

First record and redescription of *Kurzia* cf. *media* Birge, 1879 in Argentina

(Crustacea, Chydoridae, Anomopoda)

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Kurzia cf. *media* is here redescribed and illustrated based on finding this species in a temporary pond in Buenos Aires Province, Argentina. This species belongs to the family Chydoridae and has been recorded in the Palearctic region of Canada and the Neotropical Region of Colombia. Its distribution is now extended to Argentina, corresponding to the southernmost records of this species in the world.

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Introduction

In Argentina, inland water cladoceran fauna is represented by two orders, Ctenopoda and Anomopoda, which include one and five families, respectively. Knowledge of cladocerans increased with the contributions by Olivier (1962) and Paggi (1993, 1998, 2004). A recent review reports that 55 genera and 170 species have been estimated for Argentina (José de Paggi et al. 2023), among which the genus *Kurzia* Dybowski & Grochowski, 1894 (Chydoridae, Anomopoda) is well represented.

Kurzia has worldwide distribution, and has been recorded in at least three biogeographical regions: Nearctic, Palearctic and Neotropical. The genus is divided into two subgenera: *Kurzia* and *Rostrokurzia* (Hudec 2000). The subgenus *Kurzia* differs from the subgenus *Rostrokurzia* mainly in the

shape of carapace and the morphology and shape of the head, rostrum and labrum (Hudec 2000, Sinev 2016). *Rostrokurzia* includes *K. longirostris* Daday, 1898 described from Ceylon, and is also distributed in Australia, tropical Asia and tropical Africa, and *K. brevilabris* Rajapaksa & Fernando, 1986 from subtropical and tropical Asia (Thailand) (Sinev 2016).

The subgenus *Kurzia* includes three species: *Kurzia latissima* Kurz, 1874 with Palearctic Afro-tropical and Neotropical distribution (Smirnov 1974, Paggi 1995, Hudec 2000, Kotov et al. 2013); *Kurzia polyspina* Hudec, 2000 with Neotropical distribution (Elmoor-Loureiro 2002, Elías-Gutiérrez 2008, Fuentes-Reinés et al. 2012, 2019, José de Paggi et al. 2023), and *Kurzia* cf. *media* Birge, 1879 with both Nearctic and Neotropical distribution (Hudec 2000, Fuentes-Reinés et al. 2012, 2022, Kotov et al. 2013, Kotov & Fuentes-Reinés 2015).

After acceptance of this manuscript for publication in *Spixiana*, we got notice that one of the reviewers, i.e. a person who knew about the content, has published an article with a first record of the same species as the present one in Brazil, thus infringing best practice of peer reviewing. For this reason, and because the manuscript Díaz & Adami had been accepted for publication in *Spixiana* before, we publish it unchanged. The Editors at *Spixiana*

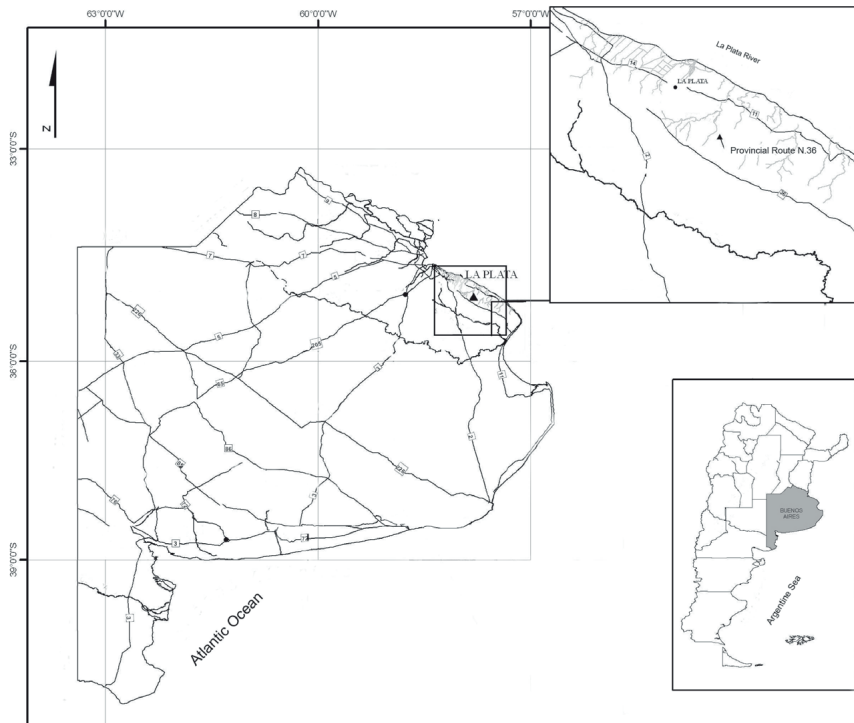


Fig. 1. Location of sampling site in Buenos Aires Province, Argentina.

