A Revision of the North American Spiders of the New Genus Socalchemmis (Araneae, Tengellidae)

Authors: PLATNICK, NORMAN I., and UBICK, DARRELL

Source: American Museum Novitates, 2001(3339) : 1-28

Published By: American Museum of Natural History

URL: https://doi.org/10.1206/0003-0082(2001)339<0001:AROTNA>2.0.CO;2

AMERICAN MUSEUM
Novitates

PUBLISHED BY THE AMERICAN MUSEUM OF NATURAL HISTORY
CENTRAL PARK WEST AT 79TH STREET, NEW YORK, NY 10024
Number 3339, 25 pp., 73 figures, 3 maps June 22, 2001

A Revision of the North American Spiders of the New Genus *Socalchemmis* (Araneae, Tengellidae)

NORMAN I. PLATNICK[1] AND DARRELL UBICK[2]

ABSTRACT

A new genus, *Socalchemmis,* is established for one of the three main groups of spiders from California and adjacent areas that are closely related to the Appalachian genus *Liocranoides* Keyserling. Although only one species belonging to the genus appears to have been described, as *Anachemmis dolichopus* Chamberlin, the genus includes two species groups and at least 15 additional species. Eleven new species are described from California: *S. gertschi, S. bixleri, S. shantzi, S. cruz, S. monterey, S. icenoglei, S. cajalco, S. palomar, S. idyllwild, S. miramar,* and *S. prenticei*; one new species (*S. kastoni*) is apparently widespread in southern California, Arizona, and Baja California Norte, and three other new species (*S. rothi, S. williamsi,* and *S. catavina*) are described from northern Baja California Norte.

INTRODUCTION

This paper is the second in a series on the spider genus *Liocranoides* Keyserling and its close relatives. Platnick (1999) presented a revision of *Liocranoides,* restricting that genus to a small set of Appalachian species, and arguing that available evidence supports the placement of this group of genera within the Tengellidae. Here we deal with one of the three major groups of species from California and adjacent areas that seem to be close relatives of *Liocranoides,* sharing with it a very odd combination of characters (claw tufts together with three tarsal claws).

All the California species have at times been considered to be members of *Liocra-*

[1] Peter J. Solomon Family Curator, Division of Invertebrate Zoology, American Museum of Natural History; Adjunct Professor, Department of Biology, City College, City University of New York; Adjunct Professor, Department of Entomology, Cornell University.

[2] Associate, Department of Entomology, California Academy of Sciences, Golden Gate Park, San Francisco CA 94118.

 ISSN 0003-0082 / Price $3.10

noides (e.g., Gertsch, in Roth, 1985), but more recently Gertsch (in Roth, 1993) separated the Californian species into three genera: *Titiotus* Simon, *Anachemmis* Chamberlin, and *Liocranoides.* The species dealt with below fall in *Liocranoides* using the keys in Roth (1993), because the males share with the Appalachian species a bipartite retrolateral tibial apophysis (fig. 3). This result is artificial, however; of the western species, it is actually those of *Anachemmis* that are closest to the Appalachian *Liocranoides* in palpal structure, even though they have a unipartite retrolateral tibial apophysis.

Although only one of the species considered here appears to have been described, as *Anachemmis dolichopus* Chamberlin (1919), the group is easily recognized, because both the male embolus and the retrolateral tibial apophysis are bipartite (figs. 2, 3). The genus includes at least 15 additional species, all newly described below. Two species groups can be distinguished; the distribution of each group is centered in southern California, and each group includes several species with apparently narrow ranges (maps 1–3).

The format of the descriptions follows that of Platnick (1999). We are grateful to Mohammad Shadab of the American Museum of Natural History for help with illustrations, to S. Ubick for assistance with mapping, and to the following collectors and curators for access to specimens:

AMNH	American Museum of Natural History, New York
CAS	California Academy of Sciences, San Francisco, C. Griswold
CBH	Blaine Hebert
CDB	David Bixler
CDFA	California Department of Food and Agriculture, M. Moody
CGL	Graeme Lowe
MCZ	Museum of Comparative Zoology, Harvard University, L. Leibensperger
MET	Mel Thompson
UCB	University of California, Berkeley, C. Barr
UCR	University of California, Riverside, R. Vetter, T. Prentice
WRI	Wendell Icenogle
WRIK	B. J. Kaston material currently in WRI

SOCALCHEMMIS, NEW GENUS

TYPE SPECIES: *Anachemmis dolichopus* Chamberlin.

ETYMOLOGY: The generic name is a contraction of southern Californian *Chemmis,* and is masculine in gender.

DIAGNOSIS: Males can be distinguished from those of the other North American tengellid genera by having both a bipartite embolus (fig. 2) and a bipartite retrolateral tibial apophysis (fig. 3); females have a large epigynal septum (figs. 4, 34) and a flatter, less three-dimensional epigynum than do those of the other genera.

DESCRIPTION: Medium to large spiders, total length of males 7.1–13.2, of females 7.5–15.2. Carapace oval, widest at rear of coxae II, abruptly narrowed at level of palpi to less than half of maximum width; thoracic groove long, longitudinal, very deep; surface coated with short recumbent and fewer, longer, erect dark setae, erect setae most numerous in ocular area; eight eyes in two rows; from above, both eye rows slightly recurved; from front, anterior row recurved, posterior row slightly procurved; anterior median eyes round, smallest; other eyes oval, subequal, with canoe-shaped tapeta; anterior median eyes separated by roughly their diameter, slightly closer to anterior laterals; posterior medians separated by roughly their diameter, farther from posterior laterals; lateral eyes of each side separated by less than their diameter; median ocular quadrangle wider in back than in front, wider in back than long; clypeal height about twice diameter of anterior median eyes, corners of clypeus with incised margins that overlie cheliceral boss; chilum weakly sclerotized, divided, composed of two triangular sclerites. Chelicerae vertical, anterior surface with few, erect setae; promargin with three teeth situated at proximal end of fang furrow, most proximal tooth smallest, retromargin with three larger, more distally situated teeth; very short, narrow, I-shaped posterior sclerite present, separating chelicerae at base. Labium short, distally invaginated at middle, reflexed at almost 90° angle relative to sternum. Endites rectangular, distally slightly convergent, with anteromedian scopula and anterolateral serrula consisting of single row of teeth. Sternum round-

ed, without extensions to or between coxae, with erect setae; posterior margin not extending between coxae IV.

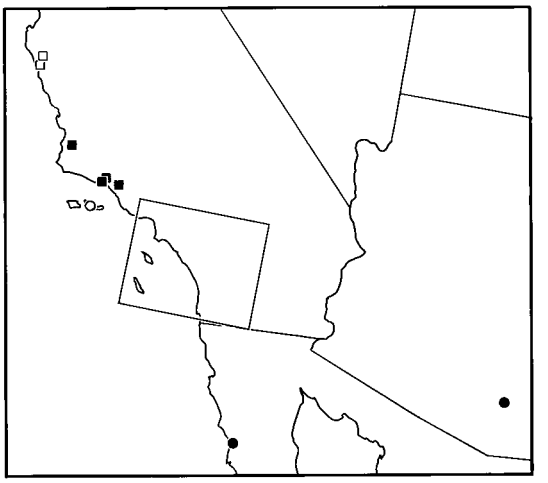
Leg formula 4123. Typical leg spination pattern (only surfaces bearing spines listed): femora: I d1-1-1, p0-2-1, r1-2-1; II d1-1-1, p1-2-1, r1-2-1; III d1-1-1, p2-1-1, r1-2-1; IV d1-1-1, p2-1-1, r0-2-1; patellae III, IV p0-1-0, r0-1-0; tibiae: I, II d1-0-1, p0-1-0, v4-4-2, r0-1-0; III, IV d1-0-1, p0-1-1, v2-2-2, r0-1-1; metatarsi: I p1-1-0, v2-2-2, r1-1-1; II p1-1-1, v2-2-2, r1-1-0; III p1-2-2, v2-2-1p, r1-1-2; IV p1-1-2, v2-2-1p, r1-2-2; tarsi with three claws and claw tufts, superior claws with several weak teeth, most distal teeth largest, inferior claws unarmed; all tarsi with strong ventral scopulae, scopular hairs distinct from those of claw tufts; trochanters notched, posteriors more strongly so than anteriors; males without tibial crack; metatarsi without preening combs. Abdomen without anterior or dorsal scutum; anterior lateral spinnerets large, composed of two articles, distal article with two major ampullate gland spigots and about 15 small piriform gland spigots; posterior median spinnerets composed of one article, those of male small, tubular, those of female triangular, expanded posteriorly, where bearing three large cylindrical gland spigots arranged in triangle (two spigots situated anteriorly, one posteriorly), anterior two cylindrical gland spigots preceded anteriorly by smaller aciniform and/or minor ampullate gland spigots; posterior lateral spinnerets composed of two articles, distal article about one-fifth as long as proximal article, those of female with at least two large cylindrical gland spigots at base, smaller spigots on tip; colulus represented by setae on small lobe.

Male palp with patella not widened, retrolateral tibial apophysis bipartite; subtegulum and tegulum with interlocking processes, median apophysis heavily sclerotized at least distally, embolus bipartite, with deep u-shaped division between prolateral prong and copulatory prong, accompanied by hyaline conductor. Female palp with extremely long, dentate claw. Epigynum without anterior hood, relatively flat, with large median septum; spermathecae posterolaterally situated.

Key to Species of *Socalchemmis*

1. Males (those of *S. cruz* unknown) 2
— Females (those of *S. rothi* and *S. williamsi* unknown) 16
2. Median apophysis relatively long, narrow (as in figs. 2, 7; the *dolichopus* group) 3
— Median apophysis relatively short, wide, with median flange below tip (as in figs. 33, 38; the *icenoglei* group) 8
3. Embolar base with proximally directed, hook-shaped protrusion (figs. 21–23) . . . . . *shantzi*
— Embolar base without proximal protrusion 4
4. Dorsal prong of retrolateral tibial apophysis, as viewed ventrally, angular on both distal and proximal sides (fig. 13) . . . . . *bixleri*
— Dorsal prong of retrolateral tibial apophysis, as viewed ventrally, not angular on both sides 5
5. Median apophysis with sharply pointed, subdistal projection (figs. 26–28) . . *monterey*
— Median apophysis without sharply pointed projection 6
6. Embolus, as viewed retrolaterally, with translucent expansion of base situated just proximal of embolar projection (fig. 18) . . . . . *kastoni*
— Embolus, as viewed retrolaterally, without translucent expansion of base 7
7. Embolus with sharp projection (figs. 1–3) . . . . . *dolichopus*
— Embolus with oblique excavation (figs. 6–8) . . . . . *gertschi*
8. Ventral prong of retrolateral tibial apophysis greatly expanded, triangular distally (as in figs. 38, 43) 9
— Ventral prong of retrolateral tibial apophysis not much wider distally than proximally (figs. 33, 63, 68, 71) 13
9. Embolus, as viewed prolaterally, with triangular basal protrusion (figs. 36, 51) 10
— Embolus, as viewed prolaterally, without basal protrusion 11
10. Basal protrusion of embolus relatively short, incised (fig. 36) . . . . . *cajalco*
— Basal protrusion of embolus relatively long, not incised (fig. 51) . . . . . *miramar*
11. Embolar base, as viewed retrolaterally, relatively wide, much wider than embolar tip (fig. 48) . . . . . *idyllwild*
— Embolar base, as viewed retrolaterally, not much wider than embolar tip (figs. 43, 58) 12
12. Embolus with sharply pointed projection, tip

relatively large, wide (figs. 41–43) . . . . . *palomar*
— Embolus with narrow incision, tip relatively small, narrow (figs. 56–58) . . . . . *prenticei*
13. Embolus wider at tip than subdistally (fig. 32) . . . . . *icenoglei*
— Embolus narrower at tip than subdistally 14
14. Embolar base with large, rectangular protrusion (figs. 61, 63) . . . . . *rothi*
— Embolar base without large, rectangular protrusion 15
15. Embolar base smoothly narrowed toward embolar tip (fig. 68) . . . . . *williamsi*
— Embolar base much wider than tip, abruptly narrowed at level of embolar protrusion (fig. 71) . . . . . *catavina*
16. Epigynal septum much wider anteriorly than posteriorly (figs. 34, 44, 64, 72) 17
— Epigynal septum not greatly widened anteriorly 20
17. Epigynal septum gradually narrowed posteriorly (figs. 34, 64) 18
— Epigynal septum abruptly narrowed posteriorly (figs. 44, 72) 19
18. Spermathecal lobes bulbous, directed anteriorly (fig. 65) . . . . . *cruz*
— Spermathecal lobes angular, directed medially (fig. 35) . . . . . *icenoglei*
19. Epigynal septum three times as wide anteriorly as posteriorly (fig. 44) . . . . *palomar*
— Epigynal septum twice as wide anteriorly as posteriorly (fig. 72) . . . . . *catavina*
20. Epigynal septum wider at middle of its length than anteriorly or posteriorly (figs. 4, 24, 29, 54) 21
— Epigynal septum subequal in width throughout 24
21. Epigynal septum elevated, flanked at sides by less elevated margins (fig. 24) . . . . . *shantzi*
— Epigynal septum not flanked at sides 22
22. Medial portion of epigynal septum ill-defined, grading into atrial sides (fig. 29) . . . . . *monterey*
— Medial portion of epigynal septum well-defined 23
23. Epigynal septum greatly expanded at middle of length (fig. 54) . . . . . *miramar*
— Epigynal septum only slightly expanded at middle of length (fig. 4) . . . . . *dolichopus*
24. Epigynal septum relatively short, not extending to near posterior margin of epigynum (figs. 9, 19) 25

