

## The Genus *Sinantherina* Bory de St. Vincent, 1826, a New Record for the Turkish Rotifer Fauna

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**Abstract:** Rotifera species collected from a pool (Çeltikli village, Bismil, Diyarbakır) 22 km from Bismil to Batman were surveyed taxonomically. Eighteen rotifer species were identified. Two of these species, *Sinantherina semibullata* (Thorpe, 1889) and *Cephalodella megalcephala* (Glasscott), 1893, as well as the genus *Sinantherina* Bory de St. Vincent, 1826, are new records for the Turkish rotifer fauna.

**Key Words:** Rotifera, *Sinantherina*, taxonomy, trophi

### Türkiye Rotifer Faunası İçin Yeni Bir Kayıt, *Sinantherina* Bory de St. Vincent, 1826

**Özet:** Bismil'den Batman'a 22. km'deki bir gölcükten (Çeltikli Köyü, Bismil-Diyarbakır) toplanan Rotifera türleri taksonomik olarak incelenmiştir. 18 rotifer türü teşhis edilmiştir. Bu türlerin ikisi; *Sinantherina semibullata* (Thorpe, 1889) ve *Cephalodella megalcephala* (Glasscott), 1893 hem de *Sinantherina* Bory de St. Vincent, 1826 cinsi Türkiye rotifer faunası için yeni kayıttır.

**Anahtar Sözcükler:** Rotifera, *Sinantherina*, taksonomi, trophi

### Introduction

The phylum Rotifera is mainly represented by freshwater species, widely distributed in all types of inland waters, and by a few marine species. The phylum currently comprises 1818 valid species, but the total number is doubtlessly higher. There are only 50 exclusively marine species, and a few terrestrial and parasitic species. The Monogononta is the largest group (1442 sp.), followed by Bdelloida (374 sp.). The latter group is highly enigmatic, as it constitutes the highest taxonomic level of exclusively asexually reproducing multicellular eukaryotes (Segers, 2002; Segers and Martens, 2005; Fischer and Ahrichs, 2006).

Although many studies describing the environmental conditions of Turkish lakes exist, most of these studies have dealt with seasonal fluctuations and hydrological changes. During the last 2 decades, many investigators have focused on the zooplankton fauna of Turkish inland

waters and significant progress has been achieved in the assessment of the Rotifera fauna of Turkey (Dumont and De Ridder, 1987; Emir, 1991; Segers et al., 1992; Altındağ and Yiğit, 1999; Yiğit, 2002).

### Materials and Methods

The sample was collected by using plankton net (mesh pore 55 µm) from a pool (Çeltikli village, Bismil, Diyarbakır) 22 km from Bismil to Batman. The sample was fixed in 4% formalin. Specimens were analysed under a stereomicroscope and identified using a compound microscope. Trophi were isolated by dissolving the soft body parts in dilute NaOCl, and were prepared for scanning electron microscopy (SEM) following the procedure described by De Smet (1998). SEM was performed using a JEOL JSM-60 60 LV and a POLARON SC 502 sputter coater was used to coat them with gold.

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### Results and Discussion

The sample was collected on 19.05.2006. Eighteen rotifer species were identified. The genus *Lecane* Nitzsch, 1827 was found to be the most dominant group (with 5 species), followed by the genera *Keratella* Bory de St. Vincent, 1822 (with 2 species) and *Cephalodella* Bory de St. Vincent, 1826 (with 2 species). *Sinantherina semibullata* (Thorpe, 1889) and *Cephalodella megalcephala* (Glasscott), 1893 as well as the genus *Sinantherina* Bory de St. Vincent, 1826 are new records for the Turkish rotifer fauna. The trophi of *S. semibullata*

are given along with some measurements. It was contracted and so its habitus could not be drawn. *C. megalcephala* is described with total measurements.

