

DESCRIPTIONS OF SOME BUTTERFLY LARVÆ FROM
YOSEMITE (V.), AND THE LIFE HISTORY OF
CALLIDRYAS EUBULE.

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Pyrameis cardui, Linn.

The life history of this well-known species has not been written, to judge from the references given by the late Mr. Henry Edwards in his useful catalogue, so I present it here :—

Egg.—Cylindric-conical, the base flat with the usual vertical ribs ; colour pale yellow ; diameter .6 mm. Laid singly.

First larval stage.—Head rounded, black and shining ; width .3 mm. Cervical shield and anal plate black ; body very blackish with a number of short dark hairs ; feet normal. The larva lives under a slight web on surface of leaf.

Second stage.—Head as before with a few hairs ; width .6 mm. Body dull black, furnished with rows of short conical blackish tubercles each with a long hair ; the tubercles of the rows (1) and (2) on joints 6, 8 and 10 are pale yellow. Hair blackish ; feet black.

Third stage.—Head slightly bilobed, black, shining, a few black hairs from minute tubercles ; width 1.1 mm. Body black, covered with spined processes arranged as in *Grapta**, all black except the three dorsal ones on joints 6, 8 and 10 which are yellow, but with black spines.

Fourth stage.—Head bilobed, uniform shining black, with many black hairs arising from elevated bases ; width 1.9 mm. Body black, minutely dotted with yellow ; processes black except the bases of the three dorsal ones on joints 6, 8 and 10, which are dark yellow. As the stage advances a very narrow geminate dorsal and single subventral broken yellow line appears. The larvæ live singly under nets constructed of silk supported on a leaf.

Fifth stage.—Head rounded, uniform sublustrous black, the mouth parts paler and bases of antennæ reddish ; covered with black hairs of considerable length, which arise from small tubercles ; width 3.5 mm. Body deep black, brownish subventrally and on the legs, with numerous minute yellow piliferous tubercles bearing whitish hairs. The shafts of the processes are all more or less colourless, but the branches and tips are all black and the bases are shining blue-black. There is a row of inter-

* See "Descriptions of some Butterfly larvæ from Yosemite," No. VI.