

American Museum Novitates

PUBLISHED BY THE AMERICAN MUSEUM OF NATURAL HISTORY
CENTRAL PARK WEST AT 79TH STREET, NEW YORK 24, N.Y.

NUMBER 1718

APRIL 22, 1955

The Spider Genera *Coressa* and *Achaeearanea* in America North of Mexico (Araneae, Theridiidae)

BY HERBERT W. LEVI¹

Although many years ago Thorell (1869, p. 90) recognized that the genus *Theridion* was a heterogeneous assemblage, and O. P.-Cambridge (1896, p. 197) complained that "*Theridion*, as restricted now by Simon, seems to me an utterly unworkable group," only recently has an attempt been made, by Archer (1946, 1950), to separate some of the species that are not closely related to *Theridion ovatum* (Clerck), the genotype. Archer, who had only a relatively few species available, established a number of new genera. The present survey of North American spiders related to the genus *Achaeearanea* demonstrates that some of Archer's genera grade into one another and are difficult to separate. In this paper some of Archer's genera have been recombined, although it should be kept in mind that the definition of a genus is a subjective matter and one that can be interpreted differently. In my opinion, large, clearly defined genera are more useful, particularly to the non-specialist, than small intergrading or monotypic genera. It is unfortunate that as a result of this revision one of the most common of our spiders, *Theridion tepidariorum*, must be placed in a different genus (*Achaeearanea*).

This study is based on the collection in the American Museum of Natural History. I would like to thank Dr. W. J. Gertsch for the loan of this abundant material, for his critical reading of the manuscript,

¹ University of Wisconsin, Extension Center, Wausau, and Department of Zoology, Madison, Wisconsin.

and for many other aids in the preparation of this paper. Specimens from the Museum of Comparative Zoölogy were made available through the help of Dr. P. J. Darlington, Jr., and Dr. A. M. Chickering of Albion College. Dr. R. V. Chamberlin of the University of Utah, Dr. E. A. Chapin of the United States National Museum, Dr. R. Barnes, and Mr. V. Roth of Oregon State College lent additional specimens. To all these I offer my thanks, and also to Dr. H. Wiehle of Dessau, Germany, for the gift and loan of specimens of *Coressa*, and to Dr. V. V. Hickman of the University of Tasmania for the gift of some *Atkinia*. I am grateful to Mr. E. Browning and Dr. G. Owen Evans of the British Museum (Natural History) for valuable information and the loan of cotypes of *A. florens* and to Mrs. C. Crocker who helped by searching for references. My wife Lorna aided materially in organizing the paper for publication.

The genera considered in this paper comprise a distinct group, which can readily be differentiated from the genera related to *Theridion* by the different structure of the male palpus. In some other characteristics these genera, particularly *Achaeearanea*, resemble *Theridion*.

In this group the base of the embolus (E in figs. 13, 24, 34, 52, and 82) and the median apophysis (M) lie adjacent to, or are separated from, the tegulum (T) as one sclerite (figs. 13, 52, and 82). Here, as in many other theridiids, the median apophysis has the function of holding the bulb in the alveolus of the cymbium (Y). In more complex palpi (*A. tepidariorum*, fig. 84), the embolus and median apophysis are separated by a seam. In the related genera *Tidarren* and *Chrysso*, as in many other theridiids, a second portion, the radix, is present. In *Coressa* and *Achaeearanea* the embolus is placed mesad (while the embolus of *Theridion* is on the ectal side), and, if thread shaped, the embolus in the group under consideration curves towards the ectal side, or counterclockwise in the left palpus, clockwise in the right palpus (just the opposite direction from that of the close relatives of *Theridion*). This group of *Achaeearanea* can be differentiated from the genera *Dipoena* and *Euryopis*, in which the emboli curve in the same way, by the presence in the group under consideration of only one pair of seminal receptacles in the female, while there are two pairs of these structures in *Euryopis* and *Dipoena*. The palpus of males of *Atkinia* Strand,¹ a genus found in the Australian region, superficially resembles that of *Achaeearanea globosa*, even though in appearance the spider is

¹ *Atkinia* Strand, 1929 (Acta Univ. Latviensis, vol. 30, p. 14), new name to replace *Atkinsonia* O. P.-Cambridge, which was preoccupied by Stainton in 1859 for a genus of Lepidoptera. Hickman, who recently revised this genus, overlooked Strand's paper.

closer to *Dipoena*. A careful study of the palpus of *Atkinia petricola* (Hickman) revealed, however, that a weakly sclerotized radix, closely appressed to a weakly sclerotized median apophysis, is present. The winding of the ducts of the palpus as well as the presence of four seminal receptacles in the female clearly places this genus close to *Dipoena*.

The different appearance of the embolus prompts the thought that *Theridion* and its relatives may belong to a different line of theridiids. Another possibility is that as a result of the growth of the radix, the embolus was pushed to the ectal side and, at the same time, turned on its axis. Evidence for the latter view is that in those theridiids with a relatively simple palpus, the embolus is curved as in *Achaearanea*; whereas I know of few genera with the embolus curved as in the *Theridion* group which at the same time lacks the radix. Exceptions to this are those genera in which the radix has been lost, presumably secondarily. (Evidence that this loss is a specialization is usually seen in the additional loss of the conductor or median apophysis while the paracymbial hook, closely associated with the median apophysis, is present.) In both *Chryso* and *Tidarren* the embolus of the palpus appears to be turning on its axis. The twist of the embolus of *Tidarren*, however, might also be explained by the fact that only one palpus is present, either the right or the left, and that as a result of this the single palpus might have been modified to service both the left and right seminal receptacles of the female.

Female genitalia were mounted in Hoyer's fluid (Baker and Wharton, 1952). However, the genitalia of the larger species can be examined for the purpose of identification by making two cuts and bending the genital area to the side.

The holotypes of all new species are deposited in the American Museum of Natural History.

CORESSA SIMON

Theonoe SIMON, 1881, Les arachnides de France, vol. 5, p. 130. Genotype: *Theonoe filiola* Simon, 1881 (= *C. minutissima* O. P.-Cambridge). (The name *Theonoe* was used by Philippi, 1865, An. Univ. Chile, vol. 26, p. 654, for a genus of insects and is therefore preoccupied.)

Coressa SIMON, 1894, Histoire naturelle des araignées, vol. 1, p. 647. Genotype: *Walckenaera minutissima* O. P.-Cambridge.

Onesinda O. P.-CAMBRIDGE, 1895, Proc. Dorset Nat. Club, vol. 16, p. 104. Genotype: *Walckenaera minutissima* O. P.-Cambridge.

Theridiellum DAHL, 1912, Beitr. Naturdenkmalpflege, vol. 3, p. 598. Genotype: *Theridiellum minutissimum* Dahl, 1912 (= *C. minutissima* O. P.-Cambridge).

Very small theridiid spiders, less than 1.5 mm. in total length.

Carapace very slightly longer than wide, rather high and appearing robust, highest behind eye region. Anterior eye row procurved, if seen from in front; posterior row straight, if viewed from above. Anterior median eyes separated by about three-quarters of their diameter, by two-thirds from laterals. Posterior median eyes separated from each other by one and three-quarters diameters, from posteriorly laterals by one diameter (fig. 4). Anterior median eyes smaller than posterior medians, in a ratio of 1.0 to 1.1; smaller than laterals in a ratio of 1.0 to 1.2. Chelicerae slightly longer than carapace is high. Clypeus concave. Sternum slightly wider than long, strongly convex, and truncate between posterior coxae which are separated by two to three of their diameters. Fourth legs slightly longer than first; third shortest. Slight retrolateral tubercles present on patellae. A comb present on fourth tarsus. Abdomen oval, rather small compared to prosoma. Colulus large.

Epigynum an indistinct structure. Palpus weakly sclerotized. Conductor (C in fig. 3) large. Median apophysis (M) fused to embolus (E). Haematodocha (H) attached to almost entire mesal part of alveolus of cymbium. The proximity of median apophysis to embolus and the characteristic horn which terminates the cymbium ally this genus to *Achaearanea*, whereas the abdomen is small and has the oval shape of other soil and litter inhabiting spiders.

As far as is known, members of this genus live in litter, under stones, and in sphagnum moss (Locket and Millidge, 1953; Wiehle, 1937).

Theonoe striatipes Petrunkevitch (1930, Trans. Connecticut Acad. Sci., vol. 30, p. 167, figs. 4, 5, female) is a synonym of *Nesticus pallidus* Emerton, 1875, according to Bryant (1940, Bull. Mus. Comp. Zool., vol. 86, p. 321).

Coressa minutissima (O. P.-Cambridge)

Figure 1

Walckenaera minutissima O. P.-CAMBRIDGE, 1879, Ann. Mag. Nat. Hist., ser. 5, vol. 4, p. 203, pl. 12, fig. 7 (female).

Theonoe minutissima, WIEHLE, 1937, Die Tierwelt Deutschlands, pt. 33, p. 219, figs. 281-286 (male, female). LOCKET AND MILLIDGE, 1953, British spiders, vol. 2, p. 90, fig. 60 (male, female).

This species is found in central Europe and Great Britain.

Coressa stridula (Crosby), new combination

Figures 2-6

Theonoe stridula CROSBY, 1906, Canadian Ent., vol. 38, p. 308, figs. 33, 34 (male). BANKS, 1910, Bull. U.S. Natl. Mus., vol. 72, p. 22. PETRUNKEVITCH,

1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 190. BISHOP AND CROSBY, 1926, Jour. Elisha Mitchell Sci. Soc., vol. 41, p. 181. CROSBY AND BISHOP, 1928, Mem. Cornell Univ. Exp. Sta., no. 101, p. 1041. COMSTOCK, 1940, The spider book, rev. ed., p. 381. ROEWER, 1942, Katalog der Araneae, vol. 1, p. 395. CHAMBERLIN AND IVIE, 1947, Bull. Univ. Utah, biol. ser., vol. 10, p. 27. KASTON, 1948, Bull. Connecticut Geol. Nat. Hist. Surv., vol. 70, p. 94. LEVI AND FIELD, 1954, Amer. Midland Nat., vol. 51, p. 444.

FEMALE: Carapace brown with dusky maculations, eye region black. Sternum, legs brown. Abdomen light gray to black; sometimes with a median dorsal darker line present; spinnerets gray, epigynum brown.

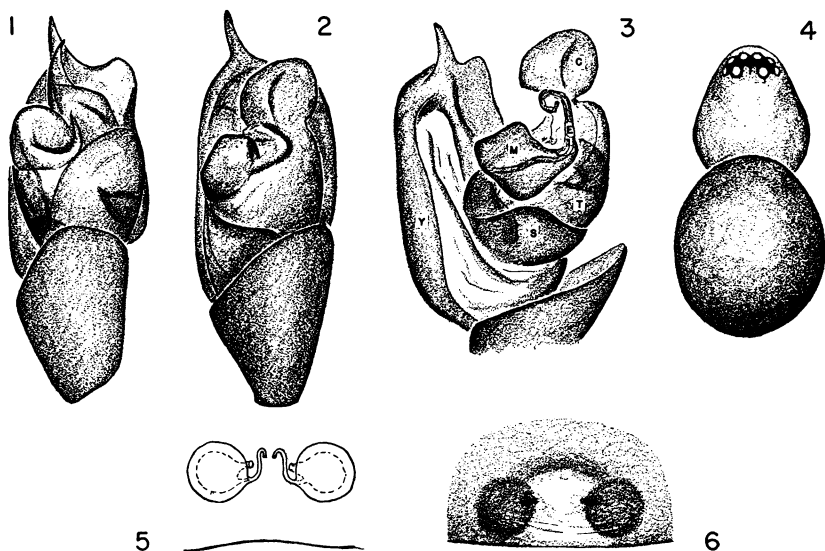


FIG. 1. *Coressa minutissima* (O. P.-Cambridge), left palp, ventral view.
FIGS. 2-6. *Coressa stridula* (Crosby). 2. Palpus, ventral view. 3. Palpus, subventral view, expanded. 4. Female. 5. Female genitalia, dorsal view. 6. Epigynum.

Abbreviations: C, conductor; E, embolus; M, median apophysis; S, subtegulum; T, tegulum; Y, cymbium.

