

Descriptions of Five New Species of *Plagiognathus* from North America (Hemip.: Miridae).*

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Plagiognathus salicicola n. sp.

Runs to *delicatus* Uhler in my key (Hem. Conn., 1923, p. 433), but easily distinguished by the larger size and black color markings; cuneus black with all margins pale.

♂. Length 4.1 mm., width 1.5 mm. Head: width .83 mm., vertex .33 mm.; pale, tylus and lora black, arcuate mark each side of frons and spot each side above, fuscous. Rostrum, length 1.4 mm., extending upon middle of hind coxae, fuscous at the joints. Antennae: segment I, length .27 mm., black, apex pale; II, 1.09 mm., pale, base and apex blackish; III, .77 mm., pale to dusky; IV, .45 mm., dusky. Pronotum: length .65 mm., width at base 1.26 mm.

Clothed with pale to yellowish simple pubescence, suberect and moderately prominent. Color blackish, anterior margin of pronotum, disk behind calli, lower half of propleura, scutellum except on base, along claval suture and radial vein, embolium, all margins of cuneus, xyphus, sides of sternum, epimera, and apical area of genital segment, pale to yellowish. Legs pale, basal half of coxae largely fuscous, double row of spots on femora, also apically on posterior aspect, knees, spots and spines on tibiae, black.

♀. Length 3.9 mm., width 1.7 mm; very similar to the male in pubescence and coloration but the dorsum somewhat more broadly pale.

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Holotype: ♂ July 17, 1927, St. Mary's, OHIO (S. A. Watson); author's collection. *Allotype*: July 13, 1920, Berrien Co., MICHIGAN (R. F. Hussey), collected on *Salix*. *Paratypes*: ♂, 2 ♀, July 19, 1925, Ledges State Park, Boone, IOWA (H. H. Knight), taken on *Salix longifolia*.

PLAGIOGNATHUS SALICICOLA depallens n. var.

Similar in structure to *salicicola* but differs in the pale color; dorsum uniformly pale, without distinct fuscous markings altho the membrane is fuscous; antennae infuscated like the typical form but the legs with spotting somewhat reduced; hind femora with a spot on middle and a group of smaller spots on apical half.

Holotype: ♂ August 2, 1924, St. Anthony Park, St. Paul, MINNESOTA (H. H. Knight); author's collection. *Paratypes*: 5 ♀, taken with the type on *Salix* sp. 12 ♂ ♀, July 12, 1919, Hennepin Co., Minnesota (H. H. Knight), taken on *Salix longifolia*. ♀ July 8, 1921, St. Paul, Minn. (H. H. Knight), taken at light. 10 ♂ ♀ July 11, 1923, Red Rock, Ramsey Co., Minnesota (H. H. Knight), on *Salix longifolia*. IOWA—♂ 3 ♀ July 19, 1925, Ledges State Park, Boone (H. H. Knight), taken on *Salix longifolia* where the species was breeding. 2 ♂ July 26, 1928, Ames, Iowa (H. H. Knight), on *Salix longifolia*.

PLAGIOGNATHUS TINCTUS Knight.

This species was originally described as a variety of *P. albonotatus* Kngt. (Hem. Conn., 1923, p. 437), but with the accumulation of considerable material since 1923, it is evident that *tinctus* is a valid species. We have found it breeding on sand bar willow (*Salix longifolia*), the same host as the above described *salicicola* but it may be readily separated by the fuscous to blackish scutellum combined with a pale to reddish cuneus.

Debilis Blatchley is a color form of *tinctus* Kngt., it being the common phase of the species in the Mississippi valley region. I found it particularly abundant in Minnesota breeding on sand bar willow. Typical *tinctus* has reddish appearing in the pale cuneus and occurs as might be expected, in the cooler and higher elevations of its range, especially Pennsylvania, but I have also taken it in Minnesota.

Plagiognathus shepherdiae n. sp.

Pale and marked with black; color pattern suggestive of *Phylloidea picta* (Uhl.) but distinguished by the longer rostrum and soft pale pubescence.