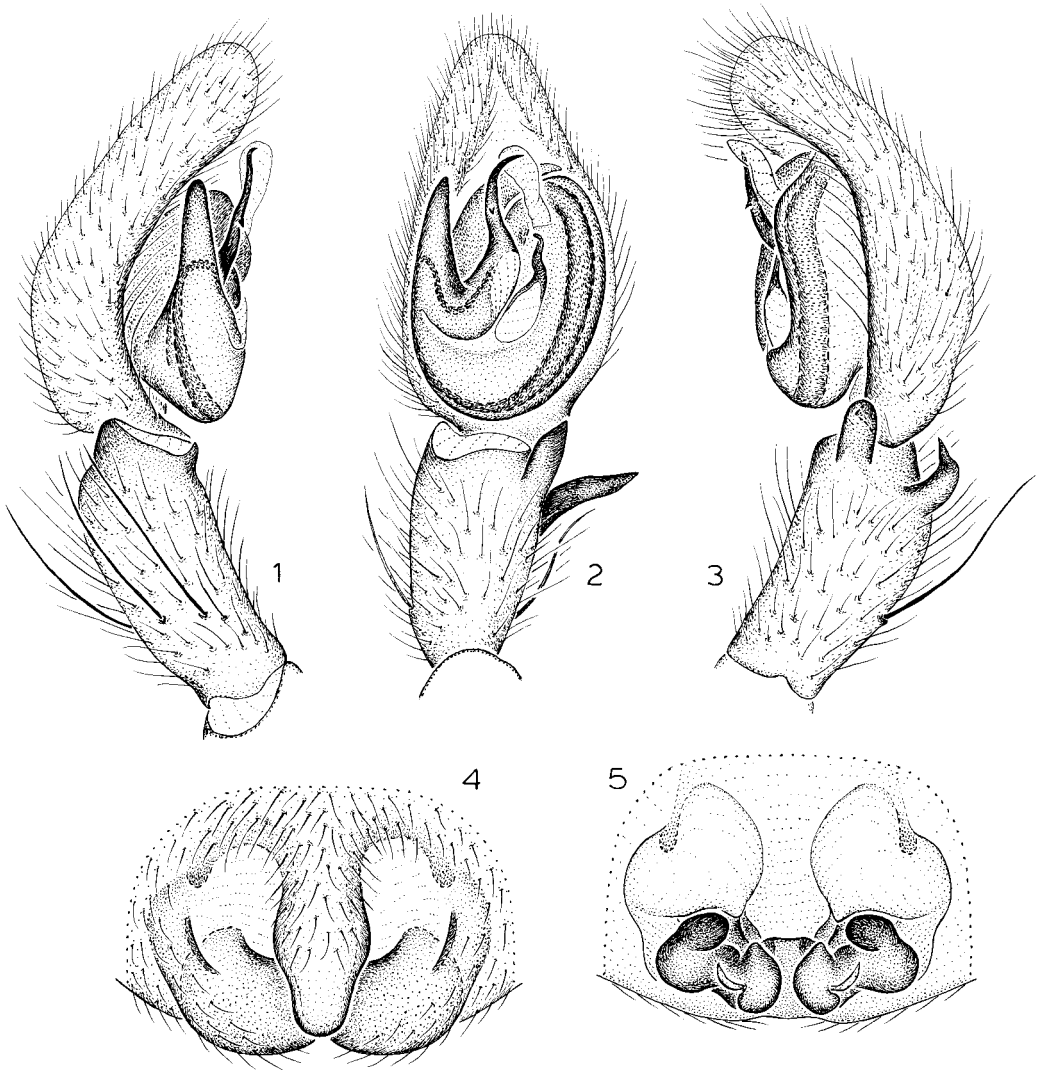


Map **1.** Southwestern North America showing the distribution of the *Socalchemmis dolichopus* group with records of *S. monterey* (□), *S. shantzi* (■), *S. cruz* (○), and *S. kastoni* (●). The enclosed area is detailed in map 2.

— Epigynal septum extending almost to posterior epigynal margin 26
25. Spermathecae fused medially (fig. 20) . . . . . *kastoni*
— Spermathecae not fused medially (fig. 10) . . . . . *gertschi*
26. Epigynal septum greatly narrowed posteriorly (fig. 59) . . . . . *prenticei*
— Epigynal septum only slightly narrowed posteriorly (figs. 14, 39, 49) 27
27. Epigynal septum relatively wide (fig. 39) . . . . . *cajalco*
— Epigynal septum relatively narrow (figs. 14, 49) 28
28. Lateral margins of epigynal septum relatively straight, angular (fig. 14) . . . . . *bixleri*
— Lateral margins of epigynal septum rounded (fig. 49) . . . . . *idyllwild*

THE *DOLICHOPUS* GROUP

Members of this group are easily separated from those of the *icenoglei* group by the long, narrow median apophysis on the male palp (as in figs. 2, 7). Females are less easy to separate, but those of the *dolichopus* group tend to have a narrower epigynal septum and smaller lateral epigynal margins (as in figs. 4, 9, 14) as well as more pronounced anterior spermathecal lobes (as in figs. 5, 10, 15).



Figs. 1–5. *Socalchemmis dolichopus* (Chamberlin). **1.** Left male palp, prolateral view. **2.** Same, ventral view. **3.** Same, retrolateral view. **4.** Epigynum, ventral view. **5.** Same, dorsal view.

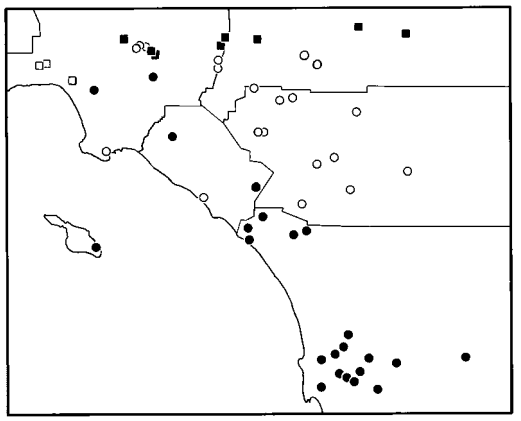
Socalchemmis dolichopus (Chamberlin), new combination

Figures 1–5; map 2

Anachemmis dolichopus Chamberlin, 1919: 13, pl. 5, figs. 6, 7 (female holotype and male paratype from Claremont, Los Angeles County, California, in MCZ, examined).

DIAGNOSIS: Males are most likely to be confused with those of *S. bixleri*, but have a longer embolus (fig. 2), with a tiny, sharp, ventrally directed denticle situated relatively far from the tip (fig. 3); females can be recognized by the shape of the epigynal septum, which is widened at about half its length and then narrowed posteriorly (fig. 4).

MALE: Total length 8.1. Carapace yellow, with light orange triangular markings radiating from thoracic groove to intercoxal areas; abdomen pale yellow, without distinct pattern; femora yellow, more distal leg segments grading to brown on metatarsi and tarsi. Leg spination typical for genus. Embolus relatively long, tip acutely bent, very tiny, very sharp denticle situated far proximal of terminal bend; dorsal prong of retrolateral

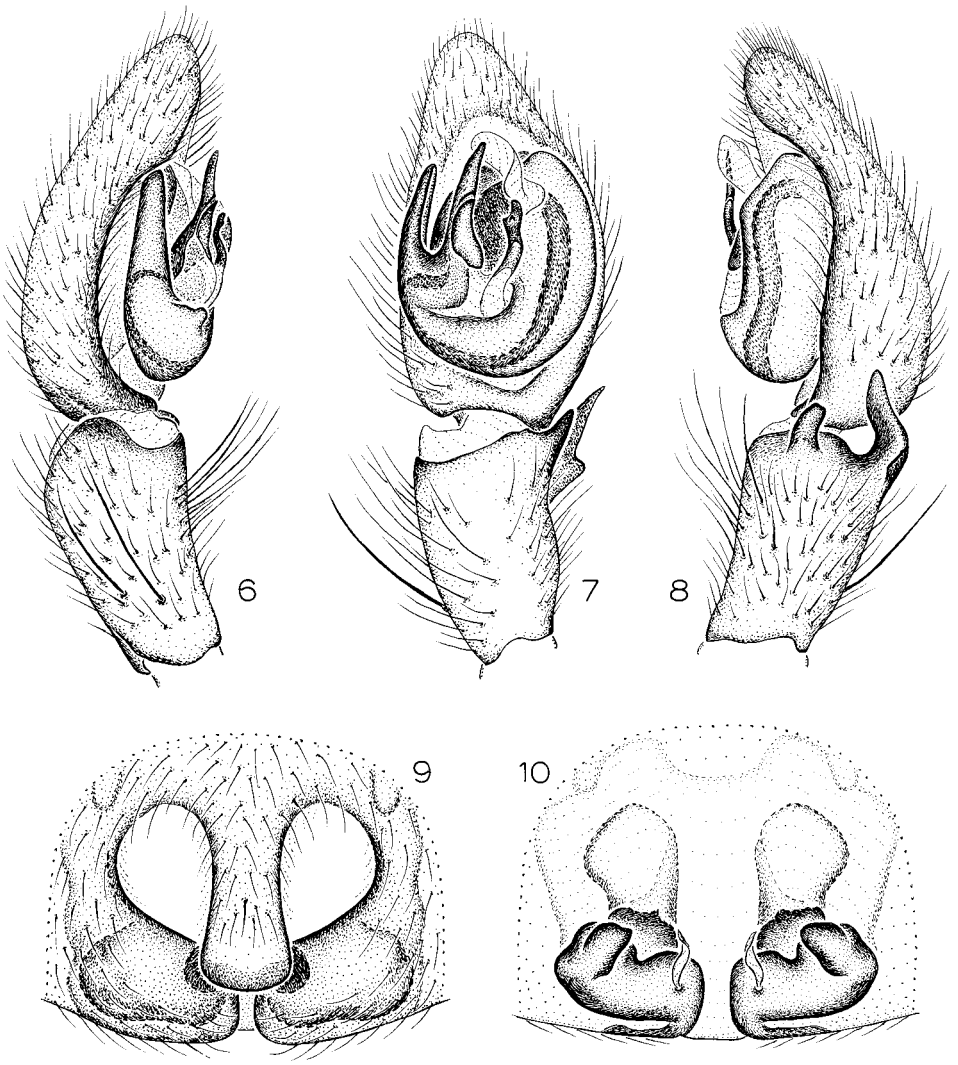


Map **2.** Southwestern California showing records of *Socalchemmis gertschi* (□), *S. bixleri* (■), *S. dolichopus* (○), and *S. kastoni* (●).

tibial apophysis greatly narrowed at tip (figs. 1–3).

FEMALE: Total length 7.5. Coloration as in male. Leg spination: femora: I p0-1-1; II p0-2-1; IV p2-0-1, r0-0-2; tibia IV r0-1-1; metatarsi: I p1-1-1, r1-1-0. Epigynal septum widest at about half its length, narrowed posteriorly along pronounced paramedian ridges, lateral margins short, oblique (fig. 4); spermathecae with rounded anterior lobes, posterior portions of ducts relatively heavily sclerotized, fused into narrow bar extending across midline (fig. 5).

MATERIAL EXAMINED: CALIFORNIA: **Los Angeles Co.:** Altadena, Sept. 8–21, 1964 (B. Crandall, MET), 1♂, Aug. 5, 1966 (F. Russell, AMNH), 1♀, Dec. 1966, under packing box (F. Russell, AMNH), 1♀; Angeles National Forest, near Henninger Flats, Nov. 18, 1967 (D. Marqua, MET), 1♀; Claremont, Mar. 9, 1918 (W. Hilton, MCZ), 1♀ (holotype), no date or collector (MCZ), 1♂ (paratype); Eaton Canyon Park, Pasadena, Dec. 24, 1964, pitfall (MET), 1♂, Dec. 12, 1966 (D. Marqua, CAS), 1♂, 1♀; Nov. 28, 1967 (M. Thompson, MET), 1♂, Feb. 14, 1968 (M. Thompson, MET), 1♀, Nov. 7, 1968 (M. Thompson, MET), 1♂, Dec. 3, 1969 (M. Thompson, MET), 1♂, Oct. 26, 1972 (P. Sullivan, MET), 1♂; Los Angeles, no specific locality (not plotted on map), Nov. 28, 1948 (J. Soule, AMNH), 1♂, Dec. 16, 1956 (J. Soule, AMNH), 1♂; San Antonio Canyon, near Claremont, July 1, 1956 (W. Gertsch, V. Roth, AMNH), 3♀; San Pedro, Feb. 16, 1948 (W. Pearce, AMNH), 1♀. **Orange Co.:** Laguna Beach, Dec. 28, 1932, under rock (W. Ivie, AMNH), 1♂. **Riverside Co.:** Beaumont, Nov. 5, 1978, in building, elev. 2600 ft (L. Lang, WRI), 1♂; Double Butte, 1 mi NW Winchester, all collected by W. Icenogle, elev. 1500 ft, Nov. 25, 1966, under wood on ground (WRI), 1♀, Mar. 22, 1967, under board on ground (WRI), 1♀, Nov. 12–Dec. 5, 1967, in building (WRI), 2♂, Oct. 20, 1968, in building (WRI), 1♂, Dec. 14, 1968, pitfall on hillside, coastal sage scrub (WRI), 1♂, Oct. 31, 1969, in building (CAS), 1♂, Oct. 25, 1970, in building (WRI), 1♂, Nov. 7, 1971, in building (WRI), 1♂, Nov. 17, 1974, in building (WRI), 1♂, Nov. 30, 1978, in building (WRI), 1♂, Apr. 11, 1979, under rock (WRI), 1♀, Feb. 4, 1980, in building (CAS), 1♂, Nov. 21, 1980, in building (WRI), 1♀, Nov. 7, 1982, in building (WRI), 1♂, Jan. 13, 1987, in wood pile (CAS), 1♀, Nov. 1, 1987, on wall in building (WRI), 1♂, Dec. 24, 1991, in building (WRI), 1♂, Oct. 24, 1993, on wall in building (WRI), 1♂, Dec. 29, 1993, on wall in building (WRI), 1♀; Glen Avon area, just NE junction Highway 60 and Pyrite Road, Jan. 6, 1989, under trash on moist ground (W. Icenogle, WRI), 3♂; Indian Hills, Riverside, Nov. 28, 2000 (B. Cardulla, UCR), 1♂; Lake Hemet, Feb. 23, 1970 (T. Taylor, MET), 1♂; Lake Mathews, Jan. 29, 1983, under rock, slope overlooking lake (G. Lowe, CGL), 1♀; 1.8 mi W Lake Mathews, just S Cajalco Road, Nov. 29, 1998, Apr. 22–May 23, 1999, Jan. 17, 2000, pitfall on steep, rocky, N-facing canyon side, coastal sage scrub, elev. 1000 ft (W. Icenogle, WRI), 4♂, 1♀; Lake Skinner, Mar. 10–18, 1996, pitfalls (T. Prentice, UCR), 1♂, 1♀, Dec. 9–12, 1996, pitfall (T. Prentice, UCR), 1♂, Mar. 6–9, 1998, pitfall (T. Prentice, UCR), 1♂, Dec. 6, 1998, pitfall (T. Prentice, UCR), 1♂, Dec. 20, 1998, pitfall (T. Prentice, CAS), 1♂; Menifee Valley, Dec. 14–17, 1997 (S. Frommer, UCR), 2♂; Riverside, Mar. 12, 1968 (M. Mull, UCB), 1♂, May 26, 1998, in home (B. Cardella, CAS), 1♂; Santa Rosa Plateau Ecological Reserve, Sylvan Meadows, July 14, 1998, pitfall (C. Dunning, UCR), 1♂, Dec. 6, 1998, pitfall (C. Dunning, UCR), 1♂, 1♀; University of California at Riverside campus, Riverside, Feb.



