

at middle of clavus and a larger one just opposite on the corium, fusco-brownish, the dark color broken by small irregular pale maculae; frequently the apex of corium with a smaller dark patch and a series of fusco-brownish spots bordering the claval suture; embolium and cuneus flecked with coagulate spots of reddish. Membrane pale, infuscation usually composed of fine irregular spots, forming a large spot on apex, a smaller one at each side joining margin, the central area and within the cells more sparsely marked with irregular flecks of fuscous; cubitus pale, radius infuscated.

Legs: Front and middle tibiae pale, triannulate with fuscous, femora and hind tibiae marked nearly as in *eximius*, infuscation frequently more or less reddish brown.

Venter: Pale, sides flecked with reddish, basal half of genital segment fuscous except along median line; flagellum and genital claspers (fig. 149: 24) distinctive of the species.

Female: Very similar to the male in size and coloration.

Breeds on *Quercus macrocarpa*.

Massachusetts, Maryland, New York.

P. infuscatus Reuter.

Acta Soc. Sci. Fenn., xxxvi, No. 2, 20, 1909.

Male: Length 5.3 mm., width 1.94 mm. Head: Width .88 mm., vertex .28 mm.; yellowish, dorsal half of juga, basal half of lora, somewhat on bucculae, and mark between bases of antennae, dark red; tylus dark red, geminate mark on basal half but separated by small wedge on base, yellowish; front and vertex clothed with prominent yellowish hairs, each side of front with indications of transverse reddish lines. Rostrum, length 2.7 mm., nearly attaining base of genital segment, yellowish, blackish at apex.

Antennae: Segment i, length 1.08 mm., pale to yellowish, fusco-brownish before apex, dusky at base, yellowish to dusky pubescent, basal half with five or six yellowish setae; ii, 2.74 mm., uniformly yellowish; iii, 1.49 mm., yellowish; iv, 1.2 mm., yellowish or uniformly dusky.

Pronotum: Length .84 mm., width at base 1.5 mm.; disk testaceous to fusco-reddish, basal submargin darker, calli and just between pale, dorsal aspect of collar pale, a reddish patch each side of median line, also an orange spot just behind inner angle of each callus; clothed with rather prominent pale to yellowish pubescence; propleura pale, a fusco-brownish line across lower extremity of coxal cleft and extending to near posterior margin, xyphus and collar beneath pale. Scutellum pale to yellowish, a reddish spot on margin each side of apical half but leaving the median line broadly yellowish. Sternum fuscous, paler on episternum, pleural sclerites fuscous but with margins pale, ostiolar peritreme pale.

Hemelytra: Embolar margins very slightly arcuate; reddish to fusco-reddish, irrorate with more or less confluent white spots.

basal half more fuscous than reddish; corio-membranal margin blackish; cuneus more heavily red, broken by small pale irrorations on middle. Membrane fumate to fusco-brownish, infuscation of areoles somewhat broken into small conspurcate spots, apical half with slightly darker fuscous area touching margin beyond cuneus.

Legs: Pale to yellowish, hind femora except basal one-third, reddish black, irrorate with small yellowish spots, with larger spots on dorsal aspect at middle, a yellowish band at slightly beyond middle of apical half, its margins irregular and nearly confluent on ventral side; front tibiae with indistinct brownish band on middle and at slightly below knee, hind pair with broad reddish band at base.

Venter: Yellowish to fuscous, darker laterally and on genital segment; genital claspers and flagellum distinctive of the species (fig. 141).

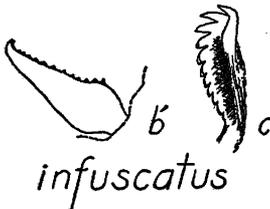


FIG. 141. *Phytocoris infuscatus* Reuter,—male genital claspers, (b) right clasper, lateral aspect with outline of genital segment added, (c) flagellum. Greatly enlarged. Drawing by Dr. H. H. Knight.

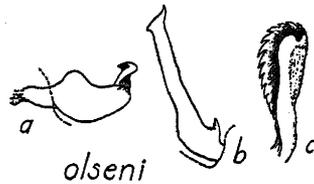


FIG. 142. *Phytocoris olseni* Knight,—male genital claspers, (a) left clasper, lateral aspect, (b) right clasper, lateral aspect, (c) flagellum. Greatly enlarged. Drawing by Dr. H. H. Knight.

