

## A new species of *Callonychium* Brèthes from Argentina (Hymenoptera: Andrenidae)

## Новый вид рода *Callonychium* Brèthes из Аргентины (Hymenoptera: Andrenidae)

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**Ключевые слова:** Apoidea, Anthophila, Calliopsini, Неотропическая область, *Paranychium*, таксономия.

**Abstract.** A new species of the South American bee genus *Callonychium* Brèthes is described and figured as *Callonychium* (*Paranychium*) *leleji* Gonzalez et Engel, **sp.n.** The new species is from near Tucumán, Argentina and is generally similar to *C. (P.) atacamense* Toro et Herrera from Chile and the sympatric *C. (P.) minutum* (Friese), but can be distinguished on the basis of color pattern, labral proportions, and integumental sculpturing.

**Резюме.** Дано описание и иллюстрации нового вида пчел из южноамериканского рода *Callonychium* Brèthes — *C. (Paranychium) leleji* Gonzalez et Engel, **sp.n.** (провинция Тукуман, Аргентина). Новый вид наиболее близок к *C. (P.) atacamense* Toro et Herrera из Чили и симпатричен с *C. (P.) minutum* (Friese), но отличается от них окраской, пропорциями лабрума и скульптурой покровов.

### Introduction

Bees of the genus *Callonychium* Brèthes, 1922 are rather small to medium-sized (3.0–7.0 mm), largely yellow-and-black species of the New World tribe Calliopsini. The genus is known to occur from Chile and Argentina northward into Paraguay and Brazil, and also into Peru and Ecuador in the West [Michener, 2007; Moure, Dal Molin, 2007], but is generally scarce in collections. Presently there have been 12 species described and these are grouped into two subgenera (Table 1), although the monophyly and utility of these remain to be tested. Along with the genera *Spinoliella* Ashmead, 1899 and *Arhysosage* Brèthes, 1922, *Callonychium* form a distinct clade within Calliopsini [Ruz,

1991], and this group recently has been referred to as the «*Spinoliella* clade» [Rozen, 2013]. The nesting biology and immature stages (mature larvae and eggs) of four species of *Callonychium* (two from each subgenus) have been reported by Rozen [2013], while Toro [1985] and Cure, Wittmann [1990] have given information on mating. While the genus *Arhysosage* has been revised [Engel, 2000; Ramos, 2013], the species of *Spinoliella* and *Callonychium* have not been treated in a comprehensive manner, aside from isolated accounts of particular species or faunas [e.g., Toro, Ruz, 1972; Toro, Herrera, 1980; Cure, Wittmann, 1990; Compagnucci, 2015], and several new species await description. Species-level revisions and keys are needed as these are the first step toward an increased understanding of the diversity, biology, evolutionary history, and broader ecology of panurgines in South America [e.g., Engel, 2011; Gonzalez et al., 2013a]. Indeed, there is a rather rich but as of yet still underexplored diversity of Panurginae in southern and western South America [e.g., Gonzalez, Engel, 2011; Gonzalez et al., 2013b, c, 2014; Ramos, 2014; Rozen, 2014; Ramos, Rozen, 2014], and *Callonychium* are just one component of this biotic variety.

During the course of on-going studies on the diversity of South American calliopsines, a new species of *Callonychium* was recognized among material from northern Argentina. This new species is described here and in celebration of the 70<sup>th</sup> birthday of our colleague, Arkadiy S. Lelej (Vladivostok, Russia).

Table 1. Checklist of the genus *Callonychium* Brèthes. Geographical data taken from Michener [2000, 2007], Ascher et al. [2006], Moure and Dal Molin [2007], and specimens deposited at the University of Kansas  
 Таблица 1. Список видов рода *Callonychium* Brèthes. Данные по распространению приведены по Michener [2000, 2007], Ascher et al. [2006], Moure, Dal Molin [2007], и экземплярам из коллекции Канзасского университета

Taxa	General Distribution
Genus <i>Callonychium</i> Brèthes, 1922	
Subgenus <i>Callonychium</i> Brèthes, 1922	
<i>C. argentinum</i> Brèthes, 1922	Argentina (Catamarca)
<i>C. brasiliense</i> (Ducke, 1907)	Brazil (Ceará, Maranhão)
<i>C. flaviventre</i> (Friese, 1906)	Argentina (Catamarca, Mendoza, Neuquén, San Luis, Tucumán)
<i>C. luteimaculatum</i> (Strand, 1910)	Paraguay
<i>C. mandibulare</i> (Friese, 1916)	Argentina (Mendoza, Neuquén), Brazil (São Paulo), Chile
<i>C. petuniae</i> Cure et Wittmann, 1990	Brazil (Paraná, Rio Grande do Sul, Santa Catarina)
Subgenus <i>Paranychium</i> Toro, 1989	
<i>C. aricense</i> Toro et Herrera, 1980	Chile (Arica)
<i>C. atacamense</i> Toro et Herrera, 1980	Chile (Atacama, Copiapó)
<i>C. chilense</i> (Friese, 1906)	Chile (Concepción, Linares, Malleco, Talca, Valparaíso, Ñuble)
<i>C. coquimbense</i> Toro et Herrera, 1980	Chile (Coquimbo)
<i>C. culiculum</i> (Vachal, 1909)	Chile (Concepción)
<i>C. leleji</i> Gonzalez et Engel, sp.n.	Argentina (Tucumán)
<i>C. minutum</i> (Friese, 1906)	Argentina (Salta, Catamarca)
<i>C. sp.</i>	Ecuador (El Oro)

## Material and Methods

The species described here is based on material in the Division of Entomology (Snow Entomological Collections), University of Kansas Natural History Museum, Lawrence, Kansas. The morphological terminology employed is generally that of Engel [2001] and Michener [2007], while the format adopted for the description is based on that used by Toro and Herrera [1980]. Photomicrographs were prepared using a Canon 7D digital camera attached to an Infinity K-2 long-distance microscope lens, and were assembled with the CombineZM™ software package. Final figures were processed and arranged with Adobe Photoshop® 7.0. Measurements were made with an ocular micrometer on an Olympus SZX-12 stereomicroscope.

