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NEW SPIDERS IN THE GROUP DIONYNCHA WITH NOTES ON OTHER SPECIES

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In the course of my studies of the spider fauna of Connecticut a number of new species were encountered. It was originally planned to describe them in a large monograph, the manuscript of which was completed for the Geological and Natural History Survey about four years ago. Since, however, its publication will be still further delayed, it is thought advisable to publish, in a series of short papers, the descriptions of new species, together with discussions of synonymy and various other taxonomic matters in other species. This first paper is concerned with the dionychous families Gnaphosidae, Clubionidae, Thomisidae, and Salticidae.

The types of the new species here described are deposited in the collection of the American Museum of Natural History. I wish to thank Dr. W. J. Gertsch for allowing access to this and much other material for comparison. Thanks are likewise due Miss E. B. Bryant for kind advice and for the loan of material from the Museum of Comparative Zoölogy, and my wife, who prepared all the illustrations.

Gnaphosidae

Drassodes auriculoides Barrows

Figures 1, 2

Drassodes auriculoides BARROWS, 1919, Ohio Jour. Sci., vol. 19, p. 355, pl. 15, figs. 4a-4b, ♀.

Drassodes robinsoni KASTON, 1938, Bull. Brooklyn Ent. Soc., vol. 33, p. 178 (for the most part), pl. 8, figs. 12-14, ♀ (not *robinsoni* Chamberlin).

Not *Geodrassus auriculoides* Kaston, 1938, *ibid.*, vol. 33, p. 175.

In 1922 Chamberlin placed this species in his newly erected genus *Geodrassus*. Since the appearance of my 1938 paper I have had an opportunity to study the type,

through the kindness of Dr. Barrows, and can definitely state that Chamberlin was in error. As in other *Drassodes*, this species has two retromarginal cheliceral teeth, not one.

Drassodes robinsoni Chamberlin

Figure 3

Drassodes robinsoni CHAMBERLIN, 1919, Ann. Ent. Soc. Amer., vol. 12, p. 245, pl. 16, fig. 2, ♀; KASTON, 1938, Bull. Brooklyn Ent. Soc., vol. 33, p. 179 (in part, none of the figures).

This species very closely resembles *auriculoides*. The segments of the male pedipalp have the proportions as in *neglectus* Keyserling (fig. 4), but the tibial apophysis is more slender, like that of *auriculoides* (fig. 2). The epigynum more nearly resembles the latter species, but the comments published by me in 1938 concerning the Woods Hole, Massachusetts, specimens, refer to this species and not to *auriculoides*, to which all the other specimens belonged.

Geodrassus gosiutus (Chamberlin)

Figure 5

Drassodes gosiutus CHAMBERLIN, 1919, Ann. Ent. Soc. Amer., vol. 12, p. 245, pl. 16, fig. 3, ♂.

Geodrassus auriculoides KASTON, 1938, Bull. Brooklyn Ent. Soc., vol. 33, p. 175, pl. 8, figs. 5-8, ♀♂; KASTON, 1938, Bull. Connecticut Geol. Nat. Hist. Surv., no. 60, p. 192 (not *Drassodes auriculoides* Barrows).

Zelotes inheritus, new species

Figures 6, 7, 42

MALE: Total length, 8 mm. Carapace, 3.54 mm. long, 2.68 mm. wide. Abdomen, 4 mm. long, 2.35 mm. wide.

Coloration and general appearance as in *subterraneus*, with carapace, chelicerae, maxillae, sternum, and legs dark chestnut brown irregularly streaked with much

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black. Abdomen above dark gray, except for the scutum which is chestnut brown like the carapace. Venter gray.

Eyes typical with the posterior row straight and wider than the anterior (36/30), the posterior medians oval, slightly smaller than the laterals, and the median ocular area slightly wider behind than in front (16/15). Carapace widest between coxae II and III, narrowing at clypeus to slightly less than half that (40/17). Chelicerae with four teeth on the promargin and two on the retromargin of the fang furrow. Labium longer than wide. Sternum oval, longer than wide.

Legs 4123. Tarsus I and II and distal two-thirds of metatarsus I and II scopulate beneath. Tarsus III and IV setose ventrally. Tibia and metatarsus I and II unspined. Abdomen with a scutum as wide at base as the dorsum, extending 25/60 the length of, and gradually narrowing at its posterior end to, half the width of the dorsum.

Palpus of the same general type as in *pullus*, *subterraneus*, and related species, with a fine curved embolus and two leaf-like processes at the distal end of the bulb. The tibial apophysis extends half the length of the cymbium, longer than in *subterraneus*, and not so thin as in *pullus*.

FEMALE: Total length, 9 mm. Carapace, 2.9 mm. long, 2.22 mm. wide between coxae II and III; narrowed to just half that at the clypeus. Abdomen, 6 mm. long, 3.16 mm. wide.

Similar to male in general appearance and structure. Abdomen lacking a scutum, and evenly gray throughout except for a median longitudinal lighter gray band on venter the width of the epigynum and extending back not quite to spinnerets. The epigynum has a distinct pigmented ridge between the two anterior rounded corners, and the distance between these is less than that between the openings in front of the receptacula; much less than is the case in *pullatus* Fox, *subterraneus* (Koch), and related species.

TYPE LOCALITY: Male holotype from Mt. Carmel, Connecticut, April 19, 1935 (B. J. Kaston). Female allotype from Keene Valley, Essex County, New York,

June 27, 1917 (Howard Notman). Two male paratypes from Crow Hill, Onondaga County, New York, August 13 (Britcher).

Zelotes pullus (Bryant)

Drassyllus pullus BRYANT, 1936, *Psyche*, vol. 43, p. 95, pl. 3, figs. 4-5, ♂ (not *pullatus* Fox 1938).

This species is quite close to *inheritus* in structure of the palpus, and is a true *Zelotes*.

Zelotes duplex Chamberlin

Zelotes duplex CHAMBERLIN, 1922, *Proc. Biol. Soc. Washington*, vol. 35, p. 164, ♀.

Zelotes sylvanus CHAMBERLIN AND IVIE, 1944, *Bull. Univ. Utah*, vol. 35, no. 9, *biol. ser.*, vol. 8, no. 5, p. 176, figs. 202-203, ♀ ♂.

Sergiolus decoratus, new species

Figures 8, 17-19

MALE: Total length, 4.7 mm. Carapace 2 mm. long, 1.4 mm. wide. Abdomen, 2.7 mm. long, 1.2 mm. wide.

Carapace orange throughout, with the somewhat darker dorsal furrow faintly indicated. Chelicerae and maxillae darker orange, but sternum and coxae yellow. Legs orange with gray to black areas on distal half of femora I and II, patellae I and II, and proximal ends of tibiae I and II; black on distal ends of femur, tibia, and metatarsus IV. Abdomen dark gray above with white transverse bands as follows: one close to the anterior end, one about halfway back, and a third near the posterior end. The latter is broken in the middle. Extending forward from the middle band is a faintly indicated T-shaped mark with the horizontal portion of the "T" extending toward the sides so that a fourth band appears to be present between the first and second. Venter light gray.

Eye relations typical. Retromargin of cheliceral fang furrow without teeth. Dorsum with a conspicuous shiny scutum extending back almost two-thirds the length of abdomen, to as far beyond the middle white band as the thickness of the band itself.

Palpus as figured. The tibial apophysis is broad, notched at the tip, and lies against a concavity on the side of the cymbium.

FEMALE: Total length, 6.7 mm. Carapace 3 mm. long, 2 mm. wide. Abdomen, 3.7 mm. long, 2.3 mm. wide.

Agreeing in general with the male. The abdomen is darker beneath and has the dorsal T-shaped mark more conspicuous, as in *variegatus*. The epigynum shows a pair of large receptacles through the skin; near the posterior end is a broadly oval fossa with a heavily sclerotized pigmented rim. The openings are tiny and lie on either side of the center of the posterior rim.

TYPE LOCALITY: Male holotype and female allotype from Woods Hole, Massachusetts, July 6, 1901 (Britcher). A male paratype from Waubay, South Dakota, June 22, 1936 (Peterson); another male paratype from near Chicago, Illinois, June; a female paratype from Cold Spring Harbor, New York, August 1, 1902 (Emerton). These paratypes are all somewhat smaller than the types. In the Museum of Comparative Zoölogy is a female (labeled *decipiens*) from Menemsha, Martha's Vineyard, Massachusetts, July 21, 1925 (G. H. Parker). It is a well-marked individual and slightly larger than the allotype. I also have a young specimen from Moores-town, New Jersey.

This species resembles *segregatus* Chamberlin, *variegatus* (Hentz), and *decipiens* Chamberlin. From *variegatus* it differs in that neither the posterior declivity of the carapace nor the proximal end of tibia IV is black and in that the abdominal markings do not show the posterior band so far back or so distinct. In males the central T-shaped spot is not so distinct, the dorsal scutum is larger, and the tibial apophysis is much broader apically. In females the epigynum has the fossa more oval, not so broad, with the anterior pigmented rim more pronounced in the median line and the posterior rim far less developed than in *variegatus*.

In *decipiens* and in *segregatus* the epigynum is much as it is in this species, but in them the openings are farther back in the fossa. Moreover, in these the posterior abdominal band is lacking, or almost so. While in *segregatus* the legs are marked as in *decoratus*, in *decipiens* the black markings

are lacking. In both *segregatus* and *decipiens* the tibial apophysis is elongate.

Sergiolus variegatus (Hentz)

Figures 9, 14-16

Herpyllus variegatus HENTZ, 1847, Jour. Boston Soc. Nat. Hist., vol. 5, p. 458, pl. 24, fig. 12, ♀.

Poecilochroa variegata EMERTON, 1890, Trans. Connecticut Acad. Sci., vol. 8, p. 174, pl. 4, figs. 1-1d, ♀ ♂.

Sergiolus capulatus CHAMBERLIN AND IVIE, 1944, Bull. Univ. Utah, vol. 35, no. 9, biol. ser., vol. 8, no. 5, p. 174.

New figures are given of this best known of our species of the genus. It can be distinguished from both *decoratus* and *decipiens* by the presence on the posterior declivity of the carapace of black pigment, as well as fine black hairs, and by a black ring at the proximal end of tibia IV. The tibial apophysis is drawn out to a point which is bent toward the cymbium. The epigynum has the fossa a more transverse short oval with a sclerotized rim that is quite pronounced at the sides and behind, but almost disappears at the middle of the anterior border. The dorsal scutum is just a little over half the length of the abdomen, extending only to the middle, or to the posterior edge, of the second white band.

Sergiolus decipiens Chamberlin

Figure 10

Sergiolus decipiens CHAMBERLIN, 1922, Proc. Biol. Soc. Washington, vol. 35, p. 151, ♂; CHAMBERLIN, 1936, Amer. Mus. Novitates, no. 841, p. 10, fig. 14, ♂.

Poecilochroa decipiens BRYANT, 1935, Psyche, vol. 42, p. 75, figs. 4, 5, ♀ ♂.

Sergiolus ocellatus CHAMBERLIN AND IVIE, 1944, Bull. Univ. Utah, vol. 35, no. 9, biol. ser., vol. 8, no. 5, p. 175.

The epigynum closely resembles that of *decoratus* but has the openings farther back in the fossa, as in *segregatus*. From the latter two species this can be distinguished also by the lack of black markings on the legs.

Sergiolus unimaculatus Emerton

Figures 11, 25, 26

Sergiolus unimaculatus EMERTON, 1915, Trans. Connecticut Acad. Sci., vol. 20, p. 142, pl. 1, figs. 9-9c, ♂.

Sergiolus clericus CHAMBERLIN, 1922, Proc. Biol. Soc. Washington, vol. 35, p. 153, ♀.

In this species the cephalothorax is more narrowed than usual, and the scutum in the male is quite conspicuous and relatively small. Emerton had referred to the tibial apophysis as sharply pointed and slender, but this refers to its appearance as he figured it, from the dorsal aspect. When seen from the side it is fairly broad, as shown in figure 26.

Besides the type of *unimaculatus* from Lyme, Connecticut, and the type of *clericus* from Washington, D. C. (which exactly matches the male), the Museum of Comparative Zoölogy has a female (labeled *montana*) from Lakehurst, New Jersey, July 3, 1912 (J. H. Emerton). The American Museum of Natural History has a female (labeled *clericus*) from Waycross, Georgia, April 21, 1938.