Female: Length 5.5 mm., width 2 mm.; more robust than the male, very similar in coloration but more broadly pale on apical half of corium, with pale and orange rays behind calli.

Breeds on hickory (*Carya*).

Plesiotypes: Male and female, 31 July, 1916, Batavia, N. Y. (H. H. Knight); compared with type.

Massachusetts, New York, Pennsylvania.

Phytocoris olseni Knight, new species.

Male: Length 6.1 mm., width 2.2 mm. Head: Width 1.03 mm., vertex .38 mm.; pale yellowish, vertex with mark each side at base, median line, arc each side of front composed of short transverse marks, irregularly across middle of tylus, dorsal margin of lora, lora except for spot on middle, dorsal margin of bucculae, and genae, orange-red; front and vertex clothed with rather prominent

yellowish hairs. Rostrum, length 2.8 mm., reaching to seventh ventral segment, yellowish, blackish apically.

Antennae: Segment i, length 1.17 mm., pale to yellowish, the slightly enlarged apex and two spots on inner or anterior aspect, reddish to brownish, pubescence and spines yellowish brown; ii, 2.37 mm., rather uniformly yellowish brown; iii, yellowish brown (broken).

Pronotum: Length .97 mm., width at base 1.69 mm.; pale testaceous to brownish with dusky, more brownish laterally on disk; mark each side on collar and extending to margin of callus, and rather broad spot behind inner half of callus, orange; propleura pale, an orange ray across lower half of coxal cleft and extending to near posterior margin; xyphus and lower half of collar pale; disk clothed with rather prominent yellowish to dusky hairs and interspersed with sericeous pale to golden pubescence. Scutellum pale, base with an orange colored vitta each side of median line and frequently extending to join with orange mark at each side of apical half.

Hemelytra: Embolar margins slightly arcuate; pale testaceous to yellowish brown, middle of endocorium and outer half of clavus fusco-brownish, usually invaded by pale irrorations, a moderately large pale area at apex of mesocorium; embolium pale, irregularly marked with reddish orange; cuneus yellowish but hypodermis largely filled with coagulated reddish flecks which also extend along corio-membranal margin; clothed with golden yellowish pubescent hairs, intermixed with sericeous golden pubescence and spots of white tomentum. Membrane fumate or pale brownish, certain areas indistinctly conspurcate with fumate, veins brownish, cubitus paler at apex of larger areole.

Legs: Chiefly pale to yellowish, hind femora fusco-brownish with reddish on apical half, irrorate with small and moderately large pale spots but not forming distinct subapical band; front tibiae with reddish brown annulus at middle and one at middle of basal half, nearly obsolete on intermediate pair; hind tibiae reddish near base, spines yellowish brown; tarsi yellowish, dusky on apex.

Venter: Pale to yellowish, sides largely orange reddish but more or less invaded with pale spots, pale yellowish pubescent; genital claspers distinctive of the species (fig. 142), the long arm of right clasper coming nearest to *tibialis*.

Female: Length 5.9 mm., width 2.4 mm.; very similar to the male, but hemelytra more broadly pale, the clavus yellowish brown with irregular pale areas.

Holotype: Male, 4 July, 1909, Lakehurst, N. J. (Chris. E. Olsen); author's collection. Allotype: same data as the type. Paratypes: Male and females (2), taken with types. NEW YORK—Female, 4-7 July, 1915, Bayshore; Female, 4 July, 1911, Yaphank; female, 21 Aug., 1917, Wyandanch, Long Island (Chris. E. Olsen). Female, 12 July, 1919, Cold Spring Harbor, Long Island (H. M. Parshley). (Named in honor of the collector, Mr. Chris. E. Olsen.)

P. tibialis Reuter.

Ofv. Kongl. Sv. Vet.-Akad. Forh., xxxii, No. 9, 68, 1876.

Length 5.1 mm., width 1.9 mm. Chiefly greenish, pronotal disk with four orange stripes; distinguished by the fuscous line on anterior aspect of antennal segment ii, also by the reddish black line on dorsal margin of anterior and intermediate tibiae. Genital claspers distinctive, right clasper very long and exhibiting a relationship with that of *olseni*.

Breeds among rank growing herbaceous weeds in damp situations.

Branford, 20 July, 1905 (H. W. W.); East River, Aug., 1910 (C. R. E.).

