

Florida, were collected by A. R. Brady from under leaves and logs, and by sifting leaf litter. The following statements by collectors will give some idea of the variety of situations in which this species occurs. Arkansas: cotton field pitfall trap, Grassy Lake; Florida: under leaves and logs, wet area, edge of pond, pitfall under magnolia, woodyard hammock, pitfall under live oak in lawn, pitfall in hickory sweetgum hammock, berlese funnel, magnolia litter, leaf mould in dried up cypress-hardwood, leaf mould in creek floodplain, cypress bay-pine flatwoods margin, wet sandy banks of stream, black mucky lake shore; Illinois: leaf mould, woods, spring area, pitfall, wooded lowland, floodplain; Missouri: moist shady leaf mould, lake margin, trap-open woods, on face of sandstone cliff; North Carolina: bottomland pine with hardwood-pitfall; Virginia: Dismal swamp, reservoir; Maryland: swampy area.

Pirata bryantae Kurata

Figs. 175-180

Pirata bryantae Kurata, 1944, Occ. Pap. Roy. Ontario Mus. Zool., 8:3-4, pl. 2, figs. 1-4 (female, Favourable Lake, Ontario, R.O.M.Z. 7073, examined).

Diagnosis.—*Pirata bryantae* is a small, dark spider that looks more like a dark *Arctosa* than a *Pirata*. The carapace is dark in both sexes and lacks the tuning-fork pattern. The epigynum (Fig. 180) also resembles that of some *Arctosa*, but the palpus (Fig. 177) has a median apophysis that is somewhat like those of *P. minutus* or *P. sedentarius*.

Description of holotype.—The holotype, a female, has a carapace 2.25 mm long and 1.55 mm wide. It is now dark and faded, almost black, so it no longer fits Kurata's description (Fig. 175). A hastate mark is visible on the abdomen and the legs show some signs of banding.

Description of female.—From Spring Creek Basin, Alberta. Carapace 2.30 mm long, 1.50 mm wide; color and markings of body and legs similar to the male. Anterior eye row much narrower than the posterior median row, strongly procurved, anterior median eyes larger than the anterior laterals, closer to the anterior laterals than to each other. Lower margin of the furrow of the chelicerae armed with three teeth, middle tooth the largest, the tooth nearest the base of the fang the smallest.

Legs 4123.

