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A Revision of the Spider Genus *Sergiolus* (Araneae, Gnaphosidae)

NORMAN I. PLATNICK¹ AND MOHAMMAD U. SHADAB²

ABSTRACT

A cladogram, key, diagnoses, descriptions, illustrations, and maps are provided for the 18 known species of the North American spider genus *Sergiolus*. The synonymy of *Sergiolus* with the European genus *Poecilochroa* is disclaimed. *Caridrassus magnus* Bryant is transferred to *Sergiolus*. Fourteen specific names are newly synonymized: *Poecilochroa inconspicua* Bryant with *Gnaphosa sericata* (L. Koch); *Sergiolus lesserti* Schenkel with *Herpyllus hesperolus* Chamberlin; *S. famulus* Chamberlin and *S. meretrix* Chamberlin, both with *S. minutus* (Banks); *S. clericus* Chamberlin and *S. tribolus* Chamberlin, both with *S. cyaneiventris* Simon; *S. bellior* Chamberlin with *S. bicolor* Banks; *P. abjecta* Chamberlin and

P. montanoides Schenkel, both with *S. montanus* (Emerton); and *S. atomisticus* Chamberlin, *S. fruitanus* Chamberlin, *S. bebius* Chamberlin, *S. clarus* Chamberlin, and *P. pananus* (Chamberlin), all with *S. angustus* (Banks). The males of *S. bicolor* Banks, *S. stella* Chamberlin, and *S. tennesseensis* Chamberlin, and the females of *S. decoratus* Kaston and *S. unimaculatus* Emerton are described for the first time. Four new species are described: *S. kastoni* from Florida, *S. gertschi* from California and Baja California, *S. iviei* from the northwestern United States and southwestern Canada, and *S. guadalupensis* from Guadalupe Island off the coast of Baja California.

INTRODUCTION

This paper, the thirteenth in a series on the spider family Gnaphosidae, contains a revision of the North American species previously placed in *Sergiolus* Simon and *Poecilochroa* Westring by various authors. The generic position of these gnaphosids has been problematical since Simon (1891) orig-

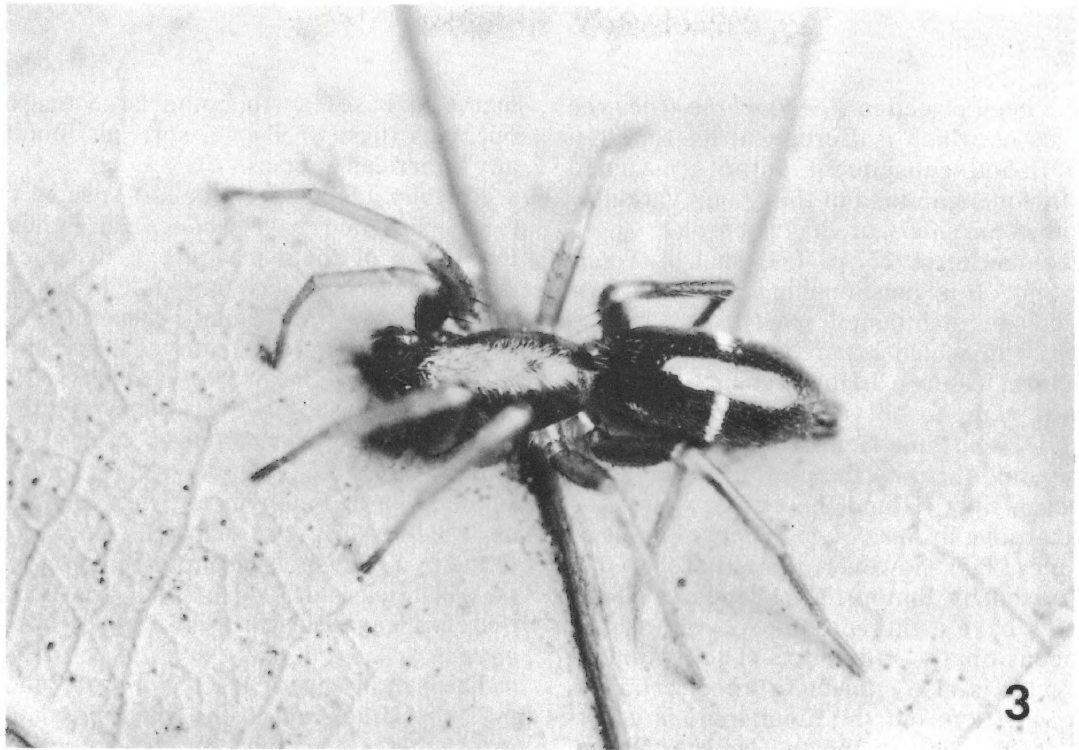
inally described *Sergiolus* for two species, *Herpyllus variegatus* Hentz of eastern North America (the type species) and *Sergiolus elegans* Simon of St. Vincent. These two species are not closely related; the latter was transferred to *Cesonia* Simon by Platnick and Shadab (1980b). The former species had

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FIGS. 1, 2. *Sergiolus capulatus* (Walckenaer), specimens from Massachusetts; photographs by H. W. Levi. 1. Male. 2. Female.



FIGS. 3, 4. *Sergiolus bicolor* Banks, specimens from Michigan; photographs by H. K. Wallace. 3. Male. 4. Female.

earlier been placed in *Poecilochroa* (the type species of which is European) by Emerton (1890), and subsequent authors assigned North American taxa of this group variously to either *Sergiolus* or *Poecilochroa*.

Chamberlin (1922, p. 151) said of *Sergiolus* that "It is questionable whether this genus can be maintained apart from *Poecilochroa* with which it agrees closely in most structural features." However, of the species then thought to be valid, he placed two in *Poecilochroa* and 12 in *Sergiolus*, claiming to separate them by the presence of a dorsal spine on tibia III and the absence of a thoracic groove in *Sergiolus*. As pointed out by Bryant (1935), however, the latter character (first used by Simon) is inadequate; all the species have a thoracic groove, although it is occasionally indistinct. The spination character is also subject to minor intraspecific variation, but the tibial spine is generally absent only in the two species Chamberlin placed in *Poecilochroa*.

This separation of the North American forms into two genera was maintained by later authors (although some, such as Kaston, 1948, questioned its advisability) until Ubick and Roth (1973), without explanation, synonymized *Sergiolus* with *Poecilochroa*. We agree with Ubick and Roth's implications that all the American species belong to a single monophyletic group, that the two species Chamberlin placed in *Poecilochroa* do not constitute the sister group of the remaining taxa, and that the separation of just those two species into a different genus is therefore unacceptable. We do not agree, however, with the implication that the monophyletic group including all the American species also includes the type species of *Poecilochroa*, *P. variana* (C. L. Koch).

The species here placed in *Sergiolus* show a peculiar type of palpal morphology, in which both the embolus and median apophysis are twisted around a large and membranous conductor (as in fig. 10). This palpal arrangement does not occur in *P. variana*, which has a greatly enlarged embolar base and lacks a conductor (figs. 6, 7). Similarly, females of *P. variana* have modified sper-

mathecal bases surrounding large epigynal openings (figs. 8, 9) of a sort not found in any American species.

A study of other European species currently assigned to *Poecilochroa* indicates that some of them may prove to be close relatives of *Sergiolus*; it is not impossible, therefore, that the genitalic structure of *P. variana* and its close relatives represents a modification of the *Sergiolus* pattern. Even if this is the case, however, the synonymy of *Sergiolus* with *Poecilochroa* could be defended only if the American genus *Nodocion* Chamberlin is synonymized with that genus as well, for the type of palpal morphology found in *Sergiolus* is also found in *Nodocion* (see Platnick and Shadab, 1980a), which we therefore regard as the sister group of *Sergiolus*.

The synonymy of *Nodocion*, not undertaken by Ubick and Roth, seems premature, as (1) there is no evidence that any of the species of *Nodocion* are more closely related to species of *Sergiolus* than to each other, and (2) all the species of *Sergiolus* are united by the presence of a fundamentally transverse abdominal color pattern (as in figs. 1-4) that is highly unusual among gnaphosids and is not found in *Nodocion* (and also is not homologous with the fundamentally longitudinal abdominal color pattern of *Cesonia* species; see Platnick and Shadab, 1980b, for a discussion of these patterns and their modifications). We therefore reject the synonymy of *Sergiolus* with *Poecilochroa* proposed by Ubick and Roth (1973), while agreeing with them that all the American species are congeneric. Further resolution of the intercontinental affinities of these spiders must await a worldwide survey of the genera belonging to the *Herpyllus* complex (see Platnick and Shadab, 1977).

A more detailed resolution of the interrelationships among the American species is possible, however, with 15 informative groups (shown in fig. 5) being supported by the presence of characters unique to some set of species within the *Sergiolus-Nodocion* lineage. Group 1, the genus *Sergiolus*, is supported by the abdominal color pattern

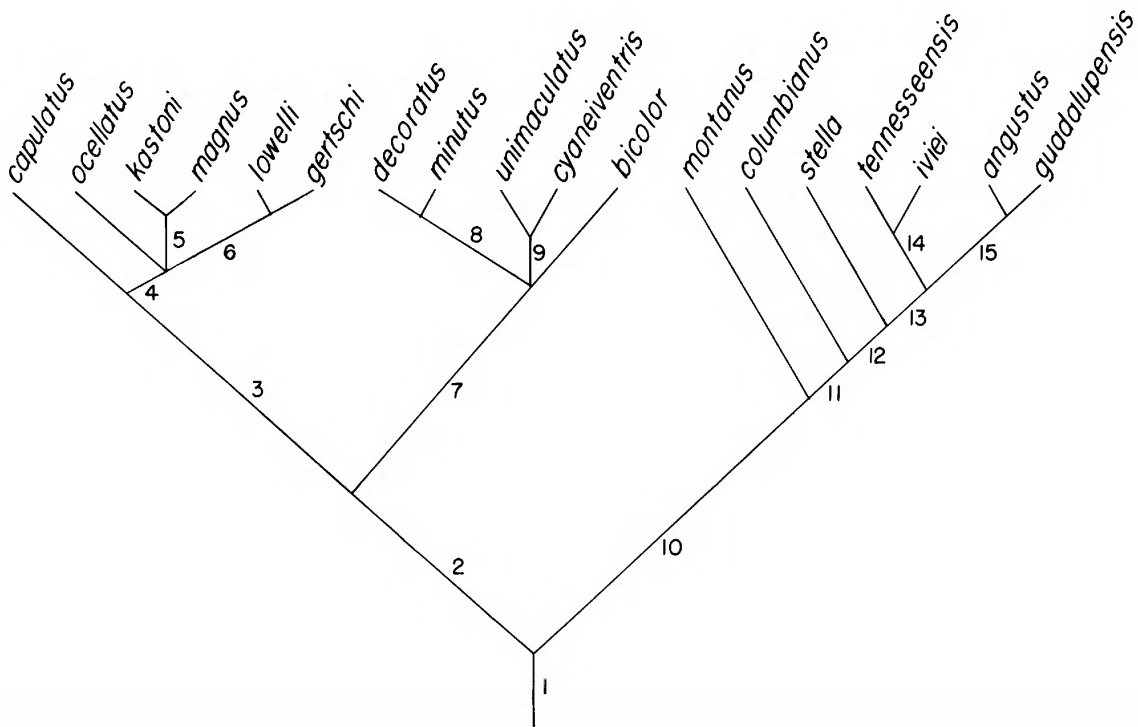


FIG. 5. Cladogram of *Sergiolus* species; numbers refer to characters discussed in text.

mentioned above; group 2 by the bilaterally margined, flattened epigyna of females (as in figs. 16, 70); group 3 by a T-shaped white bar connected to the middle transverse white abdominal band (as in figs. 1, 12), sometimes reduced to a pair of spots between the middle and anterior bands (as in figs. 18, 30); group 4 by the elongated tip of the retrolateral tibial apophysis (as in figs. 21, 39); group 5 by the elongate tip of that apophysis being sickle-shaped (figs. 11, 27); group 6 by the truncate distal edge of the elongate tip of that apophysis (figs. 33, 39); group 7 by the very broad tip of that apophysis (as in figs. 45, 69); group 8 by the median longitudinal dark stripe on the abdominal venter (figs. 43, 49) and the oblique anterior epigynal margins (figs. 46, 52); group 9 by the greatly narrowed and elongated abdomen (figs. 54, 55, 60, 61) and tiny epigynum (figs. 58, 64); group 10 by the enlarged and ventrally protuberant embolus (as in figs. 73, 106); group 11 by the presence

of an anterior epigynal hood (as in figs. 81, 107); group 12 by the elongated epigynum, with the hood advanced to near the tip of the spermathecae or further anteriorly (as in figs. 86, 107); group 13 by the depressed epigynal atrium (as in figs. 92, 107) and recurved embolar tip (as in figs. 91, 106); group 14 by the narrowed tip of the retrolateral tibial apophysis (figs. 91, 96) and triangular, continuously bordered epigynal atrium (figs. 92, 97); and group 15 by the median longitudinal dark stripe on the abdominal dorsum (figs. 99, 104; apparently formed by the fusion of medially broken middle and posterior transverse white bands, like those of figure 94, to the anterior transverse white band), the distally elongated conductor and distally twisted embolus (figs. 101, 106), and the incised tip of the retrolateral tibial apophysis (figs. 100, 105).

The species of *Sergiolus* can usually be distinguished by details of both the genitalia

and color pattern, but occasionally the male or female of one species is difficult to distinguish from the male or female of another by genitalic characters alone (in these cases, the other sex does have distinctive genitalia), and four species (*S. bicolor*, *S. montanus*, *S. columbianus*, and *S. angustus*) show extensive intraspecific variation in color pattern. Of interest is that in each of the four species, specimens from more northern parts of the range are generally darker than specimens from further south. For example, in *S. bicolor*, males are known from Manitoba, Michigan, Ohio, Georgia, and Florida; in all but Florida specimens, the carapace, sternum, coxa I, trochanter I, femora I–IV, tibia IV, and metatarsus IV are all darkened, and the abdomen is dark except for a single medially broken middle transverse white band (fig. 3). In males from Florida, and in females from Florida, Georgia, Louisiana, and Texas, the carapace, sternum, and most or all of the leg segments are light, as is the entire anterior part of the abdomen, both dorsally and ventrally (figs. 66, 67). Similarly, specimens of the widespread species *S. montanus* (map 8) are usually colored much like those of northern *S. bicolor*, but individuals with a light cephalothorax and appendages and more extensive light markings on the abdominal dorsum are known from Oregon, Idaho, Utah, Colorado, and California (where they become proportionately more common toward the southern end of the state).

With only a few exceptions, species of *Sergiulus* are poorly represented in collections; hence it is not surprising that much of the literature on the genus is marred with misidentifications, synonyms, and mismatched sexes. Based on currently available material, the genus is generally restricted to temperate North America, with one species extending into northern Canada, five into Mexico, one into the West Indies, and one each endemic to the islands of Guadalupe and Hispaniola. A few South American species are currently assigned to *Poecilochroa*, but none seem to belong either to that genus or to *Sergiulus*; their placement must await a revision of the Neotropical members

of the *Herpyllus* complex. In view of the rarity of most species in collections, we have provided below complete locality data for all but the most common species. The format of the descriptions and standard abbreviations of morphological terms follow those used in Platnick and Shadab (1975). Unless another depository is indicated, all specimens mentioned below are in the American Museum of Natural History. All measurements given are in millimeters.

We are indebted to the curators and collectors listed below for the loan and exchange of *Sergiulus* specimens, and to Dr. C. D. Dondale for reviewing a draft of the manuscript.

COLLECTIONS EXAMINED

- AJP, Mr. A. J. Penniman
 AMNH, American Museum of Natural History, including the Cornell University Collection and material made available by Dr. W. J. Gertsch
 BJK, Dr. B. J. Kaston
 BRV, Dr. B. R. Vogel
 CAS, California Academy of Sciences, Dr. D. H. Kavanaugh
 CDA, California Department of Food and Agriculture, Dr. M. J. Moody
 CNC, Canadian National Collection, Dr. C. D. Dondale
 DEB, Mr. D. E. Bixler
 DPC, Mr. D. P. Carroll
 DU, Mr. D. Ubick
 EPC, Exline-Peck Collection, Dr. W. B. Peck
 FSCA, Florida State Collection of Arthropods, including the H. K. Wallace Collection, Dr. G. B. Edwards
 JAB, Dr. J. A. Beatty
 JEC, Dr. J. E. Carico
 JSH, Mr. J. S. Heiss
 MCZ, Museum of Comparative Zoology, Dr. H. W. Levi
 MNHN, Muséum National d'Histoire Naturelle, Dr. M. Hubert
 MSU, Michigan State University, Dr. R. L. Fischer
 NMB, Naturhistorisches Museum Basel, Dr. E. Sutter
 NVH, Dr. N. V. Horner
 OSU, Ohio State University, Dr. C. A. Triplehorn
 REL, Dr. R. E. Leech

UCB, University of California at Berkeley, Dr.
E. Schlinger and Mr. C. Griswold
UCR, University of California at Riverside, Mr.
S. Frommer
VDR, Mr. V. D. Roth
VFL, Mr. V. F. Lee
WAS, Dr. W. A. Shear
WDF, Dr. W. D. Fronk
WES, Mr. W. E. Sedgwick
WLT, Dr. W. L. Tietjen
WRI, Mr. W. R. Icenogle

SERGIOLUS SIMON

Sergiolus Simon, 1891, p. 573 [type species by original designation *Herpyllus variegatus* Hentz = *Sergiolus capulatus* (Walckenaer)]. Roewer, 1954, p. 438. Bonnet, 1958, p. 4032.

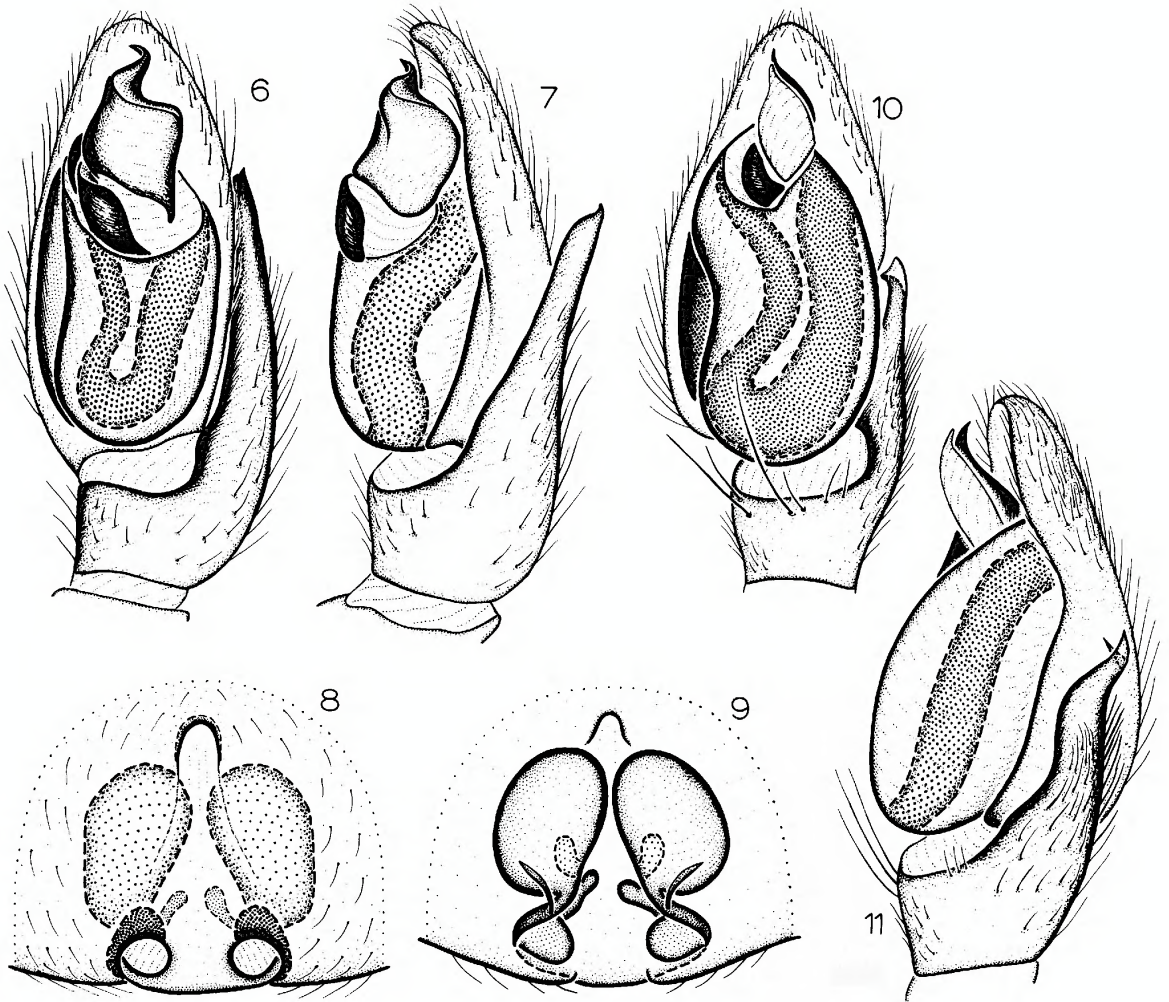
DIAGNOSIS: Specimens of *Sergiolus* can be distinguished from those of all other North American gnaphosid genera except *Nodocion* by the absence of retromarginal cheliceral teeth and presence of a promarginal cheliceral carina, by the median apophysis and embolus being twisted around a membranous conductor (as in figs. 10, 11), and by the globose spermathecae separated by short blind median ducts (as in fig. 17). They can be distinguished from specimens of *Nodocion* by having at least one transverse white band (sometimes broken medially) on the abdominal dorsum (as in figs. 1-4).

