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## NOTES ON NEW AND RARE AMERICAN MYGALOMORPH SPIDERS

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### Ctenizidae

#### Subfamily Ctenizinae

This subfamily comprises a large number of four-lunged spiders which, though essentially homogeneous in general facies, have been placed by modern authors in about ninety genera, many of which are monotypical. The genera and often the females of a given genus are difficult to identify because of an almost unparalleled variability in characters regarded as of primary importance, notably the relative size of the eyes and their arrangement. The males of a rather small percentage of the species are known, possibly because they desert their burrows at maturity to wander in search of the female. The great majority of the members of this group, which are predominantly tropical and subtropical in distribution, have developed the singular habit of dwelling in burrows in the ground, the entrances to which are closed and cleverly concealed by a silken lid of the spider's own fabrication. Only the closest scrutiny will disclose the average trap-door nest to the hunter. As a result, these secretive animals, eminently successful in living such a semi-sedentary life, seldom come to the notice of ordinary collectors. Trap-door spiders still remain a little-known element in the fauna of the United States. Occasional specimens have found their way into collections and literature, and a considerable number of species have been described, but the total of all the information accrued to date is very small.

#### CYCLOCOSMIA AUSSERER

*Cyclocosmia* AUSSERER, 1871, Verh. Zool.-Bot. Gesell., Wien, XXI, p. 144.

*Holonoproctus* Pocock, 1901, Proc. Zool. Soc., London, p. 209.

GENOTYPE.—*Mygale truncata* Hentz, from the southeastern United States.  
(Type of *Holonoproctus*, *H. ricketti* Pocock, from China.)

*Cyclocosmia truncata* (Hentz) is a trap-door spider which is remarkable for the peculiar shape of the abdomen and interesting in that it has been considered by some the rarest spider in North America. The

round, leathery, caudally truncated abdomen, in the absence of actual observations, has led to intriguing conjectures as to the use to which this part is put by the spider. Recent collections and observations of this species have added materially to what is known about it, both ecologically and morphologically, and have occasioned a review of the older literature and an analysis of the statements and conjectures contained therein.

The initial description of this unusual spider was by Nicholas Marcellus Hentz, the father of American Arachnology, who in 1841 gave it the name *Mygale truncata*. His specimens, all of which were females and all since lost, were from Alabama. In his words, "this spider dwells, like other species of this subgenus, in cylindrical cavities in the earth. Though many specimens were found, I never saw the lid described by authors as closing the aperture of its dwelling. The very singular formation of its abdomen, which is as hard as leather behind, and which forms a perfect circle, induces me to believe that it closes with that part, its dwelling, instead of with a lid, when in danger." What Hentz meant by "the lid described by authors" is inexplicable unless he was referring to the lids of nests of closely related spiders for, to our knowledge, he was the first man to see and record this species. Along with drawings of the animal, Hentz included a sketch of "the hole in in which it resides," a simple, circular hole in the ground, unadorned by any semblance of lid, turret or silken structure of any kind. Did Hentz actually see the entrance to a burrow? Did he draw upon nature or his imagination for a model for this sketch? We know that he never saw a lid and we can only surmise as to whether or not he saw the entrance.

We next hear of *truncata* in 1871 when Ausserer created two new genera, *Chorizops* and *Cyclocosmia*, for spiders differing from their nearest relatives in the possession of a truncated abdomen. Both these genera were erected wholly on the basis of the meager descriptions of Koch and Hentz, which fortunately were supplemented with recognizable figures of the spiders and the eye arrangements. At that time both were monotypical genera, but later a second species was to be added to *Cyclocosmia*. The genotype of *Chorizops* is *Actinopus loricatus* C. Koch from Mexico; of *Cyclocosmia*, *Mygale truncata* from Alabama. Of the habits of *truncata* Ausserer states: "Lebt in selbstgegrabenen Erdlochen, die jedoch nicht mit einen Decken verschlossen werden" and appends Hentz's statement of the probable use of the truncated abdomen.

Nineteen years later McCook, in his monumental work on 'American Spiders and Their Spinning Work,' treated the natural history of spiders in great detail. In his chapter on "Enemies and their influence on habit" *Cyclocosmia* is the subject of further speculation. Led on by the

singular "adaptation" of the abdomen and encouraged by the work of Hentz and Ausserer, McCook sees in this hard disk "one of the most curious examples of relation of structure to enemies, or perhaps of the reaction of hostile environment and agents upon structure." Relying solely upon Hentz for his information, but cautiously warning that Hentz's conjectures need confirmation, he agrees that it is not improbable that *truncata* uses its abdomen as a door to its burrow and appends a beautiful sketch of the spider in this imagined position. "And one may imagine the intellectual confusion of a pursuing enemy, which finds its prey suddenly disappearing within a hole in the ground, but which, when investigated, presents nothing but a level surface where certainly a hole ought to have been."

Simon's initial generic diagnosis of *Cyclocosmia* ('Histoire Naturelle des Araignées,' 1892-1895, I, p. 88) is spurious because it was based on *Cyclocosmia theveneti* Simon, a species from California, which was later placed by that author in a new genus, *Hebestatis* (Ann. Soc. Ent. Belgique, 1903, XLVII, p. 21). This genus is almost certainly a synonym of *Pachylomerus* as stated by Comstock in the 'Spider Book.' In the Supplement General of his 'Histoire Naturelle des Araignées' (Simon, 1897-1903, pp. 885-887) *Cyclocosmia* and *Chorizops* are compared for the first time by a modern author from an actual specimen of *C. loricatus* from Guanajuato, Mexico, and the excellent figures given by Pocock of *Holonoproctus ricketti* from China. Simon correctly identified this latter species as congeneric with *Cyclocosmia truncata* (Hentz).

In 1913 Comstock published his 'Spider Book.' His summary under the genus *Cyclocosmia* is interesting: only one species known from the United States and that from the work of Hentz; apparently only one specimen in collections, that one from Louisiana, belonging to and presumably still in the collection of Dr. Nathan Banks. During seventy-two years a species described as abundant yields only one specimen and no information concerning its habits or the nature of its burrow.

In 1933 a female specimen was found by a member of a collecting party from the Biology Department of the University of Florida, while picking through an accumulation of wet leaves along the margin of a small stream in the bottom of Torreya Ravine in Liberty County, Florida. Evidence seemed to point to its having been dislodged from its burrow by someone sliding down the nearby bank. Another collecting trip to the same locality in 1935 failed to produce additional specimens.

On the night of April 17, 1936, using a headlight for illumination, the junior author, in company with Mr. R. E. Bellamy, collected seven specimens, all females, in Torreya Ravine. The first specimen was found in its burrow by accident, while digging out a species of *Myrmekia-phila*, another trap-door spider belonging to the same family. Diligent search failed to reveal the entrance to a single burrow, but six additional burrows were transected and carefully excavated. The following night another large female was dug up in another locality in the same county. Again the mouth of the burrow escaped detection. Next day, while searching for trap-doors of a species of *Pachylomerus* in Gadsden County, a trap-door was found which at first was thought to belong to that genus. On removal of the external part of the nest, however, it was at once recognized as the burrow of *Cyclocosmia*. Two females were collected at this spot and one was taken alive to Gainesville. Only one lid was observed. The live specimen was provided with soil from her native environment and during the first night in captivity she began the construction of a nest on which she worked for ten nights. At the present time the nest resembles in every way the one observed in the field.

*Cyclocosmia truncata* seems to prefer a rather steep slope situated in a shady, cool, and more or less damp place. The ravines and stream valleys of northwest Florida afford many such situations. Some of these ravines are of especial ecological interest. "Along the eastern side of the Appalachicola River, in western Florida, is a series of high bluffs into which a number of small streams have cut narrow, steep-sided valleys, often well over 100 feet deep. Botanically, the cool humid ravines of this very restricted area have long been of great interest as the habitat of two endemic and very disjunct coniferous trees, *Tumion taxifolium* ('Torreya,' savarn or stinking cedar) and *Taxus floridana* (Florida yew). Many other trees of these densely wooded ravines are of interest in that they occur in but a few or no other places in Florida and are only to be found commonly, elsewhere, much farther north. In fact, the general aspect of the flora of these ravines reminds one of regions in the Piedmont, despite the inclusion of a number of typical Florida plants. Beeches (*Fagus grandifolia*) vie with magnolia, spruce pines (*Pinus glabra*) and Torreya as the most dominant of the trees and these, with sweet gum, yellow poplar (*Liriodendron tulipifera*), white oak, sugar maple (*Acer floridanum*), hornbeam, redbud, holly and needle palms (*Rhaphidophyllum hystrix*) make up the bulk of the more conspicuous vegetation. A heavy leaf mould is present and herbs are scarce but *Mitchella repens*, *Trillium* sp., *Sanguinaria canadensis*, *Hepatica triloba*

and *Uvularia* sp., occur here and there on the steep slopes and contribute to the northern aspect of the vegetation.

