Rotifer News

A newsletter for rotiferologists throughout the world

XVII International Rotifer Symposium

Rio de Janeiro (Brazil), 4-8 August 2025

Photos. Left: Rodrigo de Freitas Lagoon; Right: Natural fauna and flora in the lagoons of the Baixada de Jacarepaguá (Source: Christina Wyss Castelo Branco) (see P. 2)

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In this issue:

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Editorial: *XVII International Rotifer Symposium, Brazil*

The venue for the XVII International Rotifer Symposium (IRS) has been announced (see announcement by Branco in this issue). It will be held during Aug. 4 - 8, 2025 at Rio de Janeiro (Brazil). This gives sufficient time to for all rotiferologists to generate valuable data and to prepare for the participation in this meeting. Let us wish Christina Branco a great success in organizing this event.

The proceedings of the Rotifera XVI (2022) held in Croatia are now available online from the website of Hydrobiologia. The special with volume and page numbers will be released during this year (see note by Maria Špoljar in this issue).

Two of the three obituaries of notable workers on zooplankton (Prof. Kazutsugu Hirayama, Dr. Juta Haberman and Prof. Yenumula Ranga Reddy) also appear in this issue. The obituary of late Ranga will appear in a later issue. I had the fortune to interact with these three giants during different zooplankton meetings. I met late Hirayama in the Rotifera VI (1991, Banyoles, Spain). Hirayama, his wife and one student from his lab and myself were picked up by Prof. Eduardo Vicente and left us at the Barcelona Airport. During the rotifer meeting, I asked Dr. Hirayama's wife about the "mizukawari". Prof. Hirayama told me that his wife was not a scientist but he explained the phenomenon in detail.

I met late Juta in many meetings in including Shallow lakes conference. The complete CV is available online: https://www.etis.ee/CV/Juta_Haberman/eng/. I met Prof. Ranga Reddy during 1989 at the Symposium on Aquaculture organized by Department of Zoology, Acharya Nagarjuna University. Later we stayed together in an apartment in Ghent for about six months. Prof. Ranga also visited our University Campus in Mexico and gave some great talks on the taxonomy of Calanoid copepods during an international course on the "Selection Criteria of Zooplankton for Aquaculture Biotechnology" (5-22, Feb. 2013) (see SILnews 62: 18-20, 2013). Since 2000, both Nandini and myself met him many times.

The academic dynasty of legendary figure in Rotifer Research, Prof. John Gilbert has been provided by Bob Wallace. The Abstract of the *Virtual Rotifer Collaboratorium* (VRC) presented during the meeting has been included with the e-mail of the speaker, Gerardo Guerrero Jiménez, so that the interested readers may consult him for further information.

RN requires input from rotifer workers of different countries on the titles of Master's and Doctoral Dissertations from their respective regions. Authors of regional identification guides, books and book-chapters on rotifers are also invited to provide bibliographic details for indexing in the RN.

This issue was delayed for announcing the venue of Rotifera XVII 2025, decided during Feb., 2024. The next RN issue (No. 43) will be expected during September, 2024 or later.

S.S.S. Sarma
Editor

Prof. Kazutsugu Hirayama (1931-2023): Obituary

Remembering giants in rotifer research

Dr. Kazutsugu Hirayama, Professor Emeritus of Nagasaki University, Japan passed away on February 17, 2023 (Photo 1). He was 91 years old. Dr. Hirayama participated in Fourth (Edinburgh), Fifth (Gargnano) and Sixth (Banyoles) International Rotifer Symposium.

Dr. Hirayama was born in Okayama, Japan on October 20, 1931. After graduating from the former Tokyo High School, he completed a master's degree at the Graduate School of Biology, University of Tokyo in March 1957. In April of the same year, he was hired by the Kobe City Transportation Bureau and worked as a technician at the just-opened Kobe City Suma Aquarium, and in March 1964, he was appointed as an assistant professor at the Fisheries Laboratory attached to the Faculty of Agriculture of the University of Tokyo. In1965, he received his PhD for "Research on Circulation and Filtration Method for Purification of Seawater for Rearing Marine Animals." Thereafter, he moved to Nagasaki University in 1968 as an associate professor in the Faculty of Fisheries, and in April 1981, he became a professor in the Laboratory of Biological Environmental Studies. At Nagasaki University, he served as a councilor of the University and Dean of the Graduate School of Marine Science and Engineering, and also served as Dean of the Faculty of Fisheries for three years from February 1994.

