

stout at base, their tubercles shining black and meeting; head rather cordate, flattened in front, the vertices rounded; black, shining; the surface much covered with black hairs. To next and last moult, in June and July, 3 days.

AFTER FOURTH MOULT—Length .50 inch, color and spines as before, but the band more definite. The larva grows rapidly and in three days reaches maturity.

MATURE LARVA—Length 1 inch; cylindrical, slender; color black-brown, the under side greenish-brown; along the base a broad band, usually of dull green, with a yellow stripe in the line of lower lateral spines, and a macular yellow line running with the spiracles; in some cases this band is wholly of ochre-yellow, or reddish-yellow; the dorsum and sides much dotted with white, coarsely and irregularly on the side, but finely and mostly in regular transverse lines on dorsum; the basal band much dotted and spotted with yellowish, and these marks are found also upon the under side; spiracles black, round, in yellow rings, around each a circle of yellow dots, and between each pair irregular clusters of yellow dots and small spots; body furnished with seven rows of long, tapering black spines, one dorsal, three lateral on each side, each arising from shining black tubercles, except those of the lower lateral row, which have greenish or yellow tubercles, and each bristling with short, black hairs; those of third segment somewhat porrected; on second a dorsal collar of similar but smaller, bristling spines; legs black, pro-legs yellow-brown; head cordate, vertices high and rounded, the front flattened, color shining black; much covered with black papillæ, from which spring black hairs. Duration of this stage 3 to 5 days.

This is the history of such of the larvæ as proceed to chrysalis and imago the same season in which the eggs are laid, whatever may be the brood of the year. But a portion of every brood, and of the larvæ from every laying of eggs, so far as experiment shows, behave quite differently, and become lethargic and so pass the winter. The proportion of hibernators in the June brood in this district (i. e., the first brood of the year from egg) is about as 1 to 2, those which do not hibernate passing four moults and reaching the imago in July. But after the first moult of the brood is passed, a change takes place in the hibernators, and their development and growth is retarded, so that when the regulars are passing their third moult, these have but reached their second. And instead of being .24