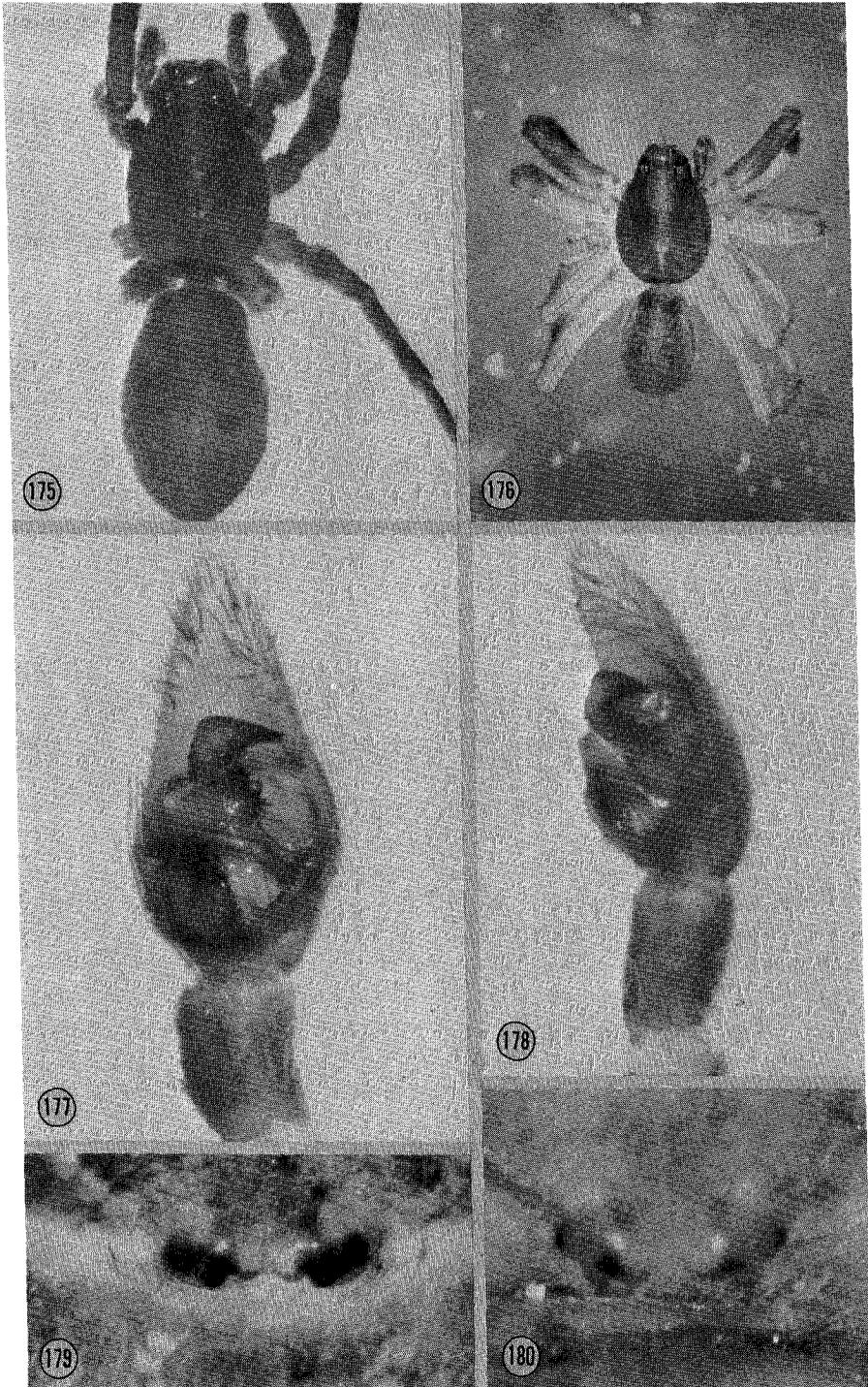
Description of male.—From Spring Creek Basin, Alberta, ca. 53° 30' N, 117° 40' W, 12-VI-1969. Carapace 2.20 mm long, 1.65 mm wide, almost black, shining with a sparse covering of white 'hairs' over the head region and around the lateral edge. Dorsum also almost black, with a sparse covering of short white 'hairs' which appear to be denser over the brown hastate mark; a pair of light colored spots behind the middle of the hastate mark and two pairs posterior to them. Sternum, epigastric region and venter almost black; anterior and posterior spinnerets almost black, posteriors twice as long as the anteriors. Labium and endites dark proximally, becoming yellow distally; coxae I dusky beneath, coxae II, III and IV yellow. Lower margin of the furrow of the chelicerae with three equally spaced teeth, middle tooth slightly larger than the medial, the tooth next to the base of the fang the smallest. Anterior eye row considerably narrower than the posterior median row, distinctly procurved; the anterior median eyes are larger than the anterior laterals and are nearer to them than to each other.

All palpal segments, except the tip of the cymbium, and femora, patellae and tibiae I and II dark like the carapace; femora I and II with a blue iridescence; all other leg segments lighter, basically yellow with dusky annulae.

Legs 4123.

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Palpus	0.65	0.34	0.32		0.72	2.03
Leg I	1.38	0.68	1.13	1.20	0.80	5.19
Leg II	1.35	0.62	1.00	1.12	0.75	4.84
Leg III	1.33	0.55	0.93	1.25	0.70	4.76
Leg IV	1.85	0.70	1.53	2.03	0.97	7.08

Description of two males.—From Lady Lake, Saskatchewan. Carapace and dorsum black; dorsal head region with grey 'hairs.' Carapaces 2.05 mm long, 1.35 mm wide and 2.05 mm long, 1.55 mm wide. Anterior eye row narrower than the posterior median row, procurved. Sternum and venter black. All coxae and trochanters yellow ventrally; palpal



Figs. 175-180.—*P. bryantae*: 175, holotype female, Ontario; 176, male, Saskatchewan, Lady Lake; 177-178, palpus, Saskatchewan, Lady Lake; 179, epigynum, Canada, Alta; 180, holotype, epigynum, Ontario.

segments black, tip of cymbium light; femur I black beneath; femur II splotchy, femora III and IV yellow; patellae and tibia I and II black beneath, all other segments light; femur II dark distally, otherwise leg pattern is the same above and below.