**Phytocoris luteolus* Knight, new species.

Male: Length 5.1 mm., width 1.7 mm. Head: Width .94 mm., vertex .27 mm.; median line of vertex impressed, clothed with prominent yellowish hairs; yellow, above base of antenna, transverse mark at base of front, rather broadly on middle of tylus, juga except apex, and basally on lora, orange to bright red. Rostrum, length 2.29 mm., reaching upon fifth abdominal segment, yellowish, apex blackish.

Antennae: Segment i, length 1.17 mm., pale yellowish, tinged with orange at apex; ii, 2.64 mm., uniformly pale yellowish; iii, 1.44 mm., yellowish; iv, 1.03 mm., yellowish.

Pronotum: Length .77 mm., width at base 1.36 mm.; bright yellow, broad ray behind eye and extending along lateral margin of disk, ray behind dorsal margin of eye and extending to front margin of callus, and small spot behind inner half of callus, orange colored; calli, xyphus, and propleura, more pale than yellowish. Scutellum uniformly bright yellow. Sternum and pleura pale to yellowish, ostiolar peritreme white.

Hemelytra: Embolar margins scarcely arcuate; clothed like the pronotum and scutellum with pale yellowish pubescence; yellow translucent, basal one-third of corium and one-fourth of embolium marked with reddish orange reticulations, several irregular orange spots on outer half of clavus; apex of clavus and inner margins of cuneus with spots of bright red. Membrane pale fumate, larger areole fuscous, apical half conspurcate with fuscous, veins yellowish to fuscous.

Legs: Pale, anterior and middle femora more yellowish; hind femora with apical half or two-thirds of dorsal surface reddish to fusco-reddish, anterior face broadly pale but with red specks, the dark color irrorate with small pale spots, with one or two larger yellowish spots on dorsal surface of apical half; hind tibiae pale but with reddish near base; tips of tarsi fuscous.

Venter: Uniformly yellowish; genital claspers and flagellum distinctive of the species (fig. 143).

Female: One specimen is at hand, June 9, 1917, Auburn, Alabama (H. H. Knight) which apparently belongs here; similar to

the male except that base of cuneus and basal margin of pronotal disk is more broadly red.

Holotype: Male, 4 July, 1920, New Haven, Conn. (B. H. Walden).

P. confluens Reuter.

Phytocoris puella var. *confluens* Reuter, Acta. Soc. Sci. Fenn., xxxvi, No. 2, 20, 1909.

Male: Length 4.6 mm., width 1.43 mm. Head: Width .83 mm., vertex .26 mm.; chiefly bright red, geminate mark on base of tylus, juga and lora apically, and ventral margin of bucculae, pale. Rostrum, length 2.2 mm., reaching upon sixth abdominal segment, pale to yellowish, blackish at apex.



FIG. 143. *Phytocoris luteolus* Knight,—male genital claspers, (b') right clasper, lateral aspect, (c) flagellum. Greatly enlarged. Drawing by Dr. H. H. Knight.

FIG. 144. *Phytocoris confluens* Reuter,—male genital claspers, (aa) left clasper, dorsal aspect, (b) right clasper, lateral aspect, (c) flagellum. Greatly enlarged. Drawing by Dr. H. H. Knight.

Antennae: Segment i, length 1 mm., reddish yellow, pubescence and spines pale yellowish; ii, 2.42 mm., uniformly yellowish; iii, .91 mm., yellowish; iv, 1.57 mm., yellowish.

Pronotum: Length .70 mm., width at base 1 mm.; deep reddish, becoming blackish at anterior angles of disk, calli fuscous with red, with pale ray or spots behind each callus, basal margin slenderly pale except at basal angles; propleura deep red, lower margins and xyphus pale; clothed with yellowish to dusky pubescence, disk with yellowish sericeous pubescence intermixed. Scutellum red, basal angles and apex pale, median line scarcely indicated with pale. Sternum and pleura dark red, ostiolar peritreme and ventral margin of epimera, white.

Hemelytra: Red, conspurcate with small to medium sized irrorations, cuneus with pale spots on inner margin and across middle; clothed with yellowish to dusky pubescence, intermixed with yellowish sericeous pubescence which may be white over the pale spots. Membrane uniformly pale fumate, veins red.

Legs: Pale to yellowish, anterior femora more reddish yellow apically, tibiae without annulations; hind femora red, pale at base, rather thickly irrorate with small pale spots although at times

nearly obsolete; hind tibiae with small red marks near base, tips of tarsi fuscous.