## Systematics

*Callonychium* Brèthes, 1922  
*Callonychium* (*Paranychium*) Toro, 1989  
*Callonychium* (*Paranychium*) *leleji*  
 Gonzalez et Engel, sp.n.

Figs 1–4.

**Material.** *Holotype*. ♀; Argentina: Tucumán, Cafayate, 4 January 1956 / SEMC 1008451 (deposited in the Division of Entomology, University of Kansas Natural History Museum, Lawrence, Kansas, USA).

**Diagnosis.** This species is known only from the female holotype. It is most similar to *C. atacamense* Toro et Herrera, 1980 from northern Chile as both have a short clypeus

(Fig. 3), which is more than three times wider than long; a labrum that is gently swollen medio-apically (Fig. 4); and predominantly yellow mesosoma (Figs 1, 2). The new species can be separated from *C. atacamense* by the sculpturing and coloration of mesoscutum, which is imbricate and shiny with distinctly broad parasagittal yellow bands, wider than the maximum diameter of the antennal flagellum. In *C. atacamense* the disc of the mesoscutum is minutely alveolate and dull, with narrower parasagittal bands, about as wide as the maximum diameter of the flagellum. The clypeus, body coloration, and sculpturing of the mesoscutum also separate this species from *C. minutum* (Friese, 1906), an Argentinean species also occurring in Tucumán. In *C. minutum* the clypeus is longer, less than three times wider than long; the mesoscutum is minutely punctate and dull; and the body coloration is predominantly dark brown to black with reduced yellow maculations on all tagmata, including the parasagittal bands of the mesoscutum, which are posteriorly at most as wide as the maximum diameter of the flagellum and anteriorly significantly thinner, and often interrupted. An undescribed species from northern Peru also resembles *C. leleji* in the sculpturing of the mesoscutum and body coloration; however, in that Peruvian species the basal setose area of the labrum is separated from the setose, apical portion by a distinct and complete carina, the clypeus is much shorter (four times wider than long), and the metabasitibial plate is delimited on all sides by strong borders (delimited only by a strong border posteriorly in *C. leleji*).

**Description.** ♀. Total body length 5.2 mm; minimum intertegular distance 0.91 mm; fore wing length 3.0 mm (as measured from apex of humeral sclerite to apical wing margin). Head 1.2 times wider than long, width 1.28 mm, length 1.08 mm; compound eyes slightly diverging ventrally; facial



Figs 1–3. *Callonychium (Paranychium) leleji*, sp.n., female, holotype (from Cafayate, Tucumán, Argentina): 1, 2 — habitus (1 — dorsal view; 2 — lateral view); 3 — facial view; 4 — detail of labrum with swollen area indicated by arrow.

Рис. 1–3. *Callonychium (Paranychium) leleji*, sp.n., самка, голотип (Кафайят, провинция Тукуман, Аргентина): 1, 2 — габитус (1 — вид сверху; 2 — вид сбоку); 3 — лицо спереди; 4 — детали строения лабрума с бугристым участком (указано стрелкой).

fovea about as long as scape; clypeus 3.3 times wider than long; labrum 1.2 times wider than long, gently swollen medio-apically. Mesobasitarsus 2.7 times wider than long; metabasitibial plate delimited by strong border posteriorly only, anteriorly evanescent. Pygidial plate bifid, emargination about twice as broad as basal width of lateral projection.

Head mainly cream colored (pale yellowish white) except dark reddish brown on apical half of mandible and two small rounded spots basally on labrum (Fig. 4); vertex, middle and superior paraocular areas, and remaining areas of face yellow except marked with black on facial fovea, frons, interocular, and interocellar areas as in Figures 1–3; anterior surfaces of scape and pedicel cream colored; posterior surfaces of scape, pedicel, and remainder of flagellum brown to dark brown. Mesosoma predominantly yellow except cream colored on pronotum, pronotal lobe, legs, tegula, metanotum, and basal and posterior surfaces of propodeum laterally; episternal groove, dorsum of pronotum anteriorly, parapsidal lines, median line

and midlateral sides of mesoscutum, axilla laterally, disc of mesoscutellum, and midline of basal and posterior surfaces of propodeum black; distitarsi, pretarsal claws, and arolia dark brown. Metasoma cream colored except apical margins semi-translucent, apical sterna and terga light reddish brown, and black bands on basal four terga, complete on first tergum but medially interrupted on terga II–IV (Fig. 1). Wing membranes hyaline and whitish; veins and pterostigma pale yellow.

Pubescence generally whitish, short, and scattered; longer and denser on hypostomal area, legs, and apical terga and sterna.

Integument largely imbricate except outer surface of mandible, labrum, metabasitibial, and pygidial plates smooth and shiny; frons micro-punctate; basal area of propodeum micro-alveolate with fine striations distally.

Male. Unknown.

**Etymology.** The specific epithet is a patronym honoring Prof. Dr. Arkadiy Stepanovich Lelej on the occasion of his

70<sup>th</sup> birthday and in recognition of his many contributions to the study of insect diversity and that of the Hymenoptera in particular.

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