Figs. 6–10. *Socalchemmis gertschi*, new species. **6.** Left male palp, prolateral view. **7.** Same, ventral view. **8.** Same, retrolateral view. **9.** Epigynum, ventral view. **10.** Same, dorsal view.

2, 1995 (UCR), 1♂; Winchester, Nov. 28, 1969, in building (W. Icenogle, AMNH), 1♂, Oct. 11, 1972, in building (W. Icenogle, AMNH), 1♂; 1 mi N Winchester, Nov. 20, 1986, in house, elev. 1400 ft (C. Naasz, WRI), 1♂. **San Bernardino Co.:** City Creek Canyon, San Bernardino Mountains, just W of Highway 330, 2 mi N junction Highland Ave., Apr. 2, 1995, under log at base of N facing, rocky ravine side, elev. 1800 ft (W. Icenogle, WRI), 1♀ (matured before Apr. 27, 1995; foothills, San Bernardino Mountains at N city limit of San Bernardino on Highway 18, 0.6 road mi S junction Waterman Canyon Road, Jan. 2, 2000, pitfalls in chaparral in ravine on S facing hillside, elev. 1600 ft (W. Icenogle, WRI), 2♂.

DISTRIBUTION: Known only from Los Angeles, Orange, Riverside, and San Bernardino counties, California (map 2).

Socalchemmis gertschi, new species

Figures 6–10; map 2

TYPE: Male holotype from Brentwood, Los Angeles Co., California (Nov. 14, 1952; B. Brattstrom), deposited in AMNH.

ETYMOLOGY: The specific name is a patronym in honor of the late Willis Gertsch, in recognition of his long-standing interest in this group.

DIAGNOSIS: Males can be recognized by the large dorsal prong of the retrolateral tibial apophysis, which is almost twice the length of the ventral prong (fig. 8) and has a distinctive basal projection in ventral view (fig. 7); females have the epigynal septum only slightly widened posteriorly, where the tip is truncated and protrudes slightly posterior of the paramedian ridges (fig. 9).

MALE: Total length 7.1. Coloration as in *S. dolichopus* except abdominal dorsum with dusky cardiac mark and posterior chevrons. Leg spination: femora: I p0-1-1; II p0-2-1; metatarsi: I r1-1-0; II p1-1-0. Embolus relatively short, wide, with distinct invagination just anterior of midpoint; dorsal prong of retrolateral tibial apophysis much larger than ventral prong, ventrally scooped (figs. 6–8).

FEMALE: Total length 12.4. Pars cephalica dark brown, pars thoracica light brown with darker radiating markings, abdomen as in male, femora light brown, more distal leg segments dark brown. Leg spination: femora: I p0-1-1; IV p1-1-1, r0-1-1; tibiae I, II d0-0-0; metatarsi I, II p0-0-0, r0-0-0. Epigynal septum narrowest anteriorly, sides parallel for most of length, posterior tip truncated, protruding past paramedian ridges that meet almost semicircular lateral margins, atrium relatively deep (fig. 9); spermathecae massive, lobes laterally situated (fig. 10).

OTHER MATERIAL EXAMINED: California: **Los Angeles Co.:** Brentwood, Nov. 14, 1952 (B. Brattstrom, AMNH), 1♂; Los Angeles, no specific locality (not plotted on map), 1936 (G. Grant, AMNH), 1♂, 1♀; Old Topanga Canyon Road, 4.7 mi from Route 27, Nov. 20, 1982 (G. Lowe, CGL), 1♂; Topanga Canyon, May 4, 1997 (J. Kempf, UCR), 1♀.

DISTRIBUTION: Known only from Los Angeles County, California (map 2)1.

Socalchemmis bixleri, new species

Figures 11–15; map 2

TYPE: Male holotype from Tanbark Flats, San Gabriel Mountains, Los Angeles Co., California (June 20, 1952; W. Gertsch), deposited in AMNH.

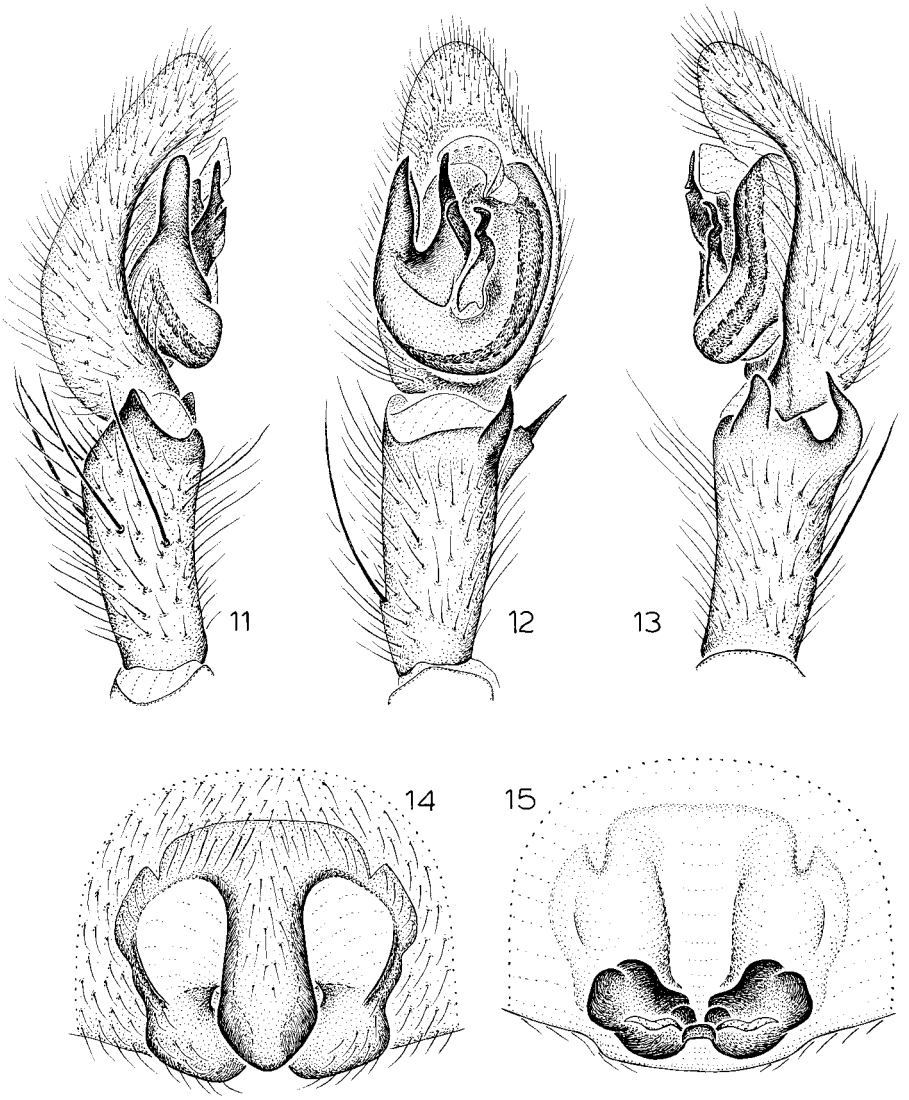
ETYMOLOGY: The specific name is a patronym in honor of Dr. David Bixler, who made available important specimens of this species.

DIAGNOSIS: Males can be recognized by the shape of the dorsal prong of the retrolateral tibial apophysis, which in ventral view has sharply angular indentations near its base (fig. 12); females have a wide, broadly pointed epigynal septum (fig. 14) and anterolateral spermathecal lobes that are much less pronounced than in other members of the *dolichopus* group.

MALE: Total length 10.3. Coloration as in *S. dolichopus.* Leg spination: metatarsi: I r1-1-0; II p1-1-0. Embolus relatively short, almost straight, with deep incision below tip; dorsal prong of retrolateral tibial apophysis sharply narrowed at about its length, resulting in sharply angular indentations as viewed ventrally (figs. 11–13).

FEMALE: Total length 12.2. Coloration as in *S. dolichopus.* Leg spination: femora: I p1-1-1; IV p2-0-1, r0-0-2; tibiae: I, II d0-0-0; metatarsi: I, II p0-0-0, r0-0-0. Epigynal septum arrow-shaped, only slightly widened at about two-thirds its length (fig. 14); anterolateral spermathecal lobes produced dorsally (fig. 15).

OTHER MATERIAL EXAMINED: CALIFORNIA: **Los Angeles Co.:** Angeles National Forest, Highway 2, near Angeles Crest Ranger Station, Jan. 1993, on rocks at night (B. Hebert, CBH), 2♂, 1♀; Angeles National Forest, Mount Baldy Village, Nov. 24, 1979, in house (D. Carroll, CDFA), 1♂; Bailey Canyon, Jan. 11, 1970 (M. Thompson, MET), 1♂; Los Angeles, no specific locality (not plotted on map) (F. Russell, AMNH), 1♂; Sierra Madre (AMNH), 1♂; Tanbark Flats, San Gabriel Mountains, June 20, 1952 (W. Gertsch, AMNH), 3♂, 1♀, Mar. 30, 1957 (AMNH), 1♀. **San Bernardino Co.:** Fawnskin, San Bernardino Mountains, fall 1993 (B. Miller, CAS), 1♂; Lytle Creek Canyon, Nov. 20, 1969, in house, elev. 3000 ft (D. Bixler, CDB), 1♂, Apr. 1, 1970 (D. Bixler, CDB), 1♂, May 24, 1971, at light on porch (D. Bixler, CDB), 1♀; Pioneertown, University of California Burns Reserve, Oct. 28, 1993 (CAS), 1♂.



Figs. 11–15. *Socalchemmis bixleri,* new species. **11.** Left male palp, prolateral view. **12.** Same, ventral view. **13.** Same, retrolateral view. **14.** Epigynum, ventral view. **15.** Same, dorsal view.

DISTRIBUTION: Known only from Los Angeles and San Bernardino counties, California (map 2).

Socalchemmis kastoni, new species

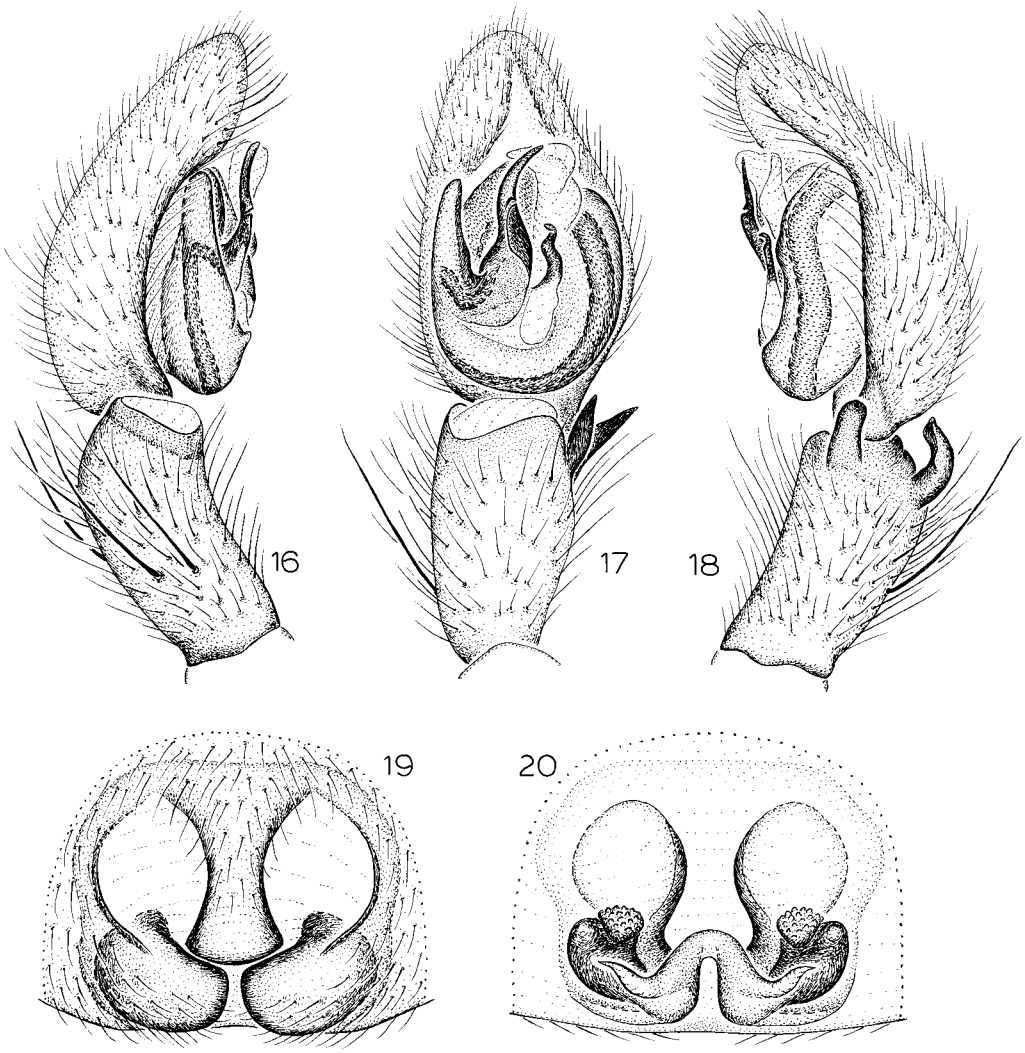
Figures 16–20; maps 1, 2

TYPE: Male holotype from Jamul, San Diego Co., California (Dec. 29, 1947; W. Pearce), deposited in AMNH.

ETYMOLOGY: The specific name is a patronym in honor of the late Dr. B. J. Kaston, collector of many specimens of this species.

DIAGNOSIS: Males can be recognized by the produced ventral lobe situated on the embolus, just below its incision (fig. 18), females by the procurved posterior margin of the epigynal septum (fig. 19).

MALE: Total length 7.4. Coloration as in *S. dolichopus.* Leg spination: femora: II p0-2-1; IV p2-0-1, r0-0-2; metatarsi II p1-1-0. Embolus with distinct, produced ventral lobe situated just posterior of embolar incision; dorsal prong of retrolateral tibial apophysis arrow-shaped in ventral view (figs. 16–18).