"Small sandy bottom brooks flow along these ravines and often pass into short swampy reaches where they wander through tangles of standing and fallen vegetation and over deposits of rich organic silt. Near the bottom, springs and seepage areas are common and wet rotten wood, fungi, mosses and liverworts are abundant.

"The fauna of these ravines is as surprising and interesting as their flora, for here a number of animals reach their southernmost limits, frequently disjunct from the remainder of their ranges. In the Amphibia, Crustacea, Odonata, Ephemera and Orthoptera a number of unexpected, northern species or species with distinct northern affinities have been discovered and among the crane-flies more than a dozen species are found that have been taken nowhere else south of the Piedmont region."<sup>1</sup>

In every instance the burrow of *Cyclocosmia* was found in the sides of a steep, stream-cut bank in the bottom of a ravine or valley. The first burrows seen were in a vertical bank protected by the overhanging roots of a large tree. This particular type of situation is characteristic of these ravines where their streams have been actively degrading their courses. The exposed red and yellow sandy-clay surfaces are partially covered with mosses and liverworts. The burrows were found to be straight, cylindrical and almost vertical in every instance (see Fig. 1). They all occurred in firm damp earth, of a red to yellow color and of a sandy-clay nature. They all tapered uniformly and gradually to their bottoms, about one inch above which they were exactly the diameter of the hard disk of their occupant. Three specimens out of ten were found head-first in the bottoms of their burrows, in other words presenting their armor-plate to the intruder. In this position they fitted the cylindrical cavity so nicely, and they held on with their claws so tenaciously, that it was necessary to dig the earth away from around them in order to extricate them without injury. The other seven had backed down into their burrows and were more easily removed. The upper reaches of the burrows were larger in diameter, large enough to permit the spider to reverse her position at will. In several instances the bottom, but never the middle region, was found lined with silk.

As has been stated before, only one trap-door and one entrance were observed in the field. The trap-door was hinged at the top and similar

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<sup>1</sup> Rogers, J. Speed, 1933, 'The Ecological Distribution of the Crane-flies of Northern Florida,' Ecological Monographs, III, No. 1, pp. 24-25.

in shape to those of *Pachylomerus* but much thinner and quite flexible, thus belonging to the wafer type (Figs. 1 and 2). Observations indicated that the entrances of at least several burrows were located in or under leaf mould which had accumulated in spots on the sides of the banks.

The habits of the animal still remain unobserved. Nevertheless, the preliminary observations lead to the conclusion that *Cyclocosmia truncata* probably always constructs some kind of trap-door and that the truncated abdomen is useful for protection only when the animal has proceeded head-first to the bottom of the burrow. It is not tenable to believe it possible for the animal to plug the entrance to the burrow with its abdomen because of the disparity in diameter of leathery disk and entrance.

A comparison of the protective devices of the three trap-door spiders collected in west Florida is illuminating. *Pachylomerus audouini* relies upon an impregnable fortress. Her door is heavy and she holds it shut with surprising strength. *Myrmekiaphila torreyi* builds a rather futile outside door, which, in fact, usually stands wide open. She depends upon deception. Deep within her burrow is a secret side-chamber which is cleverly concealed by a trap-door. *Cyclocosmia truncata* combines both deception and the use of armor.

#### *Cyclocosmia truncata* (Hentz)

Figures 1 and 2, 6 to 12

*Mygale truncata* HENTZ, 1841, Jour. Boston Soc. Nat. Hist., IV, p. 55, Pl. VII, fig. 1; 1868, idem, XI, p. 16, Pl. I, fig. 1 (reprint).

*Cyclocosmia truncata* AUSSERER, 1871, Verh. Zool.-Bot. Gesell., Wien, XXI, p. 145.—MARX, 1890, Proc. U. S. Nat. Mus., XII, p. 501 (check list).—MCCOOK, 1890, 'American Spiders and Their Spinning Work,' II, pp. 415-417, Figs. 353, 354 and 355.—BANKS, 1890, Bull. 72, U. S. Nat. Mus., p. 2 (check list; includes *Chorizops* as a synonym).—SIMON, 1897-1903, 'Histoire Naturelle des Araignées,' II, p. 887 (not Simon, 1892-1897, idem, I, p. 88).—COMSTOCK, 1913, 'The Spider Book,' pp. 237-238, Fig. 221.—BERLAND, 1932, 'Les Arachnides,' Encyclopedie Entomologique, Serie A, XVI, pp. 17-20.

FEMALE NEOTYPE.—Total length, including the chelicerae, 20.00 mm.

	CARAPACE	FRONT	STERNUM	LABIUM	MAXILLA	ABDOMEN
Length	6.75		4.60	1.60	3.00	9.25 mm.
Width	5.90	3.90	3.65	1.15	1.75	8.80 mm.

Carapace dusky brown, with a faint greenish tinge, the cervical groove and the cephalic sutures darkened, the eyes ringed with black. Carapace nearly glabrous, with three long erect black spines on the midline just behind the posterior median eyes and a pair just in front of the anterior median eyes, otherwise with a few isolated inconspicuous black hairs. Pars cephalica very broad in front, elevated, very strongly convex, gently declining behind to the cervical groove. Pars thoracica low,

nearly flat. Outline of the carapace six-sided, essentially as in figure 6. Cervical groove a deep semicircular depression placed back four-sevenths of the total length of the carapace.

Clypeus horizontal, the anterior margin weakly rounded, weakly convex as seen from the side, the length exceeding the length of the eye group (100/85). Eyes practically sessile, on a very low tubercle which occupies two-fifths of the width of the head

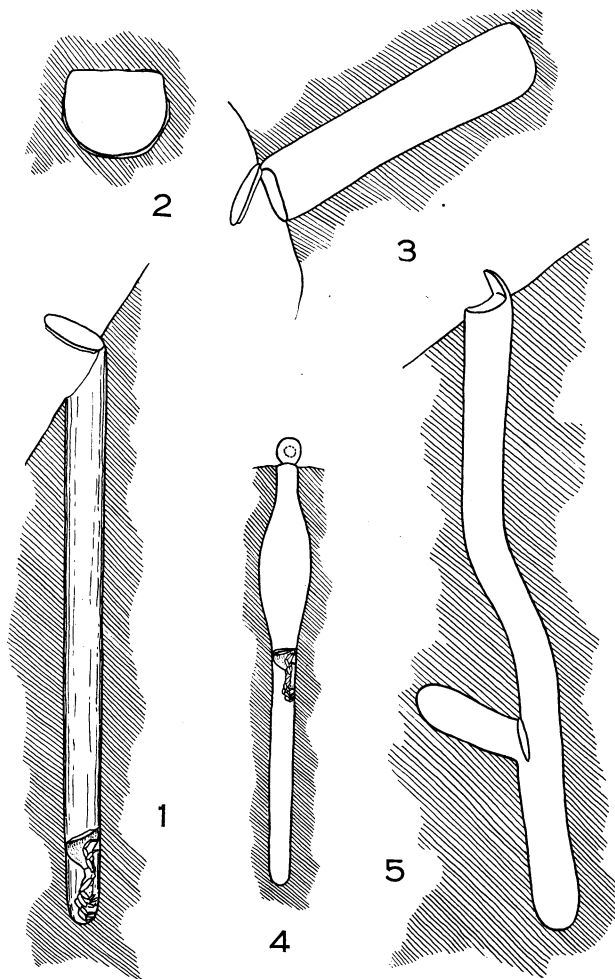


Fig. 1. *Cyclocosmia truncata* (Hentz), burrow of female.

Fig. 2. Idem, lid of burrow of female.

Fig. 3. *Pachylomerus audouini* (Lucas), burrow of female.

Fig. 4. *Galeosoma schreineri* Hewitt, burrow of female.

