



SMITHSONIAN INSTITUTION
U. S. NATIONAL MUSEUM

Vol. 90

Washington: 1941

No. 3120

TWO NEW SPECIES OF CECIDOMYIID FLIES FROM
PHLOX

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THE two new species of Diptera described below were reared by Dr. C. R. Neiswander, of the Ohio Agricultural Experiment Station, in Ohio from phlox that had been severely damaged. As a result of experiments conducted by Dr. Neiswander it was discovered that the new species of *Hyperdiplosis* was responsible for the injury. The other new species, which belongs in the genus *Lestodiplosis*, is undoubtedly a predator on the former.

Genus HYPERDIPLOSIS Felt

HYPERDIPLOSIS PHLOX, new species

Male.—Length 1 to 1.25 mm. Antenna nearly twice the length of the body, binodose, brown, yellowish basally; with 14 segments, the fifth segment with three circumfili (fig. 24, *B*), the middle circumfilus slightly shorter than the other two; the basal node rounded, the other nearly one and one-half times as long as its diameter, slightly constricted in the middle; the stems varying in length from three to three and one-half times as long as their diameter. Palpus pale yellow, slender, quadriarticulate; segments of nearly equal length. Face pale, almost white. Mesonotum light amber, shining, in certain lights with a very delicate whitish pruinosity on the sides, forming two narrow longitudinal stripes; scutellum pale yellow;

metathorax darker, infuscated with brown. Abdomen pale, dull yellow, the dorsum with a brownish infuscation on the second segment and also a little before the apex. Genitalia (fig. 24, *A*): Basal segment of clasper large, brown, its length slightly more than twice its greatest width; inner edge uneven, with a large concavity in the apical third; two large bristles of unequal length inside, just below the apical joint; dorsal plate broad, with a broad V-shaped emargination forming two broad lobes each having a deep rounded emargination that forms two small lobes, the outer one more pointed and slightly lower; the ventral plate somewhat elliptical, the apical end with a deep rounded emargination forming two small, slightly oblique lobes; the style very narrow, rounded at the tip and considerably longer than the basal segment of the clasper. Wing (fig. 24, *D*) hyaline, costa brown: three long veins; petiole at base of wing long and narrow. Halteres dark brown, base of the stem pale yellow. Legs nearly uniformly dark brown, femora paler ventrally.

Female.—Length 1 to 1.25 mm. Very similar to the male. In some specimens the yellow of the abdomen is a little deeper in color and sometimes faintly reddish. Antenna with 13 segments, the fifth (fig. 24, *C*) with the stem about three times as long as its diameter; basal enlargement twice as long as its diameter; the circumfili pale, more distinctly marked in some specimens than in others. Ovipositor a little longer than broad, the terminal lobes pale.

Last-instar larva (fig. 24, *E*, ventral view; *F*, dorsal view).—Length 1.75 to 2.5 mm. Body composed of 12 segments in addition to a small, slightly rounded, retractile head; anterior three segments, especially the first and second, tapering sharply anteriorly; anterior two segments much shorter than the following; posterior two segments tapering slightly toward the caudal end. Color white. Breast plate Y-shaped, flat, pale amber-yellow; each side of the fork broad, with a slight narrowing near the base; main stem slightly constricted below the fork. Antenna cylindrical, about twice as long as its diameter; located on a broad, flattened tubercle. Posterior segment with a large pointed tubercle at each posterior angle; below these a pair of smaller tubercles that are less widely separated than the others; on each side of the last segment, anterior to the large tubercle, a pair of pale bristles. The ventral side of segments 2 to 10 each with an ambulatory area having minute spines, arranged in about four transverse rows.

Type locality.—Chagrin Falls, Ohio, June 20, 1938. Other specimens are from Chagrin Falls, Ohio, June 20 to August 29, 1938, August 8 to September 19, 1939; Wooster, Ohio, June 29, 1936, August 9 to 29, 1937, June 25 to July 4, 1938; Canton, Ohio, July 1

