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SCARIDIUM ELONGATUM N. SP., A NEW MONOGONONT ROTIFER FROM BRAZIL

HENDRIK SEGERS

Laboratory of Animal Ecology, Zoogeography and Nature Conservation, Department M.S.E., R.U.G., K.L. Ledeganckstraat 35, B - 9000 Gent (Belgium).

Abstract. A new species of *Scaridium*, *S. elongatum* n. sp., is described from Broa reservoir, São Paulo, Brazil. The species is probably a neotropical vicariant of the palaeotropical *S. grande* SEGERS, 1995.

Key words: *Scaridium elongatum* n. sp., Scaridiidae, Brazil.

INTRODUCTION

In a recent paper revising the Scaridiidae Manfredi (SEGERS, 1995), it was noted that no neotropical *Scaridium* Ehrenberg, 1830 had so far been found, although such could be expected considering the biogeography of the known representatives of the genus, and the generally high level of endemicity in the South American rotifer fauna. Therefore, it came as no surprise to find an undescribed *Scaridium* species in a sample from an otherwise well-investigated reservoir near São Paulo. A more elaborate report on the rotifer fauna of this locality by SEGERS & DUMONT (1995) was based on samples collected during August 1994. The new *Scaridium* occurred in additional samples collected during December 1994 and January 1996, and was also found in a sample from Minas Gerais, Brazil.

MATERIAL AND METHODS

Samples were collected using a standard zooplankton net (mesh width 50μm), and fixed in formalin. Animals were selected under a Wild M10 dissecting microscope, and examined with an Olympus CH2 microscope equipped with a camera lucida. Scanning electron microscopy was performed with a JEOL-JSM 840 microscope, on trophi isolated and treated following a method after SEGERS (1993). The samples from Minas Gerais (Brazil) were collected by M.B. Dabés.

RESULTS

One of the samples collected during December 1994 contained, amongst other species (see Table 1), several specimens of a hitherto undescribed rotifer. Its description is as follows.

TABLE 1

Rotifera (Monogononta) accompanying Scaridium elongatum *n. sp.*

Collotheca ornata (Ehrenberg, 1832) f. *natans* Tschugunoff, 1921
Dicranophorus epicharis Harring & Myers, 1928
D. prionacis Harring & Myers, 1928
Euchlanis dilatata Ehrenberg, 1832
Euchlanis triquetra Ehrenberg, 1838
Filinia novaezealandiae Shiel & Sanoamuang, 1933
Lecane bulla (Gosse, 1851)
L. leontina (Turner, 1892)
L. lunaris (Ehrenberg, 1832)
L. monostyla (Daday, 1897)
L. quadridentata (Ehrenberg, 1832)
L. signifera (Jennings, 1896)
Lepadella patella (O.F. Müller, 1786)
Monommata maculata Myers, 1930
Mytilina ventralis (Ehrenberg, 1832) f. *macracantha* (Gosse, 1886)
Polyarthra sp. near *vulgaris* Carlin, 1943
Ptygura libera Myers, 1934
Scaridium elongatum n. sp.
Testudinella ohlei Koste, 1972
Tetrasiphon hydrocora Ehrenberg, 1840
Trichocerca capucina (Wierzejski & Zacharias, 1893)

Scaridium elongatum n. sp.

Material

Two parthenogenetic females (holotype and paratype) deposited in the Royal Belgian Institute for Natural Sciences (K.B.I.N., reg. nr. IG 28274 RIR 61, 62: paratype), Brussels, Belgium; One parthenogenetic female and one light microscopy trophi preparation in the 'Instituto Nacional de Pesquisas da Amazônia (I.N.P.A., reg. INPA ROT-0550a-b), Manaus, Amazonas, Brazil; one parthenogenetic female, one light microscopy trophi preparation and one S.E.M. trophi preparation in the Laboratory for Animal Ecology, University of Gent, Belgium. In total, 12 specimens were found in a sample from 14 December 1994, and one in a sample collected on 20 January 1996, both from Broa

reservoir, Itirapira, São Paulo, Brazil. One female specimen in a sample from Gameleira river (Afl. Rio Grande), Uberaba, Minas Gerais, Brazil (leg. M.B. Dabés).

