 26 µS .

4= Same station: 40 liters of water pumped up from a depth of 2 m, there is no oxygen at 4_m depth.1-4-1964.

5= Sarakreek 11-12-1963.Tributary of the Suriname River. Before closing of the dam.Temp. 25.2, pH 5.9, O_2 5.2 mg/l, K18 47 µS.

6= Sarakreek 12-2-1964. Water stagnant. Temp.27.0, pH 5.5, O_2 1.6 mg/l, K18 26 µS.

7= Sarakreek 13-5-1964. Leaves of drowned trees with sessile colonies of *Sinantherina*, *Lacinularia* and *Octotrocha*.

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Aquaculture: 3, 4, 11, 21, 26, 39, 40, 45, 47, 62, 69, 71, 73, 74, 83, 91, 92 93, 97, 98, 114, 116;

Anatomy/Behaviour/Morphology/Physiology: 13, 19, 20, 28, 31, 38, 39, 41, 42, 52, 53, 54, 66, 67, 87, 89, 90, 109, 128;

Biochemistry/Genetics/Pharmacology: 34, 35, 46, 59, 90, 110, 117, 121, 130, 131;

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Methods/Research: 8, 17, 34, 35, 66, 80,83, 105;

Reproduction: 1, 37, 54, 77,81, 108, 128;

Water quality/Toxicology: 6, 12, 16, 27, 28, 29, 32, 85, 86, 100, 127,132 .

[First author is author for correspondence unless otherwise noted.]

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Japan.>> K/W: biochemical composition, *Tetraselmis* strains, glucose, heterotrophic growth, mixotrophic growth, rotifer, fatty-acid composition, dietary lipids, prawn, requirement, oils, fish.

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& Nat. Conservat., KL Ledeganckstr 35, B-9000 Ghent, Belgium.>> K/W: taxonomy, evaluation, Rotifera, Niger Imo state, n-sp, *Lecane* rotifera, Monogononta, biogeography, systematics, floodplain, lakes.

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Res. 20, 2071-2087. <<Inst. Gewasserökol. & Binnenfischerei, Muggelseedamm 260, D-12562 Berlin, Germany.>> K/W: *Brachionus angularis*, zooplankton abundance, *Keratella cochlearis*, population-dynamics, phytoplankton, communities, reservoir, rotifers, Rhine, *calyciflorus*.

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134. WILLIAMS, W.D., P. DE DECKKER & R.J. SHIEL, 1998. The limnology of Lake Torrens, an episodic salt lake of central Australia, with particular reference to unique events in 1989. *Hydrobiologia* 384, 101-110. <<Dept of Zoology, Univ. of Adelaide, Box 498 GPO Adelaide, S.A. 5001, Australia.>> K/W: Halophile rotifers, *Brachionus plicatilis*, *Hexarthra fennica* , hypersaline, tolerance.

135. YAN, Z.-G. & X.F. HUANG, 1998. On a new species of *Keratella* (Rotifera : Monogononta : Brachionidae. *Hydrobiologia* 387, 35-37. <<Chinese Acad Sci, Inst Hydrobiol, Wuhan 430072, Peoples R China.>> K/W: Rotifera, *Keratella trapezoida* n. sp., taxonomy.

NEW ROTIFERS

Rotifers described since the last issue of *Rotifer News:*

Encentrum alpinum Jersabek, 1999 - Austrian Alps, Ref. #51
Encentrum desmeti Jersabek, 1999 - Austrian Alps, Ref. #51
Encentrum goldschmidi Jersabek, 1999 - Austrian Alps, Ref. #51
Encentrum porsildi Sorensen, 1998 - Disko Is., West Greenland, Ref. #118
Glaciera schabetsbergeri Jersabek, 1999 - Austrian Alps, Ref. #51
Keratella mongolianum Segers & Rong, 1998 - Inner Mongolia, Ref. #106
Keratella trapezoida Yan & Huang, 1998 – Yangtze R., P.R. China, Ref. #135
Keratella zhugeae Segers & Rong, 1998 - Inner Mongolia, Ref. #106
Notholca angakkoq Sorensen, 1998 - Disko Is., West Greenland, Ref. #118

ROT VIII SYMPOSIUM VOLUME

The Proceedings of the VIIIth International Rotifer Symposium held at Collegeville, MN U.S.A.22-27 June, 1997, appeared after some production delays. It is titled "Rotifera VIII: A Comparative Approach" Ed. E. Wurdak, R. Wallace & H. Segers (1998) *Developments in Hydrobiology* 134. Kluwer Acad. Publishers: 498 pp. ISBN 0-7923-5571-7. It appeared concurrently, as is the practice for the series, in *Hydrobiologia* 387/388.

The contents of the volume are listed with keywords in the bibliography of this issue of *Rotifer News*. A reviewer of the volume will be sought at Khon Kaen, said review hopefully to appear in the next issue of the newsletter.

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