Venter: White beneath, latero-dorsal margin deep red, each segment with small spot of red laterally on the white; eighth segment and base of genital segment dark fusco-reddish; genital claspers and flagellum distinctive (fig. 144).

Other specimens which apparently belong to this species have the membrane rather distinctly conspurcate with fuscous. The above description and figures of genitalia are drawn from the type specimen, male, 6 July, 1890, Washington, D. C. (O. Heidemann), United States National Museum collection.

East River, 5 Aug., 1908 (C. R. E.); New Haven, 24 June, 1911 (A. B. C.).

**Phytocoris venustus* Knight, new species.

Male: Length 4.5 mm., width 1.6 mm. Head: Width .86 mm., vertex .28 mm.; orange colored above, spot each side of vertex and one at base, two spots on median line of front, and base of tylus pale; lower half of head pale, base of juga, dorsal margin of lora, and irregular band across middle of tylus, bright red. Rostrum, length 2 mm., reaching upon sixth abdominal segment, yellowish, blackish at apex.

Antennae: Segment i, length .97 mm., pale yellowish, darker at apex, setae pale; ii, .80 mm., uniformly yellowish; iii, 1.34 mm., yellowish; iv, 1.16 mm., yellowish.

Pronotum: Length .68 mm., width at base 1.37 mm.; pale, disk with four orange stripes behind calli, outer stripe continuing around callus to anterior angle and collar, small spot before callus and collar orange red; propleura with red ray across lower half of coxal cleft but not extending to posterior margin; clothed with moderately prominent yellowish pubescent hairs, more prominent laterally and on scutellum and clavus. Scutellum orange-red to deep red, basal angles and median line more or less pale. Sternum and pleura pale, with red on meso- and meta-episternum, ostiolar peritreme white.

Hemelytra: Yellow, clavus and basal half of corium and embolium, red but irrorate with pale yellowish, thus leaving a large triangular area before cuneus nearly clear yellow; embolium sometimes with small red flecks on apical half; cuneus and tip of corium extending beyond cuneal fracture, red, outer margin of cuneus with four yellow spots, sometimes almost confluent. Membrane fumate to pale fuscous, slightly paler on apical half, veins red, usually pale at apex of areoles.

Legs: Pale to yellowish, fore femora with red flecks apically, hind femora reticulately marked with bright red, somewhat broken at middle of apical half by yellowish area; hind tibiae with reddish spots near base.

Venter: Yellowish, with red flecks along dorsal margin; genital claspers and flagellum distinctive of the species (fig. 145).

Female: Length 4.7 mm., width 1.9 mm.; more robust than the male but very similar in coloration.

Holotype: Male, 8 Aug., 1910, East River, Conn. (C. R. Ely); author's collection. Allotype: taken with the type. Paratypes: Females (4), July-Sept., 1910, type locality (C. R. Ely). DISTRICT OF COLUMBIA—Female, 12 July, 1909, Washington (O. Heidemann). NEW YORK—Female, 10 Sept., 1917, Syracuse (C. J. Drake).

***Phytocoris caryae* Knight, new species.**

Male: Length 5.3 mm., width 1.74 mm. Head: Width .93 mm., vertex .28 mm.; yellow, small spot behind dorsal margin of each eye, irregular large spot each side of front, and spot on dorsal margin or lora, orange colored; front and vertex bearing prominent pale hairs. Rostrum, length 2.2 mm., reaching upon fifth abdominal segment, pale yellowish, brownish black at apex.

Antennae: Segment i, length 1.14 mm., yellow, anterior aspect with small orange spots, largest one just before apex, setae pale to dusky; ii, 2.46 mm., uniformly pale yellow; iii, 1.5 mm., yellow; iv, 1.16 mm., yellow, dusky at apex.

Pronotum: Length .81 mm., width at base 1.44 mm.; greenish yellow, with four orange stripes on disk, sometimes joining basally; calli pale, collar with broad orange spot each side of median line and extending to touch callus; propleura with small orange ray behind lower half of coxal cleft; clothed with pale yellowish pubescent hairs, a few dusky hairs on basal margin.

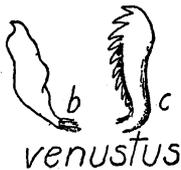


FIG. 145. *Phytocoris venustus* Knight,—male genital claspers, (b) right clasper, lateral aspect, (c) flagellum. Greatly enlarged. Drawing by Dr. H. H. Knight.