Fig. 5. *Myrmekiaphila torreyi*, new species, burrow of female.

at the first row of eyes. Ratio of the eyes: ALE:AME:PLE:PME = 40:30:36:30. First row of eyes very slightly wider than the second (38/37), straight, a line along the anterior margins of the eyes almost imperceptibly procurved, a line along the caudal margins also essentially straight. Anterior median eyes separated by less than a diameter (18/30), a full diameter from the laterals (33/30). Eyes of the second row very weakly recurved, the oval medians separated by scarcely three times their long diameter (83/30), about one-third of their short diameter from the lateral eyes (9/23). Median ocular quadrangle broader than long (124/75), narrowed in front

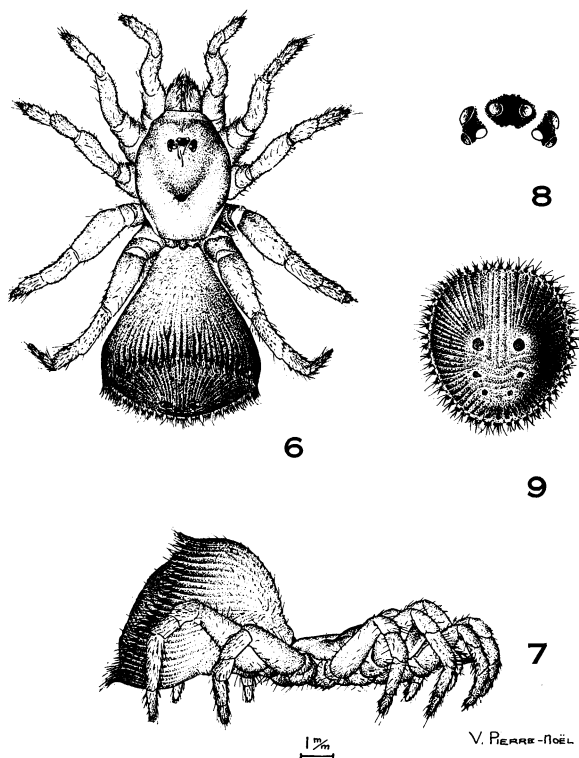


Fig. 6. *Cyclocosmia truncata* (Hentz), female, dorsal view.

Fig. 7. Idem, female, lateral view.

Fig. 8. Idem, eyes of young female.

Fig. 9. Idem, female, caudal truncature of abdomen.

(124/76), the eyes subequal. Lateral eyes of each side separated by the short diameter of the posterior median eyes. Curvature and eye arrangement as in figure 11.

Sternum (Fig. 12) longer than broad, shallowly emarginated in front, broadest at a point between the second and third coxae, clothed with black hairs that are more numerous on the margins. Underside paler brown than the dorsum. Posterior



coxae subcontiguous. Sigilla six, a small anterior pair placed near the margin opposite the first coxae, a second small pair near the margin opposite the second coxae and a large median pair which is indistinct and irregular in outline placed between the second coxae, and which is set obliquely, separated by half the width of one of them. Labium broader than long, broadly subtriangular, the distal rounded end with three black cusps (modified hairs), otherwise clothed with black hairs. Maxilla scarcely twice as long as broad, with ten conspicuous black cusps at the base on the prolateral side, numerous smaller ones along the prolateral margin of the ventral side, and a few others generally distributed on the ventral surface; maxilla otherwise clothed with long black hairs and a thin band of pale hairs along the prolateral face. Chelicera dark brown, stout and strong, flat on the prolateral face, convex on the retrolateral side, as seen from above twice as long as the width at the base, clothed at the distal end and on the prolateral margin of the dorsal side with very stout black spines. Rastellum very well developed, composed of short, robust, black spines which are set distally on a stout black process. Claw of the chelicera black, very heavy, gently curved. Retromargin of the furrow with nine stout black teeth, one of them smaller than the others. Promargin with fourteen teeth, a row of nine stout ones, which, however, are not as robust as those of the retromargin, and five small denticles placed near the furrow.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	4.50	2.75	3.00	2.35	1.50	14.10 mm.
II	3.60	2.30	2.10	2.25	1.35	11.60 mm.
III	3.50	2.65	2.00	2.15	1.70	12.00 mm.
IV	4.45	2.95	2.40	3.00	2.10	14.90 mm.
Palp	3.75	2.35	2.65		2.80	11.35 mm.

Legs short, the last two pairs relatively much stouter than the first two pairs. First leg: femur three and one-half times as long as broad, slightly curved; patella a little more than twice as long as broad (13/27); tibia proportionately about the same (13/30), as is the metatarsus (10/23); and the tarsus twice as long as broad (7/15). Dorsal faces of all joints of the first leg with a median row of very weak hair-like spines; ventral faces with rows of stout black hairs. Tibia, metatarsus and tarsus of the first leg with rows of stout black spines on the prolateral and retrolateral surfaces; the tibia with 31 retrolaterals in four irregular rows and 17 prolaterals arranged in two longitudinal rows; the metatarsus with 34 retrolaterals in three and about the same number of prolaterals; the tarsus with 21 on each side in three or four rows. Some of these spines nearly ventral in position. Palpus and second leg essentially similar in the spinal arrangement and in proportions. Comparative width and length of the joints of the third leg, measured from above, as indicated by the following ratios, the first number indicating the width: femur (17/35); patella (17/26); tibia (15/20); metatarsus (11/30); and tarsus (7/21). Idem for the fourth leg: femur (18/44); patella (15/29); tibia (15/24); metatarsus (10/30); and tarsus (6/21). Third and fourth legs essentially alike in dorsal spination, the femora with a row of weak hair-like spines, the patellae, tibiae and metatarsi with numerous short, pointed spines which are concentrated on the prolateral side. Tibiae of these legs with two or three weak distal spines; the metatarsi with a distal pair and a distal prolateral; the third tarsus with eight or ten terminal spines, the fourth tarsus with black

hairs only. Tarsus of palpus with a single claw which is armed at the base with a large tooth and a smaller one below. Claws on tarsi of legs three, the median small, the paired claws curved. Proclaw and retroclaw of the first and second tarsi with a single basal black tooth, which in the retroclaw of the left first tarsus has an additional weak pointed cusp below. Claws of the posterior tarsi similar, with the conventional large basal tooth but with an additional small tooth on the retroclaws.

Abdomen about as broad as long and as high as broad, broadly rounded basally on the sides and above but not overlapping the carapace, abruptly truncated caudally. Caudal truncature inclined forward at an angle of about thirty degrees from the vertical. Basal portion of the abdomen above and below, including the spinnerets, pale yellowish brown, the caudal portion black. Abdomen strongly sclerotized, coriaceous, more so caudally, with numerous longitudinal grooves, the elevations between broadened and flattened caudally, set with rows of black hairs, the distal end of each elevation forming a stout black projection on which are mounted from three to ten very strong black spines, the average about six, which overlap and completely fringe the caudal truncature. As seen from the posterior view the truncature is discoidal, with concentric grooves and six well-marked circular impressions; as viewed laterally the truncature is evenly convex. Details of the abdomen from above, from the side and from caudal view as shown in figures 6, 7 and 9. Spinnerets four, the one-jointed medians small, 1.10 mm. long, subcontiguous, the three-jointed large laterals (basal joint, 0.95 mm., the median, 0.65 mm., and the distal joint, 0.52 mm. long) separated by their width at the base. Bases of the four spinnerets in a weakly curved line, the medians slightly advanced. Distance between the spinnerets and the genital furrow, 2.20 mm.

**VARIATIONS.**—A second female, in which the abdomen is broken off and mutilated, agrees in detail with the neotype but differs in having the eyes of the first row slightly farther apart (Fig. 10).

A third female from Liberty County, Florida, taken May 5, 1933, the first example of this rare species taken in recent years, is much smaller and differs somewhat from the neotype which is probably adult. This spider was the basis for the detailed figures illustrating the species (Figs. 6, 7 and 9).

Total length, including the chelicerae, 10.25 mm.

Whole spider paler than in the older specimen. Structure essentially as described for the neotype but the spines less robust on the legs and the cusps on the maxillae fewer. The eye arrangement differs chiefly in having the first row weakly recurved, not nearly so strongly, however, as illustrated in figure 8.