Distribution.—Known only from Alaska and Canada.

Specimens examined.—*Alaska*: Fairbanks, July 68, John V. Mathews, female (R.E.L.). *Canada: Alberta*: ca 53° 30' N, 117° 40' W, D. W. Chomyn, VI-12-69, site I quad 1-6, male (R.E.L.), VI-12-69, site I, quad 1-2, female (R.E.L.), VI-5-69, site I quad 2-1, female (R.E.L.), VI-12-69, site 1 quad 2-2, 2 females (H.K.W.), VI-5-69, site 1 quad 1-6, male, 2 females (R.E.L.), VI-12-69, site 20 quad 20, male (R.E.L.), VI-5-69, site 1 quad 1-3, female (R.E.L.), VI-5-69, site 1 quad 2-10, female (R.E.L.), VI-12-69, site 1 quad 2-4, 2 males (H.K.W.); *Northwest Territory*: Wrigley Pan Trap no. 6, VI-6-12-69, G. E. Shewell, male female (R.E.L.), VI-12-15-69, male (R.E.L.); *Ontario*: Favourable Lake Mine, Lat. 53° N 94° W, June 1938, Morley Neal, female Holotype (R.O.M.Z. 7073); *Saskatchewan*: Lady Lake, June 9, 1969, D. J. Buckle, 2 males (D.J.B.).

Life history.—All the males and females from Canada were collected in June; the single female from Alaska in July.

Ecology.—The only information we have is the following from D. J. Buckle: "Logging trail through black spruce forest, Lady Lake, Saskatchewan, 9 June 1969."

Pirata davis, n. sp.

Figs. 181-186

Holotype.—Male, San Fernando, Tamaulipas, Mexico, Mar. 28, 1936, L. I. Davis (A.M.N.H.).

Allotype.—Female, with same data as holotype (A.M.N.H.).

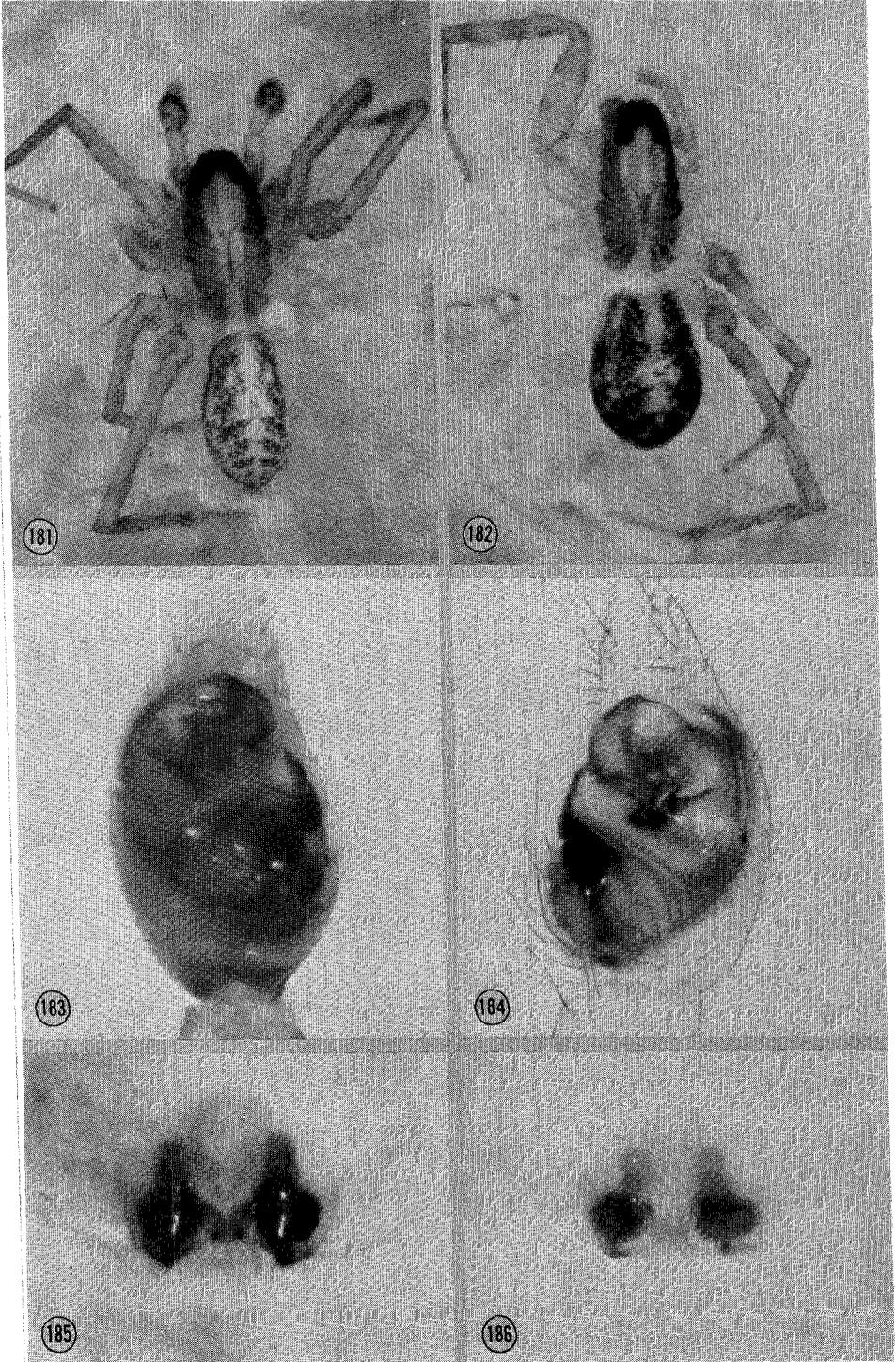
Diagnosis.—*Pirata davis*, n. sp., is very similar in appearance to *P. turrialbicus*, n. sp., and is about the same in size. The epigynum, however, is more on the order of *P. aspirans*. The palpus resembles *P. turrialbicus* somewhat, but the median apophysis is relatively bulkier and the lateral process has a different shape (Figs. 183-184).