Sergiolus famulus Chamberlin

Figures 12, 20, 21

Poecilochroa montana EMERTON, 1909, Trans. Connecticut Acad. Sci., vol. 14, p. 217, pl. 9, figs. 4-4b, ♂ (not *montana* Emerton 1890).

Sergiolus famulus CHAMBERLIN, 1922, Proc. Biol. Soc. Washington, vol. 35, p. 152, ♀.

The male described by Emerton as *montana* was erroneously synonymized by Chamberlin under *meretrix*, a species only superficially like *famulus* but with an entirely different tibial apophysis. I have a male from Milford, Connecticut, June, 1936 (R. B. Burrows), which in markings, body proportions, and palpal structure agrees exactly with Emerton's male from Massachusetts. While Emerton correctly described the tibial apophysis as "stouter and more curved at the tip" than in *variegatus*, his drawings unfortunately are made from a view which does not facilitate comparison. New drawings are supplied here. In the collection of the American Museum of Natural History is a female from Woods Hole, Massachusetts, July 19, 1901, and two from Cold Spring Harbor, New York, June 19, 1932.

The pattern of abdominal markings in this species is slightly different from that in *meretrix* as can be seen by a comparison of figures 20 and 22. Both have three transverse white bands, with the second and third partly interrupted in the center. In *famulus* the first and second are con-

nected along the sides, and in *meretrix* the middle and posterior bands are connected. In *famulus* the scutum extends back not quite two-thirds the length of the dorsum, being somewhat smaller than in *meretrix*.

Sergiolus meretrix Chamberlin

Figures 13, 22-24

Sergiolus meretrix CHAMBERLIN, 1922, Proc. Biol. Soc. Washington, vol. 35, p. 153, ♂.

Not *Poecilochroa montana* Emerton, 1909.

As pointed out under *famulus* (see above) Chamberlin had wrongly synonymized Emerton's male from Massachusetts under *meretrix*. The tibial apophysis, truncated distally, is longer and more curved dorsad than in *famulus*. The scutum is longer than in *famulus*, extending back seven-eighths the length of the dorsum. Besides the type male from Raleigh, North Carolina, the Museum of Comparative Zoölogy has a female from Alabama. The epigynum differs from that in most of the other species in being broader than long.

Clubionidae

Clubiona elizabethae, new species

Figure 43

FEMALE: Total length, 8.4 mm. Carapace, 2.6 mm. long, 1.95 mm. wide. Abdomen, 4.3 mm. long, 2.8 mm. wide.

Coloration as in *rileyi* Gertsch and related species; pale yellow for the most part, darker at the anterior end with the eyes ringed in black. Chelicerae, labium, and maxillae light brown. Sternum and legs yellow. Abdomen pale yellow with faintly indicated pinkish chevrons on posterior two-thirds.

Both eye rows virtually straight, the first narrower than the second (30/38), the anterior median eyes separated by a diameter, the posterior median eyes by almost twice a diameter and slightly nearer the posterior lateral eyes. Median ocular area broader behind, the eyes all subequal in size. Chelicerae with five teeth on the promargin of the fang furrow and two on the retromargin.

Legs spined as in *rileyi* Gertsch.

Epigynum as in *rileyi* Gertsch, but with the openings relatively larger, and separated by a broad median lobe as figured.

TYPE LOCALITY: Female holotype from Riverton, Connecticut, June 19, 1935, collected by Elizabeth Kaston.

Agroeca ornata Banks

Agroeca ornata BANKS, 1892, Proc. Acad. Nat. Sci. Philadelphia, p. 23, pl. 1, figs. 68-68a, ♀.

Rachodassus monroensis KASTON, 1938, Bull. Brooklyn Ent. Soc., vol. 33, p. 173, pl. 8, figs. 1-4, ♂; KASTON, 1938, Bull. Connecticut Geol. Nat. Hist. Surv., no. 60, p. 193.

The description of *R. monroensis* was based upon a teneral male in which the pigmentation pattern was very faint and the palpal organ unnaturally distended. Moreover, the spinnerets were more widely separated than usual, a condition which has occurred in other members of this genus, so that previous workers likewise have mistaken them for gnaphosids.

Phrurotimpus alarius (Hentz)

Figures 38, 39

Herpyllus alarius HENTZ, 1847, Jour. Boston Soc. Nat. Hist., vol. 5, p. 461, pl. 24, fig. 20, ♀.

Phrurolithus alarius EMERTON, 1890, Trans. Connecticut Acad. Sci., vol. 8, p. 189 (in part), pl. 6, figs. 5a-5g (but not fig. 5 and probably not fig. 5h), ♀ ♂; EMERTON, 1911, *ibid.*, vol. 16, p. 405, pl. 6, figs. 4-4a, ♀ ♂; CHICKERING, 1939, Papers Michigan Acad. Sci., vol. 24, p. 78, figs. 76-79, ♀ ♂.

Phrurolithus palustris BANKS, 1892, Proc. Acad. Nat. Sci. Philadelphia, p. 23, pl. 1, fig. 70, ♀; BISHOP AND CROSBY, 1926, Jour. Elisha Mitchell Sci. Soc., vol. 41, p. 193, ♀ ♂.

Phrurotimpus palustris CHAMBERLIN AND IVIE, 1944, Bull. Univ. Utah, vol. 35, no. 9, biol. ser., vol. 8, no. 5, p. 188.

This species and the following one, *borealis* Emerton, are variable in degree of pigmentation and, because of their great superficial similarity, have often been mistaken for each other. Bishop and Crosby contended on the basis of markings as shown in the original figure of Hentz that the latter had a specimen of what Emerton in 1911 described as *borealis* and that therefore the species described by Emerton in 1890 under the name of *alarius* Hentz included individuals not really of Hentz's species but new. The species to which Banks in 1892 gave the name *palustris* is the same as what Emerton in 1890 had called *alarius* Hentz, so Bishop and Crosby considered Banks' name as the valid one for the species. I have made an intensive

study of the matter, have examined Emerton's and Banks' types as well as other specimens at the Museum of Comparative Zoölogy and the American Museum of Natural History, and have compared dozens of specimens collected in the South as well as in New England. Included in my collections are, fortunately, pairs *in copula* of both species, enabling me to match the sexes correctly. I conclude that Bishop and Crosby were mistaken, the trouble having come about by Emerton's having confused two species as one in 1890—a confusion which was, however, cleared up by Emerton himself in 1911.

In the first place, in Hentz's figure we have only the pigmentation pattern to go by. While it is true, as observed by Bishop and Crosby, that as far as the cephalothorax and abdomen are concerned the drawing more nearly resembles what Emerton has described as *borealis*, the drawing very plainly shows black spots on legs III and IV. These spots are present only on those individuals, of both sexes, which have in addition all the other characteristics showing them to belong to the one species and not the other. Among these characters are some which Emerton correctly described and figured for what he considered *alarius* Hentz, thus "fixing" the species. These spots are always present in *alarius*. Emerton's figure 5 (and perhaps his fig. 5h) do not belong to *alarius*, but his figures 5b, 5e, 5f, and 5g illustrate characters possessed by individuals with the spotted hind legs, and therefore they must be *alarius*. These characters include: tibia I with five or six pairs of ventral spines, the tibial apophysis of the male palp not abruptly bent at the tip, and the receptacles of the epigynum about half their diameter apart.

In the other species, which must take the name *borealis* Emerton, there are always seven or eight pairs of spines under tibia I (both species have three or four pairs under metatarsus I), the hind legs are not spotted, the tibial apophysis has an oblique truncature near the tip and is bent toward the cymbium, and the epigynum has the receptacles about their diameter apart. Other differences are as follows:

in *borealis* the proximal three-fourths of tibia I is black and provided with a thick ventral brush of hairs in the male, while in *alarius* the brush is absent, the pigmentation is less intense, and in females may be almost completely lacking; the abdomen of *borealis* is darker above, quite iridescent in the male, less so in the female, while in *alarius* it is lighter and only slightly, if at all, iridescent in either sex; the venter of *borealis* is unmarked or at most with two faint longitudinal lines, while in *alarius* there are nearly always two gray spots near the middle.

Both species occur in the same localities, but *borealis* is more common in the northern states and *alarius* in the south. I have myself collected them in Connecticut, Tennessee, and Georgia. In addition, at the American Museum of Natural History there are specimens of *alarius* from New Jersey, Texas, New Mexico, New York, and Washington, D. C., and of *borealis* from Michigan, Utah, Massachusetts, Minnesota, New York, Pennsylvania, Maine, and Texas. At the Museum of Comparative Zoölogy there are specimens of *alarius* from New York, North Carolina, and Florida, and of *borealis* from New Hampshire, Vermont, Massachusetts, and Utah.

Phrurotimpus borealis (Emerton)

Figures 40, 41

Phrurolithus alarius EMERTON, 1890, Trans. Connecticut Acad. Sci., vol. 8, p. 189 (in part), pl. 6, fig. 5 and probably fig. 5h (but not figs. 5a-5g), ♀ ♂; BANKS, 1892, Proc. Acad. Nat. Sci. Philadelphia, p. 23; COMSTOCK, 1912, Spider book, p. 576, figs. 652-654, ♀ ♂; BISHOP AND CROSBY, 1926, Jour. Elisha Mitchell Sci. Soc., vol. 41, p. 191, ♀ ♂.

Phrurolithus borealis EMERTON, 1911, Trans. Connecticut Acad. Sci., vol. 16, p. 404, pl. 6, figs. 3-3a, ♀ ♂; CHICKERING, 1939, Papers Michigan Acad. Sci., vol. 24, p. 79, figs. 80-82, ♀ ♂.

Phrurolithus utus CHAMBERLIN AND IVIE, 1933, Bull. Univ. Utah, vol. 23, no. 4, biol. ser., vol. 2, no. 2, p. 40, pl. 12, figs. 124-126, ♀ ♂.

Phrurotimpus alarius MUMA, "1943" [1944], Common spiders of Maryland, p. 122, pl. 15, fig. 6, ♀; CHAMBERLIN AND IVIE, 1944, Bull. Univ. Utah, vol. 35, no. 9, biol. ser., vol. 8, no. 5, p. 187.

The characters by means of which this species can be distinguished from *alarius*,

with which it has been confused, are discussed under that species, just preceding.

*Castianeira*¹ *gertschi*, new species

Figures 27-29

Castianeira aurata EMERTON, 1913, Bull. Amer. Mus. Nat. Hist., vol. 32, p. 258, pl. 48, figs. 8-8b, ♀ ♂; KASTON, 1938, Connecticut Geol. Nat. Hist. Surv. Bull., no. 60, p. 193; CHAMBERLIN AND IVIE, 1944, Bull. Univ. Utah, vol. 35, no. 9, biol. ser., vol. 8, no. 5, p. 180 (not *Herpyllus? auratus* Hentz).

MALE: Total length, 5.2 mm. Carapace, 2.47 mm. long, 1.54 mm. wide, and narrowed to not quite half this much at the clypeus. Abdomen, 2.74 mm. long, 1.27 mm. wide.

The carapace is evenly bright orange with a thin black marginal line, and without pubescence. The legs are about the same color, but with femur I slightly darker, the distal segments yellowish, and with the distal segments of leg IV darker than the femur. The abdomen is orange at the anterior end but increasingly darker toward the rear where it is chestnut brown. There are two transverse bands of white scales, one just behind the middle, one just behind the anterior fourth, and in addition a very faint subbasal band. The two bands are broken in the center so that the effect is as of two white transverse spots each side.

Eyes and other structural characters typical for the genus, with the sternum about four-fifths as wide as long, and with the abdomen, as in the other species, completely covered above by a shiny scutum which, however, does not obscure the pattern.

Palpus as figured, with the embolus short.