**TYPE LOCALITY.**—Females from Alabama, all lost (Hentz, 1841).

**DISTRIBUTION.**—Louisiana: female in collection of Nathan Banks (Comstock, 1913, p. 238). Alabama: (Hentz, 1841). Florida: Torreya Ravine, Liberty County, May 5, 1933, female (Wallace collection); April 17, 1936, seven females (R. E. Bellamy and H. K. Wallace); Gadsden County, April 19, 1936, two females (R. E. Bellamy and

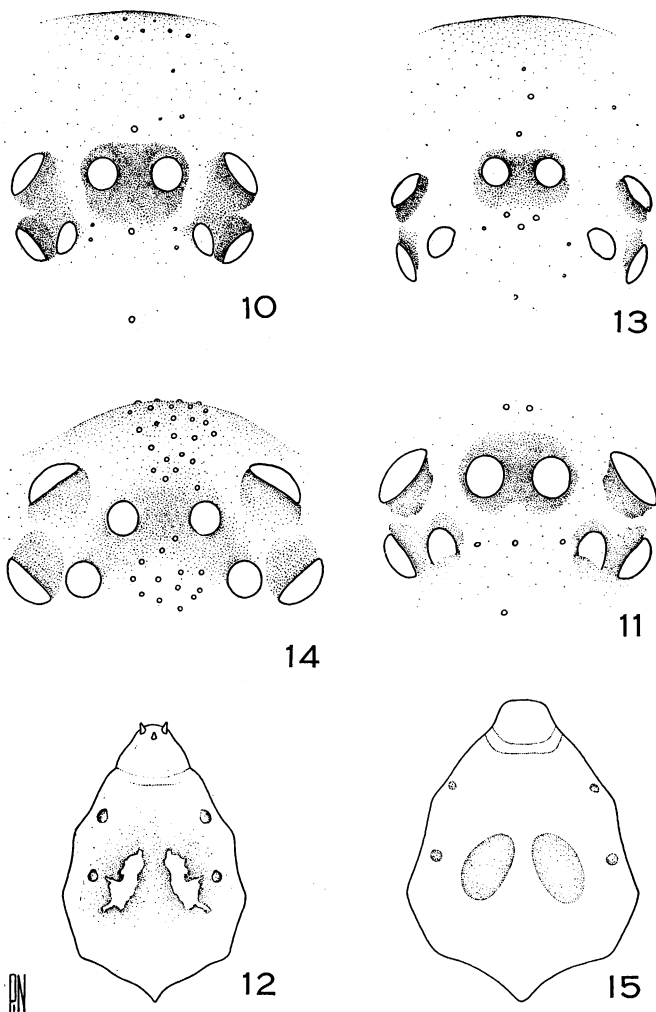


Fig. 10. *Cyclocosmia truncata* (Hentz), eyes of female.

Fig. 11. Idem, eyes of female neotype.

Fig. 12. Idem, sternum of female.

Fig. 13. *Chorizops loricatus* (Koch), eyes of female.

Fig. 14. *Pachylomerus audouini* (Lucas), eyes of female.

Fig. 15. *Myrmekeiaphila torreyi*, new species, sternum of female.

H. K. Wallace). Three of the females noted above are in the collection of The American Museum of Natural History. The other specimens from Florida are at present in the collection of H. K. Wallace.

#### CHORIZOPS AUSSERER

*Chorizops* AUSSERER, 1871, Verh. Zool.-Bot. Gesell., Wien, XXI, p. 144. (This genus precedes *Cyclocosmia* which is diagnosed on the same page.)

GENOTYPE.—*Actinopus loricatus* C. Koch, from Mexico.

The sole member of this genus, *Chorizops loricatus* (C. Koch), has been found only on two occasions since the initial description of the species by Koch. Ausserer established the genus on the basis of the characters given in the description and figures of Koch whose diagnosis is essentially accurate. The genus is distinct from *Cyclocosmia* in the recurvature of the anterior eye row and in the considerable separation of the median eyes from the laterals. It further differs in having a slight, glabrous depression at the base of the third tibia on the prolateral side which is analogous to that of *Pachylomerus*. The discovery of males of *loricatus* and *truncatus* will, no doubt, establish the validity of keeping the two genera separated. The differences between the species, however weighty, are far overshadowed by the precise similarity in most other characters.

Nothing has been published on the biology of *loricatus*, but it seems reasonable to suppose that the burrows and the habits of the species conform essentially to what is known of *Cyclocosmia truncata*. The sclerotized caudal truncature presumably serves as an impregnable barrier to predaceous or parasitic enemies which may invade the premises of the spider for food or for a site for an egg or larval parasite. The same immunity seems to be shared by still another spider, *Galeosoma schreineri*, a species of another group in which the abdomen is truncated. A figure of the burrow of this species and the position of the spider within are reproduced (Fig. 4) for comparison with the American species. The tenacious adherence of the spider to the sides of the burrow is facilitated in *Chorizops* and *Cyclocosmia* by the fringe of strong spines around the margins of the caudal truncature.

#### *Chorizops loricatus* (C. Koch)

##### Figure 13

*Actinopus loricatus* C. KOCH, 1842, 'Die Arachniden,' IX, p. 99, Pl. cccxxiii, fig. 752.

*Chorizops loricatus* AUSSERER, 1871, Verh. Zool.-Bot. Gesell., Wien, p. 144.—SIMON, 1897, Bull. Soc. Ent., France, p. 172, figs. 1-3; 1897-1903, 'Histoire Naturelle

des Araignées,' II, p. 887.—PETRUNKEVITCH, 1909, American Museum Journal, IX, p. 251, 3 figures; 1911, Bull. American Mus. Nat. Hist., XXIX, p. 54 (check list).

FEMALE NEOTYPE.—Total length, including the chelicerae, 16.75 mm.

	CARAPACE FRONT	STERNUM	LABIUM	MAXILLA	ABDOMEN
Length	5.70	3.50	0.80	2.00	9.50 mm.
Width	4.60	2.75	3.00	1.10	7.80 mm.

Cephalothorax above and below and appendages bright orange-brown in color. Carapace glabrous except for two erect long spines on the clypeus just in front of the anterior median eyes, four behind the posterior median eyes and two weaker spines near the cervical groove. Margins of the carapace with a few weak hairs. Pars cephalica very broad in front, as seen from above forming a subequilateral triangle, the clypeus gently rounded in front, the cervical groove a deep semicircular depression. Pars cephalica strongly and evenly convex, much higher than the less convex, lower pars thoracica. Carapace widest at a point between the second coxae.

Clypeus horizontal, convex as viewed from the side, the length exceeding the length of the eye group (95/80). Eyes on a very low, inconspicuous tubercle, virtually sessile, which occupies half the width of the head at the first eye row. Ratio of the eyes: ALE:AME:PLE:PME = 33:22:26:24. First row of eyes very slightly wider than the second, moderately recurved, a line along the anterior margins of the laterals cutting the centers of the medians. Anterior median eyes separated by scarcely a diameter (20/19), scarcely two diameters from the lateral eyes (23/42). Eyes of the second row moderately recurved, a line along the anterior margins of the laterals cutting the centers of the oval medians, the medians separated by four times their long diameter (24/54), separated from the laterals by less than their short diameter (17/10). Median ocular quadrangle much broader than long (67/33), much narrower in front (67/28), the eyes subequal. Lateral eyes of each side separated by the short diameter of the posterior medians. Curvature and arrangement of eyes as in figure 13, the size of the posterior lateral eyes, however, being proportionately too large.

Sternum longer than broad, clothed with short erect black hairs, very shallowly emarginated in front, differing in shape in no important particular from that of *Cyclocosmia truncata* (Fig. 12). Sigilla very indistinct, presumably lacking the first pair of small submarginal ones between the first coxae but with indications of a small submarginal pair between the second coxae and the large median pair as in *truncata*. Maxilla scarcely twice as long as broad, evenly clothed with long pale hairs, the ventral face with numerous short clavate hairs (cusps), concentrated particularly on the prolateral side, and four conspicuous black cusps near the base. Chelicera less powerful than in *truncata*, longer than broad as seen from the side (17/12), flattened and practically smooth on the prolateral surface, convex and smooth on the retrolateral side, nearly three times as long as the width at the base. Terminal part of the chelicera clothed with stout spines. Rastellum composed of twelve very robust short spines which are set on a stout projection. Promargin with a row of seven large teeth and four smaller ones placed near the furrow. Retromargin with six very large teeth.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	3.25	2.10	2.00	1.50	1.30	10.15 mm.
II	3.00	2.00	1.50	1.50	1.25	9.25 mm.
III	2.80	2.00	1.30	1.50	1.40	9.00 mm.
IV	3.15	2.15	1.50	2.10	1.40	10.30 mm.
Palp	2.15	1.80	1.70		2.00	7.65 mm.

Leg formula, 4132. Spination of legs and armature of tarsal claws in complete agreement with *Cyclocosmia truncata* (Hentz). Tibia of the third leg with a very weak constriction, a shallow glabrous groove, near the base.

Abdomen longer than broad, nearly as high as broad, broadly rounded basally, cylindrical, as viewed from the side ascending sharply from the pedicel and flattening out more quickly than in *truncata*, the abdomen proportionately longer and the caudal truncature more precipitous, inclining forward at an angle of about twenty degrees from the vertical. Abdomen strongly sclerotized, coriaceous, with longitudinal grooves and low ridges which are thickly studded with very small tubercles and clothed with two rows of hairs. Distal ends of the ridges forming stout black projections on which are set a row of fine long spines, about twelve on the average, one of which is much longer than the others on each projection. Caudal truncature discoidal, weakly convex as seen from the side, with concentric grooves and ridges and six circular impressions. Spinnerets as in *truncata*.

