



New records of the genus *Telmatotrephes* Stål, 1854 from Brazil (Heteroptera: Nepomorpha: Nepidae)

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Abstract. New records of two species of *Telmatotrephes* Stål (*T. carvalhoi* De Carlo and *T. grandicollis* Kuitert) present in Brazil are reported. The first species was known only from the type locality in the State of Rio de Janeiro, and it is herein recorded for the first time from the State of São Paulo. The second species was previously recorded from Ecuador, Peru, and Brazil (State of Amazonas) and its range is herein considerably expanded to eastern Brazil, on the border of the states of Pará and Maranhão. Lastly, a map with the records for the Neotropical species and an updated checklist of the genus are presented.

Riassunto. Nuovi dati di *Telmatotrephes* Stål, 1854 del Brasile (Heteroptera: Nepomorpha: Nepidae). Vengono riportati nuovi dati realtivi a due specie di *Telmatotrephes* Stål (*T. carvalhoi* De Carlo e *T. grandicollis* Kuitert) del Brasile. La prima specie era conosciuta finora soltanto per la località tipica nello Stato di Rio de Janeiro e viene qui segnalata per la prima volta dello Stato di San Paolo. La seconda specie era precedentemente conosciuta di Ecuador, Perù e Brasile (Stato dell'Amazonas) e il suo areale di distribuzione viene qui considerevolmente esteso verso il Brasile orientale, al confine degli stati di Pará e Maranhão. Infine viene presentata una mappa con i dati relativi alle specie Neotropicali e una checklist aggiornata del genere.

Resumo. *Novos registros do gênero Telmatotrephes Stål, 1854 no Brasil (Heteroptera: Nepomorpha: Nepidae).* Neste estudo são apresentados novos registros para o Brasil de duas espécies de *Telmatotrephes* Stål (*T. carvalhoi* De Carlo e *T. grandicollis* Kuitert). A primeira espécie, conhecida apenas para localidade tipo no Estado do Rio de Janeiro, é registrada aqui pela primeira vez no Estado de São Paulo. A segunda espécie foi registrada previamente para o Equador, Peru e Brasil (Estado do Amazonas) e sua distribuição é expandida consideravelmente para o leste do Brasil, na divisa dos Estados do Pará e Maranhão. Por fim, é fornecido um mapa com os registros das espécies neotropicais e uma lista atualizada das espécies do gênero.

Key words. Checklist, Hemiptera, Neotropics, waterscorpions.

Telmatotrephes Stål, 1854 (Nepidae: Nepinae: Nepini) is a genus of waterscorpions represented by seven valid species and distributed in regions of both the New and Old World (SITES & POLHEMUS, 2001). Four species are recorded from the Neotropical Region, all of them occurring in South America. This genus is characterized by the ovate, dorsoventrally flattened, body ranging from 23-32 mm in length; pronotum quadrate; hind wing vestigial and coriaceous; short respiratory siphons (2-8 mm); and egg respiratory horns clubbed, without a plastron meshwork (LANSBURY, 1972; KEFFER *et al.*, 1989). The phylogenetic study performed by KEFFER (2004), based on morphological characters of the male genitalia, resulted in the subfamily Nepinae as a non-monophyletic group, besides showing Curictini as the most basal tribe, and not Nepini as proposed by LANSBURY (1974). The New World species of *Telmatotrephes* have significant differences in male genitalia in relation to the Old World congeners, and KEFFER (2004) suggested future studies to better understand the relationships between Neotropical and Oriental species. This genus is extremely rare in field collections and museums. Moreover, its species have discontinuous distribution in both regions where the genus occurs, which LANSBURY (1972) considered an evidence of a relict declining group with little potential for dispersal. Subsequently, SITES & POLHEMUS (2001) commented that this geographical di-

stribution pattern may be in part due to elevational restrictions in regions without homogeneity reliefs. Because data about the distribution of members of this genus is scarce, the aim of this study is to add further records of two *Telmatotrepes* species, based on material from northern and southeastern Brazil, which expand their area of occurrence. In addition, a map of the distribution of Neotropical species and an updated checklist of the genus are presented. Specimens, including types, from two museum collections were examined. Repository abbreviations are: Museu de Zoologia da Universidade de São Paulo, Brazil (MZUSP) and Museu Nacional do Rio de Janeiro, Brazil (MNRJ). The holotype of *T. grandicollis* was examined through the website (http://research.amnh.org/iz/types_db/) of the American Museum of Natural History, United States (AMNH), in August 30, 2015. All measurements are given in millimetres. Information between brackets in the material examined was deduced subsequently.

Telmatotrepes Stål, 1854

Telmatotrepes carvalhoi De Carlo, 1956 (Figs 1, 5)

Telmatotrepes carvalhoi DE CARLO, 1956: 3.

