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## The subgenus *Chelostomoides* in Argentina (Hymenoptera: Megachilidae: *Megachile*)

El subgénero *Chelostomoides* en Argentina (Hymenoptera: Megachilidae: *Megachile*)

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**Abstract:** A new species of *Megachile* subgenus *Chelostomoides* Robertson is described from xeric central-western Argentina. The male of the new species agrees with those of the *M. exilis* species group of North America, but not the female, which has a highly modified clypeus and elongate mandibles.

**Keywords:** Argentina, *Chelostomoides*, *Megachile*, New species.

**Resumen:** Se describe una nueva especie de *Megachile* subgénero *Chelostomoides* Robertson de la región árida del centro oeste de la Argentina. El macho de esta especie concuerda con aquellos del grupo de especies *M. exilis* de América del Norte, pero no así la hembra, que tiene un clípeo muy modificado y mandíbulas alargadas.

**Palabras clave:** Argentina, *Chelostomoides*, *Megachile*, Nueva especie.

## INTRODUCTION

The subgenus *Chelostomoides* Robertson of *Megachile* Latreille is exclusive of the New World, where 31 species occur (Michener, 2007). Most of its diversity is found in U.S.A. and Mexico, and a few species occur in Central America, South America and the Caribbean Region. In South America three species have been described from Colombia and Peru, and another one extends its range from Mexico to southern Colombia (Michener, 2007; Raw, 2007; Moure et al., 2007). *Chelostomoides* is an isolated element in the megachilid fauna of the New World, since its closest relatives occur in the Old World and Australia (Michener, 2007; González, 2008; Trunz et al., 2016).

Revisions of the subgenus have been presented by Mitchell (1937) for the U.S.A. fauna, and Snelling (1990) for species occurring in North and Central America. Mitchell (1956) presented a key to all the species known to that date, which included the four species occurring in South America.

Females of *Chelostomoides* lack cutting edges on the mandibles, and are known to collect resins to construct their nests in pre-existing cavities. Resin is used to line cells and make partitions of seriate cells (Medler, 1966; Krombein, 1967). Armbrust (2004) found that other materials, such as sand and debris, are used in addition to resin to build nest caps in some species; she found that at least one species uses no resin at all in

the construction of the nest, but a cephalic secretion to cement sand and gravel.

The purpose of this contribution is to present a new species from central western Argentina, which considerably extends the range of *Chelostomoides* southwards in South America.

## MATERIAL AND METHODS

The specimens studied are deposited in the Museo Argentino de Ciencias Naturales, Buenos Aires, Argentina (MACN). The maximum diameter of the median ocellus (MOD) is used as a reference to express the length of the pubescence and other structures. The metasomal terga (T) and sterna (S) are identified with Arabic numerals.

## RESULTS

*Megachile (Chelostomoides) anillaco* n. sp.

(Figs. 1-6)

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### *Diagnosis*

The denticulate carina of T6, with a broad median emargination, distinguishes the male from other males in the subgenus, which have, as *M. anillaco*, the mandible with a ventral process, the hypostoma with an anterior concavity, the anterior tarsus with bare, concave proximal three tarsomeres, and a specialized basal tuft of hairs on the forebasitarsus. The female is characterized by the extremely short disc of the clypeus, the elongate mandible, and the presence of a tuberculiform elevation of the hypostoma next to the hypostomal carina.

### *Female holotype.*

Total length 9.0 mm; length of forewing 6.4 mm. Color. Integument black, except middle and posterior tarsi dark reddish brown, and pale yellowish spurs on all legs. Tegula black; wings weakly infuscated, darker on costal margin of marginal cell and on apex of forewing. Pubescence. Head with white hairs, except a few brown hairs on vertex, and golden-yellow hairs on labrum. Discs of scutum and scutellum with brownish hairs; remainder of mesosoma with white hairs. Legs with white hairs, except hairs brownish on inner surface of tibia and tarsus of foreleg, and yellowish on inner surface of tibiae and tarsi of middle and hind legs. Metasomal terga with yellowish, plumose hairs forming entire apical bands on T1-T5; discs of T2-T3 with minute brownish hairs (0.05-0.10x MOD), longer on T4 (0.2x MOD); disc of T5 with