FEMALE: Total length, 6.1 mm. Carapace, 3 mm. long, 1.94 mm. wide, and narrowed to just over half this much at the

¹ This is the original orthography used by Keyserling in 1879. In 1887 he used this name again but changed the spelling to *Castaneira*, a form followed by many later workers. Petrunkevitch (1939) maintains that this was a correction on the part of Keyserling. But as the latter had plainly stated that *Castianeira* was a *nomen proprium*, there can be no question of an error in transcription, and that it was not a typographical error is indicated by the fact that it appears the same way in the explanation of figures. In his 1887 paper he makes no mention of error or of correction. Hence the change would seem to be no more justified than the attempted changes of other authors, e.g., Hentz's changing *Spermophora* 1841 to *Oophora* in 1850.

clypeus. Abdomen 3.1 mm. long, 1.8 mm. wide.

Color and structure essentially as in male. However, the scutum is small, the basal white band is lacking so that only two appear, and the metatarsi are darker than in the male.

Epigynum as illustrated in figure 29, with a depressed central area between the openings and posterior to the receptacles.

TYPE LOCALITY: Male holotype from Indian Neck, Connecticut, June 6, 1937 (B. J. Kaston). Female allotype: Watertown, Connecticut, May 30, 1937 (B. J. Kaston). A male paratype from Bethany, Connecticut, June 22, 1938 (D. S. Riggs), and an immature male paratype from Staten Island, New York, January 26, 1912 (J. H. Emerton).

This species is very similar to *trilineata* Hentz. The palpal organ of the latter, however, has a thickened embolic division with two hooked rami; the epigynum of the female has the lips of the openings continued posterolaterally, and the central area is not depressed. Also in this group of species and much more like *trilineata* (if not actually a synonym of it) is *stupkai* Barrows.

It has been assumed by some workers that this (and not a *Micaria*) is the species which Hentz had when he described and figured his *Herpyllus auratus*. Not only was there a difference of opinion as to the generic status of Hentz's species, but the situation had been complicated by the fact that several different spiders had been wrongly synonymized under his name *auratus*. Assuming that what most workers were calling *Micaria aurata* was based on a misidentification, Bryant in 1941 proposed the new name *delicatula* for the *Micaria*.

Hentz's *Herpyllus auratus* was first associated with another genus by Marx, who in his "Catalog" (1890) considered it a *Micaria*. Banks in 1893 placed it in *Thargalia* (= *Castianeira*), but in 1895, in describing *Micaria agilis* as a new species, compared it with *auratus* with which he supposed *agilis* may have been confused. This would indicate that he then considered them congeneric, and Simon in 1897 like-

wise considered *auratus* a *Micaria*. In 1908 Bryant placed *longipes* Emerton and *formicoides* Banks as synonyms of *auratus* in *Micaria*. But the latter species was again placed in *Castianeira* by Banks in his "Catalog" of 1910, while *longipes*, *formicoides*, and *agilis* were each listed separately under *Micaria*. In 1913 Emerton described a "*Castianeira aurata* Banks (not Hentz)" indicating that he had believed Banks to have made a mistake with respect to the placing of Hentz's species. Emerton had previously (1902) attempted to show that there was a southern *Micaria* which could easily be considered Hentz's *aurata*, and that it differed slightly from the northern *longipes*.

In 1941 Bryant synonymized under *delicatula*, *Micaria aurata* Gertsch, 1933, and *M. aurata* Kaston, 1938. Gertsch had given the name doubtfully to western spiders which he later (1942) considered as new species (*gosiuta* and *alberta*); and while I in 1938 listed them as one I now consider *longipes* as a separate species from *aurata* (see below). In Bryant's discussion of the generic position of *aurata*, reference is made to Hentz's figure showing the characteristic pattern, and she adds "the figure shows the head only slightly narrowed, a character found in *Castianeira* rather than *Micaria* and no indication of an abdominal constriction that is usually found in *Micaria*." If we analyze these data we find, as can be seen from the new figures supplied here, first that the pattern of spots could fit either the *Micaria* or the *Castianeira*. In the second place, the "only slightly narrowed" head quite definitely fits the *Micaria*, where it is 16/25 as wide as the widest part of the carapace, as compared with 11/23 in the *Castianeira*. Third, no value can be attributed to the matter of the abdominal constriction, for this is too variable, and some *Micaria* species do not show it. No such constriction was mentioned or figured by Emerton when he described *laticeps*, *quinquenotata*, and *longispina*, and he definitely stated that *montana* and *gentilis* do not show it. Moreover, while Banks in describing *agilis* refers to the constriction, I have found in his material (from which figs. 33, 34, and

35 were prepared) that there is considerable variation. Moreover, in my own material in *aurata* and *longipes*, specimens which appear gravid do not show the constriction so well. I have also found variation in *multimaculata* (= *laticeps*, see below).

There is one other character, not mentioned by Bryant, but apparent from Hentz's drawing.¹ That is the complete absence of a dorsal thoracic groove. This character is often given in the generic diagnosis of *Micaria*. However, in some specimens the groove is faintly visible, and it has been indicated in drawings made by Emerton for certain species. Nevertheless, the groove is never missing in *Castianeira*, so that on this basis Hentz must have had a *Micaria*.

From all of the foregoing it is apparent that the name *Castianeira aurata* is based upon a misidentification, and must be replaced by the name *C. gertschi* proposed above.

Micaria aurata (Hentz)

Figures 30-35, 44

Herpyllus? auratus HENTZ, 1847, Jour. Boston Soc. Nat. Hist., vol. 5, p. 459, pl. 24, fig. 15, ♂ (not *M. aurata* Canestrini, 1868, or *M. aurata* Gertsch, 1933).

Micaria agilis BANKS, 1895, Ent. News, vol. 6, p. 204.

Micaria aurata EMERTON, 1902, Common spiders, p. 9, fig. 27, ♀.

Micaria delicatula BRYANT, 1941, Psyche, vol. 48, p. 138; CHAMBERLIN AND IVIE, 1944, Bull. Univ. Utah, vol. 35, no. 9, biol. ser., vol. 8, no. 5, p. 185.

This is the southern species, which, however, I have taken in New England at several points along the shore of Long Island Sound. Emerton in 1902 first pointed out that the posterior half of the abdomen in this species is marked with black chevrons. While I have not found this constant, I have noticed that it is more usual, at least in females, while in *longipes* the posterior half of the abdomen either is unmarked or is indistinctly gray to black without chevrons. Moreover, the white spots on the dorsum of this species are thicker than those in *longipes*. By far the

best characters, however, are in the genitalia. In males the median apophysis of the bulb in *aurata* is short and stout, while in *longipes* it is long and thin. In the epigynum of females the openings are relatively far apart, and the central narrow canals extend farther forward in *aurata* than is the case in *longipes*.

Banks gave Missouri as the type locality of *agilis*, and included Washington, D. C., and Sea Cliff, New York, as other localities. At the time I was studying his material there were two vials, neither dated, marked "Type," both from Sea Cliff, New York (the Missouri and Washington material having been lost). In one vial there were only juveniles; in the other were a male and four females. Banks used the constriction on the abdomen as a character distinguishing *agilis* from *aurata*, and while the juveniles all show a distinct constriction just in front of the middle of the abdomen, the depth of this constriction varies greatly in the mature females (figs. 33, 34, and 35). As I have tried to point out in the discussion above, the state of gravidity of the females in this, as well as in other, species is presumably a factor altering the depth of the constriction.

Micaria longipes Emerton

Figures 36, 37, 45

Micaria longipes EMERTON, 1890, Trans. Connecticut Acad. Sci., vol. 8, p. 167, pl. 3, figs. 1-1h, ♀ ♂; EMERTON, 1909, *ibid.*, vol. 14, pl. 10, figs. 2-2a, ♂; COMSTOCK, 1912, Spider book, p. 580.

Micaria formicoides BANKS, 1892, Proc. Acad. Nat. Sci. Philadelphia, p. 14, pl. 1, fig. 51, ♀.

This is the northern species, so often synonymized under *aurata*. I have given the distinguishing characters under the latter (see above).

Micaria laticeps Emerton

Micaria laticeps EMERTON, 1909, Trans. Connecticut Acad. Sci., vol. 14, p. 214, pl. 10, figs. 4-4c, ♂.

Micaria multimaculata KASTON, 1938, Bull. Brooklyn Ent. Soc., vol. 33, p. 182, pl. 9, figs. 18-23, ♀ ♂; KASTON, 1938, Bull. Connecticut Geol. Nat. Hist. Surv., no. 60, p. 194.

Additional study of the types of *multimaculata* and *laticeps* has recently led me to

¹ I am indebted to the officials at the New England Museum of Natural History for allowing me to study Hentz's original colored drawings.

consider them synonymous. Emerton not only failed to see the tibial apophysis, but his description and figure exaggerate the width of the pars cephalica, and his specimen had lost all trace of markings, hence when *multimaculata* was described I considered it distinct from *laticeps*.

Thomisidae

Philodromus placidus Banks

Philodromus placidus BANKS, 1892 (before April), Proc. Acad. Nat. Sci. Philadelphia, p. 62, pl. 3, figs. 25-25a, ♀.

Philodromus bidentatus EMERTON, 1892 (April), Trans. Connecticut Acad. Sci., vol. 8, p. 375, pl. 31, figs. 5-5b, ♂.

Philodromus exilis KASTON, 1938, Bull. Connecticut Geol. Nat. Hist. Surv., no. 60, p. 191; CHICKERING, 1940, Papers Michigan Acad. Sci., vol. 25, p. 222, figs. 57-59, ♀ ♂; CHAMBERLIN AND IVIE, 1944, Bull. Univ. Utah, vol. 35, no. 9, biol. ser., vol. 8, no. 5, p. 162 (not *exilis* Banks).

For a long time there has been uncertainty in matching up the male with the female of this species. Banks, Petrunkevitch, and others assumed Emerton's *bidentatus* to be the male of what Banks had described from a female as *exilis*. In studying the types and other material at the Museum of Comparative Zoölogy I found that *exilis* is really a synonym of *rufus*. It is true that the type of *exilis* had the legs missing even at the time it was described, but the general appearance of the body and, most important, of its epigynum leaves no doubt as to its real place. On the other hand, the type vial of *placidus* contains two females that exactly match the type male of *bidentatus*. The pattern of markings on legs III and IV offers an excellent character for comparison in this respect. In *exilis* (= *rufus*) legs III and IV do not have these markings.

Philodromus rufus Walckenaer

Philodromus rufus WALCKENAER, 1825, Faun. Française, Aran., p. 91, ♂.

Philodromus exilis BANKS, 1892 (before April), Proc. Acad. Nat. Sci. Philadelphia, p. 63, pl. 2, fig. 40, ♀.

Philodromus pictus EMERTON, 1892 (April), Trans. Connecticut Acad. Sci., vol. 8, p. 373, pl. 31, figs. 2-2h, ♀ ♂.

See discussion under *P. placidus*, preceding.

Philodromus laticeps Keyserling

Philodromus laticeps KEYSERLING, 1880, Spin. Amerikas, Lat., p. 215, pl. 5, fig. 118, ♀.

Philodromus robustus EMERTON, 1892, Trans. Connecticut Acad. Sci., vol. 8, p. 376, pl. 32, figs. 1-1a, ♂; CHAMBERLIN AND IVIE, 1944, Bull. Univ. Utah, vol. 35, no. 9, biol. ser., vol. 8, no. 5, p. 163.

Philodromus louisianus CHAMBERLIN, 1924, Proc. U. S. Natl. Mus., vol. 63, p. 23, pl. 5, fig. 39, ♀.

The type male of *robustus* is the only specimen under that name at the Museum of Comparative Zoölogy. It matches the female of Keyserling's species.

Philodromus washita Banks

Philodromus washita BANKS, 1932, Publ. Oklahoma Biol. Surv., vol. 4, no. 1, p. 28, figs. 1-2, ♀.

Philodromus keyserlingi GERTSCH, 1934, Amer. Mus. Novitates, no. 707, p. 18, fig. 22, ♂; KASTON, 1938, Connecticut Geol. Nat. Hist. Surv. Bull., no. 60, p. 191 (not *keyserlingii* Marx).

I had previously followed Gertsch in supposing this species synonymous with *keyserlingii*, but I now consider the two separate. It is smaller than that species (3.9 to 4.6 mm. as compared with 6 mm. for females) and differs markedly in details of the epigynum. Moreover, that species does not have the white V-shaped mark on the carapace, and has a dark ring at the middle rather than at the ends of the tibiae.

