

Short note.

Redescription of *Lecane fadeevi* (Neiswestnowa-Shadina, 1935)  
(Rotifera, Lecanidae)

by H. SEGERS

Abstract

*Lecane fadeevi* (NEISWESTNOWA-SHADINA, 1935), previously considered a synonym of *Lecane psammophila* WISZNIEWSKI, 1932) is redescribed from material collected near Moscow. The species appears closely related to *L. closterocerca*, they are differentiated by their different toe shape. *L. fadeevi* occurs not only in Russia, but also in Poland, as can be judged from published illustrated records.

Alternative transliterations of Cyrillic to Latin letters by different authors had as result that a junior, objective synonym of *L. fadeevi* (NEISWESTNOWA-SHADINA, 1935), *L. fadeewi* (WISZNIEWSKI, 1954) was established.

Introduction

Some time after its description from the interstitial of Oka river in Russia, WISZNIEWSKI (1954) synonymised *Lecane fadeevi* (NEISWESTNOWA-SHADINA, 1935) with *L. psammophila* (WISZNIEWSKI, 1932). So far, no author has expressed any doubt on this synonymy (e.g., KUTIKOVA, 1970; KOSTE, 1978; SEGERS, 1994).

On the occasion of a mission to Russia, the author collected some plankton samples in the Moscow district, one of which contained a few specimens matching the description of *L. fadeevi*. A redescription of the species is provided here.

Material and Methods

A sample containing *L. fadeevi* was collected on 8 August 1994 by dragging a 50 µm-mesh plankton net through the shore vegetation of the Moskwa river at Zvenigorod (Moscow region, European Russia). The sample was examined with a Wild M10 dissection microscope, trophi were isolated using NaOCl. Specimens were studied and drawn using an Olympus CH2 compound microscope with camera lucida.

Results

*Lecane fadeevi* (NEISWESTNOWA-SHADINA, 1935)

Figs 1-5

*Monostyla fadeevi* NEISWESTNOWA-SHADINA, 1935 (p. 561-562 figs 7, 8), KUTIKOVA, 1970 (p. 469).

*Monostyla fadeewi* WISZNIEWSKI, 1954 (p. 69), KOSTE, 1978 (p. 245).

*Lecane fadeewi* : VOIGT, 1957 (p. 238).

*Lecane fadeevi*: SEGERS, 1994 (p. 145).

*Lecane closterocerca* after PAWŁOWSKI (1956, 1958), partly.