Description of holotype.—Carapace 1.72 mm long, 1.22 mm wide with a wide marginal light band and the typical tuning-fork pattern on the head (Fig. 181). Basic color light yellow, lateral margins of carapace without pigmented edge. Ventral surface of body yellow, unpigmented except for a small area in the middle of the venter. Lower margin of the furrow of the chelicerae with three teeth, the middle tooth the largest. Anterior eye row narrower than the posterior median row, procurved; the anterior median eyes are twice as large as the laterals; the anterior eyes are about evenly spaced.

Legs 4123, light yellow in color, without annulae. Tibia I with five long overlapping spines, three prolateral, two retrolateral.

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Palpus	0.50	0.25	0.30		0.57	1.62
Leg I	1.25	0.55	1.07	1.17	0.60	4.64
Leg II	1.20	0.55	0.92	1.00	0.55	4.22
Leg III	1.10	0.50	0.80	1.07	0.50	3.97
Leg IV	1.60	0.57	1.37	1.97	0.70	6.21

Description of allotype.—Carapace 1.70 mm long, 1.22 mm wide, with a distinct tuning-fork pattern on the head and a wide marginal light area unmarked with pigment along the lateral edge. Basic color light yellow (Fig. 182). Sternum, labium and coxae



Figs. 181-186.—*P. davisii*, n. sp.: 181, holotype male, Mexico, Tamaulipas; 182, allotype female, Mexico, Tamaulipas; 183, palpus, Texas, Edinburg; 184, holotype, palpus; 185, epigynum, Texas, Edinburg; 186, epigynum, Texas, Bexar Co.

yellow, sternum with faint pigmented spots along lateral edges; venter a little darker with faint pigment in the middle.

Lower margin of the furrow of the chelicerae with 3 teeth, the middle tooth the largest. Anterior eye row narrower than the posterior median row, slightly procurved; anterior median eyes almost twice as large as the anterior laterals; anterior eyes about equally spaced.

Legs 4123, with faint annulae. Tibia I with 4 ventral spines; the two retrolateral spines long, overlapping, the two prolateral much reduced, the proximal one reduced to a bristle.

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Palpus	0.55	0.32	0.37		0.50	1.74
Leg I	1.25	0.60	0.92	0.97	0.51	4.25
Leg II						
Leg III	1.20	0.52	0.82	1.02	0.52	4.08
Leg IV	1.62	0.62	1.45	1.77	0.67	6.13

Distribution.—Mexico, Texas.