DESCRIPTION: Total length 3.3-9.1. Carapace oval in dorsal view, gradually narrowed anteriorly, widest between coxae II and III, orange to dark brown with recumbent and erect black setae and lateral recumbent white scales; cephalic area not elevated, thoracic groove longitudinal. From above, both eye rows recurved; from front, anterior row slightly recurved, posterior row recurved; AME circular, PME irregularly oval, ALE and PLE oval; eyes subequal in size, laterals of both rows often slightly larger than medians; AME separated by roughly their diameter, by their radius or less from ALE; PME usually separated by more than their diameter, closer to PLE; MOQ usually slightly wider behind than in front and than long. Clypeal height twice the AME diame-

ter. Chelicerae without retromarginal teeth, with low promarginal carina. Endites elongate, obliquely depressed; labium broadly triangular; sternum long, narrow, with sclerotized extensions to coxae; posterior coxae almost contiguous. Leg formula 4123. Typical leg spination pattern (only surfaces bearing spines listed): femora: I d1-1-1, p0-0-1; II d1-1-1, p0-1-1; III d1-1-1, p0-1-1, r0-1-1; IV d1-1-1, p0-0-1, r0-0-1; patella III p0-1-0, r0-1-0; tibiae: I v0-0-1p; II v0-1p-1p; III d1-0-0, p1-1-1, v2-2-2, r0-1-1; IV p1-1-1, v2-2-2, r0-1-1; metatarsi: I, II v1p-0-0; III p1-2-2, v2-0-2, r1-1-2; IV p1-2-2, v2-2-2, r1-2-2. Legs light orange, often with some segments darkened; tarsi and metatarsi with light scopulae and dorsal trichobothria; tarsi with two dentate claws and claw tufts; trochanters very shallowly notched; metatarsal preening comb lacking. Abdomen usually dark with up to four transverse white bands; dark and light areas bearing dark and light scales; transverse bands sometimes broken medially; males with very long anterior scutum; six spinnerets, anteriors widely separated, usually darkened. Palp with short curved median apophysis and terminal embolus twisted around membranous conductor. Epigynum with or without hood and atrium; spermathecae globose, with internal protrusions and blind median ducts.

MISPLACED SPECIES: Examination of the female holotype of *Poecilochroa inconspicua* Bryant (1948, p. 408) from Haiti (MCZ) indicates that the name is a junior synonym of *Gnaphosa sericata* (L. Koch), a species revised by Platnick and Shadab (1975, p. 61, figs. 143-149); **NEW SYNONYMY.** Examination of the female holotype of *Sergiolus lesserti* Schenkel (1950, p. 42) from California (NMB) indicates that the name is a junior synonym of *Herpyllus hesperolus* Chamberlin, a species revised by Platnick and Shadab (1977, p. 23, figs. 63-68); **NEW SYNONYMY.**

UNCERTAIN NAMES: *Poecilochroa convictrix* Simon (1909, p. 737) from Mexico and *Sergiolus australianus* Simon (1908, p. 398) from Australia were both based on juvenile specimens and are therefore considered



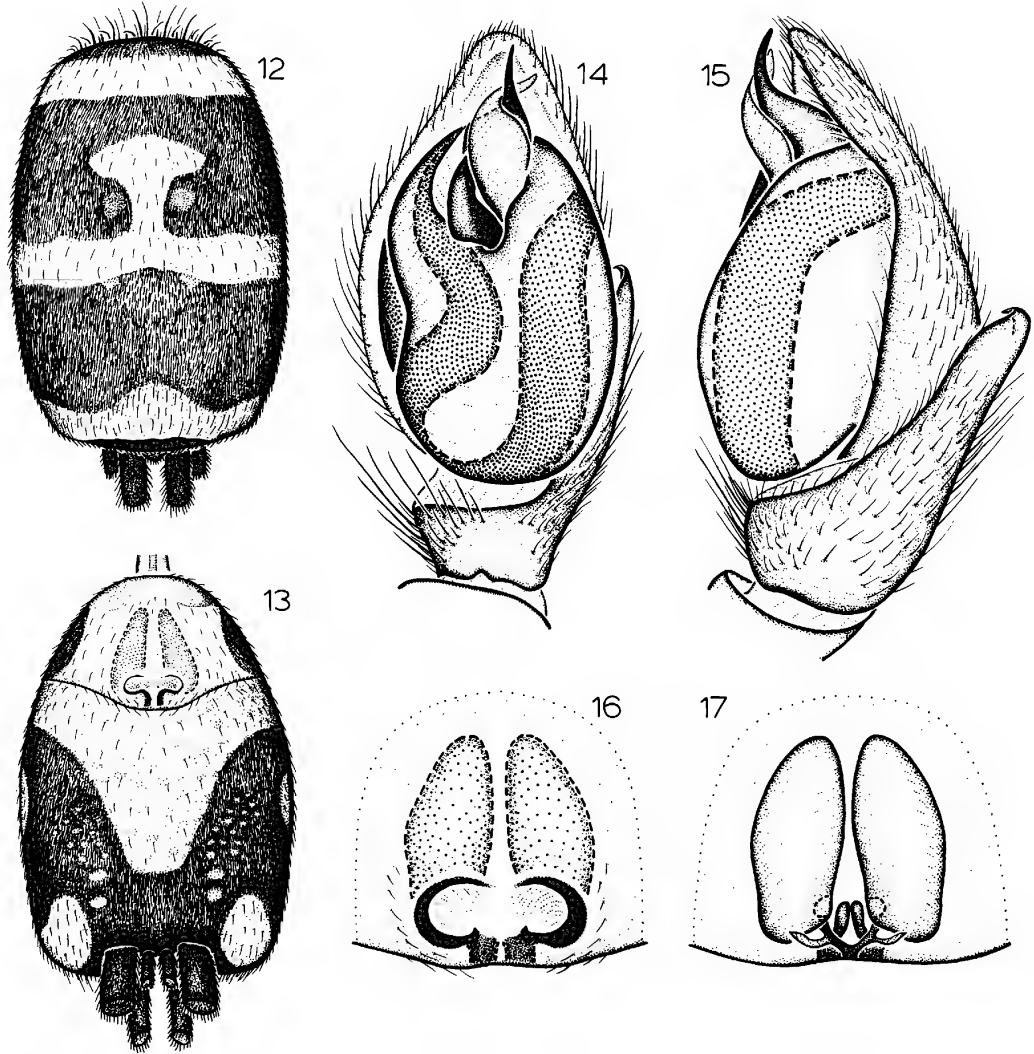
FIGS. 6-11. 6-9. *Poecilochroa variana* (C. L. Koch). 10, 11. *Sergiolus magnus* (Bryant). 6, 10. Palp, ventral view. 7, 11. Palp, retrolateral view. 8. Epigynum, ventral view. 9. Epigynum, dorsal view.

nomina dubia. The latter species almost certainly does not belong to *Sergiolus*.

KEY TO SPECIES OF *SERGIOLUS*

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|--|--|
| <p>1. Retrolateral tibial apophysis (RTA) with dorsally directed lobe at about half its length (fig. 74); epigynum a broad plate with distinct lateral edges and basal ridge (fig. 75) <i>montanus</i> Retrolateral tibial apophysis (RTA) without dorsally directed lobe; epigynum otherwise 2</p> | <p>2. Embolus relatively large, protruding ventrally (as in figs. 79, 80); epigynum with an anterior hood (as in figs. 81, 86) 17 Embolus relatively small, not protruding ventrally (as in figs. 10, 11); epigynum without an anterior hood 3 3. Dorsum of abdomen with a T-shaped white mark (sometimes broken into spots, as in figs. 18, 30) between anterior and middle transverse white bands (as in figs. 1, 2, 12, 36) 4 Dorsum of abdomen without a T-shaped white mark 13</p> |
|--|--|

4. Posterior declivity of carapace darkened; patella and proximal one-third of tibia IV darkened; tip of RTA without interior ledge, not elongated and displaced dorsally (figs. 14, 15); epigynum relatively wide, with lateral halves almost circular (fig. 16) *capulatus*
 Posterior declivity of carapace not darkened; patella and proximal one-third of tibia IV not darkened; tip of RTA with interior ledge, elongated and displaced dorsally (as in figs. 20, 21); epigynum relatively narrow, with lateral halves oval or almost rectangular (as in figs. 22, 34) 5
5. Males 6
 Females (those of *S. magnus* unknown) .. 10
6. RTA with sharp dorsal point below tip (fig. 21); eastern United States and Canada (map 2) *ocellatus*
 RTA without sharp dorsal point below tip; elsewhere (map 2) 7
7. Tip of RTA sickle-shaped (figs. 11, 27); Florida and Hispaniola 8
 Tip of RTA distally truncated (figs. 33, 39); Texas west to California 9
8. Legs without dark markings; tip of RTA beyond interior ledge relatively large (fig. 27); Florida (map 2) *kastoni*
 Legs with dark markings at least apically on tibia and metatarsus IV; tip of RTA beyond interior ledge relatively small (fig. 11); Hispaniola (map 2) *magnus*
9. Tip of RTA beyond interior ledge relatively small (figs. 38, 39); California and Baja California (map 2) *gertschi*
 Tip of RTA beyond interior ledge relatively large (figs. 32, 33); Utah east to Texas (map 2) *lowelli*
10. Lateral halves of epigynum almost rectangular (figs. 22, 28); states from Texas east (map 2) 11
 Lateral halves of epigynum oval (figs. 34, 40); states from Texas west (map 2) 12
11. Legs with dark markings; posterior ledge of epigynum near epigastric furrow (fig. 22); eastern United States and Canada (map 2) *ocellatus*
 Legs without dark markings; posterior ledge of epigynum further from epigastric furrow (fig. 28); Florida (map 2) *kastoni*
12. Posterior ledge of epigynum near epigastric furrow (fig. 40); California and Baja California (map 2) *gertschi*
 Posterior ledge of epigynum further from epigastric furrow (fig. 34); Utah east to Texas (map 2) *lowelli*
13. Venter of abdomen with median longitudinal dark stripe (figs. 43, 49) 14
 Venter of abdomen without median longitudinal dark stripe 15
14. Tip of RTA truncated (fig. 45); posterior ledge of epigynum near epigastric furrow (fig. 46) *decoratus*
 Tip of RTA gradually narrowed (fig. 51); posterior ledge of epigynum further from epigastric furrow (fig. 52) *minutus*
15. RTA with distally directed sharp point at tip of dorsal edge (fig. 57); epigynal ledges triangular (fig. 58) *unimaculatus*
 RTA without distally directed sharp point (figs. 63, 69); epigynal ledges semicircular (figs. 64, 70) 16
16. Abdomen long, narrow (figs. 54, 55); males with legs unmarked and venter of abdomen immediately behind epigastric furrow dark (fig. 55); epigynum relatively small (fig. 64) *cyaneiventris*
 Abdomen oval (fig. 66); males with at least femur I darkened or with venter of abdomen behind epigastric furrow light anteriorly, dark posteriorly (fig. 67); epigynum relatively large (fig. 70) *bicolor*
17. Tip of RTA produced into long, narrow, distally directed flange (fig. 79); epigynum with hood at about half of spermathecal length (fig. 81) *columbianus*
 Tip of RTA with distal flange short (as in figs. 84, 90, 95); epigynum with hood near tip of spermathecae or further anteriorly (as in figs. 86, 104) 18
18. Embolus almost straight (figs. 84, 85); epigynum without depressed atrium (fig. 86) *stella*
 Embolus curved (as in figs. 91, 106); epigynum with depressed atrium (as in figs. 92, 102) 19
19. Tip of RTA incised (figs. 100, 105); borders of epigynal atrium not connected posteriorly (figs. 102, 107) 20
 Tip of RTA not incised (figs. 90, 95); borders of epigynal atrium connected posteriorly (figs. 92, 97) 21
20. RTA and base of embolus relatively wide (figs. 100, 101); epigynal hood elongated, triangular (fig. 102); western North America (map 4) *angustus*
 RTA and base of embolus relatively narrow (figs. 105, 106); epigynal hood rounded (fig. 107); Guadalupe (map 4) .. *guadalupensis*
21. Tip of RTA sinuous (fig. 91); epigynal atrium relatively small (fig. 92); states from Colorado east (map 7) *tennesseensis*



FIGS. 12-17. *Sergiolus capulatus* (Walckenaer). 12. Abdomen, dorsal view. 13. Abdomen, ventral view. 14. Palp, ventral view. 15. Palp, retrolateral view. 16. Epigynum, ventral view. 17. Epigynum, dorsal view.

Tip of RTA straight (fig. 96); epigynal atrium relatively large (fig. 97); states from Colorado west (map 5) *iviei*

Sergiolus capulatus (Walckenaer)
 Figures 1, 2, 12-17; Map 1

Drassus capulatus Walckenaer, 1837, p. 621 (female holotype from "comté de Burke," now Screven County, Georgia, lost but discussed and illustrated in Abbot's 1792 manuscript

"Drawings of the Insects of Georgia" housed in the British Museum, p. 5, fig. 22, examined). *Herpyllus variegatus* Hentz, 1847, p. 458, pl. 24, fig. 12 (female holotype from Massachusetts, destroyed). First synonymized by Chamberlin and Ivie, 1944, p. 174.

Gnaphosa variegata: Marx, 1883, p. 24.

Poecilochroa variegata: Emerton, 1890, p. 174, pl. 4, figs. 1, 1b, 1c.

Sergiolus variegatus: Simon, 1891, p. 573. Kaston, 1945, p. 3, figs. 9, 14-16; 1948, p. 362, figs.

1252–1256. Roewer, 1954, p. 439. Bonnet, 1958, p. 4033.

Sergiolus capulatus: Chamberlin and Ivie, 1944, p. 174.

Drassodes capulatus: Bonnet, 1956, p. 1562.

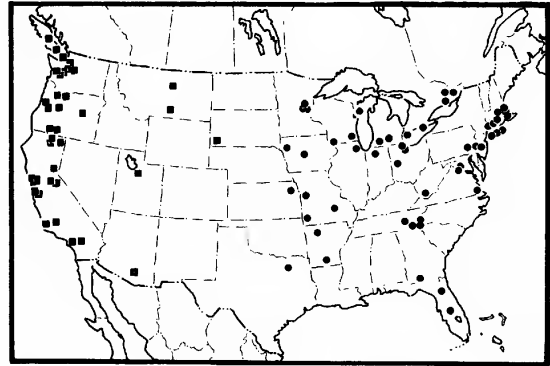
Poecilochroa capulata: Ubick and Roth, 1973, p. 6.

DIAGNOSIS: This species can be distinguished from others with a white T-shaped mark on the abdominal dorsum (figs. 1, 2, 12), by the darkened posterior declivity of the carapace and darkened patella and proximal part of tibia IV, the bent, prolaterally directed tip of the retrolateral tibial apophysis (figs. 14, 15), and the almost circular lateral epigynal halves (fig. 16).

MALE: Total length 5.58 ± 0.46 . Carapace 2.66 ± 0.31 long, 1.81 ± 0.19 wide. Femur II 1.54 ± 0.12 long (60 specimens examined). Eye sizes and interdistances: AME 0.06, ALE 0.08, PME 0.08, PLE 0.07; AME–AME 0.07, AME–ALE 0.02, PME–PME 0.12, PME–PLE 0.10, ALE–PLE 0.11. MOQ length 0.25, front width 0.20, back width 0.29. Carapace with ocular area and posterior declivity darkened; abdominal coloration as in figures 12, 13; legs with some segments darkened: I, II femur, distal patella, proximal tibia; III distal femur (slight), proximal tibia (slight); IV distal femur, distal patella, proximal and distal tibia. Retrolateral tibial apophysis without interior ledge, with tip bent toward bulb (figs. 14, 15). Leg spination: femur IV p0-1-1; patella IV r0-1-0; tibiae: I, II v0-1p-2; III, IV r1-1-1; metatarsi: II v2-0-0; III r1-2-2.

FEMALE: Total length 6.92 ± 1.06 . Carapace 3.04 ± 0.26 long, 2.08 ± 0.20 wide. Femur II 1.67 ± 0.16 long (35 specimens examined). Eye sizes and interdistances: AME 0.07, ALE 0.09, PME 0.11, PLE 0.10; AME–AME 0.08, AME–ALE 0.02, PME–PME 0.09, PME–PLE 0.14, ALE–PLE 0.17. MOQ length 0.32, front width 0.22, back width 0.32. Coloration as in male. Epigynum wide, lateral halves almost circular (figs. 16, 17). Leg spination: tibia IV v1p-2-2, r1-0-1; metatarsi: I v0-0-0; III r1-0-2.

RECORDS: **Canada:** *Ontario:* Chatterton, Fitzroy, Mazinaw Lake, Rondeau Provincial Park, Turkey Point, Walsingham. **United**



MAP 1. North America, showing distribution of *Sergiolus capulatus* (circles) and *S. columbianus* (squares).

States (county records only): *Arkansas:* Bradley, Newton. *Connecticut:* Fairfield, New Haven, Tolland. *District of Columbia:* Florida: Alachua, Highlands. *Georgia:* Thomas. *Illinois:* Cook. *Indiana:* Marshall. *Iowa:* Story, Woodbury. *Kansas:* Douglas. *Massachusetts:* Bristol, Middlesex, Norfolk, Plymouth, Worcester. *Michigan:* Calhoun, Livingston. *Minnesota:* Anoka, Chisago, Hennepin. *Missouri:* Johnson, Newton, Phelps. *New Jersey:* Ocean. *New York:* Kings, Nassau, Suffolk. *North Carolina:* Buncombe, Macon, Transylvania. *Ohio:* Champaign, Erie, Franklin, Ottawa. *Pennsylvania:* Berks, Bucks. *Tennessee:* Sevier. *Texas:* Denton. *Virginia:* Fairfax, Princesse Anne. *West Virginia:* Summers. *Wisconsin:* Door, Grant, Waukesha.

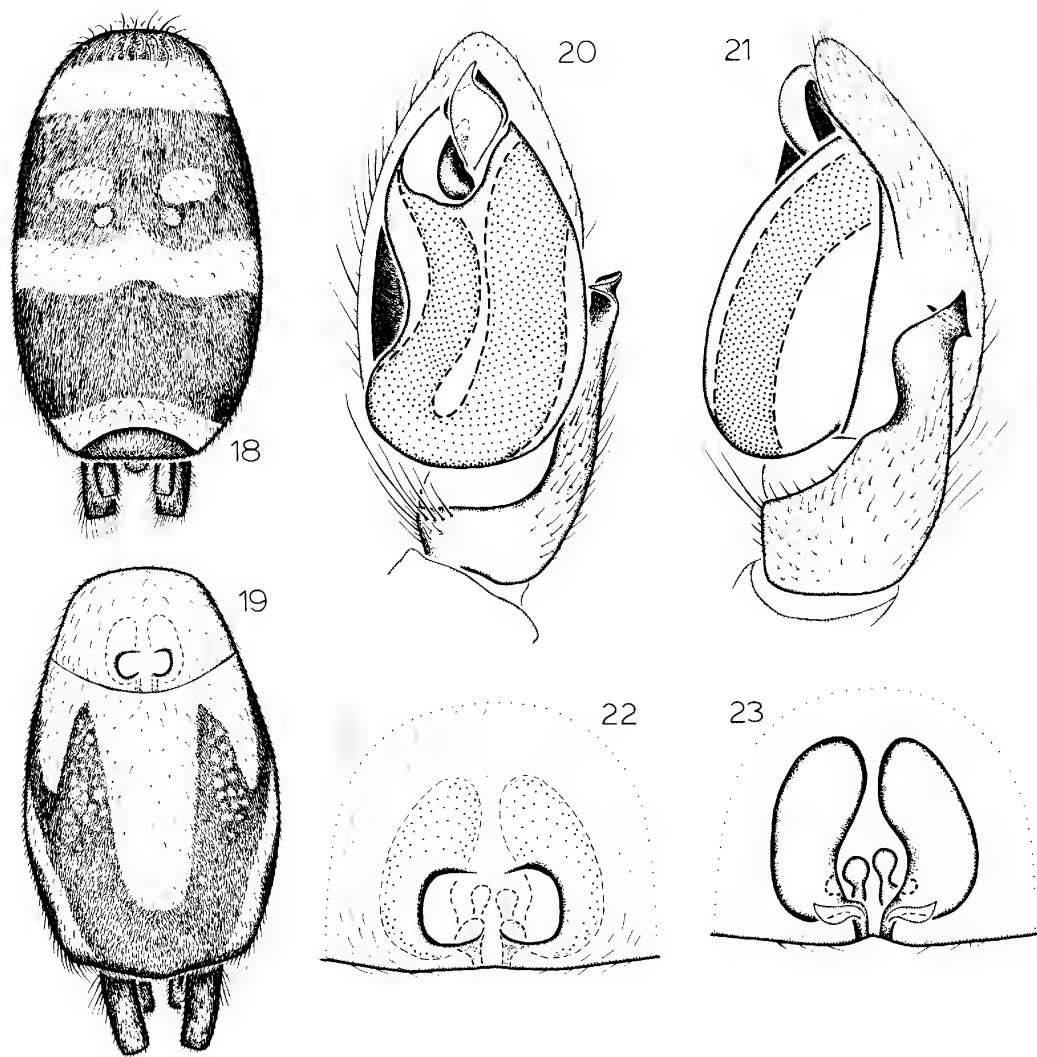
DISTRIBUTION: Minnesota to Massachusetts, south to Texas and Florida (map 1).

NATURAL HISTORY: Mature males have been taken from February through August and in November, mature females from May through September and in November. Specimens have been collected from litter in oak, pine, maple, and basswood forests, on hillsides, meadows, and lawns, in pitfall traps and a wasp nest, and indoors, at elevations up to 2130 feet.

Sergiolus ocellatus (Walckenaer)

Figures 18–23; Map 2

Drassus ocellatus Walckenaer, 1837, p. 621 (female holotype from "marais d'Ogechee,"



FIGS. 18-23. *Sergiulus ocellatus* (Walckenaer). 18. Abdomen, dorsal view. 19. Abdomen, ventral view. 20. Palp, ventral view. 21. Palp, retrolateral view. 22. Epigynum, ventral view. 23. Epigynum, dorsal view.

Georgia, lost but discussed and illustrated in Abbot's 1792 manuscript "Drawings of the Insects of Georgia" housed in the British Museum, p. 18, fig. 192, examined).

Sergiulus decipiens Chamberlin, 1922, p. 151 (male holotype from Raleigh, Wake County, North Carolina, in MCZ, examined); 1936a, p. 10, fig. 14 (North Carolina and Pennsylvania records only). Roewer, 1954, p. 438. First synonymized by Chamberlin and Ivie, 1944, p. 175.

Sergiulus ocellatus: Chamberlin and Ivie, 1944, p. 175.

Sergiulus decoratus (misidentification): Kaston, 1945, p. 2, fig. 8 (female only); 1948, p. 363, fig. 1265 (female only).

Drassodes ocellatus: Bonnet, 1956, p. 1583.

Poecilochroa decipiens: Bonnet, 1958, p. 3733.

Poecilochroa ocellatus: Ubick and Roth, 1973, p. 7.

