

THE LIFE-HISTORY OF *ARCTIA VIRGUNCULA*, KIRBY.

BY ARTHUR GIBSON, DIVISION OF ENTOMOLOGY, CENTRAL EXPERIMENTAL FARM, OTTAWA.

On the 22nd June, 1901, I received from Mr. A. Kwiat, of Chicago, a batch of eggs of *Arctia virguncula*, Kirby. These eggs were laid on the 18th June and hatched on the 25th and 26th. The following notes on the early stages of the species were taken. A brief description of the mature larva was published by Mr. Coquillett, in the first number of *Papilio*, in 1881.

*Egg*.—0.8 mm. in diameter, semi-ovoid, about as high as wide, shiny, creamy white at first; before hatching, a shiny lead colour. Under a lens the egg has a reticulated appearance and is slightly concave at base.

*Stage I*.—Length, 2 mm. Head 0.4 to 0.45 mm. wide, rounded, rather deeply depressed at apex, upper inside portion of cheeks black, shiny; clypeus and lower part of face brownish, ocelli black, mouth-parts blackish; hairs on face, some long and some short, pale and black. On each segment of body is a transverse row of shiny black tubercles. Tubercle i very small, ii and iii large, iv and v smaller than ii and iii; ii, iii, iv and v are surrounded with a wide blotch of reddish-brown. The colour of the skin at first is a dirty cream; after feeding, the larvæ are pale greenish. The reddish blotches surrounding the tubercles give the larvæ a reddish appearance, and the skin in the centre of dorsum against the reddish blotches appears as a dorsal stripe. The hairs from the tubercles are long and slender, those on dorsum being black, while those from lateral and lower tubercles are pale. Thoracic shield black, bearing small black tubercles. Thoracic feet and prolegs semi-translucent, slightly darker exteriorly than ventral surface.

On the 28th June all the larvæ were swollen, and by the morning of the 29th had passed the first moult.

*Stage II*.—Length, 4.2 mm. Head, 0.55 to 0.6 mm. wide, shiny, shaped as before; upper portion of cheeks blackish, lower portion and clypeus brown, mouth-parts reddish brown, hairs on face long and slender, mostly black on upper portion, pale on lower; some heads have more