Figs. 16–20. *Socalchemmis kastoni,* new species. **16.** Left male palp, prolateral view. **17.** Same, ventral view. **18.** Same, retrolateral view. **19.** Epigynum, ventral view. **20.** Same, dorsal view.

FEMALE: Total length 13.6. Coloration as in *S. gertschi.* Leg spination: femora: I p0-1-1; IV p2-0-1, r0-0-1; tibiae: I d0-0-0, r0-0-0; II d0-0-0; metatarsi I, II p0-0-0, r0-0-0. Epigynal septum relatively narrow anteriorly, widened posteriorly, with procurved posterior margin (fig. 19); spermathecae fused by arch-shaped median bridge (fig. 20).

OTHER MATERIAL EXAMINED: ARIZONA: **Pima Co.:** Tucson, Jan. 1, 1980 (D. Boe, CAS), 1♂. CALIFORNIA: **Los Angeles Co.:** Avalon, Santa Catalina Island, Nov. 21, 1927 (AMNH), 1♂, July 24, 1961 (V. Roth, AMNH), 1♀; El Monte, Apr. 13, 1968 (WRIK), 1♂; Los Angeles, no specific locality (not plotted on map), Sept. 1948 (J. Soule, AMNH), 1♂; West Los Angeles, Mar.–Aug. 1943 (D. Verrity, AMNH), 1♂. **Orange Co.:** Anaheim, 21263 Hohler Drive, 1963 (F. Handsfield, Jr., AMNH), 3♂; Santa Ana Mountains, 0.25 mi S Highway 74, 2.5 road mi E San Juan Fire Station (Hot Spring Canyon turnoff), Dec. 25, 1999, pitfalls in live oaks and chaparral on rocky, west-facing canyon side, elev. 1200 ft (W. Icenogle, WRI), 2♂. **San Diego Co.:** Alpine, Feb. 21,

1970 (P. Lancaster, WRIK), 1♂; De Luz Road, 2 mi N Mission Road, Nov. 26, 1982 (G. Lowe, CGL), 1♂; El Cajon, May 4, 1970, on ground (J. Hambric, WRIC), 1♂; Horse Heaven Public Camp, Mount Laguna, May 22, 1963 (C. Parrish, AMNH), 1♀; Lakeside, June 1970 (D. Rees, WRIK), 1♂; La Mesa, Nov. 4, 1975, in house (V. Cooke, CDFA), 1♂; Marine Corps Base Camp Pendleton, June 1–15, 1995, pitfalls, coastal sage scrub (R. Redak, UCR, CAS), 4♂, Nov. 29–Dec. 16, 1995, pitfalls, coastal sage scrub (R. Redak, UCR, CAS), 3♂; Miramar Naval Air Station, May 22–29, 1995, pitfall, coastal sage scrub (R. Redak, UCR), 1♂, June, 1995, pitfall, coastal sage scrub (R. Redak, CAS), 1♀, Dec. 3–16, 1995, pitfalls, coastal sage scrub (R. Redak, UCR, CAS), 3♂; Poway, Feb. 25, 1970 (C. Penny, WRIK), 1♂; Mount Helix, La Mesa, Mar. 15, 1971 (S. Johnson, AMNH), 1♂; San Diego, Nov. 16, 1967 (F. Lowe, WRIK), 1♂; San Diego, near San Diego State University, all collected by B. Kaston, pitfalls, Apr. 1969 (WRIK), 1♂, Sept. 1970 (WRIK), 1♀, Oct. 1970 (WRIK), 2♂, Nov. 1970 (WRIK), 6♂, Dec. 1970 (CAS), 4♂, Mar. 1971 (WRIK), 1♂, Dec. 1971 (WRIK), 2♂; Spring Valley, Jan. 6, 1967 (T. Boyer, WRIK), 1♀, Mar. 25, 1971 (S. Johnson, AMNH), 1♂. *Mexico:* **Baja California Norte:** Hamilton Ranch, Colonia Guerrero, May 5, 1961 (W. Gertsch, V. Roth, AMNH), 1♂.

DISTRIBUTION: Apparently widespread in southern California, Arizona, and Baja California Norte (maps 1, 2)1.

Socalchemmis shantzi, new species

Figures 21–25; map 1

TYPE: Male holotype from Santa Barbara, Santa Barbara Co., California (June 20, 1950; H. Shantz), deposited in AMNH.

ETYMOLOGY: The specific name is a patronym in honor of the collector of the holotype.

DIAGNOSIS: Males can easily be recognized by the posterior projection on the base of the embolus (figs. 21–23), females by the lateral, lowered lobes situated on either side of the epigynal septum throughout the middle third of its length (fig. 24).

MALE: Total length 8.5. Coloration as in *S. gertschi*. Leg spination: femora: II p0-2-1; IV r0-0-2; metatarsi: I r1-1-0; II p1-1-0. Embolar base bearing elevated ridge produced into posterior projection, embolus without distinct incision; tip of dorsal prong of retrolateral tibial apophysis incised more on ventral edge than on dorsal edge (figs. 21–23).

FEMALE: Total length 11.5. Coloration as in *S. gertschi*. Leg spination: femora: II p0-2-1; IV d1-1-0, r0-0-2; tibiae I, II d0-0-0; metatarsi I, II p0-0-0, r0-0-0. Epigynal septum with sinuous lateral margins situated atop lower paramedian bulges (fig. 22); spermathecal lobes directed anterodorsally (fig. 23).

OTHER MATERIAL EXAMINED: CALIFORNIA: **Santa Barbara Co.:** Cold Spring Trail, Santa Barbara, Aug. 14, 1959 (W. Gertsch, V. Roth, AMNH), 1♀, Aug. 16, 1959 (W. Gertsch, V. Roth, AMNH), 1♂ (right palp only); Santa Barbara, Sept. 3, 1948 (H. Shantz, AMNH), 1♂, Nov. 1952 (H. Shantz, AMNH), 1♀, Jan.–July 1954 (H. Shantz, AMNH), 1♂; Santa Maria, May 3, 1971, from sleeping bag (J. Betz, CAS), 1♂. **Ventura Co.:** Ojai, Mar. 1978 (UCR), 1♀.

DISTRIBUTION: Known only from Santa Barbara and Ventura counties, California (map 1).

Socalchemmis cruz, new species

Figures 64, 65; map 1

TYPE: Female holotype from Santa Cruz Island, Santa Barbara Co., California (Apr. 1913; R. Chamberlin), deposited in AMNH.

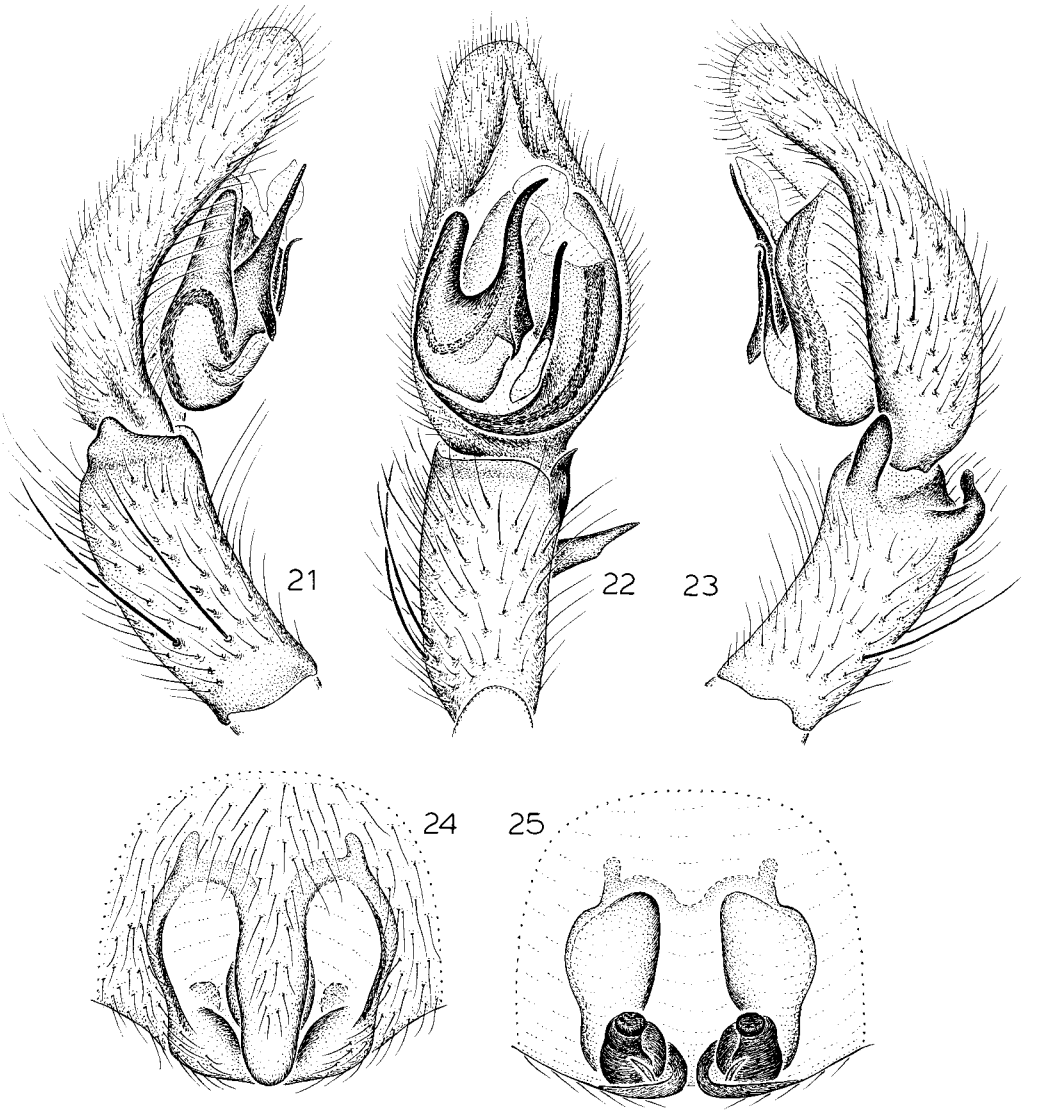
ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: Females can easily be recognized by the anteriorly widened epigynal septum (fig. 64).

MALE: Unknown.

FEMALE: Total length 15.2. Coloration as in *S. gertschi*. Leg spination: femur IV r0-0-1; tibiae I, II d0-0-0; metatarsi I, II p0-0-0, r0-0-0. Epigynal septum anteriorly widened, posteriorly elevated, beak-shaped (fig. 64); spermathecae relatively long (fig. 65).

OTHER MATERIAL EXAMINED: CALIFORNIA: **Santa Barbara Co.:** Santa Cruz Island, no date or collector (AMNH), 1♀; Santa Cruz Island, central valley, 0.25 mi W Research Station, Sept. 10–12, 1982, on ground



Figs. 21–25. *Socalchemmis shantzi*, new species. **21.** Left male palp, prolateral view. **22.** Same, ventral view. **23.** Same, retrolateral view. **24.** Epigynum, ventral view. **25.** Same, dorsal view.

at night in grove of huge eucalypt trees (W. Icenogle, WRI, CAS), 3♀.

DISTRIBUTION: Known only from Santa Cruz Island, California (map 1).

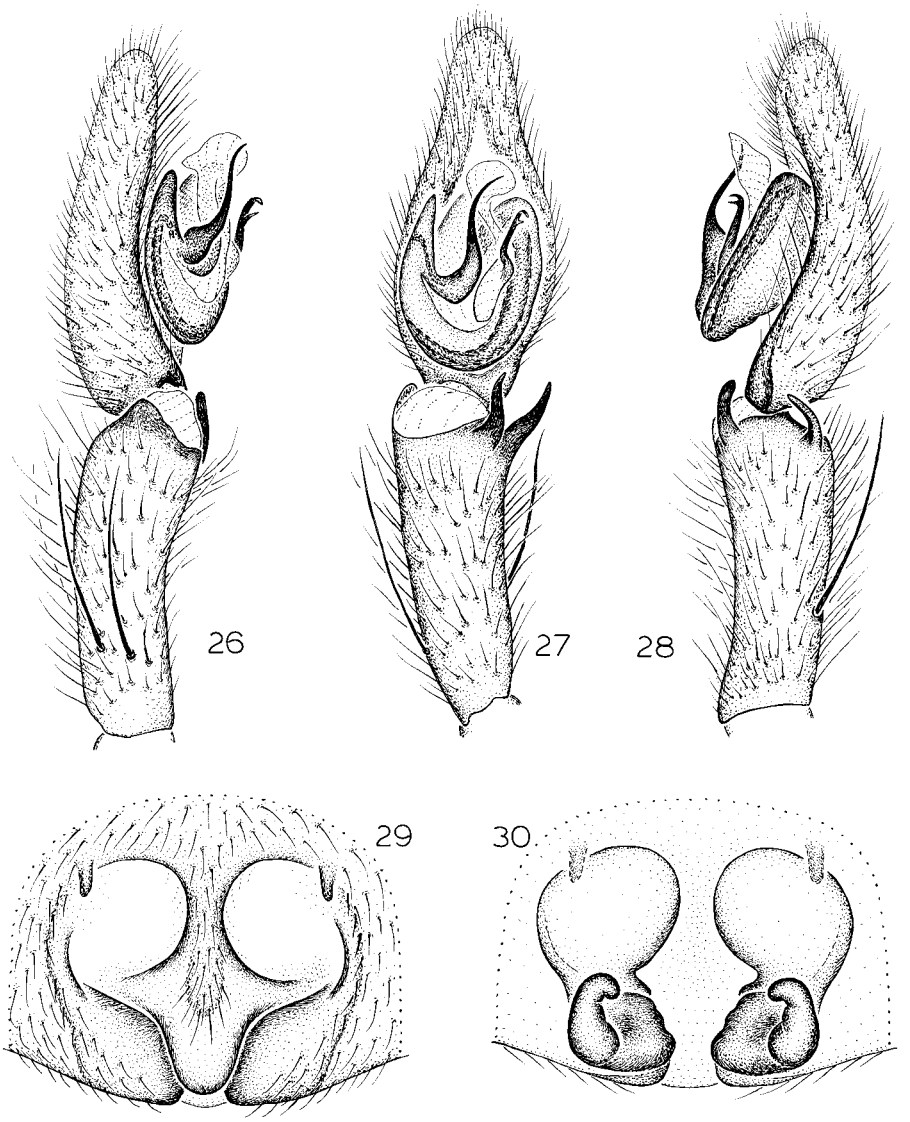
Socalchemmis monterey, new species

Figures 26–30; map 1

TYPE: Male holotype taken at night on Indians Road, W of Arroyo Seco Campground, Monterey Co., California (July 8, 1995; D. Ubick, S. Fend, W. Savary), deposited in CAS.