After retiring from Nagasaki University in March 1997, he served as Director of the Nagasaki Industrial Promotion Foundation (concurrently serving as the new technology coordinator for the RSP project of the Science and Technology Agency) in April 1997, Chairman of the Research Committee for Bioremediation at the Japan Marine Science and Technology Center in October 2000, and Research Director of Nagasaki Prefecture's "Collaboration of Regional Entities for the Advancement of Technological Excellence" in April 2004. In April 2004, when the national university was reorganized as a corporation, he worked as Auditor of Nagasaki University.

In the local community, he served as a member of the Nagasaki Prefecture Fisheries Utilization Coordination Council and the Ariake Sea Fisheries Coordination Committee, while in the national government, as an expert member of the Japanese Council for Science and Technology.

His long and distinguished career included academics, education, university administration, international exchange, regional contribution, and industry-academia-government collaboration. Dr. Hirayama's research covered a wide range of topics based on water quality management, fisheries resource biology, and environmental biology. His initial research in graduate school was supervised by Prof. Yoshiyuki Matsue, and focused on biogeochemical factors influencing water quality in marine aquaria with sand bed filters and closed recirculation systems. His discoveries became the cornerstone of

Photo 1. Prof. K. Hirayama

smart land-based aquaculture, which has recently come into prominence.

After his appointment at Nagasaki University, he began his research on planktonic organisms such as red tide organisms, larvae of attached organisms, and prey organisms. During his stay in the United States on a Monbusho overseas research program in 1974, he became proficient in axenic culture methods of microalgae under Dr. L. Provasoli and in the laboratory of Dr. C.E. King, where he had the opportunity to be at the forefront of research on rotifers using approaches of population ecology and evolutionary biology. After returning to Japan, he succeeded for the first time in axenic culture of marine rotifers as a prey organism, and this experimental system yielded many fundamental insights into the life history characteristics and nutritional requirements of rotifers. These contributed greatly to the development of rotifer mass culture technology, which was pioneered in Japan. In the latter half of his research career, he focused on genetic variation among rotifer lineages and distinguished L- and S-type rotifers, which differ in size, and are actually distinct species. This was an extremely significant advance in the fields of both rotifer biology and live food biology and established Nagasaki as a global center of rotifer genetics.

To honor the retirement of Prof. Hirayama in March 1997, the international symposium “Live Food Organisms and Marine Larviculture” was held in Nagasaki during Sept. 1-4, 1996. There were 154 participants from 24 countries, including 10 scientists from Rotifer Family members. The major theme of this symposium was “Application Meets Fundamental Research”, and it was one of the first international symposium to focus on the biology of live food organisms and its application to aquaculture.

He influenced young researchers and supervised many students in his laboratory. He played a central role in establishing the PhD program in 1987, and supervised 15 doctoral students over the next 10 years until his retirement. The number of foreign students who studied under Prof. Hirayama contributed immensely to the international stature of Nagasaki University.

Both the writing and conversation of Dr. Hirayama were in a simple and clear style. In guiding students, he did not like to use ambiguous expressions, and encouraged them to modify the

wording to be more specific. Among his popular writings, “Mizu-gokoro uogokoro (Water Spirit, Fish Spirit: A Story by a Water Quality Doctor), which was aimed at general readers, was written in a light and playful style that could be described as the essence of the Edo style of the professor, who grew up in Takadanobaba, Tokyo. In his personal life, in addition to an ornamental fish aquarium at home, he loved Go (a Japanese board game) and tanka poetry. He published a collection of tanka poems titled “A Walk on the Riverbank” at the age of 78. He continued tanka poetry until recently, and the following is one of his last works.

Koremade wa Hito no Mani-mani Korekara wa Kazeno Mani-mani Toki no Mani-mani (= Until now, being among people, from now on, among wind, among time)

I would like to express deepest condolences to the family of Dr. Kazutsugu Hirayama, an esteemed colleague who guided us with his excellent insight and warm personality. He will be sorely missed.

Atsushi Hagiwara
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For recent activity of Atsushi Hagiwara:
http://www2.fish.nagasaki-u.ac.jp/FISH/KYOUKAN/hagiwara/index-e.html

Postscript.
Yuko Hirayama, wife of Prof. Hirayama also passed away, three months after her husband. They are survived by a son Fukushi, and a daughter Junko.

Finally, I would like to thank Terry W. Snell for improving this manuscript.

In memoriam: Dr. Juta Haberman (July 06, 1933 – Dec. 22, 2023)

Remembering ardent researchers of Rotifera

Juta was born on July 6, 1933, in the family of a farmer in Pärnu County (Estonia).

In 1952, she started her studies at Tartu State University in the Department of Biology. She chose hydrobiology as his specialty and started working with zooplankton. Already as a student, she took part in scientific expeditions to Estonian lakes. It is interesting to mention here that Juta's first term paper dealt with rotifers.