*Sinantherina semibullata* (Thorpe, 1889) (Figure 1): It is distinguished by 2 dark wart-like structures on the anterior part of the venter. Colonial members of the colony attached at their foot. *S. semibullata* has 2 wart-like structures on the anterior part of the dorsum and has 9 pairs of gastric glands. Total trophi length 32.5  $\mu\text{m}$ , trophi width 57.2  $\mu\text{m}$ , ramus 22.3  $\mu\text{m}$ , fulcrum 10.2  $\mu\text{m}$ .



Figure 1. Trophi of *Sinantherina semibullata* (A. ventral, B. dorsal, scale bars: 10  $\mu\text{m}$ ).

*Cephalodella megaloccephala* (Glasscott), 1893 (Figure 2): Cosmopolitan; mud flats, beaches, sand, periphyton of freshwater margins of running water. Body stout, dorsally gibbous; head very large, broad, field extremely oblique, ventral; apical field with 2 large cirri; lorica thin, flexible, plates indistinct; dorsal median sulcus may have convex rather than concave connecting integument; body (foot) 2-segmented; toes short, decurved, sharply pointed, the toes are bendable but septa are not always observable (Nogrady et al., 1995). Trophus 52.2  $\mu\text{m}$ , fulcrum 33.8, manubrium 18.3  $\mu\text{m}$ .

According to a check-list by Ustaoglu (2004), 229 rotifer taxa were given from Turkey. After that, a few studies were conducted on Turkish rotifers: *Dicranophorus epicharis*, *Lecane rhytida*, *Lecane obtuse*, and *Testudinella parva* by Altındağ et al. (2005); *Anuraeopsis navicula*, *Ascomorphella volvocicola*, *Conochilus coenobasis*, *Encentrum putorius*, *Euchlanis deflexa*, *Lepadella ehrenbergi*, *Notholca caudata*, *Paradicranophorus hudsoni*, and *Synchaeta longipes* by Akbulut and Yıldız (2005); *Asplanchnopus hyalinus*, *Lecane donneri*, *Dissotrocha aculeata*, *Proalides tentaculatus*, and *Itura myersi* by Erdogan and Güher (2005); *Aspelta labri*, *Dicranophorus robustus*, *Encentrum uncinatum*, *Encentrum wiszniewskii*, *Eothinia lamellate*, *Itura aurita*, *Lindia torulosa*, *Lecane arcula*, *Lecane hornemanni*, *Lecane inopitana*, *Proales Theodora*, and *Wulfertia kivuensis* by Kaya et al. (2007) were found as new records for the Turkish rotifer fauna. As a result of studies the number of the rotifer species increased

from 229 to 259. In the present study, 2 new record rotifer species were reported for Turkey and the total number of rotifer species in Turkey increased to 261.

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### Appendix

#### List of Species

*Anuraeopsis fissa* (Gosse, 1851)  
*Brachionus quadridentatus* Hermann, 1783  
*Cephalodella gibba* (Ehrenberg, 1832)  
*Cephalodella megaloccephala* (Glasscott), 1893  
*Itura aurita* (Ehrenberg, 1830)  
*Keratella cochlearis* (Gosse, 1851)  
*Keratella tecta* (Gosse, 1851)  
*Lecane hamata* (Stokes, 1896)  
*Lecane hastata* (Murray, 1913)  
*Lecane luna* (Müller, 1776)  
*Lecane lunaris* (Ehrenberg, 1832)  
*Lecane nana* (Murray, 1913)  
*Pleurotrocha petromyzon* Ehrenberg, 1830  
*Pompholyx sulcata* (Hudson, 1885)  
*Scaridium longicaudum* (Müller, 1786)  
*Sinatherina semibullata* (Thorpe, 1889)  
*Testudinella patina* (Hermann, 1783)  
*Trichocerca similis* (Wierzejski, 1893)