TYPE LOCALITY.—Mexico.

RECORDS.—Guanajuato, Mexico, female (Dr. A. Dugés) (Simon, 1903, pp. 885 and 887), in the Museu de Histoire Naturelle, Paris. La Buena Ventura, Vera Cruz, Mexico, August, 1909, female neotype (Dr. A. Petrunkevitch, 1909, p. 251), in The American Museum of Natural History.

#### PACHYLOMERUS AUSSERER

*Pachylomerus* AUSSERER, 1871, Verh. Zool.-Bot. Gesell., Wien, XXI, p. 145.

GENOTYPE.—*Pachylomerus nidulans* (Fabricius).

Several females, presumed to be *Pachylomerus audouini* (Lucas), were collected in ravines in Gadsden and Alachua Counties. In both localities the nests were located in the sides of steep, stream-cut banks where roots of trees and bushes have served to hold in place the soil of the exposed surfaces. The ravines were shady, cool and moist. The burrows were all shallow (five to eight inches deep), lined with silk throughout, and provided with a door of the cork type (Fig. 3). In one case, where a large tree had been partially undermined by stream action so that its roots overhung a thirty foot precipitous bank, nests were observed which went straight up from beneath into the heart of the tree, so that the doors hung open. Both inhabited and abandoned nests having this disposition were observed. The nests are usually horizontal,

slightly inclined or moderately declined. When disturbed the spider holds the door shut with surprising strength.

**MYRMEKIAPHILA ATKINSON**

*Myrmeekiaphila* ATKINSON, 1886, Entomologica Americana, II, p. 132.

GENOTYPE.—*Mygale fluviatilis* Hentz (*M. foliata* Atkinson).

The nest of *Myrmeekiaphila fluviatilis* (Hentz) was described in some detail by George F. Atkinson in 1886 under the name of *foliata* (Entomologica Americana, II, pp. 113–117, Pl. v, figs. 15 and 16). The following notes refer to a recently discovered species from Florida, *Myrmeekiaphila torreyi*, new species.

The density of population of the *Myrmeekiaphila* from Torreya Ravine, Liberty County, Florida, is striking. The average number of adult females inhabiting the slopes of this ravine must be close to one per square yard. Smaller numbers were also observed and collected in other ravines and stream valleys in Liberty and Gadsden Counties. They are apparently restricted to the slopes and miniature stream-cut, sandy-clayish cliffs of the damp, cool shady ravines mentioned above. Burrows were observed in exposed banks but the greatest concentration of specimens was observed on the leaf-mould covered slopes of Torreya Ravine. Of over two hundred specimens collected to date only one, the holotype, is a male.

*Myrmeekiaphila torreyi* digs a burrow which, on the average, is about ten inches deep. The burrows, usually found in a sandy soil penetrated by a maze of roots, almost always prescribed an arc or contained at least one more or less abrupt bend (Fig. 5). Several inches from the bottoms of the burrows there were short side chambers (one to a burrow) masked by wafer-type doors. The entrances to the burrows were lined with silk and provided with a peculiar type of door which, when standing open, is more like a silken collar than a trap-door, but which took on the appearance of a well-camouflaged trap-door of the wafer type when closed by a slight push from a pair of forceps. The spiders usually leave these doors standing open during both night and day. As a matter of fact only one female was observed to close her door, and this one did so like a flash.

***Myrmeekiaphila torreyi*, new species**

Figures 15, 17 to 25

MALE HOLOTYPE.—Total length, including the chelicerae, 16.50 mm.

	CARAPACE	FRONT	STERNUM	LABIUM	MAXILLA	ABDOMEN
Length	7.40		4.00	1.40	2.50	6.30 mm.
Width	5.60	3.65	3.50	0.80	1.50	4.00 mm.

Carapace orange-brown, the pars cephalica somewhat infuscated, with a median narrow black line that runs from the cervical groove forward to the posterior eye row, the eyes ringed with black and enclosing a black area, the pars thoracica infuscated on the margins. Carapace (see Figs. 21 and 22 for the female) longer than broad, broad in front, irregularly indented on the margins of the anterior half, more evenly narrowed caudally, widest at the second coxae. Lateral margins of the carapace set with rows of stout black spines which are more numerous caudally. The whole carapace otherwise clothed sparsely with procumbent fine black hairs and a few weak spines. Cervical groove a deep transverse depression located back four-sevenths of the total length (46/74), the width of the groove one-fifth the width of the carapace at that point (1.10 mm./5.30 mm.). Pars thoracica moderately convex, rather low, the lateral striae indicated as paler stripes. Pars cephalica much higher, more strongly convex, subtriangular in outline from above, the cephalic grooves well indicated.

Eyes on a low tubercle one-third as wide as the front. Clypeus scarcely as high as the diameter of an anterior median eye, with a strong upright black median spine and three smaller spines on each side, the groups of spines occupying an area as wide as that occupied by the median eyes. Caudal edge of the eye tubercle with three stout spines which overlap the interval between the posterior median eyes. Ratio of the eyes: ALE:AME:PLE:PME = 33:23:28:23. First row of eyes procurved as seen from above, the medians separated by less than a diameter (23/13), as far from the much larger laterals. Second row of eyes recurved, the irregular suboval medians separated by two diameters (23/44), separated by less than half a diameter from the narrowly oval laterals (23/9). Median ocular quadrangle broader than long (82/50), much narrower in front (82/52), the eyes subequal. Lateral eyes of each side separated by the diameter of an anterior median eye. Curvature and eye arrangement as in figure 23.

Sternum longer than broad, broadly emarginated in front, broadest between the second and third coxae, set with strong erect black hairs which are more numerous on the margins, especially in the caudal half, with which are interspersed black hairs. Sigilla four, the anterior margins nearly on a line with the middle of the second coxae, the median ones large, oval, separated by one-fourth their length, one-third their length from the much smaller lateral ones which are nearly on the margins. Labium broader than long, the breadth an arbitrary measurement because of the intimate juncture in the emarginated distal end of the sternum, the anterior margin with long black hairs, the ventral face with shorter black hairs, no cusps present. Whole underside concolorous with the carapace, a little paler and not infuscated. Maxilla longer than broad, the endite weakly developed, the prolateral margins with a thick brush of fine reddish hairs, the ventral face with a series of short clavate to subspatulate hairs, otherwise clothed with weak black hairs. Three posterior coxae subequal in length, the first coxa slightly longer, all clothed evenly with erect black hairs. Chelicera as broad in lateral view as long, scarcely twice as long as broad at the middle

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	5.70	3.00	4.10	3.50	3.20	19.50 mm.
II	5.00	2.70	3.50	3.65	2.80	17.65 mm.
III	4.10	2.65	2.50	4.20	2.65	16.10 mm.
IV	5.75	3.25	4.75	5.25	3.25	22.25 mm.
Palp	3.40	1.80	2.75		1.20	9.15 mm.



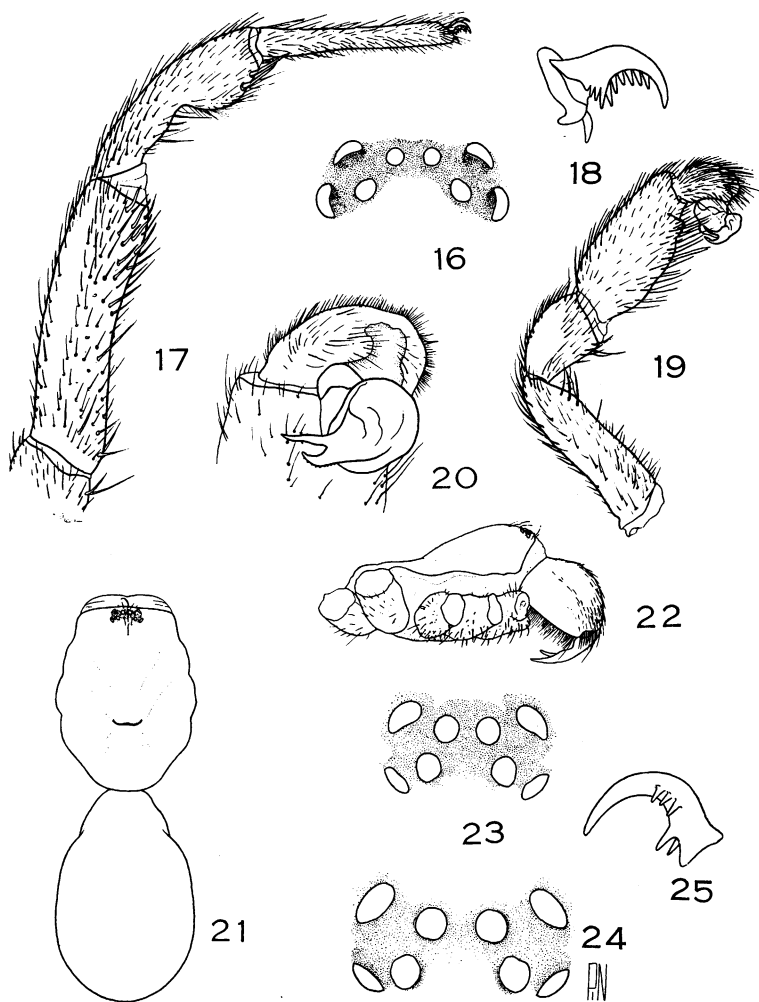


Fig. 16. *Myrmekeiaphila fluviatilis* (Hentz), eyes of a female.