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality, the most northern known for the genus.

DIAGNOSIS: Males can easily be recognized by the very long embolus and almost equally long median apophysis (fig. 26), females by the medially widened epigynal septum and anterolateral epigynal thickenings (fig. 29).



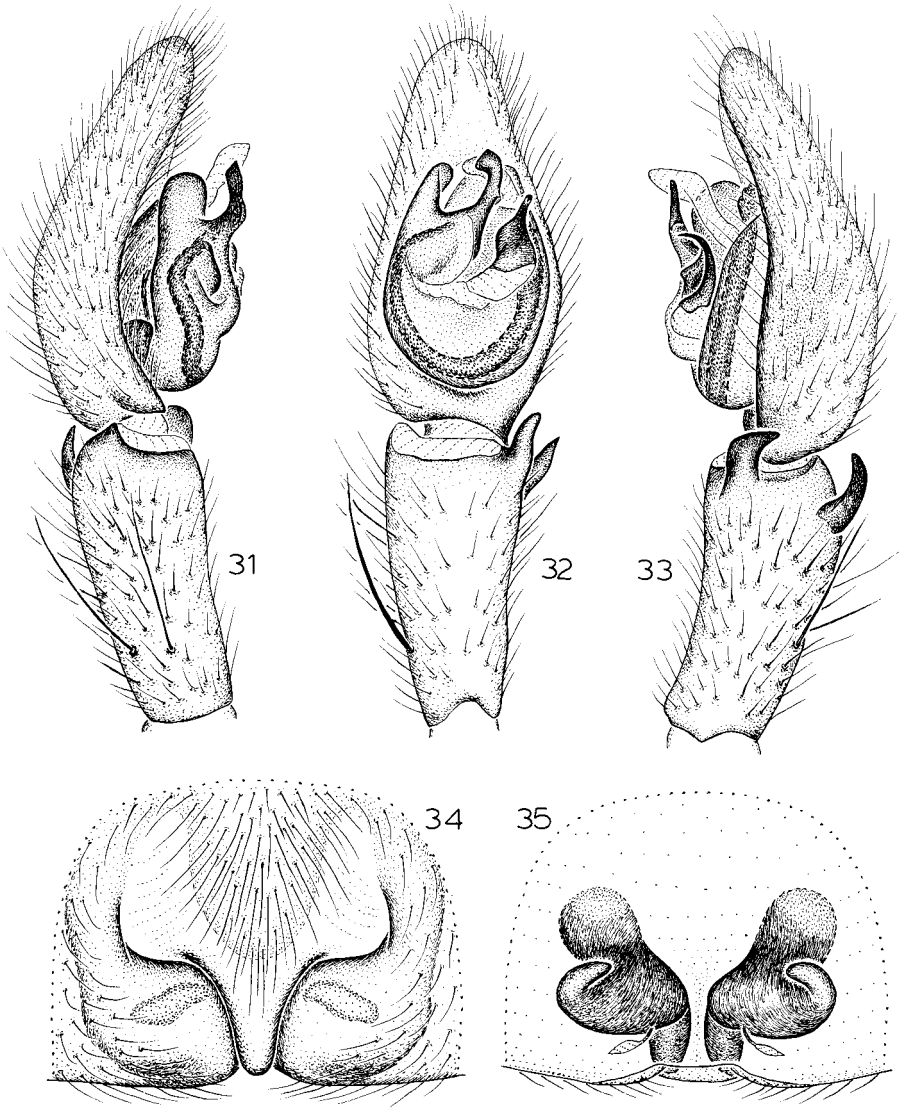
Figs. 26–30. *Socalchemmis monterey*, new species. **26.** Left male palp, prolateral view. **27.** Same, ventral view. **28.** Same, retrolateral view. **29.** Epigynum, ventral view. **30.** Same, dorsal view.

MALE: Total length 13.2. Coloration as in *S. dolichopus.* Leg spination: tibiae I–IV d1-1-1; metatarsi: I p0-1-0, r1-1-0; II p1-1-0; IV r1-1-2. Embolus long, distally narrow, arched, median apophysis long, with subdistal projection, prongs of retrolateral tibial apophysis relatively narrow, widely separated (figs. 26–28).

FEMALE: Total length 14.1. Coloration as in *S. dolichopus.* Leg spination: tibiae: I, II d0-0-0; III, IV d1-1-1; metatarsi I, II p0-0-0, r0-0-0. Epigynal septum much wider medially than anteriorly or posteriorly, accompanied by two anterolateral thickenings (fig. 29); lateral spermathecal lobes curved anteriorly (fig. 20).

OTHER MATERIAL EXAMINED: CALIFORNIA: **Monterey Co.:** Cone Peak Trail, Los Padres National Forest, Aug. 18, 1957 (T. Cohn, AMNH), 1♀.

DISTRIBUTION: Known only from Monterey County, California (map 1).



Figs. 31–35. *Socalchemmis icenoglei*, new species. **31.** Left male palp, prolateral view. **32.** Same, ventral view. **33.** Same, retrolateral view. **34.** Epigynum, ventral view. **35.** Same, dorsal view.

THE *ICENOGLEI* GROUP

Members of this group are easily separated from those of the *dolichopus* group by the median flange on the posteriorly widened median apophysis of the male palp (as in figs. 33, 38). Females are less easy to separate, but those of the *icenoglei* group tend to have a wider epigynal septum and larger lateral epigynal margins (as in figs. 34, 39, 44) as well as less pronounced anterior spermathecal lobes (as in figs. 35, 40, 45).

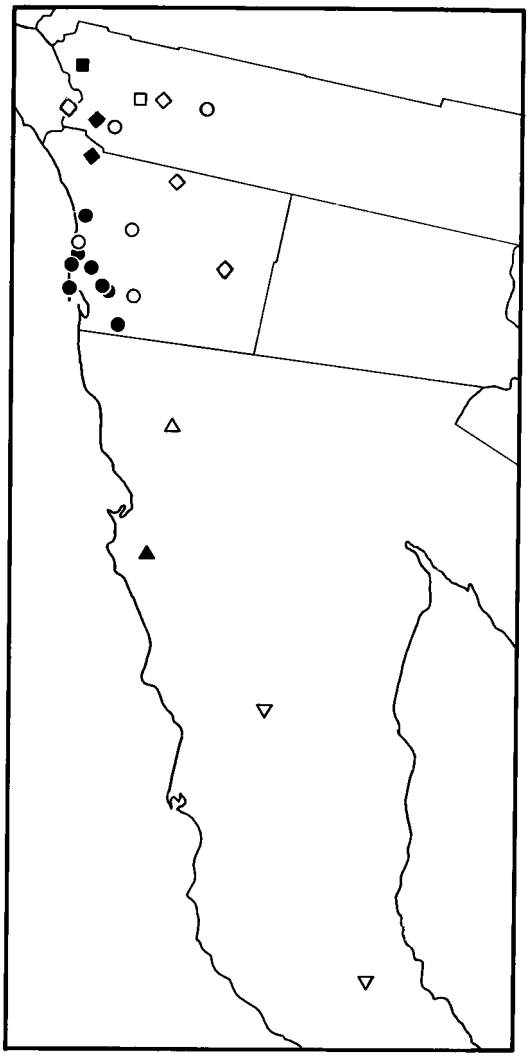
Socalchemmis icenoglei, new species

Figures 31–35; map 3

TYPE: Male holotype taken in building at Winchester, Riverside Co., California (Nov. 3, 1971; W. Icenogle), deposited in AMNH.

ETYMOLOGY: The specific name is a patronym in honor of Mr. Wendell Icenogle, who has collected an impressive series of this apparently very narrowly distributed species.

DIAGNOSIS: Males can easily be recognized by the blunt tip of the embolus (figs. 31, 32),



Map **3.** Southern California and northern Baja California showing the distribution of the *Socalchemmis icenoglei* group with records of *S. icenoglei* (□), *S. cajalco* (■), *S. palomar* (◇), *S. idyllwild* (○), *S. miramar* (●), *S. prenticei* (◆), *S. rothi* (△), *S. williamsi* (▲), and *S. catavina* (▽).

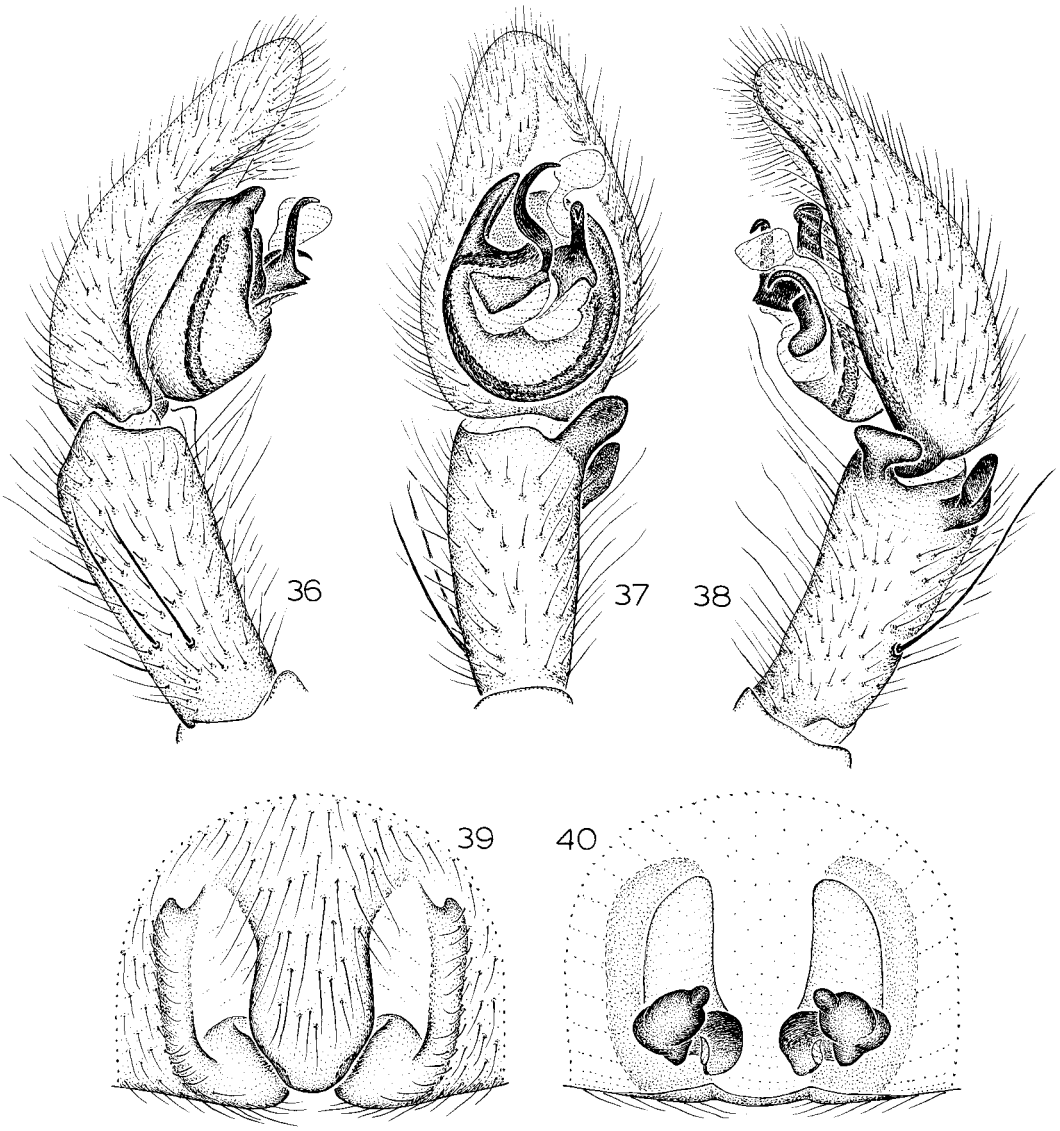
females by the shape of the epigynal septum, which is smoothly narrowed posteriorly (fig. 34).

MALE: Total length 7.2. Coloration as in *S. dolichopus*. Leg spination: femur IV r0-0-2; tibia I d0-0-0, v4-4-1p; metatarsi: I p0-0-0, r1-1-0; II p1-1-0. Embolus very short, blunt, expanded at tip, ventral prong of retrolateral tibial apophysis gradually narrowed toward tip (figs. 31–33).

FEMALE: Total length 9.6. Coloration as in *S. dolichopus*. Leg spination: femur IV r0-0-2; patella III p0-0-0; tibiae: I d0-0-0, p0-0-0, v4-4-1p; II d0-0-0; metatarsi I, II p0-0-0, r0-0-0. Epigynal septum triangular, smoothly narrowed toward posterior tip (fig. 34), tips of spermathecal lobes directed medially (fig. 35).

OTHER MATERIAL EXAMINED: CALIFORNIA: **Riverside Co.:** Double Butte, 1 mi NW Winchester, all collected by W. Icenogle, elev. 1500 ft, Nov. 6, 1967, in building (CAS), 1♂, Nov. 15, 1967, pitfall on hill, coastal sage scrub (WRI), 1♂, Oct. 24, 1968, in building (WRI), 1♂, Oct. 28, 1968, pitfall on hill, coastal sage scrub (WRI), 1♂, Nov. 5, 1969, in building (WRI), 1♀, Nov. 12, 1969, in building (WRI), 1♂, Nov. 25, 1969, in building (WRI), 1♂, Feb. 5, 1970, in building (WRI), 1♀, Feb. 18, 1973, under rock, coastal sage scrub (WRI), 1♀, Mar. 11, 1974, under rock, coastal sage scrub (AMNH), 1♀, Dec. 15, 1974, in building (CAS), 1♂, Dec. 6, 1977, in building (WRI), 1♂, Feb. 18, 1978, under rock (CAS), 1♀, Dec. 12, 1982, in building (WRI), 1♂, Dec. 8, 1984, in building (WRI), 1♂, Jan. 5, 1985, in building (CAS), 1♀, Feb. 6, 1986, in building (WRI), 1♀, May 1, 1986, found dead in black widow web on building (WRI), 1♀, same date, on lawn beside house (WRI), 1♀, Nov. 15, 1986, on wall in building (WRI), 1♂, Mar. 6, 1989, in building (WRI), 1♀, Nov. 8, 1990, in building (CAS), 1♂, Jan. 6, 1993, on wall in building (CAS), 1♂, Mar. 12, 1993, on wall in building (CAS), 1♀ (gravid; laid eggs before Mar. 30, spiderlings began emerging from egg sac Apr. 28), Jan. 12, 1995, pitfall on rocky hillside, coastal sage scrub (WRI), 1♀, Dec. 11, 1997, on wall in building (WRI), 1♂; Double Butte, 1.5 mi NW Winchester, Aug. 23, 1969, elev. 1700 ft (matured before Oct. 11, 1969), in tarantula (abandoned rodent) burrow (W. Icenogle, WRI), 1♂; Winchester, Dec. 4, 1967, in building (W. Icenogle, WRI), 1♀, Dec. 1, 1997, pitfall, coastal sage scrub (W. Icenogle, CAS), 1♂.

