

SHORT COMMUNICATION

ON A NEW SPECIES GROUP IN THE SPIDER GENUS *SOCALCHEMMIS* (ARANEAE, TENGELLIDAE)

Norman I. Platnick: American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024 USA. E-mail: platnick@amnh.org

Darrell Ubick: California Academy of Sciences, 875 Howard Street, San Francisco, California 94103 USA

ABSTRACT. A new species, *Socalchemmis arroyoseco*, described from Monterey County, California, is clearly not a member of either of the species groups currently recognized in that genus, but does appear to be more closely related to those species groups than to the other genera in the *Liocranoides* complex.

Keywords: Taxonomy, North America, *Liocranoides*, *Anachemmis*, *Titiotus*, California

North America is home to a distinctive group of large hunting spiders with a remarkable character combination: the presence of three tarsal claws and claw tufts (tufts are usually found only in two-clawed taxa). This highly unusual combination of features has historically created difficulties both in the identification and phylogenetic placement of these taxa (Platnick 1999; Platnick & Ubick 2001, 2005). Four genera are currently recognized in this complex: *Liocranoides* Keyserling 1881 (in the eastern USA); and *Titiotus* Simon 1897, *Anachemmis* Chamberlin 1919, and *Socalchemmis* Platnick & Ubick 2001 (in California and adjacent states).

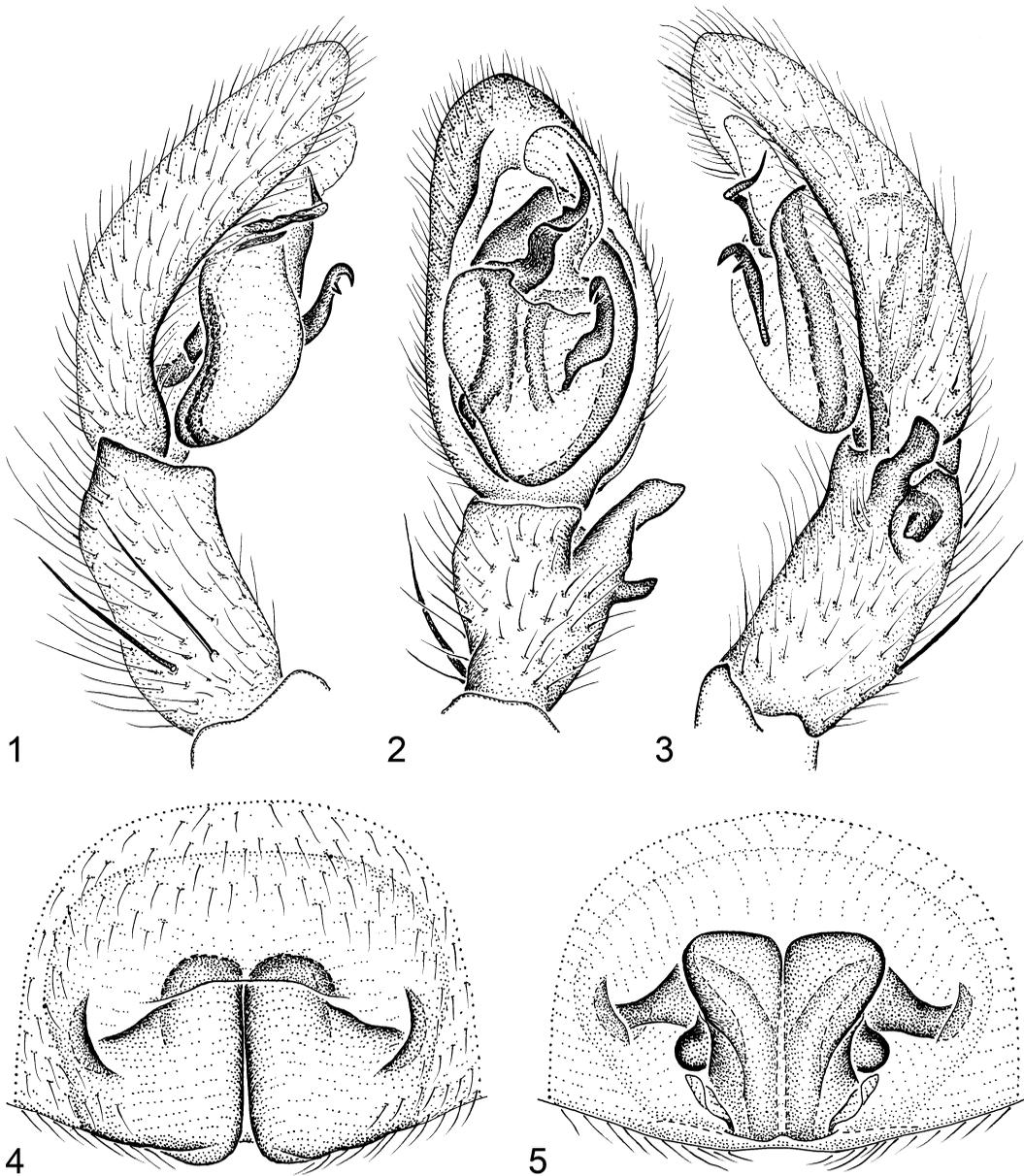
We report here on a remarkable new species recently collected in Monterey County, California, that clearly belongs to this complex but is not obviously a member of any of these four genera. It differs from the eastern species of *Liocranoides* in having an elongated median apophysis in males and lacking an elevated epigynal hood in females. It differs from the western genera as well. Males differ from those of *Titiotus* in having only two tibial apophyses, from those of *Anachemmis* in having the more dorsal tibial apophysis of males large and well-developed, and from those of *Socalchemmis* in lacking a prolateral extension at the base of the palpal embolus that results in a bipartite appearance of the embolus. Females differ from those of all three western genera in lacking a median epigynal septum.