Height of clypeus equals three and one-half diameters of anterior median eyes. One trichobothrium on fourth tibia. Seminal receptacles can be seen through the epigynum and are their diameter apart (figs. 5, 6). No distinct difference between the females of this species and those of *C. minutissima* of Europe could be found. Total length of females is 0.8-1.2 mm. A female from Ontario measured 0.97 mm. total length; carapace, 0.47 mm. long, 0.44 mm. wide; first patella and tibia, 0.34 mm.; second, 0.31 mm.; third, 0.27 mm.; fourth femur, 0.35

mm.; patella and tibia, 0.36 mm.; metatarsus, 0.15 mm.; tarsus, 0.23 mm.

MALE: Very similar to female except that the thoracic area of carapace is swollen below the abdomen, and there is a stridulating area on each side of pedicel. The abdomen has a tooth on each side above pedicel. The conductor of the palpus (fig. 2) is of a different shape from that of *C. minutissima*. Total length, 0.8–0.9 mm. Total length of a specimen from Ontario, 0.79 mm.; carapace, 0.39 mm. long, 0.42 mm. wide; first patella and tibia, 0.20 mm.; second, 0.16 mm.; third, 0.15 mm.; fourth femur, 0.20 mm.; patella and tibia, 0.22 mm.; metatarsus, 0.09 mm.; tarsus, 0.13 mm.

TYPE LOCALITY: Male holotype from bank of Hinkson Creek, Columbia, Missouri, November 20, 1904, in the Cornell University Collection.

RECORDS: *Alaska*: Matanuska, May 20–26 (Chamberlin and Ivie, 1947), one female. *Wisconsin*: Vilas County: Trout Lake (Levi and Field, 1954). Madison (Levi and Field, 1954). *Ontario*: Nipissing County: Bear Island and Ko-ko-ko Bay in Lake Temagami, August 15–25, 1946 (W. J. Gertsch, W. Ivie, and T. Kurata), five males, 16 females. *New York*: Montgomery County: Mendon Ponds Park, November 7, 1948 (J. Wright), one female. Franklin County: Paul Smiths. Yates County: Penn Yan. Schuyler County: Alpine. Tompkins County: Enfield Glen, Ithaca, McLean. Onondaga County: Labrador Pond. Orange County: Little Pond. Suffolk County: Southold, Riverhead. Albany County: Altamont; Voorheesville (all Crosby and Bishop, 1928); Rensselaerville, July 8, 1948 (S. C. Bishop), one male, 30 females. *Virginia*: Fairfax County: Falls Church (Bishop and Crosby, 1926), one male.

ACHAEARANEA STRAND

Achaea O. P.-CAMBRIDGE, 1882, Proc. Zool. Soc. London, p. 428. Genotype: *Achaea insignis* O. P.-Cambridge (= *A. trapezoidalis* Taczanowski). (The name *Achaea* has been used by Huebner, 1823, Verzeichniss bekannter Schmetterlinge, vol. 17, p. 269, for a moth and is therefore preoccupied.)

Achaearanaea STRAND, 1929, Acta Univ. Latviensis, vol. 20, p. 11. (This genus was named to replace *Achaea*, which is not available.)

Cryptachaea ARCHER, 1946, Paper Alabama Mus. Nat. Hist., no. 22, p. 36. Genotype: *Theridion catapetraeum* Gertsch and Archer, 1942 (= *A. porteri* Banks). New synonymy.

Parasteatoda ARCHER, 1946, Paper Alabama Mus. Nat. Hist., no. 22, p. 38. Genotype: *Theridion tepidarium* C. Koch. New synonymy.

Hentziectypus ARCHER, 1946, Paper Alabama Mus. Nat. Hist., no. 22, p. 51. Genotype: *Theridion globosum* Hentz. New synonymy.

Small- to large-sized theridiid spiders (1–10 mm. total length). Carapace slightly longer than wide, highest near its middle, narrow in front, anterior lateral eyes usually overhanging border (fig. 10). A shallow transverse or semicircular depression (with ends of semicircle pointing forward) in thoracic region of some species. Anterior eye row slightly procurved as seen from in front, posterior row straight or slightly recurved as seen from above. Eyes subequal in size or anterior medians slightly smaller or larger than others. Anterior median eyes separated by two-thirds of a diameter to one diameter, almost touching to one-third of a diameter from laterals. Posterior median eyes usually separated by two-thirds to one diameter, by three-quarters to one-third of a diameter from laterals. Posterior medians frequently slightly oval. Median ocular quadrangle about square. Clypeus concave. Chelicerae slightly longer than height of carapace. Sternum truncate between posterior coxae which are separated by their width. Sternum frequently with thickenings near bases of coxae. Legs of medium length with spines and usually many hairs. Females with first legs longest, fourth next in length, third shortest. Second leg of male usually (but not always) longer than fourth. A slight tubercle on retrolateral face of each patella. A comb present on fourth tarsus. Abdomens of females of North American species usually higher than long, frequently with a tubercle on the dorsum or posterior. Some South American species have abdomen longer than high, with posterior dorsal tip of abdomen overhanging spinnerets (fig. 9). Frequently a fold present about halfway between epigastric furrow and spinnerets. Abdomen of male higher than long, or longer than high, pointed behind, with a more or less sclerotized ring around pedicel. This ring frequently swollen in epigastric region. On males of some smaller species, two long setae, originating from the sclerotized ring, rub against the carapace. Colulus not visible. The abdomen and sometimes sternum of some specimens quite hairy.

Epigynum somewhat variable as follows: in species with short emboli, a rounded knob with openings in front (fig. 21); in species with emboli of intermediate length, a slit with two dark dots on each side (fig. 48); and in species with long emboli, a large opening or a depression (fig. 74). Length and width of connecting canals correspond to length and width of embolus. The genital openings in species with a knob-like epigynum may be difficult to see because of their proximity to the pedicel.

Palpus with tegulum (T in figs. 13, 24, 25) nearly spherical. Median apophysis (M) broadly attached to tegulum (fig. 24) or attached to

embolus with which it forms one sclerite (figs. 13, 34, 52, 82, 84). Distal end of median apophysis catches in a hook of the cymbium. Embolus (E) a short extension of the tegulum or attached to median apophysis with which it forms one complex sclerite. Conductor (C) an extension from tegulum which projects at about the same angle in all species examined. It may support the embolus or it may not. Cymbium (Y) in all species (except *A. tepidariorum*) extends considerably beyond the alveolus. Subtegulum (S) is shallow, ring-like on the mesal side, deeper on ectal side.

This genus differs from the related *Coressa*, *Tidarren*, and *Chryso* by the general shape of the abdomen, by having the cymbium extend beyond the alveolus, the embolus close to or combined with the median apophysis, and by the lack of a radix.

The females of some species of *Achaearana* are difficult to separate. The presence of a tubercle on the abdomen is not a good diagnostic character, as some species (*A. schullei*, *A. porteri*, *A. canionis*) may or may not have this tubercle. The ratio of leg-segment length to length (or width) of carapace may be a more valuable character by which to separate some of these more difficult and closely related species. The epigynum of *A. porteri* may have various shapes, although there is little variation in internal genitalia. The palpus of some species (*A. globosa*, *A. porteri*, *A. canionis*) shows a great deal of variation. Florida specimens of several species, particularly *A. globosa* and *A. porteri*, are noticeably smaller than those collected in other areas.

Comstock (1940) describes the web of *A. tepidariorum* as "an irregular net-work of threads built in a great variety of situations, but usually beneath some object which serves as protecting roof. . . . Frequently there is a more densely woven portion forming a tent beneath which the spider rests. The egg-sacs are brownish and pear-shaped with a dense outer coat. They are suspended in the web and several of them are made by one spider." The webs are usually dust or debris covered. More information on the life history and behavior, particularly of *A. tepidariorum*, can be found in Gertsch (1949).

This genus is represented by numerous species in Mexico and Central and South America. Besides the cosmopolitan *A. tepidariorum*, only two other species are known to me from Europe: *A. lunata* (Clerck) and *A. saxatile* (C. L. Koch). The following North American species were described in this genus but do not belong to it:

Achaea index Chamberlin and Ivie, 1944, Bull. Univ. Utah, biol. ser., vol. 8, no. 5, p. 36, figs. 87, 105 (female), is *Coleosoma flavipes* O. P.-Cambridge.

Achaea nordica Chamberlin and Ivie, 1947, Bull. Univ. Utah, biol. ser., vol. 10, no. 3, p. 25.

Achaearanea trapezoidalis (Taczanowski)

Figures 7-13

Argyrodes trapezoidalis TACZANOWSKI, 1873, Horae Soc. Ent. Rossicae, vol. 9, p. 115, pl. 5, fig. 10 (male, female).

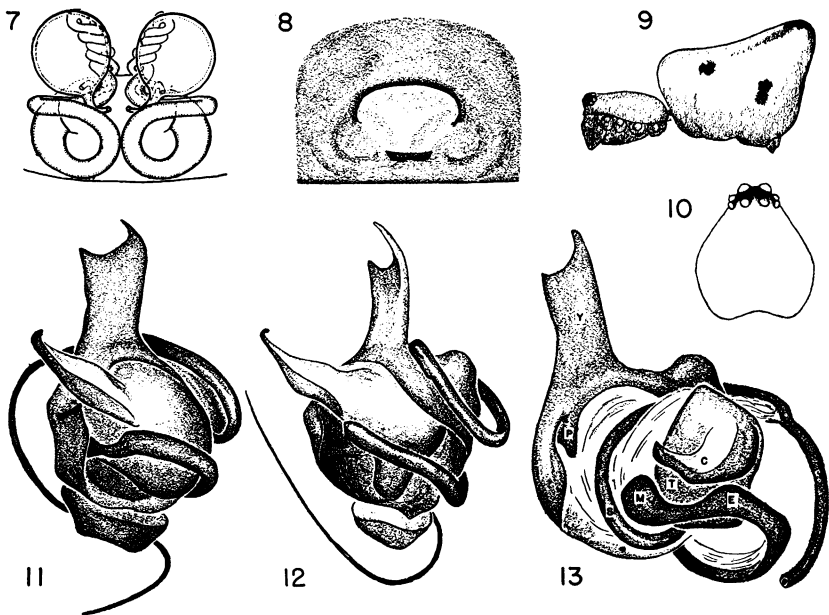
Achaea insignis O. P.-CAMBRIDGE, 1882, Proc. Zool. Soc. London, p. 428, pl. 30, fig. 5 (male).

Thwaitesia diversa O. P.-CAMBRIDGE, 1882, Proc. Zool. Soc. London, p. 432, pl. 31, fig. 8 (female).

Achaea trapezoidalis, KEYSERLING, 1884, Die Spinnen Amerikas, Theridiidae, vol. 1, p. 102, pl. 5, fig. 66 (male, female).

The long embolus of the male palpus in this species is supported by the cymbium.

Achaearanea trapezoidalis is widespread in South America.



FIGS. 7-13. *Achaearanea trapezoidalis* (Taczanowski). 7. Female genitalia, dorsal view. 8. Epigynum. 9. Female. 10. Carapace of female. 11-13. Left palpus. 11. Ventral view. 12. Ectal view. 13. Expanded, subventral view.

Abbreviations: C, conductor; E, embolus; M, median apophysis; P, paracymbial hook; S, subtegulum; T, tegulum; Y, cymbium.

