

Description of a New *Ophiomyia* Species and Occurrence of *Phytomyza plantaginis* in Hawaii¹

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Up to the present time only one species of the genus *Ophiomyia*, the widely distributed *O. lantanae* (Froggatt), has been known from the Hawaiian Islands. Nothing has been hitherto reported concerning Hawaiian *Phytomyza*. During a recent trip to Hawaii, I collected a new species of *Ophiomyia* which is a stem miner of *Verbena*, and an unrecorded species of *Phytomyza*. Before going further I wish to express my hearty thanks to Dr. J. L. Gressitt for his constant interest and kind encouragement, and to Dr. R. W. Strandtmann for his help in collecting the leaf miners.

Ophiomyia nealae Sasakawa, new species (fig. 1).

Male: Black; frons matt, parafrontalia and ocellar triangle very faintly shining; gena very slightly tinged with brown ventrally. Thorax slightly shining, gray-dusted; mesopleural suture brown; abdomen with slightly greenish metallic tinge, anterior five tergites slightly pruinose. Wings hyaline, veins brown; calypter whitish gray, with margin and fringe brownish black. Legs black.

Head: Frons slightly wider than eye; ocellar triangle with ventral tip extending to level of second upper fronto-orbital; lunule narrow, about one-eleventh as high as frons length. Parafrontalia not projecting above eye, bearing two upper and two lower fronto-orbitals; first upper fronto-orbital directed upward and outward, the second upward; first lower fronto-orbital directed upward and slightly inward, the second inward; orbital hairs reclinate, in rather dense row; eye height and width ratio as 3 : 2, with very sparse minute hairs; gena one-fifth to one-seventh eye height, forming angle of 80° anteriorly; vibrissal fasciculus strongly upcurved on apical half. Face with carina scarcely bulbous ventrad from middle of first antennal segment, in broadest part about two-thirds as wide as diameter of first antennal segment, without distinct median furrow. Antennae narrowly separated; third segment small, minutely pilose; arista subequal in length to width of eye, microscopically pubescent, swollen on basal one-fifth.

Thorax: Mesonotum with 8 rows of acrostichals, four rows of which end just before level of posterior dorsocentral; inner postalar about one-sixth length of outer. Mesopleura with 4 (3 to 5) dorsally directed setulae; sternopleura with 1 or 2 setae before sternopleural bristle. Wing: Costa extending to M_{1+2} , with sections 2 to 4 in proportion of 44 : 12 : 11; r-m at distal one-third of discal cell;

¹ Contribution from the Entomological Laboratory, Kyoto Prefectural University, no. 88.

ultimate section of M_{1+2} about five times as long as penultimate; ultimate section of M_{3+4} slightly shorter than penultimate (19 : 22). Leg: Mid tibia with two short posterodorsal bristles.