Additional records.—*Texas*: Edinburg, May 1, 1936, S. Muliak, 1 male, 2 females (A.M.N.H.); Bexar Co., Bullis Hole, female Travis Co., Austin, R.V.C., female (M.C.Z.).

Life history.—Adult males and females have been collected on March 28 and May 1.

Pirata giganteus Gertsch

Figs. 187-191

Pirata giganteus Gertsch, 1934, Amer. Mus. Nov., 693:12-13. (female, Chicago, Illinois, A.M.N.H., examined).

Description of holotype.—A female with the typical tuning-fork mark on the head (Fig. 187). Carapace 3.2 mm long, 2.3 mm wide, sides "with a broad, irregular, marginal light band." Anterior eye row narrower than the posterior median row, slightly procurved; anterior median eyes closer to the anterior laterals than to each other, less than one diameter apart. Epigynum (Fig. 188).

Distribution.—Illinois, Wisconsin.

Specimens examined.—*Illinois*: nr Chicago, June 13, 1933, W.J.G., 2 female paratypes (A.M.N.H.); Princeton, June 12, 1933, T. H. Hubbell, male (A.M.N.H.); *Wisconsin*: Richland Co., Rt. 60 W of Gotham, June 17, 1949, H. Levi, female (M.C.Z.).

Life history.—All known specimens are from June.

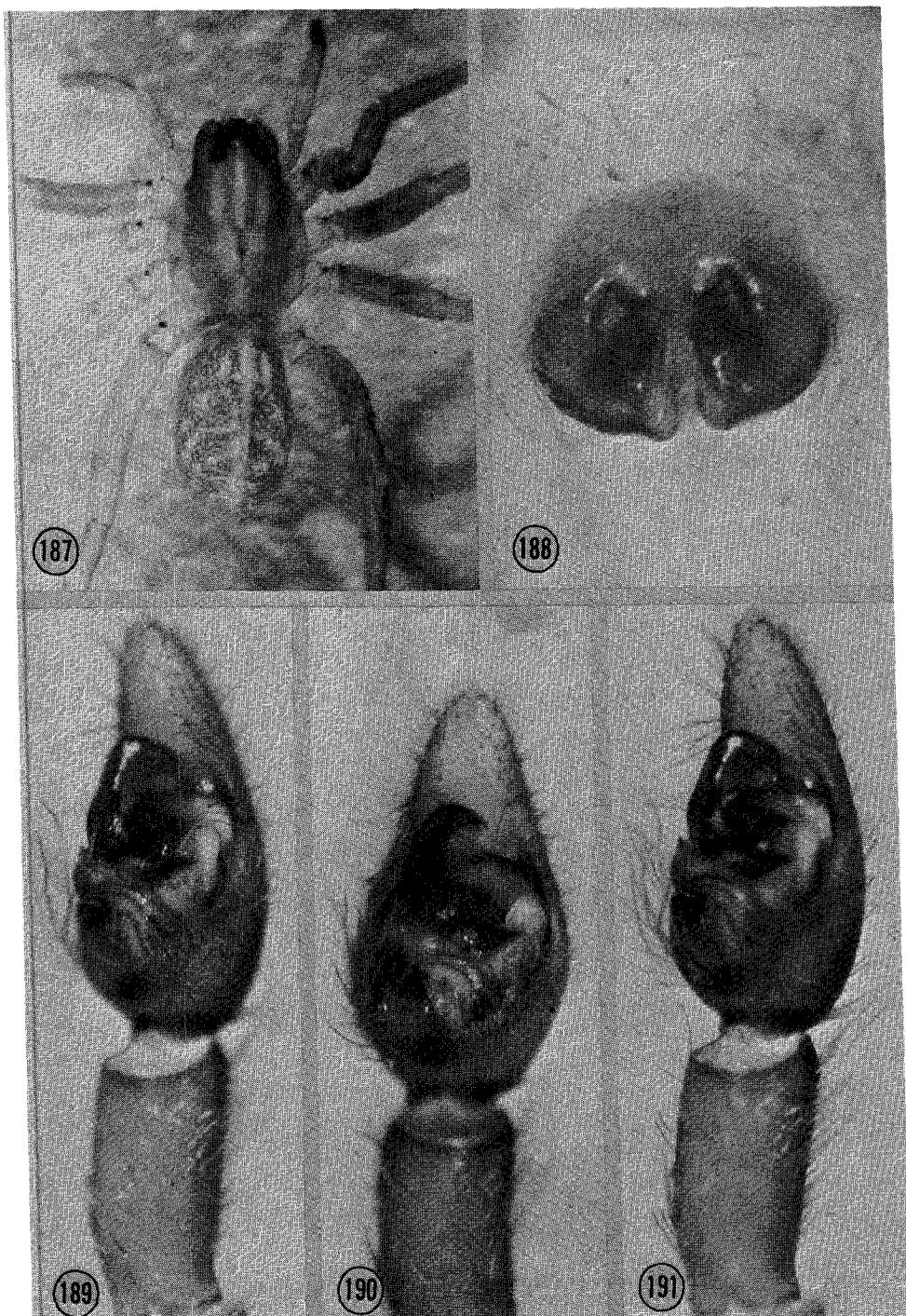
Remarks.—The carapace pattern of the Wisconsin female and the holotype are much like that of *P. sedentarius*. The epigynum resembles to some extent that of *P. hygrophilus* of Europe. The legs of the Wisconsin female show signs of annulae. Our measurements of the carapace of the holotype differ somewhat from Gertsch's; his are 3.0 mm long by 2.12 mm wide. He also describes the anterior eye row as straight, but it looks slightly procurved to us.