Diagnosis

Scaridium elongatum n. sp. is a close relative of *S. grande*[1] Segers, 1995, by its generally similar trophi shape. The species differs mostly by its rounded allulae, different from the prominent hook-shaped allulae of *S. grande*. There are several additional differences in trophi structure (slightly larger ramus teeth, more slender unci teeth, different epipharynx) (Figs 1-5). Also, the species is noticeably smaller than *S. grande* (Fig. 6), and has a relatively longer toe and third foot pseudosegment (Fig. 7).

Following the key by SEGERS (1995) and NOGRADY *et al.* (1995), the species keys out to *S. longicaudum* (O.F. Müller, 1786) and *S. bostjani* Daems & Dumont, 1974. *S. elongatum* n. sp. differs from these by its smaller allulae, more slender unciteeth, larger manubria and overall size, and by its relatively elongate toe and third foot pseudosegment.

Description

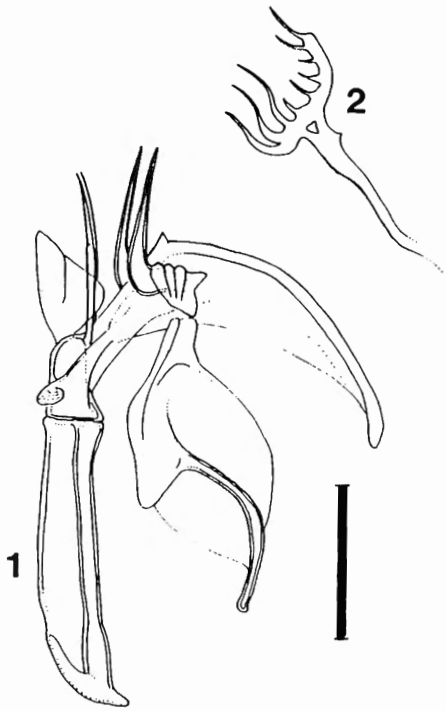
Animal large, second foot pseudosegment and toes relatively long. Head large, trunk with distinct fold antero-ventrally. Ventral pair of head lobes with minute notch. Fulcrum with low midventral crest, basal plate well-developed. Rami teeth relatively small, acutely pointed, triangular. Allulae small, rounded in lateral view. Basal part of unci triangular. Unci teeth large, elongate, slender, accessory teeth indistinct or absent. Manubrium relatively wide and transversally divided proximally. Ventral margin convex. Ventroposterior projection large, triangular. Anterior lamella well developed, posterior lamella large, weak. Terminal rod-shaped part elongate, connected with posterior lamella. Epipharynx teeth elongate, especially the posterior group. Male, and parthenogenetic and resting eggs unknown.

Dimensions (see Table 2, Figs 6, 7): Total length 402-446 μm, body 119-144 μm, second foot pseudosegment length 31-47 μm, third foot pseudosegment length 95-108 μm, toe length 155-168 μm. Fulcrum length 36-38 μm.

Etymology

The species name *elongatum* is a Latin adjective, and refers to the elongate foot and toe shape in this species and, in fact, of all *Scaridium* species.