Banks' original material was from Oklahoma; the American Museum of Natural History has a pair from Florida, and I have material from Georgia as well as from several localities in Connecticut.

Salticidae

There has always been difficulty in correctly identifying and placing some of the species originally described by Hentz under *Attus*; in fact many of them have never been placed at all in our modern system. For a number of years I have been especially interested in the spiders of New England, and as several of the unplaced names belong to species that Hentz had from that region I have made attempts to match up, in so far as possible, what he had with what we now find.

In the main we have to proceed on the basis of the colors and pattern as given for

the dorsal aspect of the spider, and this brings up several difficulties. First, in this family there is a great deal of sexual dimorphism, so that often males and females were described under separate names (as was done by many workers even long after Hentz). Second, Hentz undoubtedly described juvenile individuals, which may show patterns quite different from the adult. Third, even in the same species different individuals may show considerable variation in pattern; and finally, closely related species though distinguishable by genitalia and secondary sex characters may have the same markings and pattern. This is particularly true with the species of *Metaphidippus*, so many of which were summarily lumped together as synonyms of *capitatus*. In 1892 Banks described, as new, several other species in this same genus (under *Dendryphantes*) and my arrangement as given below is based upon a study (of primarily the genitalia) of his types, as well as of other material at the Museum of Comparative Zoölogy. It is also to some extent based upon a consideration of suggestions made by Miss Bryant and by Dr. Gertsch. It is hoped that sufficient time can be devoted to a study of the group toward the end that a revision of at least the eastern species of *Metaphidippus* can be prepared in the near future.

Metaphidippus capitatus (Hentz)

Attus capitatus HENTZ, 1845, Jour. Boston Soc. Nat. Hist., vol. 5, p. 200, pl. 17, fig. 15, ♂.

Dendryphantes aestivalis EMERTON, 1891, Trans. Connecticut Acad. Sci., vol. 8, p. 228 (in part, not light variety), pl. 17, figs. 2a-2f, ♀ ♂ (not fig. 2).

Dendryphantes capitatus PECKHAM, 1909, Trans. Wisconsin Acad. Sci., vol. 16, p. 469 (in part), pl. 36, figs. 4a-4c (not fig. 4), pl. 38, figs. 5-5a, ♀ ♂.

Metaphidippus capitatus CHICKERING, 1944, Papers Michigan Acad. Sci., vol. 29, p. 172 (in part, not male), figs. 64-65, ♀.

Of the species commonly considered as synonyms of *capitatus* it is agreed that Hentz's *Attus hebes* and *parvus* belong here, and I believe also his *canonicus* (from Massachusetts) which has remained unplaced. Hentz's *octavus*, on the other hand, I now believe to be distinct, agreeing with

what I have been calling *insignis* Banks. I likewise consider distinct Banks' *ornatus* and *exiguus*, the females of which, however, are difficult to distinguish from *capitatus*.

Metaphidippus ornatus (Banks)

Dendryphantes ornatus BANKS, 1892, Proc. Acad. Nat. Sci. Philadelphia, p. 75, pl. 4, fig. 29a, pl. 5, fig. 29, ♀.

Dendryphantes aestivalis EMERTON, 1891, Trans. Connecticut Acad. Sci., vol. 8, p. 228 (in part).

Dendryphantes capitatus PECKHAM, 1909, Trans. Wisconsin Acad. Sci., vol. 16, p. 469 (in part).

Metaphidippus capitatus CHICKERING, 1944, Papers Michigan Acad. Sci., vol. 29, p. 172 (in part, not female), figs. 61-63, ♂.

Metaphidippus octavus (Hentz)

Attus octavus HENTZ, 1846, Jour. Boston Soc. Nat. Hist., vol. 5, p. 365, pl. 22, fig. 15, ♀.

Dendryphantes insignis BANKS, 1892, Proc. Acad. Nat. Sci. Philadelphia, p. 74, pl. 5, figs. 28-28a, ♀.

Dendryphantes aestivalis EMERTON, 1891, Trans. Connecticut Acad. Sci., vol. 8, p. 228 (in part, light variety), pl. 17, fig. 2, ♀ (not figs. 2a-2f).

Dendryphantes capitatus PECKHAM, 1909, Trans. Wisconsin Acad. Sci., vol. 16, p. 469 (in part), pl. 36, fig. 4, ♀ (not figs. 4a-4c).

Dendryphantes montanus KASTON, 1938, Bull. Connecticut Geol. Nat. Hist. Surv., no. 60, p. 195 (not *montanus* Emerton).

Metaphidippus montanus CHICKERING, 1944, Papers Michigan Acad. Sci., vol. 29, p. 176, figs. 70-73, ♀ ♂ (not *montanus* Emerton).

I believe Hentz's name should be used for this species, which is the one that most distinctly shows the four pairs of spots on the abdomen. Another pair is usually faintly indicated in front of these four.

Metaphidippus exiguus (Banks)

Dendryphantes exiguus BANKS, 1892, Proc. Acad. Nat. Sci. Philadelphia, p. 75, pl. 5, fig. 30, ♀.

Dendryphantes flavipedes EMERTON, 1913, Bull. Amer. Mus. Nat. Hist., vol. 32, p. 259, pl. 48, fig. 10, ♂ (not *flavipedes* Peckham).

Dendryphantes virginis CHAMBERLIN, 1925, Bull. Mus. Comp. Zool., vol. 67, p. 233, ♂; KASTON, 1938, Canadian Ent., vol. 70, p. 16, figs. 8, 12, 14, ♂; KASTON, 1938, Bull. Connecticut Geol. Nat. Hist. Surv., no. 60, p. 195.

Metaphidippus virginis MUMA, 1944, Amer. Mus. Novitates, no. 1257, p. 11.

In the 1916 revision of his 1892 paper Banks considered this species to be the

same as *flavipedes* Peckham, but his comments concerning the lack of markings on the femora indicate that, like Emerton (1913), he was really referring to the species which Chamberlin later described from the male as *virginis*.

Metaphidippus canadensis (Banks)

Icius canadensis BANKS, 1897, Canadian Ent., vol. 29, p. 196, ♀ ♂.

Dendryphantus canadensis PECKHAM, 1909, Trans. Wisconsin Acad. Sci., vol. 16, p. 467, pl. 36, figs. 2-2d, ♀ ♂.

Dendryphantus castaneus EMERTON, 1911, Trans. Connecticut Acad. Sci., vol. 16, p. 407, pl. 6, figs. 5-5a, ♀ (not *castaneus* Hentz).

New England specimens, labeled *castaneus*, in the collection of the Museum of Comparative Zoölogy, really belong in *canadensis*. Both species have the three black lines on the venter, but they differ in a considerable number of characters, the most obvious one being the greatly thickened front legs in *castaneus*.

Paraphidippus pineus, new species

Figures 54-58

MALE: Total length, 5.7 mm. Carapace, 2.62 mm. long, 2.15 mm. wide. Abdomen, 3 mm. long, 1.7 mm. wide.

In general appearance this species resembles *marginatus* with the carapace brown above, darker along sides and on posterior declivity. On each side is a curved band of white scales, extending from the anterior lateral eyes, under the small eyes, and onto the declivity. This band extends farther back than is usual for *marginatus*, as can be seen by a comparison of figures 54 and 59. Abdomen with a very thin basal white line, the remainder of the dorsum gray brown with iridescent scales. A scutum covering the entire dorsum and without the lateral white bands of *marginatus*, in which species the scutum is shorter and narrower. Venter gray, darker than dorsum. Chelicerae, labium, endites, and sternum dark brown. Leg I with femur dark brown, except at distal end above where it is yellow; the proximal half of patella and of tibia light brown and the distal half blackish brown; metatarsus and tarsus evenly brown. There is a weak

fringe of white hairs under the patella and tibia. In the other legs the basal half of the femur is yellow, the distal half dark brown, the patella and tibia are brown, somewhat darker distally, and the metatarsus and tarsus are yellow.

The ocular area occupies 40/92 the length of the carapace, is wider behind than in front (53/58) and with the small eyes 9/13 of the distance between anterior lateral eyes and posterior lateral eyes. These latter form a row 58/71 as wide as the carapace at that level. The chelicerae are powerful, extending forward considerably, with one large prolateral tooth, and a smaller retrolateral tooth, the fang slightly sinuate. The anterolateral corners of the maxillae are drawn out only slightly, not pointed as in *marginatus*. Legs 1423, the first tibia with three pairs of ventral spines, and the metatarsus with two pairs.

The male palp has the patella slightly longer than the tibia, which is armed with an apophysis longer than, but not quite so curved as, in *marginatus*. The embolus is shorter and arises farther from the retrolateral border than in *marginatus*, and is curved ventrad rather than toward the prolateral border.

FEMALE: Total length, 5.9 mm. Carapace, 2.4 mm. long, 1.6 mm. wide.

Besides having the carapace narrower than in the male, the general color is lighter brown, with white hairs distributed more generally over the carapace, some on the clypeus, some in a patch between the rear eyes and with those in the lateral bands sparse so that the bands are not very distinct, yet meet on the declivity behind. The legs are marked as in the male but are lighter; the abdomen is light orange above and yellow beneath. The several pairs of white spots present in *marginatus* are here entirely lacking, and the epigynum has the openings much closer together.

TYPE LOCALITY: Male holotype from Wilton, Connecticut, June 17, 1937. Female allotype from same place June 16, 1938, both collected by G. H. Plumb. Two male paratypes collected with the holotype, and one female paratype collected with the allotype. These specimens were all taken on pine trees. At the Museum of Com-

parative Zoology among unidentified specimens in the Emerton Collection are several females taken at Chatham, Massachusetts, June 10, 1919.

One of the male paratypes (fig. 55) has a carapace which in its lesser width, lighter color, and more diffuse distribution of white scales more nearly resembles the female. Moreover, the chelicerae are far less powerfully developed. This situation is comparable to that in *marginatus* where some males have very powerfully developed chelicerae, and others are more like the females in appearance.

Besides *marginatus* (Walckenaer) and *pinus*, new species, other species belonging to this genus are *aurantius* (Lucas) and *fartilis* (Peckham), both of which were placed by Peckham in *Parnaeus*. In addition, it is probable that *Dendryphantus montanus* Emerton and *Icius nigromaculatus* Keyserling (*D. jeffersoni* Emerton) likewise belong here, rather than in *Metaphidippus*.

Phidippus bryantae, new species

Figures 84, 85

FEMALE: Total length, 12.7 mm.; carapace 4.8 mm. long, 4 mm. wide; abdomen 7.7 mm. long, 5.15 mm. wide.

Carapace dark mahogany brown, darker toward the anterior end, black around the eyes. On the sides extending back from below and behind the rear eyes is a thick band of white scales. The integument is set with many long hairs, sparse on the thoracic part, more numerous on the cephalic, forming dense tufts along the sides below the eyes. Clypeus with long white hairs. Chelicerae brown, slightly iridescent green distally. Sternum orange brown, labium darker. Femora I and II almost all black. Other leg segments dark brown with almost black rings at the ends of the segments, and with many short white scales, and with a dense covering of mixed black and white long hairs. Palpi with thick brushes of white hairs.

Abdomen above with a wide basal band of white continuous on each side with a somewhat narrower lateral band not quite reaching the spinnerets. Between these lateral bands is a tan folium, with small

gray maculations. The borders of the folium are notched by extensions of the lateral white, and just in front of the center is a large triangular white spot. Behind this spot is a series of three pairs of small white dots preceded by an unpaired one. From each of these dots arises a long white hair, and there are many long white hairs mixed with black hairs elsewhere along the dorsum and sides. Venter light gray, with a thin white line of scales extending back from the middle of each lung slit to a little over half the distance to spinnerets.

Ocular area somewhat less than one-half the length of carapace (34/72), narrower in front than behind (38/48), where it occupies 48/58 the width of the carapace at that level. Small eyes much closer to the anterior laterals than to posterior laterals (13/29). Chelicera with a single stout tooth on the retromargin of the fang furrow. Sternum almost twice as long as wide (32/18). Labium longer than wide. Tibiae I and II each with 2-2-2 short ventral spines on distal half of segment. Epigynum as figured.