decumbent (0.3-0.5x MOD) and erect (0.75-1.20x MOD) brownish hairs; T6 with decumbent yellowish plumose hairs and interspersed erect brown simple hairs; basal grooves of T2-T3 (hidden on subsequent terga) with plumose yellowish hairs (0.3-0.5x MOD); scopa yellowish. Sculpture. Integument of clypeus and supraclypeal area shiny between punctures. Vertex of head, scutum and scutellum similarly punctured: punctures deep, separated by 0.2-0.3 times their diameter (0.03-0.05 mm); interspaces shiny. Mesopleuron with punctures separated by 0.1-0.2x their diameter (0.04-0.06 mm); interspaces weakly tessellate. T2-T3 with punctures on center of disc separated by 0.5-1.5x their diameter (0.03-0.04 mm), with weakly strigulate interspaces; punctures finer and denser towards posterior margin. T6 with weak indication of a transverse preapical carina, not preceded by a groove. Morphology. Vertex of head elevated above eyes and ocelli; distance from lateral ocellus to posterior margin of head 2.8x MOD. Inner margin of eyes diverging below, upper interocular distance 0.87x lower interocular distance. Mandible elongate, with four teeth, but third tooth reduced (Fig. 4); width of toothed margin of mandible 0.45x length of mandible from upper tooth to acetabular articulation; base of mandible without tubercles or elevations; inner fimbriate line of hairs outstandingly developed (Fig. 4, FL). Clypeus with disc extremely short, its length along midline 0.42x interantennal distance; apex of clypeus concave in frontal view, with lateral tuberculiform lobe and median transverse thickening irregularly punctate; reflexed area of clypeus (Fig. 4, ra) at perpendicular plane to disc, and larger than disc of clypeus (at midlength 1.5x as long as disc). Maximum width of gena in lateral view 1.1x maximum width of eye. Hypostomal carina strong on posterior half and fading anteriorly; hypostomal area with strong tubercle next to midlength of carina. Proportions of scape, pedicel and first three flagellomeres 4.5:1.5:1:1.2:1.5; first flagellomere as long as 0.53 times its apical width.

### *Male*

Total length 8.0 mm; length of forewing 5.8 mm. Color. Black, with following parts rufous: tibia and basitarsus of foreleg, middle and hind legs beyond femora (but distotarsi darker), lateral margins of T2-T4, apical band on T5, entire T6 and T7, posterior third of S2, posterior half of S3, and entire S4. Wings as in female. Pubescence. Color of pubescence similar to that of female. T1-T5 with complete apical bands of plumose hairs, narrow on T5 (bands worn medially on T1-T3 in studied specimen, but scattered remnant hairs suggest that the bands were complete). T2-T6 with basal bands of plumose hairs. S1-S3 with white plumose hairs, on S2 forming large apical band, on S3 restricted apically to sides. Sculpture. Punctuation similar to that of female, with shiny interspaces on face, scutum, scutellum and metasomal terga. Morphology. Inner margin of eyes converging below, upper interocular distance 1.1x lower interocular distance. Mandible tridentate, with strong ventral process. Clypeus weakly convex, 0.47x as long as wide; disc with median longitudinal

impunctate stripe; clypeal margin with small median denticle and large tubercle on each side of middle. Maximum width of gena in lateral view 0.85x maximum width of eye. Hypostomal area with anterior glabrous deep concavity. Proportions of scape, pedicel and first three flagellomeres 3.5:1.2:1:2.0:2.3; first flagellomere as long as 0.72x its apical width. Front coxal spine present, strong; coxa with long plumose hairs laterally, but basal to spine with short, simple hairs. Anterior basitarsus 2.1x as long as its apical width, concave and glabrous beneath, basally with tight group of long, apically curved setae (mastigion of Snelling, 1990); second and third following tarsomeres also concave and glabrous beneath; second to fourth tarsomeres strongly asymmetrical (Fig. 5). Carina of T6 medially emarginate, both lateral part of carina and emargination weakly denticulate (Fig. 6). Sternum 4 incompletely concealed, sparsely setose, with bare, polished, down curved apical margin.