Fig. 17. *Myrmekeiaphila torreyi*, new species, first right leg of male, retrolateral view.

Fig. 18. Idem, retroclaw of first right tarsus of male, retrolateral view.

Fig. 19. Idem, right palp, retrolateral view.

Fig. 20. Idem, tarsus of bulb of male right palp, ventral view.

Fig. 21. Idem, female, dorsal view, the appendages omitted.

Fig. 22. Idem, carapace of female, lateral view.

Fig. 23. Idem, eyes of male.

Fig. 24. Idem, eyes of female.

Fig. 25. Idem, proclaw of first right leg of female, retrolateral view.

as seen from above, the distal end with a covering of black hairs. Both margins of the furrow with a band of fine black hairs, the promargin armed with a series of about sixteen small teeth, the retromargin with a line of very small denticles. Rastellum well developed, made up of stout spines set on a stout apophysis.

Leg formula, 4123. First femur three and one-half times as long as broad, armed above with a median row of seven spines and with two additional distal prolaterals, otherwise clothed with strong black hairs. Distal joints of the first leg as figured (Fig. 17), the tibia about three times as long as broad, slightly thicker at the distal end, set with nine strong spines on the retrolateral side which are concentrated in the distal half of the joint and a like number on the prolateral surface but set farther back. First metatarsus strongly incrassated at the distal end on the ventral side, armed with a distal pair of black spines and a single spine directly behind the one on the retrolateral side. Other legs normal in shape, heavily clothed with strong spines and black hairs. Tarsal claws of all legs similar, in a double series, with five or six long teeth near the base in one row which is followed by a second row of five subequal short denticles (Fig. 18). Details of the palpus as illustrated (Figs. 19 and 20), the femur three times as long as broad, slightly curved, shallowly excavated on the prolateral side, clothed with black hairs and a few weak terminal spines. Tibia thickened, twice as long as broad, with a strong terminal tubercle on the retrolateral side. Tarsus and details of the bulb well shown in figure 20, the terminal portion deeply bifid, the lower branch, which is more curved and shorter than the upper, with a row of small teeth on the lower side.

Dorsum of the abdomen dusky brown, the venter paler, clothed with black hairs. Spinnerets four, the median ones one-jointed and short (0.50 mm.), the lateral pair three-jointed, robust, the basal joint, 1.10 mm., the median, 0.60 mm., and the conical terminal joint, 0.25 mm. long. Bases of the four spinnerets in a weakly recurved line, the medians separated by their width, the laterals by two-thirds their width.

FEMALE ALLOTYPE.—Total length, including the chelicerae, 23.50 mm.

	CARAPACE	FRONT	STERNUM	LABIUM	MAXILLA	ABDOMEN
Length	8.50		5.00	1.10	3.50	11.00 mm.
Width	7.00	5.25	4.50	1.50	2.00	7.25 mm.

Carapace orange-brown, the pars cephalica slightly darker, clothed very sparsely with inconspicuous black hairs. Carapace longer than wide, very broad in front, gently rounded on the sides, broadly rounded behind. Shape essentially as in figures 21 and 22, which were drawn from a small female. Cervical groove a deep, transverse, weakly procurved depression (1.50 mm.) which is placed back three-fourths of the total length of the carapace. Pars thoracica nearly flat, the pars cephalica strongly elevated, convex, the head sutures well marked.

Eyes on a low tubercle which is about three-tenths as wide as the front and placed on the clypeal margin, the eyes being scarcely a diameter of the anterior medians from the front edge. Spines in ocular area as in the male but all of them weak. Ratio of the eyes: ALE:AME:PLE:PME = 38:22:21:25. First row of eyes procurved as viewed from above, the medians separated by exactly their diameter, as far from the much larger laterals. Second row of eyes weakly recurved, the oval medians separated by more than twice their long diameter (23/60), separated from the smaller laterals by one-third their diameter (9/23). Median ocular quadrangle broader than

long (100/58), narrowed in front (100/65), the eyes subequal in size. Curvature and relations of eyes essentially as in figure 24, which, however, is of another female in which the posterior lateral eyes are proportionately larger than in the allotype. A figure of the eyes of *Myrmekiaphila fluviatilis* (Hentz) is included for comparison (Fig. 16).

Underside of the carapace clothed as in the male but with the following differences. Labium with three black spatuliform hairs (cuspules) at the distal end. Lateral sigilla on the sternum (Fig. 15) their diameter from the margin and quite as far from the very large median sigilla which are subcontiguous. Chelicera as in the male, the promargin with a series of ten, subequal, stout black teeth, the upper margin with a row of five small denticles and a group of smaller denticular elevations. Retromargin with a thick band of hairs, the promargin with a light band. Rastellum well developed, the terminal spines set on a strong black plate.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	5.25	3.35	3.60	3.00	1.85	17.05 mm.
II	4.55	3.10	3.00	2.80	1.75	15.20 mm.
III	3.70	2.90	2.00	2.80	2.25	13.65 mm.
IV	5.20	3.80	4.50	4.25	2.40	20.15 mm.
Palp	3.50	2.00	2.40		2.20	10.10 mm.

Leg formula, 4123. Legs much stouter and less spinose than in the male. First femur slightly curved, shallowly excavated and smooth on the prolateral side, nearly four times as long as broad, clothed with inconspicuous black hairs and a line of weak dorsal spines. Terminal joints with weak dorsal spines, the tibia with two median ventral spines on the retrolateral side, the metatarsus with 1-2-2 stout ventral spines, the last pair distal and a distal prolateral. Second leg as the first but the metatarsus with 2-2-(1)-2 ventrals and a median prolateral and distal retrolateral spine. Third leg more spinose than the others, the dorsal surfaces of the patella and tibia with rows of short spines, the tibia with 2-2-2 ventrals, 1-1 prolaterals and 1-1-2 retrolaterals, the metatarsus with 2-1-2 ventrals, 2-2-1-2 prolaterals and 1-2-1-1 retrolaterals. Fourth leg unarmed above, the tibia with 2-2-2 ventrals, 0-1-0 prolaterals and 1-1-1 retrolaterals, the metatarsus with 0-1-1-0 retrolaterals, 2-1-1-2 ventrals and 1-0-0-1 prolaterals. Spinal formula inconstant. First two tarsi thickly scopulate beneath, the last two less thickly clothed with scopular hairs. Tarsal claws three, the median one small, the paired claws essentially similar though somewhat variable (Fig. 25). Retroclaws and proclaws with two denticles near the base, the lower one much smaller, and a series of three or four on the inner face. Both paired claws of the fourth tarsus usually lacking the lateral denticles.

Dorsum of the abdomen uniform dusky brown, the venter a little paler. Spinnersets shorter and stouter than in the male, the median pair one-jointed (0.60 mm. long), separated by their width, the lateral pair separated by their width, the basal joint, 1.00 mm., the median, 0.40 mm., and the conical distal joint, 0.35 mm. long.

VARIATIONS.—Spiders of all sizes are represented in the more than one hundred and thirty female paratypes. There is considerable variation in the color of the abdomen and in structural characters. The differences in color do not seem to be correlated with age. The para-

type from Gadsden County has the abdomen unusually pale, the dorsum being gray and marked with a narrow longitudinal dark streak for two-thirds the length. Many females of all sizes have a definite pattern of transverse dark bands on the dorsum of the abdomen through which often runs a median dark stripe. In many others, including the allotype, the bands are coalesced or the pattern is completely masked by dusky brown chromatism which obscures the pattern. Variation in the comparative width and length of the carapace is considerable. The general relations of the eyes are relatively constant but the size of the eyes is subject to considerable variation. This naturally affects the distances between the various eyes. The posterior lateral and median eyes of each side may be clearly separated, subcontiguous or coalesced. The degree of curvature is essentially constant.