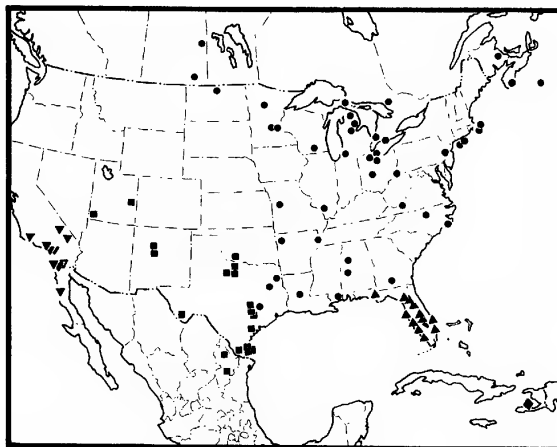
Poecilochroa ocellata: Kaston, 1978, p. 208.

DIAGNOSIS: *Sergiolus ocellatus* belongs to a group of five species with white T-shaped marks on the abdominal dorsum, an elongated tip of the retrolateral tibial apophysis, and vicariant distributions (map 2); it can be distinguished by the sharp dorsal point below the tip of the retrolateral tibial apophysis (fig. 21) and the large epigynum with rectangular ledges (fig. 22).

MALE: Total length 4.69 ± 0.56 . Carapace 2.09 ± 0.17 long, 1.45 ± 0.14 wide. Femur II 1.21 ± 0.11 long (57 specimens examined). Eye sizes and interdistances: AME 0.05, ALE 0.05, PME 0.07, PLE 0.07; AME-AME 0.04, AME-ALE 0.02, PME-PME 0.08, PME-PLE 0.07, ALE-PLE 0.06. MOQ length 0.22, front width 0.14, back width 0.22. Coloration as in *S. capulatus* except posterior declivity not darkened, abdomen as in figures 18, 19, patella I darkened, distal femur and patella II darkened, tibia III not darkened, patella and proximal tibia IV not darkened. Tip of retrolateral tibial apophysis elongated, with interior ledge and sharp dorsal point below tip (figs. 20, 21). Leg spination: femur II p0-0-1; tibiae: I, II v0-0-2; III v1p-2-2; metatarsi: II v2-0-0; III p0-1-2, r0-1-2.

FEMALE: Total length 5.77 ± 0.90 . Carapace 2.44 ± 0.21 long, 1.64 ± 0.16 wide. Femur II 1.28 ± 0.12 long (40 specimens examined). Eye sizes and interdistances: AME 0.07, ALE 0.09, PME 0.09, PLE 0.06; AME-AME 0.07, AME-ALE 0.03, PME-PME 0.11, PME-PLE 0.12, ALE-PLE 0.09. MOQ length 0.26, front width 0.22, back width 0.29. Coloration as in male. Epigynum narrow, large, rectangular (figs. 22, 23). Leg spination: tibiae: II v0-0-1p; III v1p-2-2; metatarsus I v0-0-0.

RECORDS: **Canada:** *New Brunswick:* Kouchibouguac National Park. *Nova Scotia:* Lockeport, Sable Island. *Ontario:* Pelee Island, Pointe au Baril, Rondeau Provincial Park, Windsor. *Saskatchewan:* Lady Lake, Montmartre. **United States** (county records only): *Alabama:* Marengo, Tuscaloosa. *Arkansas:* Mississippi, Washington. *Georgia:* Turner. *Illinois:* Jackson. *Louisiana:* Rapides. *Massachusetts:* Barnstable, Dukes.



MAP 2. North America, showing distribution of *Sergiolus ocellatus* (circles), *S. kastoni* (upright triangles), *S. magnus* (diamond), *S. lowelli* (squares), and *S. gertschi* (inverted triangles).

Michigan: Berrien, Chippewa, Emmet, Iosco, Midland. *Minnesota:* Cass, Hennepin, Ramsey. *Mississippi:* Jackson. *Missouri:* Johnson. *New Jersey:* Hunterdon. *New York:* Nassau, Suffolk. *North Carolina:* Carteret, Wake. *North Dakota:* Rolette. *Ohio:* Erie, Franklin, Ottawa. *Pennsylvania:* Texas: Anderson, Harrison, Travis. *Virginia:* Giles. *West Virginia:* Marshall. *Wisconsin:* Columbia.

DISTRIBUTION: Saskatchewan to Nova Scotia, south to Texas and Georgia (map 2).

NATURAL HISTORY: Mature males have been taken from May through August, mature females from April through September. Specimens have been collected in litter in pin oak forests and a staghorn sumac grove, in pitcher plants in bogs and marshes, in pitfall traps in prairies, and indoors.

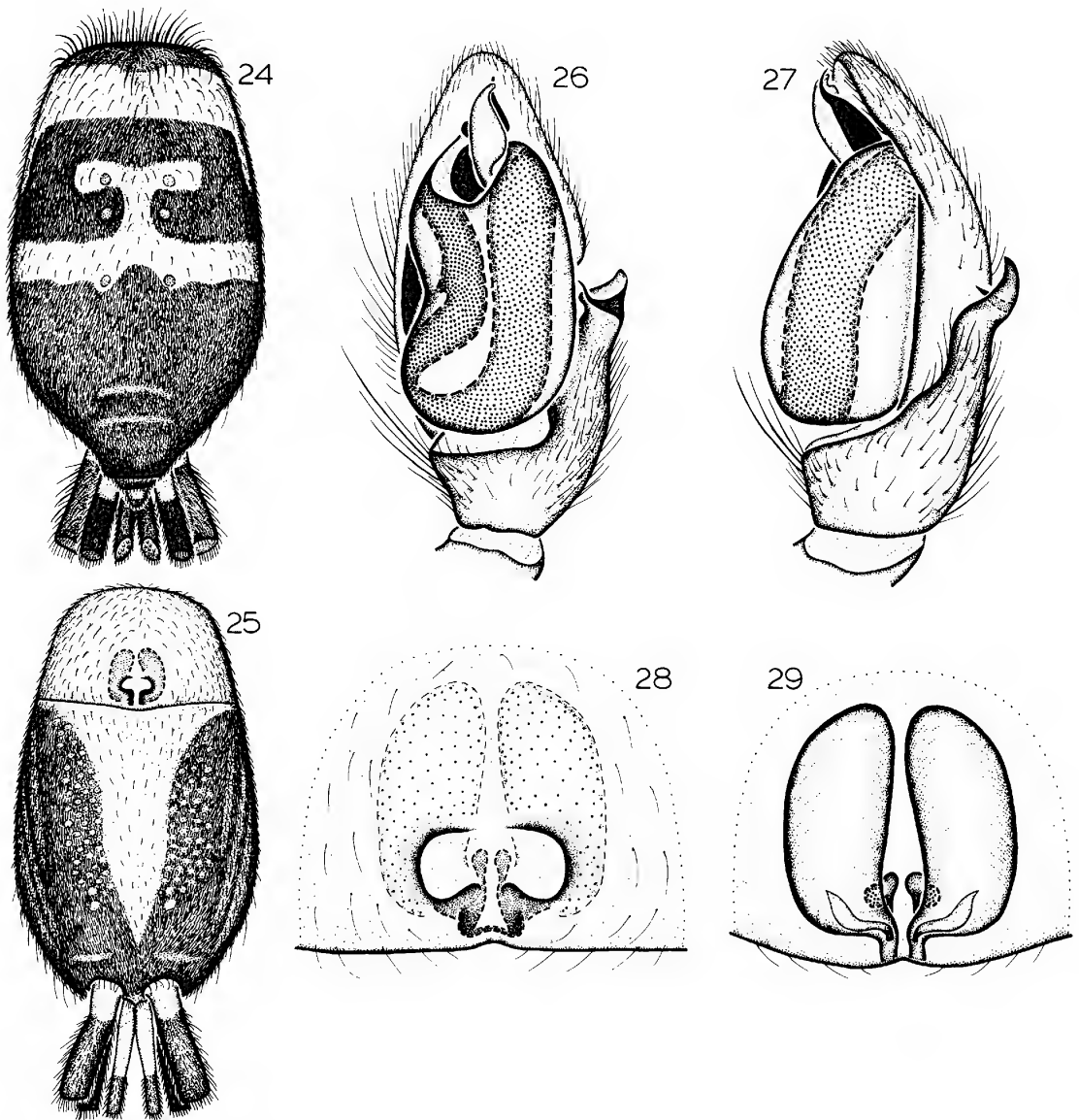
Sergiolus kastoni, new species

Figures 24–29; Map 2

Poecilochroa decipiens (misidentification): Bryant, 1935, p. 75, figs. 4, 5.

Sergiolus decipiens (misidentification): Kaston, 1945, p. 3, fig. 10.

TYPES: Male holotype and female paratype from Gainesville, Alachua County, Florida



FIGS. 24–29. *Sergiolus kastoni*, new species. 24. Abdomen, dorsal view. 25. Abdomen, ventral view. 26. Palp, ventral view. 27. Palp, retrolateral view. 28. Epigynum, ventral view. 29. Epigynum, dorsal view.

(male, March 31, 1933; female, November 28, 1938; H. K. Wallace), deposited in AMNH.

ETYMOLOGY: The specific name is a patronym in honor of Dr. B. J. Kaston, in recognition of his (1945) contributions to our knowledge of *Sergiolus*.

DIAGNOSIS: This species, a member of the

vicariant group 4 (fig. 5, map 2), is closest to *S. magnus* but can be distinguished by the more proximally situated interior ledge of the retrolateral tibial apophysis (fig. 27) and small, rectangular epigynum (fig. 28).

MALE: Total length 4.25 ± 0.32 . Carapace 1.98 ± 0.17 long, 1.31 ± 0.14 wide. Femur II 1.18 ± 0.11 long. Eye sizes and interdis-

tances: AME 0.09, ALE 0.06, PME 0.09, PLE 0.08; AME-AME 0.05, AME-ALE 0.01, PME-PME 0.06, PME-PLE 0.06, ALE-PLE 0.07, MOQ length 0.24, front width 0.23, back width 0.24. Carapace and legs without dark markings, abdomen as in figures 24, 25. Tip of retrolateral tibial apophysis elongated, sickle-shaped, with proximally situated interior ledge (figs. 26, 27). Leg spination: femur II p0-0-1; patella III p0-0-0; tibiae: I, II v0-0-2; IV v1p-2-2; metatarsi: I v0-0-0; II v2-0-0; III r0-1-2.

FEMALE: Total length 6.66 ± 0.90 . Carapace 2.96 ± 0.34 long, 1.92 ± 0.22 wide. Femur II 1.58 ± 0.18 long. Eye sizes and interdistances: AME 0.12, ALE 0.11, PME 0.12, PLE 0.11; AME-AME 0.08, AME-ALE 0.03, PME-PME 0.12, PME-PLE 0.13, ALE-PLE 0.13. MOQ length 0.39, front width 0.32, back width 0.36. Coloration as in male. Epigynum narrow, small, rectangular (figs. 28, 29). Leg spination: femur IV p0-1-1; patella III p0-0-0; tibia III v1p-2-2; metatarsus I v0-0-0.

MATERIAL EXAMINED: UNITED STATES: **Florida:** *Alachua Co.:* no specific locality, Nov 1, 1949 (H. K. Wallace, FSCA), 1♀, Nov. 14, 1952 (H. K. Wallace, FSCA), 1♀, Dec. 13, 1948 (H. K. Wallace, FSCA), 1♀; Gainesville, Mar. 31, 1933, in field (H. K. Wallace), 1♂ (holotype), Nov. 28, 1938 (H. K. Wallace), 1♀ (paratype). *Calhoun Co.:* Blountstown, Apr. 17, 1938 (W. J. Gertsch), 1♂. *Collier Co.:* Royal Palm Park, Apr. 1-18, 1927 (W. S. Blatchley, MCZ), 1♂, 1♀. *Gilchrist Co.:* no specific locality, Mar. 16, 1952 (H. K. Wallace, FSCA), 1♀. *Highlands Co.:* no specific locality, Aug. 28, 1957 (H. K. Wallace, FSCA), 1♂. *Lee Co.:* Fort Myers, Jan. 12, 1942 (W. M. Barrows, OSU), 5♂, 1♀. *Marion Co.:* Weirsdale, Feb. 13, 1952 (M. H. Muma, FSCA), 1♂. *Martin Co.:* Port Mayaca, Mar. 2, 1957 (W. J. Gertsch, R. R. Forster), 1♂. *Palm Beach Co.:* West Palm Beach, Oct. 16, 1977 (M. W. Klemens), 1♀. *Pinellas Co.:* Dunedin, 1925-1926 (W. S. Blatchley), 1♂, 1927 (W. S. Blatchley, MCZ), 1♀. *Polk Co.:* Lakeland, 1♂; Winter Haven, June 21, 1968, pitfall under oak (FSCA), 1♀. *Sarasota Co.:* 18 mi. S Osprey, Apr. 14, 1949 (H. K. Wallace, FSCA), 1♀;

Sarasota, Feb. 6, 1958, under *Pinus* bark (H. V. Weems, Jr., FSCA), 1♀.

DISTRIBUTION: Known only from Florida (map 2).

Sergiolus magnus (Bryant), new combination

Figures 10, 11; Map 2

Caridrassus magnus Bryant, 1948, p. 406 (male holotype from Miragoâne, Haiti Sud, Hispaniola, in MCZ, examined). Roewer, 1954, p. 411.

DIAGNOSIS: This species, a member of the vicariant group 4 (fig. 5, map 2), is closest to *S. kastoni* but can be distinguished by the more distally situated interior ledge of the retrolateral tibial apophysis (fig. 11).

MALE: Total length 5.07. Carapace 2.26 long, 1.51 wide. Femur II 1.35 long. Eye sizes and interdistances: AME 0.06, ALE 0.08, PME 0.09, PLE 0.09; AME-AME 0.09, AME-ALE 0.03, PME-PME 0.09, PME-PLE 0.07, ALE-PLE 0.07. MOQ length 0.25, front width 0.22, back width 0.27. Specimen badly faded but carapace not darkened, abdomen apparently like that of *S. lowelli*, probably all femora and distal tibia and metatarsus IV darkened. Tip of retrolateral tibial apophysis elongated, sickle-shaped, with distally situated interior ledge (figs. 10, 11). Leg spination: femur IV p0-1-1; tibiae: I v0-1p-2; II v1p-2-2; III r1-1-1; IV d1-0-0, r1-1-1; metatarsi I, II v2-0-0.

FEMALE: Unknown.

MATERIAL EXAMINED: Only the holotype, collected by P. J. Darlington, Jr., on November 2, 1934.

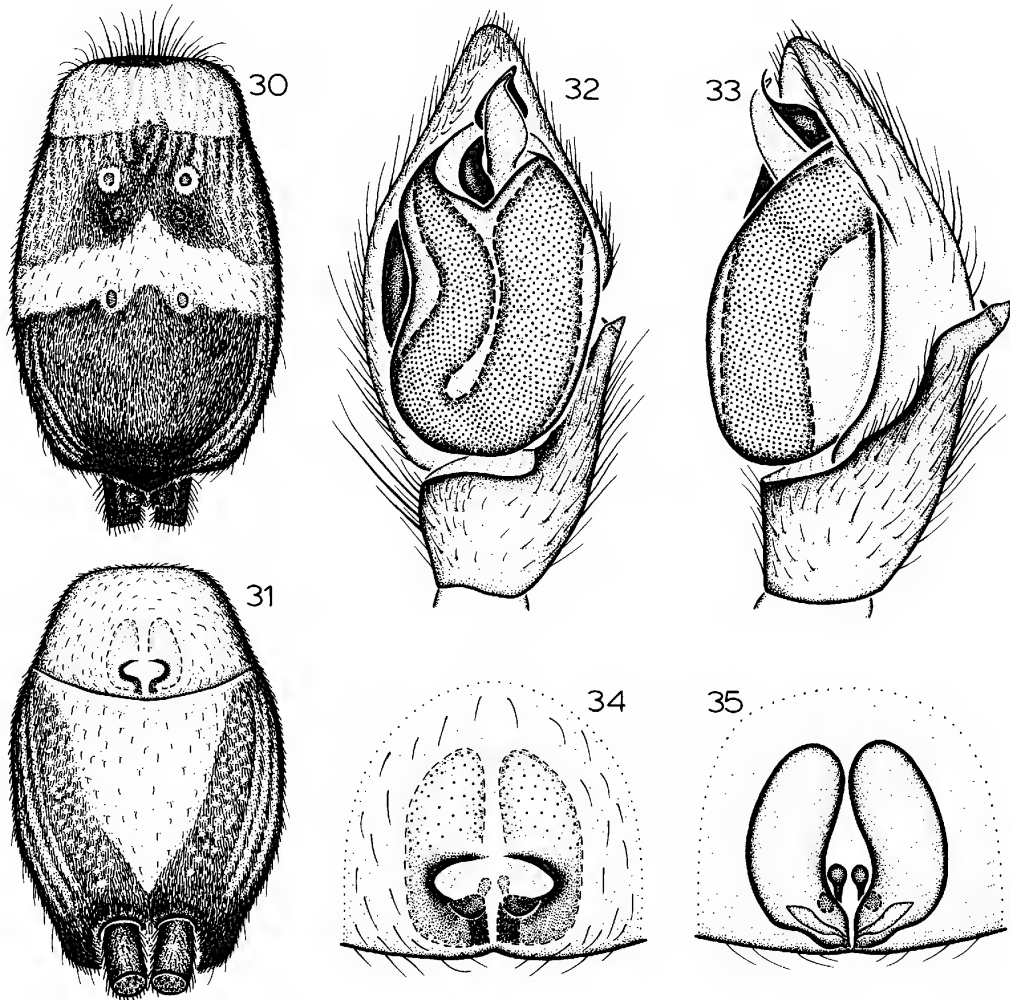
DISTRIBUTION: Known only from Hispaniola (map 2).

PLACEMENT: When *Caridrassus* was synonymized with *Eilica* (Platnick, 1975), this species was merely assigned to the *Herpyllus* complex; the holotype fits the diagnosis of *Sergiolus* given above.

Sergiolus lowelli Chamberlin and Woodbury
Figures 30-35; Map 2

Sergiolus decipiens (misidentification): Chamberlin, 1922, p. 151 (Texas record only); 1936a, p. 11 (Texas record only).

Sergiolus lowelli Chamberlin and Woodbury, 1929, p. 133, pl. II, figs. 7, 8 (male holotype



FIGS. 30–35. *Sergiolus lowelli* Chamberlin and Woodbury. 30. Abdomen, dorsal view. 31. Abdomen, ventral view. 32. Palp, ventral view. 33. Palp, retrolateral view. 34. Epigynum, ventral view. 35. Epigynum, dorsal view.

from St. George, Washington County, Utah, in AMNH, examined). Roewer, 1954, p. 439. Bonnet, 1958, p. 4032.

Sergiolus segregatus Chamberlin, 1936b, p. 5, figs. 11, 12 (male holotype from Edinburg, Hidalgo County, Texas, in AMNH, examined). Roewer, 1954, p. 439. Bonnet, 1958, p. 4033. First synonymized by Ubick and Roth, 1973, p. 7.

Poecilochroa lowelli: Ubick and Roth, 1973, p. 7.

DIAGNOSIS: This species, a member of the vicariant group 4 (fig. 5, map 2), is closest to

S. gertschi but can be distinguished by the more proximally situated interior ledge of the retrolateral tibial apophysis (fig. 33) and smaller epigynum (fig. 34).

MALE: Total length 5.08 ± 0.38 . Carapace 2.34 ± 0.21 long, 1.57 ± 0.14 wide. Femur II 1.33 ± 0.10 long. Eye sizes and interdistances: AME 0.09, ALE 0.09, PME 0.09, PLE 0.10; AME–AME 0.05, AME–ALE 0.02, PME–PME 0.09, PME–PLE 0.11, ALE–PLE 0.09. MOQ length 0.31, front width 0.24, back width 0.27. Coloration as in

S. capulatus but carapace unmarked, abdomen as in figures 30, 31, only femur of leg I slightly darkened, only distal femur of leg II darkened, leg III light, only distal tibia and metatarsus IV darkened. Tip of retrolateral tibial apophysis elongated, distally truncated, with interior ledge not as close to tip as in *S. gertschi* (figs. 32, 33). Leg spination: femur IV p0-1-1; patella IV r0-1-0; tibiae: I v0-0-2, II v0-1p-2; metatarsi: I, II v2-0-0; III r1-2-2.

FEMALE: Total length 6.61 ± 1.06 . Carapace 2.98 ± 0.40 long, 1.97 ± 0.26 wide. Femur II 1.59 ± 0.24 long. Eye sizes and interdistances: AME 0.07, ALE 0.09, PME 0.09, PLE 0.08; AME-AME 0.07, AME-ALE 0.03, PME-PME 0.11, PME-PLE 0.11, ALE-PLE 0.11. MOQ length 0.28, front width 0.22, back width 0.28. Coloration as in male. Epigynum with small, oval lateral halves (figs. 34, 35). Leg spination: femur II p0-0-1; tibiae: III v1p-2-2; IV r1-1-1.

MATERIAL EXAMINED: MEXICO: Nuevo León: General Bravo, Sept. 29, 1968, 1♀; Linares, July 18, 1956 (W. J. Gertsch, V. Roth), 1♀. UNITED STATES: New Mexico: Bernalillo Co.: Albuquerque, July 2, 1964 (W. A. Shear, WAS), 1♀. Sandoval Co.: W Bernalillo (C. C. Hoff), 1♂. Oklahoma: Comanche Co.: Lawton, June 12, 1957 (L. and W. Miller, MCZ), 1♂; Wichita Mountains Wildlife Refuge, May 20, 1978 (F. Bryce, NVH), 1♂, fall 1975 (F. Bryce, NVH), 1♂. Texas: Archer Co.: no specific locality, Mar. 17, 1973, grass (R. Snider, NVH), 1♂. Baylor Co.: no specific locality, May 10, 1975, ground (T. Emsoff, NVH), 1♂; Wichita River, 6 mi. N Mabelle, Apr. 30, 1969, tamarisk bower (B. Vogel, BRV), 1♀. Caldwell Co.: 2 mi. E Lockhart, Apr. 11, 1971 (B. Vogel, BRV), 1♀. Cameron Co.: no specific locality, Jan.-Mar. 1936 (L. I. Davis), 1♂; Brownsville (Schaeffer, MCZ), 1♂, Jan. 18, 1936, under boards in damp pasture (L. Giovannoli), 1♂. Gonzales Co.: 1 mi. N Otine, Dec. 19, 1969, leaf litter (B. Vogel, BRV), 1♀. Hidalgo Co.: Edinburg, Jan. 10-Apr. 29, 1935-1937 (S. Mulaik), 6♂ (including holotype), May 3-Sept. 18, 1935-1936 (S. Mulaik), 3♀; NW Edinburg, June 10-Sept. 18, 1935 (S. Mulaik), 3♀; Hidalgo, May

13, 1952 (W. J. Gertsch), 1♂. Kenedy Co.: Padre Island National Seashore, June 4 (C. Fletcher, MCZ), 1♂; Rivera, July 19, 1969, 1♀. Presidio Co.: 1 mi. W Lajitas, Apr. 23-30, 1963 (J. E. Gillaspay, MCZ), 1♂. San Patricio Co.: 8 mi. NE Sinton, June 12-Sept. 30, 1959-1960 (H. E. Laughlin), 3♂, Aug. 12, 1964 (J. and W. Ivie), 1♀. Travis Co.: Austin, Sept. 2-10, 1945 (H. and D. Frizell, EPC), 1♂. Wichita Co.: Burkburnett, July 18, 1977, in house (J. Cokendolpher, NVH), 1♂, Sept. 27, 1972, sweeping grass (J. Cokendolpher, NVH), 1♂; Lake Wichita, Oct. 13, 1967, on tarp (R. Carpenter, NVH), 2♀; Shipp Farm, Mar. 1977, bird nest 2 m. above ground in hackberry (J. Cokendolpher, NVH), 1♂; Wichita Falls, June 14, 1979, in building (L. Sorkin), 1♂. Utah: Grand Co.: Moab, June 19, 1934 (W. Ivie, H. Rasmussen), 1♀. Washington Co.: St. George, 1920 (R. V. Chamberlin, MCZ), 1♂, 1926 (A. M. Woodbury), 3♀, Mar. 14, 1928 (L. A. Woodbury), 1♂ (holotype).