Achaearanea globosa (Hentz), new combination

Figures 19-25

Theridion globosum HENTZ, 1850, Jour. Boston Soc. Nat. Hist., vol. 6, p. 279, pl. 9, fig. 23 (female); 1875, The spiders of the United States, p. 151, pl. 16,

fig. 23 (female). BRYANT, 1908, Occas. Papers Boston Soc. Nat. Hist., vol. 7, p. 13. EMERTON, 1911, Trans. Connecticut Acad. Sci., vol. 16, p. 387, pl. 1, fig. 1 (male). PETRUNKEVITCH, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 197. COMSTOCK, 1912, The spider book, p. 348. EMERTON, 1913, Appalachia, vol. 12, p. 155; 1920, Trans. Roy. Canadian Inst., vol. 12, p. 310. BISHOP AND CROSBY, 1926, Jour. Elisha Mitchell Sci. Soc., vol. 41, p. 182. CROSBY AND BISHOP, 1928, Mem. Cornell Univ. Agr. Exp. Sta., no. 101, p. 1041. CHICKERING, 1934, Papers Michigan Acad. Sci., vol. 20, p. 584. CROSBY AND BISHOP, 1936, Jour. New York Ent. Soc., vol. 44, p. 44. KASTON, 1938, Bull. Connecticut Geol. Nat. Hist. Surv., no. 60, p. 186. COMSTOCK, 1940, The spider book, rev. ed., p. 363. BRYANT, 1940, Bull. Mus. Comp. Zool., vol. 86, p. 319. KURATA, 1941, Univ. Toronto Studies, biol. ser., vol. 48, p. 109. TRUMAN, 1942, Proc. Pennsylvania Acad. Sci., vol. 16, p. 27. ROEWER, 1942, Katalog der Araneae, vol. 1, p. 503. CHAMBERLIN AND IVIE, 1944, Bull. Univ. Utah, biol. ser., vol. 8, p. 51. MUMA, 1945, Bull. Univ. Maryland Agr. Exp. Sta., no. A 38, p. 28. PROCTER, 1946, Biological survey of the Mount Desert region, pt. 7, p. 520. GIBSON, 1947, Ohio Jour. Sci., vol. 46, p. 39. LOWRIE, 1948, Ecology, vol. 29, p. 338. KASTON, 1948, Bull. Connecticut Geol. Nat. Hist. Surv., no. 70, p. 108, figs. 131, 152 (male, female).

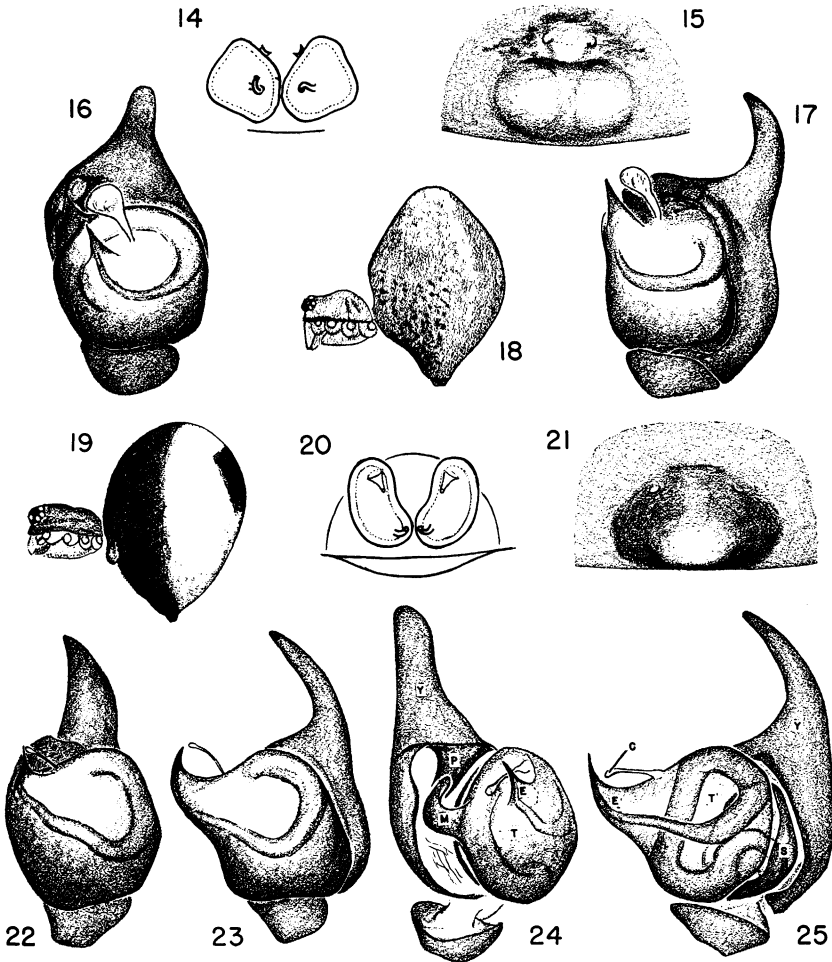
Theridium globosum, EMERTON, 1882, Trans. Connecticut Acad. Sci., vol. 6, p. 14, pl. 2, fig. 3 (female). KEYSERLING, 1884, Die Spinnen Amerikas, Theridiidae, vol. 1, p. 91, pl. 4, fig. 59 (female). MARX, 1889, Proc. U.S. Natl. Mus., vol. 12, p. 519; 1891, Proc. Ent. Soc. Washington, vol. 2, p. 155. BANKS, 1896, Jour. New York Ent. Soc., vol. 4, p. 191. EMERTON, 1902, The common spiders, p. 113. BANKS, 1904, Proc. Acad. Nat. Sci. Philadelphia, vol. 56, p. 126; 1910, Bull. U.S. Natl. Mus., no. 72, p. 19; 1911, Proc. Acad. Nat. Sci. Philadelphia, vol. 63, p. 445.

Hentizectypus globosus, ARCHER, 1946, Paper Alabama Mus. Nat. Hist., no. 22, p. 51, pl. 2, figs. 1-3 (female); 1950, *ibid.*, no. 30, p. 17, pl. 1, fig. 4 (male). KASTON, 1953, How to know the spiders, p. 167, fig. 418 (male, female). LEVI AND FIELD, 1954, Amer. Midland Nat., vol. 51, p. 442.

FEMALE: Carapace light yellow-brown, sometimes with dusky border, to dark dusky yellow-brown, nearly black. Eye region black, or just anterior median eyes black. Sternum yellow-brown to red-brown. Legs light yellow-brown to dark dusky brown, distal segments slightly darker. Anterior portion of abdomen usually black or gray, sometimes white, posterior white with a distinct black spot (fig. 19). A female from Tamaulipas yellow, except for eye region and abdominal spot which are black.

Distances between eyes quite variable. Anterior median eyes usually slightly larger than others, sometimes subequal or smaller. Height of clypeus equals diameter of anterior median eye. Epigynum a protruding knob, the anterior surface of which has two distinct openings (fig. 21); seminal receptacles more or less bean shaped (fig. 20). Measurements of a female from Mississippi: Total length 1.6 mm.; carapace, 0.65 mm. long, 0.59 mm. wide; first femur, 1.05 mm.; patella and tibia, 0.91 mm.; metatarsus, 0.65 mm.; tarsus, 0.39 mm.; second patella and tibia, 0.64 mm.; third, 0.44 mm.; fourth, 0.68 mm.

MALE: Lighter in color than females. Abdomen gray to white, with faint indications of markings, with a distinct black spot behind middle of dorsum, and a dark spot on large epigastric plate. Structure with usual differences. Height of clypeus equals two diameters of anterior median eyes. Palpus with embolus and median apophysis broadly



FIGS. 14-18. *Achaearanea conjuncta* (Gertsch and Mulaik). 14. Female genitalia, dorsal view. 15. Epigynum. 16-17. Left palpus. 16. Ventral view. 17. Ectal view. 18. Female.

FIGS. 19-25. *Achaearanea globosa* (Hentz). 19. Female. 20. Female genitalia, dorsal view. 21. Epigynum. 22-25. Palpus. 22. Ventral view. 23. Ectal view. 24. Expanded, subventral view. 25. Expanded, ectal view.

Abbreviations: C, conductor; E, embolus; M, median apophysis; P, paracymbial hook; S, subtegulum; T, tegulum; Y, cymbium.

attached to tegulum (fig. 24). Total length of a male from Mississippi, 1.3 mm.; carapace, 0.62 mm. long, 0.53 mm. wide; first femur, 1.13 mm.; patella and tibia, 1.08 mm.; metatarsus, 0.83 mm.; tarsus, 0.41 mm.; second patella and tibia, 0.71 mm.; third, 0.45 mm.; fourth, 0.65 mm.

All the specimens listed below are considered to represent a single species, *Achaearanea globosa*, although the variation of individual specimens in size and differences of the cymbia of the palpi are large. This variation appears to be geographical and is assumed to be subspecific. Because only a few individuals were available and little is gained by giving subspecific names, no new names have here been established. The largest individuals are from the northeastern portion of the range, the smallest from Florida. Specimens from most portions of the range are of intermediate size. A male from New Jersey measured 1.7 mm. in total length; carapace, 0.89 mm. long, 0.75 mm. wide; first patella and tibia, 1.54 mm. A male from Florida measured 1.1 mm. in total length; carapace, 0.55 mm. long, 0.48 mm. wide; first patella and tibia, 0.88 mm. The largest female, from Massachusetts, measured 2.2 mm. in total length; the smallest, from Florida, 1.0 mm. The cymbium of the male palpus is more rounded at the apex in northern specimens (fig. 24, drawn from Wisconsin specimen), more pointed in the southern specimens (figs. 22, 23, drawn from a Mississippi specimen). There seems to be no relationship between this and the size of the individuals. The specimens of *A. globosa* found in Florida were not only smaller than those from other portions of its range, but also the only female from that region had its epigynum very slightly flatter, and the palpus of the males differed in having a shorter cymbium, and in having the embolus projecting ventrad less noticeably (as seen in lateral view). The palpus thus resembled that of *A. conjuncta*. A male from the Okefenokee Swamp, Georgia, was intermediate in respect to these palpal characters, as well as in size, when compared to specimens from other southern states. All specimens examined, however, had the characteristic black spot on the abdomen, and the species can thereby readily be distinguished from *A. conjuncta*.

Achaearanea globosa makes irregular webs in leaf litter, logs, and holes or tree stumps in woods (Archer, 1946). In a report on aeronautic spiders, Crosby and Bishop (1936) mention a male having been found in April in Louisiana at 1000 feet. The spindle-shaped egg sacs are hung in the web, as many as five in a web according to Archer. Judging by the collections available, males are almost as common as females.

TYPE LOCALITY: Hentz collected the types in Alabama in August, but his specimens have been lost.

RECORDS: *Ontario*: Peel County: Port Credit (S. Harrod). Prince Edward County: Lake on the Mountain (Kurata, 1941). *Quebec*: Montreal (Emerton, 1920). *Minnesota*: Hennepin County: Lake Minnetonka. Polk County: Eight miles southeast of Warren. *Iowa*: Woodbury County: Sioux City (C. Ainslie). *Missouri*: Columbia (Bishop and Crosby, 1926). *Illinois*: Peoria (Keyserling, 1884). Macoupin County: Gillespie (C. and M. Goodnight). Montgomery County: Butler (C. and M. Goodnight). *Wisconsin*: Oneida County: Rhinelander (C. Salzer). Marinette County: Pembine (L. and H. Levi). Jackson County: Castle Mound (L. and H. Levi). Waushara County: Hills Lake (R. Hunt); Wautoma. *Michigan*: Montcalm County: (R. Dreisbach); Calhoun County: Albion (Chickering, 1934). Allegan County: Saugatuck (Lowrie, 1948). *Maine*: Mt. Desert Island: Hulls Cove (Procter, 1946). Portland (Bryant, 1908). *New Hampshire*: Lake Winnepesaukee (Bryant, 1908). Cheshire County: Fitzwilliam (Emerton, 1911). Carroll County: West Ossipee (S. Mulaik). *Massachusetts*: Blue Hills, Milton (Emerton, 1911); Boston (Emerton, 1882). Essex County: Beverly (Bryant, 1908). Middlesex County: Medford (Bryant, 1908); Stowe (E. B. Bryant). Woods Hole (H. Britcher). *Connecticut*: Hartford County: Simsbury. New London County: Voluntown. New Haven. Fairfield County: Norwalk (all Kaston, 1948). *New York*: Ithaca (N. Banks). Onondaga County. Rensselaer County: Central Nassau (both Crosby and Bishop, 1928). Suffolk County: Cold Spring Harbor (W. J. Gertsch). *New Jersey*: Bergen County: Ramsey (W. J. Gertsch). *Pennsylvania*: "Western Pennsylvania" (Truman, 1942). *Maryland*: Prince Georges County: (Muma, 1945). Montgomery County: Takoma Park (J. M. Davis). *District of Columbia*: (Marx, 1891). *Kentucky*: Breathitt County: Quicksand. *Tennessee*: Bedford County: South of Shelbyville (Archer, 1946). Wilson County: Cedars of Lebanon State Park (Archer, 1946). Shelby County: Wolf River (Gibson, 1947). *North Carolina*: Buncombe County: Ridgecrest (A. F. Archer). Swannanoa Valley (Banks, 1911). *Georgia*: Atlanta (J. Emerton). Muscogee County: Upatoi Creek (Archer, 1946). Clay County: Fort McPherson (Archer, 1946). Billy's Island, Okefenokee Swamp. Rabun County: Clayton. Chatham County: Three miles southeast of Savannah (both Chamberlin and Ivie, 1944). *Florida*: Runnymede (Banks, 1904). Calhoun County: (H. K. Wallace). Pasco County: South of Zephyrhills (W. J. Gertsch). Hardee County: Near Ona (W. J. Gertsch). Pinellas County: Dunedin (W. S. Blatchley). Highlands County: Highland Hammock near Sebring (W. J. Gertsch). Manatee County: Oneco. Charlotte County: Punta Gorda (Banks, 1904). *Alabama*: (Numerous localities in Archer, 1946). Mobile County:

Dauphin Island (A. F. Archer). Clarke County: Grove Hill (A. F. Archer). *Mississippi*: Tishomingo County: Tishomingo State Park (C. and M. Goodnight). Wilkinson County: Centreville (A. F. Archer). *Louisiana*: Madison Parish: Tallulah (Crosby and Bishop, 1936). *Texas*: Bexar County: San Antonio (L. I. Davis). Hidalgo County: Edinburg (S. Mulaik); Mission (S. Mulaik). *Tamaulipas*: Forty miles south of Linares (A. M., L. I., and C. Davis); 34 miles west of Altamira (L. I. Davis). *Veracruz*: Papantla (H. Wagner). *Cuba*: Soledad, Vilches Hill (Bryant, 1940).