[1]Emendation of *Scaridium grandis*: incorrect Latin termination of the adjectival species name, in disagreement with the gender of the genus name (see ICZN 31(b), (c)(ii)).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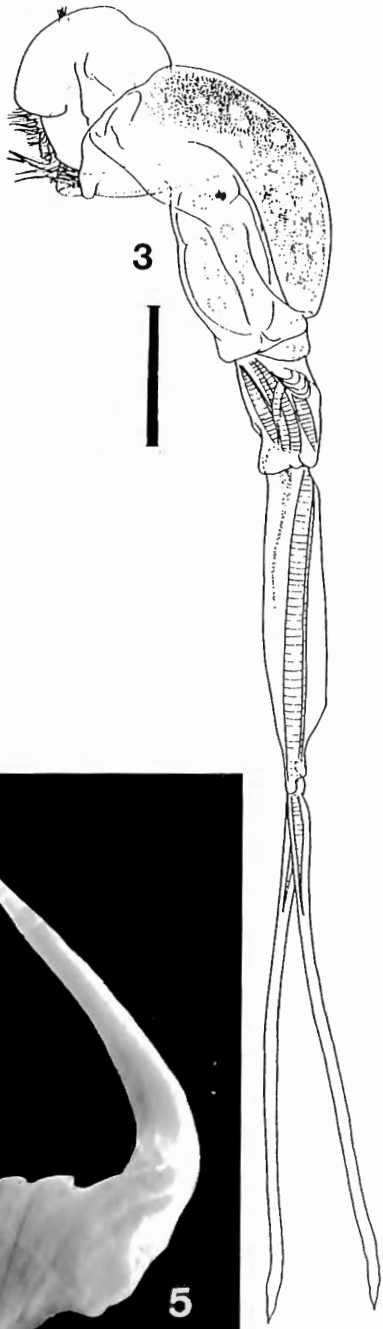
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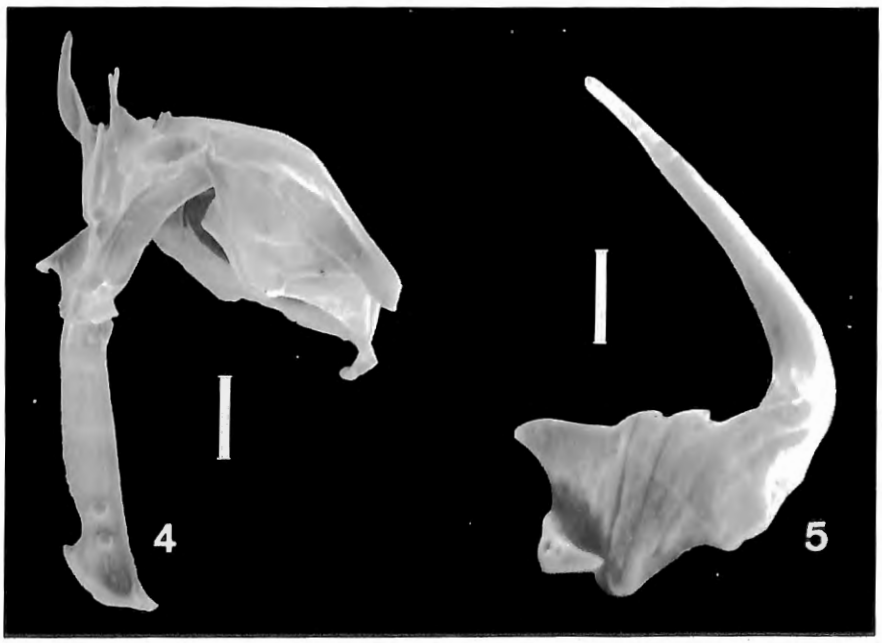
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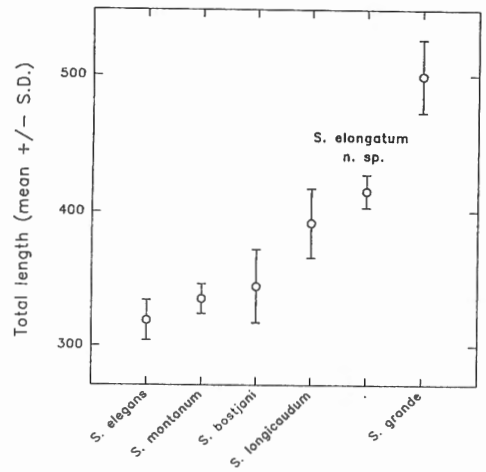