♂. Length 4.5 mm., width 1.6 mm. Head: width .87 mm., vertex .38 mm. Rostrum, length 1.38 mm., reaching upon middle of hind coxae. Antennae: segment I, length .30 mm., pale, base and two setigerous points on apical half black; II, 1.27 mm., pale to greenish yellow, base and more widely on apex blackish; III, .77 mm., fuscous; IV, .42 mm., fuscous. Pronotum: length .64 mm., width at base 1.29 mm.

Clothed with soft pale pubescence. Ground color pale to yellowish, four spots on front of vertex, transverse marks each side of frons, apex and bivittate mark on basal half of tylus, tip of rostrum, calli, more or less transversely on basal half of pronotal disk and sometimes extending forward to outer margin of callus, middle of mesoscutum and sometimes extending on base of scutellum, clavus except rather broadly along claval vein, claval suture, corium except rather broadly along radial vein and extending to apex, central area of cuneus, coxal cleft above, central area of propleura, sternum, and venter more or less, fuscous to black. Legs pale, anterior aspect of femora with double row of prominent spots, posterior aspect also with incomplete rows, and dorsal margin with line on apical half, black; knees, tibial spines and spots at base also black. Membrane fuscous, paler bordering the white veins.

♀. Length 4 mm., width 1.6 mm. Head: width .83 mm., vertex .41 mm. Antennae: segment I, length .29 mm.; II, .98 mm.; III, .61 mm.; IV, .37 mm. Pronotum: length .62 mm., width at base 1.24 mm. More robust than the male but very similar in coloration; membrane paler, the heavy infuscation reduced to an irregular transverse band, and between and within the central areas of larger areoles.

Holotype: ♂ August 12, 1925, Pagosa Springs, COLORADO (H. H. Knight); author's collection. *Allotypes* same data as type. *Paratypes*: 22 ♂ ♀, taken with the types on buffalo berry (*Shepherdia argentea* Nutt.) on which the species was breeding. 11 ♂ ♀ Aug. 13, 1925, Mancos, Colorado (H. H. Knight), taken on the same host.

PLAGIOGNATHUS SHEPHERDIAE *flavidus* n. var.

Very similar in structure to *shepherdiae* but differs greatly in color aspect; uniformly pale, antennae and legs marked with black as in *shepherdiae* but without black line forming above on femora; frons above with four dusky spots but other markings obsolete; cuneus sometimes dusky on middle, membrane uniformly pale fumate. Clothed with soft pale pubescence.

♂. Length 3.8 mm. Head: width .86 mm., vertex .385 mm. Antennae: segment I, length .29 mm.; II, 1.15 mm.; III, .74 mm.; IV, .45 mm. Pronotum: length .59 mm., width at base 1.21 mm. Female very similar to the male in size and coloration.

Holotype: ♂ July 24, 1927, Kennebec, SOUTH DAKOTA (H. H. Knight); author's collection. *Allotype*: same data as type. *Paratypes*: 16 ♂ 22 ♀, taken with the types on buffalo berry (*Shepherdia argentea* Nutt.), but the fruit of these plants was yellow and not dark red like the Colorado plants which have been determined as the same species.

It seems rather significant that not a single specimen of the good series obtained, varies toward the dark color pattern of the typical *shepherdiae* from Colorado. Perhaps the form here described represents a race or subspecies, but it will take time and more work before we can be sure of the status of such closely related forms.

Plagiognathus luteus n. sp.

Distinguished by the uniformly orange-yellow color; first antennal segment, base and apex of segment II, line on dorsal margin of apical half of hind femora, knees and spots on tibiae, black; membrane uniformly pale fumate, veins of the same deep orange-yellow as the corium and cuneus. Tibial spines fuscous to black; tarsi apically, last two antennal segments and tip of rostrum, fuscous.

♂. Length 3.8 mm., width 1.3 mm. Head: width .70 mm., vertex .31 mm. Rostrum, length 1.3 mm., reaching to middle of hind coxae. Antennae: segment I, length .26 mm.; II, 1.12 mm.; III, .59 mm.; IV, .33 mm. Pronotum: length .52 mm., width at base 1.06 mm.