Telmatotrepes carvalhoi [sic]: KEFFER, 2004.

Material examined. Holotype male (MNRJ), Brazil, **Rio de Janeiro**, Petrópolis, 1949, J.C.M. Carvalho leg.; 1 female (MZUSP), Brazil, **São Paulo**, Estação Biológica de Boracéia, riacho [stream] 1, [896 m a.s.l., 23°39'17" S/ 45°52'32" W], XII.1993, J.A. Bertoluci leg.

Measurements of the female: length 22.6 (without respiratory siphon); maximum width 9.7 (across abdominal segment IV); medial length of pronotum 3.4; maximum width of pronotum 7.2.

This species was described based on a unique male specimen from Petrópolis, Rio de Janeiro. The female from São Paulo is morphologically very similar to the male holotype. This species has the metasternum reaching beyond the hind margin of abdominal sternite II, very similar to the illustration of *T. sculpticollis* Stål, 1854 presented by LANSBURY (1972: 274, Fig. 4). This feature contradicts couplet 2 of Lansbury's key to *Telmatotrepes* species, which must be improved. The female was collected in a small stream consisting of interconnected rocky or muddy puddles with dead leaves and sticks, located in the Atlantic Forest region of the Serra do Mar (Fig. 5) - a mountain chain along the Atlantic Coast of southeastern and southern Brazil. Additional information about habitat preferences is scarce, which makes collecting specimens even more difficult, especially in a biome that is currently in continuous process of anthropogenic transformation, leading to its considerable reduction and fragmentation.

Telmatotrepes grandicollis Kuitert, 1949 (Figs 2-5)

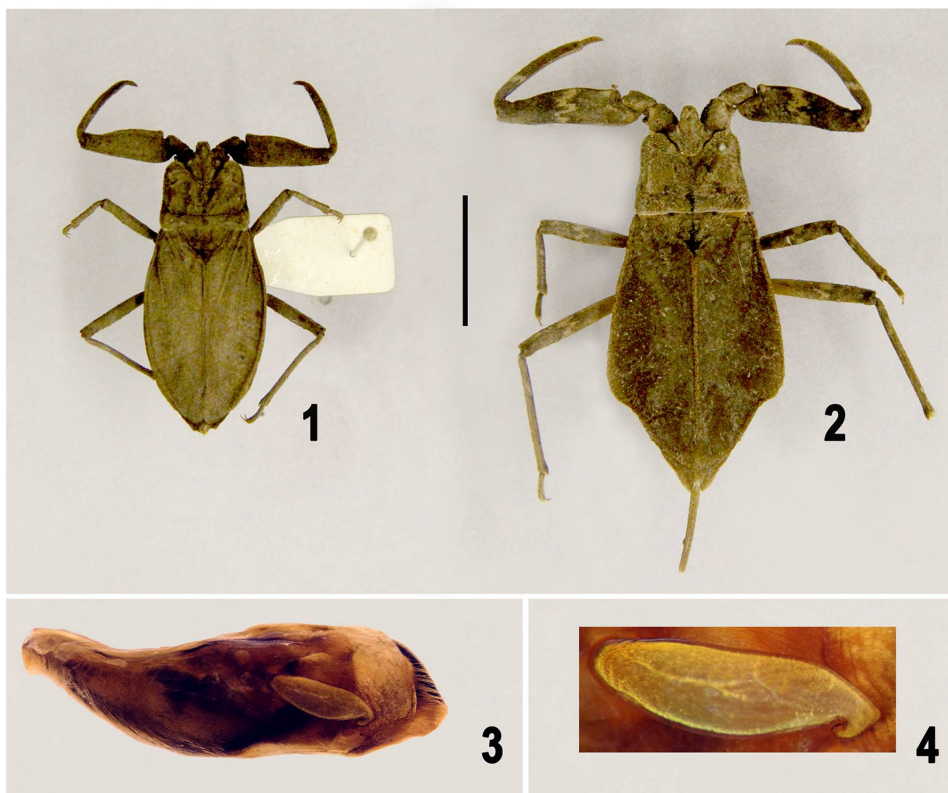
Telmatotrepes grandicollis KUITERT, 1949: 60.

Telmatotrepes brasiliensis DE CARLO, 1956: 1; syn. by LANSBURY, 1972: 277.

Material examined. Holotype female of *T. brasiliensis* (MNRJ), Brazil, **Amazonas**, Rio Javari, 1950, J.C.M. Carvalho leg.; photo of the holotype male of *T. grandicollis* (AMNH), Peru, Rio Santiago, 25.VI.1929, H. Bassler leg.; 1 male (MZUSP), Brazil, **Maranhão**, Aldeia Araçu, 50 Km East from Canindé, Rio Gurupi-Una, [76 m a.s.l., 02°33'36" S/ 46°28'48" W], II.1966, B. Malkin leg.

