

## Rotifers from a pond in Pune (India), with the record of *Ptygura pedunculata* (Edmondson, 1939) (Rotifera: Monogononta) from the Oriental region

Avinash Isaac VANJARE\*, Kalpana PAI

Laboratory for Zooplankton Studies, Department of Zoology, University of Pune, Pune-411007 - INDIA

Received: 11.05.2009

**Abstract:** Phylum Rotifera consists of aquatic, microscopic invertebrates inhabiting the freshwaters of the world. We report on some rotifers from the littoral zone of a pond in the University of Pune, Pune (India) (18°33'16"N, 73°49'28"E). A total of 13 rotifers species were found, including 5 new records to the Maharashtra state. *Ptygura pedunculata* (Edmondson, 1939) is reported for the first time from India and the Oriental region.

**Key words:** Rotifera, *Ptygura pedunculata*, new record, India, Oriental region

The minor phylum Rotifera consists of approximately 2030 described species (Segers, 2007). The freshwater groups Monogononta and Bdelloidea consist of 1570 and 461 species, respectively, whereas the marine group Seisonida contains 3 epizoic species only. Rotifers are primarily freshwater animals and are found everywhere where water is present. Being abundant and highly diverse in nature they are ranked as one of the most abundant freshwater animals after Protozoa. Rotifers are known worldwide as model organisms in biological research due to their diversity, smaller sizes, ease of culture, shorter life spans, transparent bodies, and ecological importance.

Work on rotifers in India is very limited and scattered (Vanjare, 2008). Studies in India are concentrated largely in the North and North-eastern states (Sharma, 2005).

The present study reports on the rotifers from a small pond in University of Pune campus, Pune (India) (18°33'16"N, 73°49'28"E). A few random water samples were collected from the pond along the littoral zone using a nylon plankton net (55µ mesh size) during January 2008-January 2009. Concentrated samples were carried immediately to the laboratory in 300 mL plastic collection bottles. The rotifers were identified instantly under an Olympus binocular microscope (CH 20i) fitted with a digital camera (Sony DSC-W35) using available keys (Edmondson, 1959; Koste, 2000; Stemberger, 1979). Water parameters, such as pH, temperature, conductivity, and salinity, were checked on site using a Multiparameter PCS Testr35 tester (Eutech, Singapore).

\* E-mail: avinashisaac7@gmail.com

The study revealed 13 rotifers species belonging to 2 orders and 6 families.

**PHYLUM: ROTIFERA**

**Subclass: Monogononta**

**Order: Ploima**

Family: Asplanchnidae

*Asplanchna brightwellii* (Gosse, 1850)

*Asplanchnopus hyalinus* (Harring, 1913)

Family: Brachionidae

*Brachionus calyciflorus* (Pallas, 1766)

*Brachionus caudatus* (Barrois and Daday, 1894)

*Brachionus quadridentatus* (Hermann, 1783)

*Keratella cochlearis* (Gosse, 1851)

*Keratella tropica* (Apstein, 1907)

*Plationus patulus* (Müller, 1786)

Family: Epiphanidae

*Epiphanes brachionus spinosa* (Rousselet, 1901)

Family: Trichotriidae

*Trichotria tetractis* (Ehrenberg, 1830)

**Order Flosculariaceae**

Family: Flosculariidae

*Limnias melicerta* (Weisse, 1848)

*Ptygura pedunculata* (Edmondson, 1939)

Family: Testudinellidae

*Testudinella patina* (Hermann, 1783)

Rotifera, especially the sessile ones, have been scarcely studied in India. Of the described 26 species of the genus *Ptygura*, only 5 species have been reported from India.

***Ptygura pedunculata* (Edmondson, 1939)**

**Material examined:** 3 females, University of Pune Pond, Pune (India), 28.11.2008

**Description:** Solitary specimens, often with an egg near the base, were found attached to the sediment mud. *Ptygura pedunculata* is characterized by the presence of a very long peduncle and a large, conical lateral antenna terminating into long setae. Corona is



Figure. *Ptygura pedunculata* ×40 (adult female).

elliptical in shape and wider than the body. An obvious notch is present on the ventral side of the corona. A cylindrical foot, shorter than the peduncle, is present. The slender and long peduncle showed a slight swelling toward the distal end. *P. pedunculata* has been described as the most timid Rotifer ever seen (Edmondson, 1939) and this behavior is an important characteristic aiding the identification of the rotifer (Koste, 2000).

**Remarks:** *P. pedunculata* has been described earlier only from the Palearctic, Nearctic, and Neotropical regions (Segers, 2007). This is the first record of the species from the Oriental region and

subsequently from the Indian subcontinent. It is considered to be an acidophile and a warm stenothermal species.

**Dimensions:** Max length (expanded specimen): 730 µm, Peduncle: 285 µm, Body length: 445 µm, Corona width: 110 µm

**Water parameters:** Temperature (24.7 °C), pH (8.7), Conductivity (350 µs/cm), and Salinity (170 ppm).

In addition to *P. pedunculata*, *Asplanchna brightwellii*, *Asplanchnopus hyalinus*, *Epiphanes brachionus spinosa*, and *Limnias melicerta* are also

new records to Maharashtra state; *Ptygura pedunculata* is reported for the first time from the Oriental region. The above results are an effort of arbitrary and limited sampling for a short period. Detailed work in the future is sure to yield new insights into the actual status of rotifer fauna in India.

### Acknowledgements

Grants provided are duly acknowledged (UGC/2008 and ISRO-UoP/2007). Special thanks to Dr. Hendrik Segers (Belgium) for comments and help.

### References

- Edmondson, W.T. 1939. New Species of Rotatoria, with Notes on Heterogonic Growth. Transactions of the American Microscopical Society. 58: 459-472.
- Edmondson, W, T, 1959, Rotifera: In Freshwater Biology (ed. H. B. Ward and G.C Whipple), John Wiley and Sons Inc, New York, pp 420-494.
- Koste, W. 2000. Study of the Rotatoria-fauna of the littoral of the Rio Branco, south of Boa Vista, Northern Brazil. International Review of Hydrobiology. 85: 433-469.
- Sharma, B.K. and Sharma, S. 2005. Biodiversity of freshwater rotifers (Rotifera, Eurotatoria) from North-Eastern India. Mitt. Mus. Nat.kd. Berl., Zool. Reihe 81: 81-88.
- Segers, H. 2007. Annotated checklist of the rotifers (Phylum Rotifera), with notes on nomenclature, taxonomy and distribution. Zootaxa. 1564:1-104.
- Stemberger, R.A. 1979. Guide to the Rotifers of the Laurentian Great Lakes. USEPA-600/4-79-021, US Environment and Protection Agency, Washington, D.C.
- Vanjare, A.I. 2008. Taxonomy and Ecology of Freshwater Rotifers from Pune, Maharashtra, M.Phil Dissertation, University of Pune, Pune, India. 76 pp.