♀. Length 3.2 mm., width 1.5 mm. Head: width .68 mm., vertex .34 mm. Antennae: segment I, length .25 mm.; II, .95 mm.; III, .52 mm.; IV, .31 mm. Pronotum: length .49 mm., width at base 1.1 mm. Very similar to the male in coloration and pubescence.

Holotype: ♂ June 12, 1925, Williams, ARIZONA (A. A. Nichol); author's collection. *Allotype*: same data as the type. *Paratypes*: 16 ♂ 1 ♀, taken with the types on *Berberis fremontii* which is the host plant. Mr. Nichol states: "Recalling the yellow species of which there was a good series taken on

barberry at Williams, it may be of interest to know that the color of the flower and insect not only closely agreed, but the outer layer of the cambium is also that shade of yellow."

Plagiognathus tenellus n. sp.

Distinguished by the uniformly pale yellowish color, rather broad head and prominent eyes. Antennae yellowish brown, last two segments dark brown to fuscous. Hind femora with five or six setigerous fuscous dots subapically on anterior face; tibial spines prominent, black, with small fuscous spots at base. Membrane uniformly pale fuscous. Clothed with prominent, simple, pale yellowish pubescence. Left genital clasper rather prominent for the genus, forming a small lobe distally, the dorsal margin forming an arcuate line.

♂. Length 3.8 mm., width 1.4 mm. Head: width .89 mm., vertex .31 mm. Rostrum, length 1.14, scarcely attaining hind margins of middle coxae. Antennae: segment I, length .25 mm.; II, 1.2 mm.; III, .86 mm.; IV, .35 mm. Pronotum: length .61 mm., width at base 1.27 mm.

♀. Length 3.6 mm., width 1.6 mm. Head: width .86 mm., vertex .40 mm. Antennae: segment I, length .24 mm.; II, 1.03 mm.; III, .80 mm.; IV, .41 mm. Pronotum: length .59 mm., width at base 1.3 mm. Very similar to the male in pubescence and coloration.

Holotype: ♂ August 2, 1917, top of Bright Angel trail, Grand Canyon, ARIZONA (H. H. Knight); author's collection.

Allotype: taken with the type. *Paratypes*: 12 ♂ ♀, taken with the types. 36 ♂ ♀ June 20, 1928, alt. 6200 ft., Chiricahua Mts., ARIZONA (A. A. Nichol). Mr. Nichol reports the species as breeding on *Philadelphus rugosus*.

Plagiognathus phoradendronae n. sp.

Pale greenish yellow, more greenish on thorax, hemelytra yellowish translucent, tinged with dusky apically on corium. Membrane pale, anal area, apically within areoles, and transverse cloud just behind areoles, dusky to fuscous. Legs unspotted, tibial spines pale to yellowish. Head rather short and broad for the genus.

♂. Length 2.8 mm., width 1.2 mm. Head: width .74 mm., vertex .33 mm. Rostrum, length .83 mm., just attaining hind margins of intermediate coxae. Antennae: segment I, length .16 mm.; II, .90 mm., thickness about equal to segment I, clothed with rather prominent fuscous pubescence; III, .40 mm.; IV, .35 mm.; greenish yellow, last two segments becom-

ing fuscous. Pronotum: length .47 mm., width at base 1.06 mm.

♀. Length 2.8 mm., width 1.2 mm. Head: width .71 mm., vertex .37 mm. Antennae: segment I, length .16 mm.; II, .75 mm.; III, .41 mm.; IV, .29 mm. Pronotum: length .445 mm., width at base 1.03 mm. Very similar to the male in coloration and pubescence.

Holotype: ♂ June 20, 1928, Chirichaua Mts., ARIZONA (A. A. Nichol); author's collection. *Allotype*: same data as the type. *Paratypes*: 18 ♂ ♀, taken with the types on mistletoe (*Phoradendron macrophyllum*) where the species was breeding.