Achaearanea conjuncta (Gertsch and Mulaik), new combination

Figures 14-18

Theridium inornatum BANKS, 1899, Proc. Ent. Soc. Washington, vol. 4, p. 192; 1904, Proc. Acad. Nat. Sci. Philadelphia, vol. 56, p. 126; 1910, Bull. U.S. Natl. Mus., no. 72, p. 19. [Not *Theridion (Dipoena) inornatum* O. P.-Cambridge.]

Theridium inornatum, PETRUNKEVITCH, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 198.

Theridium conjunctum GERTSCH AND MULAİK, 1936, Amer. Mus. Novitates, no. 863, p. 10 (new name for *inornatum*). ROEWER, 1942, Katalog der Araneae, vol. 1, p. 502.

FEMALE: Carapace, sternum yellow-white. Legs yellow-white, distal segments of first and second legs reddish. Abdomen yellow-white, with white pigment on dorsum and a crescent of white pigment around posterior half. Some fine black spots on venter, anterior and posterior (fig. 18). Posterior median eyes separated by one diameter, one-half of their diameter from laterals. Eyes subequal in size or anterior medians slightly larger. Height of clypeus twice the diameter of anterior median eyes. Epigynum, which differs from that of *A. globosa* by being very weakly sclerotized, is a translucent protuberance, showing the almost spherical seminal receptacles underneath (fig. 15). Openings anterior to protuberance. Total length of females, 1.3-1.6 mm. A female from Mississippi measured 1.3 mm., total length; carapace, 0.55 mm. long, 0.48 mm. wide; first femur, 0.94 mm.; patella and tibia, 0.78 mm.; metatarsus, 0.57 mm.; tarsus, 0.36 mm.; second patella and tibia, 0.53 mm.; third, 0.38 mm.; fourth, 0.56 mm.

MALE: Coloration and structure like those of female except for usual differences. A dark spot on epigastric plate. Palpus (figs. 16, 17) has distal end of conductor larger than in *A. globosa* and duct is coiled slightly differently, lacking the slight sinuation on the ventral face. Total length of a specimen from Mississippi, 1.0 mm.; carapace, 0.55 mm. long, 0.48 mm. wide; first femur, 0.95 mm.; patella and tibia, 0.86 mm.; metatarsus, 0.65 mm.; tarsus, 0.34 mm.; second patella and tibia, 0.61 mm.; third, 0.41 mm.; fourth, 0.57 mm.

The drawings were made from Mississippi specimens. All indications are, however, that there is considerable variation within the species. Males from North Carolina were larger, measuring 1.4 mm. in total length. Although the openings of the epigynum were separate in the Mississippi specimens, North Carolina females had these openings (although separated by the same distance) in a common indistinct depression with a slight posterior lip, somewhat resembling the epigynum of *A. geochares*. The palpi of North Carolina males, in contrast to those from Mississippi, has the stalk of the conductor of the palpus slightly narrower and the tip smaller, and also the palpi seemed narrower or differently shaped. However, this species can readily be differentiated from *A. globosa* by the ring of white pigment on the abdomen and by the absence of the black spot on the posterior.

TYPE LOCALITIES: Cotypes of *Theridion inornatum* Banks came from Shreveport, Louisiana, and Kissimmee, Osceola County, Florida, and are in the Museum of Comparative Zoölogy.

RECORDS: *North Carolina*: Durham County: Durham, May 9, July 4, 1953 (R. D. Barnes), seven males, three females; 3.7 miles north of Durham, May 16, 1953 (R. D. Barnes), one female. *Florida*: Runnymede (Banks, 1904). Hillsborough County: Hillsborough River State Park, April 8, 1938 (W. J. Gertsch), one male. *Mississippi*: Scott County: Eight miles east of Morton, August 16, 1940 (A. M. and L. I. Davis), two males, two females, two juveniles.

Achaearana florens (O. P.-Cambridge), new combination

Figures 26-31

Theridion florens O. P.-CAMBRIDGE, 1886, *Biologia Centrali-Americana*, Araneidea, vol. 1, p. 205, pl. 24, fig. 12 (female). PETRUNKEVITCH, 1911, *Bull. Amer. Mus. Nat. Hist.*, vol. 29, p. 195. CHICKERING, 1936, *Trans. Amer. Micros. Soc.*, vol. 55, p. 451. REIMOSER, 1939, *Ann. Naturhist. Mus. Wien*, vol. 50, p. 346. ROEWER, 1942, *Katalog der Araneae*, vol. 1, p. 492.

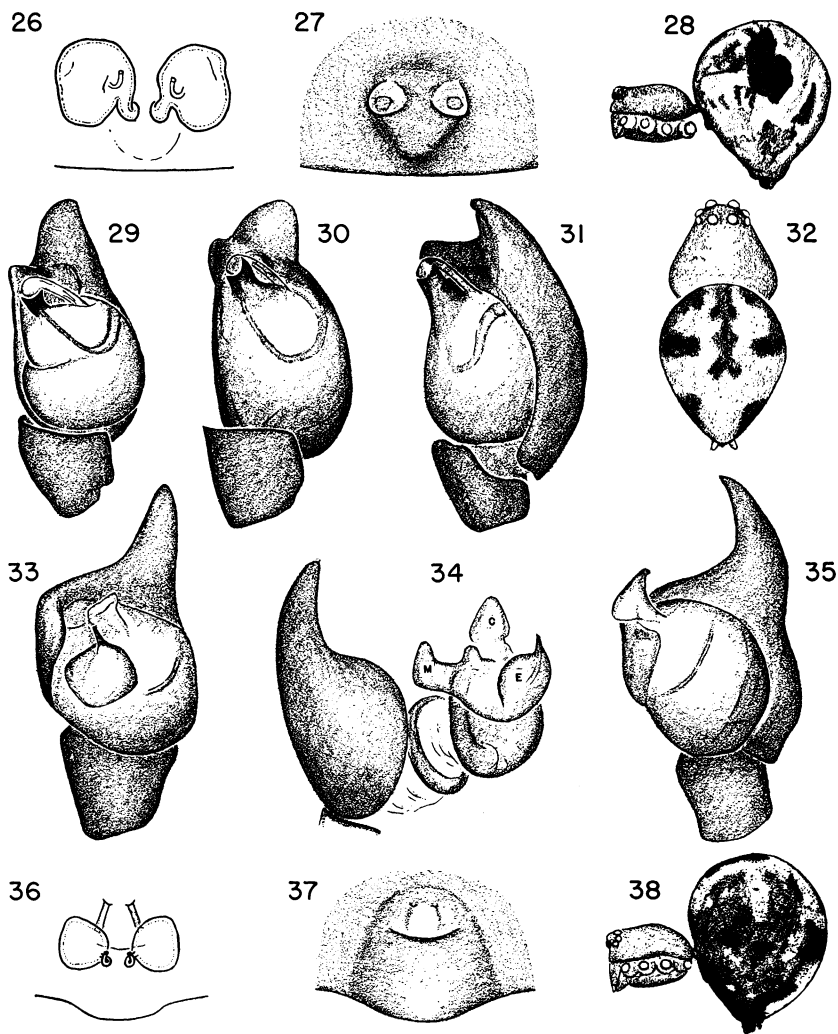
Achaea mendax O. P.-CAMBRIDGE, 1899, *Biologia Centrali-Americana*, Araneidea, vol. 1, p. 294, pl. 39, fig. 7 (male). F. O. P.-CAMBRIDGE, 1902, *Biologia Centrali-Americana*, Araneidea, vol. 2, p. 401, pl. 37, fig. 30 (male). PETRUNKEVITCH, 1911, *Bull. Amer. Mus. Nat. Hist.*, vol. 29, p. 165. ROEWER, 1942, *Katalog der Araneae*, vol. 1, p. 445. New synonymy.

Steatoda florens, F. O. P.-CAMBRIDGE, 1902, *Biologia Centrali-Americana*, Araneidea, vol. 2, p. 382, pl. 36, fig. 5 (female).

Theridium florens, BANKS, 1909, *Proc. Acad. Nat. Sci. Philadelphia*, vol. 61, p. 203.

FEMALE: Carapace dusky to brown. Sternum dusky, with dark patches on sides. Coxae very light. Legs light, with indistinct bands which are more visible on distal segments. Abdomen with a black patch

on each side, bordered behind by a white line (fig. 28); the posterior portions may be reddish brown. The structure is typical. Posterior median eyes separated by two-thirds of their diameter, one-half of their



FIGS. 26-31. *Achaearanea florens* (O. P.-Cambridge). 26. Female genitalia, dorsal view. 27. Epigynum. 28. Female. 29-31. Left palpus. 29. Ventral view (Panama). 30. Ventral view (Texas). 31. Ectal view (Texas).

FIGS. 32-38. *Achaearanea schullei* (Gertsch and Mulaik). 32. Male. 33-35. Palpus. 33. Ventral view. 34. Expanded, mesal view. 35. Ectal view. 36. Female genitalia, dorsal view. 37. Epigynum. 38. Female.

Abbreviations: C, conductor; E, embolus; M, median apophysis.

diameter from laterals. Eyes subequal in size. Height of clypeus equals two diameters of anterior median eyes. Epigynum with a protuberance on the anterior face of which are two large openings, each with a more or less distinct sclerite in its center (fig. 27). The drawings were made from specimens collected in Panama. There is some variation in the shape of the protuberance and in the distance which separates the openings from the posterior border. The two cotypes of *A. florens* examined had the openings about their diameter distant from the margin, the same distance as in some other specimens from more northern localities. Total length of females, 2.2–3.2 mm. Total length of a female from Panama, 3.00 mm.; carapace, 1.24 mm. long, 0.97 mm. wide; first femur, 2.00 mm.; patella and tibia, 1.92 mm.; metatarsus, 1.69 mm.; tarsus, 0.73 mm.; second patella and tibia, 1.30 mm.; third, 0.94 mm.; fourth, 1.30 mm.

MALE: Coloration and structure generally like those of female. Posterior median eyes separated by one diameter, by two-thirds to three-quarters of a diameter from laterals. Height of clypeus one to two diameters of anterior median eyes. Palpus with a short two-pointed embolus (figs. 29–31). Total length, 1.5–1.7 mm. A male from Panama measured 1.7 mm., total length; carapace, 0.87 mm. long, 0.71 mm. wide; first femur, 1.37 mm.; patella and tibia, 1.30 mm.; metatarsus, 1.17 mm.; tarsus, 0.52 mm.; second patella and tibia, 0.91 mm.; third, 0.59 mm.; fourth, 0.80 mm.

TYPE LOCALITIES: The type of *A. florens* came from Tabasco, Mexico; that of *A. mendax*, from Coban, Guatemala; both are in the British Museum (Natural History).

