NEW SPECIES OF COLORADO APHIDIDÆ, WITH NOTES UPON THEIR LIFE-HABITS.

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(Continued from Vol. XXXIX, page 396.)

Myzus Braggii, n. sp. (Plate 1, figs. 1, 2, 3).

A beautiful pale yellowish or greenish-yellow louse, with bluish-green markings; upon Canada thistle, Carduus arvensis.

Winged Male (Fig. 3).

Described from specimens taken at Fort Collins, Colo., Oct. 26, 1906. General colour light yellow, or greenish-yellow. Head, thorax, antennæ, tarsi and distal ends of tibæ black or blackish. The dorsum of the abdomen has black transverse bands on all of the segments, except the first two. Femora black in distal two-thirds, but light near the coxe. The pleuron of the mesothorax, the coxe, more or less of the cornicles, about four or five spots on either lateral margin of the abdomen, the beak except at base, the subanal and subgenital plates, and the nervures of the wings, dusky brown to blackish in colour. Eyes dark red; cauda pale yellow; cornicles .40 mm. long, slender, cylindrical, straight, or very slightly curved, and with flange at free end. Length of body, 1.80 mm.; length of wing, 3 mm.; length of antennæ, 2.30 mm. Prothorax without lateral tubercles, a slight tubercle on vertex of head for ocellus. Joints of antennæ measure about as follows: III .51, IV .43, V .37, VI .11, and VII .90 mm. The sensoria are abundant on segments three, four and five. They are oval and placed with their greater diameters across the antennal segments. A cluster of about six or eight sensoria are placed at the end of segment six.

Winged Viviparous Female (Fig. 1).

Described from specimens taken at Fort Collins, Colorado, Oct. 5, '07. In general appearance hardly unlike the male described above, but differs by being a little larger (about 2 mm. long), by having the black colour upon dorsum of the abdomen in a solid rectangular patch on joints 3, 4 and 5, by having a transverse band on joint 6, and by lacking the black tip to the abdomen, but with subgenital plate dusky. Sensoria abundant on joints 3, 4 and 5 as in the male; cornicles slender, a little curved and .50 mm. long.

Apterous Viviparous Female (Fig. 2).

The ground colour of this female is very pale greenish-yellow, with a broad but more or less obscure dark stripe of green extending over the thorax and abdomen about midway between the median and lateral lines.

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of the dorsum upon either side. In some specimens, however, the green colour is quite distinct and pronounced. The whole body, in some specimens, is tinged more or less distinctly with flesh colour, the head being the lightest. The distal portions of the antennae, tibiae, cornicles, beak and the entire tarsi infuscated; eyes dark red; entire length of body 2 mm.; antennae 2 mm. Joints of antennae about as follows: I and II together .10 mm.; III .40, IV .34, V .31, VI .10, and VII .80 mm. Cornicles .70 to .80 mm. long, gently curved in form and quite slender. Style rather long, upturned. The body has many capitate hairs, but there are none of these hairs upon the antennae or legs; the tubercles for the antennae are quite prominent and slightly gibbous. The first joint of the antenna is much larger than the second, and strongly gibbous on the inner side, giving the appearance of receiving joint 2 upon the outer side. There is a slight frontal prominence bearing two capitate hairs; prothoracic tubercles wanting. The lice have been so numerous upon the thistles as to utterly kill many of them.

**Apterous Oviparous Female.**

Mr. Bragg and I have been searching for the oviparous females for at least two weeks, and those obtained to-day (Oct. 5, '07) are the first that we have noticed this season, although I saw a few eggs upon thistles one week ago. There certainly is not more than one oviparous female to 100 males upon the plants at this time. The eggs are bright yellow in colour when first deposited, but gradually change to black. I am able to find but very few of these upon the stems and leaves of the thistles, but they are scattered in small numbers over the plants. This form closely resembles the apterous viviparous form. A technical description has not been made.

**The Pupa.**

The pupae are light greenish-yellow in general colour, with two longitudinal dashes running over the mesothorax, with a large green spot on either side of the first segment of the abdomen, and with a broken longitudinal line of green on either side of the dorsum of the abdomen extending over segments three, four, five and six. This green colour is a very conspicuous marking upon the light background of the general colour of the pupa.

I find that my winged males for a time retain the green colour markings that are so prominent on the apterous females and the pupae. After a few hours' exposure to the daylight these winged males lose the green colouring and take on the dark colouring of the abdomen mentioned above. All of the individuals seem now (Oct. 5) to be acquiring wings,
and, so far as I can find, all are becoming males, although I find an occasional yellowish-green egg that probably is being deposited by oviparous females upon the stems of the thistle.

