## LIFE HISTORIES OF NORTH AMERICAN GEOMETRIDAE.- LXVII.

by harrison g. dyar, washington, d. C.

## Euchlaena effectaria Walker.

Egg. Elliptical, rounded, depression and truncation not strong, rounded, the truncation a little oblique. Reticulations large, hexagonal, distinct, tending to lie in longitudinal rows but the cross striae equally heavy; white crests at the angles; surface shagreened; bluish green, turning dull purplish; size $.8 \times .6 \times .5 \mathrm{~mm}$.

Stage I. Head rounded, bilobed, flattish before, erect, not notched, brownish ochraceous, not shining, a little white frosted before; ocelli and jaws black. Body moderate, rather stout, normal, equal, segments slightly widened posteriorly and coarsely annulate. White; a broad, subdorsal vinous-brown band, joined to a single broad dorsal one on joints 10-13; a similar single ventral band, broken about the feet on joints $2-4$; feet of joint 10 vinous, of 13 ochraceous, thoracic feet pale. Tubercles small, dark, normal; setae short, dark, very minutely capitate.

Stage II. Head slightly bilobed, flattened before, held flatly, luteous with brown dots in vertical rows, more distinct above; width .5 mm . Body moderate, even, greenish, the dark brown subdorsal and ventral stripes as before.

Stage III. Head broad, flat, held flatly, all dark purplish shaded and dotted, leaving two erect obscure pale sordid lines and a broad lunate band of pale above the mouth; width .8 mm . Body marked as before but filled in with sordid purplish shadings; sides broadly dull greenish, venter and feet dark. Faint narrow pale lines of whitish, addorsal and subdorsal ones the most distinct.

Stage IV. Head gray above with vertical lines of black dots, black on the face surrounding the transverse lunate pale gray bar over the lower part of clypeus; width 1.4 mm . Body moderate, smooth, dark gray dorsally with faint irregular pale addorsal and subdorsal lines; subventer broadly greenish, pale with dark spots on tubercles vii; venter diffusely dark brown. Tubercles black, conical.

Stage V. Head rounded, flattened especially below, held flatly; black, dull on the faces of the lobes, a broad white triangle below over clypeus and above anteriorly reaching up along the median suture; else gray brown, the lobes with vertical rows of oblique black spots in two rows alternating; antennae reddish; width 2 mm . Body cylindrical, normal, thorax depressed, tubercles elevated, tubercle ii of joint 9 especially high forming a pair of black papillae. Anal flap triangular, produced; a pair of subanal cones. Black-brown, reddish brown shaded, no defined lines; a
light whitish space dorsally on joints 5 to 7 , illy defined, narrowed between the segments, appearing again on joints 10 to 12 less broadly. Venter more ocherous shaded with irregular blackish spots and streaks; lines pale and broken, crinkled, obscure.

Stage VI. Head quadrate, flattened, thicker at the vertex, slightly roundedly bilobed; sordid luteous gray before, a bicusped yellowish white band reaching over the clypeus; above darker gray with obscure straight vertical light streaks, the pale patch and black spots of former stage both absent; a slight darker line on upper angles of lobes; ocelli dark; width 2.8 mm . Body straight, stick-like, roughened by the anal cones and subpapillose dorsal tubercles, of which tubercle ii of joint 9 is much the largest. Back brown, mottled with subdued whitish and gray-black. Irregular light dorsal areas on joints 5 to 7 , widest on joint 5 and on joints 10 to 12; joints 8-9 nearly black dorsally and an irregular blackish subdorsal band, rather broad. Sides broadly blackish shaded, leaving the venter narrowly pale. Feet of joint 10 large, pale wood brown, a black ring near the base and many small white dots above; feet of joint 13 dark like the sides. Thoracic feet pale, appressed. All finely mottled and dotted; tubercles black; spiracles black ringed.

Cocoon of coarse silk. Eggs from Washington, D. C., May 29; mature larvae July 21; first moth issued August 7. The larvae were fed on rose leaves. Probably they will eat a variety of food plants. The pupa is dark brown without any noteworthy characters.


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