FIG. 146. *Phytocoris caryae* Knight,—male genital claspers, (b) right clasper, lateral aspect, (c) flagellum. Greatly enlarged. Drawing by Dr. H. H. Knight.

Scutellum greenish yellow, an oblique orange mark each side of median line at middle. Sternum and pleura pale yellowish.

Hemelytra: Embolar margins very slightly arcuate; pale to greenish yellow; mottled with fusco-orange, darkest on clavus and irrorate with large irregular greenish yellow spots, apical one-fifth of corium nearly uniformly greenish yellow, embolium with a few scattering reddish orange spots; tip of clavus with dusky spot and beset with prominent black hairs; cuneus yellowish translucent.

apex and margins flecked with reddish, a prominent fusco-reddish spot on corio-membranal margin; clothed with yellow pubescent hairs, nearly fuscous on ante-apical area of corium. Membrane nearly pale, marmorate with pale fuscous, darkest within areoles and spot on middle, veins dusky yellowish at apex of areoles.

Legs: Pale to yellowish, apical half of femora flecked with bright red, larger spots on posterior pair; tibial spines fuscous, hind pair with small reddish spot at base of spines although obsolete apically; tips of tarsi dusky.

Venter: Pale greenish yellow; genital claspers and flagellum distinctive of the species (fig. 146).

Female: Length 5.2 mm., width 1.9 mm.; more robust than the male but very similar in coloration.

Breeds on *Carya* sp.

Holotype: Male, 30 July, 1916, Batavia, N. Y. (H. H. Knight); author's collection. Allotype: same data as the type. Paratypes: Males and females (24), taken with the types on hickory.

P. puella Reuter.

Ofv. Kongl. Sv. Vet.-Akad. Forh., xxxii, No. 9, 69, 1876.

Female: Length 4.9 mm., width 1.9 mm. Head: Width .86 mm., vertex .36 mm.; pale, mark each side of collum and extending upon collar, irregular arc each side of front, base of lora, and dorsal half of bucculae, orange colored. Rostrum, length 2.26 mm., extending upon fifth ventral segment, pale, blackish at apex.

Antennae: Segment i, length 1.26 mm., pale, indistinctly dotted with orange on anterior aspect; ii, 2.8 mm., pale yellowish; iii, 1.49 mm., yellowish; iv, 1.28 mm., yellowish to dusky.

Pronotum: Length .78 mm., width at base 1.4 mm.; pale, disk with four orange stripes, paler forms with stripes broken at middle, anterior angles with orange stripe which extends upon collar; propleura with orange ray across lower half of coxal cleft and extending to near posterior margin. Scutellum pale, with an oblique orange vitta each side of apical half.

Hemelytra: Pale, rather uniformly reticulate with orange, cuneus with red; pale yellowish pubescent and intermixed with prominent white sericeous pubescence. Membrane pale, areoles infuscated but more conspurcate within apical half, veins yellowish, pale at apex of areoles.

Legs: Pale, front tibiae with two nearly obsolete orange-yellow bands; hind femora reticulately marked with red on apical half but divided at middle of apical half by pale annulus, fuscous hairs arising from the red marks.

Venter: Pale, tinged with red near each spiracle.

Male: Length 5 mm., width 1.54 mm. Suggestive of *confluens* but with the dorsum uniformly bright red, calli pale, basal angles and apex of scutellum yellowish to pale orange; membrane pale

fumate or nearly clear, areoles rather finely and obsoletely conspicuate with pale fuscous; apical half of hind femora reticulate with red and bearing blackish hairs but leaving a yellowish subapical band, and in this respect very similar to the female.

This species was described by Reuter (1876) with New York designated as the type locality, the description evidently drawn from the female only. The male here described (fig. 147) has been recognized by association with female specimens which sex seems to occur in greater abundance. The sexes of *puella* exhibit a greater variation in color than do other closely related species herein described.

East River, Aug., 1910 (C. R. E.); New Haven, 4 Aug., 1920 (B. H. W.).



FIG. 147. *Phytocoris puella* Reuter,—male genital claspers, (b) right clasper, lateral aspect, (c) flagellum. Greatly enlarged. Drawing by Dr. H. H. Knight.