DISTRIBUTION: Known only from the Winchester area of Riverside County, California (map 3).



Figs. 36–40. *Socalchemmis cajalco,* new species. **36.** Left male palp, prolateral view. **37.** Same, ventral view. **38.** Same, retrolateral view. **39.** Epigynum, ventral view. **40.** Same, dorsal view.

Socalchemmis cajalco, new species
Figures 36–40; map 3

TYPE: Male holotype taken in pitfall trap in coastal sage scrub on steep, rocky, north-facing canyon side at an elevation of 1000 ft at a site 1.8 mi W of Lake Mathews, just S of Cajalco Road, Riverside Co., California (May 31, 1999; W. Icenogle), deposited in AMNH courtesy of Mr. Icenogle.

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: Males can be recognized by the incised, ventrally projecting tip of the embolar base (fig. 36), females by the very (and almost uniformly) wide epigynal septum (fig. 39).

MALE: Total length 8.1. Coloration as in *S. dolichopus* except abdominal dorsum almost completely covered with gray pigment, paler

over cardiac area. Leg spination: femur IV p0-0-2; metatarsi: I r1-1-0; II p1-1-0. Embolus relatively long, narrow, with protuberant, incised base, ventral prong of retrolateral tibial apophysis greatly widened toward tip (figs. 36–38).

FEMALE: Total length 10.9. Coloration as in male. Leg spination: femora: I p0-1-1, r1-1-1; II p0-2-1; IV p1-1-1, r0-0-1; patella IV p0-0-0; tibiae I, II d0-0-0; metatarsi: I p0-0-0, r0-0-0; II p1-0-0, r1-0-0. Epigynal septum extremely wide, relatively uniformly wide throughout its length (fig. 39); spermathecal lobes directed anteromedially (fig. 40).

OTHER MATERIAL EXAMINED: CALIFORNIA: **Riverside Co.:** 1.8 mi W Lake Mathews, just S Cajalco Road, all collected by W. Icenogle in pitfall traps on steep, rocky, north-facing canyon side, coastal sage scrub, elev. 1000 ft, Apr. 22, 1999 (matured before May 6) (WRI), 1♀, May 15, 1999 (matured before June 11, CAS), 1♂, May 15, 1999 (matured before June 29, WRI), 1♀, July 29, 1999 (CAS), 1♀, Sept. 6–25, 1999 (WRI), 3♀, Jan. 17, 2000 (AMNH), 1♂, Aug. 29, 2000 (WRI), 1♂, Oct. 2, 2000 (AMNH), 1♀.

DISTRIBUTION: Known only from the Lake Mathews area of Riverside County, California (map 3).

Socalchemmis palomar, new species

Figures 41–45; map 3

TYPES: Male holotype and female allotype taken under rotten logs on Mount Palomar, San Diego Co., California (July 25, 1931; W. Ivie), deposited in AMNH.

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: Males can be recognized by the basally narrow embolus, which is incised at about half its length (figs. 41–43), females by the enormously wide, posteriorly narrowed epigynal septum (fig. 44).

MALE: Total length 8.4. Coloration as in *S. cajalco.* Leg spination: femur IV r0-0-2; metatarsi: I p1-0-0, r0-1-0; II p1-1-0. Embolar base narrow, not produced, embolus incised at about half its length, ventral prong of retrolateral tibial apophysis greatly widened toward tip (figs. 41–43).

FEMALE: Total length 14.8. Coloration as in *S. cajalco.* Leg spination: femur I p0-1-1; II r1-1-1; IV p1-1-1, r0-0-2; patella III p0-0-0, r0-0-0; tibiae I, II d0-0-0; metatarsi I, II p0-1-0, r0-0-0. Epigynal septum three times as wide anteriorly as posteriorly (fig. 44); spermathecae crenulated (fig. 45).

OTHER MATERIAL EXAMINED: CALIFORNIA: **Orange Co.:** Santa Ana Mountains, 0.25 mi S Highway 74, 2.5 road mi E San Juan Fire Station (Hot Spring Canyon turnoff), May 26, 2000, pitfalls in live oaks and chaparral on rocky, west-facing canyon side, elev. 1200 ft (W. Icenogle, WRI), 1♂ (matured before June 8, 2000), same, Aug. 15–Sept. 18, 2000, 2♂, July 22–Sept. 23, 2000, 4♀. **Riverside Co.:** Hemet, 0.2 mi S intersection of Cornell and Crest, July 12, 1998 (R. Mason, UCR), 1♂. **San Diego Co.:** Box Canyon, Anza-Borrego Desert State Park, Apr. 14, 1981, under rock (D. Ubick, CAS), 1♀; SW end, Mendenhall Valley, Palomar Mountain, June 3–Aug. 7, 1997, pitfall, forest, elev. 6000 ft (J. George, UCR), 3♂.

DISTRIBUTION: Known only from Orange, southern Riverside, and northern San Diego counties, California (map 3).

Socalchemmis idyllwild, new species

Figures 46–50; map 3

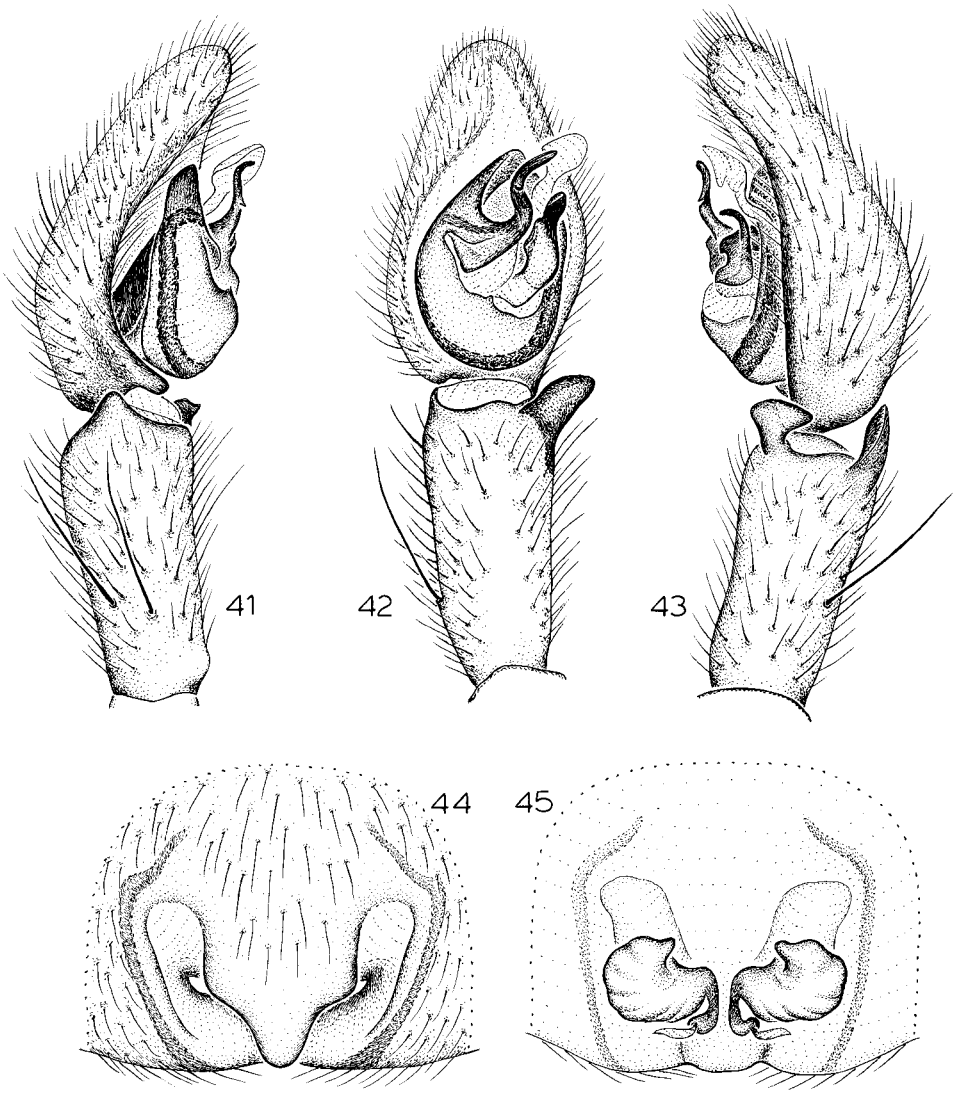
TYPE: Male holotype from Idyllwild, Riverside Co., California (July 7, 1953; W. & J. Gertsch), deposited in AMNH.

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: Males can be recognized by the shape of the embolus, which has a long base that is twice as wide as the distal portion of the structure (figs. 46, 48), females by the tongue-shaped epigynal septum and long lateral epigynal margins (fig. 49).

MALE: Total length 9.0. Coloration as in *S. cajalco.* Leg spination: femora: I p0-1-1; II p1-1-1; IV r0-0-2; metatarsi: I p1-0-0, r1-0-0; II p1-1-0. Embolar base much wider than tip, which forms semicircular cap set obliquely to base, ventral prong of retrolateral tibial apophysis greatly widened toward tip (figs. 46–48).

FEMALE: Total length 10.9. Coloration as in *S. cajalco.* Leg spination: femora: I p0-1-1, r1-1-1; II p1-1-1; IV p1-1-1, r0-0-2; tibiae: I d0-0-0, p0-0-0, r0-0-0; II d0-0-0; metatarsi: I p0-0-0, r0-0-0; II p1-0-0, r0-0-0. Epigynal



Figs. 41–45. *Socalchemmis palomar*, new species. **41.** Left male palp, prolateral view. **42.** Same, ventral view. **43.** Same, retrolateral view. **44.** Epigynum, ventral view. **45.** Same, dorsal view.

septum long, tongue-shaped, lateral epigynal margins long (fig. 49); spermathecae kidney-shaped (fig. 50).

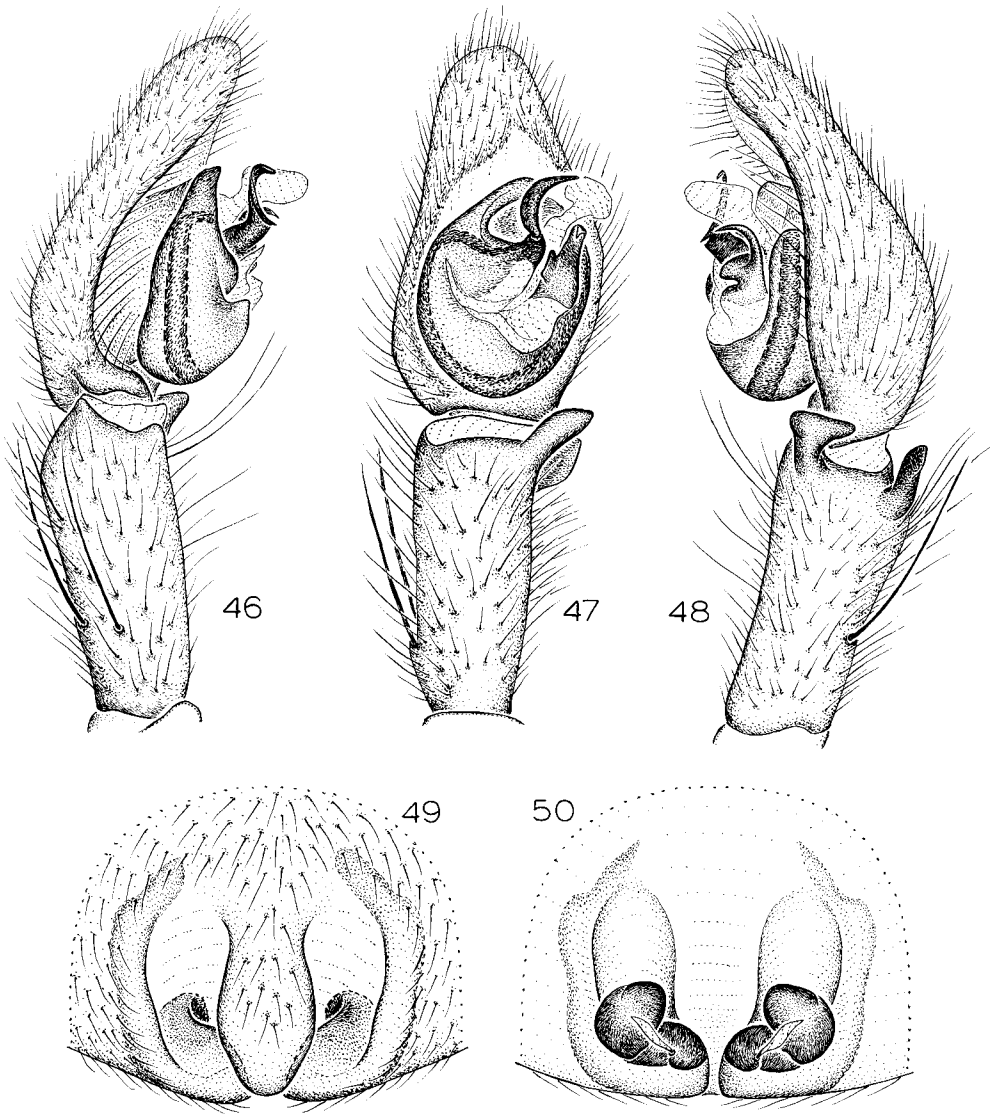
OTHER MATERIAL EXAMINED: CALIFORNIA: **Riverside Co.:** Murrieta, 5 mi W Santa Rosa Plateau, July 31, 1991 (V., B. Roth, CAS), 2♀. **San Diego Co.:** Del Mar, Apr. 21–Aug, 1956–1957 (J. Comstock, AMNH), 9♂, 3♀; San Pasqual Valley, May 17, 1948 (W. Pearce, AMNH), 1♂; Sloan Canyon Road, S Dehesa Road, 8 mi E El Cajon, May 1970, dirt road, chaparral, rocks (C. Croulet, CAS), 1♂.