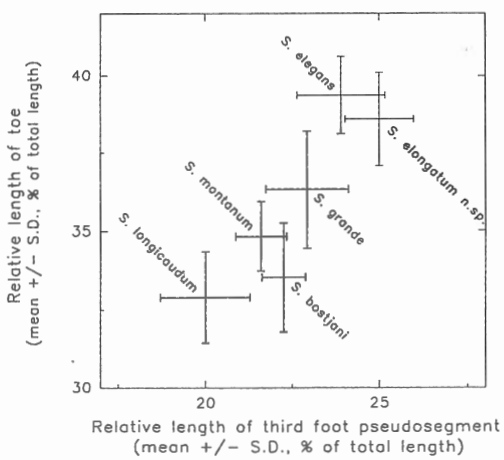

Fig. 6. – A comparison of the total length of all *Scaridium* species (after SEGERS, 1995; modified)
Fig. 7– Relative length of the third foot pseudosegment versus relative length of the toe in *Scaridium* species (after SEGERS, 1995; modified).

Figs 1-5. – *Scaridium elongatum* n. sp. – 1, 4. trophi, lateral view – 2. epipharynx – 4. habitus, lateral view – 5. uncus – 4, 5. S.E.M. photographs. (Scale bars: 1, 2: 25μm – 3: 50μm – 4: 10μm; 5: 5μm).

TABLE 2

Measurements on Scaridium elongatum *n. sp. (in μm)*

Specimen	1	2	3	4	5	6	7	8	9	10	11	12	mean±S.D
- Total length	407	405	412	410	415	405	402	446	420	415	418	428	415±12.17
- Body length	126	129	129	134	122	119	129	144	121	129	124	142	132±9.59
- first foot pseudo segment l.	36	39	36	41	34	36	44	46	44	36	31	36	38±4.81
- second foot pseudosegment l.	103	108	106	96	101	106	101	106	106	106	103	108	104±3.70
- Toe length	157	168	157	160	162	160	157	162	156	160	168	155	106±4.20
- Toe l./total l. (%)	38.6	41.4	38.1	39.1	39.0	39.5	39.1	36.3	37.1	38.5	40.2	36.2	38.6±1.52
- 3rd pseudos.l./ tot. l. (%)	25.3	26.7	25.6	23.3	24.2	26.1	25.0	23.6	25.1	25.4	24.7	25.3	25.0±0.97

Biogeography and ecology

As aforementioned, *Scaridium elongatum* n. sp. resembles, and is probably most closely related to *Scaridium grande*, of all its congeners. Whereas the latter species appears to have a palaeotropical distribution, the former is neotropical, as it is being described from Brazil. The Brazilian fauna now contains four representatives, *S. elongatum* n. sp., *S. bostjani* (see SEGERS, 1995), *S. elegans* Segers & De Meester, 1994 (three specimens in a sample from the Rio Paraguai, Pantanal region, leg. A.L. de Oliveiro-Neto), and *S. longicaudum* (one specimen in a marginal lagoon of São Francisco river, Januária, Minas Gerais, 28 Februari 1995, leg. M.B. Dabés).

The sample containing the majority of the specimens of *Scaridium elongatum* n. sp. was from a littoral habitat. Apart of the new species, 20 additional monogonont Rotifera could be identified from that sample (see Table 1), which is a relatively low number. As the majority of the Rotifera accompanying the new species, and all other *Scaridium* species are littoral, it can be assumed that also *S. elongatum* n. sp. lives in this type of habitat. Remarkable are *Testudinella ohlei* Koste, 1972 a neotropical species, an unidentifiable *Polyarthra* sp. (near *P. vulgaris* Carlin, 1943), and *Filinia novaezealandiae* Shiel & Sanoamuang, 1993. The latter record is the first of this species from the New World (SEGERS *et al.*, in press).

The discovery of a new *Scaridium* species in the neotropical region is particularly noteworthy, as it was hypothesised that such a South American *Scaridium* exists (SEGERS, 1995), an assumption derived from the contemporary knowledge on the biogeography of the taxon. This case therefore illustrates that our knowledge in this field has reached a point where predictions on the distribution and diversity of certain rotifer taxa, at the least at the level of large-scale, regional biogeography, become possible. As such, it is an example of the predictive potential of biogeography.

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