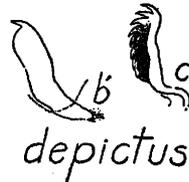


FIG. 148. *Phytocoris depictus* Knight,—male genital claspers, (b') right clasper, lateral aspect with outline of genital segment added, (c) flagellum. Greatly enlarged. Drawing by Dr. H. H. Knight.

Phytocoris depictus Knight, new species.

Closely related to *puella* but antennal segment i shorter, also differs in coloration.

Male: Length 4.1 mm., width 1.5 mm. Head: Width .78 mm., vertex .27 mm.; marked with orange and red, nearly as in *puella*. Rostrum, length 1.93 mm., reaching upon fifth abdominal segment, yellowish, blackish at apex.

Antennae: Segment i, length .83 mm., thickest near base and tapering to more slender just before apex, yellowish, with a few red dots on anterior aspect, with seven or eight fuscous setae on basal half of dorsal aspect; ii, 1.97 mm., uniformly pale yellowish; iii, .96 mm., yellowish; iv, .97 mm., yellowish.

Pronotum: Length .71 mm., width at base 1.23 mm.; pale testaceous with dusky, calli pale, disk with four orange stripes, collar each side of median line and behind eye orange colored; clothed with pale yellowish pubescent hairs, fuscous near basal margin, and sparsely intermixed with pale sericeous pubescence; propleura with red across lower half of coxal cleft, more diffusely behind it.

Scutellum pale, with orange mark each side of median line and extending obliquely to lateral margin. Sternum pale, episternum with red mark, epimeron chiefly red, ostiolar peritreme white, reddish just above.

Hemelytra: Irregularly marked with red reticulations, produced by the thickly placed and more or less confluent pale irrorations, basal half of corium more nearly fusco-reddish, extreme tip of clavus and spot near inner basal angle of cuneus, black with prominent black hairs; clothed with golden yellow pubescence, central area with a few small spots of sericeous silvery tomentum; cuneus with bright red and irrorate with rather small pale spots. Membrane pale fuscous, areoles and central area with clear spots, veins pale to fuscous.

Legs: Pale to yellowish, apical two-thirds of hind femora with dark red, irrorate with large and small pale irrorations, an irregular incomplete pale band at middle of apical half, with a few blackish hairs arising from the red; spines on hind tibiae pale, with reddish spots at base of each except apically.

Venter: Pale yellowish, reddish dots on sides, base of genital segment fuscous; genital claspers and flagellum distinctive of the species (fig. 148).

Female: Length 5.1 mm., width 1.77 mm.; larger and more robust than the male but very similar in coloration, the dorsum and membrane frequently more broadly pale.

Breeds on *Quercus macrocarpa*.

Holotype. Male, 15 Aug., 1916, Batavia, N. Y. (H. H. Knight); author's collection. Allotype: 11 Aug., 1920, University Farm, St. Paul, Minn. (H. H. Knight). Paratypes: New York—Male, 10 Aug., females (2), 12 Aug., males (6), 15 Aug., 1916, type locality (H. H. Knight), taken on *Quercus macrocarpa*. Male and female, 24 Aug., 1915, Batavia (H. H. Knight), taken on *Fraxinus pennsylvanica*, one specimen in teneral condition. MINNESOTA—Males and females (34), 5 Aug., males and females (8), 11 Aug., 1920, University Farm, St. Paul (H. H. Knight), on *Quercus macrocarpa*.

Tribe MYRMECORINI.

Key to Genera.

1. Antennal segment i, in length, distinctly greater than width of head; scutellum not conically produced; dorsum with fine short pubescence *Paraxenetus*
- Antennal segment i, in length, scarcely greater than width of vertex; scutellum conically produced; dorsum, especially the pronotum and scutellum, with long erect pilose hairs *Barberella*

Paraxenetus Reuter.

P. guttulatus (Uhler).

Ent. Amer., iii, p. 150, 1887.