RECORDS: *Texas*: Hidalgo County: South of Pharr, April 5, 1936 (S. Mulaik), one male. *Tamaulipas*: Twenty-seven miles north of Villa Juarez, April 17, 1938 (A. M. and L. I. Davis), one female. Seven miles south of Hidalgo, July 3, 1936 (L. I. Davis), one female. *Distrito Federal*: México, 1940 (H. Wagner), one female. *Costa Rica*: Tejar de Cartágo; Fortuna; Cartágo; San José (all Banks, 1909). *Panama*: Cerro Punta, Chiriquí, March 4, 1936 (W. J. Gertsch), two males, four females.

Achaearanea schullei (Gertsch and Mulaik), new combination

Figures 32–38

Theridion schullei GERTSCH AND MULAİK, 1936, Amer. Mus. Novitates, no. 863, p. 15, fig. 22 (female). ROEWER, 1942, Katalog der Araneae, vol. 1, p. 505.

Theridion credulum GERTSCH AND DAVIS, 1936, Amer. Mus. Novitates, no. 881, p. 11, fig. 17 (male). ROEWER, 1942, Katalog der Araneae, vol. 1, p. 502. New synonymy.

FEMALE: Carapace dusky brown, eye region black. Sternum dusky brown. Coxae dark brown. Legs yellow-white banded with brown, two more or less distinct bands on femora, tibiae, and metatarsi and one dark band on tarsi; patellae dark. Abdomen with a dorsal longitudinal gray mark, bordered by white, which has other more or less white lines radiating between lighter and darker gray to black spots (figs. 32, 38). Some Mexican specimens with abdomen almost black. Posterior median eyes separated by one diameter, by two-thirds of a diameter from laterals. Height of clypeus equals two diameters of anterior median eyes. Abdomen may have a tubercle or not. Epigynum a slightly swollen plate with an anterior lip. The openings are small and anterior, below the pedicel (fig. 37). Total length, 1.4 to 2.2 mm. A female from Llano, Texas, measured 2.0 mm., total length; carapace, 0.70 mm. long, 0.65 mm. wide; first femur, 1.08 mm.; patella and tibia, 1.04 mm.; metatarsus, 0.79 mm.; tarsus, 0.40 mm.; second patella and tibia, 0.77 mm.; third, 0.52 mm.; fourth, 0.84 mm.

MALE: Color like that of female, eyes slightly closer together. Palpus illustrated by figures 33-35. Embolus and median apophysis one separate sclerite (fig. 34). Total length of a male from Llano, Texas, 1.30 mm.; carapace, 0.65 mm. long, 0.60 mm. wide; first femur, 1.00 mm.; patella and tibia, 1.00 mm.; metatarsus, 0.78 mm.; tarsus, 0.44 mm.; second patella and tibia, 0.78 mm.; third, 0.56 mm.; fourth, 0.70 mm.

TYPE LOCALITY: Female holotype of *Theridion schullei* from Edinburg, Texas, October 15, 1935 (Schulle). Male holotype of *T. credulum* from Cameron County, Texas, January to March, 1936 (L. I. Davis). Both are in the American Museum of Natural History.

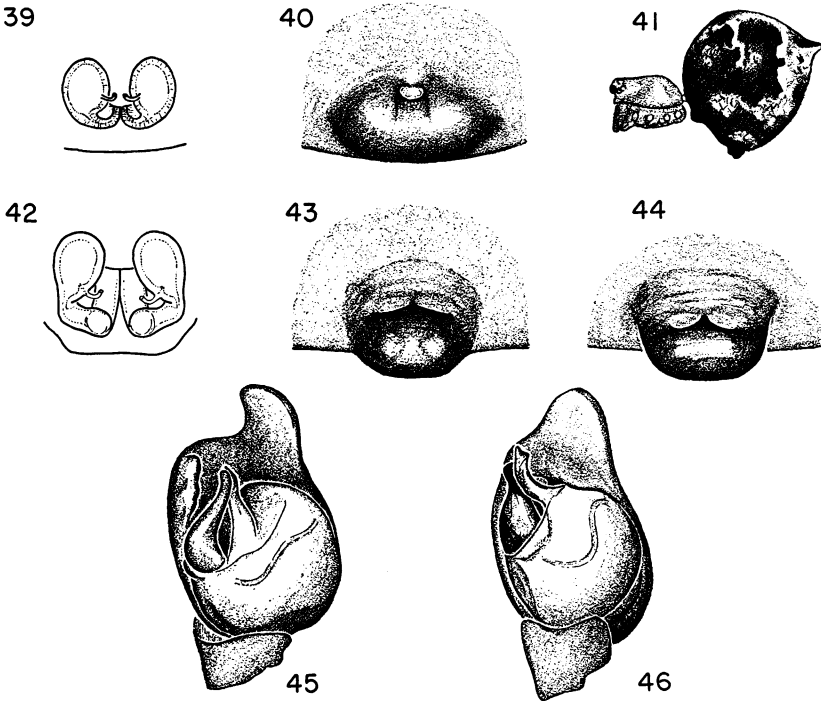
RECORDS: *Florida:* Alachua County: March 3, 1946 (H. K. Wallace), one male. *Texas:* Hays County: April 15, 1939 (D. and S. Mulaik), two females. Llano County: Llano, June 7, 1939 (L. I. Davis), one male, one female, one juvenile. Bell County: Twelve miles north of Temple, July 22, 1936 (L. I. Davis), one female; Belton, September 1, 1933 (W. Ivie), one female. Starr County: Five miles east of Rio Grande City, May 31, 1939 (D. Mulaik), one female. Bexar County: San Antonio, August 1935 (L. I. Davis), two females. *California:* Imperial County: Seven miles west of El Centro, March 14, 1941 (W. Ivie), one female. *Tamaulipas:* Llera, May 18, 1952 (W. J. Gertsch), one female. *Sinaloa:* Five miles south of Mazatlán, July 23, 1954 (W. J. Gertsch), one female. Forty miles south of Culiacán, July 22, 1954 (W. J. Gertsch), one female. *Nayarit:* Compostela, July 26, 1954 (W. J. Gertsch), one male. *Colima:* Ten miles south of Colima, August 1, 1954 (W. J. Gertsch), one female.

Achaeearanea insulsa (Gertsch and Mulaik), new combination

Figures 41-45

Theridion insulsum GERTSCH AND MULAİK, 1936, Amer. Mus. Novitates, no. 863, p. 11, figs. 25, 26 (female).

FEMALE: Carapace, sternum, coxae dark gray-brown. Legs white, femora with gray-brown rings, other segments with red-brown bands. Abdomen with two white lines across dorsum crossing a black patch



FIGS. 39-40. *Achaeearanea geochares*, new species. 39. Female genitalia, dorsal view. 40. Epigynum.

FIGS. 41-45. *Achaeearanea insulsa* (Gertsch and Mulaik). 41. Female. 42. Female genitalia, dorsal view. 43. Epigynum, ventral view. 44. Epigynum, anterior view. 45. Left palpus, ventral view.

FIG. 46. *Achaeearanea geochares*, new species. Palpus, ventral view.

on each side, otherwise mottled with light and dark gray spots (fig. 41). Posterior median eyes separated by three-quarters of their diameter from each other and by same distance from laterals. Eyes subequal in size. Height of clypeus one and one-half diameters of anterior median

eyes. Legs relatively short. Abdomen, of all specimens examined, with a large tubercle. Epigynum a projection having two openings on its anterior face (figs. 43, 44). Total length, 1.8 to 2.2 mm. Total length of a specimen from Cameron County, Texas, 2.2 mm.; carapace, 0.67 mm. long, 0.65 mm. wide; first femur, 0.78 mm.; patella and tibia, 0.78 mm.; metatarsus, 0.52 mm.; tarsus, 0.36 mm.; second patella and tibia, 0.60 mm.; third, 0.45 mm.; fourth, 0.68 mm.

MALE: Similar in structure and coloration to female, although the abdomen is lighter in color. Anterior median eyes slightly larger than others. Height of clypeus equals two diameters of anterior median eyes. Abdomen with tubercle. Palpus illustrated by figure 45. Total length of a male from Rio Grande City, Texas, 1.5 mm.; carapace 0.83 mm. long, 0.62 mm. wide; first femur, 0.95 mm.; patella and tibia, 0.99 mm.; metatarsus, 0.65 mm.; tarsus, 0.43 mm.; second patella and tibia, 0.71 mm.; third, 0.53 mm.; fourth, 0.75 mm.

TYPE LOCALITY: Female holotype from Brownsville, Texas, November 30, 1934 (S. Mulaik), in the American Museum of Natural History.

RECORDS: *Texas*: Hidalgo County: Edinburg, May 27, 1935, February 5, 1939 (S. Mulaik), two females. Cameron County: Big Tree-Vine Association, September, 1936 (L. I. Davis), two females. Starr County: Five miles east of Rio Grande City, October 31, 1936 (S. Mulaik), one male. *Tamaulipas*: Eight miles north of Ciudad Victoria, April 13, 1941 (A. M. Davis), one female. *San Luis Potosí*: Two miles north of Pujal, March 21, 1940 (W. Bridges), one female.

Achaearana geochares, new species

Figures 39–40, 46

FEMALE: Carapace dusky yellow to dark brown or black. Sternum dark brown. Coxae white. Legs striped as in *A. rupicola*. Abdomen black and white similar to that of *A. rupicola*. Anterior median eyes separated by one diameter, by one-half of their diameter from laterals. Posterior median eyes separated by one diameter from laterals. Eyes subequal in size. Height of clypeus two and one-half diameters of anterior median eyes. Abdomen with a small tubercle as in *A. rupicola*, and quite hairy. The females are distinguished from those of all other North American *Achaearana* by the epigynum which is a protruding knob with one median opening on its anterior surface (fig. 40). Total length of females, 2.2–3.0 mm. Female allotype 3.0 mm., total length; carapace, 1.14 mm. long, 0.94 mm. wide; first femur, 1.82 mm.; patella and tibia, 1.78 mm.; metatarsus, 1.40 mm.; tarsus, 0.65 mm.; second patella and tibia, 1.17 mm.; third, 0.81 mm.; fourth, 1.30 mm.

MALE: Coloration and structure like those of female. Height of clypeus equal to two diameters of anterior median eyes. Abdomen with a small tubercle. The male can be distinguished from the males of *A. insulsa* and *A. rupicola* by the shape of the short embolus which lies against the conductor (fig. 46). Total length, 1.7 to 2.4 mm. Total length of the male holotype, 2.2 mm.; carapace, 1.12 mm. long, 0.85 mm. wide; first femur, 2.11 mm.; patella and tibia, 2.08 mm.; metatarsus, 1.71 mm.; tarsus, 0.77 mm.; second patella and tibia, 1.34 mm.; third, 0.82 mm.; fourth, 1.19 mm.

Achaearanea geochares is very close to *A. saxatilis* (C. L. Koch), 1834, of Europe and Siberia. Details of the genitalia differentiate the two species.

TYPE LOCALITY: Male holotype and female allotype from Monterey, California, October, 1945 (A. F. Archer).

RECORDS: *California*: Alameda County: Albany, March 18, 1950 (E. Schlinger), one male. San Mateo County: Golden Gate Park, San Francisco, August 16, 1950 (S. F. Bailey), one female. Between San Francisco and Santa Cruz, July 1, 1948 (H. L. Shantz), one female. Santa Clara County: Stanford University, 1940 (W. M. Pearce), five females. Santa Cruz County: Watsonville, March 23, 1940 (D. Blaisdell), one female. Monterey County: Pacific Grove, August, 1931 (W. Ivie), five females, juveniles; Carmel, September 9, 1945 (A. F. Archer), one female paratype, one juvenile. Yosemite National Park, July 3, 1931, two males. Santa Barbara County: Santa Barbara, 1947, April, August, 1948, February, May, September, 1949, July, September, 1950, 1951 (H. L. Shantz), seven males, six females. Los Angeles County: West Los Angeles, 1943 (C. B. Cowles), one female; Long Beach, 1948 (W. M. Pearce), one female, juvenile; Glendale (E. Schlinger), one male; Santa Monica, December 25, 1932 (W. Ivie), one male, three females, juveniles.

