

# A new species of *Tarsonops* (Araneae, Caponiidae) from southern Belize, with a key to the genera of the subfamily Nopinae

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## Abstract

A new species of Caponiidae, *Tarsonops irataylori* sp. n. is described from southern Belize, and a key to the genera of the subfamily Nopinae is provided.

## Keywords

Spider, *Tarsonops*, new species, Belize

## Introduction

Comprising 84 species parceled among 15 genera (Platnick 2012), the spider family Caponiidae is widely distributed but not currently known from Australia or Europe. Petrunkevitch (1939) divided the Caponiidae into two subfamilies, Caponiinae and Nopinae, the latter of which is characterized by subsegmented tarsi and has a New World distribution with 53 species described from North, South, and Central America and numerous species known from the Caribbean. While recent authors have ques-



of a single unique specimen. However, the morphological uniqueness of the species, the extension of the genus distribution, and recognition of important species level and morphological diversity serves as the impetus despite any misgivings. Moreover, it may very well be, given the combination/absence of characteristics (Table 1) for this species, that it may ultimately represent a new genus or species group, however, its palpal morphology closely resembles that described for *T. systematicus* by Ubick (2005). Although two of the nopine genera are monotypic (*Nopsides* Chamberlin 1924 and *Nyetenops* Platnick and Lise 2007) it is our opinion that the description of a new genus should be postponed until more material, including the female, and potential other species become available.

**Key to the genera of the subfamily Nopinae (Caponiidae)**

- 1            4 eyes.....***Nopsides* Chamberlin, 1924**
- 1'          2 eyes..... **2**
- 2            Palpal endites (both sexes) expanded anteriorly, broadest at anterior apex of labium (see Platnick and Lise 2007); palpal bulb longer than cymbium, distinction between bulb and embolus not evident except by sculpturing ...  
..... ***Nyetenops* Platnick & Lise, 2007**
- 2'          Palpal endites (both sexes) not broadest anterior to apex of labium; normal palpal bulb with distinct embolus ..... **3**
- 3            Anterior tarsus with distinct suture that divides article into two distinct sub-segments ..... **4**
- 3'          Anterior tarsus with several false sutures, lacking distinct suture, not divided into two distinct sub-segments..... ***Tarsonops* Chamberlin, 1924**
- 4            Metatarsus IV divided into two distinct subsegments..... **5**
- 4'          Metatarsus IV entire ..... ***Orthonops* Chamberlin, 1924**
- 5            Tarsus I with inferior claw extended dorsally between superior claws; carapace generally lacking distinct patterning..... ***Nops* MacLeay, 1839**
- 5'          Tarsus I with inferior claw not extending dorsally between superior claws; carapace patterned ..... ***Cubanops* Sánchez-Ruiz et al., 2010**

**Materials and methods**

All measurements were taken with a Leica MZ16.5 stereomicroscope equipped with a 10× ocular and ocular micrometer scale. We measured the left appendage, usually in retrolateral view, using the highest magnification possible. Legs I-IV (femur, patella, tibia, metatarsus, tarsus) and palp article lengths (femur, patella, tibia, cymbium) given in order of proximal to distal. Illustrations were prepared using a Visionary Digital Imaging System (Ashland, VA). Photographs were recorded in multiple focal planes and assembled using the Zerene Stacker software package (Zerene Systems

LLC, Richland, WA). The habitus illustration was constructed from whole body images that were bisected, copied, and reflected in Adobe Photoshop (Adobe Systems, Inc.) to produce a roughly symmetrical image (technique described in Bond 2012). Measurements in millimeters.