Embolar margins strongly sulcate, or medially coarctate; fusco-grayish and tinged with fulvous; cuneus, veins of membrane, and

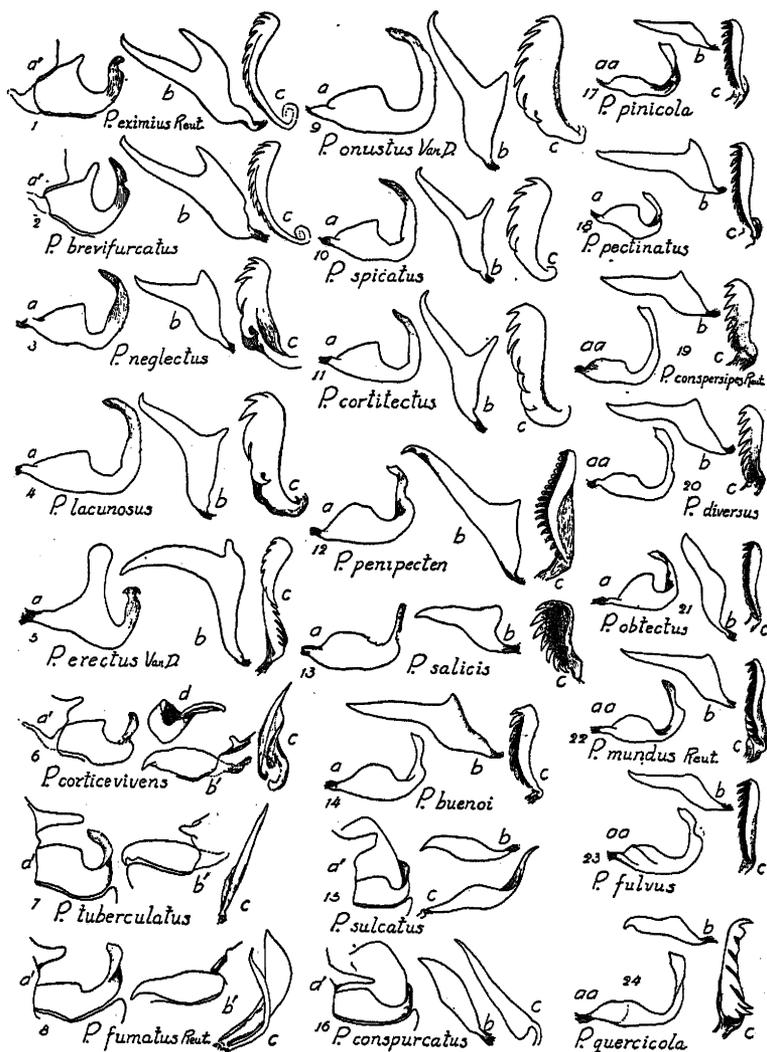


FIG. 149. Male genitalia of species of *Phytocoris*. All greatly enlarged, but drawn to the same scale. Drawing by Dr. H. H. Knight. Key to Structures: (a) left clasper, lateral aspect, (a') left clasper with outline of genital segment added, (aa) left clasper, dorsal aspect, (b) right clasper, lateral aspect, (b') right clasper, lateral aspect, with outline of genital segment added, (c) flagellum, (d) left clasper, caudal aspect. (1) *eximius* Reuter. (2) *brevifurcatus* Knight. (3) *neglectus* Knight. (4) *lacunosus* Knight. (5) *erectus* Van Duzee. (6) *corticevicens* Knight. (7) *tuberculatus* Knight. (8) *fumatus* Reuter. (9) *onustus* Van Duzee. (10) *spicatus* Knight. (11) *cortitectus* Knight. (12) *penipecten* Knight. (13) *salicis* Knight. (14) *buenoi* Knight. (15) *sulcatus* Knight. (16) *conspurcatus* Knight. (17) *pinicola* Knight. (18) *pectinatus*. (19) *conspersipes* Reuter. (20) *diversus* Knight. (21) *obtectus* Knight. (22) *mundus* Reuter. (23) *fulvus* Knight. (24) *quercicola* Knight.

calli, fulvous to reddish, sometimes rather broadly tinged with fulvous; antennae except apical segment, and tibiae, pale yellowish, femora frequently fusco-reddish; clothed with recumbent fine yellowish pubescence, femora rather sparsely set with long pilose hairs, longest on posterior pair.

Male: Length 6.4 mm., width at base of cuneus, 1.33 mm. Head: Width 1 mm., vertex .27 mm., with sulcus on median line of vertex. Antennae: Segment i, length 1.46 mm.; ii, 3.45 mm.; iii, 2.85 mm.; iv, .86 mm.; yellowish, segment iv reddish black.

Female: Very similar to the male in form and coloration, the dorsum sometimes more broadly fulvous or reddish.

Occurs on grape vines (*Vitis* sp.).

