

- Pirata agilis* Banks, 1892, Proc. Acad. Nat. Sci. Philadelphia, 44:72, pl. 1, fig. 47 (male, female, 2 juv., Ithaca, New York, M.C.Z., examined; see comments).
- Pirata nigromaculatus* Montgomery, 1902, Proc. Acad. Nat. Sci. Philadelphia, 54:579-581, pl. 30, figs. 44-45 (male, female, Luzerne Co., Pennsylvania, A.M.N.H., only female cotype examined; see comments).
- Pirata montana*, Emerton, 1911, Trans. Connecticut Acad. Arts, Sci., 16:401, 402, pl. 5, figs. 3, 3a.

**Comments on synonyms and types.**—The vial sent to us as containing the type of *P. montanus* contains two females labeled “Long Lake, Adirondacks, July 1884, J. H. Emerton, coll., dried up, relaxed 1958.” These are evidently the two females cited by Emerton from Long Lake and are what we recognize as *P. montanus*.

Banks described and gave measurements of a female *P. agilis*, n. sp. A vial sent to us from the M.C.Z. contains one male, one female, and two immature specimens labeled in longhand, “*Pirata agilis* Bks type,” Ithaca, New York. All four specimens are *P. montanus*.

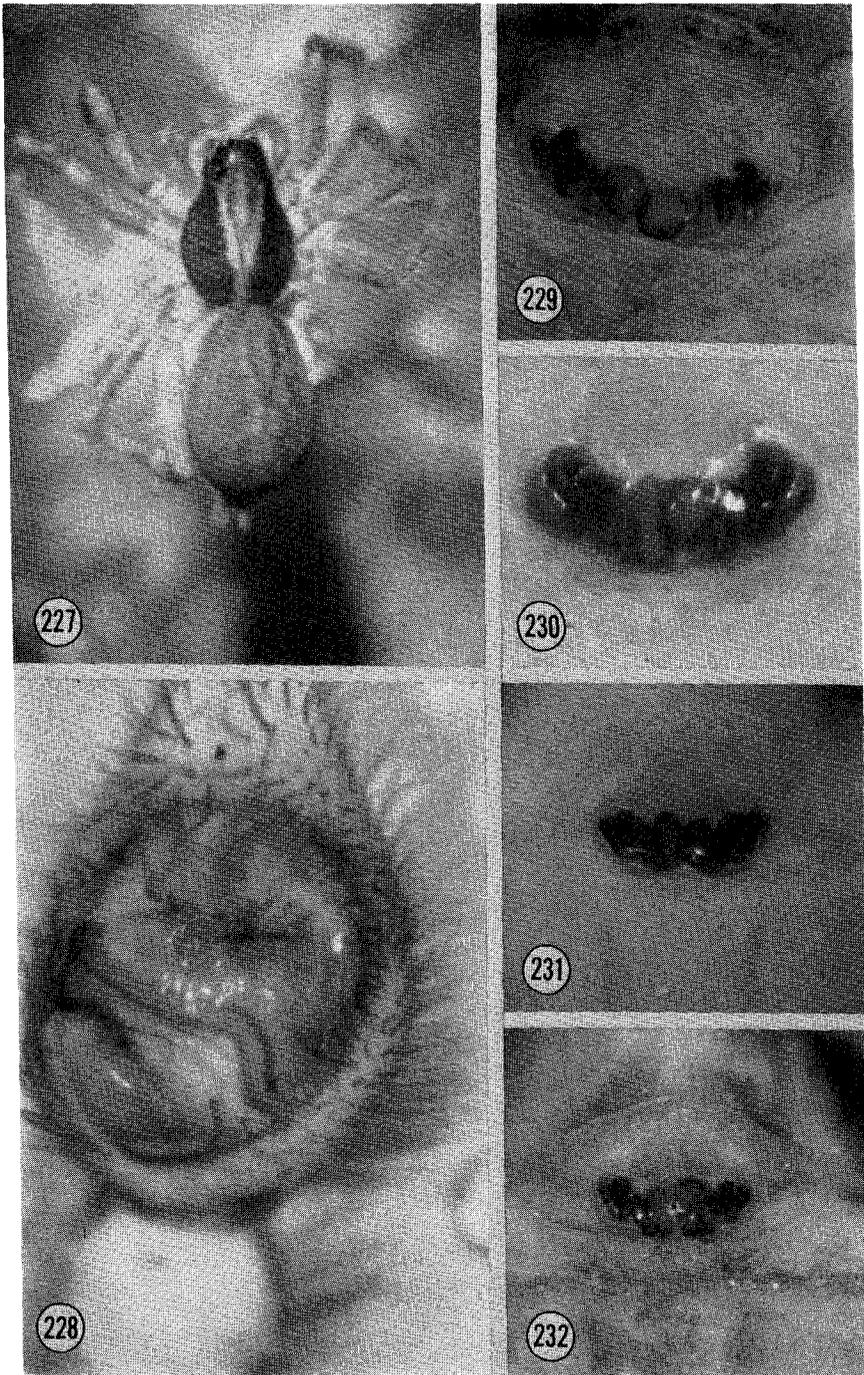
The types of *P. nigromaculatus* Montgomery were not received. However, in the shipment of types from the A.M.N.H. there was a female from Pennsylvania labeled “Cotype” with a carapace 2.7 mm long by 1.77 mm wide which is clearly *P. montanus*.