The Canada thistle upon which this louse has been found occurs upon a small area in the suburbs of Fort Collins, where the seeds were introduced some twenty years ago. I have never seen the thistle in the surrounding country, and neither Mr. Bragg nor myself have ever found this louse upon other food-plants, but it seems probable that such must occur here. The lice have been most abundant during the month of October, and we have not seen them during the spring or summer months, though carefully searched for. The lice are rather broad and flat, and so near the colour of the leaves of the thistle that they are seen with difficulty unless very numerous.

Myzus vince, n. sp. (Plate 1, figs. 4, 5).

Alate Viviparous Female (Fig. 5). Type specimens taken at Fort Collins, Nov. 11, 1907, upon Vincia sp. in the College greenhouse.

General colour pale greenish-yellow. Head, antennae, transverse band on pronotum, mesothorax above, laterally and beneath; a transverse band upon each segment of the abdomen dorsally, spots along lateral margins of the abdomen, cauda, subanal and subgenital plates, tarsi, distal ends of femora and tibiae, and beak, except at base, black or blackish; eyes dark red. Upon segments 3 to 5 of the abdomen the bands unite to form a large blotch.

Body, 1.70 mm.; antenna, 2.37 mm.; cornicles, .29 mm.; wing, 3.20 mm.; cauda, .13 mm. Antennal joints: III .50, IV .45, V .37, VI .15, VII .73 mm. Cornicles cylindrical, with distinct flange at apex; 3rd joint of antenna with about 15 sensoria that are scarcely tuberculate; no sensoria on joint 4; cauda tail-like, upturned; beak barely reaching 3rd coxæ; antennæ upon moderate frontal tubercles, the inner sides gibbous, as are the inner sides of the first joints of the antenna; lateral tubercles of pro-thorax wanting. A few red specks, the eyes of embryo lice, can usually be seen over the abdomen. In some examples segments 2, 3, 4 and 5 of the abdomen have black transverse dashes near their lateral margins.

Apterous Viviparous Female (Fig. 4).

Colour light yellowish-green, with black markings above and dark red eyes; cauda concolorous with body, antenna, legs and cornicles light yellowish-brown; distal ends of joints 3, 4 and 5 and all of joints 6 and 7 of antenna and extreme ends of cornicles and tarsi black; distal ends of tibiae slightly infuscated.

Length of body, 1.90 to 2.10 mm.; antenna, 2.70 to 2.80 mm.; cornicles, .45 mm, cylindrical or slightly enlarged towards base, slightly
bent, and the distal end with a rather strong flange. Joints of antenna about as follows: III .65, IV .52, V .40, VI .18, VII .79 mm. Antennal tubercles strongly gibbous, and first joints of antennae moderately gibbous; cauda conical and upturned. A few of the eyes of embryos usually show as bright red specks in the abdomen. No dark markings on ventral surface.

The black coloration above consists of rather broad irregular transverse bands, one for each segment of the thorax and one each for joints 2, 3 and 4 of the abdomen, the last being broadest and the only one that extends across the middle of the dorsum, the others being cut by a median light portion concolorous with the rest of the body.

It seems probable that some of the past references to *M. dianthi* are really of this species.

I hesitate to call this a new species, but have been unable to find a description that will fit it. It is closely allied to the *persicae, dianthi, achyrantes* group, especially in the alate form.

Mr. Bragg has taken this louse upon liliaceous plants, asparagus, asparagus fern, Aquilegia and Rumex sp. in the greenhouse, and it was sent me from Boulder, Colorado, by Professor T. D. A. Cockerell, who found it in large numbers upon a lily indoors. I have taken it repeatedly upon *Vinca* and asparagus in greenhouses. Mr. Bragg tells me he has found it colonized upon several other greenhouse plants which he has not noted. It is evidently a very general feeder when abundant. Sexual forms and eggs have not been found. There are many apterous but few alate forms in the College greenhouse at this date, Nov. 20, '07.

*Callipterus robinie*, Gillette. (For description see Vol. XXXIX, page 395.)

Winged viviparous female, plate 1, fig. 6; oviparous female, fig. 7; winged male, fig. 8.

This louse is solitary in its habits, and the winged forms are very active jumpers upon being approached. It has been fairly common, but not abundant, upon the under side of the leaves of the black locust in Denver and about Ft. Collins for the past two years. On November 9th, after the leaves had nearly all fallen, I saw the oviparous females with their long-drawn-out abdomens depositing eggs upon rough places in the bark of small limbs of locust trees in Denver parks.

**Explanation of Plate 1.**

Figures 1, 2 and 3, alate viviparous female, apterous viviparous female and alate male of *Myzus Braggii*, n. sp. Figures 4 and 5, apterous viviparous female and alate viviparous female of *Mizus vincae*, n. sp. Figures 6, 7 and 8, alate viviparous female, apterous oviparous female and alate male of *Callipterus robinie*, n. sp. All enlarged 15 diameters. Original; Miriam A. Palmer artist.

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