TYPE LOCALITY: Holotype female taken at New Haven, Connecticut, March 15, 1938 (H. Kiley). This spider has the white bands on the cephalothorax as in *variegatus*, and in some specimens of *audax* (the variety *fasciolatus* of Hentz), but its abdominal pattern is more like that of *mystaceus*.

Phidippus audax (Hentz)

Attus audax HENTZ, 1845, Jour. Boston Soc. Nat. Hist., vol. 5, p. 199, pl. 17, figs. 6-7, ♀ ♂.

Attus fasciolatus HENTZ, 1846, *ibid.*, vol. 5, p. 356, pl. 21, fig. 11, ♀.

Phidippus variegatus KASTON, 1938, Bull. Connecticut Geol. Nat. Hist. Surv., no. 60, p. 197 (not *variegatus* Lucas).

Hentz himself, referring to *fasciolatus*, suggested that this "may prove only a variety of" *tripunctatus* (= *audax*). His figure shows the typical pattern on the abdomen and in addition a band of white on each side of the carapace. The Peckhams (1909) and Bryant (1942) have used the presence of these white bands as a character distinguishing *audax* from *variegatus*. However, I have taken specimens of both the typical and the banded variety, in

Connecticut and in Georgia, which agree in details of the palpus and epigynum. The genitalia in *variegatus* are entirely different.

Phidippus insignarius C. L. Koch

Phidippus insignarius C. L. KOCH, 1846, Die Arachniden, vol. 13, p. 150, pl. 457, fig. 1206, ♂.

Attus nuttallii HENTZ, 1846 (June), Jour. Boston Soc. Nat. Hist., vol. 5, p. 353, pl. 21, fig. 3, ♀.

Hentz's female from Massachusetts was somewhat grayer in appearance than is usual for this species, but the pattern he figured seems distinctive enough, and I have some specimens which almost exactly match it.

Phidippus whitmanii Peckham

Figures 80, 81

Phidippus rufus PECKHAM, 1888, Trans. Wisconsin Acad. Sci., vol. 7, p. 13 (in part, ♂), pl. 2, fig. 2, ♂ (not ♀, pl. 1, fig. 2a) (not *rufus* Hentz).

Phidippus whitmanii PECKHAM, 1909, *ibid.*, vol. 16, p. 394, pl. 29, figs. 6-6b, ♀ ♂; EMERTON, 1909, Trans. Connecticut Acad. Sci., vol. 14, p. 224, pl. 11, fig. 5, pl. 12, fig. 1, ♀ ♂; CHICKERING, 1944, Papers Michigan Acad. Sci., vol. 29, p. 200, figs. 117-121, ♀ ♂.

Phidippus insolens KASTON, 1938, Canadian Ent., vol. 7, p. 16; KASTON, 1938, Bull. Connecticut Geol. Nat. Hist. Surv., no. 60, p. 196 (not *insolens* Hentz).

The male of this species is well known and easily recognized because of its bright red color, but there has been some uncertainty regarding the female. Although Peckham states that the latter is "like the male," I have found it much duller, more brown than red, resembling, though less gray than, the female of *princeps*, and on that account had first thought it to be *insolens*. While males are seldom marked with spots on the abdomen, females usually have faintly indicated white spots. The latter pattern is quite distinct on individuals in the penultimate instar. Here the white spots are surrounded with black, as Peckham reports for the females and as shown in figure 80 here, but, as I have had opportunity to observe in several individuals of both sexes, the ground color is brown rather than red. The males when mature all acquire the bright red color, but the females remain brown, though they may lose the spots.

Besides my own reporting of *Phidippus insolens* (Hentz) from New England, which turned out to be an error, there are a number of specimens from New England localities, identified as *insolens* in the collection of the Museum of Comparative Zoölogy. They are males from Petersham, Blue Hills, and Ipswich, Massachusetts, and a study of these proved they were referable to *princeps* (Peckham). The same applies to the males from "S. Mts." Maryland, Fairfax, Virginia, and Catawba, North Carolina. It is true that Peckham had commented on the male of *insolens* being "most closely related to the male of *brunneus* [= *princeps*]" from which it must be distinguished by slight differences in the palpus," but he gave no distinguishing characters. He supplied a drawing of the palpus of each species, but I have seen no specimens that *quite* fit either one, though many *could* fit either species. The remaining specimens labeled *insolens* in the collection of the Museum of Comparative Zoölogy are not, in my opinion, either that species or *princeps*.

Phidippus princeps (Peckham)

Figures 82, 83

Attus princeps PECKHAM, 1883, Description of new and little known spiders of the family Attidae of the United States, p. 18, pl. 2, fig. 14, ♀.

Phidippus brunneus EMERTON, 1891, Trans. Connecticut Acad. Sci., vol. 8, p. 225, pl. 16, fig. 2, ♀; EMERTON, 1909, *ibid.*, vol. 14, p. 224, pl. 11, fig. 1, ♂.

Phidippus princeps BRYANT, 1942, Amer. Midland Nat., vol. 28, p. 701.

Bryant has shown that Emerton's *brunneus* is the same as *princeps*. From Peckham's descriptions under both names in 1909 it is obvious that the females with spots on the abdomen could also fit his description of *insolens*. As pointed out above, nearly all the males labeled *insolens* in the collection of the Museum of Comparative Zoölogy really belong under *princeps*.

In females the abdomen may be light brown to orange, but there is a greater amount of gray pubescence than in the males, and this gray enables them to be distinguished from the very similar *whitmanii* females. The females of *princeps*

and *whitmanii* can be easily distinguished by their epigyna, new drawings of which are supplied here.

Evarcha hoyi (Peckham)

Figures 66–68

Attus hoyi PECKHAM, 1883, Description of new or little known spiders of the family Attidae of the United States, p. 7, pl. 1, fig. 5, ♂.

Attus pinus PECKHAM, 1883, *op. cit.*, p. 20, pl. 2, fig. 16, ♀.

Hasarius hoyi EMERTON, 1891, Trans. Connecticut Acad. Sci., vol. 8, p. 243, pl. 21, figs. 2–2g, ♀ ♂.

Pellenes hoyi PECKHAM, 1909, Trans. Wisconsin Acad. Sci., vol. 16, p. 557, pl. 48, figs. 4–4d, ♀ ♂.

Evarcha blanchardi [sic] BRYANT, 1941, Psyche, vol. 48, p. 139 (not *blanchardi* Scopoli).

In 1905 Banks published an indication that "our one species" which could be included in Simon's genus *Evarcha* was probably the European *paleata* (which I take to be a printer's error for *falcata*). In 1910 he definitely listed *pinus* and *hoyi* as well as his own *latens* (1892) as synonyms of *falcata* Clerck (= *blanchardi* Scopoli), and in 1941 Bryant did likewise, besides discussing her reasons for so doing. Simon in his "Arachnides de France" (1937, vol. 6, p. 1271), in a footnote concerning *E. blanchardi*, expressed astonishment that this species should have been omitted from the Peckhams' work as he had specimens from Oregon, Georgia, and Colorado. Bryant stated, "Peckham did know it, but he failed to identify it with the common European species." However, I think she misinterpreted Simon's remarks, for he had not indicated that *hoyi* was a synonym of *blanchardi*. He undoubtedly considered that there were two species in North America and that the Peckhams had simply omitted one of them. Further support of this can be found in his "Histoire naturelle des araignées" (1903) where, in the same paragraph on page 703 of volume 2, he cites *both* species as from North America. Petrunkevitch (1911) omitted *blanchardi* from his "Catalog."

Whether we have two species in America or only one, it is certain that *hoyi* is not the same as *blanchardi*. Published figures of the epigynum of *hoyi* show that the structure as a whole is much wider, the open-

ings¹ are larger, and they extend farther anteriorly than is the case in *blanchardi* (as shown in "Arachnides de France," fig. 2022). Likewise, in the palp of *hoyi* there is a thin, spine-like, dark embolus, while in *blanchardi* the embolus looks double, or as though paralleled by a conductor (fig. 2015 in "Arachnides de France"), though actually these two darkly pigmented, sclerotized "ribs" are connected by a membranous portion (fig. 63). There is a difference in the tibial apophyses also, that of *hoyi* being somewhat longer, as well as wider distally. I have supplied illustrations for comparison, these new drawings of *blanchardi* having been made from specimens collected at Basel, Switzerland. Besides the differences in the genitalia, *hoyi* averages somewhat smaller, 10 males ranging from 4.3 to 5.5 mm., and 13 females from 4.6 to 6.3 mm. In *blanchardi* males range from 5 to nearly 7 mm., and females from 6.5 to almost 8 mm. (according to Blackwall, Simon, and O. P.-Cambridge).

Habronattus viridipes (Hentz)

Figures 48, 49, 69

Attus viridipes HENTZ, 1846, Jour. Boston Soc. Nat. Hist., vol. 5, p. 362, pl. 22, fig. 5, ♂.

Attus peregrinus PECKHAM, 1883, Description of new or little known spiders of the family Attidae of the United States, p. 17, pl. 2, figs. 13–13a, ♂.

Habrocestum peregrinum PECKHAM, 1888, Trans. Wisconsin Acad. Sci., vol. 7, p. 61 (in part), pl. 4, fig. 44a, ♂ (not fig. 44 or 44b); EMERTON, 1891, Trans. Connecticut Acad. Sci., vol. 8, p. 245, pl. 20, figs. 6–6b, ♀ ♂.

Habrocestum viridipes PECKHAM, 1888, Trans. Wisconsin Acad. Sci., vol. 7, p. 60 (in part), pl. 4, fig. 43, ♂ (not ♀, fig. 43a).

Pellenes viridipes EMERTON, 1909, Trans. Connecticut Acad. Sci., vol. 14, p. 228, pl. 12, figs. 5–5a, ♀ ♂.

Habronattus peregrinus CHICKERING, 1944, Papers Michigan Acad. Sci., vol. 29, p. 158 (♀ only), fig. 33, ♀ (not ♂).

For a long time this species has been considered as two, *peregrinus* and *viridipes*, and has also at times been confused with *calcaratus*. While in life, leg I of *viridipes* is light green. This color fades after a short

¹ Peckham (1909) speaks of the epigynum being "unique, having two large anterior openings, and two other openings behind, near the edge." This statement is based upon a misinterpretation, as in Emerton's drawing, for the anterior circular areas are not openings but areas covering the receptacula.

time in alcohol, and in all probability Peckham's original description of *peregrinus* was made from a faded type specimen. At any rate comparison of the type with material quite definitely known to be *viridipes* proves them identical. In 1888 Peckham, in his redescription, figured and referred to two different varieties as *peregrinum*. His "variety 1," figure 44a, is like the type with patella III showing the spur arising from near the base of the distal expansion, but his "variety 2," figure 44b, shows the spur arising from the upper ridge of the enlargement, and his figure 44 of the palp represents the species which was later described by Banks as *calcaratus*. In the same paper (1888) Peckham figured the palp of *viridipes* (fig. 43), but his description included no mention of the enlarged patella III or the green front legs. In fact virtually the entire description is of a female belonging to another species.

In his 1909 revision of the family Peckham separated *peregrinus* from *viridipes* on the basis of the former's having solid bands on the abdomen, leg IV longer than I, and tibia I with non-spatulate spines, and the latter's having notched bands, leg IV shorter than I, and tibia I with spatulate spines. I have found that all the males identified as *peregrinus* in the collection of the Museum of Comparative Zoölogy have spatulate spines. While some individuals of *viridipes* have the black and white abdominal bands notched, others show them solid as in the females. I find the lengths of legs I and IV to vary somewhat, but they are nearly the same length.

The palpal organ resembles that of *calcaratus* but the embolus arises farther forward on the retrolateral side of the bulb, and the tibial apophysis is not quite so finely drawn out as in that species. I have taken females mating with males quite definitely *viridipes*, and find that they are identical not only with females labeled *viridipes*, but also with those labeled *peregrinum*, in the collection of the Museum of Comparative Zoölogy. The epigynum has a nearly parallel-sided tubular central structure which is much narrower than in any of our other eastern species.

Habronattus calcaratus (Banks)

Figures 46, 47, 70

Habrocestum peregrinum PECKHAM, 1888, Trans. Wisconsin Acad. Sci., vol. 7, p. 61 (in part), pl. 4, figs. 44, 44b, ♂ (not fig. 44a; not *peregrinus* Peckham 1883).