## Taxonomy

### *Tarsonops irataylori* sp. n.

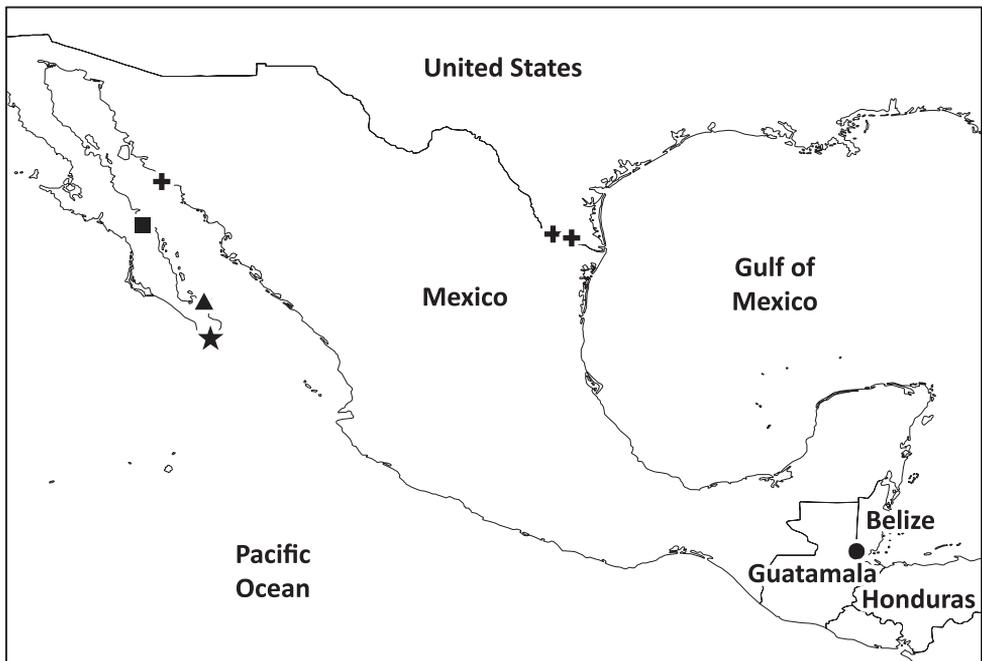
urn:lsid:zoobank.org:act:4B93D052-EA8C-43E7-A5D4-28A52FE05DBE

[http://species-id.net/wiki/Tarsonops\\_irataylori](http://species-id.net/wiki/Tarsonops_irataylori)