Pirata hiteorum, n. sp.

Figs. 192-198

Holotype.—Male, Cove Creek, Washington Co., Arkansas, June 2, 1963, Otis and Maxine Hite (A.M.N.H.).

Allotype.—Female with same data (A.M.N.H.).



Figs. 187-191.—*P. giganteus*: 187, holotype female, Illinois, Chicago; 188, holotype, epigynum; 189-191, palpus, Illinois, Princeton.

Etymology.—Named after the collectors, O. and M. Hite.

Diagnosis.—This small spider somewhat resembles *P. minutus* in appearance; however, the front legs are not dark in the male as they are in *P. minutus*. At first glance the epigynum looks like that of *P. minutus*, but close examination leaves no doubt as to their distinctness; the concave depressions in front of the tips of the lobes of the epigynum of *P. hiteorum* are unique. The palp resembles that of *P. aspirans* most closely, but the anteromedial truncation of the median apophysis (Figs. 194-195) is unique also. However, positioning of the palpus determines the shape of the median apophysis from the viewer's point of view and this palpus must be moved around carefully in order to obtain a satisfactory impression of its structure.

Description of holotype.—A male with basic color yellow or amber with dark pigment producing the typical tuning-fork pattern on the head and a distinct pattern on the dorsum (Fig. 192). Carapace 1.50 mm long, 1.03 mm wide, with a wide marginal light area and pigmented lateral edge. Eye region black. Legs yellow, lightly pigmented; femur I dusky above, palpal segments darker. Face, chelicerae, sternum, epigastric region, and venter all pigmented; venter splotchy. Anterior eye row distinctly narrower than the posterior median row, strongly procurved (Fig. 196). Anterior eyes about equally spaced, anterior median eyes approximately one and one-half times larger than the anterior lateral eyes. Clypeus height equals a diameter of an anterior median eye, slanted posteriorly (receding). Tibia and metatarsus I with three pairs of overlapping ventrolateral spines.

The legs from a male paratype from Cove Creek measure as follows:

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Palpus	0.43	0.20	0.24		0.47	1.34
Leg I	1.00	0.50	0.77	0.85	0.48	3.60
Leg II	0.93	0.43	0.70	0.75	0.45	3.26
Leg III	0.82	0.37	0.60	0.80	0.43	3.02
Leg IV	1.23	0.48	1.05	1.30	0.63	4.69