DISTRIBUTION: Known only from southwestern Riverside and western San Diego counties, California (map 3).

Socalchemmis miramar, new species

Figures 51–55; map 3

TYPE: Male holotype from San Diego, San Diego Co., California (July 18, 1948; D. Shankland), deposited in AMNH.



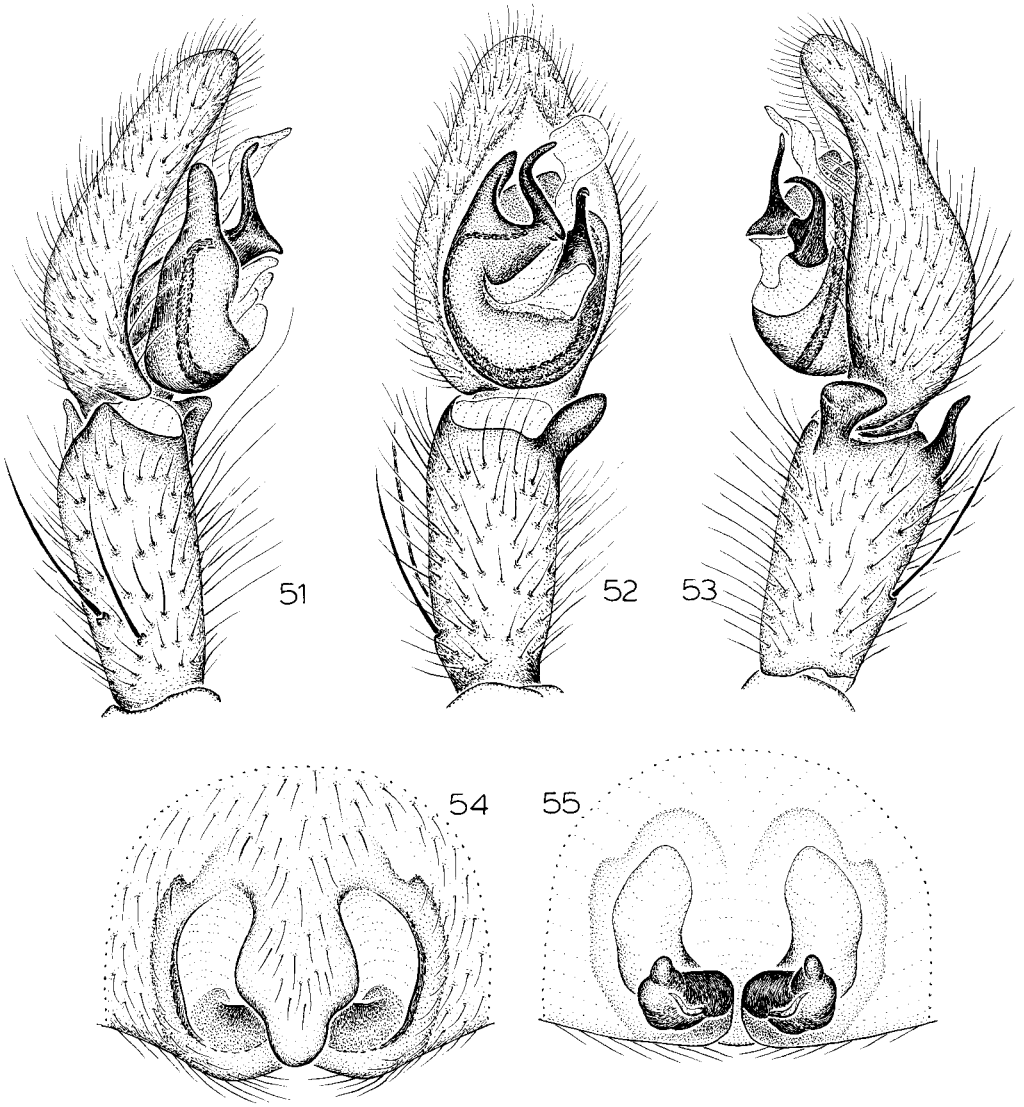
Figs. 46–50. *Socalchemmis idyllwild,* new species. **46.** Left male palp, prolateral view. **47.** Same, ventral view. **48.** Same, retrolateral view. **49.** Epigynum, ventral view. **50.** Same, dorsal view.

ETYMOLOGY: The specific name is a noun in apposition taken from one of the localities at which the species occurs.

DIAGNOSIS: Males can be recognized by the beak-shaped protuberance at the base of the embolus (figs. 51–53), females by the almost trilobate appearance of the epigynal septum and the short spermathecae (figs. 54, 55).

MALE: Total length 8.1. Coloration as in *S. cajalco.* Leg spination: femora: I, II p0-1-1; IV r0-0-2; patellae III, IV p0-0-0; tibia I d0-0-1; metatarsi I, II p0-1-0, r0-1-0. Embolar base with beak-shaped protrusion, ventral prong of retrolateral tibial apophysis short, greatly widened toward tip (figs. 51–53).

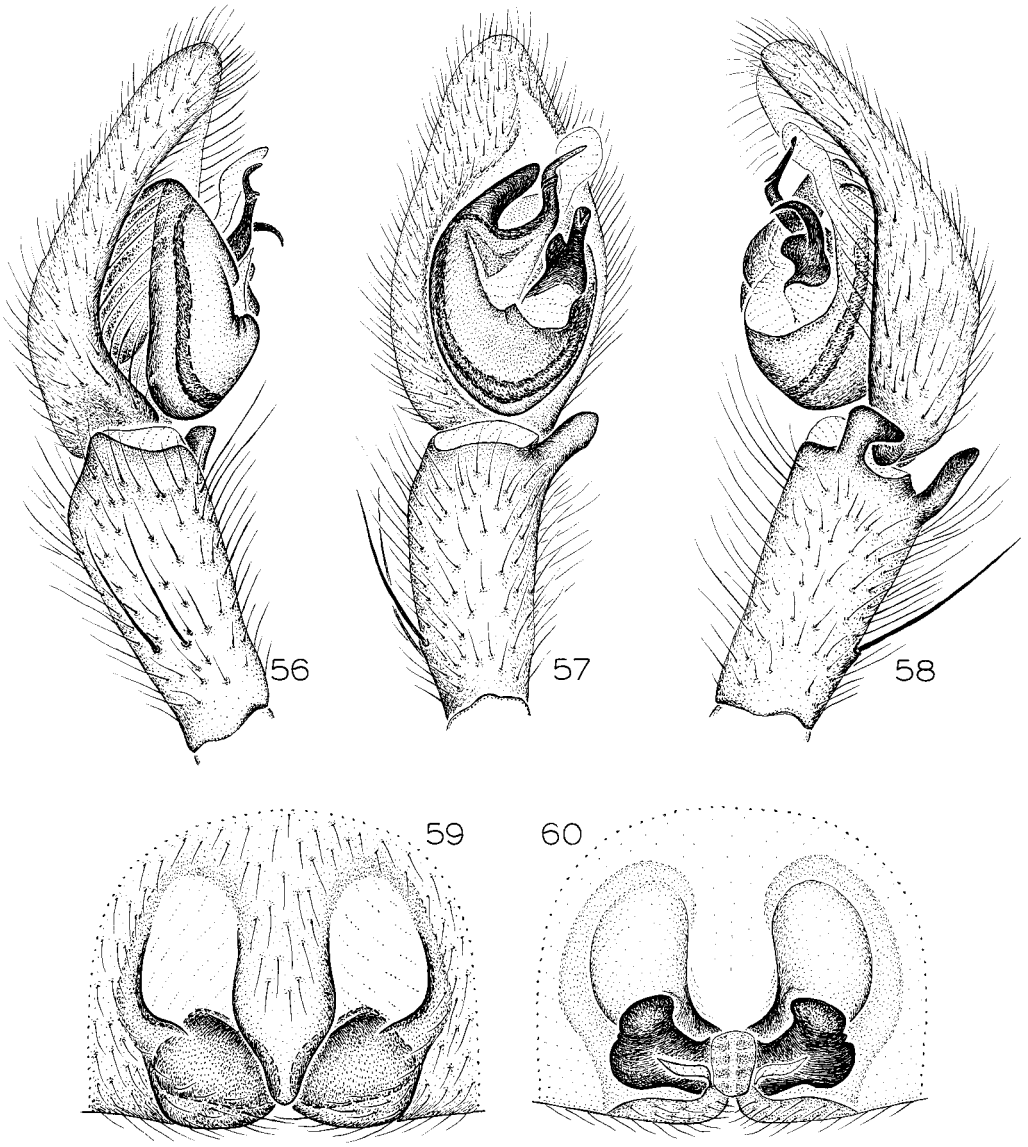
FEMALE: Total length 12.1. Coloration as in *S. cajalco.* Leg spination: femora: I p0-1-1, r1-1-1; IV p1-1-1, r0-0-2; tibiae I, II d0-0-0; metatarsi: I p0-0-0, r0-0-0; II p0-1-0, r0-0-0. Epigynal septum much wider at middle of length than posteriorly, resulting in almost



Figs. 51–55. *Socalchemmis miramar,* new species. **51.** Left male palp, prolateral view. **52.** Same, ventral view. **53.** Same, retrolateral view. **54.** Epigynum, ventral view. **55.** Same, dorsal view.

trilobate appearance (fig. 54); spermathecae relatively short, compact (fig. 55).

OTHER MATERIAL EXAMINED: CALIFORNIA: **San Diego Co.:** ''La Cresta'', probably La Costa (and mapped as such), June 8, 1947 (W. Pearce, AMNH), 1♂; La Jolla, Sept. 9–Nov., 1999, in house (M. Metzger, UCR), 6♀; La Mesa, Apr. 18, 1970 (R. Sparhawk, WRIK), 1♂; Lower Otay County Park, Aug. 5, 1976, under rock (D. Faulkner, WRIK), 1♀; Miramar Naval Air Station, Aug. 23–Sept. 1, 1995, pitfalls, coastal sage scrub (R. Redak, CAS, WRIK), 2♂, 3♀; Point Loma, 1020 Devonshire Drive, July 12, 1975, in house (S. Johnson, WRIK), 1♀, Aug. 1, 1975, in house (S. Johnson, WRIK), 1♂, Mar. 5–May 27, 1977, in house (S. Johnson, WRIK, CAS), 2♂; San Diego, near San Diego State Univ., no date (WRIK), 2♀, no date, pitfall (H. Moore, WRIK), 1♂, May 1969 (B. Kaston, WRIK), 8♀, Sept. 6, 1969, in house (B. Kaston, WRIK), 1♂, Aug.–Oct.



Figs. 56–60. *Socalchemmis prenticei,* new species. **56.** Left male palp, prolateral view. **57.** Same, ventral view. **58.** Same, retrolateral view. **59.** Epigynum, ventral view. **60.** Same, dorsal view.

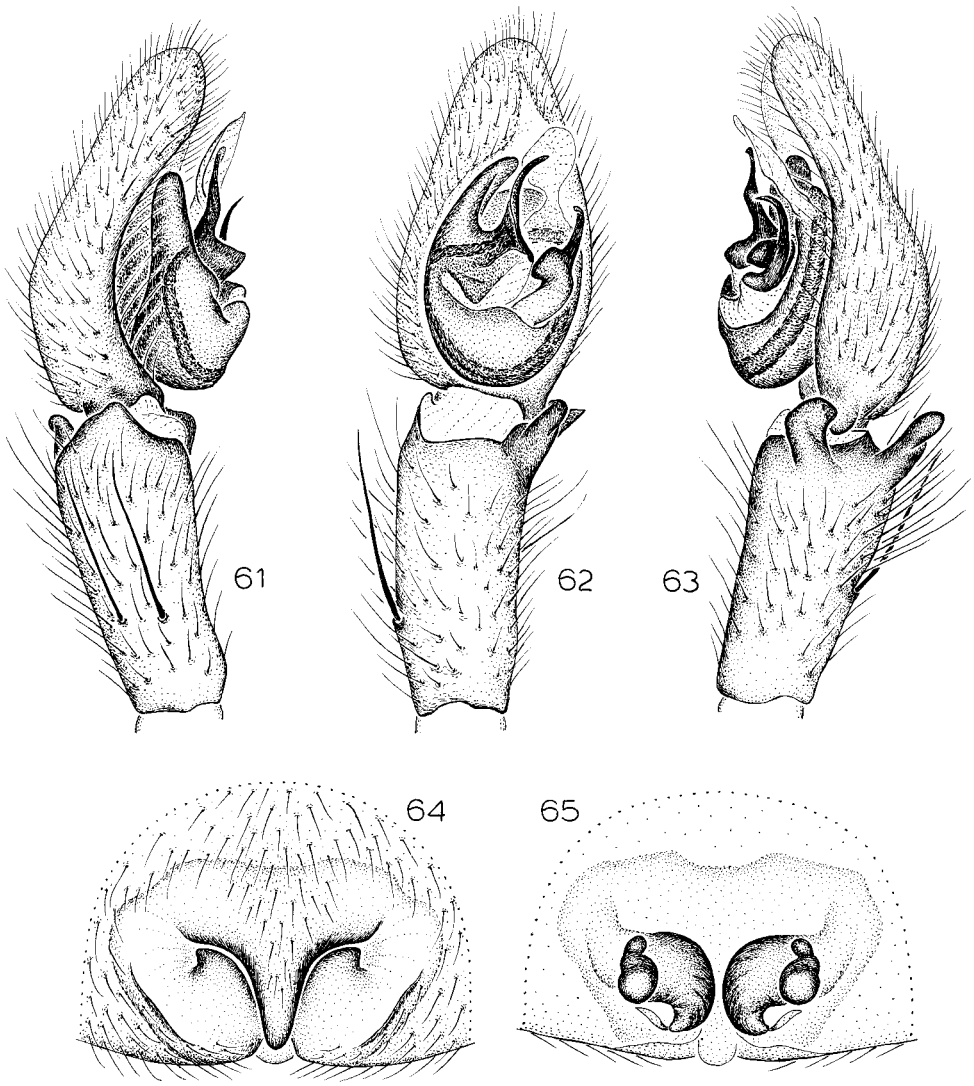
1970–1971, pitfalls (B. Kaston, WRIK, CAS), 12♀, Sept. 26, 1970, in house (B. Kaston, CAS), 1♀, Oct. 4, 1971, in house (WRIK), 2♀, Apr. 7, 1972, in house (B. Kaston, WRIK), 1♂, Aug. 4, 1977, in house (WRIK), 1♂; Torrey Pines State Reserve, Sept. 30, 1996, pitfall (J. King, UCR), 1♀.

