

Redescription of *Selenops minutus* F.O. Pickard-Cambridge, 1900 (Aranei: Selenopidae)

Переописание *Selenops minutus* F.O. Pickard-Cambridge, 1900 (Aranei: Selenopidae)

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КЛЮЧЕВЫЕ СЛОВА: Araneae, новая находка, плоский паук, Чьяпас, Мексика.

ABSTRACT. In this work we redescribe and re-diagnose both sexes of the flattie spider *Selenops minutus* F.O. Pickard-Cambridge, 1900. In addition, we provide the first record of *S. minutus* from Mexico.

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РЕЗЮМЕ. В работе приведено переописание обоих полов и обновлённый диагноз *Selenops minutus* F.O. Pickard-Cambridge, 1900. Вид впервые найден в Мексике.

Introduction

Selenops Latreille, 1819 is the only selenopid genus distributed in the Western Hemisphere, and it is the largest genus of the family with 132 species worldwide, the majority distributed in the Americas [WSC, 2021]. *Selenops minutus* F.O. Pickard-Cambridge, 1900 is known only from the type specimens, which were described over 120 years ago and collected from somewhere in “Guatemala” [Pickard-Cambridge, 1900; Crews, 2011]. Muma [1953] did not examine the holotype but reproduced the description along with the figures made by Pickard-Cambridge [1900] and provided a new drawing of the epigyne. Crews [2011] examined the type series and provided a comprehensive description although some characteristics (e.g., coloration pattern, chaetotaxy and some details of genitalia) were undetermined due to the condition of the type series.

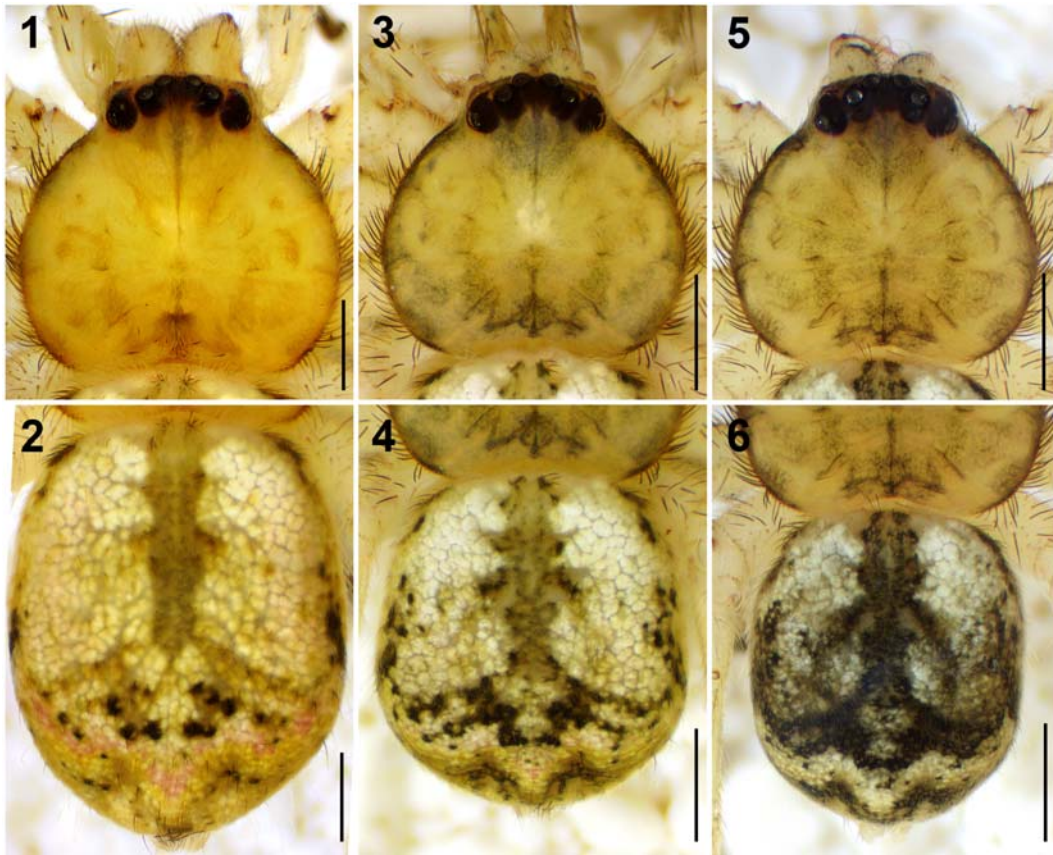
In this paper, we provide additional morphological data of *S. minutus* based on recently collected speci-

mens, hence we emend the diagnosis. Moreover, this is the first time the species has been recorded outside of Guatemala.