Pellenes calcaratum BANKS, 1904, Jour. New York Ent. Soc., vol. 12, p. 117, pl. 6, figs. 17, 19, ♀ ♂.

Habronattus peregrinus CHICKERING, 1944, Papers Michigan Acad. Sci., vol. 29, p. 158 (♂ only), figs. 29-32, ♂ (not ♀).

In his 1909 revision of the family Peckham correctly describes the spur on patella III as coming off from the upper ridge of the enlargement, a condition he had previously (1888) figured for "variety 2" of his *peregrinum*. (His "variety 1" has the spur arising from near the base and is identical with *viridipes*.) Peckham also refers to the abdomen of the male as "spotted," and I have seen specimens from Florida as well as from Michigan which show median white spots one behind the other. But in the specimens from Connecticut and Massachusetts the spots are joined and more or less indistinctly continued before and behind to form a median band of white. The palpal organ resembles that of *viridipes* but has the embolus arising much nearer the proximal end of the bulb, and the tibial apophysis is drawn out more finely.

The female has a pattern more like that of the female *borealis*, and Peckham states that the two species are indistinguishable in this sex. However, I find that the proportions of the epigynal structures are such as to make separation not difficult. Drawings of both are here supplied for comparison. The central conical structure of *calcaratus* is much broader than in *viridipes*, but relatively longer (as is the entire epigynum) than in *borealis*.

Habronattus coronatus (Hentz)

Figures 51, 52

Attus coronatus HENTZ, 1846, Jour. Boston Soc. Nat. Hist., vol. 5, p. 361, pl. 22, fig. 1, ♂.

Pellenes coronatus PECKHAM, 1909, Trans. Wisconsin Acad. Sci., vol. 16, p. 545, pl. 45, figs. 3-3d, ♀ ♂.

This is the only other species occurring in New England which (besides *viridipes* and *calcaratus*) has leg III modified. The

distal end of femur III has a shiny boss, just proximad of which is a tuft of hairs on a prominence; patella III has a stout conical process before the distal end and a short spur at the end; and tibia III is greenish in color. The female is similar in general appearance to *calcaratus* and *borealis*, but may be distinguished by the epigynum in which the central conical structure is proportionately much larger than in those species.

Habronattus decorus (Blackwall)

Figures 53, 71, 72

Salcticus decorus BLACKWALL, 1846 (Jan.), Ann. Mag. Nat. Hist., vol. 17, p. 34, ♂.

Attus roseus HENTZ, 1846 (June), Jour. Boston Soc. Nat. Hist., vol. 5, p. 362, pl. 22, fig. 4, ♂.

Habrocestum splendens EMERTON, 1891, Trans. Connecticut Acad. Sci., vol. 8, p. 244, pl. 20, figs. 5-5d, ♂.

Pellenes roseus EMERTON, 1909, *ibid.*, vol. 14, p. 229, pl. 12, fig. 2, ♀ ♂; PECKHAM, 1909, Trans. Wisconsin Acad. Sci., vol. 16, p. 567, pl. 48, figs. 11-11b, ♂; KASTON, 1938, Bull. Connecticut Geol. Nat. Hist. Surv., no. 60, p. 196.

Pellenes splendens PECKHAM, 1909, Trans. Wisconsin Acad. Sci., vol. 16, p. 569, pl. 47, fig. 2, pl. 48, figs. 8-8a, ♀ ♂; COMSTOCK, 1912, Spider book, p. 692.

Habronattus decorus CHICKERING, 1944, Papers Michigan Acad. Sci., vol. 29, p. 155, figs. 25-28, ♀ ♂.

That *splendens* Peckham is the same as *roseus* Hentz, as indicated by Chickering, is a conclusion to which I myself was led upon studying the type of *splendens* at the Museum of Comparative Zoology several years ago. All the females identified (by Emerton) as *roseus* are identical with the type female of *splendens*, not only in pattern but also in structure of the epigynum. In 1909 Peckham supplied drawings of the palpi of both *splendens* and *roseus*. The chief difference would seem to be in the structure of the tibial apophysis, but his drawings do not quite fit any of the specimens examined by me, and I have found males labeled *roseus* exactly matching those labeled *splendens*. On the basis of its dark iridescent cephalothorax, *splendens* was separated from *roseus*, which is stated to have white scales and no iridescence. I have found, however, that in examining a large enough series one may see all gradations between these two conditions, according

to how much the specimen has had the pubescence rubbed off. The same applies to the distinctness of the abdominal pattern.

Nebridia borealis (Banks)

Figures 77-79

Sidusa borealis BANKS, 1904, Jour. New York Ent. Soc., vol. 12, p. 116, pl. 6, fig. 18, ♂; PECKHAM, 1909, Trans. Wisconsin Acad. Sci., vol. 16, p. 593, pl. 47, fig. 10, ♂.

It is my belief that this species belongs in *Nebridia* Simon rather than in *Sidusa* where it was placed by Banks. The Peckhams had not seen a specimen but merely copied Banks' description, which, however, fails to mention many characters of generic importance in this group. In *Sidusa* the carapace is widest at the first row of eyes, the ocular quadrangle occupies three-fifths of the length of the carapace, the anterior eye row is slightly procurved, the posterior eyes form a row as wide as the carapace at that place, and metatarsus I has lateral as well as ventral spines. However, in *borealis* the posterior eyes form a row which is narrower than the carapace, the latter is widest just behind these eyes, the ocular quadrangle occupies less than half the length of the carapace, the anterior eye row is recurved, and metatarsus I is devoid of lateral spines.

GERTSCHIA, NEW GENUS

The carapace is flat and low, its greatest height being about one-third the length, its width from two-fifths to two-thirds the length. The ocular quadrangle occupies two-thirds to almost three-fourths the length of the carapace and is approximately as wide in front as behind where it occupies almost, or quite, four-fifths the width of the carapace at that level. The small eyes of the second row are much nearer the anterior lateral eyes than the posterior lateral eyes. The sternum is oval, about one and a half times as long as broad, truncate in front so that the anterior coxae are separated by their width. The labium is slightly wider than long, and the fang furrow of the chelicera has a bicuspid tooth. While the carapace is devoid of a constriction the abdomen has one about one-third the length back.

GENOTYPE: *Synemosyna noxiosa* Hentz.

This genus is erected in the belief that Hentz's *S. noxiosa* differs sufficiently from *picata* and *americana* to warrant its removal from the genus *Peckhamia* in which it has been placed by Peckham and later American authors, who have erroneously considered it a synonym of *scorpionia*. In the discussion of his newly erected genus *Peckhamia*, Simon (1903, "Histoire naturelle des araignées," vol. 2, p. 496) calls attention to the convex pars cephalica and the very distinct constriction behind the eyes, both characters being well shown in his figure 584 of the genotype, *scorpionia*. While from the proportions of the abdomen the drawing could well be of the same species figured by Hentz as *scorpionia*, neither drawing fits what Peckham, Emerton, *et al.*, have been calling *scorpionia*. The spider referred to by these and later authors has a much shorter abdomen and, as in Hentz's *noxiosa*, no constriction on the cephalothorax. This makes it much less ant-like than the true *Peckhamia* species (compare figs. 73 and 74).

The species described by Gertsch in 1934 as *Peckhamia idahoana* undoubtedly belongs in *Gertschia*. It differs from *noxiosa* in having leg I rather than leg IV longest, in having the retromarginal tooth simple rather than bicuspid, in having three pairs of spines under tibia I rather than two or three spines, and in having a simple tibial apophysis, rather than a double-pronged one.

To the genus *Peckhamia* belong: *picata* (Hentz), *americana* (Peckham), and *semi-nola* Gertsch, besides the genotype. These spiders differ from *Gertschia* in that the carapace is convex in the cephalic region, the greatest height about two-fifths the length, and is narrower, with the greatest width barely more than half the length. The length of the ocular quadrangle is from half to three-fifths that of the carapace, and it is very slightly narrower in front than behind, where it is virtually the width of the carapace at that level. The sternum is over twice as long as wide, narrowed in front so that the anterior coxae are separated by less than the width of one, and the labium is as long as wide.

Both *Peckhamia* and *Gertschia* belong in that division of the family, the Fissidentati, in which the retromargin of the chelicera has a tooth divided into two or more cusps. Yet *G. idahoana* is unidentate, and I have seen specimens of *P. picata* that were unidentate. Many others of our eastern genera are quite variable in this respect. Though *Peckhamia* was first included by Simon in the Pluridentati, it was later transferred to the Fissidentati, to which Petrunkevitch refers our *Hentzia*, *Nebidia*, *Onondaga*, *Maevia*, and *Zygoballus*. At first, following Simon, Petrunkevitch (in the "Systema araneorum," 1928) had considered *Hentzia* unidentate. But Comstock (1912) had shown that *H. palmarum* is fissidentate, and in 1930 Petrunkevitch found for both *palmarum* and *mitrata* that while most males may be unidentate, other males and all females are fissidentate. "Close inspection of most males of different species reveals that the tooth has a slight lateral projection at [the] end, which can be interpreted only as a rudiment of the second cusp present in females." Of the individuals of *palmarum* and *mitrata* examined by me, the females were all fissidentate and the males unidentate except for one male of *mitrata* which was fissidentate on one chelicera and unidentate on the other. I find *Maevia vittata* truly fissidentate and *Nebidia borealis* likewise, although Banks, writing of the retromargin in *borealis*, refers to "one simple distinct tooth." The genus *Fuentes*, presumably fissidentate, has had removed from it to *Onondaga* the species *lineata*, which I find often unidentate, and I note that Comstock found likewise for *taeniola*, which had been removed to *Metacryba*. In *Zygoballus nervosus* I find both sexes unidentate, while in *Z. bettini* the females are fissidentate and the males unidentate, a situation similar to that in *Hentzia*.

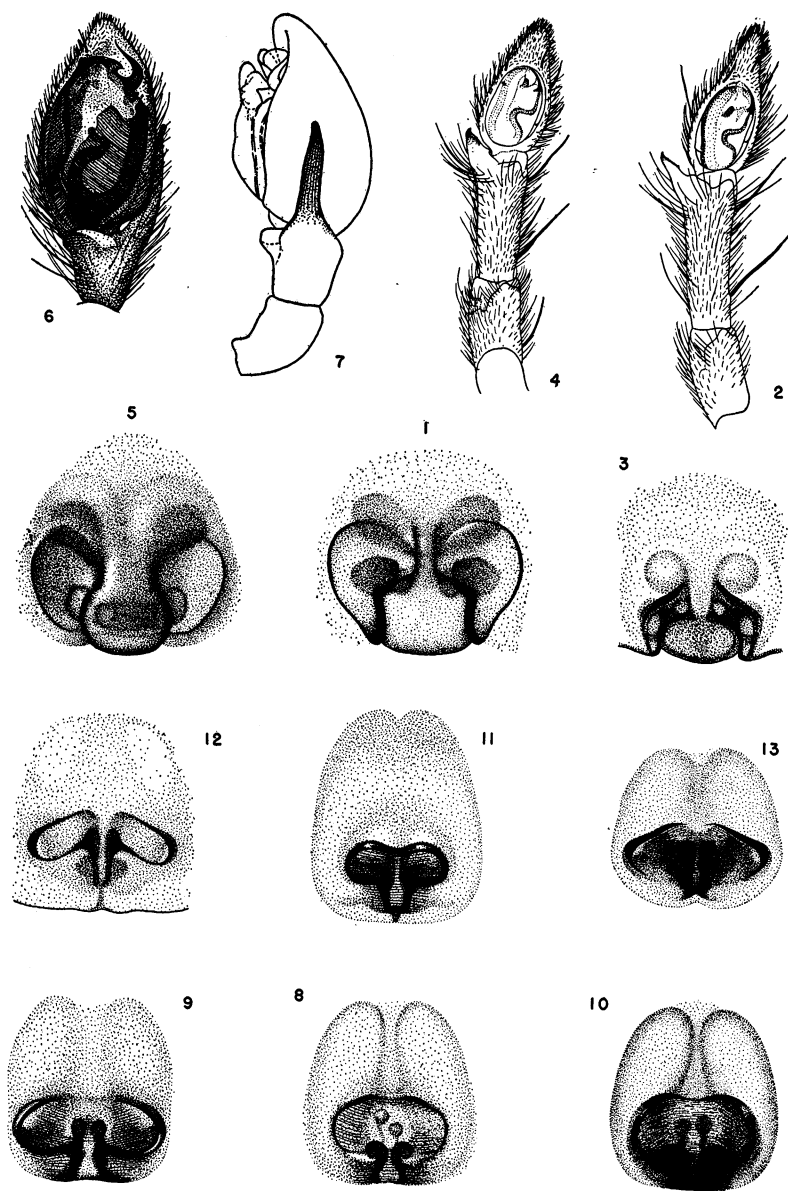
The genera placed in the Pluridentati include our *Ballus*, *Synemosyna*, and *Myrmarachne*. Yet all the specimens of *B. youngii* I have examined are unidentate. Comstock's specimens of *S. formica* had bicuspid or tricuspid teeth, hence were fissidentate. Several examined by me were

fissidentate, some were pluridentate, and one was fissidentate on one chelicera and pluridentate on the other! I find specimens of *M. hentzi* to be unidentate.