In the Neotropical region, *K. (K.) latissima* has been reported in four different lacustrine regions of Argentina (Paggi 1995, José de Paggi et al. 2023, see supplementary table C). *K. (K.) polyspina* has the widest distribution and has been reported from Mexico, Cuba, Surinam, Brazil and Argentina (Elmoor-Loureiro 2002, Elías-Gutiérrez 2008, Fuentes-Reinés et al. 2012, 2019, José de Paggi et al. 2023). *Kurzia (K.) cf. media* has been reported from a swamp in Santa Marta (Colombia), associated to submerged and floating macrophytes (Fuentes-Reinés et al. 2012), and from Mexico (Kotov & Fuentes-Reinés 2015).

This paper reports the occurrence of *Kurzia cf. media* in a temporary pond in Buenos Aires Province, extending the distribution of the genus southward by about 7500 kilometers.

Materials and methods

The species *Kurzia (K.) cf. media* here presented was found in a temporary pond located on Provincial Route #36 (35°07'40" S, 57°53'09" W) in Buenos Aires Province (Fig. 1). The material was collected by Mariana Adami in July 2018 with a plankton net with mesh size 125 µm. The specimens were placed in 70% alcohol for permanent storage and mounted and dissected in glycerin

under a stereoscopic microscope. Limb morphology was studied under a light microscope, and line drawings were made with the help of Zeiss, Standard 25 stereomicroscope with camera lucida. The nomenclature of the limb chaetotaxy follows Kotov (2000a,b) and Van Damme (2016). Material was deposited in the Carcinological Collection at Museo de La Plata, La Plata, Argentina (MLP-Cr numbers). The following abbreviations were used: A2, second antenna; P1-5, first to fifth thoracic limbs; IDL, inner distal lobe; ODL, outer distal lobe; N, number of individuals. Size measurements are given in millimeters.

Taxonomy

Family Chydoridae Dybowski & Grochowski, 1894
 Subfamily Aloninae Dybowski & Grochowski, 1894
Kurzia Dybowski & Grochowski, 1894

Kurzia (K.) cf. media Birge, 1879

Fig. 2A-G

Material examined. 3 parthenogenetic females deposited in the Carcinological Collection at Museo de La Plata, Argentina (MLP-Cr 27356).