DISTRIBUTION: Utah east to Texas and Nuevo León (map 2).

Sergiolus gertschi, new species

Figures 36-41; Map 2

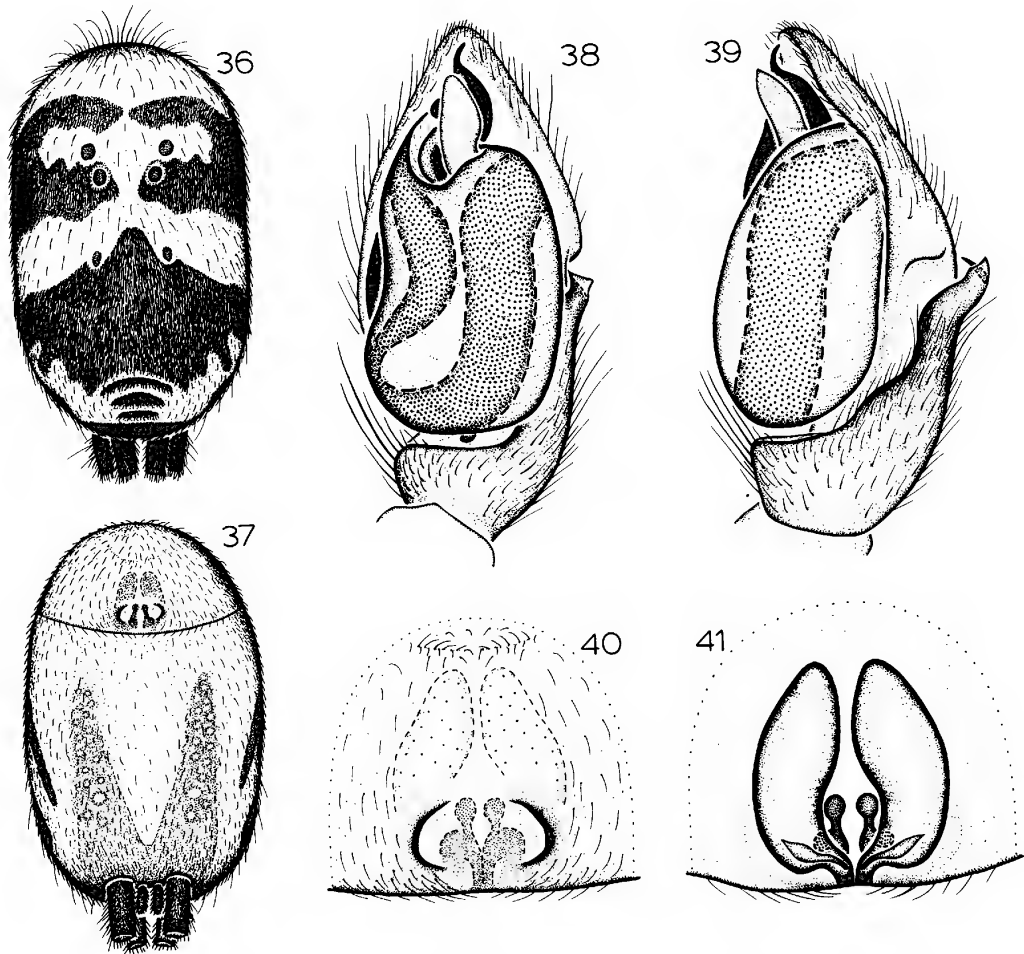
Sergiolus decipiens (misidentification): Chamberlin, 1922, p. 151 (California record only); 1936a, p. 11 (California record only).

TYPES: Male holotype and female paratype from San Juan Creek, Orange County, California (July 1-7, 1931; R. V. Chamberlin), deposited in AMNH.

ETYMOLOGY: The specific name is a patronym in honor of Dr. W. J. Gertsch, who first recognized the species as new.

DIAGNOSIS: This species, a member of the vicariant group 4 (fig. 5, map 2), is closest to *S. lowelli* but can be distinguished by the more distally situated interior ledge of the retrolateral tibial apophysis (fig. 39) and larger epigynum (fig. 40).

MALE: Total length 4.11-4.45. Carapace 1.56-2.02 long, 1.17-1.35 wide. Femur II 0.86-1.19 long. Eye sizes and interdistances: AME 0.05, ALE 0.06, PME 0.07, PLE 0.08; AME-AME 0.07, AME-ALE 0.03, PME-PME 0.07, PME-PLE 0.07, ALE-PLE 0.07.



FIGS. 36-41. *Sergiolus gertschi*, new species. 36. Abdomen, dorsal view. 37. Abdomen, ventral view. 38. Palp, ventral view. 39. Palp, retrolateral view. 40. Epigynum, ventral view. 41. Epigynum, dorsal view.

MOQ length 0.22, front width 0.16, back width 0.22. Coloration as in *S. capulatus* but carapace unmarked, abdomen as in figures 36, 37, leg III unmarked, patella and proximal tibia IV unmarked. Tip of retrolateral tibial apophysis elongated, distally truncated, with origin of interior ledge almost at tip (figs. 38, 39). Leg spination: femur II p0-0-1; patella IV r0-1-0; tibiae: I v0-0-2; II v0-1p-2; metatarsi: II v2-0-0; III p0-2-2, r0-2-2.

FEMALE: Total length 5.54 ± 0.71 . Carapace 2.49 ± 0.31 long, 1.69 ± 0.23 wide. Femur II 1.31 ± 0.22 long. Eye sizes and in-

terdistances: AME 0.07, ALE 0.08, PME 0.07, PLE 0.07; AME-AME 0.06, AME-ALE 0.03, PME-PME 0.11, PME-PLE 0.10, ALE-PLE 0.12. MOQ length 0.24, front width 0.21, back width 0.26. Coloration as in male but with dark markings on legs much subdued. Epigynum narrow, with semicircular lateral halves (figs. 40, 41). Leg spination: femora: II p0-0-1; IV p0-0-0; tibiae: I v0-1p-1p; III v1p-2-2; metatarsus III v2-1r-2, r1-2-2.

MATERIAL EXAMINED: MEXICO: Baja California Norte: El Rosario, May 5, 1961

(W. J. Gertsch, V. Roth), 1♀. UNITED STATES: California: *Inyo Co.*: Cartago, Aug. 6, 1931 (W. Ivie), 1♀. *Los Angeles Co.*: Los Angeles (MCZ), 1♂. *Orange Co.*: Aliso Canyon, near Laguna Beach, July 1, 1931 (W. Ivie), 1♀; San Juan Creek, July 1–7, 1931 (R. V. Chamberlin), 1♂, 1♀ (types). *San Bernardino Co.*: Saratoga Springs, Death Valley, May 1953 (R. X. Schick), 2♀. *San Diego Co.*: Chula Vista, Apr. 10, 1970 (J. W. Allen, BJK), 1♀; La Mesa, July 3, 1952 (W. M. Pearce), 1♂; mouth of San Diego River, July 12, 1931 (W. Ivie), 1♀; National City, July 12, 1931 (R. V. Chamberlin), 1♀; San Diego, May–June 1970–1971, pitfall trap (B. J. Kaston, AMNH, BJK), 2♂; San Ysidro, July 11, 1931 (W. Ivie), 1♀. *Santa Barbara Co.*: Santa Barbara, June 6, 1950 (H. L. Shantz), 1♀.

DISTRIBUTION: Southern California and Baja California Norte (map 2).

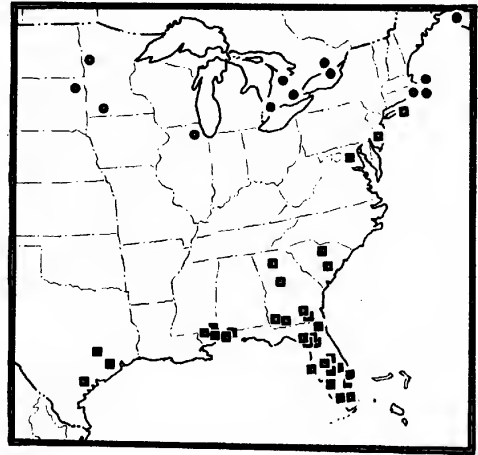
Sergiolus decoratus Kaston
Figures 42–47; Map 3

Sergiolus decoratus Kaston, 1945, p. 2, figs. 17–19 (male holotype from Woods Hole, Barnstable County, Massachusetts, in AMNH, examined; not female, =*S. ocellatus*); 1948, p. 363, figs. 1264, 2121, 2122 (male only). Roewer, 1954, p. 439.

Poecilochroa decorata: Ubick and Roth, 1973, p. 6.

DIAGNOSIS: This species resembles *S. minutus* in having a median longitudinal dark stripe on the abdominal venter, but can be distinguished by the broadly truncated tip of the retrolateral tibial apophysis (fig. 45) and larger epigynum (fig. 46).

MALE: Total length 4.18 ± 0.41 . Carapace 1.90 ± 0.18 long, 1.26 ± 0.10 wide. Femur II 1.09 ± 0.09 long. Eye sizes and interdistances: AME 0.05, ALE 0.05, PME 0.07, PLE 0.05; AME–AME 0.04, AME–ALE 0.01, PME–PME 0.07, PME–PLE 0.07, ALE–PLE 0.09. MOQ length 0.22, front width 0.14, back width 0.22. Carapace unmarked; abdomen as in figures 42, 43; femora I, II darkened, tibia and metatarsus IV with distal dark rings. Tip of retrolateral tibial apophysis broadly truncated (figs. 44, 45).

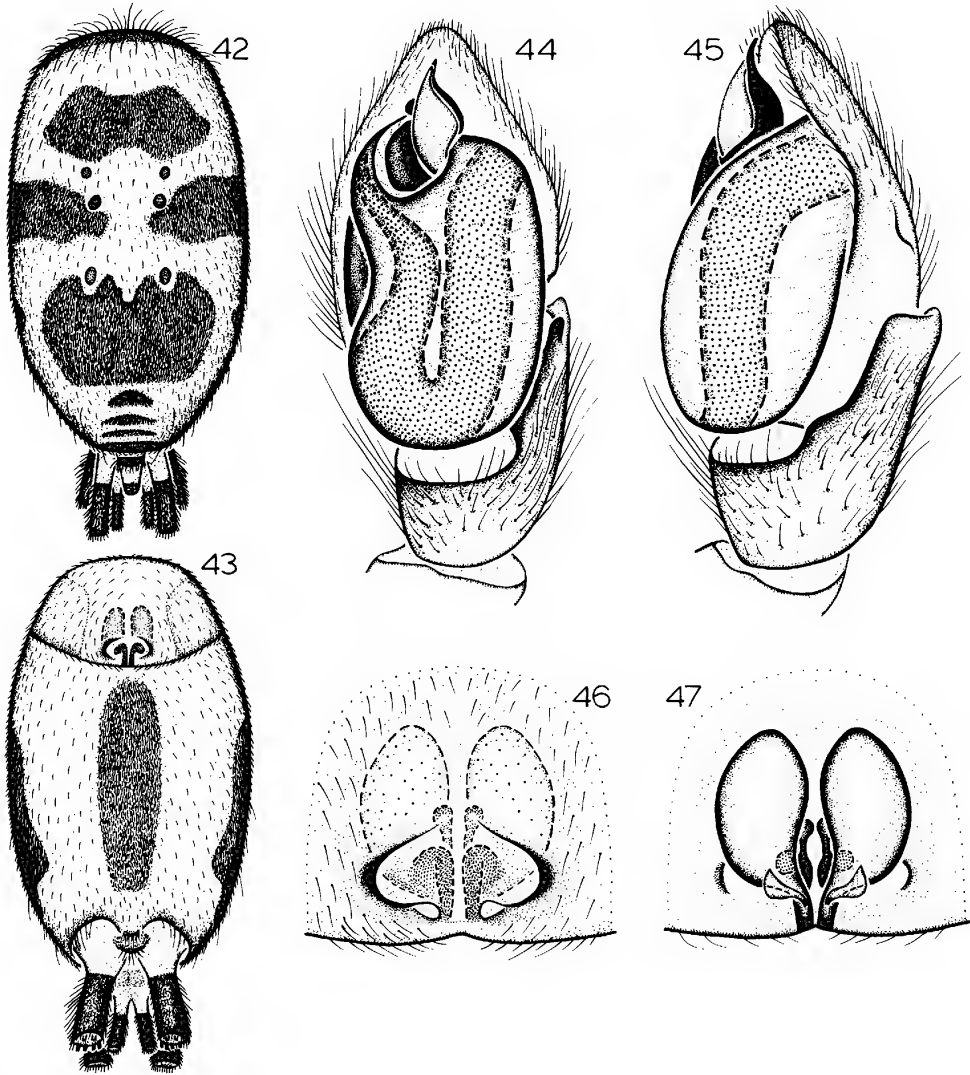


MAP 3. Eastern North America, showing distribution of *Sergiolus decoratus* (circles) and *S. cyaneiventris* (squares).

Leg spination: femur II p0-0-1; patella III p0-0-0; tibiae: I, II v0-0-2; IV p0-1-1; metatarsus IV p2-2-2, r2-2-2.

FEMALE: Total length 4.65–7.43. Carapace 2.07–2.99 long, 1.33–1.88 wide. Femur II 1.12–1.55 long. Eye sizes and interdistances: AME 0.05, ALE 0.06, PME 0.06, PLE 0.07; AME–AME 0.06, AME–ALE 0.04, PME–PME 0.12, PME–PLE 0.11, ALE–PLE 0.11. MOQ length 0.21, front width 0.15, back width 0.24. Coloration as in male. Epigynum large, with oblique anterior ledges (figs. 46, 47). Leg spination: femur II p0-0-1; patella III r0-0-0; tibiae: II v0-0-1p; III v1p-1p-2; IV v1p-2-2; metatarsus III p0-2-2, r0-1-2.

MATERIAL EXAMINED: CANADA: Nova Scotia: Marshalltown, July 30, 1956 (J. Sawler, CNC), 1♀. Ontario: Chatterton, May–July 29, 1965–1968, meadow, pitfall trap or vacuum (C. D. Dondale, R. E. Leech, CNC), 6♂, 2♀; Hamilton, 1957 (B. Poole, CNC), 1♂; Mountain View, Aug. 19, 1959, vacuum, tall dry grass (A. L. Turnbull, CNC), 1♀; Owen Sound, June 20, 1975, on ground (W. and D. Madison), 1♂, 1♀; Rednersville, July 3–20, 1964, pitfall, old field (J. H. Redner, CNC), 1♂, 1♀; Rondeau Provincial Park, July 8–Sept. 23, 1975, grassy beach (C. D. Dondale, J. H. Redner, CNC), 1♂, 2♀. UNITED STATES: Illinois: Cook Co.: Chi-



FIGS. 42–47. *Sergiolus decoratus* Kaston. 42. Abdomen, dorsal view. 43. Abdomen, ventral view. 44. Palp, ventral view. 45. Palp, retrolateral view. 46. Epigynum, ventral view. 47. Epigynum, dorsal view.

cago, June, 1♂. **Massachusetts:** *Barnstable Co.:* Woods Hole, July 6, 1901 (H. W. Britcher), 1♂ (holotype). *Nantucket Co.:* Nantucket, Aug. 19 (MCZ), 1♂. *Plymouth Co.:* Plymouth, July 24 (J. H. Emerton, MCZ), 1♂. **Minnesota:** *Clay Co.:* 3 mi. SE Felton, June 18, 1967, sweeping virgin upland prairie (B. Cutler), 1♂. *Jackson Co.:* 13 mi. NW Jackson, June 25, 1977, sweeping disturbed prairie (B. Cutler), 1♂. **South Da-**

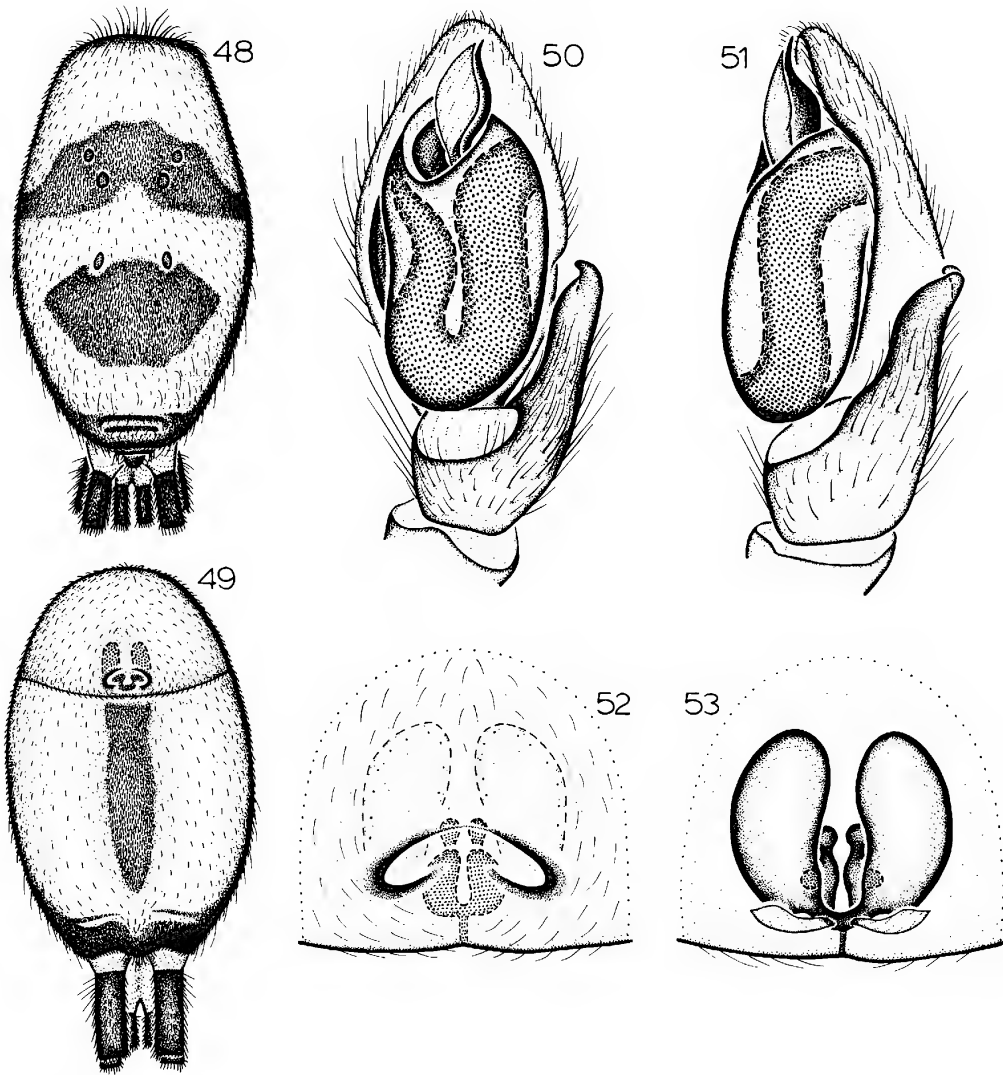
kota: *Day Co.:* Waubay, June 22, 1936 (Peterson), 1♂.

DISTRIBUTION: South Dakota east to Nova Scotia (map 3).

Sergiolus minutus (Banks)

Figures 48–53; Map 4

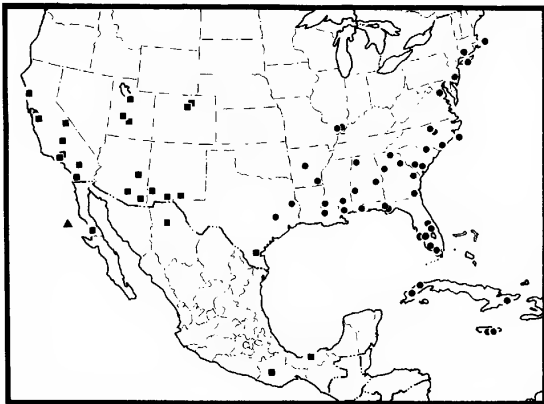
Poecilochroa minuta Banks, 1898, p. 185 (male holotype from Brazos County, Texas, in MCZ, examined). Bryant, 1940, p. 396, fig. 171.



FIGS. 48–53. *Sergiolus minutus* (Banks). 48. Abdomen, dorsal view. 49. Abdomen, ventral view. 50. Palp, ventral view. 51. Palp, retrolateral view. 52. Epigynum, ventral view. 53. Epigynum, dorsal view.

Roewer, 1954, p. 432. Ubick and Roth, 1973, p. 7.
Sergiolus minutus: Chamberlin, 1922, p. 153. Bonnet, 1958, p. 4033.
Sergiolus famulus Chamberlin, 1922, p. 152 (female holotype from Washington: District of Columbia, in MCZ, examined). Kaston, 1945, p. 4, figs. 12, 20, 21; 1948, p. 363, figs. 1257–1259. Roewer, 1954, p. 439. Bonnet, 1958, p. 4032. NEW SYNONYMY.