Measurements of the newly recorded male: length 30.7 (without respiratory siphon); length of siphon 7.5; maximum width 14.4 (across abdominal segment V); medial length of pronotum 4.6; maximum width of pronotum 9.4.

This species is known from Ecuador, Peru and Brazil, with records concentrated in the Loreto Province of eastern Peru and adjacent areas, in regions with relatively low altitudes (76 to 350 m) (SITES & POLHEMUS, 2001). It is herein recorded from the border of Pará and Maranhão states, Brazil (Fig. 5), thus the known distribution spans about 2,500 km across the eastern Amazon. The male from the State of Maranhão matches well with the photo of the holotype of *T. grandicollis* (available on the



Figs 1-4. *Telmatotrepes carvalhoi* (1): dorsal view of specimen from São Paulo. *Telmatotrepes grandicollis* (2-4): 2. dorsal view of specimen from Maranhão; 3. male genital capsule in lateral view; 4. paramere. Scale bar = 10 mm.

website of AMNH), with both specimens displaying the outer margin of hemelytra emarginated posteriorly. As mentioned by LUNSBURY (1972), this part of the wing is variable and can be almost straight, such as in the holotype of *T. brasiliensis*, a junior synonym of *T. grandicollis*. Male genital capsule (Fig. 3) and paramere (Fig. 4) also resemble the illustrations offered by LANSBURY (1972: 278, Figs 25, 28), however, the specimen from Maranhão has the paramere slightly wider centrally, with inferior margin more rounded.

Checklist of *Telmatotrepes* species

Neotropical region

T. carvalhoi De Carlo, 1956

Brazil (DE CARLO, 1956; present study).

T. ecuadorensis Lansbury, 1972

Ecuador (LANSBURY, 1972).

T. grandicollis Kuitert, 1949

= *T. brasiliensis* De Carlo, 1956

Ecuador (SITES & POLHEMUS, 2001), Peru (KUITERT, 1949; LANSBURY, 1972), Brazil (DE CARLO, 1956; present study).

T. sculpticollis Stål, 1854
Colombia (STÅL, 1854).

Oriental region

T. breddini Montandon, 1907
Brunei (SITES & POLHEMUS, 2001), East Malaysia (MONTANDON, 1907; LANSBURY, 1972; SITES & POLHEMUS, 2001).

T. chinensis Lansbury, 1972
China (LANSBURY, 1972).

T. simpsonae Sites & Polhemus, 2001
Thailand (SITES & POLHEMUS, 2001).

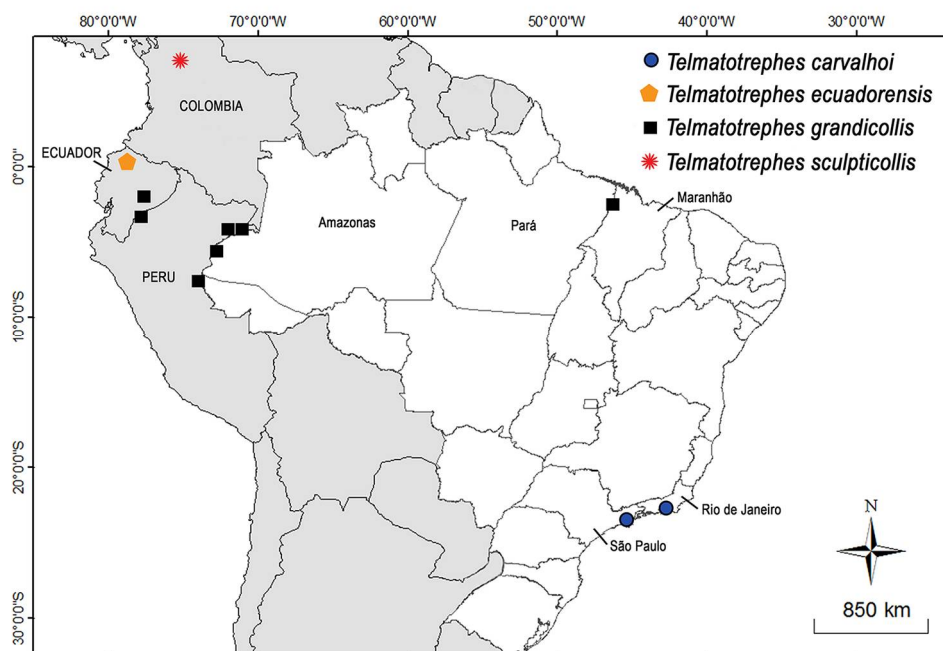


Fig. 5. Distribution map of the Neotropical species of *Telmatotrepes*. The white area of the map represents Brazil.

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