Material and methods

The specimens studied are deposited in the following institutions: Colección de Arácnidos e Insectos (CARCIB), Centro de Investigaciones Biológicas del Noroeste, México and Colección de Arácnidos del Sureste de México (ECOTAAR), El Colegio de la Frontera Sur, México. Identification and measurements of the specimens were performed with a Nikon SMZ 1500 stereomicroscope with an ocular micrometer, and all measurements are in millimeters. The format of the description follows Crews *et al.* [2021], except for legs, which are presented as follows: total length (femur, patella, tibia, metatarsus, tarsus). Epigynes were cleaned following the procedures described in Álvarez-Padilla & Hormiga [2008], and then temporarily cleared with clove oil. Multifocal images were made using an Amscope MU500 camera and then assembled with Helicon Focus 6.7.1.

Terminology follows Zamani & Crews [2019] and Crews *et al.* [2021]. Eyes: ALE — anterior lateral eye, AME — anterior median eye, PLE — posterior lateral eye, PME — posterior median eye. Legs and palps: Fm — femur, Mt — metatarsus, Pt — patella, Ta — tarsus, Ti — tibia. Leg spination: d — dorsal, p — prolateral, r — retrolateral, v — ventral. Male copulatory organs: C — conductor, E — embolus, MA median apophysis, RTA — retrolateral tibial apophysis, dRTA — dorsal branch of RTA, vRTA — ventral branch of RTA. Female copulatory organs: CD — copulatory ducts, EP — epigynal pocket, FD, — fertilization ducts, LL — lateral lobes, MF — median field, PSP — primary spermatheca, SSP — secondary spermatheca.



Figs 1–6. *Selenops minutus* from Chiapas, Mexico. 1–2 — female habitus, dorsal; 3–6 — male habitus, dorsal. 1–4 — ECOTAAR; 5–6 — CARCIB. Scales: 1.0 mm.

Рис. 1–6. *Selenops minutus* из Чьяпас, Мексика. 1–2 — габитус самки, сверху; 3–6 — габитус самца, сверху. 1–4 — ECOTAAR; 5–6 — CARCIB. Масштаб: 1,0 мм.

Taxonomy

Selenopidae Simon, 1897

***Selenops* Latreille, 1819**

Selenops minutus F.O. Pickard-Cambridge, 1900

Figs 1–16.

