

Notes on Coccinellidae.

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(Presented at the meeting of March 1, 1923.)

Curinus coeruleus (Muls.).

Mulsant Spec., p. 472.

DESCRIPTION OF IMMATURE STAGES.

Egg. Deposited in clusters of from one to two dozen eggs. Individual eggs cylindrical, tapering at the ends, exceeding 1 mm. in length, pearly white, smooth, although microscopically sculptured, micropylar end roughened by the presence of numerous minute granular papillae in a circular area about the opening, attached by an adhesive fluid at opposite end, but seldom erect, usually procumbent.

Larva. Eight mm. long, 3 mm. wide at middle, tapering to both ends, moderately convex, integument finely reticately rugose; head small, roughly rectangular, a little longer than wide (dorsal view), fairly smooth, black, with a few scattered pale hairs; ocelli three on either side of the head, near antero-lateral angle, directly behind antennae, which are short and three-segmented; the maxillary palpi are considerably larger and three-segmented also; the labial palpi two-segmented. Prothorax much larger than head, roughly triangular in outline (dorsal view), creamy white, the cervical shield brownish, bisected by a median longitudinal white vitta, each half with a black border except for a short distance on posterior margin and with two black spinous tubercles bearing many black spinous hairs situated midway on outer lateral margin; many black spinous hairs on the flat plates. Mesothorax, metathorax and ten abdominal segments transverse, mesonotum and metanotum with four, abdominal tergites, except the last two, with six longitudinal rows of large black spinous tubercles bearing black spinous hairs. These are disposed with reference to individual nota as follows: On the mesonotum two outer (pleural) and two inner (lateral) tubercles on either side, the former widely separate, the latter close together and with a brown spot bordered with black at the base on the inner side; metanotum with two outer (pleural) and one inner (lateral) tubercle, the large oval basal spot entirely black; abdominal tergites with one pleural, one lateral and one dorsal tubercle on either side. There is a conspicuous submarginal crease or depression on either side between the lines of lateral and pleural tubercles. There are also scattered black spinous hairs medially on the mesothorax and metathorax, and laterally on the abdominal segments, a median single and lateral double row of small black depressed tubercles on the abdominal tergites, and spiracular openings in the intersegmental folds at the anterior margins of the first six abdominal segments, between dorsal and lateral tubercles, and on pronotum at base of anterior of the two pleural tubercles on

inner side. Color dusky, except an interrupted median longitudinal white vitta (already noted on pronotum), a white U-shaped area embracing the median section of the fourth and posterior margin of the third abdominal segment (to and including the bases of the two lateral tubercles) and the corresponding tubercles on the first and second abdominal segments; a white spot at the base of the corresponding pleural tubercles on the posterior side, as well as at the base of the posterior of the two pleural tubercles on the metathorax on the posterior side, and a median section of the pleural and lateral tubercles on first abdominal segment, lateral tubercle on second abdominal segment and dorsal tubercle on fourth abdominal segment, also as above indicated for prothorax and head. Penultimate segment with many light and dark hairs on posterior margin. Last segment retracted, appearing on the ventral side of body as a flat foot, the organ of attachment in pupation. Venter lighter, legs stout, transverse rows of depressed tubercles on the abdominal sternites.

Pupa. Formed within the shed larval skin, which is rent lengthwise from the anterior margin of the cervical shield to the posterior margin of the fifth abdominal tergite and an opening formed by the receding margins, the pupa lying in the hollow. Length, 5 mm.; width, 3.5 mm., depth, 2 mm. Viewed from above, roughly triangular in outline, the dorsal surface moderately convex. Head retracted beneath the pronotum and closely appressed to the body, not visible on dorsum; roughly triangular in outline, quite narrow at the clypeus although the sides are parallel for half their length. Pronotum deeply emarginate medially on the anterior margin for the reception of the head, lateral margins rounded, only the very posterior part visible from above, the posterior margin slightly curved outwardly. Mesonotum and metanotum transverse, the obtusely angled base of the wing covers joining them laterally, nine segments visible in the dorsal view of abdomen, which is roughly triangular in outline, all the segments transverse. The color of the body ranges from creamy white to reddish brown with dusky markings. Head mostly dusky, pronotum with two broad dusky vittae of reddish-brown ground color, mesonotum with an obtusely angulate narrow transverse black vitta behind anterior margin and two widely separated black spots in front of posterior margin on reddish brown ground, metanotum nearly black, a reddish brown oval area medially near anterior margin. Wing covers blackish along posterior lateral margin, otherwise reddish brown to dusky and yellowish brown, first abdominal tergite black with reddish brown anterior margin and with two pairs of papillae, the lateral ones situated close to the lateral margins, considerably elevated and conical, the median ones more tuberculate, a dusky to black transverse chitinization on each of the following segments to and including the eighth; ninth and tenth segments very small, the latter retracted and with a forked tail for the attachment of the body. Legs and maxillary palpi very conspicuous ventrally. Wing covers reaching posteriorly as far as the posterior margin of the fifth abdominal segment.

Figured in Biennial Report, Hawaiian Board of Agriculture and Forestry, 1921-22, Plate XI (opposite p. 64).

Egg stage	9 Days.
Larval stage	28 Days.
Pupal stage	7 Days.

***Hyperaspis silvestrii* Weise.**

Boll. Portici v. 3, p. 205, 1908.

DESCRIPTION OF IMMATURE STAGES.

Egg. Laid singly beneath the adult female of *Pseudococcus nipae*. Color, pale lemon yellow, elliptico-cylindrical, .5 mm. long, surface rugulose.

Larva. Young larva olive green, pale and sordid, .75 mm. long, head capsule thinly chitinized, dusky and shining, three ocelli on either side black, a black spot posteriorly on either side of the median line on pro, meso and metathoracic nota. Body clothed with pale hairs. Legs stout. Full grown larva 5 mm. long, 2 mm. wide, elongate oval, flatly convex, color pale clay yellow, darker medially, covered dorsally with white, waxy secretion. Secretes a sulphur yellow fluid from the dorsum when this is disturbed. Head small, transverse, labelliform, retractile, thinly chitinized and bearing fine hairs, ocelli two on each side, black, immediately behind the short, papillate antennae, which are two-jointed and setaceous at apex. Maxillary palpi four jointed. Labial palpi disc-like. Legs fairly stout. Prothorax transversely oval, narrower than the mesothorax or the metathorax. Abdominal segments transverse, narrowing slightly in a posterior direction from the metathorax. A longitudinal row of setigerous tubercles is present on the lateral margins, another within the margin of the metathorax and the first eight abdominal segments, three transverse rows of fine hairs on the pronotum, two on mesonotum and metanotum and a line along the lateral margins of each, a transverse row of hairs on the anterior margin of the first eight abdominal segments, ninth abdominal segment with the hind margin curved, a line of hairs along the caudal margin and a few scattered hairs on the notum, ventral surface nearly naked, the foot on the venter of ninth segment.

Pupa. Completely covered with a mass of white, waxy secretion. When denuded of this, the color appears the same as that of larva. Very convex dorsally, flat ventrally, short oval, 3.5 mm. long, 2.75 mm. wide, dorsally very hairy, head withdrawn to the venter and somewhat imbedded, the nota reaching nearly half the length of body, wing cases extending to the posterior margin of the fourth abdominal segment, last abdominal segment recurved onto the venter and bearing the foot or organ of attachment.

Figured in Biennial Report, Hawaiian Board Agriculture
and Forestry, 1921-22, Plate XI (opposite p. 64).

Egg stage	7 Days.
Larval stage	27 Days.
Pupal stage	13 Days.