**Description of female.**—From Poverty Bay, Canada. Carapace 3.0 mm long, 2.1 mm wide, with a wide dorsal light colored band that extends from the posterior margin of carapace, becoming wider as it approaches the posterior lateral eyes and enclosing a tuning-fork mark which is incomplete, i.e., broken up into four patches of pigment; sides heavily pigmented with no trace of marginal or submarginal light areas. General body color amber in unpigmented areas; dorsum pigmented with indistinct hastate mark; legs unbanded. Ventral surfaces of body and legs unmarked. Lower margin of the furrow of the chelicerae with three stout teeth which are almost equal in size. Anterior row of eyes distinctly procurved, much narrower than the posterior median row; anterior eyes almost equal in size, equally spaced; clypeus height at anterior lateral eyes equal to the diameter of an anterior lateral eye.

Legs 4123.

**Description of male.**—From Raleigh Co. W. Va. Carapace 2.3 mm long, 1.7 mm wide; sides black; a wide mid-dorsal light stripe extends from the posterior margin to the posterior lateral eyes, widening to inclose the tuning-fork pattern in the head region; the head region bears a sparse covering of white hair-like structures which are longest between the posterior median eyes; the lateral edges of the carapace are adorned with closely set, short white hair-like bristles. The dorsum of the abdomen has an indistinct hastate mark, lateral rows of white scales, and four pairs of spots covered with white scales. Lower margin of the furrow of the chelicerae with three robust teeth which are almost equal in size. Anterior eye row distinctly procurved and considerably narrower than the posterior median row; anterior eyes almost equal in size and evenly spaced. Sternum, labium, endites and coxae I and II pigmented; sternum with a median longitudinal light stripe; distal end of endites light colored. Venter anteriorly, and epigastric region, darkly pigmented.

Legs 4123. The legs are yellow above except for coxae I and II and proximal five-sixths of femora I and II which are almost black, and femora III and IV which have a lightly pigmented band near the distal end. The leg pattern is the same below except that the pigment on femora I and II covers the whole surface.



Figs. 227-229.—*P. montanus*: 223, female, Virginia, Dickerson Breakes St. Pk.; 228, palpus, Connecticut, E. Haddon; 229, epigynum, Connecticut, E. Haddon.

Fig. 230.—*P. agilis*: Type (= *P. montanus*), epigynum.

Fig. 231.—*P. nigromaculatus*: Cotype (= *P. montanus*), epigynum.

Fig. 232.—*P. elegans*: Cotype (= *P. montanus*), epigynum.

**Distribution.**—Northeastern United States and Canada; south into North Carolina; west into Iowa and Minnesota.

**Specimens examined.**—Canada: *Nova Scotia, Ontario*. United States: *Connecticut, Indiana, Kentucky, Massachusetts, Michigan, New Hampshire, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Vermont, Virginia, West Virginia, Wisconsin*.

**Life history.**—Ninety-two percent of the specimens we have examined are from May, June, July and August. It is striking that we have not seen a single specimen from December, January, February, March or April and only one collection each from October and November. We have males only from May, June and July and egg sacs from June, July, August and September.