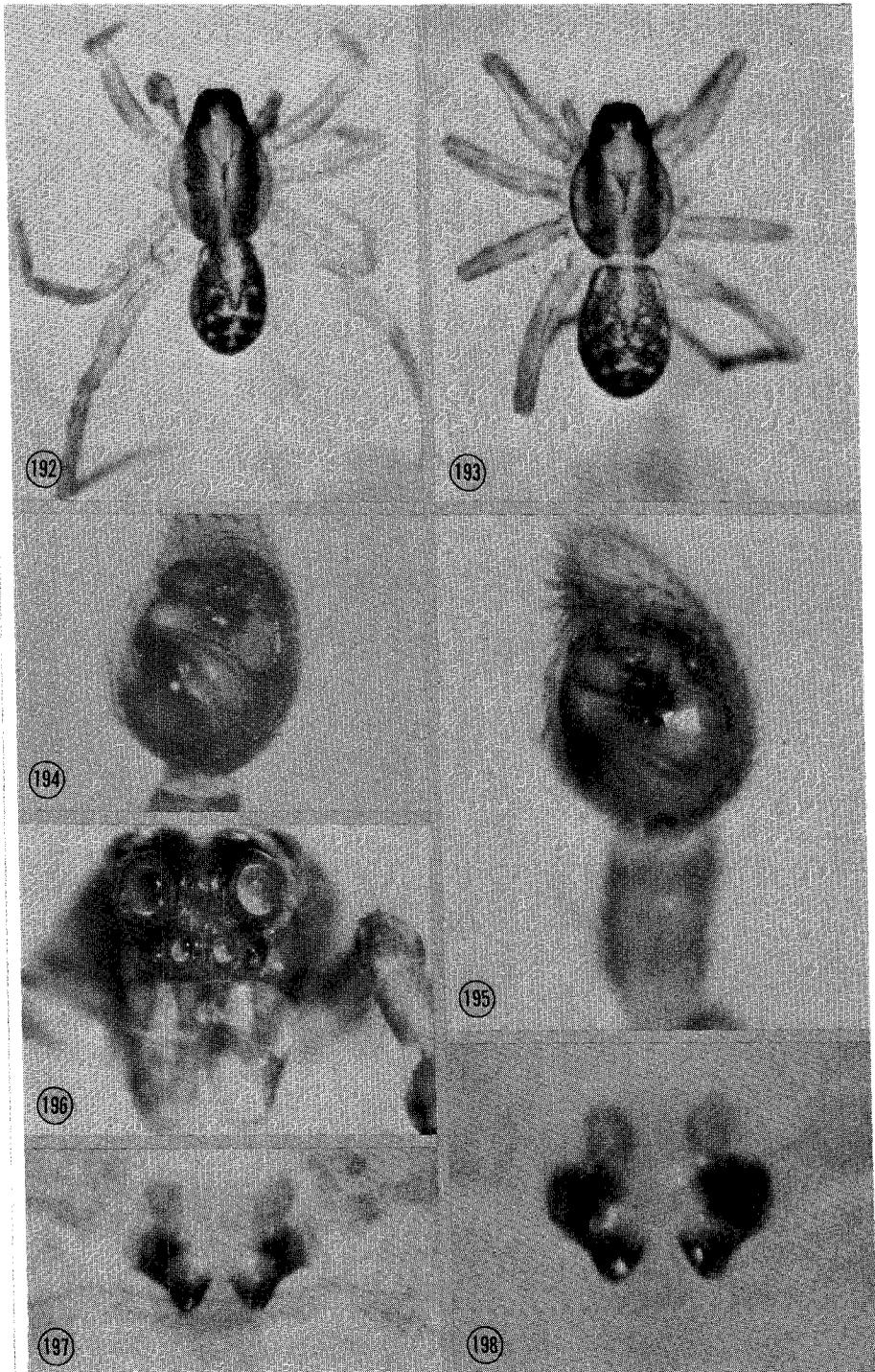
The lower margin of the furrow of the chelicerae of the paratype has three teeth, the middle tooth the largest, the one next to the fang inconspicuous.

Description of allotype.—The female is a little more heavily pigmented than the holotype (Fig. 193) and there is a distinct triangular dark spot that looks like a widening of the dorsal groove anteriorly; in front of this spot the two prongs of the tuning-fork pattern are lightly pigmented. The carapace is 1.50 mm long, 1.03 mm wide, and the pigment along the lateral edge is wider than in the holotype, so much so in fact, that one might describe the sides of the carapace as having a submarginal light area. In both sexes the carapace is shiny, somewhat as in *Trabea* and some *Arctosa*. The legs show faint traces of annulae. The eye arrangement (Fig. 196) and spining of tibia and metatarsus I are similar to the holotype.