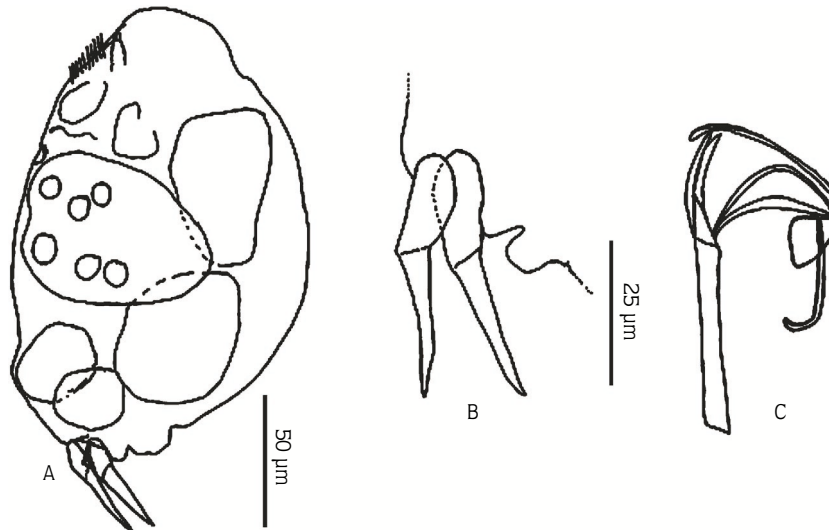


Figure 2. *Cephalodella megaloccephala* (Glasscott), 1893: A. General body shape, B. Toes, C. Trophi (scale bars: A: 50  $\mu\text{m}$ , B, C: 25  $\mu\text{m}$ ).

## References

- Akbulut, N. and Yıldız, K. 2005. The Rotifera fauna of Euphra River Basin (Turkey) Hacettepe Journal of Biology and Chemistry. 34: 93-105.
- Altındağ, A. and Yiğit, S. 1999. A taxonomical study on the rotifer fauna of Akşehir Lake. Turk. J. Zool. 23: 1-6.
- Altındağ, A., Kaya, M., Ergönül, M.B. and Yiğit, S. 2005. Six rotifer species new for the Turkish fauna. Zoology in the Middle East. 36: 99-104.
- De Smet, W.H. 1998. Preparation of rotifer trophi for light and scanning electron microscopy. Hydrobiologia. 387/388: 117-121.
- Dumont, H. J. and De Ridder, M. 1987. Rotifers from Turkey. Hydrobiologia. 147, 65-74.
- Emir, N. 1991. Some rotifer species from Turkey. Doğa-Tr. J. of Zoology, 15: 35-45.
- Erdoğan, S. and Güher, H. 2005. The Rotifera fauna of Gala Lake (Edirne-Turkey). Pakistan Journal of Biological Sciences. 8: 1579-1583.
- Fischer, C. and Ahlrichs, W.H. 2006. *Cephalodella ungulata* n.sp. (Monogononta: Notommatidae), a new rotifer species from North West Germany, with notes on *C. tenuiseta* (Burn, 1890). Zootaxa. 1378: 49-59.
- Kaya, M., Altındağ, A. and Yiğit, S. 2007. Rotifers in Turkish inland waters. Zoology in the Middle East. (in press).
- Nogradý, T., Pourriot, R. and Segers, H. 1995. Rotifera Volume 3. The Notommatidae and the Scaridiidae. Guides to the Identification of the Microinvertebrates of the Continental Waters of the World. (ed. H.J.F. Dumont). Academic Press, Amsterdam.
- Segers, H., Emir, N. and Mertens, J. 1992. Rotifera from north and north-east Anatolia (Turkey). Hydrobiologia. 245: 179-189.
- Segers, H. 2002. The nomenclature of the Rotifera: annotated checklist of valid family- and genus-group names. Journal of Natural History. 36: 631-640.
- Segers, H. and Martens, K. 2005. Aquatic biodiversity: the diversity of aquatic ecosystems. Reprinted from Hydrobiologia, volume 542.
- Ustaoglu, R. 2004. A check-list for zooplankton of Turkish inland waters. E.Ü. Su Ürünleri Dergisi. 21: 191-199.
- Yiğit, S. 2002. Seasonal fluctuation in the rotifer fauna of Kesikköprü Dam Lake (Ankara, Turkey). Turk J. Zool. 26: 341-348.