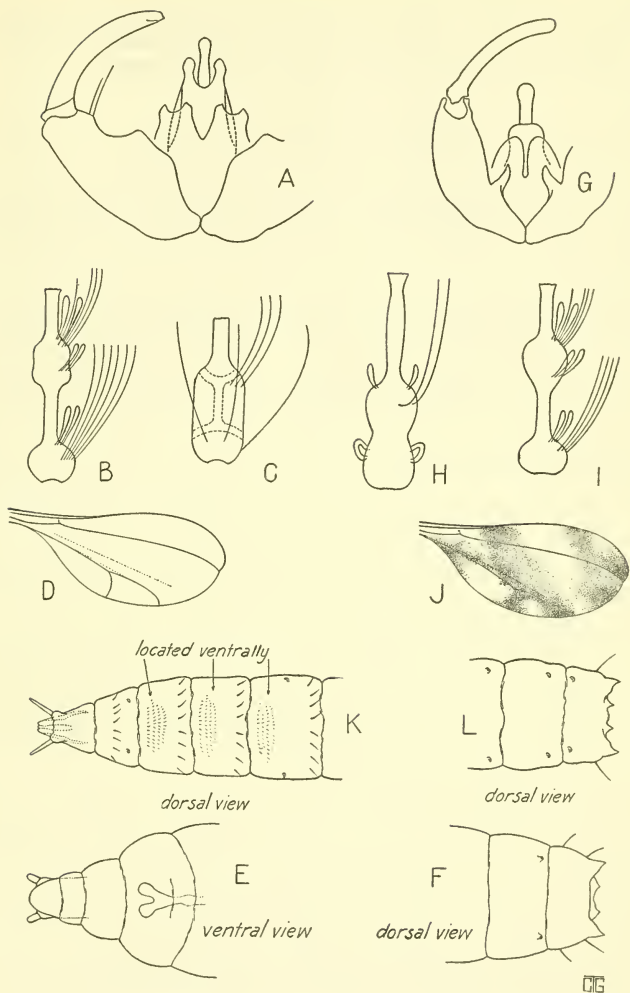


FIGURE 24.—TWO NEW FLIES REARED FROM PHLOX

A-F, *Hyperdiplosis phlox*: A, Male genitalia; B, fifth segment of male antenna; C, fifth segment of female antenna; D, wing of male (type); E, anteroventral view of last-instar larva; F, posterodorsal view of last-instar larva.

G-L, *Lestodiplosis maculipennis*: G, Male genitalia; H, fifth segment of female antenna; I, fifth segment of male antenna; J, wing of male (type); K, anterodorsal view of last-instar larva; L, posterodorsal view of last-instar larva.

to October 2, 1939. All the material was reared from phlox by Dr. C. R. Neiswander. Described from numerous specimens.

Type male and 7 $\frac{1}{4}$ paratypes.—U. S. N. M. No. 54187.

Genus **LESTODIPLOSIS** Kieffer

LESTODIPLOSIS MACULIPENNIS, new species

This species is superficially very similar to *Hyperdiplosis phlox* and was reared from the same plant material. The principal differences are found in the wing, the female antenna, and the male genitalia.

Male.—Length 1.25 mm. Differs from *Hyperdiplosis phlox* in the following characters: Antenna about twice the length of the body, binodose, mostly pale yellow, with 14 segments, the fifth segment (fig. 24, *I*) with three circumfili; the middle circumfilus shorter than the other two; the basal node rounded, the upper and lower stems about three times as long as their diameter. Abdomen pale, dull yellow, darker on the basal third. Genitalia (fig. 24 *G*): Basal segment of clasper large, three times as long as its greatest width; the apical half much thicker than the basal portion; a pointed projection on the inner side just below the middle; dorsal plate broad, very deeply and very narrowly emarginated; each lobe simple and elliptical in form; ventral plate broad and rounded, with the apical edge nearly straight; style narrow, broadly round at the apex, slightly longer than the basal segment of the clasper. Wing (fig. 24, *J*) with the basal petiole shorter than in *phlox*; color pale luteous; black hairs forming two diagonal crossbands, one in the middle and the other at the apical portion of the wing; much darker areas at the apices of all the veins and indefinite spots before and beyond the apex of the third vein. Halteres pale yellow. Legs nearly uniformly dark brown, femora paler ventrally.

Female.—Length 1 to 1.25 mm. Like the male except for the following differences: Antenna with 13 segments, the fifth segment (fig. 24, *H*) with the stem as long as the basal enlargement about six times as long as its greatest diameter and slightly narrower at the base and near the outer end; basal enlargement twice as long as its greatest diameter, somewhat constricted in the middle; two circumfili, the upper one in narrow loops; the lower loops much broader and somewhat triangular in shape. Palpus quadriarticulate; basal segment one-half as long as the second; segments 2 to 4 of equal length.

Last-instar larva (fig. 24, *K, L*).—Length 1.75 to 2.5 mm. Body composed of 12 segments in addition to the small head, which tapers sharply anteriorly; first thoracic segment tapering slightly toward

the head; posterior two segments tapering slightly toward the caudal end; color in life orange to reddish; breast plate absent. Antenna slender, cylindrical, tapering anteriorly, about six times as long as its basal diameter, located on a small, rounded tubercle. Posterior segment with a large pointed tubercle on each posterior angle; below these a pair of smaller tubercles that are less widely separated than the others; a large bristle on each side of the last segment, anterior to the large tubercle. Segments 1 to 11 each with a dorsal, transverse row of eight bristles. The ventral side of segments 2 to 10 each with an ambulatory area having minute spines, arranged in about four transverse rows.

Type locality.—Chagrin Falls, Ohio, August 10, 1939. Other specimens from Wooster, Ohio, August 9 to 12, 1937; Chagrin Falls, Ohio, August 24, 1938. All reared from phlox by Dr. C. R. Neiswander.

Type male and 5 paratypes.—U.S.N.M. No. 54188.