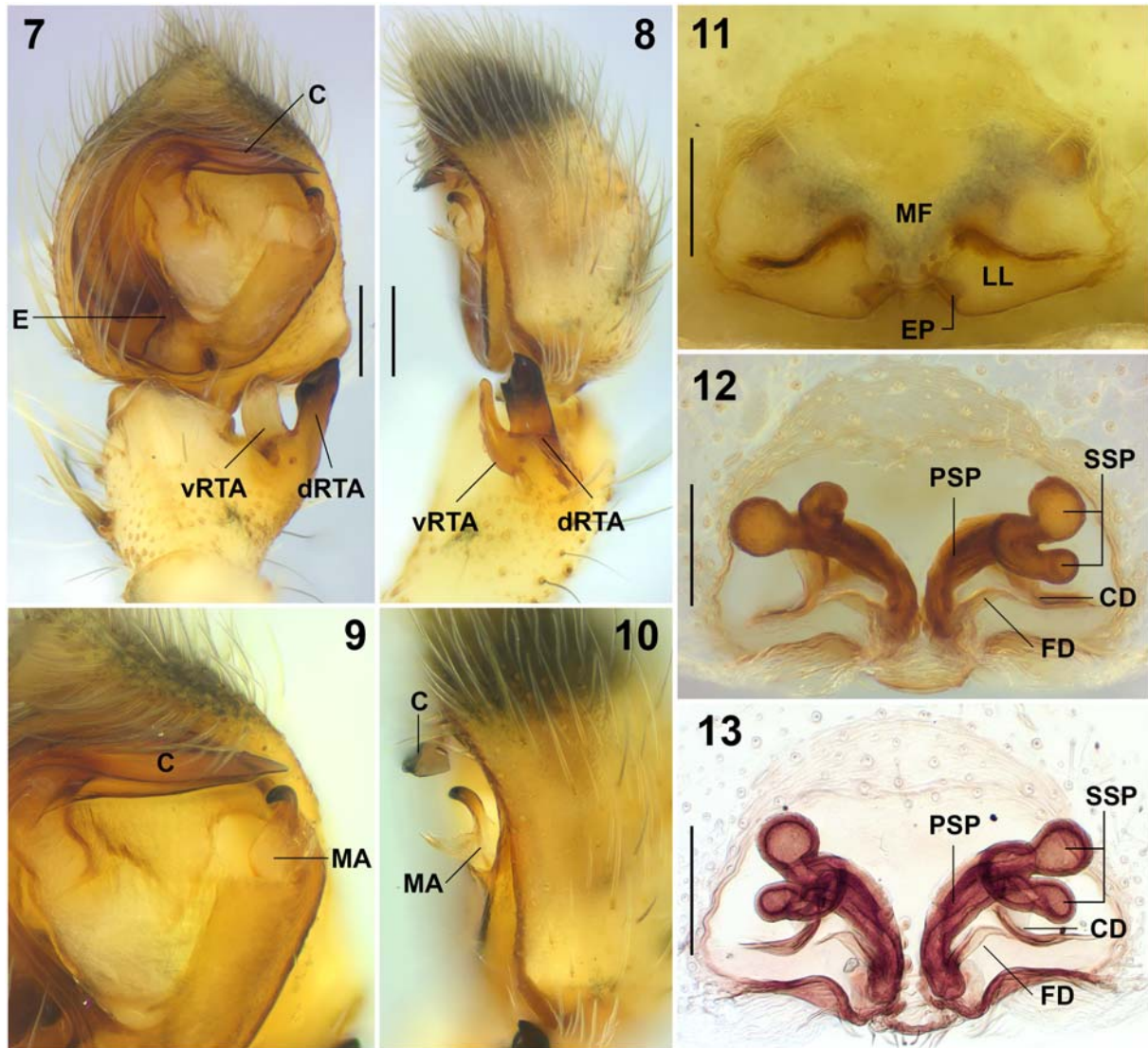
Selenops minutus F.O. Pickard-Cambridge, 1900: 118, pl. 8, figs 19–20 (♂♀ at British Museum of Natural History, not examined); Muma, 1953: 38, figs 64–65 (♂♀); Crews, 2011: 43, figs 37–40 (♂♀).

MATERIAL EXAMINED. MEXICO, *Chiapas*, Mpio. Ocosingo, Lacanja-Chansayab (16.757071°N, 91.132143°W, 340 m), 16.IV.2019, leg. E. Chankin, J. Ríos, G. Suárez, 1 ♂, 1 ♀, 1 juvenile (CARCIB), 1 ♀, 1 ♂ (ECOTAAR).

DIAGNOSIS (emended from Crews [2011]). Males can be easily differentiated from other American species by the unique long conductor: the first half directed distally, then curved abruptly retrolaterally, extended horizontally, reaching the margin of the cymbium. Additionally, the MA has two branches, one hyaline and jagged, the other sclerotized and slightly hooked; the embolus is narrow and slightly hooked, its base is rounded as seen ventrally. Finally, the RTA have two branches, dRTA diagonally truncated, slightly longer than vRTA, which is oblong as seen ventrally. The palp of *S. morosus* Banks, 1898, *S. nigromaculatus* Keyserling, 1880 and *S. marginalis* F.O. Pickard-Cambridge, 1900

are slightly similar with *S. minutus* but none have the conductor extended horizontally nor reaching the cymbial margin. In addition, they are large sized species with different vRTA and dRTA shape. The females can be distinguished by the horizontally long lateral lobes situated posteriorly, close together but not touching. In dorsal view, the primary spermathecae is long and posteriorly convergent, and the secondary spermathecae have two rounded chambers. Females of *S. enriquillo* Crews, 2011, *S. lindborgi* Petrunkevitch, 1926 and *S. petrunkevitchi* Alayón, 2003 have long lateral lobes as *S. minutus* but such lobes are touching medially.