Measurements of leg segments of a paratype from Cove Creek:

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Palpus	0.50	0.25	0.33		0.47	1.55
Leg I	1.20	0.53	1.00	0.93	0.48	4.14
Leg II	1.10	0.50	0.83	0.85	0.47	3.75
Leg III	1.03	0.45	0.75	0.95	0.47	3.65
Leg IV	1.50	0.57	1.38	1.68	0.68	5.81

Lower margin of the furrow of the chelicerae with three teeth, the middle tooth the largest, the other two about equal in size; almost evenly spaced.



Figs. 192-198.—*P. hiteorum*, n. sp., Arkansas, Washington Co.: 192, holotype male; 193, allotype female; 194-195, palpus; 196, holotype, eyes; 197, allotype, epigynum; 198, epigynum.

Variation.—This species varies somewhat in the amount of pigmentation, in size, and in the structure of the genitalia. Sometimes leg I is slightly swollen and sclerotized in the male. Males vary in carapace length from 1.4 mm to 1.5 mm, females from 1.5 mm to 1.7 mm. The legs are lightly banded in dark specimens. The epigynum is characterized by the concavity in front of the tips of the lobes. The median apophysis varies somewhat in the shape of the median and lateral extensions or arms. The palpus is small and difficult to observe clearly, but it can be positioned so that the median apophysis appears squarely truncate laterally.

Distribution.—Southeastern United States, north to Virginia, west to Texas and north to Kansas.

Specimens examined.—*Alabama*: Madison Co., Monte Sano, Dec. 1940, A. F. Archer, female (A.M.N.H.); *Arkansas*: Benton Co., Beaver Lake, 7-VIII-65, Peck, female (Exline); V-21-65, male (Exline); Bradley Co., VI-1-63, female (Exline); Conway Co., V-30-64, MOR II, male (Exline); Crawford Co., Natural Dome, V-31-61, L-1-5, female and egg sac (Exline); Washington Co., Cove Creek, many records (Exline); *Florida*: Leon Co., Tall Timbers, male in May, female in June, pitfall (D.P.I.); *Kansas*: Riley Co., Manhattan, IX-5-63, female (Exline); *Missouri*: Dent Co., Dry Fork, VIII-22-62, HEF, 2 females (Exline); Phelps Co., Dry Forks Cr., VII-2-49, HEF, female (Exline); *North Carolina*: Orange Co., 7-VI-63, Beatty, male (Beatty); *Virginia*: Giles Co., Mountain Lake, July-August, males, females, egg sacs (D.P.I.); Albemarle Co., VIII-27-48, HKW, 3 females, egg sacs (H.K.W.); *Texas*: Dallas Co., Dallas, 11 May, 40, Knutsen, female (M.C.Z.).

Life history.—*P. hiteorum* is a summer species. Males have been collected from May to August with the majority from May and June. Most of the records of females are from August, but May, June and July are well represented. We have studied two females from March, three from September, and one from December. Egg sacs have been collected from May through August.

Ecology.—It is interesting that we have no record of *P. hiteorum* being taken near water. Most of the records are from pitfall traps or from under rocks. We have 14 records from pitfall traps in meadows, five from pitfall traps in old fields (most of these from Arkansas), one from a lawn at night, one from a hillside during the day, and the Texas record is from under a rock. Wallace collected this species at 4,000 feet at Mountain Lake, Virginia, at least a dozen times, almost always by turning rocks in fields or by scraping leaf litter and shining the area with a headlight in wooded situations, never close to water. This appears to be a mesic form.

Remarks.—In publications on Arkansas spiders this species has been listed as *Pirata* sp. A., aff *minutus* Em).

Pirata marxi Stone

Figs. 199-203

Pirata piraticus, Emerton, 1885, Trans. Connecticut Acad. Sci., 6:492, pl. 48, figs. 7-7d.

Pirata marxi Stone, 1890, Proc. Acad. Nat. Sci. Philadelphia, 42:429-430, pl. 15, figs. 1, 1a (female, York Co., Pennsylvania); Chamberlin, 1908, Proc. Acad. Nat. Sci. Philadelphia, 60:307-309, pl. 21, fig. 8, pl. 22, fig. 8; Kaston, 1938, Canadian Entomol., 70:16, fig. 5; Kaston, 1948, Bull. Connecticut Geol. Nat. Hist. Survey, 70:309, pl. 49, figs. 985-986, pl. 50, fig. 1006.