### *Etymology*

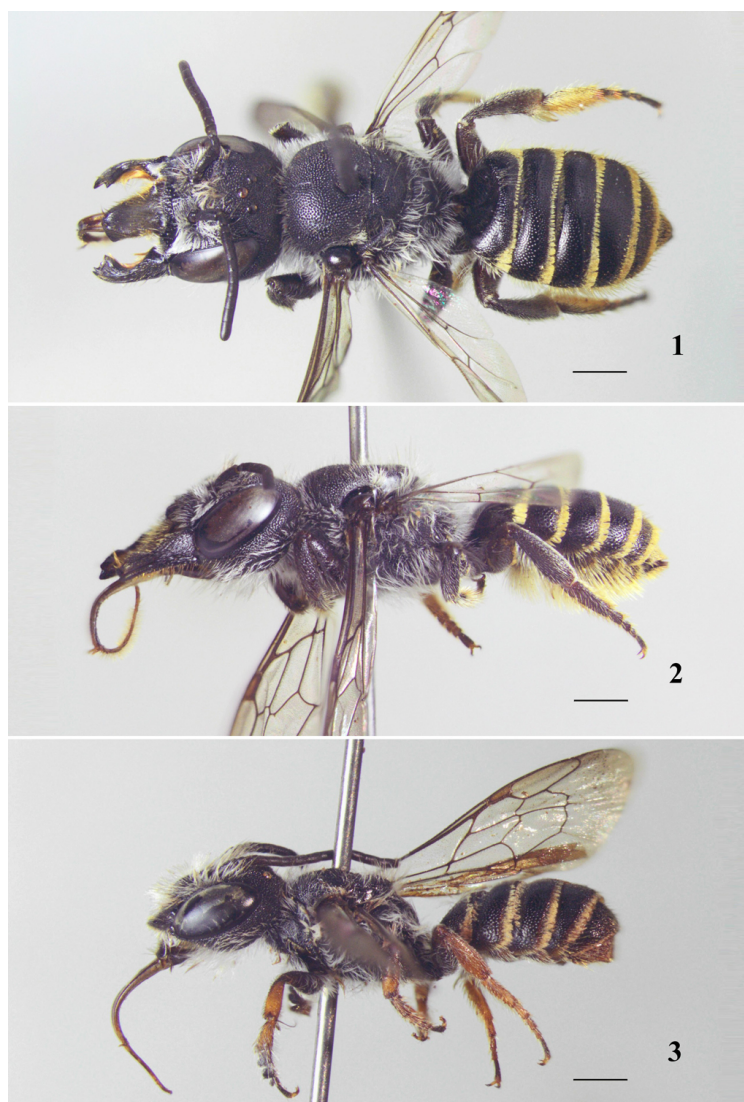
The species name is taken from the type locality and is used as a noun in apposition.

### *Distribution*

Argentina, province of La Rioja.

### *Material studied.*

Holotype female, Argentina, La Rioja, 6 km SE Pinchas, 4-5-XI-2011, Roig A., González V. & Compagnucci, ex *Capparis atamisquea* (MACN). Paratype male, Argentina, La Rioja, 6 km SE Pinchas, 4-5-XI-2011, Roig A., González V. & Compagnucci, ex *Cercidium praecox* (MACN).



Figs. 1-3. *Megachile (Chelostomoides) anillaco* n. sp. 1, female holotype, habitus, dorsal view; 2, female holotype, habitus, lateral view; 3, male, habitus, lateral view.  
Scale lines = 1 mm.