DESCRIPTION. Male (ECOTAAR). Habitus as in Figs 3–4. Paler morph: carapace yellowish, paramedian area suffused with dark green markings, border dusky dark green. Chelicerae dull yellow with median dark brown spots, promargin and retromargin with 2 teeth each, labium, endites and sternum dull yellow, legs dull yellow, suffused with dark green maculations laterally, Ti and Mt with more maculations laterally. Abdomen whitish dorsally with central, longitudinal, brown band extended to lateral margins on posterior half of abdomen, interrupted by a transverse whitish stripe with scattered small pink dots, lateral margins suffused with dark brown markings, ventrally whitish, yellowish around epigastric area. Palp: cymbium yellowish with black tip (Fig. 8). Measurements: total length 5.00. Carapace 2.25 long, 2.50 wide. Sternum 1.37 long, 1.25 wide.



Figs 7–13. *Selenops minutus* from Chiapas, Mexico. 7, 9 — male palp, ventral; 8, 10 — same, retrolateral; 11 — epigyne, ventral; 12 — same, dorsal; 13 — epigyne cleared, dorsal. 7–11, 13 — ECOTAAR; 12 — CARCIB. Scales: 0.2 mm.

Abbreviations: C — conductor, CD — copulatory ducts, dRTA — dorsal branch of RTA, E — embolus, EP — epigynal pocket, FD — fertilization ducts, LL — lateral lobes, MA — median apophysis, MF — median field, PSP — primary spermatheca, SSP — secondary spermatheca, vRTA — ventral branch of RTA.

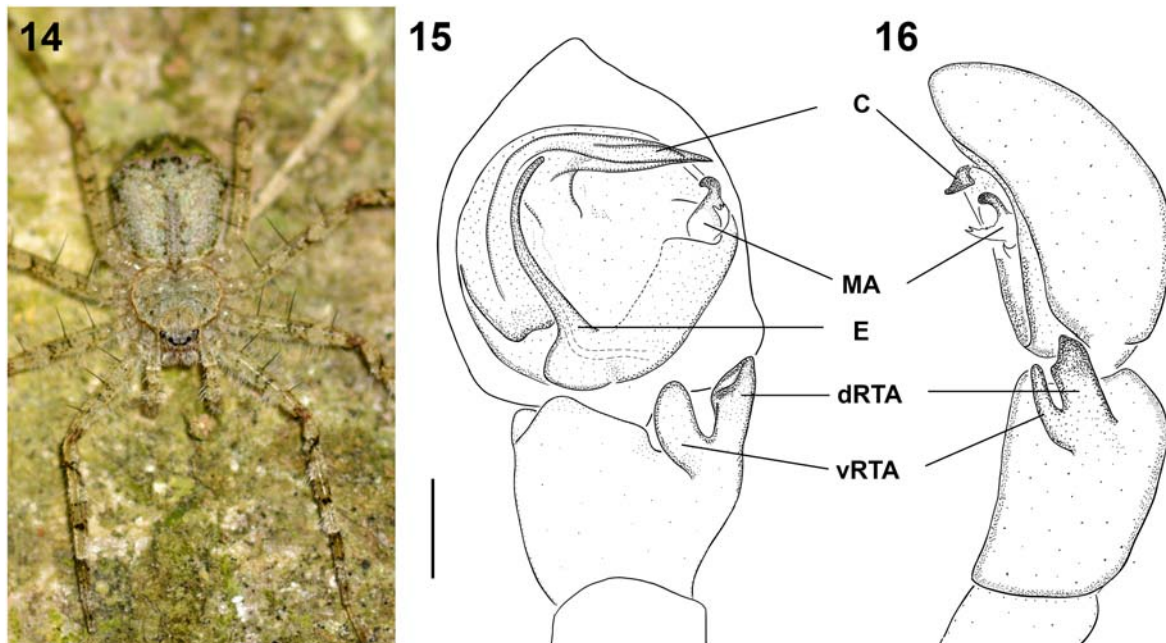
Рис. 7–13. *Selenops minutus* из Чьяпас, Мексика. 7, 9 — пальпа самца, снизу; 8, 10 — то же, ретролатерально; 11 — эпигина, снизу; 12 — то же, сверху; 13 — мацерированная эпигина, сверху. 7–11, 13 — ECOTAAR; 12 — CARCIB. Масштаб: 0,2 мм.