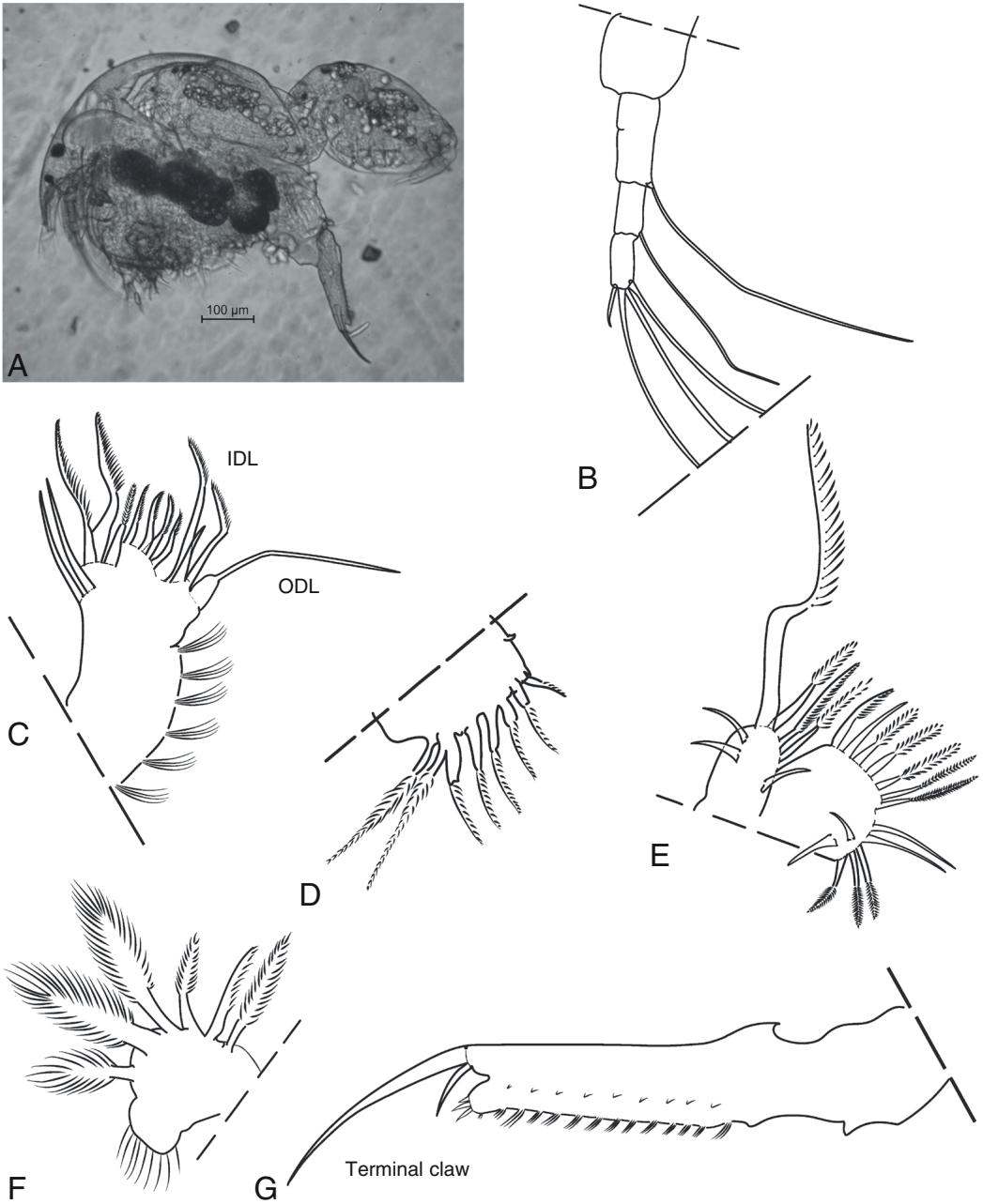


Fig. 2. *Kurzia* cf. *media*. A. Carapace lateral view; B. A2; C. P1; D. P2, scraping spines; E. P3; F. P4; G. post-abdomen. Scale bars A-G: 0.1 mm.

Description

Adult parthenogenetic female. General habitus (Fig. 2A-G), length=0.9 mm, height=0.7 mm.

Carapace (Fig. 2A) lacking ornamentation. Sub-rectangular, laterally strongly compressed, dorsal margin curved and decreasing to the truncated posterior margin, ventral margin slightly concave.

Valve setae ca. 30–40 in three main groups, the anterior being the longest. The posterior group with fine setules gradually decreasing in size towards the corner. Transparent brownish.

Cephalic structures. Ocellus smaller than eye, equidistant between rostrum and eye. Head small. Rostrum short. Three circular connected head pores, all the same size, close to the broadly rounded round posterior head shield margin. Labrum short, roughly sub-triangular. Antennules/A1 short, about 2–2.5, as long as wide, setulated on the margin (four to five rows). Aesthetascs of similar length projecting well beyond the tip of the rostrum, two slightly longer, all implanted on the apex (not illustrated due to damaged antennule). Second antennae/A2 (Fig. 2B). Exopodite not preserved. Only segments of endopodite are illustrated. First endopod segment short. Second segment seta as long as terminal setae, third segment seta shorter. Terminal spine reaching half of terminal segment. Terminal setae of similar thickness.