After graduating from the university in 1957, she worked as a schoolteacher in the small town of Viljandi. She was a respected teacher and highly valued by her students.

Juta returned to lake research in 1963, when she started working at the Võrtsjärv Limnological Station of the Institute of Zoology and Botany (later known as Centre for Limnology of the Estonian University of Life Sciences), following her husband Henn Haberman (08.01.1935 – 08.05.1991), who worked there as an ichthyologist. This was the beginning of her long and fruitful scientific career as a limnologist-zooplanktonologist, which lasted 60 years in the same institution, from laboratory assistant to senior researcher. In 1964, she started collecting zooplankton samples from the two largest Estonian lakes – L. Peipsi and L. Võrtsjärv. This can be

considered one of the important milestones in Estonian hydrobiology – the beginning of comprehensive and continuous zooplankton studies. These two lakes became her main research area for the rest of her academic career. In 1974, Juta defended her candidate thesis (= PhD) entitled “Main regularities of the seasonal dynamics of pelagial zooplankton in the Lake Peipsi-Pihkva and Lake Võrtsjärv”. The zooplankton monitoring she started and conducted by her for decades, has created a unique long-term database. You could say Juta had a lucky hand in collecting plankton samples. A new rotifer species, endemic *Ploesoma peipsiense* was described by Mäemets & Kutikova (1979) from samples collected by her in L. Peipsi. As an avid researcher, she also studied zooplankton in many small lakes in Estonia and in several other lakes in Finland, Turkmenistan, Georgia, and Ukraine.

Her main field of research became the qualitative and quantitative structure of zooplankton communities and its temporal changes both on a seasonal and long-term scale. One of the topics she focused on in her research was the analysis of abiotic and biotic factors that would be the drivers of the changes in zooplankton communities. The effects of climate change and eutrophication were also discussed in relation to this issue. Parameters of zooplankton communities as indicators to assess the ecological state of lakes were another leading issue in her research.

Juta Haberman published (as an author and co-author) more than 100 scientific publications. Being a productive author herself, she always considered it especially important to disseminate and introduce research results, to the scholarly as well as to a wider audience. She managed to attend many scientific meetings, with a presentation as a rule. She always encouraged her students and younger colleagues as well to participate in international meetings. Juta herself was an enthusiastic and consistent organizer of academic gatherings, initiator and editor of monographs and journal special issues. In 2003, she was awarded the Estonian State Science Award for the set of monographs on Lake Peipsi research.

Although she thought about herself more competent in crustaceans, she always considered it important to include all zooplankton groups in plankton studies. Whenever possible, the rotiferological aspect was always reflected in her works. Juta contributed a lot to the advancement of rotiferology in Estonia. She was also a visionary who saw the need to train specialists to study distinct groups of zooplankton. To increase the taxonomic resolution of studies, she invited Dr. Ludmila A. Kutikova (Institute of Zoology of St. Petersburg, Russia), the well-known rotifer taxonomist to participate in and consult on local rotifer studies in the 1970s and 1980s. This cooperation resulted in several interesting papers including more detailed information on the rotifer assemblages of Estonian large lakes, and the training of

Estonia's own rotifer specialist (T.V., the signatory of this text).

Juta's interest in rotifers as an important component of lake zooplankton connected her to the international rotifer research community. She attended four International Rotifer Symposia. Her debut was at the 3rd IRS in Uppsala (Sweden) in 1982. After that, she participated in the symposia in Mikolajki (Poland) in 1994 (7th IRS), in Collegeville (in USA) in 1997 (8th IRS) (Photo 1), and in Illmitz (Austria) in 2003 (10th IRS).

Photo 1. Dr. Juta Haberman during 1997 Minnesota rotifer conference (IRS-XVIII)

Juta did not consider educational work to be less important than research. She gave lectures on zooplanktonology at the University of Tartu and the Estonian University of Life Sciences, supervised doctoral and master's theses. Concern for the next generation of zooplankton researchers was very characteristic of her. She was a demanding but sympathetic and caring mentor to the zooplankton enthusiasts who came under her care.

Juta was a positive person and dedicated scientist. Despite battling cancer for the past five years, she remained mentally active while still working part-time until the last year of her life. Her last coauthored paper was published in 2021. A beautiful and significant summary of her long academic life was her participation in person in the 11th International Shallow Lakes Conference held in Tartu (Estonia) in June 2023, where she coauthored a poster presentation "Keystone species *Chydorus sphaericus* in shallow eutrophic Lake Võrtsjärv (Estonia) – 56 years of continuous zooplankton monitoring and research".