The question, then, is what the closest relatives of the new species might be. No formal cladistic analysis of generic level relationships incorporating

all four genera has been conducted, and it isn't obvious that enough morphological characters are available to answer the question robustly. However, multiple features of the male palp suggest that the new species is more closely related to *Socalchemmis* than to the other three genera. The presence of an apical retrolateral tibial apophysis accompanied by a subapical, more dorsally situated apophysis suggests that the new species is closer to *Liocranoides* and *Socalchemmis* than to *Anachemmis* (males of which have only a tiny dorsal apophysis) or *Titiotus* (males of which have multiple apophyses, in a rather different conformation). In addition, both the embolus and the median apophysis are long and narrow (quite unlike the shorter and wider structures typical of *Liocranoides*, *Anachemmis*, and *Titiotus*).

Thus, we conclude that the new species is probably closest to *Socalchemmis*. Two species groups of *Socalchemmis* are currently recognized, but it is clear that the new species cannot be placed in either of those groups. Pending the discovery of additional taxa and a detailed cladistic analysis (hopefully including molecular data), we suggest that the new species probably represents the sister group of *Socalchemmis*, as currently constituted. Given the tentative nature of this conclusion, it seems better to expand the concept of *Socalchemmis*, at least temporarily, by including the new species as a third species group, rather than to create a new generic name that might prove, on further analysis, to be superfluous.

The new species is an outlier geographically, as



Figures 1–5.—*Socalchemmis arroyoseco* new species: 1. Left male palp, prolateral view; 2. Left male palp, ventral view; 3. Left male palp, retrolateral view; 4. Epigynum, ventral view; 5. Epigynum, dorsal view.

well; most *Socalchemmis* species occur in southern California and adjacent parts of Arizona and Baja California Norte. The new species is from the same area in Monterey County, California that is inhabited by the most northern of the previously known species, *S. monterey* Platnick and Ubick 2001. Specimens are deposited in the California Academy of Sciences, San Francisco (CAS) and the American Museum of Natural History, New York (AMNH).