Most of our genera have been placed in the Unidentati. But the Peckhams called attention to the fact that in *Icius*, *wickhamii* is fissidentate, and in *Thiodina* there is considerable variation. "In some the tooth is compound, in others single, and in

a few there are several teeth. Even the two falces in the same specimen are occasionally unlike." The Peckhams state that the tooth is lacking completely in *Euophrys*, but I have shown that there is one present in *E. nearctica*, and find that the type female of *E. diminuta* also has one.

Obviously the nature of the chelicerar armature can have only a limited application in this family.



- Fig. 1. *Drassodes auriculoides* Barrows, epigynum.
 Fig. 2. Idem, palpus, ventral aspect.
 Fig. 3. *Drassodes robinsoni* Chamberlin, epigynum.
 Fig. 4. *Drassodes neglectus* (Keyserling), palpus, ventral aspect.
 Fig. 5. *Geodrassus gosiutus* (Chamberlin), epigynum.
 Fig. 6. *Zelotes inheritus*, new species, palpus, ventral aspect.
 Fig. 7. Idem, palpus, retrolateral aspect.
 Fig. 8. *Sergiolus decoratus*, new species, epigynum.
 Fig. 9. *Sergiolus variegatus* (Hentz), epigynum.
 Fig. 10. *Sergiolus decipiens* Chamberlin, epigynum. Florida specimen.
 Fig. 11. *Sergiolus unimaculatus* Emerton, epigynum.
 Fig. 12. *Sergiolus famulus* Chamberlin, epigynum.
 Fig. 13. *Sergiolus meretrix* Chamberlin, epigynum. Alabama specimen.

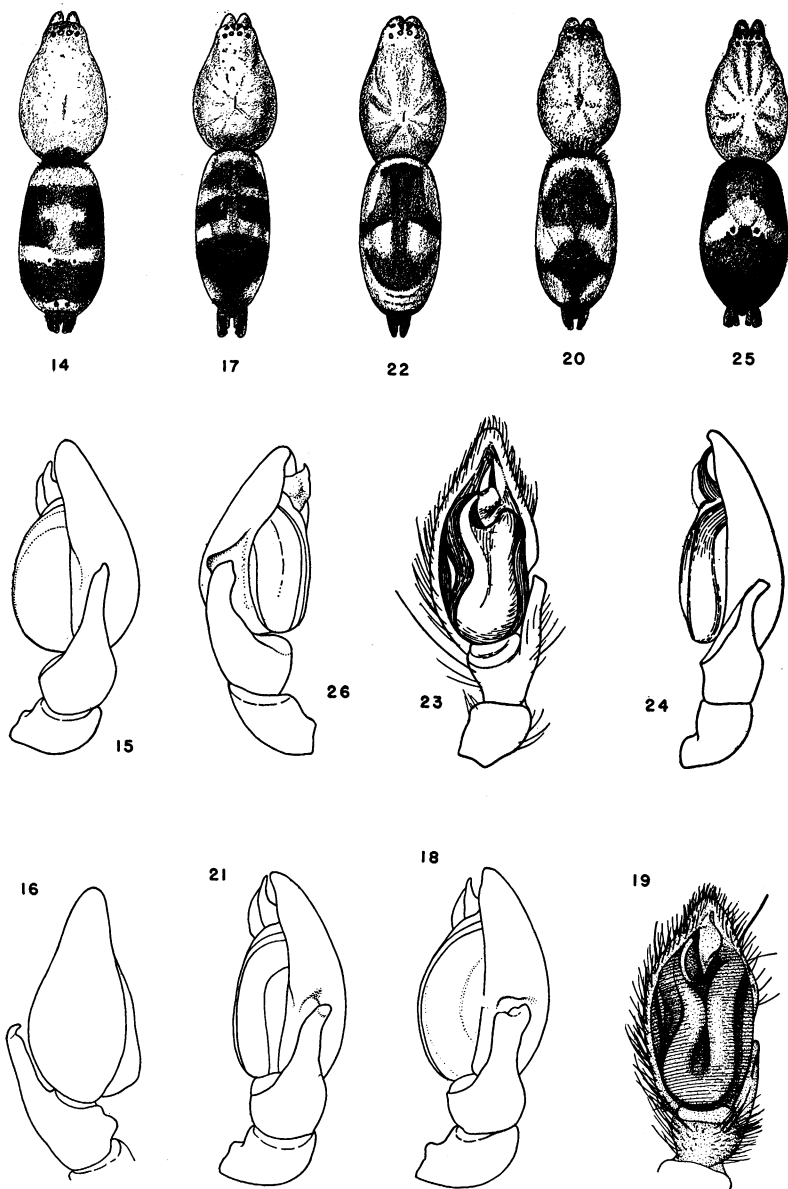
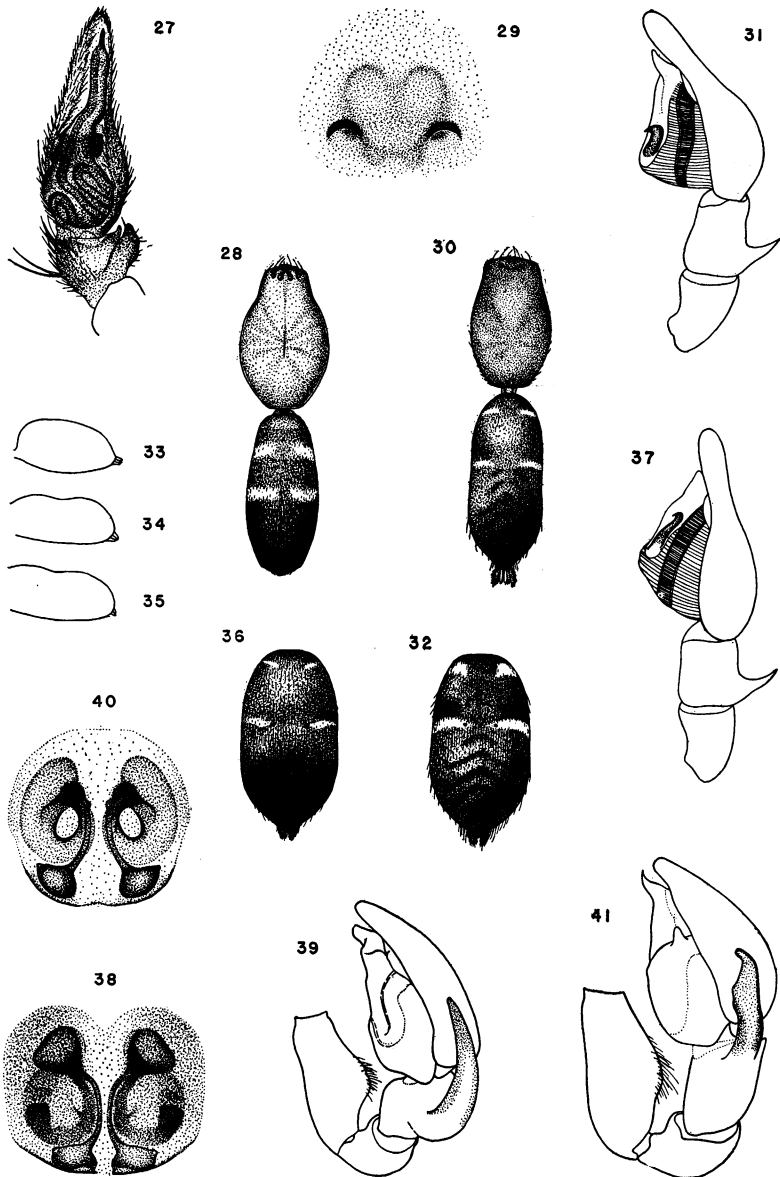
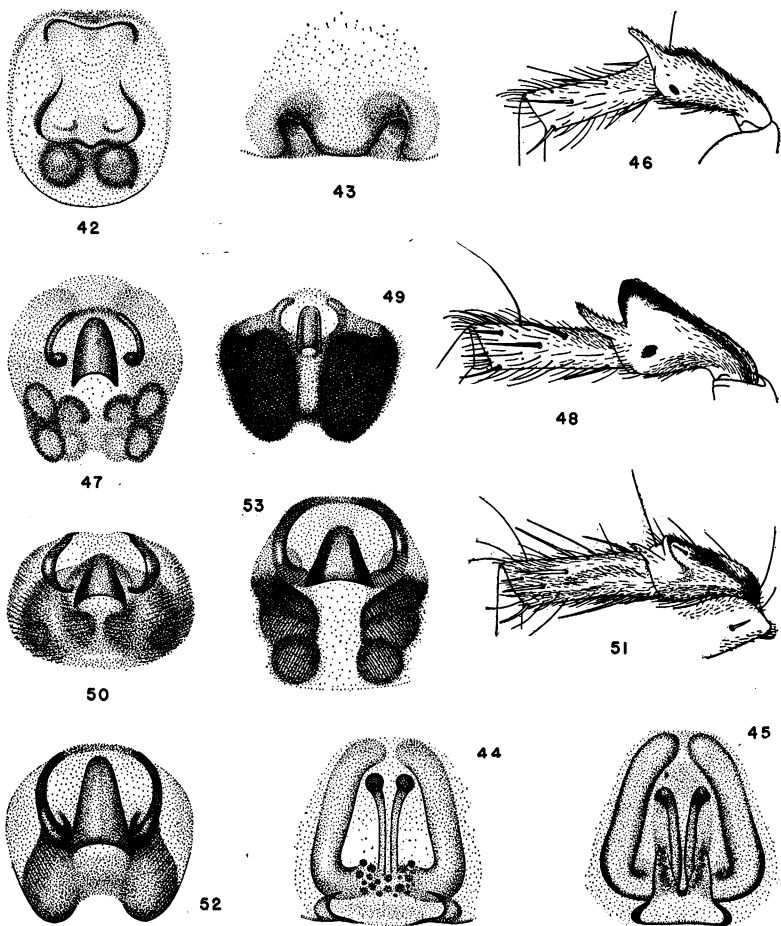


Fig. 14. *Sergiolus variegatus* (Hentz), dorsal view of male.
 Fig. 15. Idem, palpus, retrolateral aspect.
 Fig. 16. Idem, palpus, dorsal aspect.
 Fig. 17. *Sergiolus decoratus*, new species, dorsal view of male.
 Fig. 18. Idem, palpus, retrolateral aspect.
 Fig. 19. Idem, palpus, ventral aspect.
 Fig. 20. *Sergiolus famulus* Chamberlin, dorsal view of male.
 Fig. 21. Idem, palpus, retrolateral aspect.
 Fig. 22. *Sergiolus meretrix* Chamberlin, dorsal view of male. Type specimen.
 Fig. 23. Idem, palpus, ventral aspect. Same specimen.
 Fig. 24. Idem, palpus, retrolateral aspect. Same specimen.
 Fig. 25. *Sergiolus unimaculatus* Emerton, dorsal view of male. Type specimen.
 Fig. 26. Idem, palpus, retrolateral aspect. Same specimen.



