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Streblocerus superserricaudatus sp. nov. from Venezuela

(Macrothricidae, Anomopoda, Crustacea)

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Abstract

A new species of the genus *Streblocerus* is described from Venezuela and compared with European, Newfoundland and Australian specimens. The geographical distribution of the genus is discussed.

The genus *Streblocerus* comprises peculiar, smallest macrothricids characterized mainly by a bent antennule bearing laterally a few strong setae, the gut making convolutions, and a short bilobed postabdomen. The type species *S. serricaudatus* (Fischer, 1849) was described from the vicinity of Sankt Petersburg. In 1901, the smallest species of this genus *S. pygmaeus* Sars, 1901 was described from material reared from mud collected in the neighbourhood of Sao Paulo (Brazil). *S. pygmaeus* is also found in the Orinoco basin (Lewis *et al.*, 1990).

The genus was supposed to be Holarctic and Neotropical. In 1928 *S. serricaudatus* was found in Australia by Brehm (1928), and a New Zealand population was named *S. serricaudatus var. novae-zealandiae* by Brehm (1928). Paggi (1976) published a convincing record of *S. serricaudatus* from Argentina (Province of Rio Negro). In the present study G. O. Sars' type material of *S. pygmaeus* and original material of *S. minutus* (syn. *S. serricaudatus* Fischer) were examined (both in alcohol, F18460 and F18703, respectively, in the Zoological Museum of the Oslo University, Norway). Fischer's type material of *S. serricaudatus* obviously does no longer exist.

More recent findings added *S. inexpectatus* Dumont, 1981 from a pond at the border of Senegal and Guinea-Bissau (Africa). A form with a spinulated postabdomen was recorded from Malaysia by Idris & Fernando (1981) and qualified as *S. spinula-*

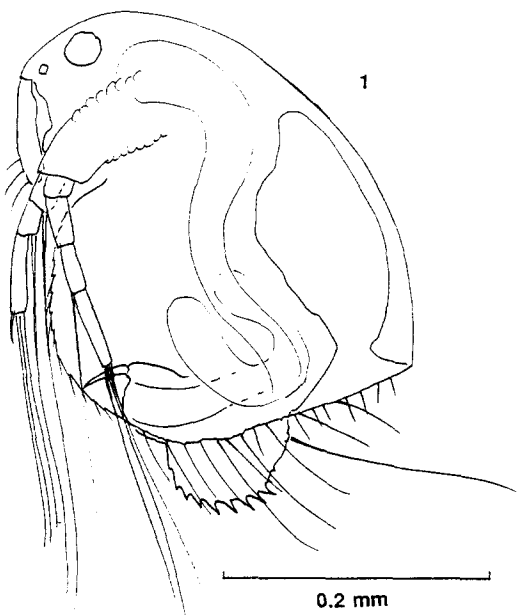

Fig. 1. Streblocerus superserricaudatus sp. nov., left-side view (The Amazonas State).