Achaearanea rupicola (Emerton), new combination

Figures 47-52, 56

Theridium rupicola EMERTON, 1882, Trans. Connecticut Acad. Sci., vol. 6, p. 14, pl. 2, fig. 2 (male, female). MARX, 1889, Proc. U. S. Natl. Mus., vol. 12, p. 520. BANKS, 1892, Proc. Acad. Nat. Sci. Philadelphia, p. 30. EMERTON, 1902, The common spiders, p. 113. BANKS, 1910, Bull. U. S. Natl. Mus., no. 72, p. 20; 1911, Proc. Acad. Nat. Sci. Philadelphia, vol. 63, p. 444. (Not *T. rupicola*, Kulczyński, 1899, Rozprawy i sprawozdania z posiedzen wydziału matematyczno przyrodniczego Akad. umiejtnosci, Krakow, ser. 2, vol. 16, p. 368, fig. 36.)

Theridion rupicola, BRYANT, 1908, Occas. Papers Boston Soc. Nat. Hist., vol. 7, p. 14. PETRUNKEVITCH, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 205. COMSTOCK, 1912, The spider book, p. 347. EMERTON, 1913, Appalachia, vol. 12,

p. 155; 1920, Trans. Roy. Canadian Inst., vol. 12, p. 310. BISHOP AND CROSBY, 1926, Jour. Elisha Mitchell Sci. Soc., vol. 41, p. 183. CROSBY AND BISHOP, 1928, Mem. Cornell Agr. Exp. Sta., no. 101, p. 1042. KASTON, 1938, Bull. Connecticut Geol. Nat. Hist. Surv., no. 60, p. 186. COMSTOCK, 1940, The spider book, rev. ed., p. 362. KURATA, 1941, Univ. Toronto Studies, biol. ser., no. 48, p. 109. ROEWER, 1942, Katalog der Araneae, vol. 1, p. 505. MUMA, 1945, Bull. Univ. Maryland Agr. Exp. Sta., no. A38, p. 29. KASTON, 1948, Bull. Connecticut Geol. Nat. Hist. Surv., no. 70, p. 109, figs. 129-130 (male, female). LOWRIE, 1948, Ecology, vol. 29, p. 338.

Theridion (Cryptachaea) rupicola, ARCHER, 1946, Paper Alabama Mus. Nat. Hist., no. 22, p. 37.

Cryptachaea rupicola, ARCHER, 1950, Paper Alabama Mus. Nat. Hist., no. 30, p. 15. LEVI AND FIELD, 1954, Amer. Midland Nat., vol. 51, p. 442.

FEMALE: Carapace dusky yellow to nearly black. Sternum golden to dusky yellow, with a dusky margin. Coxae yellow-white. Legs yellow-white, distal ends of femora, center and distal ends of tibiae, metatarsi, and tarsi with dark bands. Patellae dark. Abdomen white, with gray and black spots (fig. 56).

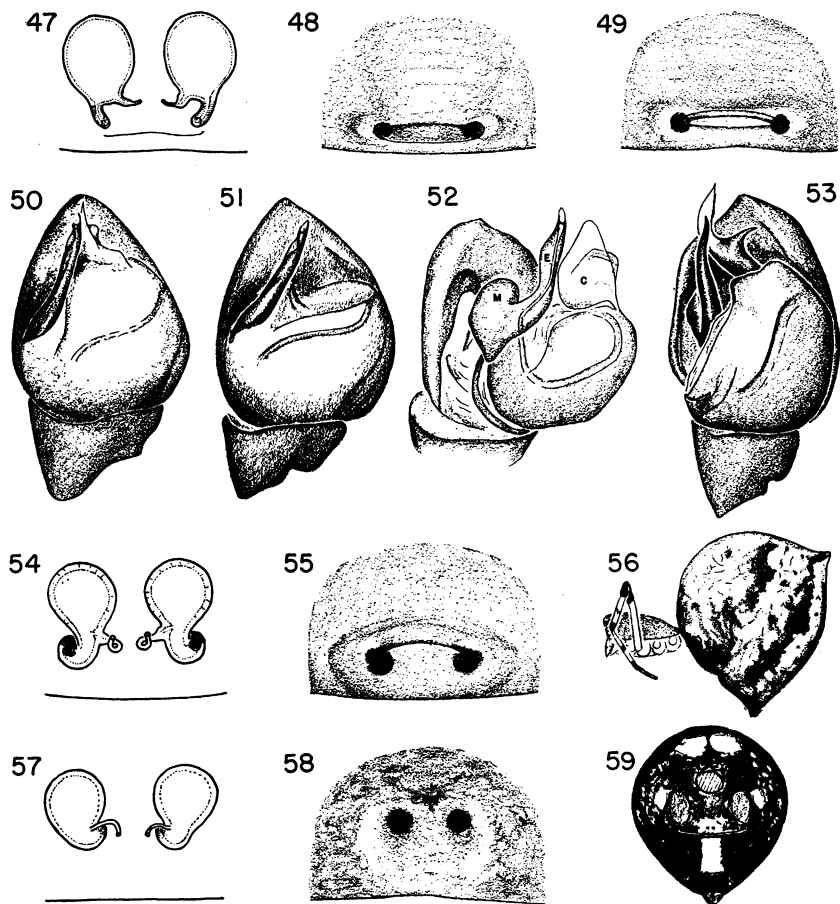
Structure typical. Posterior median eyes separated by about one diameter, by two-thirds of a diameter from laterals. Eyes subequal in size. Height of clypeus equals one and three-quarters diameters of anterior median eyes. Abdomen with tubercle on all specimens examined. Epigynum a long sclerotized plate under an indistinct posterior lip. An opening on each side in a dark spot which may vary in size (figs. 48, 49). In southern specimens there is an anterior lip (fig. 49) which in many specimens appears broken in the middle, with the broken ends slightly overlapping. Total length, 1.8 to 2.7 mm. Total length of a female from New Jersey, 2.7 mm.; carapace, 0.95 mm. long, 0.79 mm. wide; first femur, 1.56 mm.; patella and tibia, 1.50 mm.; metatarsus, 1.20 mm.; tarsus, 0.59 mm.; second patella and tibia, 1.01 mm.; third, 0.78 mm.; fourth, 1.14 mm.

MALE: Coloration like that of female, with leg bands less distinct. The tubercle on abdomen usually indistinct. The difference between the palpi of northern and southern males is quite considerable (figs. 50, 51). Total length, 1.4 to 2.2 mm. Total length of a male from New Jersey, 1.7 mm.; carapace, 0.91 mm. long, 0.78 mm. wide; first femur, 1.82 mm.; patella and tibia, 1.62 mm.; metatarsus, 1.53 mm.; tarsus, 0.65 mm.; second patella and tibia, 1.17 mm.; third, 0.87 mm.; fourth, 1.04 mm.

Achaearanea rupicola makes a large irregular web under boards, loose slabs, or ledges. The web may contain sand grains or debris. (Archer, 1946; Kaston, 1948.)

TYPE LOCALITY: Cotypes from eastern Massachusetts and New Haven, Connecticut, in the Museum of Comparative Zoölogy.

RECORDS: ?*British Columbia*: Victoria (Emerton, 1920, probably an erroneous record). *Ontario*: Prince Edward County: (Kurata, 1941). *Wisconsin*: Grant County: Wyalusing State Park (L. and H. Levi). *Illinois*: Rockford (A. F. Archer). *Michigan*: Berrien County: Warren's Woods (Lowrie, 1948). Washtenaw County: Ann Arbor (E. L. Miner).



FIGS. 47-52. *Achaearanea rupicola* (Emerton). 47. Female genitalia, dorsal view. 48. Epigynum (New Jersey). 49. Epigynum (Alabama). 50-52. Left palpus. 50. Ventral view (New Jersey). 51. Ventral view (Alabama). 52. Subventral view, expanded (New Jersey).

FIGS. 53-55. *Achaearanea fresno*, new species. 53. Palpus, ventral view. 54. Female genitalia, dorsal view. 55. Epigynum.

FIG. 56. *Achaearanea rupicola* (Emerton). Female.

FIGS. 57-59. *Achaearanea chiricahua*, new species. 57. Female genitalia, dorsal view. 58. Epigynum. 59. Abdomen, ventral view.

Abbreviations: C, conductor; E, embolus; M, median apophysis.

Indiana: La Porte County: Smith (Lowrie, 1948). *Maine*: Portland (Bryant, 1908). *New Hampshire*: Cheshire County: Jaffrey (Bryant, 1908). Grafton County: Franconia (Bryant, 1908). *Massachusetts*: Plymouth County: Norwell (A. F. Archer). Norfolk County: Sharon. Woods Hole. Hampshire County: Mt. Tom (all Bryant, 1908). *Connecticut*: Litchfield County: Washington (B. J. Kaston). New Haven County: New Haven (Bryant, 1908); Meriden; Mount Carmel; Bethany. Cheshire County: Brooksville. Middlesex County: Killingworth (all Kaston, 1948). *New York*: Onondaga County: Tully (H. W. Britcher). Ithaca (Banks, 1892); Freeville. Albany County: Westerlo. Dutchess County: Poughkeepsie. Westchester County: Larchmont (all Crosby and Bishop, 1928). *New Jersey*: Bergen County: Ramsey (W. J. Gertsch). *Maryland*: Allegany County: (Muma, 1945). *Kentucky*: Harlan County: Nolansburg (W. L. and C. K. Necker). Breathitt County: Quicksand (S. C. Bishop). *Tennessee*: Grundy County: Beer-sheba (Bishop and Crosby, 1926). Unicoi County: Erwin (W. Ivie). *North Carolina*: McDowell County: Little Switzerland (W. S. Creighton). Madison County: Paint Rock. Buncombe County: Swannanoa Valley (both Banks, 1911); Oteen (Bishop and Crosby, 1926). *Georgia*: Three miles south of Neel Gap (P. W. Fattig). *Alabama*: De Kalb County: De Soto State Park (A. F. Archer). Madison County: Monte Sano. Lawrence County: Black Warrior National Forest (A. F. Archer). Jackson County: Saltpetre Cave (A. F. Archer). (Additional Alabama localities are listed in Archer, 1946).

Achaearanea canionis (Chamberlin and Gertsch), new combination

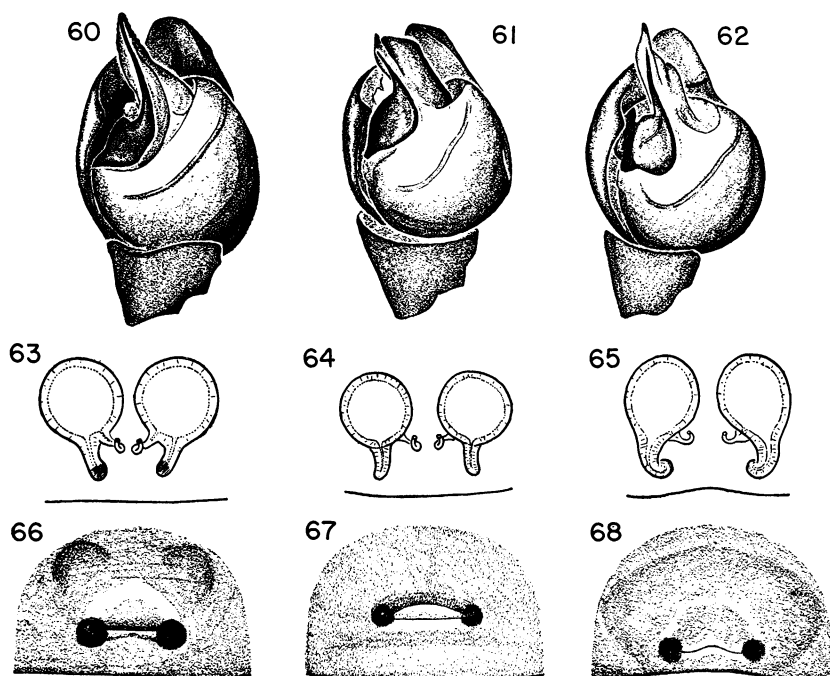
Figures 60-68

Theridion canionis CHAMBERLIN AND GERTSCH, 1929, Jour. Ent. and Zool., vol. 21, p. 103, fig. 43 (female). CHAMBERLIN AND WOODBURY, 1929, Proc. Biol. Soc. Washington, vol. 42, p. 135. ROEWER, 1942, Katalog der Araneae, vol. 1, p. 502.