**TYPE LOCALITY.**—Male holotype, female allotype and twenty-one paratypes from Torreya Ravine, Liberty County, Florida, April 10, 1935 (H. K. Wallace); six female paratypes, April 11, 1935 (H. K. Wallace); April 17, 1936, seventy-seven female paratypes (R. E. Bellamy and H. K. Wallace); April 18, 1936, twenty female paratypes (R. E. Bellamy and H. K. Wallace). Gadsden County, Florida, April 14, 1935, female paratype (H. K. Wallace). Leon County, Florida, April 15, 1936, five female paratypes (R. E. Bellamy and H. K. Wallace); April 16, 1936, six female paratypes (James Rogers and H. K. Wallace). The holotype, allotype and numerous paratypes are in the collection of The American Museum of Natural History. Female paratypes in the collection of Mr. H. K. Wallace.

#### EUTYCHIDES SIMON

*Eutychides* SIMON, 1888, Ann. Soc. Ent., France, (6) VIII, p. 214.

GENOTYPE.—*Eutychides aurantiacus* Simon.

#### *Eutychides arizonicus*, new species

Figures 26 to 31

**MALE HOLOTYPE.**—Total length, including the chelicerae, 15.50 mm.

	CARAPACE	FRONT	STERNUM	LABIUM	MAXILLA	ABDOMEN
Length	6.00		3.70	0.75	2.50	7.50 mm.
Width	5.00	3.15	3.00	1.00	1.25	4.70 mm.

Pars cephalica orange-brown, the pars thoracica paler, the thoracic striae darkened, the eyes narrowly ringed in black and enclosing a black field. Carapace longer than broad, three-fifths as broad in front as the broadest point between the second coxae, the front subtruncate but somewhat produced below the eyes, the sides gently rounded, irregular, the caudal margin subtruncate (see Fig. 30). Cervical groove a

deep, transverse, semilunar, procurved depression, 1.00 mm. in width, about one-fourth the width of the carapace at that point and situated back two-thirds of the total length of the carapace. Pars thoracica moderately convex, rather flat, much lower than the triangular convex pars cephalica which in lateral view drops off evenly to the cervical groove. Carapace clothed sparsely with rows of soft black hairs and a very few weak spines on the midline.

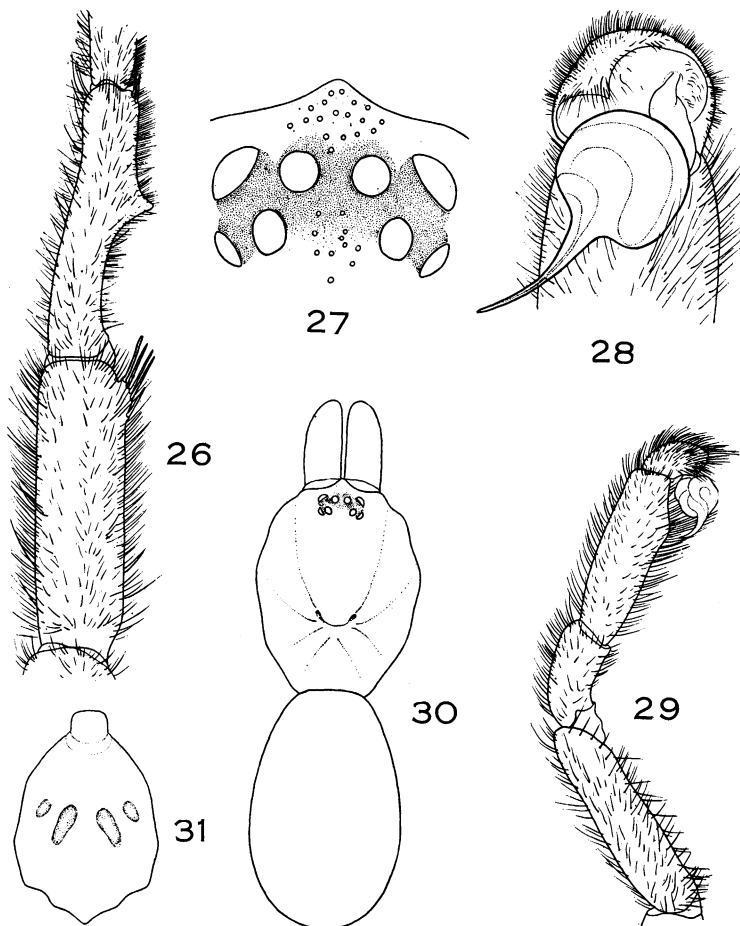


Fig. 26. *Eutychides arizonicus*, new species, tibia and metatarsus of first right leg of male, dorsal view.

Fig. 27. Idem, eyes of male.

Fig. 28. Idem, tarsus and bulb of right palpus, ventral view.

Fig. 29. Idem, right palpus, retrolateral view.

Fig. 30. Idem, carapace and abdomen of male, dorsal view.

Fig. 31. Idem, sternum of male.

Eyes on a low tubercle which occupies scarcely one-half the width of the head at the second eyes (7/18). Clypeus scarcely as high as the diameter of an anterior median eye, with five strong erect spines and a series of smaller ones below the anterior medians. Ratio of the eyes: ALE:AME:PLE:PME = 38:23:23:23. First row of eyes slightly wider than the second, straight, the anterior margins of the eyes forming a straight line, the medians separated by less than a diameter (23/16), nearer the laterals (23/13). Second row recurved, the oval medians separated by twice their long diameter, less than a radius from the laterals (23/10). Median ocular quadrangle broader than long (90/65), narrowed in front (90/67), the eyes subequal. Lateral eyes of each side separated by scarcely the short diameter of the anterior medians. Curvature and eye arrangement as in figure 27.

Sternum longer than broad, clothed with black hairs which are stouter on the margins, with four well-marked sigilla, the median pair large, oblique, separated by their width, about as far from the smaller laterals which are near the margins (Fig. 31). Labium broader than long, clothed with black hairs. Maxilla twice as long as broad, clothed with black hairs, the inner margin with a thick brush of soft brown hairs, the base with a few short clavate hairs. Chelicera about as broad as long as seen from the side, the outer margin moderately convex, the inner (promargin) flattened, the clothing black hairs which are more numerous and longer along the inner dorsal margin. Promargin armed with six subequal teeth which are spaced apart about their width at the base; retromargin with a row and a group of very small denticles. Rastellum moderately well developed, composed of several rows of discrete, subequal black spines which are more numerous at the distal end.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	5.50	2.85	3.60	3.40	2.00	17.35 mm.
II	5.20	2.60	3.00	3.50	1.75	16.05 mm.
III	4.00	2.40	2.30	3.20	1.90	13.80 mm.
IV	5.20	3.00	4.10	4.60	2.40	19.30 mm.
Palp	3.48	1.70	2.70	1.15	1.15	9.03 mm.

Leg formula, 4123. First leg with few spines (Fig. 26), the femur nearly five times as long as broad, clothed with black hairs, the patella about twice as long as broad, clothed with black hairs. Tibia nearly three times as long as broad, armed at the distal end on the retrolateral side with a group of five stout spines, four of them on an elevated tubercle, and one directly behind; also armed ventrally with three single median spines on the retrolateral side. First metatarsus three and one-half times as long as broad, slightly sinuous, excavated in the basal half on the retrolateral side and armed just beyond the middle of that surface with a stout tubercle. Metatarsus and tarsus clothed thickly beneath with light scopular hairs, the former with three ventral distal spines. Second leg normal, the tibia with four single ventral spines, the metatarsus with two single spines in the basal half and three distals, the tarsus and metatarsus of this leg scopulate beneath. Third leg with several weak ventral and lateral spines on the tibia, the metatarsus with 3-4 ventrals and an additional distal pair, five single retrolaterals and seven prolateral spines. Fourth leg with 2-1-2 spines beneath the tibia, 1-2-2-2 ventrals, 1-1-1-1 prolaterals and 1-1-1 retrolaterals on the metatarsus. Posterior tarsi scopulate beneath. Legs without dorsal spines. Claws three, the paired claws essentially similar on all the tarsi. Proclaw of the right

first leg with five teeth on the retrolateral face and a basal one on the prolateral side near the base; retroclaw with five teeth on the prolateral face and a basal one on the retrolateral side. Palpus as illustrated in figures 28 and 29.

Abdomen dusky brown above, clothed with black hairs. Spinnerets four, the one-jointed medians, 0.70 mm. long, separated by their width, the large lateral spinnerets three-jointed, the basal joint, 1.25 mm., the median, 0.70 mm., and the distal joint, 0.50 mm. long.

TYPE LOCALITY.—Male holotype from Sabino Basin, Santa Catalina Mountains, Arizona, 3800 feet, July 8–12, 1916 (Dr. F. E. Lutz), in the collection of The American Museum of Natural History.