Sergiolus meretrix Chamberlin, 1922, p. 153 (male holotype from Raleigh, Wake County, North Carolina, in MCZ, examined). Kaston, 1945, p. 4, figs. 13, 22–24. Bryant, 1945, p. 185, fig. 3. Roewer, 1954, p. 439. Bonnet, 1958, p. 4032. NEW SYNONYMY.
Poecilochroa famula: Ubick and Roth, 1973, p. 6.
Poecilochroa meretrix: Ubick and Roth, 1973, p. 7.



MAP 4. North America, showing distribution of *Sergiulus minutus* (circles), *S. angustus* (squares), and *S. guadalupensis* (triangle).

DIAGNOSIS: This species resembles *S. decoratus* in having a median longitudinal dark stripe on the abdominal venter, but can be distinguished by the oblique tip of the retrolateral tibial apophysis (fig. 51) and smaller epigynum (fig. 52).

MALE: Total length 4.81 ± 0.46 . Carapace 2.16 ± 0.27 long, 1.44 ± 0.18 wide. Femur II 1.26 ± 0.16 long (45 specimens examined). Eye sizes and interdistances: AME 0.06, ALE 0.07, PME 0.07, PLE 0.06; AME-AME 0.07, AME-ALE 0.02, PME-PME 0.09, PME-PLP 0.07, ALE-PLP 0.07. MOQ length 0.23, front width 0.19, back width 0.23. Carapace unmarked; abdomen as in figures 48, 49; apex of tibia IV slightly darkened, legs otherwise unmarked. Retrolateral tibial apophysis oblique, with small recurved distal flange (figs. 50, 51). Leg spination: femora: II p0-0-1; IV p0-1-1; patella III p0-0-0; tibiae: I, II v0-0-2; III v1p-2-2; metatarsi: II v2-0-0; III p0-2-2, r0-1-2.

FEMALE: Total length 5.86 ± 0.74 . Carapace 2.63 ± 0.23 long, 1.73 ± 0.20 wide. Femur II 1.39 ± 0.19 long (26 specimens examined). Eye sizes and interdistances: AME 0.08, ALE 0.08, PME 0.09, PLE 0.07; AME-AME 0.06, AME-ALE 0.03, PME-PME 0.13, PME-PLP 0.12, AME-ALE 0.12. MOQ length 0.26, front width 0.23, back width 0.31. Coloration as in male. Epigynum

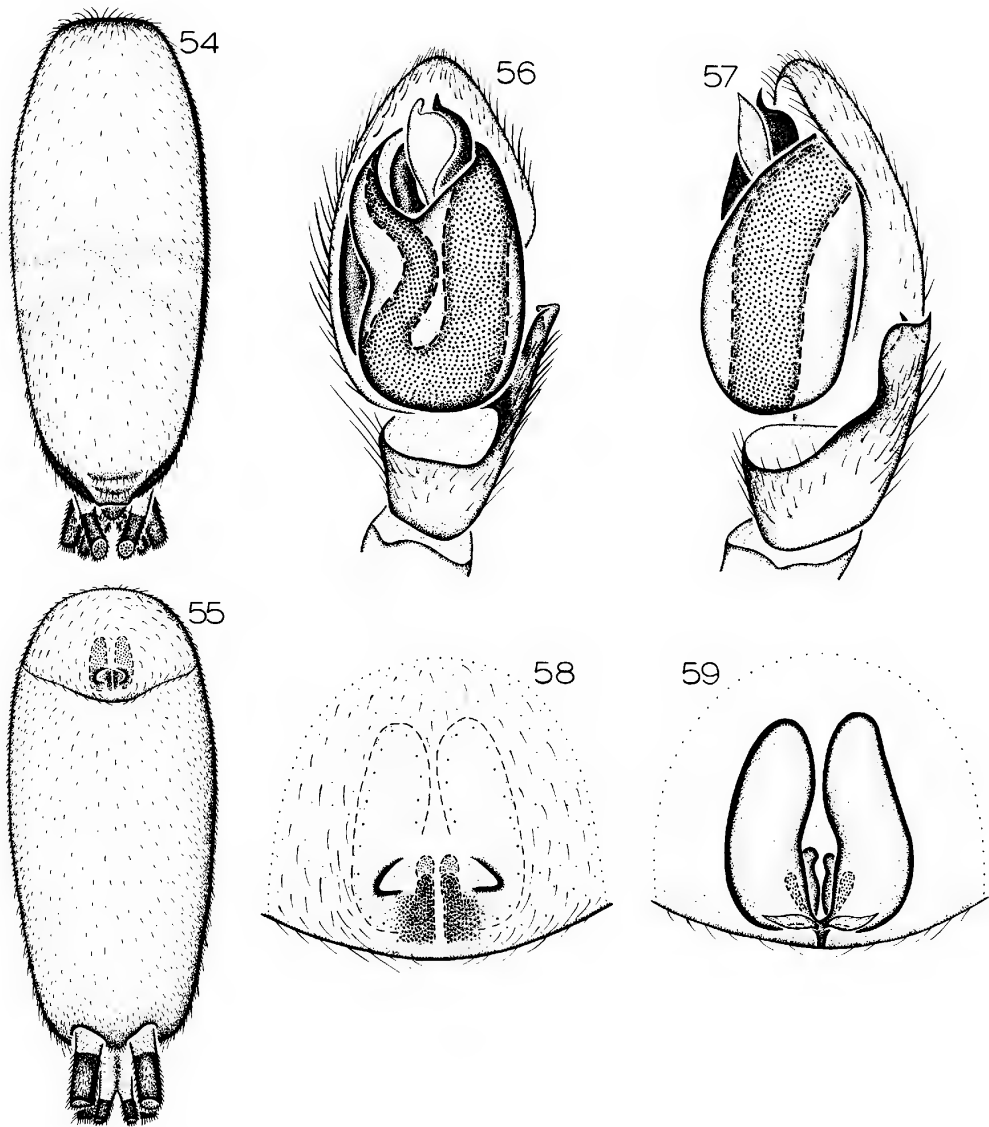
small, with oblique anterior ledges (figs. 52, 53). Leg spination: femur IV p0-1-1; patella III p0-0-0; tibiae: II v0-0-1p; III v1p-2-2; IV r1-1-1.

RECORDS: **Cuba:** *Oriente:* Soledad. *Pinar del Río:* 9 km. S Pinar del Río, Sierra de Anafe. **Jamaica:** *St. Andrew:* Liguanea, Mona Heights, Mona Reservation, Monroe Road, Richards Reservoir, Trafalgar Road. *St. Catherine:* Jamaica School of Agriculture. **United States** (county records only): *Alabama:* Baldwin, Colbert, Sumter, Tallapoosa. *Arkansas:* Chicot, Conway. *Connecticut:* New Haven. *District of Columbia:* *Florida:* Calhoun, Collier, De Soto, Jackson, Lee, Okeechobee, Osceola, Sarasota. *Georgia:* Charlton, Fulton, Screven, Towns, Wilkes. *Illinois:* Jackson, Saline. *Louisiana:* Iberville. *Massachusetts:* Barnstable. *Mississippi:* Forrest, Harrison, Wilkinson. *New Jersey:* Ocean. *New York:* Suffolk. *North Carolina:* Carteret, Durham, New Hanover, Wake. *South Carolina:* Aiken, Charleston, Chesterfield. *Texas:* Brazos, Shelby.

DISTRIBUTION: Texas east to Florida and Jamaica, north to southern Illinois and coastal Massachusetts (map 4).

SYNONYMY: No comparisons seem previously to have been made between *S. minutus* and either of its synonyms. Kaston (1945, 1948) placed northern specimens of this species (from Massachusetts, Connecticut, New York, and the District of Columbia) in *S. famulus* and southern specimens (from North Carolina and Alabama) in *S. meretrix*. We have been unable to corroborate the differences he cited in the retrolateral tibial apophysis of the holotype male of *S. meretrix*, or to find any consistent differences separating northern and southern specimens in the much larger samples currently available. The species is actually replaced in the north by its sister species, *S. decoratus* (with limited sympatry in eastern Massachusetts).

NATURAL HISTORY: Mature males have been taken every month except October, mature females every month except February, March, September, and October. Specimens have been collected in a pitfall trap in a Bermuda grass pasture, by sweeping a



FIGS. 54–59. *Sergiolus unimaculatus* Emerton. 54. Abdomen, dorsal view. 55. Abdomen, ventral view. 56. Palp, ventral view. 57. Palp, retrolateral view. 58. Epigynum, ventral view. 59. Epigynum, dorsal view.

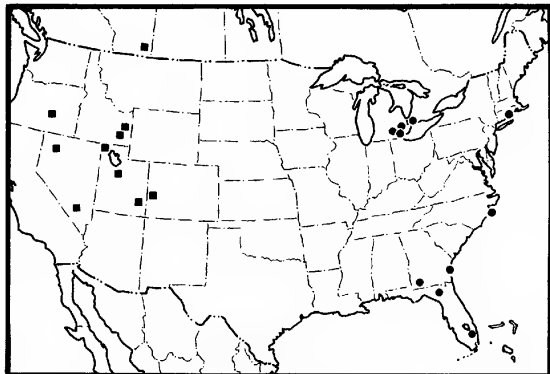
pond edge, in a soybean field, and on a sidewalk.

Sergiolus unimaculatus Emerton
Figures 54–59; Map 5

Sergiolus unimaculatus Emerton, 1915, p. 142
(male holotype from Lyme, New London

County, Connecticut, in MCZ, examined). Kaston, 1945, p. 3, figs. 25, 26 (male only); 1948, p. 363, figs. 1260, 1261 (male only). Roewer, 1954, p. 439. Bonnet, 1958, p. 4033.
Poecilochroa unimaculata: Ubick and Roth, 1973, p. 7.

DIAGNOSIS: This species resembles *S. cyaneiventris* in having an extremely narrowed



MAP 5. North America, showing distribution of *Sergiolus unimaculatus* (circles) and *S. iviei* (squares).

and elongated abdomen, but can be distinguished by the sharp dorsal point on the tip of the retrolateral tibial apophysis (fig. 57) and the triangular lateral epigynal halves (fig. 58).

MALE: Total length 4.08 ± 0.44 . Carapace 1.80 ± 0.16 long, 1.15 ± 0.09 wide. Femur II 0.98 ± 0.11 long. Eye sizes and interdistances: AME 0.06, ALE 0.06, PME 0.06, PLE 0.06; AME-AME 0.06, AME-ALE 0.01, PME-PME 0.09, PME-PLE 0.07, ALE-PLE 0.06. MOQ length 0.22, front width 0.18, back width 0.21. Carapace and legs unmarked; abdomen as in figures 54, 55. Tip of retrolateral tibial apophysis sharply pointed dorsally (figs. 56, 57). Leg spination: femur II p0-0-1; patella III p0-0-0, r0-0-0; tibiae: I, II v0-1p-2; III p0-1-1, v1p-2-2; IV p0-0-0; metatarsi: I, II v2-0-0; III p0-1-2, r0-0-2; IV p0-1-2, r1-1-2.

FEMALE: Total length 5.80 ± 1.38 . Carapace 2.35 ± 0.46 long, 1.49 ± 0.33 wide. Femur II 1.24 ± 0.27 long. Eye sizes and interdistances: AME 0.09, ALE 0.09, PME 0.08, PLE 0.09; AME-AME 0.09, AME-ALE 0.03, PME-PME 0.13, PME-PLE 0.13, ALE-PLE 0.12. MOQ length 0.31, front width 0.27, back width 0.30. Coloration as in male. Epigynum tiny, with triangular lateral halves (figs. 58, 59). Leg spination: femora: II p0-0-1; IV p0-0-0; patella III p0-0-0; tibiae: I v0-1p-2; II v0-0-2; III p1-0-1, v1p-

2-2; IV p0-0-0; metatarsi: I, II v2-0-0; III p0-1-2, r0-1-2; IV p0-1-2, r1-1-2.

MATERIAL EXAMINED: CANADA: **Ontario:** Rondeau Provincial Park, May 19-July 6, 1976, pitfall in dunes (C. D. Dondale, J. H. Redner, CNC), 1♂. UNITED STATES: **Connecticut:** *New London Co.:* Lyme, Oct. 5, 1913, damp field near shore (J. H. Emerton, MCZ), 1♂ (holotype). **Florida:** *Alachua Co.:* no specific locality, Apr. 28, 1951 (H. K. Wallace, FSCA), 1♀. *Palm Beach Co.:* Royal Palm Park, Mar. 15-24, 1930 (W. Blatchley, MCZ), 1♂. **Georgia:** *McIntosh Co.:* Sapelo Island, July-Aug. 1960, salt marsh (S. Schmittner), 3♂, 4♀, Sawmill Creek, Nov. 5, 1957, sweeping *Spartina* marsh (A. Smalley, MCZ), 1♀. *Thomas Co.:* Bar M Ranch, Apr. 4, 1973 (W. Sedgwick), 1♂, 1♀. **Michigan:** *Livingston Co.:* E. S. George Reserve, July 12-Aug. 2, 1954 (H. K. Wallace, FSCA), 2♀. *Macomb Co.:* New Baltimore, June 17-30, 1944 (B. Malkin), 1♀. *Wayne Co.:* Grasse Ile, May 30, 1949 (A. M. Chickering, MCZ), 1♂. **North Carolina:** *Carteret Co.:* Beaufort, May 20-June 6, 1951 (R. D. Barnes), 1♂, 1♀, Aug. 13, 1951 (R. D. Barnes, MCZ), 1♀; North River, June 2, 1952 (R. D. Barnes, MCZ), 1♂.

DISTRIBUTION: Michigan east to Connecticut, south to Florida (map 5).

Sergiolus cyaneiventris Simon

Figures 60-65; Map 3

Sergiolus cyaneiventris Simon, 1893, p. 311 (female holotype from Florida, in MNHN, examined). Roewer, 1954, p. 438. Bonnet, 1958, p. 4032.

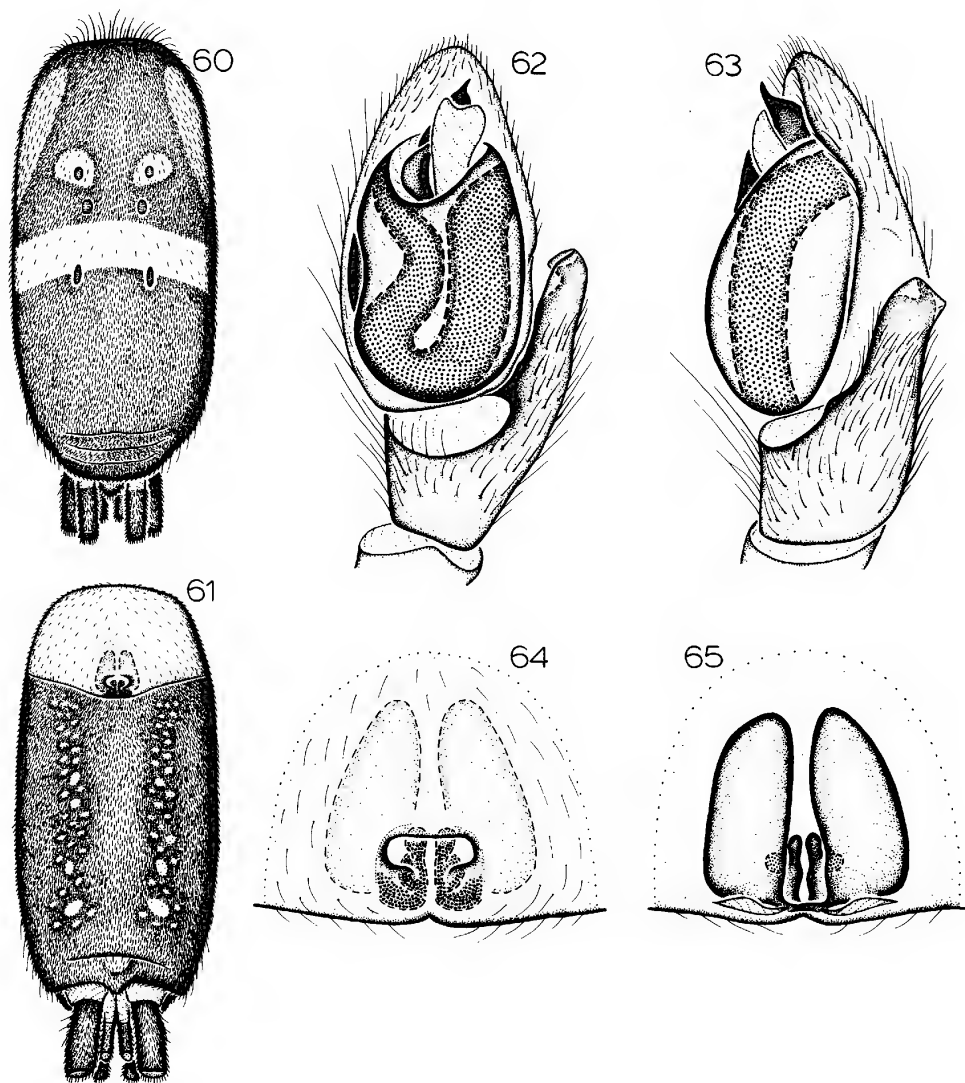
Sergiolus cyaneoventris: Banks, 1904, p. 122, figs. 3, 4, 14 (*lapsus*).

Sergiolus cyaniventris: Banks, 1910, p. 9 (*lapsus*). Chamberlin, 1922, p. 154 (*lapsus*).

Sergiolus clericus Chamberlin, 1922, p. 153 (female holotype from Washington, District of Columbia, in MCZ, examined). Roewer, 1954, p. 438. Bonnet, 1958, p. 4032. NEW SYNONYMY.

Sergiolus tribolus Chamberlin, 1922, p. 153 (male holotype from Punta Gorda, Charlotte County, Florida, in MCZ, examined). Bryant, 1935, p. 76, fig. 6. Chamberlin, 1936a, p. 10, fig. 15. Roewer, 1954, p. 438. NEW SYNONYMY.

Sergiolus unimaculatus (misidentification): Kas-



FIGS. 60–65. *Sergiulus cyaneiventris* Simon. 60. Abdomen, dorsal view. 61. Abdomen, ventral view. 62. Palp, ventral view. 63. Palp, retrolateral view. 64. Epigynum, ventral view. 65. Epigynum, dorsal view.

ton, 1945, p. 3, fig. 11 (female only); 1948, p. 363, fig. 1262 (female only).

Sergiulus trilobus: Bonnet, 1958, p. 4033 (*lapsus*).

Poecilochroa cyaneiventris: Ubick and Roth, 1973, p. 6 (*lapsus*).

Poecilochroa tribolus: Ubick and Roth, 1973, p. 7.

DIAGNOSIS: This species resembles *S. unimaculatus* in having an extremely narrowed

and elongated abdomen, but can be distinguished by the absence of a sharp dorsal point on the tip of the retrolateral tibial apophysis (fig. 63) and the rectangular lateral epigynal halves (fig. 58).

MALE: Total length 4.39 ± 0.39 . Carapace 1.95 ± 0.17 long, 1.22 ± 0.09 wide. Femur II 1.13 ± 0.10 long (21 specimens examined). Eye sizes and interdistances: AME 0.07,

ALE 0.06, PME 0.07, PLE 0.07; AME-AME 0.06, AME-ALE 0.02, PME-PME 0.09, PME-PLE 0.08, ALE-PLE 0.09. MOQ length 0.22, front width 0.20, back width 0.22. Carapace unmarked; abdomen as in figures 60, 61; tibia IV slightly darkened, other leg segments unmarked. Tip of retrolateral tibial apophysis with short interior ledge, without sharp dorsal point (figs. 62, 63). Leg spination: patella III p0-0-0; tibiae: I, II v0-0-2; III v1p-2-2; metatarsi: I, II v2-0-0; III p0-2-2, r0-2-2.

FEMALE: Total length 6.31 ± 0.81 . Carapace 2.50 ± 0.17 long, 1.52 ± 0.12 wide. Femur II 1.30 ± 0.11 long (40 specimens examined). Eye sizes and interdistances: AME 0.06, ALE 0.08, PME 0.07, PLE 0.08; AME-AME 0.08, AME-ALE 0.02, PME-PME 0.10, PME-PLE 0.11, ALE-PLE 0.12. MOQ length 0.25, front width 0.20, back width 0.24. Coloration as in male. Epigynum tiny, with rectangular lateral halves (figs. 64, 65). Leg spination: patella III p0-0-0; tibia III v2-1p-2; metatarsus III p0-2-2, r0-1-2.

RECORDS: **United States** (county records only): *Alabama*: Baldwin, Mobile. *District of Columbia*. *Florida*: Alachua, Charlotte, Collier, Dade, Dixie, Duval, Highlands, Indian River, Lee, Levy, Marion, Martin, Orange, Palm Beach, Pinellas, Polk. *Georgia*: Charlton, Fulton, Macon, Seminole, Thomas, Ware. *Mississippi*: George, Jackson, Pearl River. *New Jersey*: Ocean. *New York*: Suffolk. *South Carolina*: Charleston, Chesterfield. *Texas*: Galveston, San Patricio, Waller.

DISTRIBUTION: Texas east to Florida, north to New York (map 3).

SYNONYMY: Kaston (1945) placed *S. clericus* as the female of *S. unimaculatus*, but several simultaneous collections of both sexes indicate that it is the female of *S. tribolus* instead, and the actual female of *S. unimaculatus* is described for the first time above. Chamberlin evidently did not examine the type of *S. cyaneiventris* before describing *S. clericus*; we found no significant differences between the two.

NATURAL HISTORY: Adult specimens of both sexes have been taken every month except November, December, and January.

The species has been collected in insect flight traps, in pitfall traps on a sand-pine dune and in citrus groves, on *Quercus laevis*, and by sweeping and beating mesophytic understory, an old field, and the edge of a lake.

Sergiolus bicolor Banks

Figures 3, 4, 66-71; Map 6

Sergiolus bicolor Banks, 1900, p. 96 (female holotype from Covington, Saint Tammany Parish, Louisiana, in MCZ, examined). Roewer, 1954, p. 438. Bonnet, 1958, p. 4032.

Sergiolus bellior Chamberlin, 1936b, p. 4, fig. 17 (female holotype from Edinburg, Hidalgo County, Texas, in AMNH, examined). Roewer, 1954, p. 438. Bonnet, 1958, p. 4032. NEW SYNONYMY.