Dr. Juta Haberman passed away on December 22, 2023, at the age of ninety. As if an era had ended, but the intellectual mark she left on Estonian hydrobiology remains, her works will continue to be cited. Juta was a very cordial and sociable person, always interested in the surroundings and a person with a cheerful outlook towards life. She will be missed by her colleagues as a bright personality and a recognized limnologist and zooplankton specialist.

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Notes and News

Proceedings of Rotifera XVI 2022
Zagreb (Croatia)

Hydrobiologia special issue "Rotifera XVI: Diverse rotifers in diverse ecosystems" related to the scientific works presented on the last symposium in Zagreb (2022), has 28 articles (already available online) and the Preface by guest editors. We expect the release of special issue during 2024.

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Abstract of VRC presentation

VRC: 11 Oct. 2023

Resilience of rotifers and cladocerans communities in four reservoirs with eutrophication pollution and lead concentrations in Aguascalientes, Mexico.

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Modification of the water quality by lead (Pb) or high levels of eutrophication may modify the life history of zooplankton species. In Aguascalientes City, four urban reservoirs present this type of pollution. To evaluate the resilience of zooplankton species to these polluted scenarios. Several diapausing eggs (DE) and organism hatched from DE were exposed to different dilution of the water of each reservoir and Pb concentrations to evaluate the hatching rate and the survivorship of the autochthonous species. Results of eutrophication exposition in the global analysis showed a hatching rate of 22.5%, however, the survivorship rate was around the 50%, therefore, the possibility of species to re-populate these reservoirs is around 10%. In Pb exposition, the hatchings decrease 50% with 0.1 mg L^{-1} Pb concentration and no hatching in 10 and 20 mg L^{-1}. However, even if organisms hatched at 0.1 mg L^{-1} of Pb, they did not survive. More analyses were performed to test resilience of the reservoirs studied, and also, the sensibility of species from the different reservoirs. Finally, analysis with two populations of *Moina macrocopa* showed clear dissimilar hatching patterns that suggested a different adaptive mechanism. Niagara population shows a hatching rate of approximately 25% in the first two days of reservoir water exposure, while UAA population increased hatching rate to 75% on exposure at day seven.

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Academic Dynasty of Giants in Rotifer Research

Former Doctoral Students of Prof. John J. Gilbert (Dartmouth College, Hanover, NH 03755, USA)

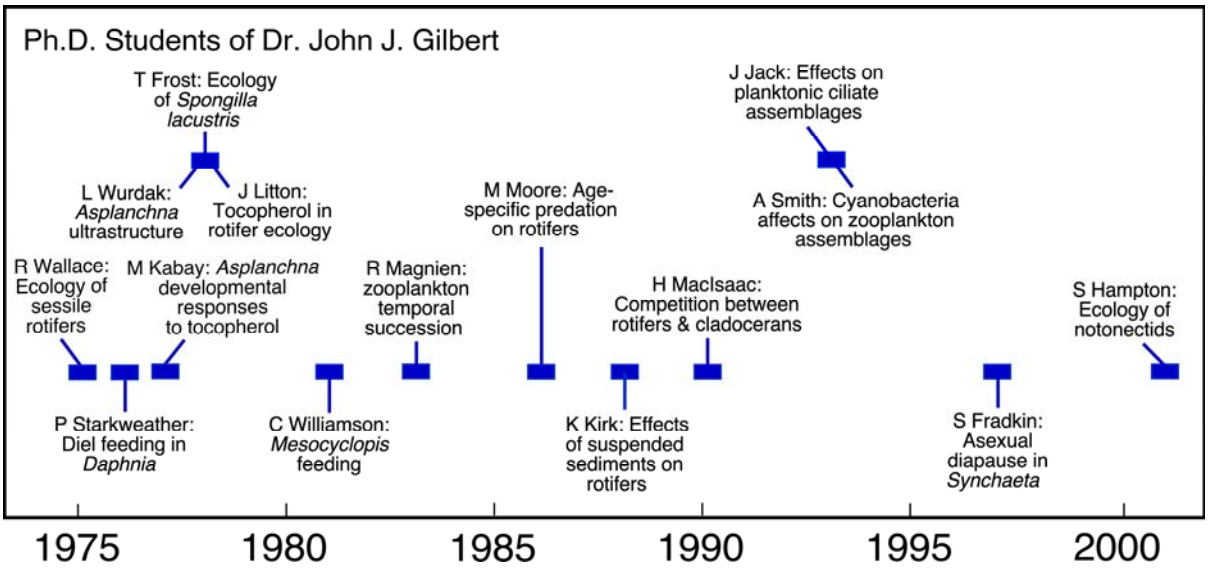

Figure: Doctoral dissertations completed under the supervision of Prof. J.J. Gilbert

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