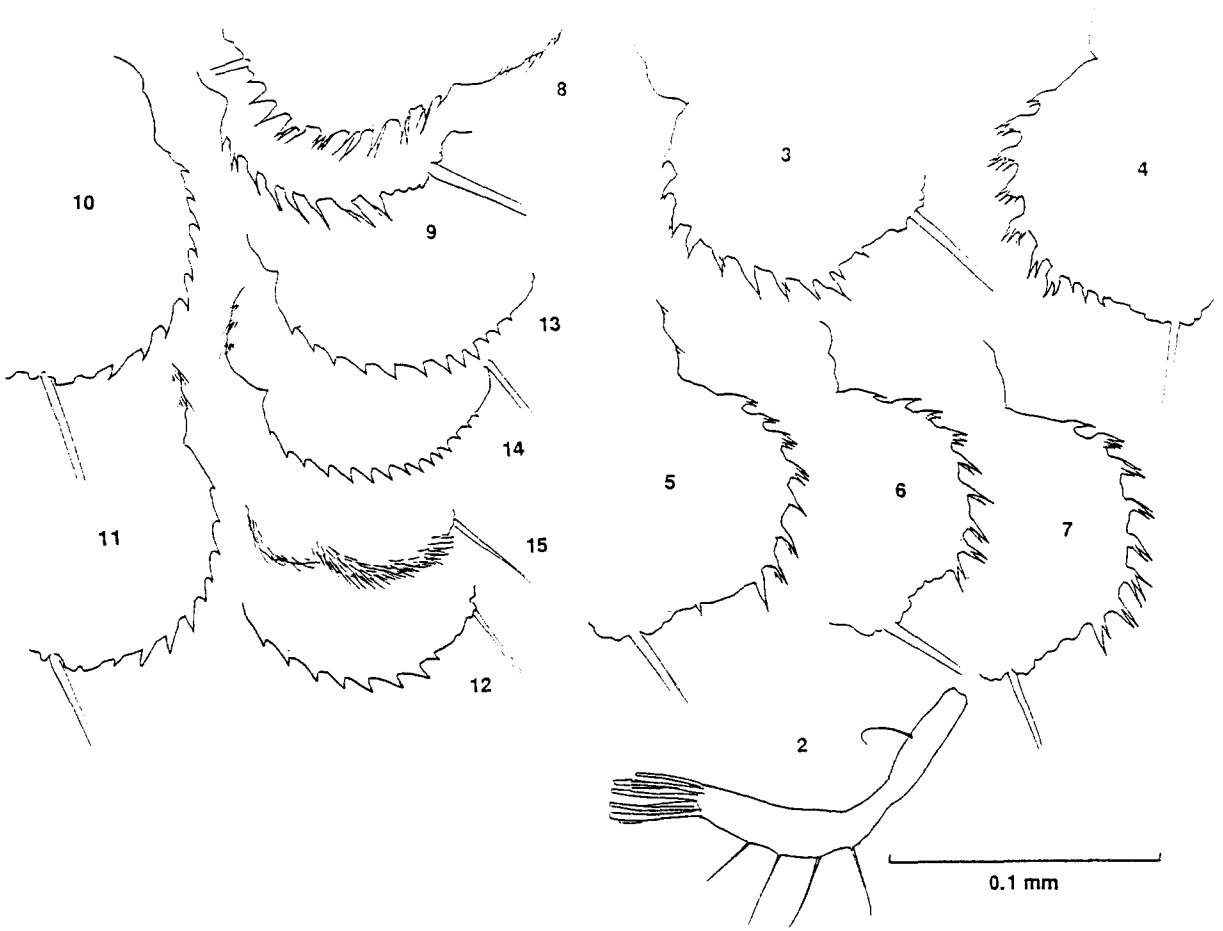

Plate 1. Its antennule (right, ventral view). Preanal margin of postabdomens. 3 – Preanal margin of the female shown in Fig. 1. 4–7 – Preanal margins of other females from the Amazonas State. 8–9 – Females from Estado Bolivar. 10–11 – Females of *S. serricaudatus* from a peat bog at Lake Narskoe (the Moscow region, Russia). 12 – Female of *S. serricaudatus* from Newfoundland (a pond at Bay Bulls). 13–14 – Females from Australia (New South Wales, a swamp inland from Sugar Point, Myall Lakes, 13-slide 2836, 14-slide 2836 in the Zoological Museum of the Moscow Univ.) 15 – *S. pygmaeus* from the Rio Nhamunda (Amazonas, Brazil, slide 3045).

tus by N. N. Smirnov, 1992. Thus, the distribution of the genus is cosmopolitan. However, few populations have been studied in detail and further investigation is necessary.

The known species differ mainly in the armament of the postabdomen (Figs 3–15). Specimens newly collected in Venezuela supplied a new link in the morphological series of postabdominal modification, which seemed to make a good reason to define a new species, described below. Sites where collections were made, hydrochemical data, and accompanied species are listed in the Table 1. The 'tepuis' are table mountains cut into Precambrian quartzite of the Roraima group' (Schubert 1988: 132).

Streblocerus superserricaudatus sp. nov.
(Figs 1–9)

Material. Females from highlands at *c.* 2000 m asl (tepuis) of the Guayana Shield in Venezuela: 6 females from the Amazonas State, 5 females from Estado Bolivar (Table 1) (collected by H. Alvarez and M. M. Castillo).

Holotype. A female from Territoria Federal Amazonas in the Zoological Museum of the Moscow University, N3701.

Paratypes. 5 females from Territorio Federal Amazonas, in the Zoological Museum of the Moscow University), NN 3702-3706.

Table 1.