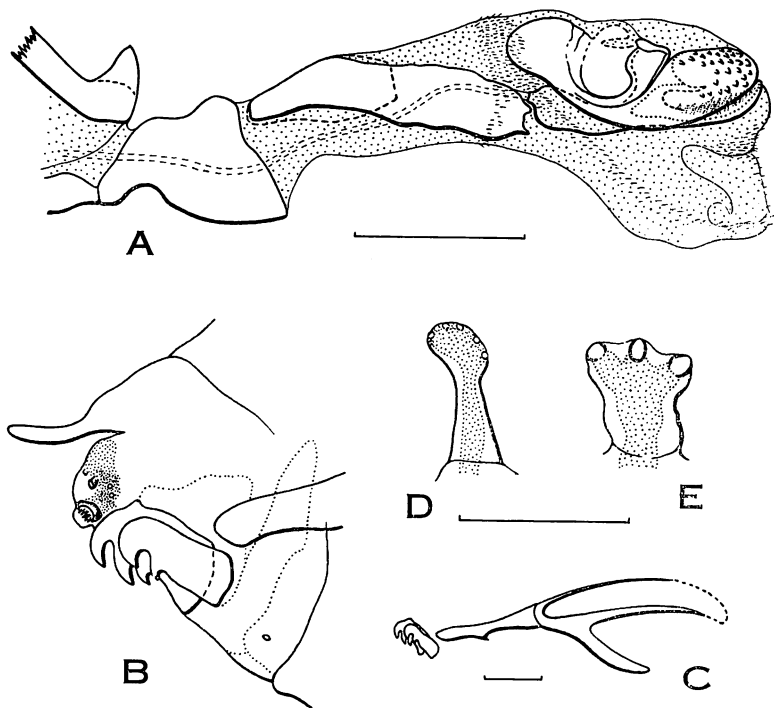


FIGURE 1. *Ophiomyia nealae* Sasakawa, n. sp.: a, lateral view of phallus of male terminalia; b-e, larva, b, lateral view of head; c, cephalopharyngeal skeleton; d, anterior spiracle; e, posterior spiracle. Scale equals 0.1 mm.

Abdomen: Tergite 6 slightly longer than 5; sternite 5 as long as tergite 6, incised on caudal one-fifth. Terminalia: Epandrium narrow, about one-third as long as tergite 6; surstylus projected anteromesally, bearing 4 spines and 3 apical setae. Hypandrium about one-half as long as phallapodeme, with side pieces broadly united basally and strongly curved ventrally. Phallapodeme with a pair of processes at distal end; hypophallus about one-fourth as long as length of phallapodeme, paraphallus distinctly short; endophallus slightly shorter than hypophallus, spinulose on laterodistal part and internally; ventral process membranous, minutely setulose.

Length: Body 1.82–2.05 mm., wing 1.93–2.16 mm.

Female: Tergite 5 without dust dorsomesally; gena one-eighth to one-seventh eye height; vibrissa normal. Length: Body 1.93–2.39 mm., wing 1.93–2.28 mm.

Habitat: Hawaiian Is. (Oahu).

Holotype female (BISHOP 3547), Tantalus, Honolulu, Oahu, Apr. 13, 1963, Sasakawa, reared from a larva mining stem of *Verbena littoralis* HBK., deposited

in Bishop Museum. Allotopotype male; paratopotypes 2 males, 2 females, Mar. 28–Apr. 13, 1963, in collections of Kyoto Prefectural University and U.S. National Museum.

This species may be easily separated from *O. lantanæ* (Froggatt) by the faintly greenish shining abdomen, scarcely bulbous facial carina, and the distally spinulose endophallus. Also, differences in larval and pupal characters are as follows:

	<i>lantanæ</i>	<i>nealæ</i>
Larva		
Color.....	pale yellow.....	white
Length.....	2.61–3.18 mm.....	3.75–4.05 mm.
Head.....	without process.....	with a clavate process
Mandibles.....	right mandible with.....	right mandible with
	2 teeth, left one with	3 teeth, left one with
	1 tooth.	2 teeth.
Spinal pattern on lateral side		
2T.....	0•I+5.....	0•III+8~9
3A.....	5+I•I+5.....	7~9+II•II+7~8
6A.....	5•I+4.....	9~10+II•0+8
8A.....	0.....	4~6+VI•0
Number of bulbs of.....	6.....	3
posterior spiracle		
Puparium		
Color.....	pale brown.....	white
Length.....	1.95–2.27 mm.....	2.73–2.95 mm.

It is my pleasure to dedicate this species to Miss Marie C. Neal, Bishop Museum, who kindly determined the host plant.

Bionomics: The larva makes a whitish ophionome on the stem of *Verbena littoralis*. The mine, 23–25 cm. in length and 1.5 mm. in greatest width, usually begins from the lower part of stem and runs upward, sometimes extending to the leaves along the mid veins, and later on runs downward. The frass is deposited irregularly; minute or large grains are usually arranged at distance of 2–3 mm. along the lateral side of the mine. The mature larva pupates in the mine at the upper basal part of the leaf but rarely in the stem mine.

Phytomyza plantaginis Robineau-Desvoidy.

Phytomyza plantaginis Robineau-Desvoidy, 1851, REV. MAG. ZOOL. 3:404.

Kauai; Kokee, and Haena, Apr. 23–25, 1963, 16 females, Strandtmann and Sasakawa, reared from larvae mining leaves of *Plantago lanceolata* L.

Distribution: Europe, Japan, North America, Hawaii.