**Ecology.**—The small amount of evidence available indicates that *P. montanus* occupies a variety of habitats from sphagnum moss in a bog to leaf litter on a mesic slope. Wallace collected it sifting leaf litter on a mesic slope in Magnetawan, Ontario. Levi and Field (1954) reported it in Wisconsin "in forests, frequently on hills. Fairly common." The following notes were extracted from labels in vials: Michigan: "sphagnum in bog," "leaf litter-wood lot." Pennsylvania: "can trap-woods." Virginia: "leaf mould of spruce, hemlock, oak mesic forest," "sphagnum moss-spruce swamp," "laurel thicket," "moss on rock at bank of stream." Wisconsin: "maple woods," "under rotten pine log." Stone (1890) wrote that *P. elegans* was "rather abundant in damp woods in York Co., Pennsylvania, in June."

**Remarks.**—*Pirata montanus* is one of the easiest *Pirata* to recognize due to the unique pattern on the carapace and the unique genitalia. It is one of the few *Pirata* that lack a light marginal or submarginal band on the carapace.

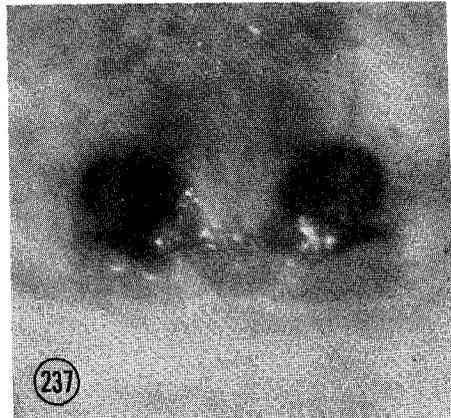
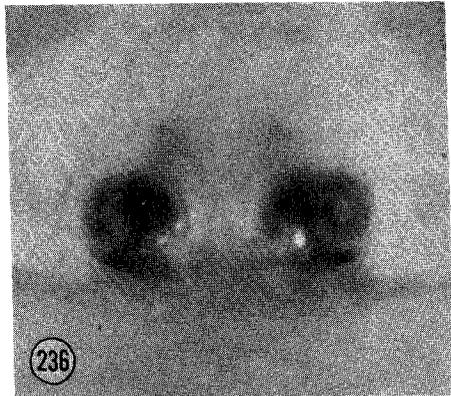
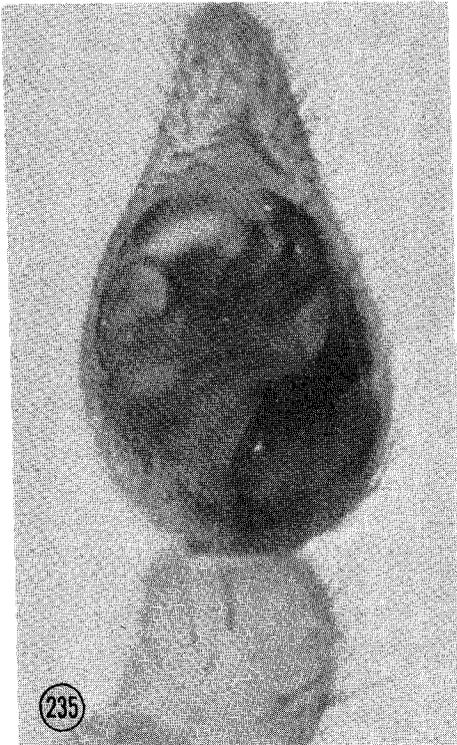
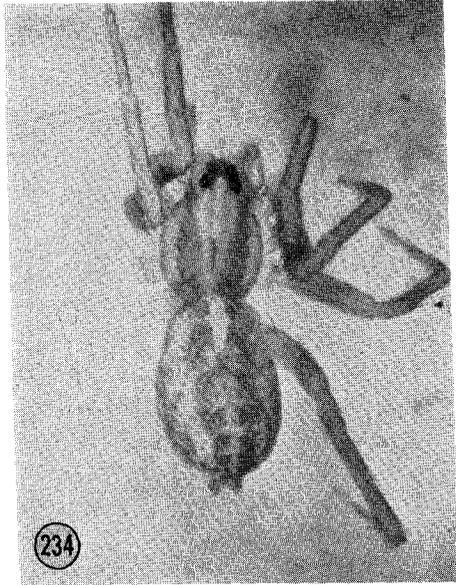
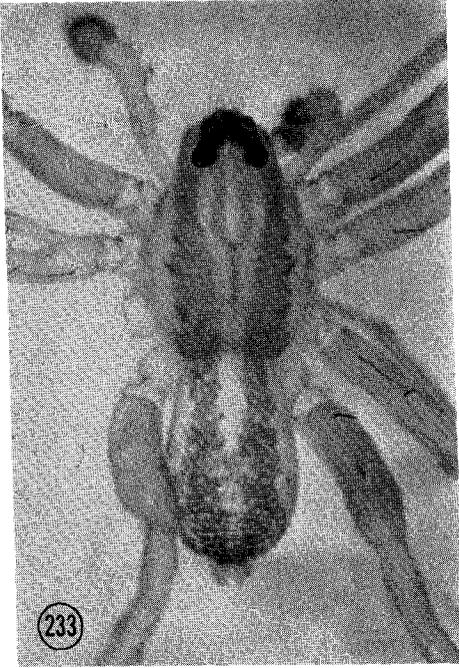
*Pirata sylvanus* Chamberlin and Ivie