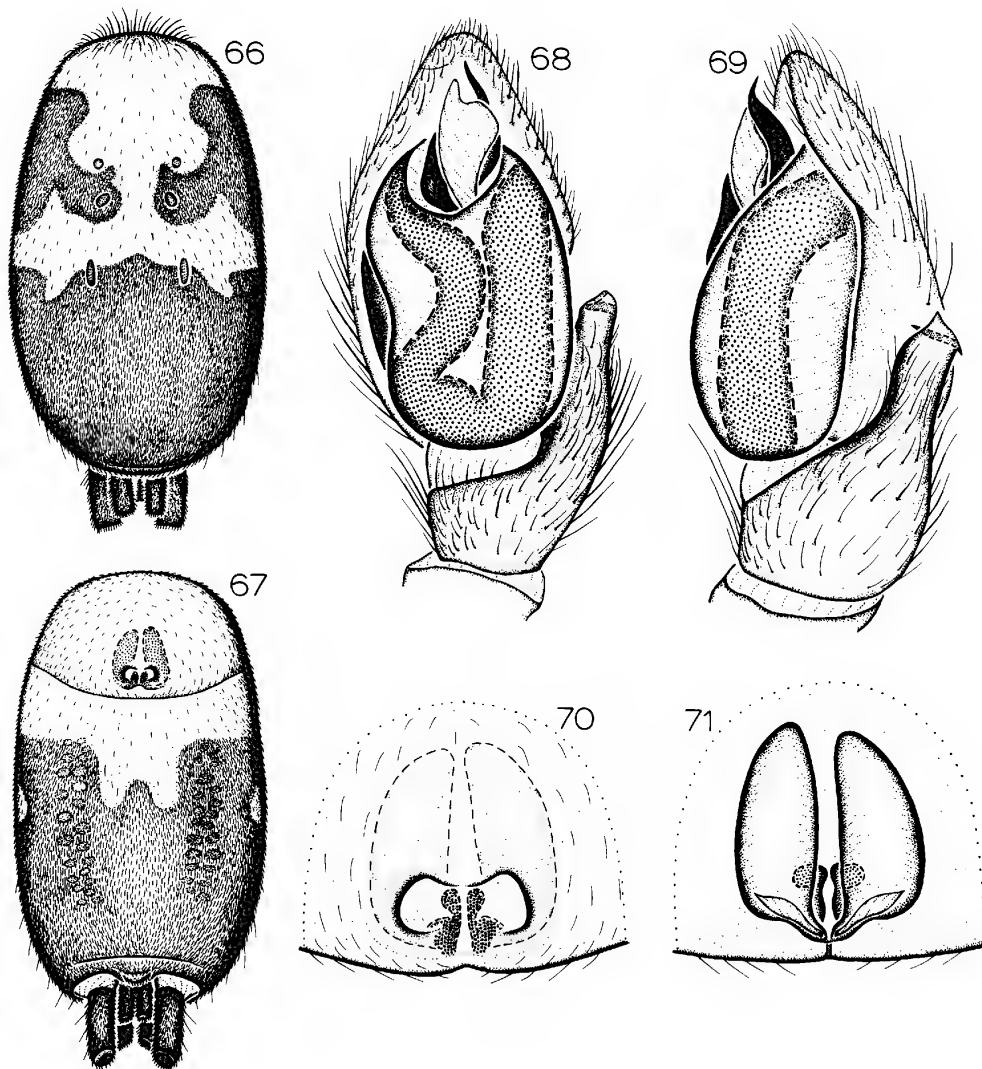
Poecilochroa bicolor: Ubick and Roth, 1973, p. 6.

Poecilochroa bellior: Ubick and Roth, 1973, p. 6.

DIAGNOSIS: Females of this species are easily recognized by the sinuous anterior ledge of the epigynum, which is closer to the epigastric furrow at its middle than at its sides (fig. 70). Males are difficult to distinguish from those of *S. cyaneiventris* by genital characters, although there are slight differences in the conformation of the tip of the retrolateral tibial apophysis (emphasized in figs. 63, 69), but may be distinguished by both the body shape (they lack the narrowed, elongated abdomens of *S. cyaneiventris*) and coloration (northern specimens have leg markings, and southern specimens abdominal markings, not found in *S. cyaneiventris*).

MALE: Total length 4.22 ± 0.42 . Carapace 1.92 ± 0.16 long, 1.20 ± 0.08 wide. Femur II 1.06 ± 0.12 long. Eye sizes and interdistances: AME 0.06, ALE 0.06, PME 0.07, PLE 0.07; AME-AME 0.06, AME-ALE 0.01, PME-PME 0.08, PME-PLE 0.08, ALE-PLE 0.11. MOQ length 0.24, front width 0.18, back width 0.22. Coloration geographically variable; abdomen of southern specimens as in figures 66, 67; see Introduction for details. Tip of retrolateral tibial apophysis wide, with interior ledge (figs. 68, 69). Leg spination: patella III p0-0-0; tibiae: I, II v0-0-2; III, IV v1p-2-2; metatarsi: I, II v0-0-0; III p0-2-2, r0-1-2.

FEMALE: Total length 5.96 ± 0.64 . Cara-

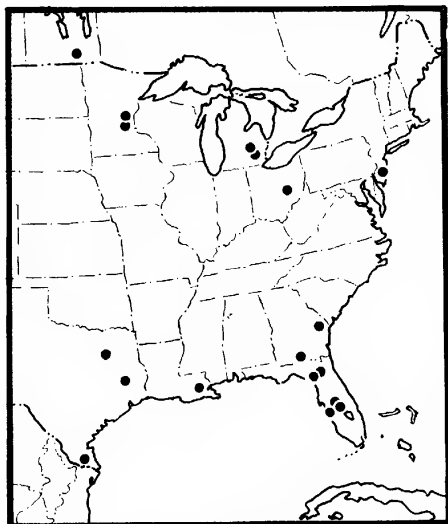


FIGS. 66–71. *Sergiolus bicolor* Banks. 66. Abdomen, dorsal view. 67. Abdomen, ventral view. 68. Palp, ventral view. 69. Palp, retrolateral view. 70. Epigynum, ventral view. 71. Epigynum, dorsal view.

pace 2.58 ± 0.17 long, 1.58 ± 0.12 wide. Femur II 1.28 ± 0.10 long. Eye sizes and interdistances: AME 0.07, ALE 0.08, PME 0.06, PLE 0.07; AME–AME 0.08, AME–ALE 0.02, PME–PME 0.13, PME–PLE 0.12, ALE–PLE 0.11. MOQ length 0.25, front width 0.22, back width 0.25. Coloration as in male. Epigynum with sinuous anterior ledge produced toward epigastric furrow at middle (figs. 70, 71). Leg spination: femur IV

p0-0-0; patella III p0-0-0; tibiae: II v0-0-1p; III v1p-1p-2; IV p1-0-1, v1p-2-2.

MATERIAL EXAMINED: CANADA: Manitoba: E Winnipeg, summer 1963, sweeping grasses and shrubs (A. L. Turnbull, CNC), 1♂. UNITED STATES: Florida: Alachua Co.: no specific locality, May 1955 (H. K. Wallace, FSCA), 1♀; Gainesville, Apr. 22, 1955, hanging on silk line from tree (H. K. Wallace), 1♀, Apr. 22, 1978, on driveway



MAP 6. Eastern North America, showing distribution of *Sergiolus bicolor*.

(G. B. Edwards, FSCA), 1♂, July 8, 1979, on ground (G. B. Edwards, FSCA), 1♀. *Dixie Co.*: 4 mi. N Oldtown, Apr. 27, 1980, beating mesophytic understory (G. B. Edwards, M. C. Thomas, FSCA), 1♂. *Highlands Co.*: S Lake Istokpoga, Aug. 15, 1963 (R. Archbold), 1♂. *Polk Co.*: Winterhaven, Aug. 4, 1967, on allamanda leaf 4 ft. above ground (M. H. Muma, FSCA), 1♀. *Sarasota Co.*: Miakka River State Park, Apr. 6, 1938 (W. J. Gertsch), 1♂. **Georgia**: *Effingham Co.*: no specific locality, Jan. 10, 1975, from sac in Spanish moss on live oak (D. Gowan, WLT), 1♀. *Lowndes Co.*: Withlacoochee River, 5 mi. N Valdosta, May 28, 1946 (P. W. Fattig), 1♂. **Louisiana**: *Saint Tammany Par.*: Covington (N. Banks, MCZ), 1♀ (holotype). **Michigan**: *Livingston Co.*: E. S. George Reserve, June 14–July 14, 1954 (H. K. Wallace, AMNH, FSCA), 3♂, 5♀. *Washtenaw Co.*: Waterloo Recreation Area, June 12, 1949 (A. M. Chickering, MCZ), 1♀. **Minnesota**: *Anoka Co.*: Helen Allison Savanna Nature Conservation Area, June 13, 1978, from dry seed pods of *Penstemon grandiflorus* (B. Cutler), 1♀. *Hennepin Co.*: Minneapolis, Apr. 28, 1931 (W. J. Gertsch), 1♀. **New Jersey**: *Ocean Co.*: Lakehurst, July 3, 1912, from gall (J. H.

Emerton, MCZ), 1♀. **Ohio**: *Hocking Co.*: Ash Caves, July 9, 1938 (W. M. Barrows), 1♀; Old Man's Cave, June 18, 1941 (W. M. Barrows, OSU), 1♂. **Texas**: *Hidalgo Co.*: NW Edinburg, Sept. 3, 1934 (S. Mulaik), 1♀ (holotype). *Kaufman Co.*: Crandall, June 12, 1937, 1♂. *Walker Co.*: Huntsville, Sept. 11, 1976 (R. S. Peigler, CNC), 1♀.

DISTRIBUTION: Manitoba to New Jersey, south to Texas and Florida (map 6).

SYNONYMY: Chamberlin (1936b) provided no characters by which to distinguish *S. bellior* from *S. bicolor*, and there appear to be none.

Sergiolus montanus (Emerton)

Figures 72–76; Map 7

Poecilochroa montana Emerton, 1890, p. 175, pl. 4, fig. 2 (female holotype from Mt. Washington, Coos County, New Hampshire, in MCZ, examined). Roewer, 1954, p. 432. Bonnet, 1958, p. 3734. Ubick and Roth, 1973, p. 7.

Poecilochroa pacifica Banks, 1896, p. 89 (female holotype from Palo Alto, Santa Clara County, California, in MCZ, examined); 1904, p. 334, fig. 14. First synonymized by Chamberlin, 1922, p. 151.

Sergiolus montana: Bryant, 1908, p. 8.

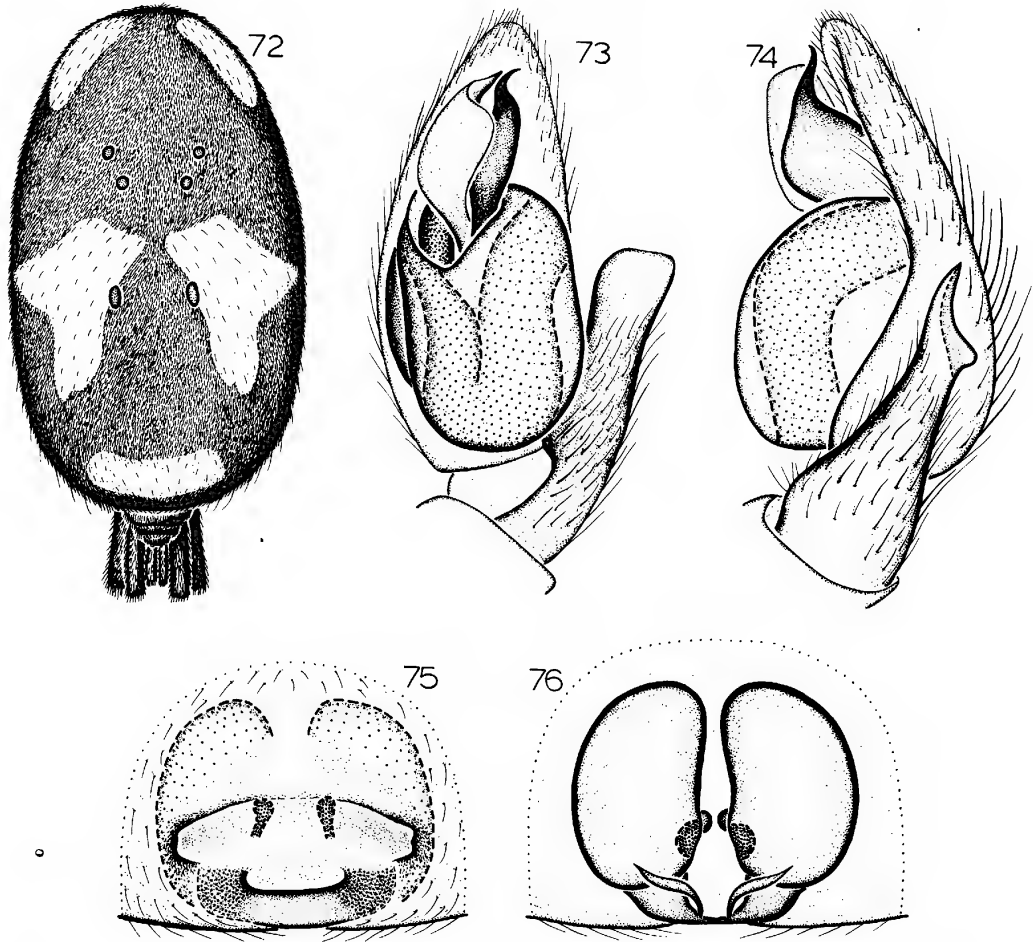
Sergiolus montanus: Petrunkevitch, 1911, p. 146.

Poecilochroa abjecta Chamberlin, 1936a, p. 7, figs. 11, 12 (male holotype from Arizona, in AMNH, examined). Roewer, 1954, p. 431. Bonnet, 1958, p. 3731. Ubick and Roth, 1973, p. 6. **NEW SYNONYMY**.

Poecilochroa montanoides Schenkel, 1950, p. 41, fig. 8 (female holotype from Crater Lake, Klamath County, Oregon, in NMB, examined). Roewer, 1954, p. 432. Ubick and Roth, 1973, p. 7. **NEW SYNONYMY**.

DIAGNOSIS: This species is easily recognized by the retrolateral tibial apophysis having a dorsal extension at about half its length and a dorsoventrally flattened tip (figs. 73, 74) and the epigynum being a broad plate with paired lateral edges and a median basal ridge (fig. 75).

MALE: Total length 4.85 ± 0.46 . Carapace 2.31 ± 0.21 long, 1.69 ± 0.15 wide. Femur II 1.47 ± 0.12 long (215 specimens examined). Eye sizes and interdistances: AME 0.09, ALE 0.10, PME 0.09, PLE 0.09; AME–AME 0.07, AME–ALE 0.02, PME–PME

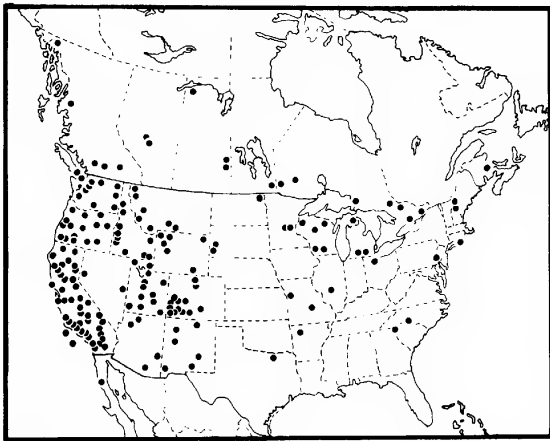


FIGS. 72-76. *Sergiolus montanus* (Emerton). 72. Abdomen, dorsal view. 73. Palp, ventral view. 74. Palp, retrolateral view. 75. Epigynum, ventral view. 76. Epigynum, dorsal view.

0.13, PME-PLE 0.05, ALE-PLE 0.07. MOQ length 0.31, front width 0.25, back width 0.32. Coloration geographically variable; most specimens with darkened carapace, anterior coxae, and femora and two pairs of light spots on abdominal venter (fig. 72), but some western specimens (see Introduction) with light carapace and appendages and abdominal spots fused into lateral stripes; abdominal venter uniformly dark. Retrolateral tibial apophysis with dorsal extension at about half its length and wide, flattened tip (figs. 73, 74). Leg spination: patella III p0-0-0, r0-0-0; tibiae: I, II v0-0-2; III d0-

0-0, r1-1-1; IV p1-0-1, r1-1-1; metatarsi: II v2-0-0; III p1-1-2.

FEMALE: Total length 6.89 ± 1.08 . Carapace 2.89 ± 0.32 long, 2.05 ± 0.23 wide. Femur II 1.69 ± 0.17 long (360 specimens examined). Eye sizes and interdistances: AME 0.11, ALE 0.11, PME 0.10, PLE 0.12; AME-AME 0.08, AME-ALE 0.04, PME-PME 0.16, PME-PLE 0.13, ALE-PLE 0.10. MOQ length 0.34, front width 0.30, back width 0.36. Coloration as in male. Epigynum an elevated plate with distinct lateral ridges, usually indistinct anterior ridge, and pronounced posterior ridge just behind depres-



MAP 7. North America, showing distribution of *Sergiolus montanus*.

sion (figs. 75, 76). Leg spination: patella III p0-0-0; tibiae: II v0-0-1p; III d0-0-0, v1p-2-2; IV v1p-2-2; metatarsi: I v0-0-0; III p1-1-2.

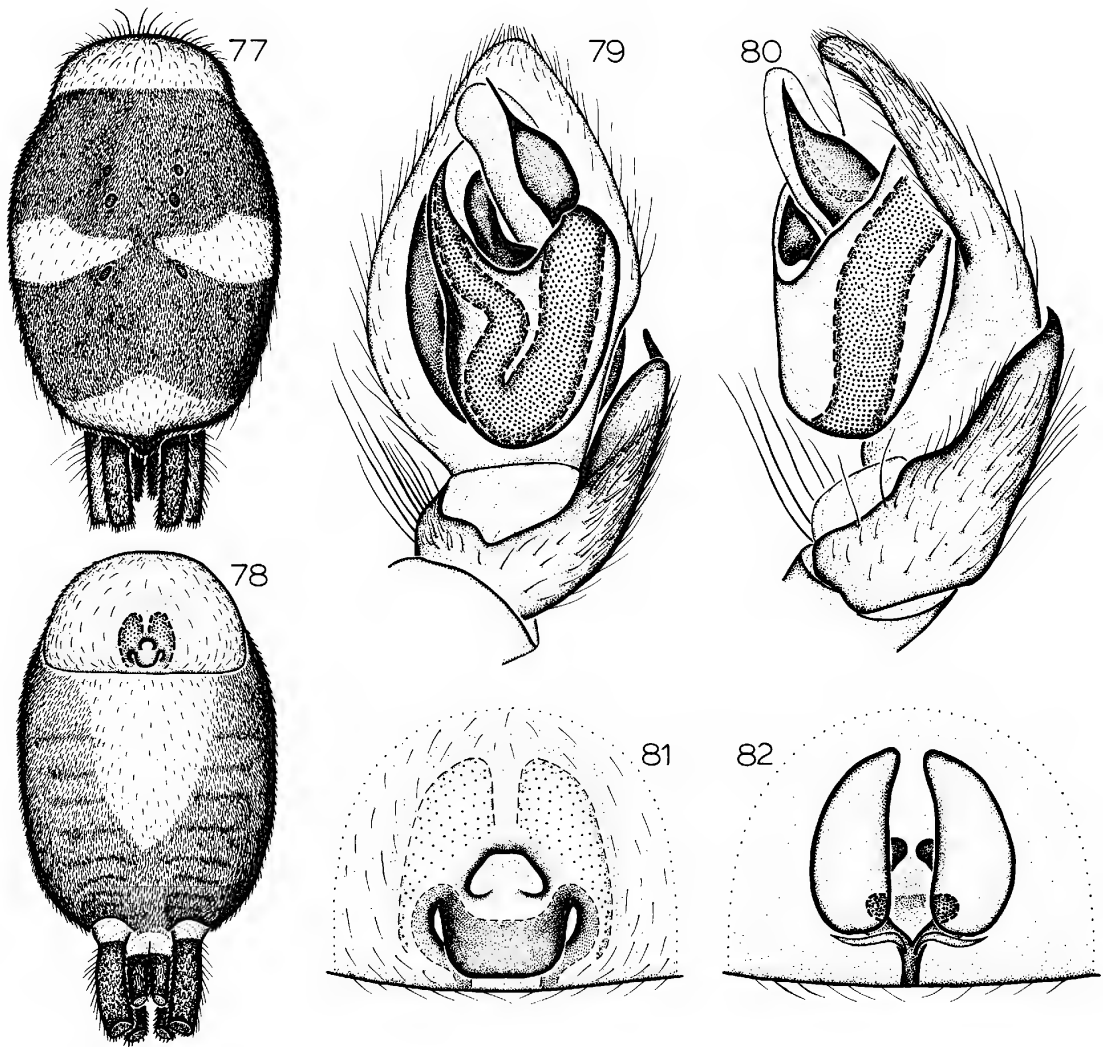
RECORDS: **Canada:** *Alberta:* Edmonton, George Lake, Robb. *British Columbia:* Blue Pool Camp, Kamloops, Lillooet, Salmon Arm, Seton Creek, Terrace, Trinity Valley, Wellington. *Manitoba:* Rennie, Seddon's Corner. *New Brunswick:* Kouchibouguac National Park. *Ontario:* Batchawana, Belleville, Lac Seul, Minaki, Opeongo, Rockport, Sturgeon Falls, Turkey Point. *Saskatchewan:* Lady Lake, Lake Athabasca, Reserve. **Mexico:** *Baja California Norte:* Arroyo Santo Domingo, El Rosario, **United States** (county records only): *Alaska:* Skagway. *Arizona:* Apache, Coconino, Pima. *Arkansas:* Johnson. *California:* Alameda, Alpine, Contra Costa, El Dorado, Fresno, Humboldt, Inyo, Kern, Lake, Los Angeles, Madera, Marin, Mariposa, Mendocino, Mono, Monterey, Orange, Placer, Plumas, Riverside, Sacramento, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, Santa Clara, Santa Cruz, Shasta, Sierra, Siskiyou, Stanislaus, Tehama, Tulare, Tuolumne, Ventura, Yolo. *Colorado:* Alamosa, Boulder, Custer, Delta, Gunnison, Hinsdale, La Plata, Larimer, Mesa, Mineral, Montezuma, Montrose, San

Miguel. *Idaho:* Adams, Bear Lake, Bonneville, Canyon, Franklin, Latah, Lewis, Payette, Twin Falls, Washington. *Illinois:* Sangamon. *Michigan:* Calhoun, Cheboygan, Emmet, Washtenaw. *Minnesota:* Hennepin, Ramsey. *Missouri:* Jackson, Phelps. *Montana:* Carbon, Flathead, Lake, Madison, Powell, Ravalli, Sweet Grass. *Nevada:* Washoe, White Pine. *New Hampshire:* Carroll, Coos. *New Mexico:* Grant, Lincoln, Otero, Sandoval, Taos, Valencia. *New York:* Suffolk. *North Carolina:* Mecklenburg. *North Dakota:* Pembina. *Ohio:* Ottawa. *Oregon:* Baker, Benton, Deschutes, Grant, Harney, Jackson, Josephine, Klamath, Lake, Lane, Umatilla, Wasco, Washington. *Pennsylvania:* Bucks. *South Carolina:* Oconee. *South Dakota:* Custer, Pennington. *Texas:* Grayson. *Utah:* Box Elder, Emery, Garfield, Rich, Salt Lake, San Juan, Sevier, Uintah, Utah, Washington, Wayne, Weber. *Washington:* King, Okanogan, Pierce, San Juan, Snohomish, Spokane, Stevens, Thurston, Whitman, Yakima. *Wisconsin:* Crawford, Dane, Florence, Marathon, Washburn. *Wyoming:* Albany, Crook, Park, Sublette, Teton, Yellowstone National Park.