Site	Site description	Accompanying species	pH	Conductivity (μScm^{-1})(25 °)	Total alkalinity ($mgCaCO_3l^{-1}$)	Nitrate (μg^{-1})
Auyar tepui (Bolivar State) Auyan river Kukenan (Bolivar State)	Pond located at a river turn	–	4.98		3.25	0.00
Pond 1	Shallow pond (depth <0.5 m) with silty bottom	Cyclopoid copepods Cladocerans: *Acroperus harpae* *Alonella nana* *Chydorus piger* Unidentif. Chidorid Rotiferans	5.1	3.23	2	3
Pond 2	Shallow pond (depth <0.5 m) bottom covered by filamentous algae	*Acroperus harpae* *Alona* sp. Rotiferans	5.1	3.51	2.5	11
Esmeralda Lake Roraima (Bolivar State)	Deeper (depth +2 m) pond with rocky bottom	*Acroperus harpae* *Chydorus piger*	5.4	2.61	4	3.3
Lake Gladys	Pond	Cyclopid copepod: *Tropocyclops prasinus* Cladocerans: *Acroperus harpae* *Alonella nana* *Alona* sp. Unidentif. Chidorid Rotiferans	5.3	2.81	2.5	3.3
Marahuaka (Amazonas State) pond	Shallow pond (depth <0.5m)	Cyclopoid and harpacticoid copepods Cladocerans: *Alonella nana* *Alonella* sp. *Alona* sp. *Acantholeberis curvirostris* Rotiferans *Lecane lunaris*	3.9	5.9	0	0

Female. With features of the genus. Dorso-posterior angle of shell noticeable. Antennule incurved, with 4 lateral setae and a short basal seta. Setae on the posterior part of ventral margin of valve intermittently short and long. Teeth on preanal margin of postabdomen elongated and pointed into filiform apices, frequently building groups. In several individuals the base of a tooth makes an elevated base bearing on its top a cluster of 2–4 denticles. Females from Estado Bolivar possess more elongated and spiniform preanal teeth (Figs 8, 9). Length *c. 0.36 mm.*

Male. Unknown.

Type locality. A shallow pond at Marahuaka (The Amazonas State, Venezuela).

Ecology. S. superserricaudatus is found in lentic environments (like shallow ponds), and in a pond in the Auyan river, most probably permanent. The low pH of Auyan tepui and Marahuaka waters may be associated with a higher incidence of peat deposits here than in Roraima and Kukenan. Air temperature in the visited localities shows a rather high daily variation: e.g., 8–17 °C in Kukenan.

Differential diagnosis. *S. superserricaudatus* sp. nov. has long, pointed and frequently clustered preanal teeth, while its nearest relative *S. serricaudatus* possesses solitary teeth, not elongated into filiform apex, as shown in Figs 10–12.

The new form was compared with European and Newfoundland specimens of *S. serricaudatus*, which both have solitary teeth increasing in size proximally. Specimens from Australia (New South Wales), studied for comparison, also possessed solitary preanal teeth, but the largest of them was situated in the middle, and teeth became smaller proximally as shown in Figs 13, 14. This may be also seen on the figure by Brehm (1928, Fig. 53) thus confirming his *S. serricaudatus novae-zealandiae*, with possible Australasian distribution (Smirnov & Timms, 1983).

Discussion

No interpopulational comparative studies had been ever made on *Streblocerus* species. Especially in case of widely distributed species (e.g., *S. serricaudatus* Eurasia-wide, North American and South American) local taxa may be revealed, as was the case, e.g., with *S. inexpectatus* described by Dumont (1981) from West Africa. This species is generally close to *S. serricaudatus*, but differs in a deep cut between the distal and proximal lobes of the postabdomen.

Thus the genus *Streblocerus* supplies a peculiar case of geographical distribution: Holarctic, Australasian, Neotropical, with loci in Malaysia and Africa. It may be reminded that there are a number of other species of the Macrothricidae (Smirnov, 1992) and of other anomopods with clear Holarctic distribution and additionally occurring in the southern hemisphere. Extreme cases of morphological speciation (specialization) are now recorded for the Neotropical region such as *S. superserricaudatus* sp. nov., and *S. pygmaeus*. The distribution of *S. serricaudatus* (if its close relative *S. inexpectatus* be added) on all continents may be interpreted as an indication to ancient nature of this form.

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