

except that in the lower lateral row, from 6 to 10, there is a little orange on the outer side of each tubercle; the small spines of row along base are orange, from orange tubercles; segment 2 has a black chitinous dorsal collar on which are many small black spines, with hairs; feet black; pro-legs black, the last joint yellowish; head ob-ovoid, flattened frontally, depressed at suture, the vertices rounded; color dull black, the surface rough, thickly covered with long black hairs.

On 2nd May, one larva passed the first moult after hibernation, the supposed fourth moult. At 24 hours from the moult: length  $\frac{1}{8}$  inch. By 10th May, this larva had reached maturity.

**MATURE LARVA.**—Length .9 inch; cylindrical, thickest in middle; color black, with a slight dorsal band of gray-white, made up of white tubercles on the cross ridges, and a heavier band of same color along lower part of side, the black area between the two being thinly dotted white; the spines long, stout at base, tapering, and thickly beset with long black hairs; those of dorsal row black at tips, the rest and the large basal tubercles, yolk-yellow; those of the other three rows black, the bases black; the small spines along base of body yolk-yellow on 6 to 10, the rest black; on 2 a chitinous collar with many small black spines with hairs; feet black, pro-legs black, the last joint yellowish; head ob-ovoid, flattened in front, depressed at top, the vertices rounded; surface rough with many long, black hairs; color dead black.

On 12th the larva suspended, and at 8 p. m., 13th, pupated. From last moult to pupation 11½ days. (In case of other *Melitaeas*, two moults have occurred between hibernation and pupation.)

**CHRYsalis.**—Length  $\frac{1}{8}$  inch; breadth across mesonotum and abdomen  $\frac{1}{8}$  in.; shape of *Phaeton*; cylindrical; head case narrow, compressed transversely, excavated at the sides; mesonotum not prominent, rounded, somewhat carinated, followed by a shallow excavation; the tuberculations which correspond to the larval spines and tubercles rounded, raised but little above the surface; color of anterior parts and wing cases dark pearl-gray, marked and spotted with black; of abdomen diluted black dotted with dull white, especially along mid-dorsum, and across same, on the posterior part of each segment, where the dots form parallel rows; the mid-dorsal tubercles orange, making a round spot on the fore part of each segment, and on each spot are two small black spots in cross row; in line with the spiracles, on the anterior side of each, is a slight orange discol-