DISTRIBUTION: Southern Alaska to New Brunswick, south to Baja California Norte, Texas, and South Carolina (map 7).

SYNONYMY: Chamberlin (1936a) provided no characters by which to distinguish *P. abjecta* from *S. montanus*, and there appear to be none; Schenkel's description of the distinguishing epigynal characters of *P. montanoides* applies fully to *S. montanus*. Of the four holotypes, only that of *P. pacifica* shows the color modifications found in some southwestern specimens.

NATURAL HISTORY: Mature males have been taken in February and from late April through early October; mature females every month except December. Specimens have been collected under rocks, reeds, bark (including *Eucalyptus* trees), driftwood on beaches, and dry cow feces, in bogs, climax chaparral, and a wasp nest, associated with jack pine, ponderosa pine, scrub oak, aspen, and sage, in and around buildings, and in stabilized talus at elevations up to 10,200 feet.



FIGS. 77–82. *Sergiolus columbianus* (Emerton). 77. Abdomen, dorsal view. 78. Abdomen, ventral view. 79. Palp, ventral view. 80. Palp, retrolateral view. 81. Epigynum, ventral view. 82. Epigynum, dorsal view.

Sergiolus columbianus (Emerton),
new combination
Figures 77–82; Map 1

Poecilochroa columbiana Emerton, 1917, p. 269, fig. 21 (one male and two female syntypes from Departure Bay, British Columbia, Canada, in MCZ, examined). Bonnet, 1958, p. 3732. Ubick and Roth, 1973, p. 6.

DIAGNOSIS: This species can be easily recognized by the ventrally rotated embolus and distally narrowed retrolateral tibial apophysis (figs. 79, 80) and narrow epigynal hood situated just anteriorly of a wide plate (fig. 81).

MALE: Total length 5.25 ± 0.64 . Carapace 2.34 ± 0.31 long, 1.63 ± 0.20 wide. Femur II 1.54 ± 0.20 long (33 specimens examined).

Eye sizes and interdistances: AME 0.06, ALE 0.09, PME 0.08, PLE 0.07; AME-AME 0.07, AME-ALE 0.03, PME-PME 0.11, PME-PLE 0.10, ALE-PLE 0.10. MOQ length 0.27, front width 0.18, back width 0.27. Specimens usually dark, with dark carapace, coxa I, trochanter I, femora I-IV, distal patella and entire tibia, metatarsus IV, but some specimens from southern Oregon and California with posterior part of carapace and some or all leg segments light. Retrolateral tibial apophysis abruptly narrowed distally (figs. 79, 80). Leg spination: patella III p0-0-0; tibiae: II v0-0-1p; III d0-0-0; IV r1-1-1; metatarsus I v0-0-0.

FEMALE: Total length 6.33 ± 0.94 . Carapace 2.64 ± 0.21 long, 1.80 ± 0.16 wide. Femur II 1.63 ± 0.14 long (99 specimens examined). Eye sizes and interdistances: AME 0.08, ALE 0.09, PME 0.08, PLE 0.09; AME-AME 0.09, AME-ALE 0.03, PME-PME 0.15, PME-PLE 0.11, ALE-PLE 0.10. MOQ length 0.30, front width 0.25, back width 0.31. Coloration as in male. Epigynum with narrow anterior hood and wide posterior plate (figs. 81, 82). Leg spination: patella III p0-0-0; tibiae: III d0-0-0, v1p-2-2; IV v1p-2-2, r1-1-1; metatarsi: I v0-0-0; III p1-1-2.

Records: **Canada:** *British Columbia:* Coxox, Departure Bay, Goldstream Provincial Park, Langford, Wellington. **United States** (county records only): *Arizona:* Pima. *California:* Kern, Los Angeles, Marin, Mariposa, Modoc, Mono, Napa, Placer, San Bernardino, San Francisco, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Siskiyou, Sonoma. *Montana:* Carbon, Fergus. *Oregon:* Benton, Descutes, Grant, Hood River, Jackson, Klamath, Lane, Multnomah. *South Dakota:* Custer. *Utah:* Salt Lake. *Washington:* King, Kittitas, Mason, Pierce, San Juan, Snohomish, Thurston.

DISTRIBUTION: Vancouver Island to South Dakota, south to California and Arizona (map 1).

NATURAL HISTORY: Mature males have been taken from March through August, mature females from May through September and in December. Specimens have been collected under bark, rocks, boards, and drift-

wood and kelp on beaches, by sweeping grass, in chaparral, sagebrush, and pinyon pine, yellow pine, oak, and juniper woods, in houses, and at elevations up to 4600 feet.

Sergiolus stella Chamberlin

Figures 83-87; Map 8

Sergiolus stella Chamberlin, 1922, p. 152 (female holotype from Austin, Travis County, Texas, in AMNH, examined). Roewer, 1954, p. 439. Bonnet, 1958, p. 4033.

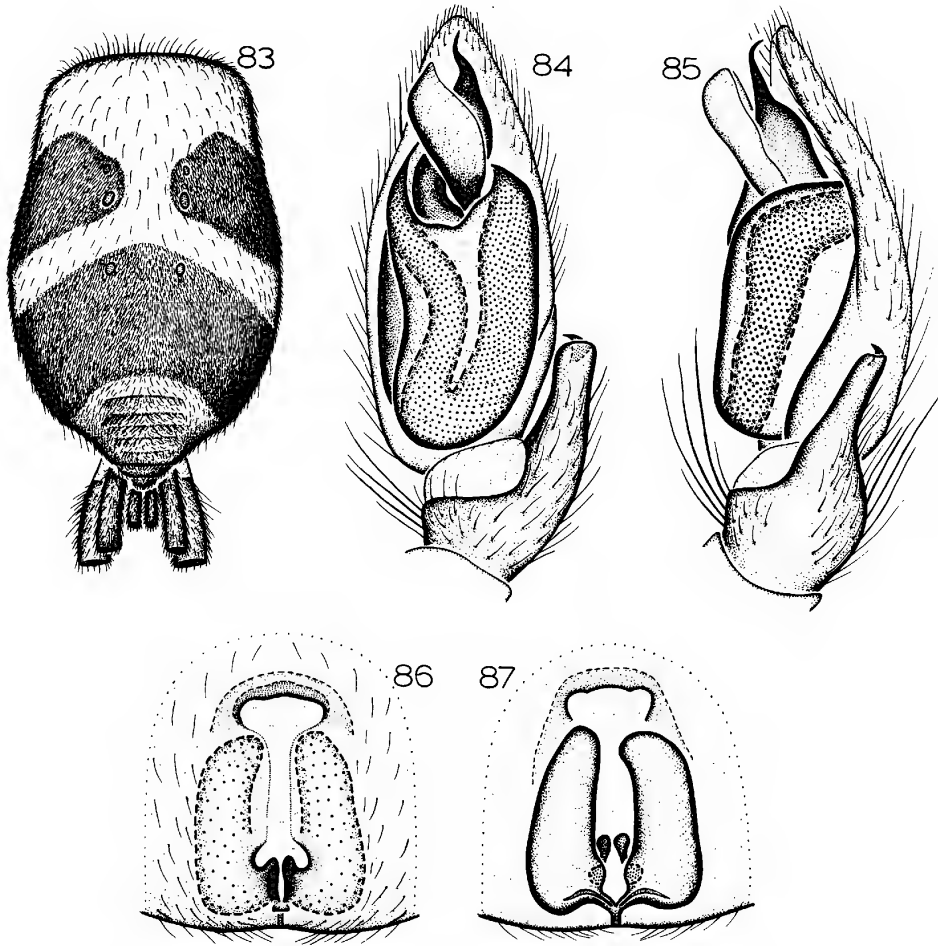
Poecilochroa stella: Ubick and Roth, 1973, p. 7.

DIAGNOSIS: This species is easily recognized by the long, straight embolus (figs. 84, 85) and extremely long epigynum (fig. 86).

MALE: Total length 4.98 ± 0.60 . Carapace 2.27 ± 0.29 long, 1.61 ± 0.18 wide. Femur II 1.43 ± 0.17 long. Eye sizes and interdistances: AME 0.08, ALE 0.09, PME 0.09, PLE 0.09; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.10, PME-PLE 0.04, ALE-PLE 0.06. MOQ length 0.23, front width 0.21, back width 0.27. Carapace dark; abdomen as in figure 83, venter uniformly light brown; femora slightly darkened. Embolus extremely long, straight (figs. 84, 85). Leg spination: femur IV p0-1-1; patella IV p0-1-0, r0-1-0; tibiae: I v0-1p-1p; IV d1-0-0.

FEMALE: Total length 6.49 ± 0.67 . Carapace 2.78 ± 0.35 long, 1.91 ± 0.22 wide. Femur II 1.58 ± 0.16 long. Eye sizes and interdistances: AME 0.07, ALE 0.09, PME 0.08, PLE 0.09; AME-AME 0.08, AME-ALE 0.01, PME-PME 0.13, PME-PLE 0.12, ALE-PLE 0.11. MOQ length 0.26, front width 0.22, back width 0.29. Coloration as in male. Epigynum extremely elongated (figs. 86, 87). Leg spination: patella IV p0-1-0, r0-1-0; tibiae: I v0-1p-1p; IV d1-0-0; metatarsus III v2-1p-2.

MATERIAL EXAMINED: **MEXICO:** **Chi-huahua:** summit W Primavera, July 2, 1947, elevation 7000 feet (W. J. Gertsch), 1♂; Torrecillas, Aug. 17, 1947, elevation 6900 feet (G. M. Bradt), 1♀. **Durango:** 10 mi. W Durango, Sept. 9, 1961, elevation 4600 feet (A. Aschwanden, JAB), 1♀; 15 mi. E Durango, Aug. 18, 1947 (W. J. Gertsch), 1♀; San Isidro, 60 mi. NW Durango, Aug. 19, 1947 (W.

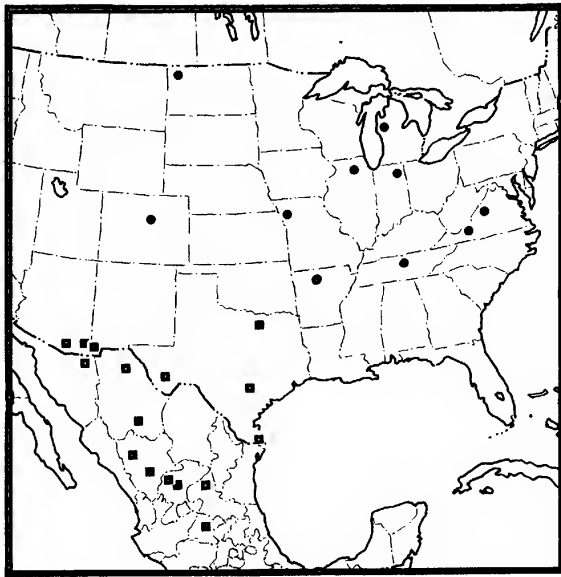


FIGS. 83–87. *Sergiolus stella* Chamberlin. 83. Abdomen, dorsal view. 84. Palp, ventral view. 85. Palp, retrolateral view. 86. Epigynum, ventral view. 87. Epigynum, dorsal view.

J. Gertsch), 1 ♀. **Guanajuato:** San Miguel de Allende, Aug. 13, 1953 (P. and C. Vaurie), 1 ♂. **San Luis Potosí:** Charcas, San Diego Plain, July 8–29, 1934, hillside (A. M. Chickering, MCZ), 3 ♂, 13 ♀. **Sonora:** Cajón Bonita, 38 mi. E Agua Prieta, Aug. 6, 1975 (V. Roth), 1 ♀. **Zacatecas:** 37 mi. NW Fresnillo, Aug. 31, 1965 (W. J. Gertsch, R. Hastings), 1 ♀; 4 km. N Morales, Aug. 7, 1972, under rocks (N. Horner, NVH), 1 ♂; 33 mi. NW Zacatecas, Aug. 31, 1965 (W. J. Gertsch, R. Hastings), 2 ♀. **UNITED STATES: Arizona:** *Cochise Co.:* Portal, July 9, 1970 (B. and C. Durden, BRV), 1 ♂; Southwestern Research

Station, Aug. 14, 1963, elevation 5400 feet (V. Roth, VDR), 1 ♂. *Santa Cruz Co.:* 7 mi. SE Ruby, Sept. 5, 1950 (W. J. Gertsch), 2 ♀. **New Mexico: Hidalgo Co.:** Peloncillo Mountains, Aug. 1, 1969 (V. Roth), 1 ♂. **Texas: Brewster Co.:** W Alpine, Sept. 5, 1939 (D. and S. Mulaik), 1 ♀. *Cameron Co.:* Brownsville, Mar. 16, 1923, 1 ♀. *Denton Co.:* Denton, July 25, 1945, in house, 1 ♀. *Travis Co.:* Austin (MCZ), 1 ♀ (holotype); 5 mi. E Austin, June–July 1957 (W. McAlister), 1 ♂.

DISTRIBUTION: Arizona to Texas, south to central Mexico (map 8).



MAP 8. North America, showing distribution of *Sergiolus tennesseensis* (circles) and *S. stella* (squares).

Sergiolus tennesseensis Chamberlin
Figures 88–93; Map 8

Sergiolus tennesseensis Chamberlin, 1922, p. 152 (female holotype from Glenraven, Robertson County, Tennessee, in MCZ, examined). Roewer, 1954, p. 439. Bonnet, 1958, p. 4033.
Poecilochroa tennesseensis: Ubick and Roth, 1973, p. 7.

DIAGNOSIS: This species is closest to *S. iviei* (which it replaces in the eastern and plains states) but can be distinguished by the smaller embolus and sinuous tip of the retrolateral tibial apophysis (figs. 90, 91) and the smaller epigynal atrium (fig. 92).

MALE: Total length 3.59–5.16. Carapace 1.58–2.47 long, 1.21–1.81 wide. Femur II 1.17–1.78 long. Eye sizes and interdistances: AME 0.04, ALE 0.05, PME 0.07, PLE 0.05; AME–AME 0.05, AME–ALE 0.01, PME–PME 0.05, PME–PLE 0.05, ALE–PLE 0.05. MOQ length 0.16, front width 0.13, back width 0.19. Carapace dark; abdomen as in figures 88, 89; femora dark, other leg segments light. Retrolateral tibial apophysis with distal flange, sinuous in lateral view

(figs. 90, 91). Leg spination: patella IV p0-1-0, r0-1-0; tibiae: I v0-1p-1p; III, IV v1p-2-2; metatarsus III p0-2-2, r0-1-2.

FEMALE: Total length 5.04–6.26. Carapace 2.29–2.87 long, 1.66–2.00 wide. Femur II 1.55–1.91 long. Eye sizes and interdistances: AME 0.05, ALE 0.07, PME 0.08, PLE 0.07; AME–AME 0.06, AME–ALE 0.02, PME–PME 0.07, PME–PLE 0.06, ALE–PLE 0.10. MOQ length 0.23, front width 0.16, back width 0.23. Coloration as in male. Epigynum with small, triangular, depressed atrium with completely connected margins (figs. 92, 93). Leg spination: patellae: III p-0-0; IV p0-1-0, r0-1-0; tibiae III, IV v1p-2-2; metatarsi: I v0-0-0; II v2-0-0.

MATERIAL EXAMINED: UNITED STATES:
Arkansas: *Newton Co.:* 5.9 mi. S Mt. Judea, Aug. 22, 1974, pitfall, elevation 1950 feet (J. Heiss, R. Chenoweth, JSH), 1♀.
Colorado: *Douglas Co.:* Cherry Creek, 4 mi. S Frankstown, June 20, 1960 (B. Vogel, BRV), 1♂.
Illinois: *La Salle Co.:* Starved Rock State Park, June 18, 1941 (D. C. Lowrie), 1♂, 1♀.
Indiana: *Marshall Co.:* Tippecanoe Lake (N. Banks, MCZ), 1♂.
Michigan: *Oceana Co.:* Manistee National Forest, July 1938 (M. Heifetz), 1♀.
Missouri: *Jackson Co.:* Fort Osage, June 25, 1975 (R. C. Funk), 1♂.
North Dakota: *Divide Co.:* no specific locality, 1937–1938 (J. Davis), 1♂.
Tennessee: *Robertson Co.:* Glenraven, June–July 1904 (W. H. Fox, MCZ), 1♀ (holotype).
Virginia: *Giles Co.:* no specific locality, July 9, 1935 (H. H. Hobbs), 2♀. *Page Co.:* E Luray, July 5, 1933 (W. J. Gertsch), 2♀.

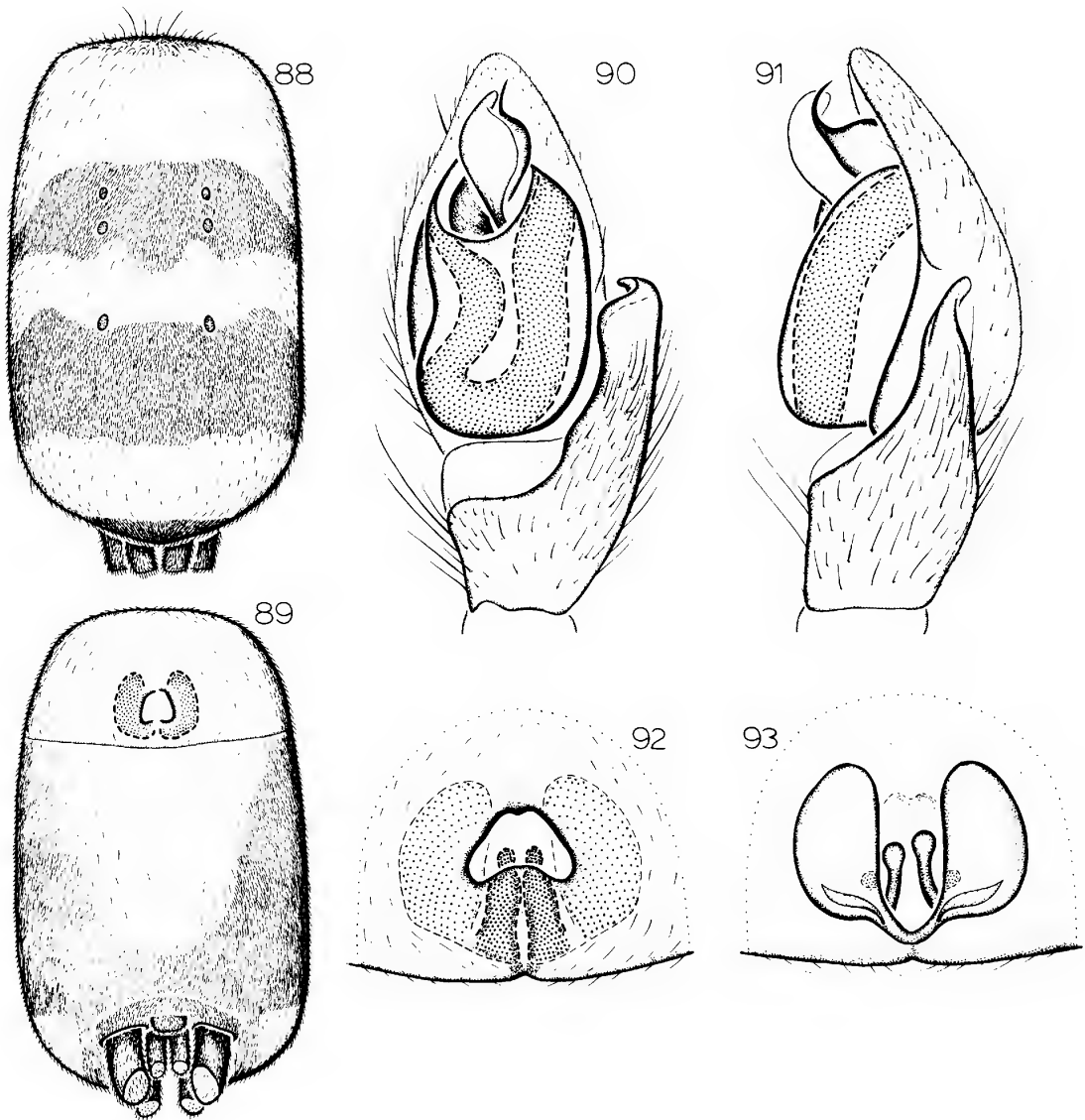
DISTRIBUTION: North Dakota and Colorado east to Virginia (map 8).

Sergiolus iviei, new species
Figures 94–98; Map 5

TYPES: Male holotype and female paratype from southwest of Salt Lake City, Salt Lake County, Utah (May 17, 1941; W. Ivie), deposited in AMNH.

ETYMOLOGY: The specific name is a patronym for the collector of the type specimens and many other *Sergiolus*.