Сокращения: С — кондуктор, CD — копулятивный канал, dRTA — дорзальная ветвь RTA, E — эмболос, EP — карман эпигины, FD — оплодотворительный канал, LL — боковая лопасть, MA — медиальный отросток, MF — медиальное поле, PSP — первичная рецептакула, SSP — вторичная рецептакула, vRTA — вентральная ветвь RTA.

Abdomen 2.75 long, 2.25 wide. Palp: 2.62 (0.82, 0.44, 0.54, 0.82). Leg I: 16.07 (4.51, 1.27, 4.41, 3.82, 2.07). Leg II: 18.33 (5.49, 1.47, 4.90, 4.41, 2.06). Leg III: 18.81 (5.68, 1.37, 4.90, 4.70, 2.16). Leg IV: 18.03 (5.49, 1.37, 4.51, 4.61, 2.06). Eye sizes and interdistances: AME 0.16, ALE 0.10, PME 0.14, PLE 0.22; AME–PME 0.08, PME–ALE 0.20, ALE–PLE 0.18, PME–PME 0.42, ALE–ALE 0.92; AME–AME 0.46, PLE–PLE 1.22; clypeus 0.04 high. Spination: palp, Fm d0-1-3; Pt 0; Ti 0; leg I, Fm p1-0-0, d1-1-1; Ti v2-2-2, d0-0-1, Mt v2-2-0; leg II, Fm d1-1-1; Ti v2-2-2; Mt v2-2-0; leg III, Fm d1-1-1; Ti 0; Mt 0; leg IV, Fm p1-0-

0, d1-1-1; Ti 0; Mt 0. Fm I–IV with long whitish setae, less conspicuous than in females.

Palp: in ventral view, RTA with 2 branches, vRTA oblong, rounded distally, slightly sclerotized, dRTA diagonally truncated, and heavily sclerotized at apex, slightly longer than vRTA (Figs 7, 15). In retrolateral view, vRTA straight, slightly attenuated, apex rounded, and narrower than dRTA, which is straight, rectangular with broad notch at apex (Figs 8, 16). In ventral view, two-branched MA, arising at 3 o'clock position, lower branch hyaline, subtriangular, jagged; upper branch sclerotized, slightly curved distally (Figs 7–8,



Figs 14–16. *Selenops minutus*. 14 — live specimen *in situ*; 15 — male palp, ventral; 16 — same, retrolateral. Scales: 0.2 mm.

Abbreviations: C — conductor, dRTA — dorsal branch of RTA, E — embolus, MA — median apophysis, vRTA — ventral branch of RTA.

Рис. 14–16. *Selenops minutus*. 14 — фото в природе; 15 — палпа самца, снизу; 16 — то же, сбоку. Масштаб: 0,2 мм.

Сокращения: С — кондуктор, dRTA — дорзальная ветвь RTA, E — эмболюс, MA — медиальный отросток, vRTA — вентральная ветвь RTA.

15–16). Conductor long, first half directed distally and then curved abruptly retrolaterally, reaching the margin of the cymbium (Figs 7, 15). Embolus base round, situated at 6 o'clock position, at the posterior margin of copulatory bulb, E relatively long (extending at least 1/2 the length of cymbium), almost the same width throughout its length, slightly curved, directed anteriorly (Figs 7, 15).