DISTRIBUTION: Known only from southwestern San Diego County, California (map 3).

Socalchemmis prenticei, new species
Figures 56–60; map 3

TYPE: Male holotype taken in pitfall trap in coastal sage scrub on Marine Corps Base Camp Pendleton, San Diego Co., California (May 1996; T. Prentice), deposited in AMNH courtesy of Mr. Prentice and Dr. R. Redak of the University of California, Riverside.

ETYMOLOGY: The specific name is a pa-



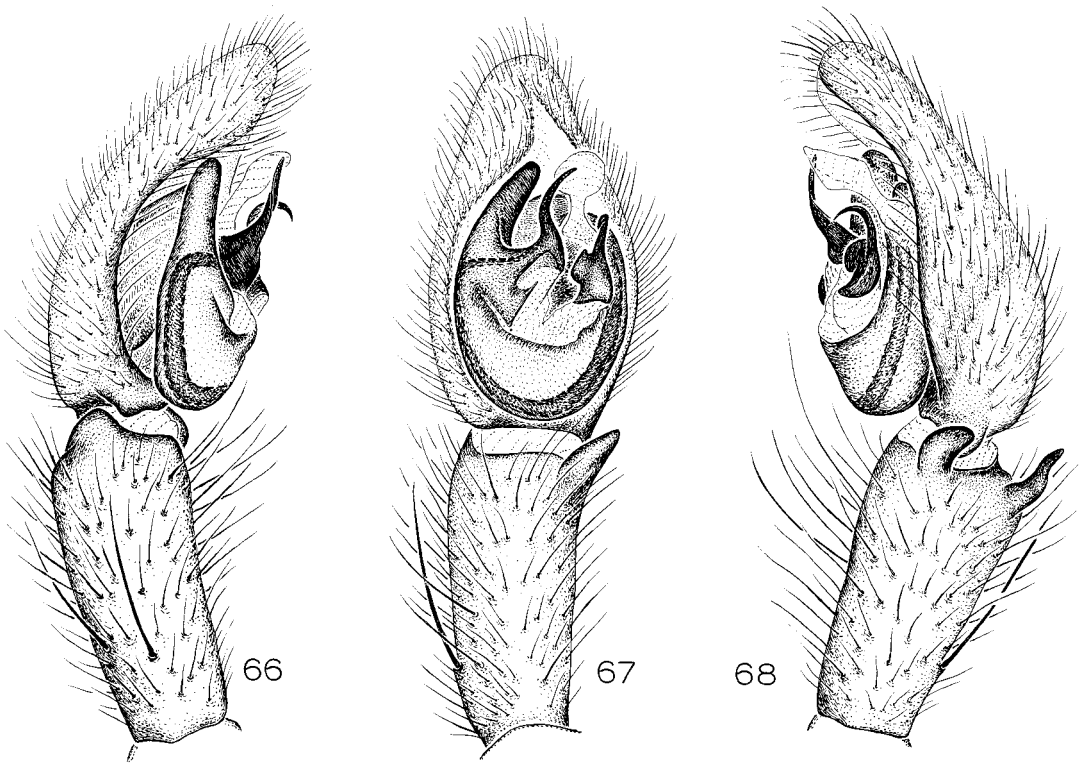
Figs. 61–65. 61–63. *Socalchemmis rothi*, new species. 64, 65. *Socalchemmis cruz*, new species. **61.** Left male palp, prolateral view. **62.** Same, ventral view. **63.** Same, retrolateral view. **64.** Epigynum, ventral view. **65.** Same, dorsal view.

tronym in honor of the collector of the type and many other important *Socalchemmis* specimens.

DIAGNOSIS: Males can be recognized by the elongated embolar base, which is sharply distinguished from the relatively short embolar tip by an oblique constriction (figs. 56–58), females by the short, wide, anteriorly situated spermathecal lobes and medially fused spermathecal receptacles (fig. 60).

MALE: Total length 7.2. Coloration as in *S. dolichopus.* Leg spination: femora: I p0-1-1; II p1-1-1; IV r0-0-2; tibia I d0-0-1; metatarsi: I r1-1-0; II p1-1-0. Embolar base long, narrow, relatively straight, separated from tip by narrow, obliquely directed excavation, ventral prong of retrolateral tibial apophysis short, greatly widened toward tip (figs. 56–58).

FEMALE: Total length 8.0. Coloration as in *S. dolichopus.* Leg spination: femora: I p0-1-1, r0-2-1; IV p1-1-1, r0-0-1; tibia I d0-0-1; metatarsi I, II p0-0-0, r0-0-0. Epigynal septum not expanded medially, smoothly



Figs. 66–68. *Socalchemmis williamsi,* new species. **66.** Left male palp, prolateral view. **67.** Same, ventral view. **68.** Same, retrolateral view.

narrowed posteriorly (fig. 59); spermathecae fused across midline by membranous duct, spermathecal lobes relatively short, wide (fig. 60).

OTHER MATERIAL EXAMINED: CALIFORNIA: **Riverside Co.:** Wildomar, Clinton Keith exit, 3 mi into foothills, Nov. 23, 1996, in house (R. Cole, UCR), 1♀. **San Diego Co.:** Marine Corps Base Camp Pendleton, May 15–22, 1995, pitfall, coastal sage scrub (R. Redak, CAS), 1♀, Aug. 14–21, 1995, pitfall, coastal sage scrub (R. Redak, UCR), 1♂, Aug. 31, 1995 (T. Prentice, CAS), 1♂.

DISTRIBUTION: Known only from northwestern San Diego County, and adjacent southwestern Riverside County, California (map 3).

Socalchemmis rothi, new species

Figures 61–63; map 3

TYPE: Male holotype taken in an oak grove 40 mi S of Tecate, Baja California Norte, Mexico (Nov. 10, 1957; V. Roth), deposited in AMNH.

ETYMOLOGY: The specific name is a patronym in honor of the collector of the holotype.

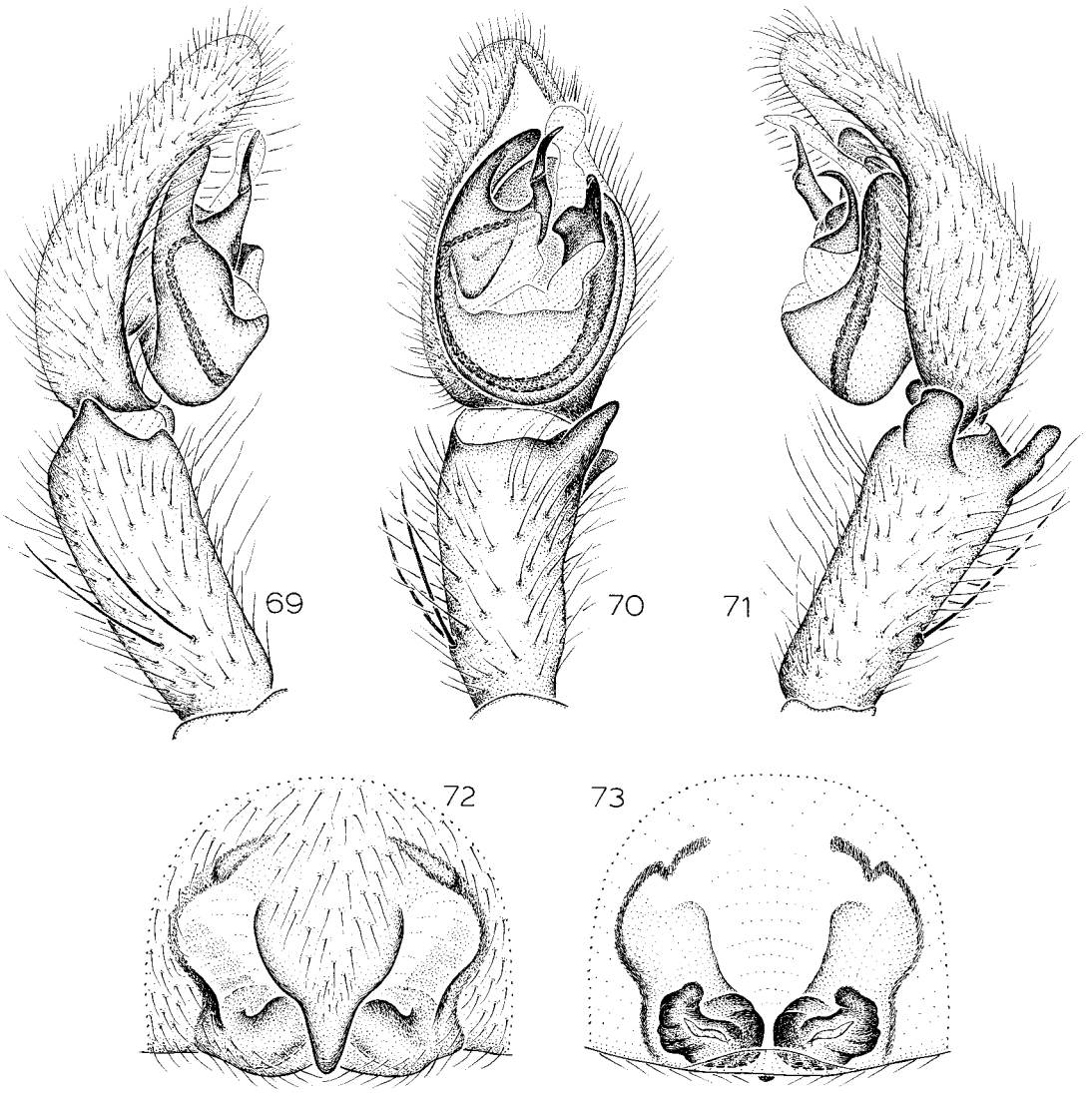
DIAGNOSIS: Males resemble those of *S. miramar* in having a strongly protuberant embolar base, but differ in having the tip of the protuberance wider and in having the ventral prong of the retrolateral tibial apophysis much less expanded at its tip (fig. 63).

MALE: Total length 9.1. Coloration as in *S. cajalco.* Leg spination (legs I missing): femora: II p1-1-1; IV r0-0-2; metatarsi II p1-1-0. Embolar base with large, rectangular protrusion, ventral prong of retrolateral tibial apophysis not widened distally (figs. 61–63).

FEMALE: Unknown.

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Known only from Baja California Norte, Mexico (map 3).



Figs. 69–73. *Socalchemmis catavina,* new species. **69.** Left male palp, prolateral view. **70.** Same, ventral view. **71.** Same, retrolateral view. **72.** Epigynum, ventral view. **73.** Same, dorsal view.

Socalchemmis williamsi, new species
Figures 66–68; map 3

TYPE: Male holotype taken 4 mi W of Santo Tomás, Baja California Norte, Mexico (July 8, 1973; S. Williams, K. Blair), deposited in CAS.

ETYMOLOGY: The specific name is a patronym in honor of one of the collectors of the holotype.

DIAGNOSIS: Males resemble those of *S. catavina* but have a narrower embolar base and a narrower ventral prong of the retrolateral tibial apophysis (figs. 66–68).

MALE: Total length 8.0. Coloration as in *S. cajalco.* Leg spination: femora: I p0-1-1; II p1-1-1; IV r0-0-2; metatarsi: I r1-1-0; II p1-1-0. Embolar base relatively narrow, scarcely wider than embolar tip, ventral prong of retrolateral tibial apophysis short, narrow, bent (figs. 66–68).

FEMALE: Unknown.

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Known only from Baja California Norte, Mexico (map 3).

Socalchemmis catavina, new species

Figures 69–73; map 3

TYPE: Male holotype taken beating palm thatch in palm canyon at Cataviña, Baja California Norte, Mexico (Jan. 15, 1981, matured Mar. 21, 1982; D. Ubick), deposited in CAS.

ETYMOLOGY: The specific name is a noun in apposition taken from the type locality.

DIAGNOSIS: Males resemble those of *S. williamsi* but have a wider embolar base and a wider ventral prong of the retrolateral tibial apophysis (figs. 66–68); females have a distinctively goblet-shaped epigynal septum and sinuous posterior epigynal margins (fig. 72).

MALE: Total length 7.7. Coloration as in *S. cajalco.* Leg spination: femora: I p0-1-1; IV r0-0-2; metatarsi: I r1-1-0; II p1-1-0. Embolar base wider than embolar tip, ventral prong of retrolateral tibial apophysis relatively short, wide, not expanded distally (figs. 66–71).

FEMALE: Total length 10.5. Coloration as in *S. cajalco.* Leg spination: femora: I p0-1-1; IV r0-0-2; tibiae I, II d0-0-0; metatarsi: I p0-0-0, r0-0-0; II p1-0-0, r0-0-0. Epigynal septum relatively wide anteriorly, greatly narrowed posteriorly, appearing goblet-shaped, posterior epigynal margins sinuous (fig. 72); spermathecae relatively wide (fig. 73).

OTHER MATERIAL EXAMINED: MEXICO: **Baja California Norte:** Sierra San Pedro Mártir, 5 mi SW La Corona gate, Aug. 20, 1978, elev. 6000 ft (M. Bentzien, CAS), 1♀.

DISTRIBUTION: Known only from Baja California Norte, Mexico (map 3).

REFERENCES

Chamberlin, R. V.
1919. New Californian spiders. J. Entomol. Zool. Claremont 12: 1–17.

Platnick, N. I.
1999. A revision of the Appalachian spider genus *Liocranoides* (Araneae: Tengellidae). Am. Mus. Novitates 3285: 13 pp.

Roth, V. D.
1985. Spider genera of North America. Gainesville, FL: Am. Arachnol. Soc., no continuous pagination.
1993. Spider genera of North America, third edition. Gainesville, FL: Am. Arachnol. Soc., 203 pp.

Recent issues of the *Novitates* may be purchased from the Museum. Lists of back issues of the *Novitates* and *Bulletin* published during the last five years are available at World Wide Web site http://nimidi.amnh.org. Or address mail orders to: American Museum of Natural History Library, Central Park West at 79th St., New York, NY 10024. TEL: (212) 769-5545. FAX: (212) 769-5009. E-MAIL: scipubs@amnh.org