DIAGNOSIS: This species is closest to *S. tennesseensis* (which it replaces in the west-

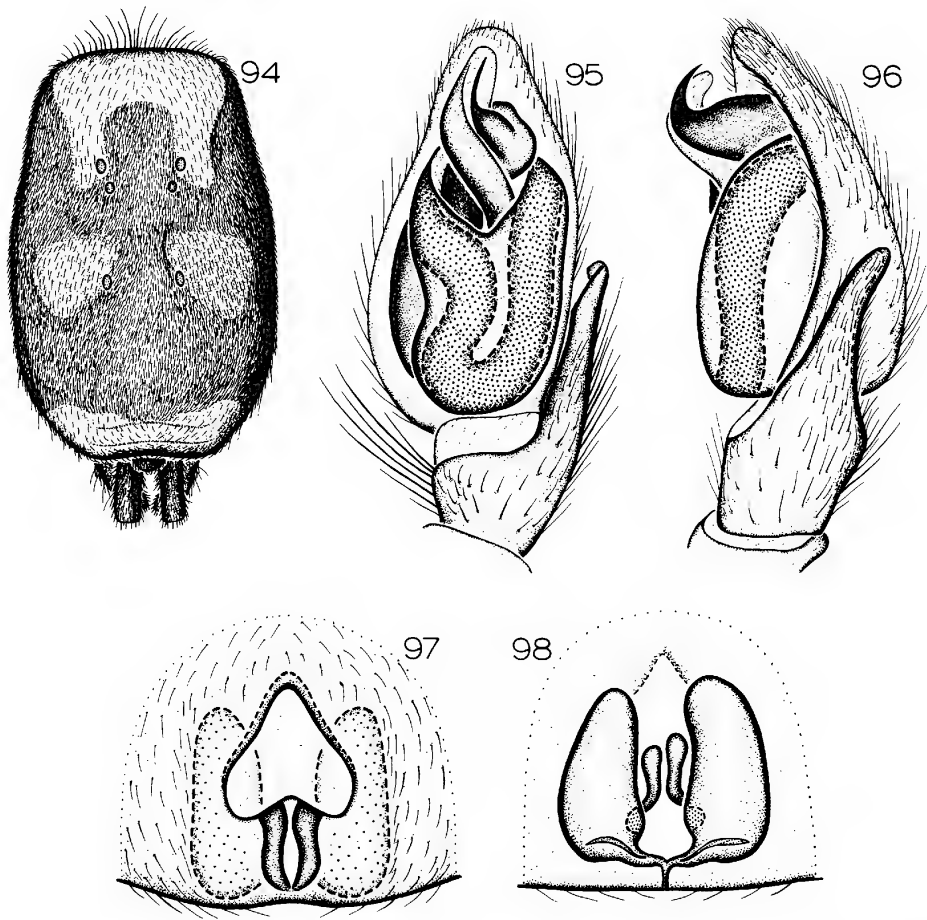


FIGS. 88–93. *Sergiolus tennesseensis* Chamberlin. 88. Abdomen, dorsal view. 89. Abdomen, ventral view. 90. Palp, ventral view. 91. Palp, retrolateral view. 92. Epigynum, ventral view. 93. Epigynum, dorsal view.

ern states) but can be distinguished by the larger embolus and straight, small tip of the retrolateral tibial apophysis (figs. 95, 96) and the larger epigynal atrium (fig. 97).

MALE: Total length 3.30–4.39. Carapace 1.45–1.92 long, 1.14–1.37 wide. Femur II 0.92–1.15 long. Eye sizes and interdistances:

AME 0.04, ALE 0.07, PME 0.06, PLE 0.06; AME–AME 0.05, AME–ALE 0.01, PME–PME 0.05, PME–PLE 0.05, ALE–PLE 0.07. MOQ length 0.21, front width 0.13, back width 0.18. Carapace light; abdomen as in figure 94 or with spots fused into lateral stripes, venter pale yellow. Embolus large,



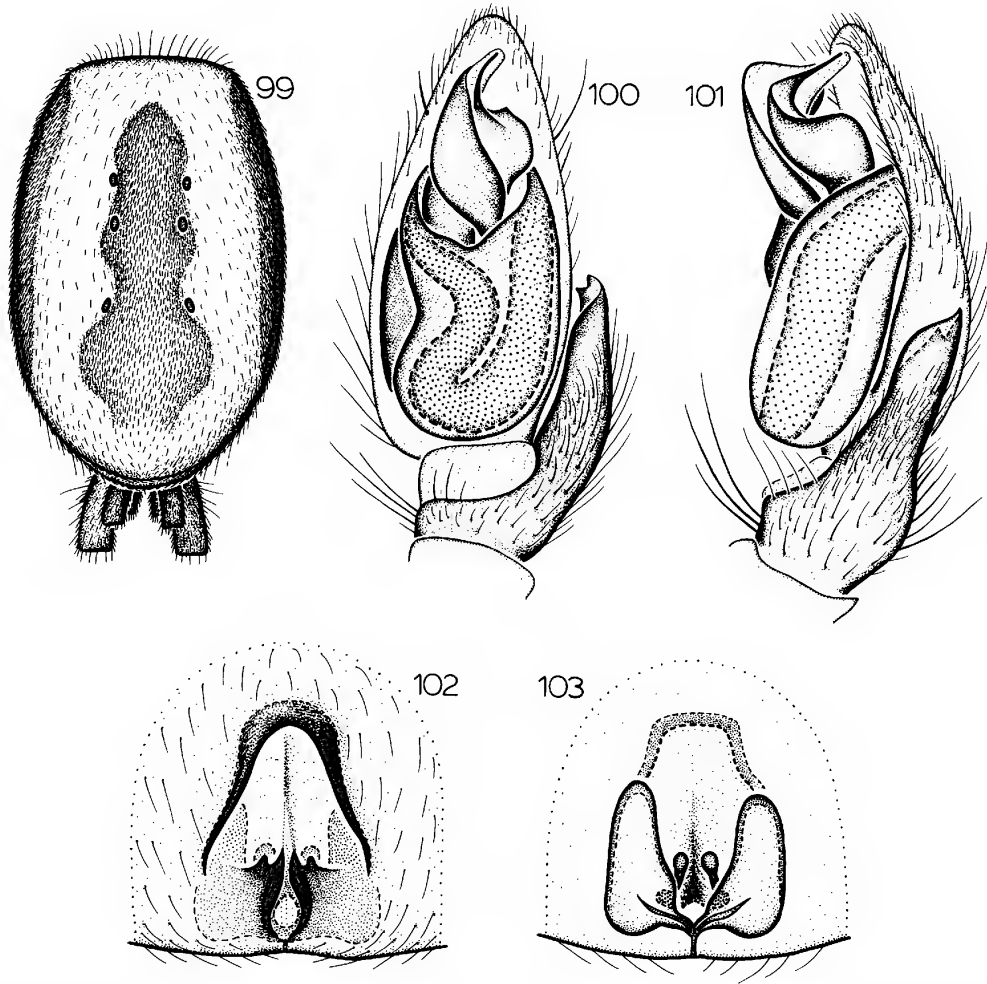
FIGS. 94-98. *Sergiolus iviei*, new species. 94. Abdomen, dorsal view. 95. Palp, ventral view. 96. Palp, retrolateral view. 97. Epigynum, ventral view. 98. Epigynum, dorsal view.

folded over conductor ventrally; retrolateral tibial apophysis small, with narrow tip, straight in lateral view (figs. 95, 96). Leg spination: tibia I v0-1p-1p.

FEMALE: Total length 6.04 ± 0.99 . Carapace 2.59 ± 0.42 long, 1.76 ± 0.28 wide. Femur II 1.39 ± 0.21 long. Eye sizes and interdistances: AME 0.06, ALE 0.07, PME 0.07, PLE 0.07; AME-AME 0.05, AME-ALE 0.02, PME-PME 0.09, PME-PLE 0.07, ALE-PLE 0.07. MOQ length 0.23, front width 0.17, back width 0.23. Coloration as in male, although abdominal spots often merging into pale background. Epigynum

with large, triangular, depressed atrium with completely connected margins (figs. 97, 98). Leg spination: femur II p0-0-1; tibiae III, IV v1p-2-2; metatarsi: I v0-0-0; III p0-2-2, r0-1-2.

MATERIAL EXAMINED: CANADA: **Alberta:** Manyberries, summer 1966 (D. A. Taylor, REL), 1♀. UNITED STATES: **Colorado:** Mesa Co.: Whitewater, June 20, 1963 (C. J. McCoy, BRV), 1♂. **Idaho:** Bonneville Co.: Idaho Falls, July 14, 1967, 1♀. **Power Co.:** 2 mi. W Massacre Rock, July 19, 1952 (B. Malkin), 1♂. **Nevada:** Humboldt Co.: 30 mi. N Winnemucca, Jan. 23, 1961 (W. Ivie),



FIGS. 99–103. *Sergiolus angustus* (Banks). 99. Abdomen, dorsal view. 100. Palp, ventral view. 101. Palp, retrolateral view. 102. Epigynum, ventral view. 103. Epigynum, dorsal view.

1♂. *Nye Co.*: Mercury, Aug. 1, 1962, 1♀. *Co. ?*: Sheldon Reserve, Aug. 1949 (H. Exline, EPC), 4♀. **Oregon**: *Harney Co.*: Wagontire, June 23, 1952 (B. Malkin), 1♀. **Utah**: *Box Elder Co.*: Lynn, Sept. 8, 1932, under rock (W. Ivie), 1♀. *Grand Co.*: Moab, Apr. 18, 1928 (R. V. Chamberlin, W. J. Gertsch), 1♀. *Salt Lake Co.*: W Jordan, 1935, 1♂; SW Salt Lake City, May 17, 1941 (W. Ivie), 1♂, 2♀ (including types).

DISTRIBUTION: Alberta south to Nevada and Colorado (map 5).

Sergiolus angustus (Banks), new combination

Figures 99–103; Map 4

Herpyllus angustus Banks, 1904, p. 337, fig. 43 (male holotype from San Pedro, Los Angeles County, California, in MCZ, examined). Roewer, 1954, p. 422. Bonnet, 1957, p. 2170.

Sergiolus atomisticus Chamberlin, 1924, p. 610, fig. 46 (female holotype from Gulf of California region, possibly Isla Espiritu Santo, Baja California Sur, Mexico, in CAS, examined). Roewer, 1954, p. 438. Bonnet, 1958, p. 4032. **NEW SYNONYMY**.

Sergiolus fruitanus Chamberlin, in Chamberlin and Gertsch, 1928, p. 177 (male holotype from Fruita, Wayne County, Utah, in AMNH, examined). Roewer, 1954, p. 439. Bonnet, 1958, p. 4032. NEW SYNONYMY.

Sergiolus bebius Chamberlin, 1936a, p. 9, fig. 13 (female holotype from Red Rock Range, Boulder County, Colorado, in AMNH, examined). Roewer, 1954, p. 438. NEW SYNONYMY.

Sergiolus clarus Chamberlin, 1936a, p. 9, figs. 20, 21 (male holotype from Clear Creek Canyon, Sevier County, Utah, in AMNH, examined). Bonnet, 1958, p. 4032. NEW SYNONYMY.

Zelotes pananus Chamberlin, 1936b, p. 10, fig. 44 (female holotype from City Creek Canyon, Salt Lake County, Utah, in AMNH, examined). Roewer, 1954, p. 471. Bonnet, 1959, p. 4939. NEW SYNONYMY.

Sergiolus belius: Bonnet, 1958, p. 4032 (*lapsus*).

Poecilochroa angusta: Ubick and Roth, 1973, p. 6.

Poecilochroa atomistica: Ubick and Roth, 1973, suppl. 3, p. 2.

Poecilochroa fruitana: Ubick and Roth, 1973, p. 6.

Poecilochroa bebia: Ubick and Roth, 1973, p. 6.

Poecilochroa clara: Ubick and Roth, 1973, p. 6.

Poecilochroa panana: Ubick and Roth, 1973, p. 7.

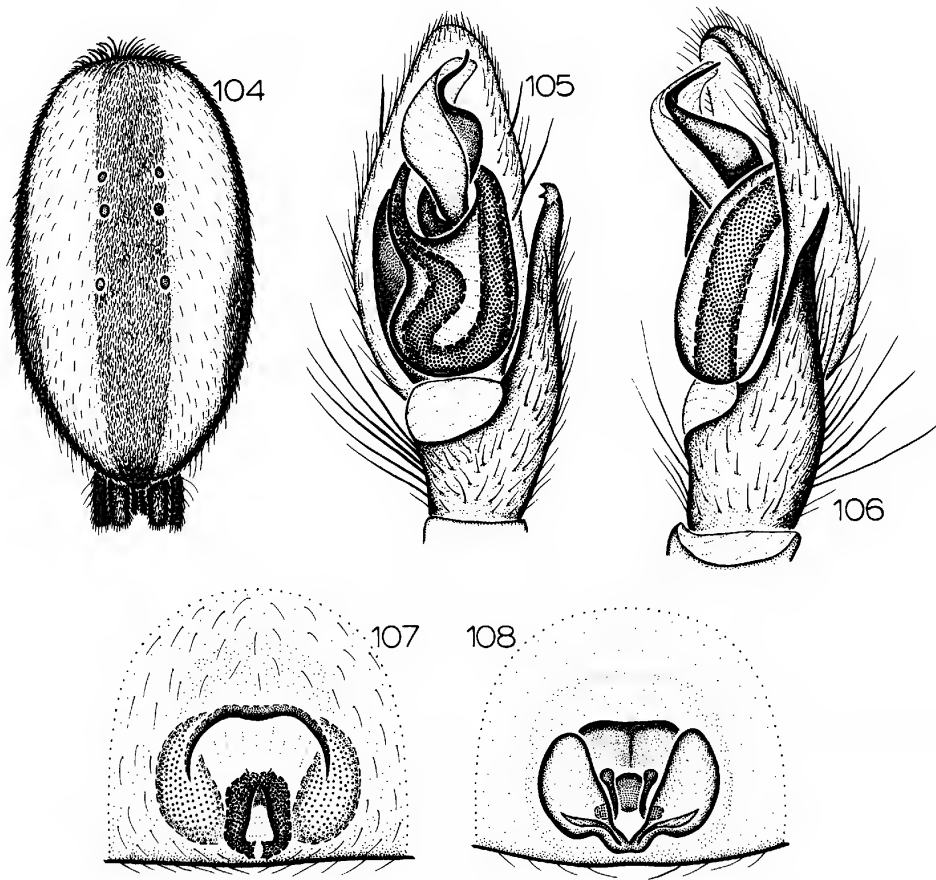
DIAGNOSIS: This species resembles *S. guadalupensis* in having a median longitudinal dark stripe on the abdominal dorsum, but can be easily distinguished by the wider retrolateral tibial apophysis (fig. 101) and longer epigynal hood (fig. 102).

MALE: Total length 4.57 ± 0.47 . Carapace 2.08 ± 0.15 long, 1.45 ± 0.14 wide. Femur II 1.27 ± 0.08 long. Eye sizes and interdistances: AME 0.06, ALE 0.07, PME 0.07, PLE 0.07; AME-AME 0.06, AME-ALE 0.01, PME-PME 0.06, PME-PLE 0.05, ALE-PLE 0.06. MOQ length 0.23, front width 0.18, back width 0.21. Carapace dark; abdomen as in figure 99 except in some northern specimens where lateral stripes are disconnected into paired spots; abdominal venter uniformly light brown; femora dark, other leg segments light except in some northern specimens where patellae and tibiae also darkened. Tip of retrolateral tibial apophysis incised, relatively wide (figs. 100, 101). Leg spination: patella IV p0-1-0, r0-1-0;

tibiae: I v0-1p-1p; IV d1-0-0; metatarsus III r0-1-2.

FEMALE: Total length 6.42 ± 1.49 . Carapace 2.68 ± 0.41 long, 1.83 ± 0.32 wide. Femur II 1.51 ± 0.14 long. Eye sizes and interdistances: AME 0.05, ALE 0.09, PME 0.07, PLE 0.08; AME-AME 0.09, AME-ALE 0.03, PME-PME 0.13, PME-PLE 0.12, ALE-PLE 0.11. MOQ length 0.27, front width 0.19, back width 0.28. Coloration as in male. Epigynum with long, triangular hood and paired paramedian projections over openings (figs. 102, 103). Leg spination: femur IV p0-1-1; patella IV p0-1-0, r0-1-0; tibiae: I v0-1p-1p; IV d1-0-0.

MATERIAL EXAMINED: MEXICO: **Baja California Norte:** 5 mi. S Rosarito, May 14, 1952, elevation 50 feet (W. S. Creighton), 1♂. **Baja California Sur?:** Gulf of California region, possibly Isla Espiritu Santo (J. C. Chamberlin, CAS), 1♀ (holotype). **Chihuahua:** summit NE San José Bavicora, July 3, 1947, elevation 7700 feet (W. J. Gertsch), 1♀. **Oaxaca:** ½ mi. E Nochixtlán, 1 mi. SE El Palmar, Dec. 11, 1948 (E. S. Ross), 3♂, 1♀. **Tabasco:** La Venta, Feb. 11, 1939, 1♀. UNITED STATES: **Arizona:** *Cochise Co.:* Cave Creek, Chiricahua Mountains, June 1, 1952 (W. J. Gertsch, M. Cazier, R. Schrammel), 1♂. *Navajo Co.:* 10 mi. NE Whiteriver, White Mountains, July 8-11, 1940 (W. J. Gertsch, R. Hook), 1♀. *Pima Co.:* Molino Basin, Santa Catalina Mountains, Mar. 20, 1968, under rocks, elevation 4000 feet (D. E. Bixler, DEB), 1♂. **California:** *Alameda Co.:* Berkeley, Oct., 1♀. *Los Angeles Co.:* Beverly Glen Canyon, June 22, 1957, coastal sage, oak woodlands (R. X. Schick), 1♂; San Pedro (Cockerell, MCZ), 1♂ (holotype). *Mendocino Co.:* Philo, May 8, 1970 (D. Fleming, BJK), 2♀. *Mono Co.:* Benton Station, May 28, 1942 (W. M. Pearce), 1♀. *Riverside Co.:* Herkey Creek, San Jacinto Mountains, June 20, 1939 (E. S. Ross, CAS), 1♂; Idyllwild, San Jacinto Mountains, June 18, 1952 (W. J. Gertsch), 1♂; west part of county, May 1953 (R. X. Schick), 1♂; Winchester, Mar. 5 (matured Apr. 11), 1971, under rock (W. Icenogle, WRI), 1♂. *San Bernardino Co.:* San Anto-



Figs. 104–108. *Sergiolus guadalupensis*, new species. 104. Abdomen, dorsal view. 105. Palp, ventral view. 106. Palp, retrolateral view. 107. Epigynum, ventral view. 108. Epigynum, dorsal view.

nio Canyon, May 28, 1969, coastal sage, elevation 2000 feet (D. E. Bixler, DEB), 1♂. *San Diego Co.*: Lakeside, Apr. 25, 1967 (J. Ivie), 1♂; San Diego, June 1971, pitfall (B. J. Kaston), 2♂, 1♀, Sept. 1970, pitfall (B. J. Kaston, BJK), 1♀. *Tulare Co.*: Johnsondale, June 1, 1973, pine-cedar forest (D. E. Bixler, DEB), 1♂. *Colorado: Boulder Co.*: no specific locality, May 31, 1961 (S. Sutton, BRV), 1♂; 1 mi. S Eldorado Springs, June 9, 1963 (S. M. Sutton, BRV), 1♂; Red Rock Range, W Boulder, July 6, 1908 (F. E. Lutz), 1♀ (holotype). *Weld Co.*: 10 mi. N New Raymer, July 4, 1962 (S. Sutton, BRV), 1♀. *New Mexico: Dona Ana Co.*: Organ Mountains

(N. Banks, MCZ), 1♀. *Eddy Co.*: Carlsbad Caverns, Feb. 24, 1968, entrance walkway (T. Rosson), 1♂. *Grant Co.*: Silver City, Apr. 10, 1972, pitfall, pinyon-pine, juniper (M. H. Muma), 1♀. *Texas: Kleberg Co.*: Kingsville, Mar. 28, 1970, *Opuntia*, 1♀. *Utah: Salt Lake Co.*: City Creek Canyon, Salt Lake City, May 15, 1936 (W. J. Mellor), 1♀, June 12, 1928 (W. J. Gertsch), 1♀ (holotype); Hughes Canyon, near Holladay, May 20, 1934 (W. Ivie, H. Rasmussen), 1♂. *Sevier Co.*: Clear Creek Canyon, near Richfield, June 15, 1930 (W. J. Gertsch), 1♂ (holotype). *Wayne Co.*: Fruita, Apr. 21, 1928 (A. M. Woodbury), 1♂ (holotype).

DISTRIBUTION: California to Texas, south to southern Mexico (map 4).

SYNONYMY: Simultaneous collections of both sexes indicate that *S. atomisticus* is the female of *S. angustus*. Chamberlin's descriptions of *S. fruitanus* and *Z. pananus* are ascribable to generic misplacements, but he (1936a) provided no characters by which to distinguish *S. bebius* from *S. atomisticus*, or *S. clarus* from *S. fruitanus*, and there appear to be none.

***Sergiolus guadalupensis*, new species**

Figures 104–108; Map 4

TYPES: Female holotype from Guadalupe Island, Baja California Norte, Mexico (April 22, 1963; C. J. McCoy), deposited in AMNH courtesy of Dr. B. R. Vogel, and male paratype from the northeast anchorage of that island (February 14, 1973; J. D. Pinto), deposited in AMNH courtesy of Mr. S. I. Frommer.

ETYMOLOGY: The specific name refers to the type locality.

DIAGNOSIS: This species resembles *S. angustus* in having a median longitudinal dark stripe on the abdominal dorsum, but can be distinguished by the narrower retrolateral tibial apophysis (figs. 105, 106) and shorter epigynal hood (fig. 107).

MALE: Total length 5.74. Carapace 2.50 long, 1.73 wide. Femur II 1.46 long. Eye sizes and interdistances: AME 0.06, ALE 0.08, PME 0.08, PLE 0.08; AME–AME 0.06, AME–ALE 0.02, PME–PME 0.08, PME–PLE 0.09, ALE–PLE 0.12. MOQ length 0.27, front width 0.18, back width 0.24. Carapace dark; abdomen as in figure 104, venter uniformly light brown; femora slightly darkened. Retrolateral tibial apophysis narrow, with incised tip (figs. 105, 106). Leg spination: femur IV p0-1-1, r0-1-1; patella IV r0-1-0; tibiae: II v0-0-1p; IV d1-0-0; metatarsus III r0-1-2.

FEMALE: Total length 6.23. Carapace 2.75 long, 1.82 wide. Femur II 1.48 long. Eye sizes and interdistances: AME 0.06, ALE 0.07, PME 0.07, PLE 0.08; AME–AME 0.06, AME–ALE 0.02, PME–PME 0.10, PME–PLE 0.10, ALE–PLE 0.10. MOQ length

0.25, front width 0.19, back width 0.24. Coloration as in male. Epigynum with short, rounded hood (figs. 107, 108). Leg spination: femora: I p0-0-2; IV p0-1-1; patella IV r0-1-0; tibiae: II v0-0-1p; IV missing; metatarsi: I v0-0-0; III p1-1-2, v2-1r-2, r1-2-2; IV missing.

MATERIAL EXAMINED: Only the types.

DISTRIBUTION: Known only from Guadalupe Island (map 4).

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