Thoracic structures. Five pairs of thoracic limbs (P1–5). First limb/P1 (Fig. 2C). Short round epipodite. First endite with just two smooth setae, second endite with three setae, two equal and one shorter, third endite with four similar setae. IDL with two long setae implanted with fine setules unilaterally on distal halves, both similar in size uniformly set. ODL with one slender smooth seta. About six anterior setulae groups with relatively short setules in each group, strongly decreasing in length ventrally. Second limb/P2 (Fig. 2D). Exopodite quadrangular. Eight scrapers, scraping spines gradually decreasing in size between the exopodite and the gnathobase. Two first scrapers relatively longer, third slightly shorter than the fourth, sixth to eighth slightly thicker. Setulation of all scrapers uniform, no anterior elements at the base of scrapers. Gnathobase with short tuft of setules and a filter comb (not illustrated because of the damaged gnathobase). Third limb/P3 (Fig. 2E). Epipodite oval-rectangular with short projection. Exopodite circular with seven setae in 2+5 arrangement. First seta about twice as long as second, both in opposite directions; third seta about twice as long as sixth seta; fourth seta just shorter than sixth, fifth of the same length as the seventh seta and both are half as long as the sixth seta. Fourth seta clearly bent in the middle, oriented away from the epipodite. All setae widely plumose. Endopodite with 7 plumose setae, three subequal (DS-3) setae. Seven gnathobase filter setae. Fourth limb/P4 (Fig. 2F). Pre-epipodite round. Exopodite round, with six plumose setae; first seta slightly shorter than second and third which are of similar lengths; fourth to sixth setae shorter and finely setulated. Fifth limb/P5 not observed.

Abdominal/postabdominal structures. Postabdomen (Fig. 2G). Widest at preanal corner. length of post-abdomen 2–2.5 times as long as wide. Distal corner of post-abdomen forms lobe not projecting beyond terminal claw base with a cluster of 1–3 denticles on tip. About nine groups of isolated marginal denticles. Terminal claw (Fig. 2G). Long, about 0.10 mm. Curved distally, with a single basal spine twice as long as basal diameter of terminal claw, basal spine without serrations. Concave margin of the claw with fine setules.

Ephippial female and ephippium. Ephippial female (Fig. 2A) light brown colour. Ephippium light to dark brown with a single egg, as for the genus.

Males. Not found.

Key of *Kurzia* (K.) species

- 1 Lateral serration of the two longest IDL setae uniform 2
- Lateral serration of the two longest IDL setae with spicules and setules *K. (K.) polyospina*
Hudec, 2000
- 2 Post-abdominal distal corner broad, almost straight, with three spicule-like denticles on the tip and 7–9 marginal, spicule-like denticles
..... *K. (K.) latissima*
Kurcz, 1874
- Post-abdominal distal corner with lobe not protruding beyond terminal claw base 3
- 3 Terminal claw base with 1–3 thick denticles on the tip. Post-abdominal claw with denticles, about nine groups of isolated marginal denticles *K. (K.) cf. media*
Birge, 1879

Discussion

We reported the occurrence of *Kurzia* (K.) cf. *media* in Argentina (Buenos Aires Province), this being the third time that the species has been found in the Neotropical region (Fuentes-Reinés et al. 2012, Kotov et al. 2015), extending its distribution in South America southward from 11°N to 35°S.

The redescription of *Kurzia* (K.) cf. *media* based on the specimens collected in this study agrees with previous diagnosis by Hudec (2000) and Fuentes-Reinés et al. (2022).

The taxonomic key provided shows morphological differences between *K. (K.) cf. media* and the species previously recorded in Argentina *K. (K.) latissima* and *K. (K.) polyospina*. We consider it necessary

to highlight these differences because the species are very similar. Indeed, Hudec (2000) suggested that *Kurzia* (K.) cf. *latissima* recorded in Venezuela (Rey & Vasquez 1986) belongs to *K. (K.) polyspina*. In agreement with our standpoint, Elmoor-Loureiro (2002) suggested that the Argentine populations attributed to *K. (K.) latissima* could have been confused with *K. (K.) polyspina*, considering the postabdomen drawn by Paggi (1995) is characteristic of the latter. Unfortunately, there is no material deposited in the institutional repositories in Argentina in order to check them. Regarding *Kurzia* (K.) cf. *media*, Hudec (2000) suggests that it could have been confused with the North American population of *K. (K.) latissima*.

In this context, we suggest that there is a need for an overall revision of the genus *Kurzia* based on a thorough morphological study and, ideally, a molecular phylogenetic study of all its species, particularly those in the Southern Hemisphere.

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