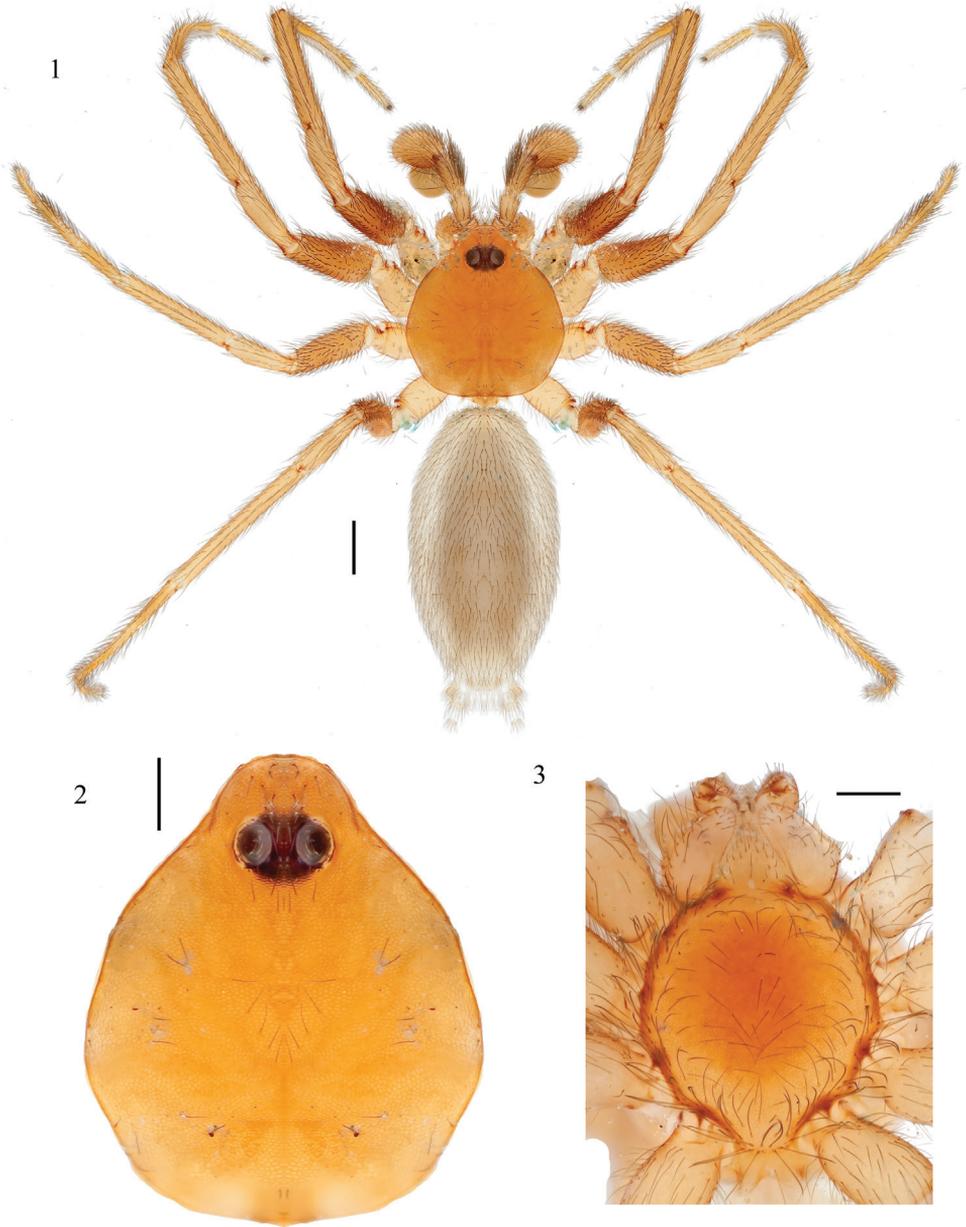
Map 1, Figs 1–7

**Type material. Holotype** male from BELIZE: **Toledo District:** Cave near Pueblo Creek Cave: 37 km WNW of Punta Gorda, 16°12'N, 89°08'W (Figure 1): 16 April 2011: sjt11-018: Coll. Michael E. Slay, Jean K. Krejca, Christy M. Slay, Geoffrey B. Hoese, Germano Coe. Sample# 253, Specimen# 0222. On dry flowstone in entrance zone, 0.1 lux, air temperature 25.7 °C, soil temperature 23.5 °C, relative humidity 91.2%. Deposited in the Auburn University Museum of Natural History collection.

**Etymology.** The specific epithet honors the contributions of Mr. Ira W. Taylor to the study of subterranean ecosystems.



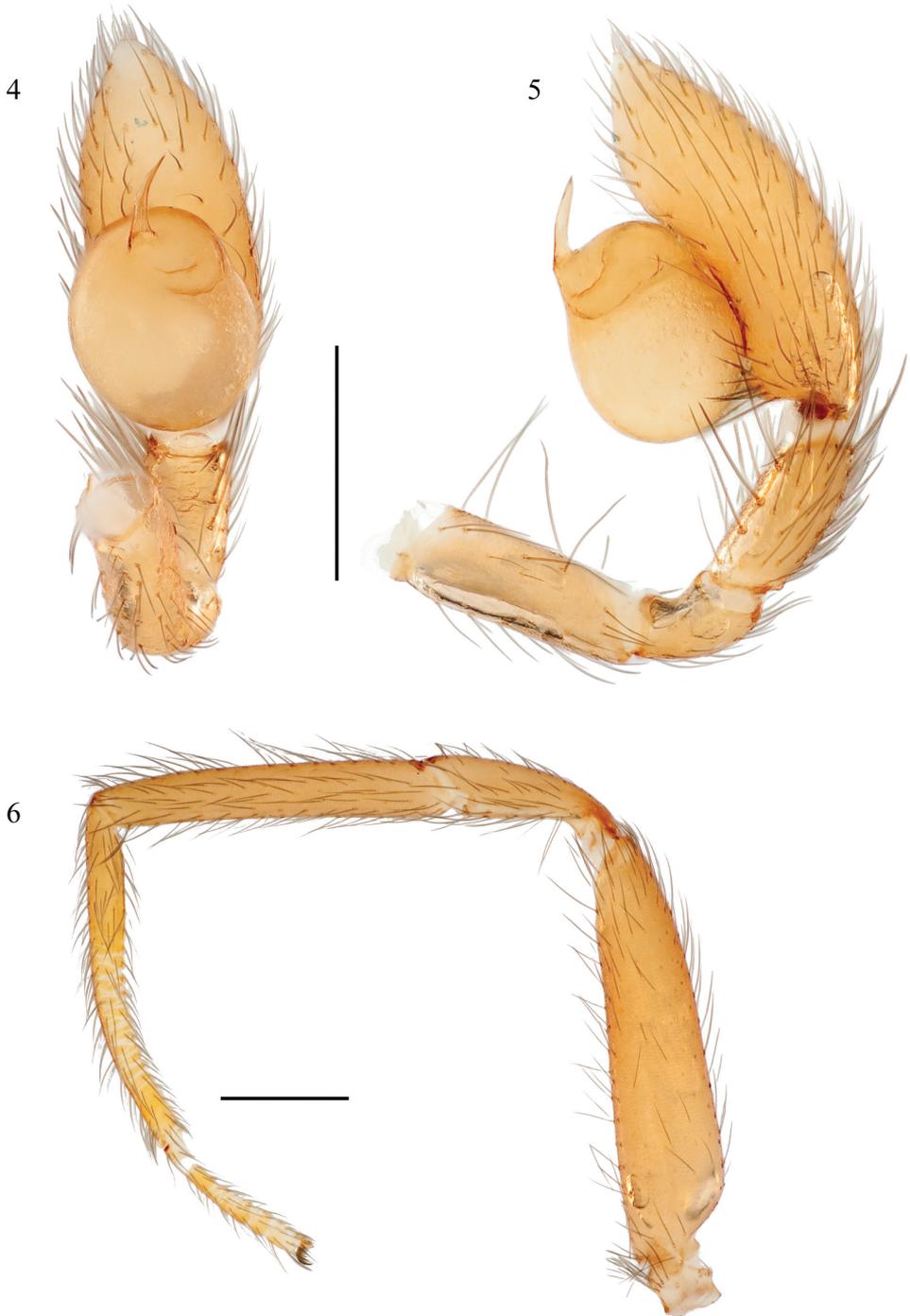
**Map I.** Distribution of *Tarsonops* species: *T. sternalis* (star), *T. sectipes* (triangle), *T. clavis* (square), *T. systematicus* (crosses, also recorded from California and Arizona, see Ubick *et al.* [2005]), *T. irataylori* sp. n. (circle).



