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The *Desmodium* Aphid, *Microparsus variabilis* n. sp.*

EDITH M. PATCH.

(Plates XVIII and XIX)

For the past few years a very distinctive aphid has been present in enormous numbers upon the Canadian tick-trefoil in the vicinity of Orono. On account of the size of the wing tracheæ and the abundance of material this was one of the species which the writer used in the study of wing venation and it was figured and named in that connection before the description of the species was put into shape. Although not as detailed as is desirable it is hoped that the description given here will serve to place this characteristic species.

MICROPARSUS n. gen.

The ensiform cauda, the hemispherical anal plate, the cylindrical cornicles, the moderate hairs with spatulate tips, and the

*Papers from the Maine Agricultural Experiment Station: Entomology 35.

form of the antennae all indicate a close relationship of this genus with *Macrosiphum*. It is clearly differentiated from *Macrosiphum* and any other named genus by the wing characters. The radial sector* is short and strongly curved. The media is typically two branched. The cubitus and first anal are heavily shadowed. The hind wing is minute, the tip extending only to about the first anal of the fore wing, and is correspondingly narrow. The costal hooks of the hind wing are very near the tip of the wing. Typically the hind wing has only the radius. The shape and relative size of these wings are better indicated by the accompanying figures than by a detailed description.

***Microparsus variabilis* n. sp.**

The species under consideration is one of the most peculiar yet found in the family. I listed it first as *Macrosiphum* n. sp. as the cauda and cornicles would indicate. The head and antennae show *Myzus* tendencies, but the wings throw it out of any present genus. The heavy shadowing of the first anal and cubitus suggest the shadowed veins common in *Callipterus*. The two-branched media together with the frequent occurrence of a reversion of the three-branched condition presents a case similar to that of *Toxoptera*. The exceedingly small hind wing, however, and the very peculiar shape of the fore wing correlated with this are inconsistent with the characters of any named genus.

Mr. Sanborn in "Kansas Aphididæ" describes and figures the winged viviparous form of this or a closely allied species as *Macrosiphum* n. sp. and corrects this to *new genus, new species* in "Errata to Part I," but suggests no name in either instance.

This species may be *Macrosiphum desmodi* Williams which he lists on *Desmodium canadense* but as that species is *nomen nudum* there is no means of ascertaining.

Mr. J. T. Monell collected the same species thirteen years

*For the wing vein nomenclature, the reader is referred to "Homologies of the wing veins of Aphididae, Psyllidae, Aleurodidae and Coccidae." *Annals of the Entomological Society of America*. June, 1909.

ago and has graciously given me permission to use the notes with which he records his collection, as follows:

"On *Desmodium marilandicum*, St. Louis, Mo., August 12, '86. Covering leaves and stem in immense quantity. Colors alive under one-half inch pocket lens. *Apterous*. Head generally reddish yellow. Neck black. Tail yellowish to yellowish green. Dorsum yellow to yellowish green with few delicate irregular pale green markings. Apex of femora black. *Winged* the same. In the adult apterous is small dusky ring on abdomen enclosing nectary.

"33 wings had monofurcate 3d discoidal.

"14 wings had bifurcate 3d discoidal.

"24 wings had no discoidals.

"5 hind wings had trace of base of 2d discoidal."