FEMALE: Coloration similar to that of *A. rupicola*. Posterior median eyes separated by two-thirds to one diameter, by two-thirds of a diameter from laterals. Eyes subequal in size or anterior medians slightly smaller. Height of clypeus one and three-quarters to two and one-half diameters of anterior median eyes. Specimens from Utah usually lack the abdominal tubercle, while this structure is usually present in specimens from Arizona and California. The genitalia are illustrated by figures 63-68. Total length of females, 1.8 to 3.5 mm. Total length of a female from Salt Lake City, 2.6 mm.; carapace, 1.00 mm. long, 0.88 mm. wide; first femur, 1.88 mm.; patella and tibia, 1.82 mm.; metatarsus, 1.56 mm.; tarsus, 0.75 mm.; second patella and tibia, 1.12 mm.;

third, 0.91 mm.; fourth, 1.40 mm. The leg segments of specimens from Arizona and California are shorter. A female from Los Angeles County, California, measured 3.0 mm. total length, and had a carapace 1.04 mm. long. The first patella and tibia measured 1.53 mm.

MALE: Coloration like that of female. The eyes may be slightly closer to each other than those of the female. Height of clypeus two to two and one-half diameters of anterior median eyes. Abdomen of Utah



FIGS. 60-68. *Achaearanea canionis* (Chamberlin and Ivie). 60-62. Left palpi, ventral view. 60. California. 61. Utah. 62. Arizona. 63-65. Female genitalia, dorsal view. 63. California. 64. Utah. 65. Arizona. 66-68. Epigynum. 66. California. 67. Utah. 68. Arizona.

specimens usually without a tubercle, while those collected in Arizona and California usually have a tubercle. Both the conductor and the embolus of the palpus quite variable in shape; some extremes are illustrated by figures 60-62. Total length of males, 1.5 to 2.0 mm. A male from Dinosaur National Monument, Utah, measures 2.0 mm. total length; carapace 0.91 mm. long, 0.78 mm. wide; first femur, 1.71 mm.; patella and tibia, 1.82 mm.; metatarsus, 1.63 mm.; tarsus, 0.69 mm.; second patella and tibia, 1.27 mm.; third, 0.91 mm.; fourth, 1.14 mm.

The leg segments of specimens from Arizona and California may be shorter.

This species is extremely variable and when first examined was thought to be three distinct species. However, additional specimens showed that there is one species with a great deal of variation. The conductors of the palpi of no two males are alike, and the embolus likewise shows considerable differences. Specimens from Utah may lack the abdominal tubercle and may have longer legs. The largest and the smallest specimens of this species were collected in Utah. The palpus differentiates this species readily from related ones. The epigynum of the female, however, is very much like that of *A. chiricahua* and of *A. fresno*, but the species can be separated from *A. chiricahua* in that *A. canionis* lacks the distinct white spot on the venter of the abdomen. *Achaeareanea fresno* has longer legs than female specimens of *A. canionis* collected in California.

TYPE LOCALITY: Female holotype from Zion National Park, Utah, 1927 (A. M. Woodbury), in the collection of the University of Utah.

RECORDS: *Utah:* Dinosaur National Monument, Castle Park, June, 1948 (H. G. Rodeck), one male. Salt Lake County: Dry Canyon, Salt Lake City, July, 1949 (W. J. Gertsch), one female. Sevier County: Richfield, August, 1930 (W. J. Gertsch), one female. Wasatch County: Cobble Rest, July 30, 1936 (W. Ivie), six females, one male. Beaver County: Beaver Canyon (W. Ivie), one female. Washington County: St. George, April 23, 1930 (R. V. Chamberlin), one female. *Arizona:* Gila County: Seven miles north of Payson, Sycamore Camp, August 14, 1950 (M. A. Cazier), one male. Cochise County: South fork of Cave Creek in Chiricahua Mountains, July 3, 1949 (W. J. and J. W. Gertsch), one female. Yavapai County: Prescott, April 23, 1936 (S. C. Bishop), one male, one juvenile. *California:* Los Angeles County: Tanbark Flats, San Gabriel Mountains, June 20, 1952 (W. J. Gertsch), one male, one female. Ventura County: Oxnard, June 23, 1952 (W. J. Gertsch), one male. Santa Barbara County: Ten miles west of Santa Barbara, July 12, 1934 (W. Ivie), two females. Orange County: San Juan Capistrano, July 8, 1934 (W. Ivie), three males, three females.

Achaeareanea chiricahua, new species

Figures 57-59

FEMALE: Carapace, sternum dark dusky brown. Legs white, with dusky rings on femora, brown rings on distal segments. Dorsum of abdomen with pattern similar to that in other species of the genus, three transverse white lines on each side. Bright white spots on the dark venter (fig. 59) readily distinguish this species from others in the

genus. The posterior eyes are separated by one diameter, by two-thirds of a diameter from laterals. Eyes subequal in size. Height of clypeus equals two diameters of anterior median eyes. Abdominal tubercle absent or only slight indications of it present. This species appears to be very similar to *A. fresno*, but is believed to be distinct. *Achaearana chiricahua* has slightly shorter legs than *A. fresno*. Epigynum (fig. 58) a sclerotized plate with two dark spots. Total length of holotype, 3.0 mm.; carapace, 1.21 mm. long, 1.13 mm. wide; first femur, 2.24 mm.; patella and tibia, 2.13 mm.; metatarsus, 1.82 mm.; tarsus, 0.78 mm.; second patella and tibia, 1.46 mm.; third, 1.06 mm.; fourth, 1.62 mm.

TYPE LOCALITY: Female holotype from Rustler Camp, Chiricahua Mountains, Cochise County, Arizona, September 9, 1950 (W. J. Gertsch).

RECORD: *Arizona*: Cochise County: Ramsey Canyon, Huachuca Mountains, June 15, 1940, 7500 feet (D. C. Lowrie), female paratype.

Achaearana fresno, new species

Figures 53-55

FEMALE: The coloration of this species resembles that of *A. rupicola*, although the leg bands are less distinct. The anterior median eyes are separated by two-thirds of their diameter, by one-third from laterals. Posterior median eyes separated by two-thirds of their diameter, and by the same distance from laterals. Eyes subequal in size. Height of clypeus equals two diameters of anterior median eyes. A small tubercle present on abdomen. The female of *A. fresno* can be distinguished from California specimens of *A. canionis* by longer legs of the latter and by the large diameter of the connecting ducts of the female genitalia (fig. 54). Total length of female allotype, 3.5 mm.; carapace, 1.20 mm. long, 1.05 mm. wide; first femur, 2.36 mm.; patella and tibia, 2.30 mm.; metatarsus, 1.96 mm.; tarsus, 0.75 mm.; second patella and tibia, 1.56 mm.; third, 1.17 mm.; fourth, 1.66 mm.

MALE: Coloration like that of female. The posterior median eyes separated from each other and from laterals by about one diameter. Anterior eye row as in female. Anterior median eyes slightly larger than others which are subequal. Height of clypeus equal to two and one-half diameters of anterior median eyes. Tubercle of abdomen very small. The male of *A. fresno* can be separated from that of *A. canionis* and other related *Achaearana* by the relatively thick embolus and by the large thorn on the ectal side of the conductor (fig. 53). Total length, 2.5 to 2.7 mm. Total length of male holotype, 2.7 mm.; carapace, 1.33 mm. long, 1.11 mm. wide; first femur, 2.92 mm.; patella and tibia,

2.88 mm.; metatarsus, 2.50 mm.; tarsus, 0.86 mm.; second patella and tibia, 2.05 mm.; third, 1.53 mm.; fourth, 1.88 mm.

TYPE LOCALITY: Male holotype, female allotype, and female paratype from Cherry Gap, near Hume, Fresno County, California, July 17, 1952 (W. J. Gertsch).

RECORDS: *California*: Eldorado County: Meyers, 6337 feet, July 11, 1952 (W. J. Gertsch), one male.

Achaeareanea serenoae (Gertsch and Archer), new combination

Figures 76-79

Theridion serenoae GERTSCH AND ARCHER, 1942, Amer. Mus. Novitates, no. 1171, p. 10, figs. 27, 28 (male, female).

Theridion (Cryptachaea) serenoae, ARCHER, 1946, Paper Alabama Mus. Nat. Hist., no. 22, p. 36.

Cryptachaea serenoae, ARCHER, 1950, Paper Alabama Mus. Nat. Hist., no. 30, p. 15.

FEMALE: Carapace dark brown, almost black. Chelicerae, labium reddish brown. Sternum black, coxae white. Legs, palpi reddish; legs with reddish or black bands on distal ends of femora, middle and distal ends of tibiae, metatarsi, middle of tarsi. Patellae black. Abdomen (fig. 78) black and white, with some dark reddish marks on sides. Spinnerets reddish brown. Posterior median eyes separated by one diameter, by three-quarters of a diameter from laterals. Eyes subequal in size. Height of clypeus equals two diameters of anterior median eyes. Sternum quite convex. Abdomen with a large tubercle on dorsum (fig. 78). Epigynum illustrated by figure 77. Total length of females, 1.7-2.2 mm. Total length of a female from Lake Placid, Florida, 2.0 mm.; carapace 0.86 mm. long, 0.75 mm. wide; first femur, 1.30 mm.; patella and tibia, 1.17 mm.; metatarsus, 0.96 mm.; tarsus, 0.45 mm.; second patella and tibia, 0.75 mm.; third, 0.65 mm.; fourth, 1.00 mm.

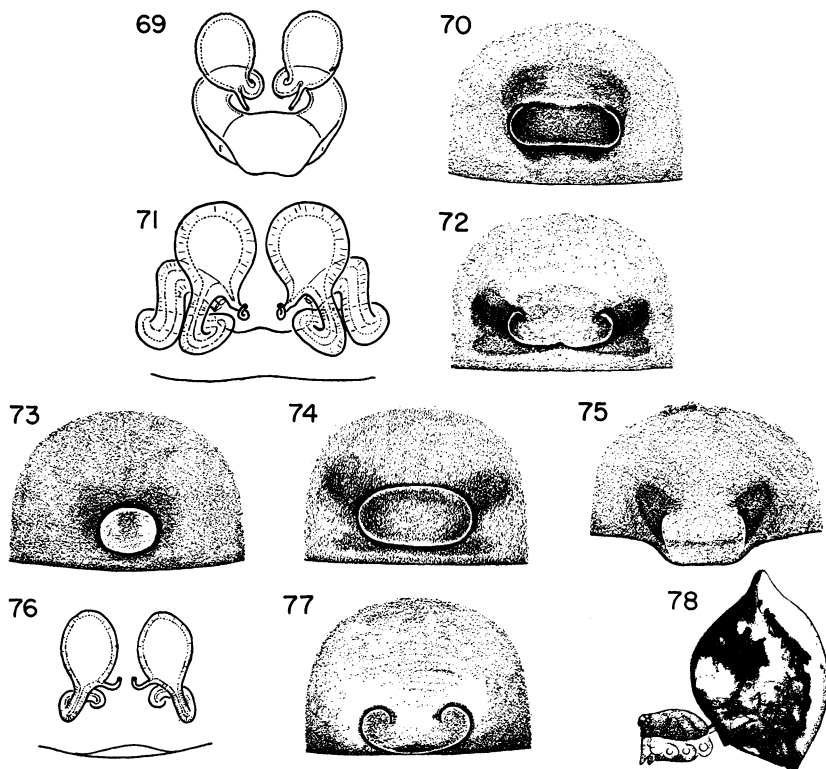
MALE: Coloration and structure much like those of female, although the anterior median eyes are slightly larger than others. Clypeus not quite so high as in female. Embolus of palpus thread-like (fig. 79). Total length of a male from Sebastian, Florida, 1.4 mm.; carapace, 0.75 mm. long, 0.58 mm. wide; first femur, 1.17 mm.; patella and tibia, 1.09 mm.; metatarsus, 0.82 mm.; tarsus, 0.48 mm.; second patella and tibia, 0.78 mm.; third, 0.60 mm.; fourth, 0.75 mm.

This species lives on palmettos and in tree scars of other species of palms.

TYPE LOCALITY: Male holotype, female allotype, and male and fe-

male paratypes from Dauphin Island, Mobile County, Alabama, July 29, 1940 (A. F. Archer), in the American Museum of Natural History.

RECORDS: *Florida*: Highlands County: Lake Placid, January 26–28, 1943 (M. Cazier), eight females, six juveniles. Indian River County: Sebastian, April, 1932 (G. Nelson), one male. Brevard County: Micco, December 30, 1940 (Gertsch and Archer, 1942). Dade County: Royal



FIGS. 69–70. *Achaearanea tepidariorum* (C. L. Koch). 69. Female genitalia, dorsal view. 70. Epigynum.