Figs. 233-237

*Pirata sylvanus* Chamberlin and Ivie, 1944, Bull. Univ. Utah, 35(9):151-152, figs. 192, 193 (male, female, 2 mi. E. of Sylvania, Georgia, A.M.N.H., examined).

**Remarks on types.**—The male holotype has a carapace 1.90 mm long, 1.50 mm wide, with a submarginal light band (Fig. 233). The femora are faintly banded. The anterior eye is narrower than the posterior median row and is slightly procurved; the anterior median eyes are twice as large as the laterals and the eyes are almost equally spaced. The carapace of the female allotype is 2.37 mm long, 1.75 mm wide, with a submarginal light band. The eye arrangement is similar to that of the holotype except the anterior median eyes are closer to the laterals than to each other.

**Description of male.**—From Morrilton, Conway Co., Arkansas, 14 June 1961. Carapace 1.93 mm long, 1.35 mm wide, with a wide marginal light band and tuning-fork pattern. (Note: This male and one of the other two males in the same vial have a trace of marginal pigment and the male in the same vial with the female described below has a definite submarginal light band on the carapace.) Dorsum of abdomen heavily pigmented, with light hastate area and indications of paired light spots. Coxae and endites light amber, unpigmented; labium and venter lightly pigmented; sternum light with marginal blotches of pigment. Anterior eye row narrower than the posterior median row, almost straight; anterior median eyes twice as large as laterals, closer to laterals than to each other. Clypeus about as high as the diameter of an anterior median eye. Lower margin of the



Figs. 233-237.—*P. sylvanus*: 233, holotype male, Georgia, 2 mi. E. Sylvania; 234, allotype female, Georgia, 2 mi. E. Sylvania; 235, holotype, palpus, 236, allotype, epigynum; 237, epigynum, Arkansas, Conway.

furrow of the chelicerae with three unequal teeth, middle tooth the largest and closer to the lateral, which is the smallest, than to the median.

The median apophysis of the palpus of *P. sylvanus* somewhat resembles that of *P. apacheanus*, both in shape and in having a light-colored tip. The palpus of *P. sylvanus* is distinguished by the presence of a straight-edged shelf-like structure proximad of the base of the median apophysis (Fig. 235).

Legs 4123, femora faintly banded. Tibiae I with eight ventral and lateral spines, the four proximal spines long, overlapping and ventral in position; the distal pair is apical in position. Tibiae II with eight ventral and lateral spines; the ventral prolateral spines are reduced almost to bristles; the distal pair of spines are apical in position.

**Description of female.**—From Cove Creek, Washington Co., Arkansas, V-10-61, No. L-70. Carapace 2.60 mm long, 1.80 mm wide, with a distinct submarginal light band, and tuning-fork pattern. Dorsum heavily pigmented, with a narrow light hastate mark and four pairs of spots covered with white scales. Ventral surface yellowish amber except for scattered pigment in the center of the venter and narrow streaks of pigment along the edge of the sternum. Anterior eye row narrower than the median row, slightly procurved; anterior median eyes twice as large as laterals, somewhat closer to laterals than to each other. Clypeus height equals a diameter of an anterior median eye. Lower margin of the furrow of the chelicerae with three almost equally spaced teeth, the middle tooth the largest, the other two almost equal in size.

The epigynum of *P. sylvanus* is unlike that of any other *Pirata* that we have examined (Fig. 236-237). Legs 4123, very faintly pigmented; the femora have a suggestion of annulations. Tibiae I with five long overlapping ventrolateral spines; distal apical spines not developed. Tibiae II with four ventral spines and one spine lateral in position, the proximal retrolateral spines longer than the prolaterals; distal spines not developed.