#### BOTHRIOCYRTUM SIMON

*Bothriocyrtum* SIMON, 1891, Act. Soc. Linn., Bordeaux, p. 314.

GENOTYPE.—*Cteniza californica* Cambridge.

#### *Bothriocyrtum californicum* (Cambridge)

Figures 32 to 37

*Cteniza californica* CAMBRIDGE, 1874, in Moggridge, 'Harvesting Ants,' etc., Suppl., p. 260, Pl. xv, fig. B.—McCook, 1893, 'American Spiders,' III, Pl. xxix, fig. 8.

*Bothriocyrtum californicum* SIMON, 1891, Act. Soc. Linn., Bordeaux, p. 315; 1892, 'Hist. Nat. Araignées,' I, p. 96.—SMITH, 1908, Ann. Ent. Soc., America, I, p. 214.

MALE.—Total length, including the chelicerae, 21.50 mm.

	CARAPACE	FRONT	STERNUM	LABIUM	MAXILLA	ABDOMEN
Length	8.95		5.25	1.25	3.80	8.70 mm.
Width	8.30	5.50	4.60	1.70	1.10	7.10 mm.

Pars cephalica dark reddish brown, the head portion darker, the whole carapace smooth for the most part, the sutures deep, well marked, the cervical groove a deep procurved semilunar depression. Clothing of the carapace sparse, the margins of the pars thoracica with black hairs and strong erect black spines which are most conspicuous at the caudal end. Carapace slightly longer than broad, very broad in front, the width of the head at the second eye row about three-fourths the greatest width of the carapace. Pars thoracica convex, with conspicuous grooves at the position of the radiating streaks, the margins turned up to form a shallow trench along the margin. Pars cephalica moderately elevated, as seen from the side evenly declining caudally to the cervical groove, from above triangular in outline, the sides subequal. Cervical groove a deep transverse semilunar procurved depression, 1.50 mm. in width, about three-sixteenths of the width of the carapace at that point, situated back eleven-eighteenths of the total length of the carapace. Outline of the carapace as in figure 34.

Eyes on a low tubercle which occupies about one-third the width of the head at the second eyes (9/24). Clypeus subhorizontal, gently sloping forward, convex as seen from the side, scarcely as long as the eye group, with eight small spines in front of the anterior median eyes, with three larger spines just in front of the interval between the medians, the caudal one much larger. Eye tubercle with eight spines be-

tween the posterior median eyes. Ratio of the eyes: ALE:AME:PLE:PME = 62:40:38:25. First row of eyes procurved as seen from above, the medians separated by their short diameter, half as far as from the lateral eyes. Eyes of the second row

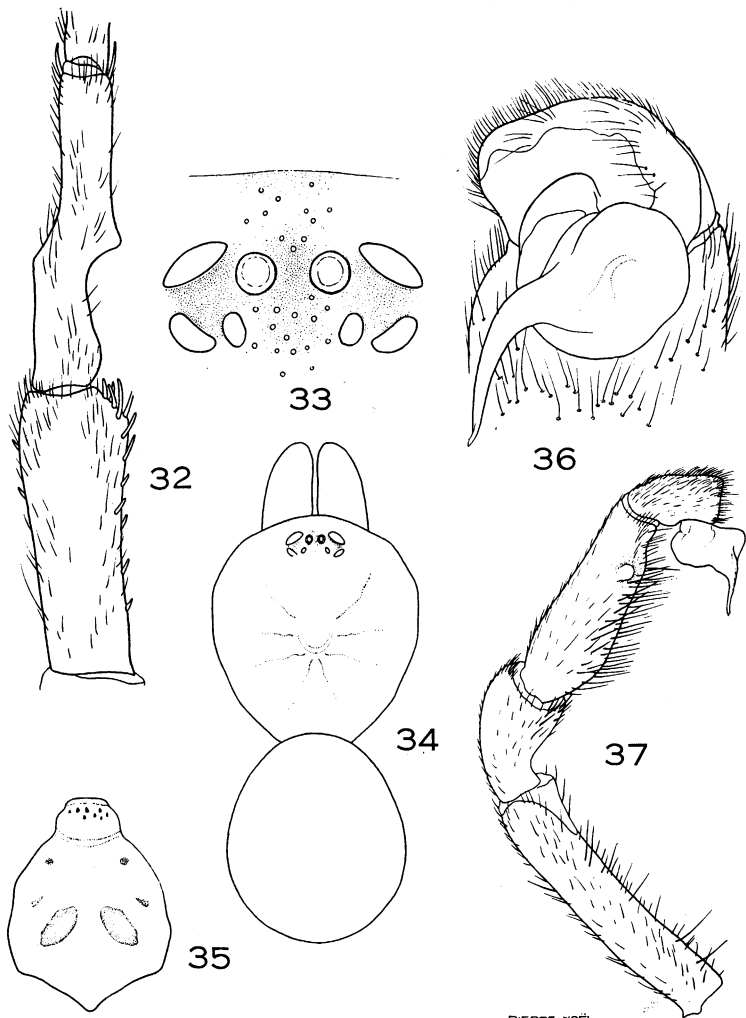


Fig. 32. *Bothriocyrtum californicum* (Cambridge), tibia and metatarsus of first right leg, dorsal view.

Fig. 33. Idem, eyes of male.

Fig. 34. Idem, carapace and abdomen of male, dorsal view.

Fig. 35. Idem, sternum of male.

Fig. 36. Idem, tarsus and bulb of male palpus, ventral view.

Fig. 37. Idem, male palpus, retrolateral view.



straight, the medians oval, separated by less than four diameters (94/25), one-half their short diameter from the laterals. Median ocular quadrangle broader than long (26/17), narrowed in front (26/18). Curvature of eyes and arrangement essentially as in figure 33.

Sternum longer than broad, evenly clothed with short black hairs, those on the margins more numerous and longer, with six sigilla, a large median pair between the second and third coxae which are separated by their short diameter, a very small pair opposite the second coxae, and a small round pair opposite the first coxae, these last mentioned sigilla very small and inconspicuous (Fig. 35). Labium broader than long, set with black hairs, the distal end with eight small cusps. Maxilla about twice as long as broad, clothed with black hairs, the prolateral side with a thick band of pale hairs, the base with a group of about twenty black cusps near the prolateral side. Chelicera nearly as broad as long as seen from the side, flat on the prolateral surface, convex retrolaterally and distally, armed with stiff black hairs and spines, the rastellum well developed, a strong black process armed with stout black spines. Promargin of the chelicera armed with seven very unequal teeth, the retromargin with five smaller teeth which are more widely separated, the groove itself with eight small denticles.

	FEMUR	PATELLA	TIBIA	METATARSUS	TARSUS	TOTAL
I	8.80	4.25	5.90	6.20	2.60	27.75 mm.
II	8.10	3.80	5.50	6.00	2.50	25.90 mm.
III	6.70	3.35	4.70	5.00	2.50	22.25 mm.
IV	8.80	3.80	5.80	7.10	3.50	29.00 mm.
Palp	7.25	3.35	5.20		2.25	18.05 mm.

Leg formula, 4123. Legs concolorous with the carapace, the first rather sparsely spinose, the femur five times as long as broad, the tibia two and one-half times as long as broad, widened apically and armed with a cluster of six stout black spines on the retrolateral side, which is followed by eleven smaller retrolateral spines, the prolateral surface with five small black spines in the apical half. First metatarsus about three times as long as broad, narrow basally, curved, with a conspicuous bend near the middle, the retrolateral side with a strong tubercle. First tibia and metatarsus as figured (Fig. 32). First tarsus with a thin covering of short hairs and rows (4-2-1-2) of short black spines. Other legs normal in form, the last two tarsi scopulate beneath. Details of the palpus as in figures 36 and 37. Claws three, the median one small, the paired claws similar, with teeth in a single series. First and second proclaws and retroclaws with a tooth at the base, a much larger one distad of it, and four very small ones in a distal row, the denticles occupying three-fifths of the length of the claw. Third and fourth proclaws and retroclaws with two subequal teeth at the base but lacking the distal denticles.

Abdomen gray to brown, clothed with black hairs. Spinnerets four, the one-jointed medians separated by half their width, the very large lateral spinnerets three-jointed (basal joint, 1.10 mm., median, 0.50 mm., and distal joint, 0.60 mm. long), separated by their width.

TYPE LOCALITY.—California (Cambridge, 1874).

RECORDS.—Los Angeles, California, December 5, 1929, male and female (G. Grant). Inglewood, near Los Angeles, California, June 17, 1931, females (F. E. Lutz).