FIGS. 71–75. *Achaearanea porteri* (Banks). 71. Female genitalia, dorsal view. 72–75. Epigyna. 72. Alabama. 73. Mississippi. 74. Texas. 75. Tennessee.

FIGS. 76–78. *Achaearanea serenoae* (Gertsch and Archer). 76. Female genitalia, dorsal view. 77. Epigynum. 78. Female.

Palm State Park, December 27, 28 (Archer, 1942). *Alabama*: Mobile County: Dauphin Island, July 29, 1940 (Gertsch and Archer, 1942). Baldwin County: Gulf State Park, August 23, 25, 1940 (A. F. Archer), two females; Lagoon, April 24, 1951 (A. F. Archer), one female.

Achaearanea porteri (Banks), new combination

Figures 71-75, 80-82

Theridium porteri BANKS, 1896, in Blatchley, Ann. Rept. Indiana Geol. Surv., vol. 21, p. 203; 1907, Ann. Rept. Indiana Geol. Nat. Resources, no. 31, p. 738. BANTA, 1907, Carnegie Inst. Washington Publ., no. 67, p. 61. BANKS, 1910, Bull. U.S. Natl. Mus., no. 72, p. 19.

Theridium porteri, PETRUNKEVITCH, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 203. ROEWER, 1942, Katalog der Araneae, vol. 1, p. 504.

Theridium redemptum GERTSCH AND MULAİK, 1936, Amer. Mus. Novitates, no. 863, p. 13, figs. 14, 15 (male, female). ROEWER, 1942, Katalog der Araneae, vol. 1, p. 505. MUMA, 1945, Bull. Univ. Maryland Agr. Exp. Sta., no. A38, p. 29. New synonymy.

Theridium catapetraeum GERTSCH AND ARCHER, 1942, Amer. Mus. Novitates, no. 1171, p. 10, fig. 7 (female). CHAMBERLIN AND IVIE, 1944, Bull. Univ. Utah, biol. ser., vol. 35, p. 48. New synonymy.

Theridium (Cryptachaea) catapetraeum, ARCHER, 1946, Paper Alabama Mus. Nat. Hist., no. 22, p. 37, pl. 1, fig. 1 (female). New synonymy.

Theridium (Parasteatoda) redemptum, ARCHER, 1946, Paper Alabama Mus. Nat. Hist., no. 22, p. 38. New synonymy.

Cryptachaea catapetraeum, ARCHER, 1950, Paper Alabama Mus. Nat. Hist., no. 30, p. 14. New synonymy.

Cryptachaea porteri, ARCHER, 1950, Paper Alabama Mus. Nat. Hist., no. 30, p. 15.

FEMALE: Carapace golden-yellow to reddish brown, some duskiness along margin and in cephalic area. Sternum yellow. Legs banded as in *A. rupicola*. Abdomen with irregular gray and black spots. Eye spacing quite variable, eyes subequal in size. Abdomen with or without a tubercle. Epigynum unusually variable in structure (figs. 72-75), although the internal genitalia (fig. 71) are not. For positive identification, the internal genitalia should be examined. Range of size from 2.2 mm. (Florida) to 4.9 mm. (Tennessee). Total length of a female from Alabama, 4.0 mm.; carapace, 1.52 mm. long, 1.36 mm. wide; first femur, 2.71 mm.; patella and tibia, 2.70 mm.; metatarsus, 2.36 mm.; tarsus, 0.99 mm.; second patella and tibia, 1.78 mm.; third, 1.34 mm.; fourth, 2.08 mm.

MALE: Coloration like that of female, although the leg stripes are less distinct. Eye spacing variable. Eyes subequal in size. Abdomen with or without tubercle. Palpus, which is illustrated by figures 80 and 81, quite distinct and not easily confused with other species. Total length, 1.6 mm. (Florida) to 2.8 mm. (Alabama). Total length of an Alabama specimen, 2.80 mm.; carapace, 1.40 mm. long, 1.17 mm. wide; first femur, 2.8 mm.; patella and tibia, 2.8 mm.; metatarsus, 2.5 mm.; tarsus, 1.00 mm.; second patella and tibia, 2.06 mm.; third, 1.43 mm.; fourth, 1.79 mm.

The variation in this species, particularly in the female, is unusually great.

Achaearanea porteri makes webs in caves and under objects such as bricks and lumber.

TYPE LOCALITY: The type locality of *Theridium porteri* is Porter's Cave, Owen County, Indiana. The male holotype and female allotype

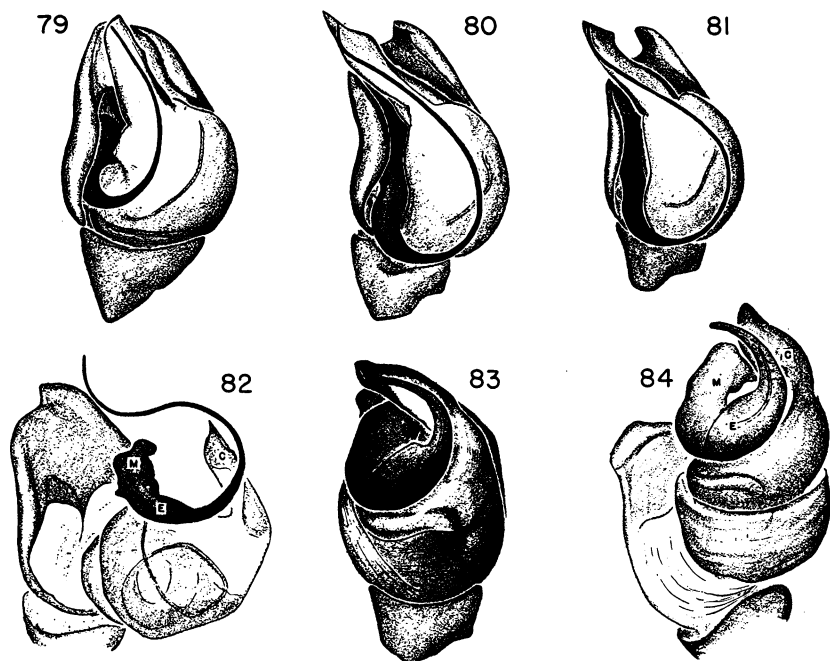


FIG. 79. *Achaearanea serenoae* (Gertsch and Archer). Left palpus, ventral view.

FIGS. 80–82. *Achaearanea porteri* (Banks). Palpus, ventral view. 80. Alabama. 81. Florida. 82. Expanded (Alabama).

FIGS. 83–84. *Achaearanea tepidariorum* (C. L. Koch). Palpus. 83. Ventral view. 84. Expanded, ventral view.

Abbreviations: C, conductor; E, embolus; M, median apophysis.

of *Theridion redemptum* were from 30 miles south of San Antonio, Texas, August 20, 1935 (S. Mulaik). The holotype of *Theridion cata-petraeum* was from Royal State Park, Dade County, Florida, December 27–29, 1940 (A. F. Archer). The last two are in the American Museum of Natural History.

RECORDS: *Indiana*: Monroe County: Truett's Cave (Banks, 1897). *Ohio*: Hocking County: Cantwell Cliffs (W. Ivie). *New York*: Suffolk County: Cold Spring Harbor (J. H. Emerton). *Pennsylvania*: Philadel-

phia, Wissahickon Creek (A. F. Archer). *Maryland*: Frederick County: (Muma, 1945). Prince Georges County (Muma, 1945). *Virginia*: Shenandoah National Park (W. Ivie). *Kentucky*: Christian County: Hopkinsville. Mammoth Cave National Park (W. Ivie). *Tennessee*: De Kalb County: Gin Bluff Cave near Dowelltown (J. M. Valentine and Beakley). *South Carolina*: Savannah River Game Refuge (W. Ivie). *Georgia*: Fulton County: Atlanta (J. H. Emerton). Ware County: Twenty miles southeast of Waycross (Chamberlin and Ivie, 1944). *Florida*: Five miles south of Clara (W. J. Gertsch). Osceola County: North of Olney (W. J. Gertsch). Suwannee County: Four miles east of Branford (H. K. Wallace). Dade County: Twenty miles west of Miami (W. Ivie). *Alabama*: Lawrence County: Black Warrior National Forest (additional localities in Archer, 1946). *Mississippi*: Wilkinson County: Centreville (A. F. Archer). *Louisiana*: Rapides Parish: Bayou Boeuf, Bringham (W. B. Jones, A. F. Archer). Grant Parish: (Archer, 1946). *Texas*: Kendall County: Comfort (L. I. Davis). Llano County: Llano (L. I. Davis). Harrison County: Nineteen miles north of Carthage (S. Mulaik). *Nuevo León*: Six miles north of Linares (L. I. Davis). *Jalisco*: Fourteen miles east of Mazamitla (W. J. Gertsch). *Chiapas*: Las Casas (C. and M. Goodnight). *Panama*: El Volcán, Chiriquí (W. J. Gertsch). *Bahama Islands*: Cat Island: Caves in Bennett's Harbour (E. Hayden).

Achaeearanea tepidariorum (C. L. Koch), new combination¹

Figures 69–70, 83–84

Theridium tepidariorum C. L. KOCH, 1841, Die Arachniden, vol. 8, p. 75, figs. 646–648 (male, female). Type locality: Greenhouses of the botanical gardens of the University of Erlangen, Bavaria.

? *Theridion pallidum* WALCKENAER, 1841, Histoire naturelle des insectes, aptères, vol. 2, p. 321. Type locality: Georgia, North America, type based on Abbot's drawing p. 25, fig. 312 (female).

Theridion vulgare HENTZ, 1850, Jour. Boston Nat. Hist. Soc., vol. 6, p. 271, pl. 9, fig. 1 (female). Type locality: United States.

Steatoda tepidariorum, THORELL, 1870, Remarks on synonyms of European spiders, p. 80.

Theridion marmoreum HOLMBERG, 1876, An. Agr. Republic Argentina, vol. 4, p. 14.²

Theridium varium URQUHART, 1886, Trans. Proc. New Zealand Inst., vol. 18, p. 187, pl. 6, fig. 3 (male, female). Type locality: Karaka, Auckland, New Zealand.

Theridion (Parasteatoda) tepidariorum, ARCHER, 1946, Paper Alabama Mus. Nat. Hist., no. 22, p. 38.

Parasteatoda tepidariorum, ARCHER, 1950, Paper Alabama Mus. Nat. Hist., no. 30, p. 14.

¹ References incomplete.

² Reference not seen.

This, one of our most common species, needs no description. Its genitalia are illustrated by figures 69, 70, 83, and 84.

Achaearanea tepidariorum is cosmopolitan. It is abundant in Mexico and Central America; however, its northern limits are not certain. It is believed to occur in southern Canada, although there are few references.

There is little variation in the structure of the genitalia of this species.

LITERATURE CITED

- ARCHER, A. F.
1946. The Theridiidae or comb-footed spiders of Alabama. Paper Alabama Mus. Nat. Hist., no. 22, pp. 1-67.
1950. A study of theridiid and mimetid spiders. *Ibid.*, no. 30, pp. 1-40.
- BAKER, E. W., AND G. W. WHARTON
1952. An introduction to acarology. New York, Macmillan Co.
- COMSTOCK, J. H.
1940. The spider book. Revised and edited by W. J. Gertsch. New York, Doubleday, Doran and Co.
- GERTSCH, W. J.
1949. American spiders. New York, Van Nostrand Co.
- LOCKET, G. H., AND A. F. MILLIDGE
1953. British spiders. London, Ray Society, vol. 2.
- PICKARD-CAMBRIDGE, O.
1889-1902. Arachnida-Araneidea. *In* Biologia Centrali-Americana. London, vol. 1, pp. 1-317, pls. 1-39.
- THORELL, T.
1869. On European spiders. Nova Acta Soc. Sci. Upsalla, ser. 3, vol. 7, pp. 1-108.
- WIEHLE, H.
1937. Familie: Theridiidae oder Haubennetzspinnen (Kugelspinnen). *In* Dahl, Friedrich, Die Tierwelt Deutschlands. Jena, G. Fischer, pt. 33, pp. 119-222, figs. 1-286.