Cold Spring Harbor, Long Island, N. Y. 4 Aug., 1902 (H. G. Barber).

Barberiella Poppius.

B. apicalis Knight, new species.

Male: Length 5 mm., width 1.6 mm. Head: Width 1.14 mm., vertex .43 mm.; strongly vertical, vertex and base of front distinctly impressed along median line but not grooved; brownish black, clothed with pale pubescence and short hairs, more prominent on front. Rostrum, length 1.99 mm., reaching upon base of hind coxae, dark brown.

Antennae: Segment i, length .52 mm., dark brown, finely and closely pubescent, with two or three erect hairs near apex but not equal to thickness of segment; ii, 2.03 mm., cylindrical, thickness slightly greater than segment i, more slender near base, dark brown, finely and closely pubescent; iii, 1.11 mm., slender, dark brown; iv, .68 mm., dark brown.

Pronotum: Length 1.24 mm., width at base 1.59 mm., anterior angles .84 mm., apical one-third nearly cylindrical or to a point just behind calli, from thence flaring to basal margin but forming nearly a straight line, disk strongly convex, calli scarcely apparent but with two impressed points just between; brownish black, darker anteriorly, surface alutaceous, pale pubescent and sparsely interspersed with erect pilose hairs. Scutellum conically produced, the point bent over and directed to the rear, sparsely set with long pilose hairs, mesoscutum broadly exposed, sloping downward to base of scutellum from which it is not distinctly separated; dark brown, moderately shining. Sternum and pleura dark brown, posterior half of epimeron white, ostiolar peritreme dark brown, with a protuberant point just above the ostiole.

Hemelytra: Embolar margins strongly constricted at middle, disk nearly flat, cuneus strongly declivitous; clothed with moderately sparse golden yellow pubescence and interspersed with more erect fine hairs, more prominent on clavus; clavus dull fusco-brownish, a triangular pruinose field extending upon middle from

the corium; corium fuscous on basal half, a tranverse pale spot at middle, behind this dark fusco-brownish as far as a line drawn tranversely through tip of clavus, apical area pale brownish, somewhat translucent and shining, more pruinose bordering the tranverse dark band; cuneus uniformly brownish translucent. Membrane uniformly fusco-brownish, veins slightly darker.

Legs: Uniformly dark brown, hind coxae with a pale or yellowish opaque spot on antero-lateral angle; femora coarsely alutaceous, sparsely clothed with erect pale hairs; hind tibiae compressed, strongly curved, beset with yellow spine-like hairs; tarsi fuscous, brownish at base.

Venter: Black with a tinge of brown, moderately shining; strongly constricted at base, a pale mark on side just beneath that of corium; ventral aspect sparsely set with erect pale hairs.

Female: Length 5.5 mm., width before base of cuneus 1.59 mm.; very similar to the male in form and coloration, abdomen broader apically. Head: Width 1.32 mm., vertex .58 mm. Antennae: Segment i, length .54 mm.; ii, 2.1 mm., slender on basal half, clavate apically (.114 mm. thick), exceeding thickness of segment i.

Holotype: Male, 14 July, 1906, Staten Island, N. Y. (Wm. T. Davis); author's collection. Allotype: Female, Aug., Central Park, Long Island, N. Y. (Wm. T. Davis).

This species is more closely related to *Fiebrigiella silvestri* Popp., described from Brazil, than to *Barberrella formicoides* Popp., but differs from the former at least in the longer antennal segment i and by the shining, brownish translucent apical area of corium and embolium. The members of this genus are very good ant mimics, and in general aspect very suggestive of large species of *Pilophorus*.

Family GERRIDAE.*

By J. R. DE LA TORRE-BUENO.

The water striders are familiar objects on the surface of ponds and streams, gliding about on their long spider-like legs like graceful skaters on a sheet of ice. They form perhaps one of the largest of the families of semiaquatic Heteroptera. They differ, as the key has shown, from all other Heteroptera in having sub-apical claws; that is, inserted in more or less of a cleft at some distance from the apex of the last tarsal segment.

The divisions of the family are shown in the following key to tribes of Gerridae.

* This family should follow the Veliidae but in paging the manuscript it was inadvertently placed after Miridae. The Miridae was nearly all in page form before the error was noticed, and to correct it, meant changing several hundred pages and figure numbers, to say nothing of recasting the pages of the Miridae. W. E. B.