**Variation.**—*P. sylvanus* specimens are usually lightly pigmented. They may appear to have a marginal or submarginal light band on the carapace depending upon the amount of pigmentation; the same holds true for the legs. The femora may be lightly banded; we recorded one male with banded legs. The size appears to be nearly uniform, male carapaces averaging around 1.9 mm by 1.4 mm and the females 2.3 mm by 1.7 mm. Arkansas specimens may be smaller: males with carapace 1.7 mm long, females 1.5 mm long.

The median apophysis of the male palpus usually has a light colored tip, but this is not true for some heavily sclerotized specimens.

**Distribution.**—Southeastern United States. The records from Missouri, Tennessee, and Virginia are based on females and should be considered tentative until confirmed by the collection of males. The only record from Georgia is that from the types.

**Specimens examined.**—*Arkansas*: Bradley, Conway, Washington Counties; *Georgia*: 2 mi. E. Sylvania, Screven Co., Apr 17, 43, W 81° 35', N 32° 43', W.I., male holotype, female allotype (A.M.N.H.); *Louisiana*: Hamburg, W.M.B., V-63, 4 males, 29-IV-63, 6 males, female; *Missouri*: Rolla, Phelps Co., X-48, H.E.F., female (H.E.); *North Carolina*: Weaverville, Buncombe Co., V-26-34, H.K.W. 332, male, female (H.K.W.); *Tennessee*: Kingston, Roane Co., 7-12-33, W.I., 16 females (Utah); *Virginia*: Amissville, Rappahannock Co., 8-18-39, R.V.C., female (Utah).

**Life history.**—Males have been collected from April into September and females from April into October. The only egg sac we have examined from a dated collection is from October.

**Ecology.**—Most of the specimens we have examined are from pitfall traps and most of those are from Arkansas: from traps in cotton, sorgham and alfalfa fields and in pastures. It also has been collected under stones near ponds and creeks.

**Remarks.**—*P. sylvanus* is larger than *P. apalacheus*; their palps are somewhat similar, but their epigyna are quite different. The anterior eye row in *P. apalacheus* is distinctly procurved while in *P. sylvanus* it is straight or only slightly procurved. The epigyna of *P. alachuus* and *P. sylvanus*, resemble each other superficially, but in the former there are openings on the ventral surface of the lobes of the epigynum (Figs. 8, 173-174), while in the latter the openings are on the posteromedial edge of the lobes (Figs. 12, 237).

#### ABBREVIATIONS

A.E., anterior eyes; A.L.E., anterior lateral eyes; A.M.C., A. M. Chickering; A.M.E., anterior median eyes; A.M.N.H., American Museum of Natural History; A.R.E., anterior row of eyes; B.J.K., B. J. Kaston; B.M.N.H., British Museum (Natural History); C.A.S., California Academy of Sciences; C.D.D., C. D. Dondale; C.G., Clarence Goodnight; D., diameter; D.C.L., Donald C. Lowrie; D.E.B., David E. Bixler; D.J.B., D. J. Buckle; D.P.I., Division of Plant Industry, University of Florida, Gainesville; E.S.G.R., E. S. George Reserve, Pickney, Michigan; H.E., Harriett Exline; H.E.F., Harriett Exline Frizell; H.G.P., Hillary G. Parrish; H.K.W., H. K. Wallace; J.A.B., J. A. Beatty; J.E.C., J. E. Carico; J.H.E., J. H. Emerton; K.P., Kenneth Prestwich; M.C.Z., Museum of Comparative Zoology; O.S.U., Oklahoma State University; P.L.E., posterior lateral eyes; P.M.E., posterior median eyes; P.M.R., posterior median row of eyes; P.R.E., posterior row of eyes; R.E.L., Robin E. Leech; R.I.B.O., Research Institute, Belleville, Ontario; R.O.M.Z., Royal Ontario Museum of Zoology; R.V.C., R. V. Chamberlin; S.C.B., Sherman C. Bishop; T.F.L., T. F. Hlavac; T.H.H., Theodore H. Hubbell; T.R.R., T. R. Renault; U.C.R., University of Costa Rica; U.F., University of Florida; U.F.C.R., University of Florida Conservation Reserve, Welaka; Utah, R. V. Chamberlin collection, now in the A.M.N.H.; W.B.P., William B. Peck; W.I., Wilton Ivie; W.J.G., Willis J. Gertsch; W.M.B., William Morton Barrows.

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