- Fig. 27. *Castianeira gertschi*, new species, palpus, ventral aspect.
 Fig. 28. Idem, dorsal view of male.
 Fig. 29. Idem, epigynum.
 Fig. 30. *Micaria aurata* (Hentz), dorsal view of male.
 Fig. 31. Idem, palpus, lateral aspect.
 Fig. 32. Idem, female, dorsal view of abdomen.
 Figs. 33, 34, 35. Idem, abdomens of different females, from side, to show variation in amount of constriction.
 Fig. 36. *Micaria longipes* Emerton, female, dorsal view of abdomen.
 Fig. 37. Idem, palpus, lateral aspect. Type specimen.
 Fig. 38. *Phrurotimpus alarius* (Hentz), epigynum.
 Fig. 39. Idem, palpus, retrolateral aspect.
 Fig. 40. *Phrurotimpus borealis* (Emerton), epigynum.
 Fig. 41. Idem, retrolateral aspect.



- Fig. 42. *Zelotes inheritus*, new species, epigynum.
 Fig. 43. *Clubiona elizabethae*, new species, epigynum.
 Fig. 44. *Micaria aurata* (Hentz), epigynum.
 Fig. 45. *Micaria longipes* Emerton, epigynum.
 Fig. 46. *Habronattus calcaratus* (Banks), patella and tibia III of male.
 Fig. 47. Idem, epigynum. Type specimen.
 Fig. 48. *Habronattus viridipes* (Hentz), patella and tibia III of male.
 Fig. 49. Idem, epigynum.
 Fig. 50. *Habronattus borealis* (Banks), epigynum.
 Fig. 51. *Habronattus coronatus* (Hentz), patella and tibia III of male.
 Fig. 52. Idem, epigynum.
 Fig. 53. *Habronattus decorus* (Blackwall), epigynum

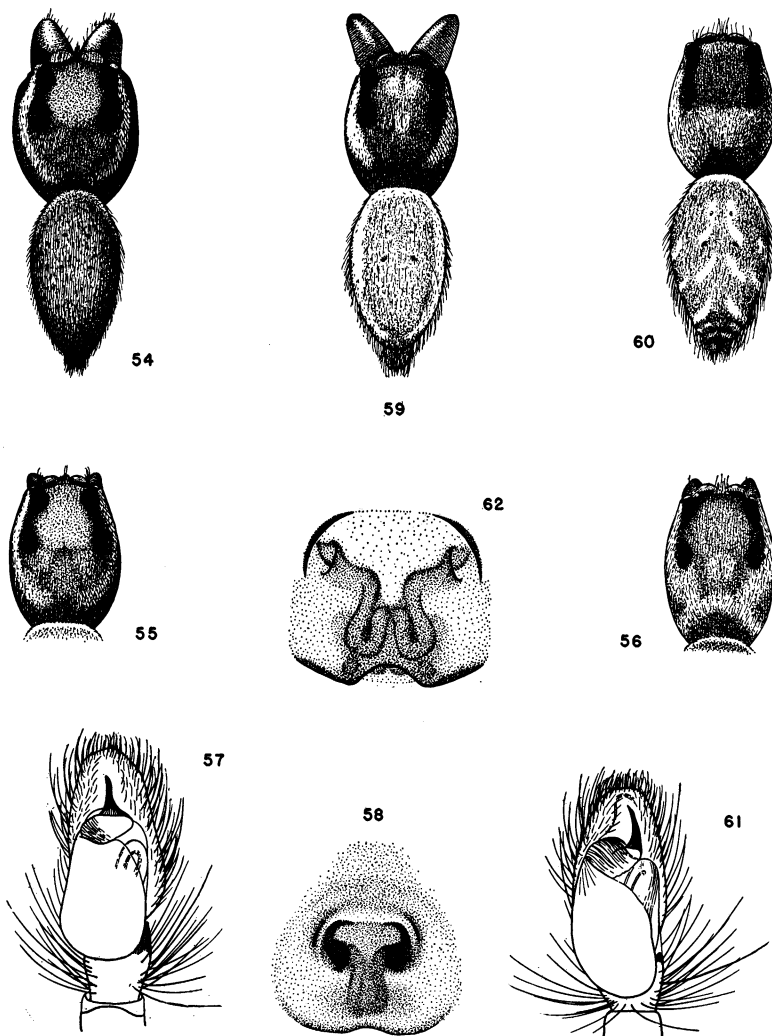


Fig. 54. *Paraphidippus pineus*, new species, dorsal view of male.

Fig. 55. Idem, carapace of another male.

Fig. 56. Idem, carapace of female.

Fig. 57. Idem, palpus, ventral aspect.

Fig. 58. Idem, epigynum.

Fig. 59. *Paraphidippus marginatus* (Walckenaer), dorsal view of male.

Fig. 60. Idem, dorsal view of female.

Fig. 61. Idem, palpus, ventral aspect.

Fig. 62. Idem, epigynum.

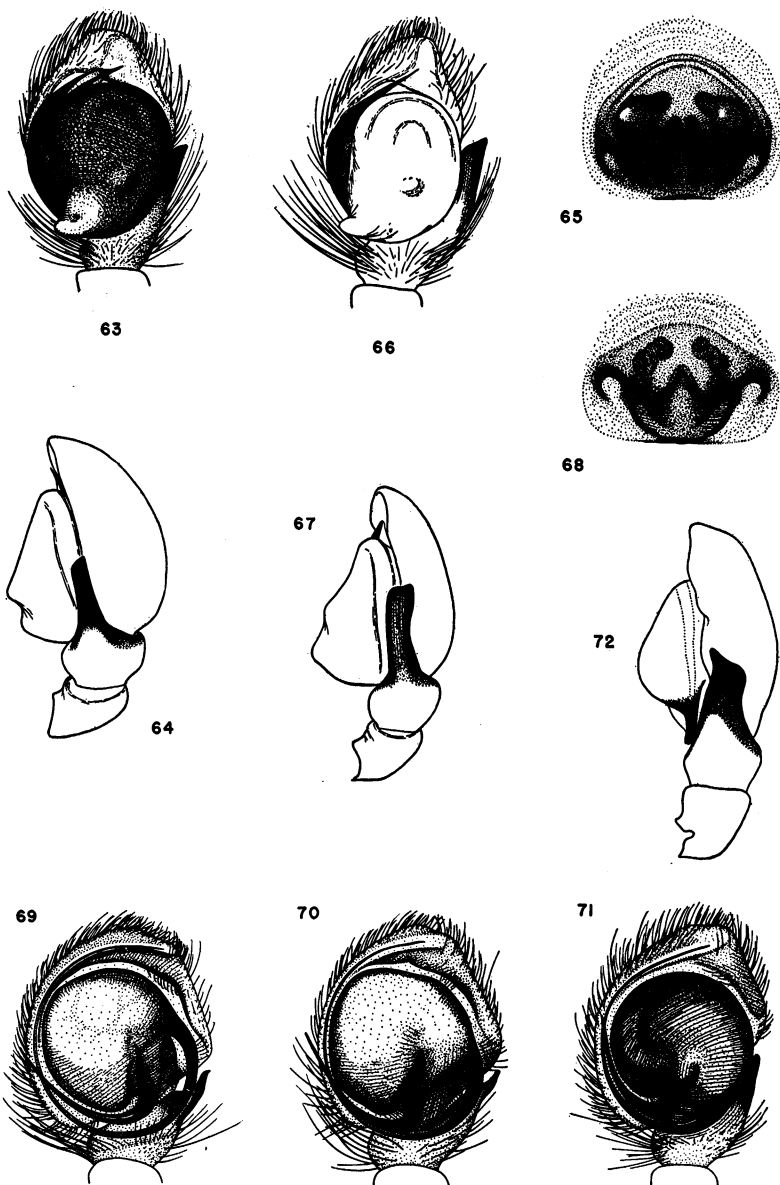
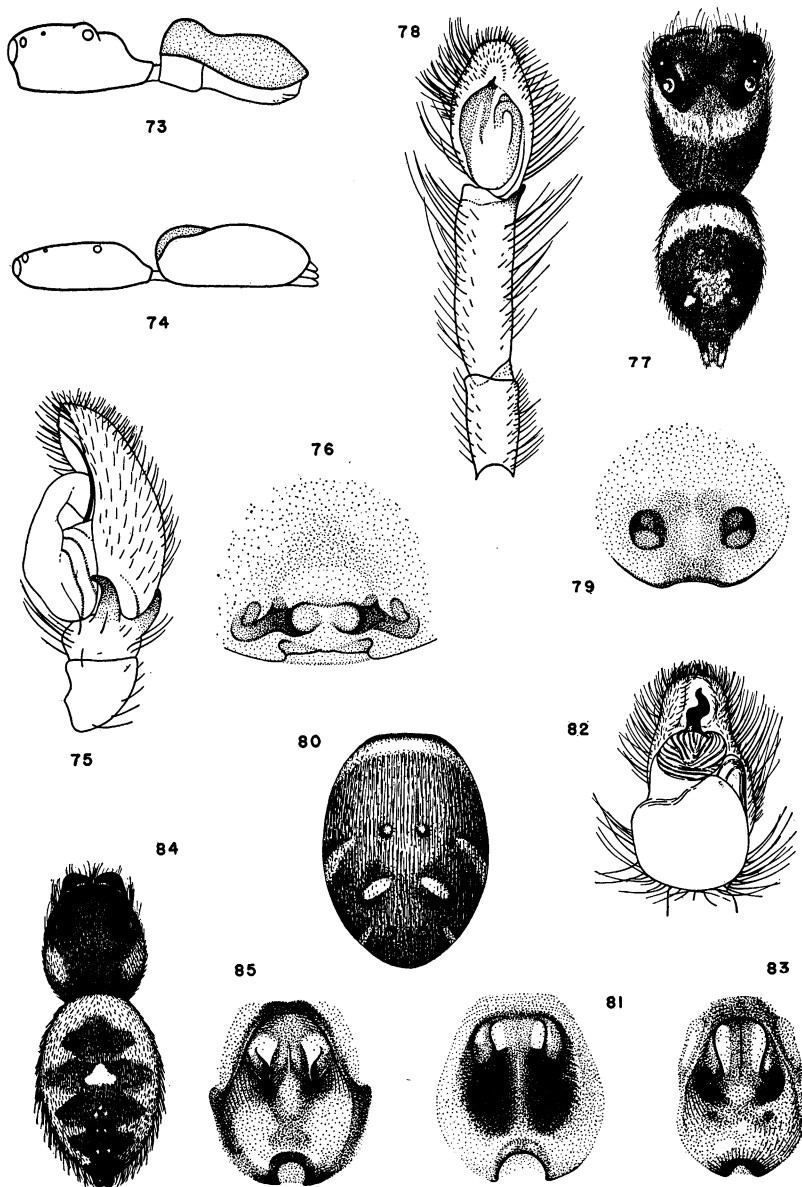


Fig. 63. *Evarcha blancardi* (Scopoli), palpus, ventral aspect.
 Fig. 64. Idem, palpus, retrolateral aspect.
 Fig. 65. Idem, epigynum.
 Fig. 66. *Evarcha hoyi* (Peckham), palpus, ventral aspect.
 Fig. 67. Idem, palpus, retrolateral aspect.
 Fig. 68. Idem, epigynum.
 Fig. 69. *Habronattus viridipes* (Hentz), palpus, ventral aspect.
 Fig. 70. *Habronattus calcaratus* (Banks), palpus, ventral aspect.
 Fig. 71. *Habronattus decorus* (Blackwall), palpus, ventral aspect.
 Fig. 72. Idem, palpus, retrolateral aspect.



- Fig. 73. *Peckhamia picata* (Hentz), lateral aspect of male.
 Fig. 74. *Gertschia noxiosa* (Hentz), lateral aspect of male.
 Fig. 75. Idem, palpus, retrolateral aspect.
 Fig. 76. Idem, epigynum.
 Fig. 77. *Nebridia borealis* (Banks), dorsal view of male.
 Fig. 78. Idem, palpus, ventral aspect.
 Fig. 79. Idem, epigynum.
 Fig. 80. *Phidippus whitmanii* Peckham, immature male, dorsal view of abdomen.
 Fig. 81. Idem, epigynum.
 Fig. 82. *Phidippus princeps* (Peckham), palpus, ventral aspect.
 Fig. 83. Idem, epigynum.
 Fig. 84. *Phidippus bryantae*, new species, dorsal view of female.
 Fig. 85. Idem, epigynum.

