

and substigmatally, forming a series of very black subdorsal patches or spreading largely over the body. At the end of this stage the larva enters the earth without moulting.

*Cocoon*.—Formed beneath the ground; elliptical, rather thick, firm, opaque, black. Size, 11 x 4.5 mm. Imago appeared August 1. Larvæ found on the leaves of *Betula populifolia* at Woods' Holl., Mass., and Plattsburgh, N. Y.

*Fenusa varipes*, St. F.

(The imported alder leaf-miner.)

Abundant on *Alnus serrulata* at Woods' Holl., Mass., causing the leaves to turn brown and fall.

*Egg*.—A slight circular swelling in the leaf, visible on both surfaces, 0.5 in diameter. The egg is thin, delicate, milky white, about 0.3 mm in diameter, inserted under the epidermis by a saw cut.

*First stage*.—Mines under the upper epidermis usually less than 1 mm. in diameter, rarely as large as 1.5 mm., starting from the egg puncture. Head much flattened, broader than long, mouth parts projecting, the lateral lobes bulging, pale watery brownish; width, 0.25 mm. Body flattened, deeply incised, joint 2 wide, joints 3-4 rapidly tapering, the rest of even width, joint 13 rounded. Feet imperceptible with a lens. Colour translucent watery, scarcely whitish, alimentary canal green. Length, 1 mm.

*Second stage*.—Like the preceding stage, but thoracic segments larger and body more deeply incised. Milky translucent, the alimentary canal green, head brownish, 0.3 mm. wide. Feet very rudimentary, but visible. Cervical shield present, large, not very distinct. Burrow about 3 mm. diameter.

*Third stage*.—As before. Width of head, 0.4 mm.; diameter of burrow, about 6 mm.

*Fourth stage*.—Much as in the next stage. Cervical shield covering the anterior half of joint 2, very faintly brownish, as are the thoracic feet. Head rather paler than in the next stage, 0.55 mm. wide. Burrow about 10-12 mm. in diameter.

*Fifth stage*.—Head much flattened, mouth projecting in front, clypeus occupying the central third of what is the upper surface; lobes rounded, projecting laterally; ocellus nearly central. Colour honey-brown, paler, almost whitish toward vertex, which is withdrawn beneath joint 2; mouth dark brown, eye black; width, 0.75 mm. Abdominal feet very rudi-