DIFFERENTIAL DIAGNOSIS

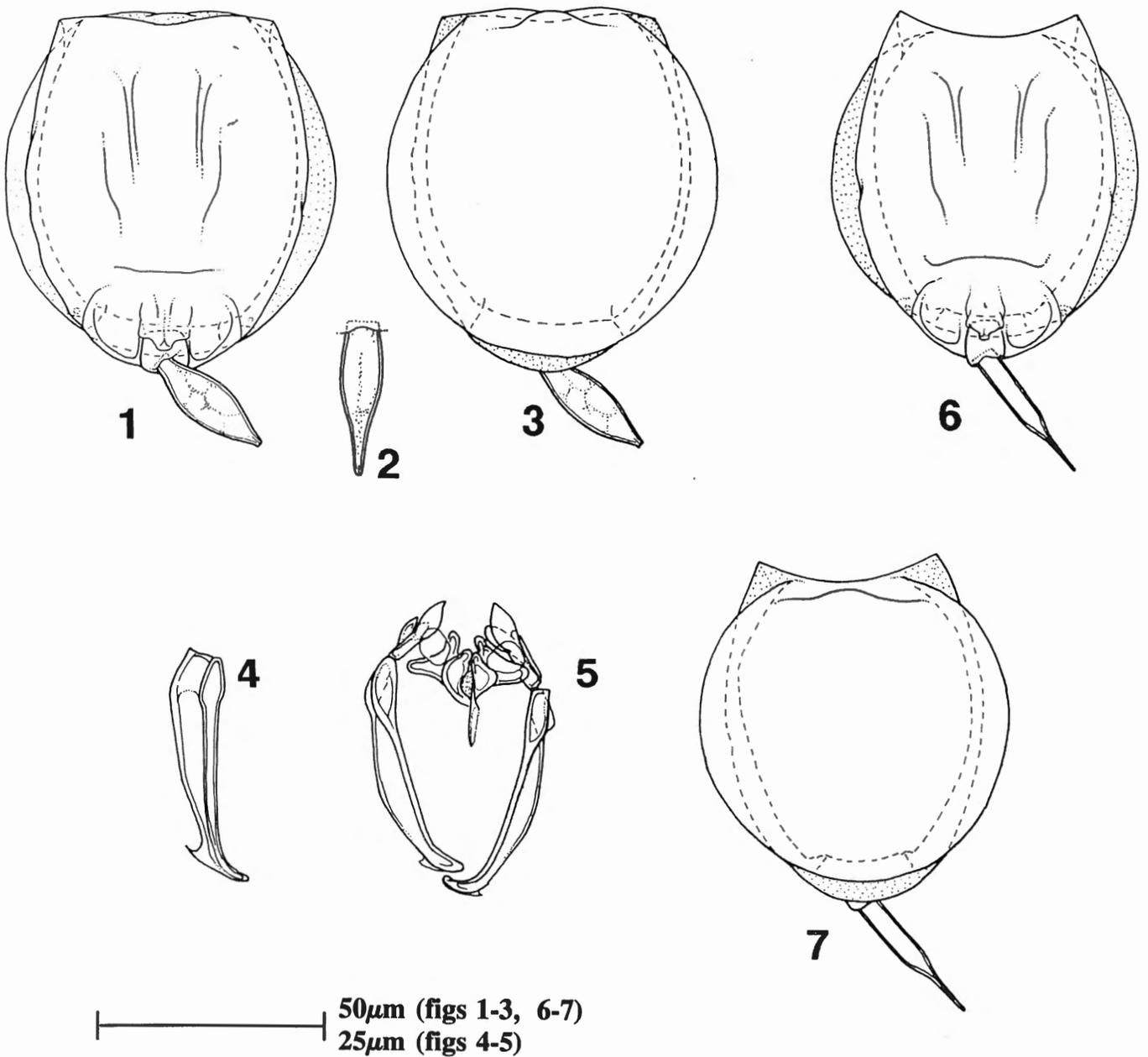
*L. fadeevi* can be distinguished from *L. psammophila* by its different lorica : in *L. fadeevi*, the dorsal plate is medially wider, anteriorly narrower than the ventral plate, whereas the dorsal is consistently wider than the ventral in *L. psammophila*.

*L. fadeevi* is closely related to *L. closterocerca* (SCHMARD, 1859) and *L. boliviana* SEGERS, 1995, by its similar lorica. It is characterised by the antero-lateral corners of its ventral plate being angulate (with sharp, triangular spines in *L. boliviana* : see SEGERS *et al.*, 1995), and by the peculiar shape of its toe (bulging medially, with short terminal fissure in *L. fadeevi*, parallel-sided, occasionally with a weak constriction in the basal part, the tip smoothly tapering to a sharp point distally in *L. closterocerca* (figs 6, 7) and *L. boliviana*). The species also has a relatively broader foot pseudo-segment than *L. closterocerca*.

*L. fadeevi* keys out to *L. closterocerca* (SCHMARD) and *L. arcuata* (BRYCE, 1891) following the key of SEGERS (1994); it can easily be distinguished from those by its bulging toe.

DESCRIPTION

Lorica stiff, smooth or slightly ornamented. Dorsal plate anteriorly narrower, medially wider than ventral plate. Head aperture margins nearly coincident, slightly concave or straight. Antero-lateral corners angulate. Lateral



Figs 1-5. — *L. fadeevi*. 1 : lorica (ventral view), 2 : toe, 3 : lorica (dorsal view), 4 : manubrium (lateral view), 5 : trophi (ventral view).