Female (ECOTAAR): Habitus as in Figs 1–2. Similar to male (ECOTAAR) but paramedian area of carapace suffused with brownish markings, borders light brown. Promargin with 3 and retromargin with 2 teeth. Legs suffused with dark brown to dark green maculations laterally, Ti, Mt, and Ta with more maculations prolaterally, lateral brown stripe on Pt of all legs. Dorsum of abdomen whitish anteriorly, yellowish posteriorly, central longitudinal light brown band extended to lateral margins on posterior half, interrupted by transverse pinkish stripe with scattered white dots. Measurements: total length 6.63. Carapace 2.88 long, 3.25 wide. Sternum 1.75 long, 1.50 wide. Abdomen 3.75 long, 3.25 wide. Palp: 3.14 (1.04, 0.50, 0.62, 0.98). Leg I: 16.07 (4.61, 1.57, 4.41, 3.63, 1.86). Leg II: 17.54 (5.10, 1.76, 4.80, 3.92, 1.96). Leg III: 18.52 (5.88, 1.57, 4.80, 4.31, 1.96). Leg IV: 17.64 (5.39, 1.57, 4.31, 4.41, 1.96). Eye sizes and interdistances: AME 0.14, ALE 0.08, PME 0.14, PLE 0.22; AME–PME 0.12, PME–ALE 0.20, ALE–PLE 0.18, PME–PME 0.56, ALE–ALE 1.18; AME–AME 0.50, PLE–PLE 1.54; clypeus 0.06 high. Spination: palp, Fm p0-0-1, d0-1-2, r0-0-1; Pt d0-0-1, r0-1-0; Ti p0-1-0, d0-2-2, r0-1-0; Ta p2-1-0, d2-0-0, r2-1-0, v0-0-2; leg I, Fm p1-0-0, d1-1-1; Ti v2-2-2; Mt v2-2-0; leg II, Fm d1-1-1, Ti v2-2-2, Mt v2-2-0; leg III, Fm d1-1-1; Ti 0; Mt 0; leg IV, Fm d1-1-1; Ti 0; Mt 0. Fm I–

IV with long whitish setae and some patches on Ti, more conspicuous in live specimens (Fig. 14).

Epigyne wider than long; lateral lobes close together, but not touching, widened medially; epigynal pockets present; copulatory openings located at anterior margins of lateral lobes (Fig. 11). Endogyne with copulatory ducts slender and shorter than PSP; long PSP, convergent posteriorly; SSP with two rounded chambers; FD shorter than copulatory ducts, located posteriorly, posterodorsal fold absent (Figs 12–13).

VARIATION. The spination of the second male differs as follows: palp, Fm p0-0-1, d0-1-2; leg I, Mt v2-2-0, r1-0-0; leg II, Ti v2-2-2, d0-0-1. Female size ranges (N=2): carapace 2.88–3.13 long, 3.25–3.37 wide, abdomen 3.75–4.50 long, 3.25–3.38 wide. The spination of the other female differs as follows: palp, Pt p0-1-0, d0-0-1; Ta p2-2-0, d2-0-0, r2-1-0, v0-0-2; leg I, Fm d1-1-1. A slightly variation on SSP chambers, compare endogyne Fig 12 and Fig 13. Pickard-Cambridge [1900] described two colour morphs, the paler and the darker, the latter with the central, dorsal band of the abdomen “much darker and more extended behind”, also the lateral margins are “more deeply suffused” with dark brown markings. The second male (CARCIB) matches the darker morph (see Figs 5–6), whereas the two females examined here did not differ greatly in color pattern.

NATURAL HISTORY. The specimens were found on tree trunks in tropical rainforest remnants at twilight (17:00–18:00 hrs.). These spiders are difficult to see due to its lichen-like appearance (Fig 14) as other American species, e.g., *S. banksi* Muma, 1953 and *S. curruganja* Crews et Galvis, 2021 [Crews *et al.*, 2021].

DISTRIBUTION. Mexico, Chiapas (present data), and Guatemala [Pickard-Cambridge, 1900].

Compliance with ethical standards

CONFLICTS OF INTEREST: The authors declare that they have no conflicts of interest.

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