Family Tengellidae Dahl 1908

Genus *Socalchemmis* Platnick & Ubick 2001

Type species.—*Anachemmis dolichopus* Chamberlin 1919 by original designation.

Socalchemmis arroyoseco new species

Figs. 1–5

Material examined.—Holotype male and allotype female taken in pitfall traps in an oak forest at

an elevation of 1,126 ft [= 343 m] at Arroyo Seco, Indians Road, 36°13.8'N, 121°29.5'W, Monterey County, California, USA, 18 June–24 October 2004, D. & S. Ubick (CAS).

Other material examined: USA: California: Monterey County: 1 ♀, Indians Road, ca. 1 air km SSW Arroyo Seco Campground, 7 May 1995, oak forest, elev. 1,100 ft [= 335 m], D. Ubick, W. Savary (AMNH); 2 ♂, Arroyo Seco, Indians Road, 36°13.8'N, 121°29.5'W, 11 June–28 November 2003, pitfalls, oak forest, elev. 1126 ft [= 343 m], D. & S. Ubick (AMNH); 1 ♂, same data, 18 June–24 October 2004, D. & S. Ubick (CAS); 2 ♂, Arroyo Seco, The Lakes, 36°13.9'N, 121°29.1'W, 19 August–11 November 2001, pitfalls, base of talus slope in oak-bay forest, elev. ca. 1000 ft [= 305 m], D. & S. Ubick (CAS).

Etymology.—The specific name is a noun in apposition taken from the type locality.

Diagnosis.—The sinuous, dentate embolus of males (Fig. 2), and the arched anterior epigynal margin of females (Fig. 4), are diagnostic.

Description.—*Male:* Total length 4.5 mm. Carapace pale yellow, darkest anteriorly; abdomen pale gray, unpatterned; femora yellow, more distal leg segments grading to light brown on metatarsi and tarsi. Leg spination typical for genus except: femora: I p0-1-1; II p0-2-1; III r2-1-1; IV r0-1-1; metatarsi: I p0-1-0, r0-1-0; II p1-1-0, r0-1-0. Embolus relatively long, twisted at about half its length, bearing distally directed denticle; dorsal tibial apophysis directed laterally, smaller than ventral apophysis (Figs. 1–3).

Female: Total length 4.9 mm. Coloration as in male. Leg spination typical for genus except: femora: I p0-1-1, r0-1-1; II p0-2-1, r1-1-1; III r0-2-1; IV r0-0-1; tibiae: I d0-0-0, p0-0-0, r0-0-0; II

d0-0-0; III r0-1-1; metatarsi: I, II p0-0-0, r0-0-0; IV p0-1-2, v3-3-1p. Epigynum without medium septum, with short lateral margins, distinct anterolateral margins, and arched anterior margin (Figs. 4, 5).

Natural history.—This species has been collected at three sites, two along Indians Road and the third just south of Arroyo Seco Campground, which enclose an area of only about 1 km in diameter. Although these sites are near the Hastings field station, extensive collecting there over several decades has produced no *Socalchemmis* specimens. All three of the inhabited sites are densely forested, primarily by oaks, but are adjacent to open canopy, formed by chaparral at Indians Road and an extensive talus slope at the campground site. The single specimen collected by hand was on the undersurface of a boulder deeply imbedded in porous soil. The specimens from pitfall traps suggest a surface activity in summer to autumn, whereas the hand-collected female was taken in early May.

Distribution.—Known only from the vicinity of Arroyo Seco in Monterey County, California.

LITERATURE CITED

- Platnick, N.I. 1999. A revision of the Appalachian spider genus *Liocranoides* (Araneae: Tengellidae). *American Museum Novitates* 3285:1–13.
- Platnick, N.I. & D. Ubick. 2001. A revision of the North American spiders of the new genus *Socalchemmis* (Araneae, Tengellidae). *American Museum Novitates* 3339:1–25.
- Platnick, N.I. & D. Ubick. 2005. A revision of the North American spider genus *Anachemmis* Chamberlin (Araneae, Tengellidae). *American Museum Novitates* 3477:1–20.

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