Figs 6-7. — *L. closterocerca lorica*. 6 : ventral view, 7 : dorsal view.

edges of dorsal plate scarcely reaching anterior edge. Ventral plate longer than wide, with incomplete transverse and weak longitudinal folds. Lateral margins smooth or irregularly folded, slightly curved. Lateral sulci deep. Foot plate short, with rounded triangular coxal plates. Prepedal fold narrow, elongate, posterior margin with median projection. Foot pseudosegment simple, slightly wider than long, scarcely projecting. Toe single, distinctly-bulging in the proximal half, then tapering to point. A short, scarcely visible terminal fissure present, no claw.

Trophi malleate, modified. Fulcrum short, fan-shaped. Unci with weak preuncinal plates, and three unequal, fused teeth left and right. Manubria elongate, relatively wide in lateral view, with sharp, recurved distal hooks.

Measurements : Dorsal plate length 75-74  $\mu\text{m}$ , width 66-74  $\mu\text{m}$ , ventral plate length 76-90  $\mu\text{m}$  (75  $\mu\text{m}$ ), width 60-64  $\mu\text{m}$ , head aperture width 46  $\mu\text{m}$  (45  $\mu\text{m}$ ), toe length 29-32  $\mu\text{m}$  (27  $\mu\text{m}$ ), width 9-10  $\mu\text{m}$  (7.5  $\mu\text{m}$  (lapsus; 7.5  $\mu\text{m}$  ?)) (4 specimens; measurements of NEISWESTNOWA-SHADINA (1935) between brackets). Trophi length 29-32  $\mu\text{m}$ , manubrium length 24-25  $\mu\text{m}$ , uncus length 9-10  $\mu\text{m}$ , incus width 14  $\mu\text{m}$ .

## DISTRIBUTION AND HABITAT

The original and the present record are both from rivers in the region of Moscow, Central Europe. PAWŁOWSKI (1956, 1958) illustrates what appears to be this species from the Grabi river, Poland (see plate 85 figs 2b-d in KOSTE, 1978).

According to NEISWESTNOWA-SHADINA (1935), *L. fadeevi* lives in the interstices between coarse sands in the bed of river Oka, attaining maximum densities of 20 to 30 specimens per cm<sup>3</sup> in June and July. Specimens were commonly encountered in deep plankton samples, eggs can be found sticking to sand grains (NEISWESTNOWA-SHADINA, 1935). The present material was collected between the shore vegetation of the Moskwa river, a tributary of Oka river. A list of the accompanying rotifer fauna in our sample is as in Table 1. The record by PAWŁOWSKI (1956, 1958) is from a similar habitat. *L. closterocerca*, on the other hand, is one of the commonest, most eurytopic lecanids, occurring in most types of weedy habitat.

Table 1.  
Rotifer record (Monogononta) in a sample from the Moskwa river, Zvenigorod

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<i>Brachionus quadridentatus</i> HERMANN
<i>Cephalodella gibba</i> (EHRENBERG)
<i>C. hoodi</i> (GOSSE)
<i>Colurella colurus</i> (EHRENBERG)
<i>C. uncinata</i> (O.F. MÜLLER) f. <i>bicuspidata</i> (EHRENBERG)
<i>Dicranophorus uncinatus</i> (MILNE)
<i>Euchlanis deflexa</i> GOSSE
<i>E. dilatata</i> EHRENBERG
<i>E. incisa</i> CARLIN
<i>E. triquetra</i> EHRENBERG
<i>Harringia eupoda</i> (GOSSE)
<i>Kelicottia longispina</i> (KELICOTT)
<i>Keratella cochlearis</i> (GOSSE)
<i>Lecane bulla</i> (GOSSE)
<i>L. closterocerca</i> (SCHMARDA)
<i>L. fadeevi</i> (NEISWESTNOWA-SHADINA)
<i>L. flexilis</i> (GOSSE)
<i>L. hamata</i> (STOKES)
<i>L. inermis</i> (BRYCE)
<i>L. lunaris</i> (EHRENBERG)
(incl. f. <i>crenata</i> (HARRING), <i>perplexa</i> (AHLSTROM))
<i>L. pyriformis</i> (DADAY)
<i>L. quadridentata</i> (EHRENBERG)
<i>L. stenroosi</i> (MEISSNER)
<i>L. ungulata</i> (GOSSE)
<i>Lepadella cristata</i> (ROUSSELET)
<i>L. elliptica</i> WULFERT
<i>L. ovalis</i> (O.F. MÜLLER)
<i>L. patella</i> (O.F. MÜLLER)
<i>Lophocharis oxisternon</i> (GOSSE)
<i>Mytilina mucronata</i> (O.F. MÜLLER)