**Figures 1–3.** *Tarsonops irataylori* sp. n., male holotype **1** habitus, dorsal view **2** carapace, dorsal view **3** cephalothorax, ventral view. Scale bar = 0.50 mm (Fig. 1); 0.25 mm (Figs 2, 3)

**Diagnosis.** *Tarsonops irataylori* sp. n. differs from all known species of *Tarsonops* by the absence of a ventral translucent keel on the anterior metatarsi and a highly reduced translucent extension of the membrane between the anterior metatarsi and tarsi.

**Description of male holotype.** *Specimen preparation and condition.* Specimen collected live, preserved in 70% ethanol. Coloration may be faded. Pedipalp, leg I left



**Figures 4–6.** *Tarsonops irataylor* sp. n., male holotype. **4** left pedipalp, ventral view **5** left pedipalp, retrolateral view **6** leg I, retrolateral view. Scale bars = 0.50 mm.

side removed and stored in vial with specimen. *General coloration.* Carapace, chelicerae, legs light orangish red (Figs 1, 2). Abdomen uniform very pale grayish brown dorsally. No dorsal carapace or abdominal patterning. *Cephalothorax.* Carapace 1.56 long, 1.40 wide, with sparse thin setae, surface lightly granular (Fig. 3), pars cephalica elevated slightly. Clypeus height 1.5× eye diameter. Two eyes, eyes separated by distance equal to radius. Sternum lightly setose, widest between coxae II, III (Fig. 4). Sternum length 1.12, width 1.00. Palpal endites rectangular, anterior margin rounded, extending slightly beyond anterior margin of labium (Fig. 4). Labium width 0.348, length 0.244. *Legs.* Leg I: 1.67, 0.740, 1.34, 1.41, 0.626; Leg II: 1.672, 0.751, 1.335, 1.485, 0.568; Leg III: 1.401, 0.600, 1.120, 1.404, 0.720; Leg IV: 1.814, 0.663, 1.509, 2.000, 1.028. Legs I-IV metatarsi and tarsi subsegmented distally (Fig. 7). Superior tarsal claw, Leg I with 5 teeth; inferior tarsal claw not extending dorsally between superior tarsal claws. Tarsus I with two trichobothria. Metatarsus I with 4 trichobothria, arranged along dorsal midline, lacking a ventral translucent keel, translucent extension of the membrane between the anterior metatarsus I and tarsus I greatly reduced, barely evident on close examination as wrinkled bump. Leg I illustrated in Figure 7. *Pedipalp.* (Figs 5, 6): 0.522, 0.270, 0.357, 0.940; bulb total length 0.618. Dense group of setae on prolateral tibial surface. Embolus short, less than 1/4<sup>th</sup> length of bulb, tapering to sharp single point, bulb sub-spherical.

## Discussion

Although this species was taken from just inside a cave, it does not exhibit any obvious troglomorphies, and may be accidental in this habitat. The description of *Tarsonops irataylori* sp. n. extends the range of the genus 9 degrees east and 6.8 degrees south from the previously known range. A number of undescribed species of *Tarsonops* are known from collections in Mexico (Platnick, pers. comm. 31 October 2011).

*Tarsonops irataylori* sp. n. is the first species of *Tarsonops* described which lacks a ventral translucent keel on the anterior metatarsi and marked translucent extension of the membrane between the anterior metatarsi and tarsi. Chamberlin's (1924) diagnoses of the genus does not list these characters, thus we have taken the conservative approach of placing the species in this genus. As discussed above, future studies in which more specimens are examined, may further warrant the establishment of a new genus to accommodate this somewhat unusual species.

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