Winged viviparous form.—Head light greenish brown. Hairs with spatulate tips present on head and antennae. Antennae black except basal III. Antennae much longer than body; 2.83 mm. with segments measuring I, 0.12 mm.; II, 0.08 mm.; III, 0.61 mm.; IV, 0.57 mm.; V, 0.49 mm.; VI (base), 0.12 mm.; spur 0.84 mm. Sensoria: A few (usually 5) circular sensoria in a more or less regular row on III; on V the customary terminal sensorium; and on VI the terminal with crowded group of 6 marginal sensoria. Eyes dark red. Ocular tubercles prominent. Beak 0.44 mm. long extending just caudad 3rd coxa. Thorax light brownish green, lobes glistening; prothorax with a dark longitudinal median line. Wings with veins dark brown. First anal and cubitus heavily shadowed, others unshadowed but heavy. Total expansion 5.4 mm. Hind wing extending only to the 1st anal of fore wing. Radius present and often the tip of media. Legs with the proximal two-thirds of femora very pale, distal one-third glistening dark brown, tibiae dark at proximal half and distal tip, with space between pale. Tarsi dark. Abdomen light green with dark patch at base of each cornicle. Cornicle dark brown, cylindrical, strongly and about uniformly imbricated throughout its length. Imbrications nowhere forming polygonal reticulations. A little larger at base than at the middle and slightly flared at tip. Cornicles 0.3 mm. long. Cauda light yellowish green, ensiform, upcurved, 0.24 mm. long. Anal plate hemispherical when seen from dorsal aspect. Total length of body, exclusive of antennae, 1.6 mm. Width 0.7 mm.

Apterous Viviparous Form.—Head light brown. Antennae with I, II, and basal III light, rest dark. Antennae longer than body, 2.62 mm. with segments measuring I, 0.14 mm.; II, 0.07 mm.; III, 0.62 mm.; IV, 0.48 mm.; V, 0.41 mm.; VI (base), 0.1 mm.; spur 0.8 mm. No sensoria on

III or IV, the usual terminal one of V and the terminal one with group of 6 crowded sensoria present on VI. Eyes red. Ocular tubercles prominent. Beak 0.43 mm., extending to 3rd coxae. Thorax and prothorax light green. Legs with femora light proximally and dark and glistening distally; tibiae dark at proximal and distal ends with light space between; tarsi black. Abdomen light green with dark ring at base of cornicle. Cornicle black, shaped and imbricated about as in the winged viviparous form. Cornicles 0.32 mm. Cauda light yellowish brown, ensiform, upcurved, 0.24 mm. Total length of body, exclusive of antennae 2 mm.; width .99 mm.

Apterous oviparous female.—Head light brown. Antennae black except basal III. Antennae longer than body, 2.62 mm. with segments measuring I, 0.15 mm.; II, 0.08 mm.; III, 0.6 mm.; IV, 0.48 mm.; V, 0.42 mm.; VI (base), 0.13 mm. Spur 0.76 mm. No sensoria except the terminal one of V and the terminal one of VI accompanied by crowded group of 6 marginal sensoria. Ocular tubercles prominent. Beak 0.44 mm., extending just caudad of 3rd coxa. Thorax light green. Legs colored as in winged viviparous form. Hind tibiae thickly set with sensoria. Abdomen light green with dark patch around cornicle. Cornicles dark brown, shaped and imbricated about as in the viviparous forms. Cauda light yellowish, ensiform, length 0.2 mm. Total length of body, exclusive of antennae, 2.25 mm. Width 1.01 mm.

Winged male.—Head light yellowish brown. Antennae black, longer than body, length 2.65 mm. with segments measuring I, 0.12 mm.; II, 0.08 mm.; III, 0.56 mm.; IV, 0.51 mm.; V, 0.41 mm.; VI (base), 0.12 mm.; spur 0.85 mm. Sensoria thickly set in III, IV and V. Terminal sensoria of V and group of VI similar to those of the other 3 forms. Ocular tubercles prominent. Beak 0.37 mm. reaching nearly to 3rd coxa. Thorax glistening brown. Prothorax light green. Wings with venation as in the alate viviparous form. Wings expand 4.95 mm. Legs colored as in alate viviparous form. Abdomen light green. Cornicles dark and strongly imbricated as in the other forms. Cornicles more uniformly cylindrical than in the other forms. Cauda lighter than abdomen, ensiform, about the length of tarsus, 0.12 mm. Total length of body, 1.125 mm.; width 0.56 mm.

The entire life cycle of the colonies observed in Maine is passed upon the Canadian or showy tick-trefoil, *Desmodium canadense* DC. The species reproduces upon the trefoil during the summer, and during July the colonies of apterous and alate viviparous forms thickly crowd the tips of the branches and the ventral surface of the leaves which become badly twisted and curled. From the middle of August to the middle



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