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*Mytilina ventralis* (EHRENBERG)  
(incl. f. *macracantha* (GOSSE))  
*Scaridium longicaudum* (O.F. MÜLLER)  
*Squatinella lamellaris* (O.F. MÜLLER)  
*Testudinella patina* (HERMANN)  
*Trichocerca weberi* (JENNINGS)

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## Discussion

Although the different toe shape presents a reliable diagnostic characteristic between *L. fadeevi* and *L. closterocerca*, some intraspecific variability in toe shape is apparent. In the common *L. closterocerca*, the basal part of the toe is normally parallel-sided, specimens with broadly constricted toe (see figs 474, 477 in SEGERS (1994); *L. closterocerca* after MURRAY (1913, partly) can occasionally be encountered. An additional difference between the two species, not noted by NEISWESTNOWA-SHADINA (1935) is that the toe tip is sharp and spiniform in *L. closterocerca*, and has a short terminal fissure in *L. fadeevi*. Differences in head aperture shape, as apparent in figs 1, 3, 6, 7 are taxonomically irrelevant, as they result from a different degree of contraction of the specimens. The interpretation of internal structures in the toe as canals and reservoirs for some adhesive gland, as suggested by NEISWESTNOWA-SHADINA (1935) remains speculative. The subtlety of the characters distinguishing the two taxa may raise doubts on the taxonomic separation of the two, although similar pairs of congeners (e.g., *L. rhopalura* (HARRING & MYERS) and *L. lunaris* (EHRENBERG)) exist. However, as both *L. closterocerca* and *L. fadeevi* co-occur (our material, see table 1, figs 6-7), and as *L. fadeevi* is being recorded again after an interval of 57 years, and, hence, may be considered morphologically stable, it can but be concluded at present that they do represent two different species.

The trophi structure of *L. fadeevi* does not differ significantly from that of *L. closterocerca* or *L. boliviana* (figs 2c and 3c in SEGERS *et al.* (1995), respectively). The three have in common that their manubria have dorsal hooks distally, a character not recorded for any other *Lecane* (see figs 34-61 in SEGERS, 1994).

As in most Rotifera, no types of *L. fadeevi* have been deposited, or any museum material known to exist. The nomenclatural confusion is, however, not such that the designation of a neotype would be in order here. Microscope mounts of the species have been deposited in the collections of the Royal Belgian Institute for the Natural Sciences, Brussels, Belgium (IG 28110, RIR 51), in the Museum of Moscow University, Moscow (Russia) and in the Institute of Animal Ecology (University of Ghent, Ghent, Belgium) for future reference.

Alternative transliterations by various authors have an important consequence here. WISZNIIEWSKI (1954) used a variant spelling of the species' name, '*fadeewi*', instead

of the original '*fadeevi*' of NEISWESTNOWA-SHADINA (1935). According to the rules governing Zoological Nomenclature, the spelling *fadeevi* is a correct original spelling (see Art. 32(c)(ii), International Commission on Zoological Nomenclature, 1985). On the other hand, *fadeewi* can not be considered an 'incorrect subsequent spelling' (without further nomenclatural consequences), but is 'demonstrably intentional', as WISZNIEWSKI (1954) consistently transliterated the Cyrillic letter 'B' to the Latin 'w' throughout his work (see Art. 33(b)(i)). *L. fadeewi* has therefore to be treated as an 'unjustified emendation'. As such, *L. fadeewi* (WISZNIEWSKI, 1954) is an available name, and a junior, objective synonym of *L. fadeevi* (NEISWESTNOWA-SHADINA, 1935) (Art. 33(b)(iii)). A similar situation is that of *L. kutikowa* KOSTE, 1972 and *L. kutikova* KOSTE, 1978 (see SEGERS, 1994). Obviously, such cases represent unnecessary nomenclatural complications, which should be avoided.

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