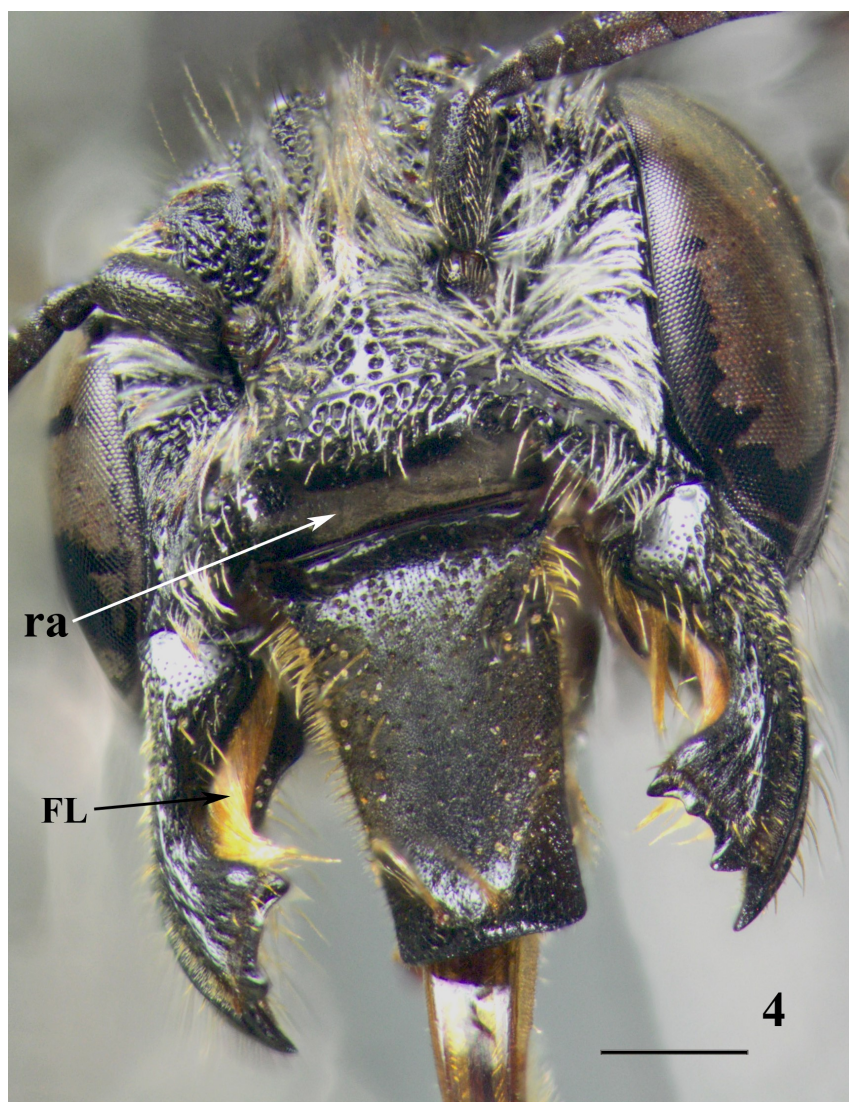


Fig. 4. *Megachile (Chelostomoides) anillaco* n. sp., female holotype, anteroventral view of head.  
Scale line = 0.5 mm.



Figs. 5-6. *Megachile* (*Chelostomoides*) *anillaco* n. sp., male. 5, male, front tarsus, outer surface (m, mastigion, specialized tuft of hairs); 6, male, sixth metasomal tergum, dorsal view.

Scale lines = 0.2 mm.

## DISCUSSION

The new species *M. anillaco* is readily distinguished from the other four known South American species of *Chelostomoides*. *Megachile haematoxylonae* Mitchell from northern Colombia, *M. peruviana* Smith from Peru, and *M. otomita* Cresson, distributed from Mexico to southern Colombia, have females with an unmodified clypeal disc and short and broad mandibles, while *M. anillaco* has a strongly shortened, modified clypeus, and slender, elongate mandibles. *Megachile cartagenensis* Mitchell from northern Colombia is known only from the male, which has a concolorous anterior tarsus, hypostomal area with a weak anterior concavity, a tuberculate forecoxal spine, and an entirely hidden fourth metasomal sternum, all characters unlike those of *M. anillaco*.

Snelling (1990) in his study of North American species recognized ten species groups. Males of *M. anillaco* agree only with those of the *exilis* group (Group I), because of the strong ventral process of the mandible, the glabrous concavity on the anterior part of the hypostoma, and the modified foretarsus, the basitarsus of which bears basally a peculiar slender, tight tuft of hairs (Fig. 5, m) present only in males of group I. However, the female of *M. anillaco* disagrees on all the diagnostic features



indicated by Snelling for females of the *exilis* group, to which belongs for example *M. otomita*, characterized above. A peculiar feature of the female *M. anillaco* is the elevation of the hypostoma next to the hypostomal carina, a condition only seen in *M. ecplectica* Snelling (only species of Snelling's group X), although the elevation is tuberculiform in the former and cariniform in the latter. *Megachile ecplectica*, a rare Mexican species the male of which is unknown, also agrees with *M. anillaco* in the elongate mandibles and the bifaced clypeus.

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