

NOTES ON *PIESMA CINEREA* SAY.

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During the summer of 1922 *Piesma cinerea* Say was found to be very plentiful in certain sections near Boston, Mass. In Medford a plot of "Love-lies-bleeding" (*Amaranthus caudatus* L.) was completely destroyed, the leaves curling and falling and even the buds of the partly grown plants being destroyed. "Prince's feather" (*Amaranthus hybridus* L., form *hypochondriacus* Robinson) and the wild *Amaranthus retroflexus* L. were also



Fig. 1. Adults of *Piesma cinerea* Say.

attacked, altho injury was not observed except for some curling of the leaves. During July, August and September all stages of the insect were found in the field.

The eggs were deposited on the under surface of the leaves where they lay on their sides, very often parallel to and near the veins, particularly the larger ones. They usually were deposited singly but in some instances there were twenty or more on a single leaf.

The nymphs fed on the under surface of the leaves, the resulting curling furnishing protection to them. New adults were usually of a light cream color tinged with green, but soon



became darker altho there was considerable variation, some remaining light, others becoming fuscous or with dark irregular patches.

*The Egg.*

Length .72 mm.; width .25 mm. Color uniformly light yellow; cylindrical, sides parallel; chorion bearing some 10

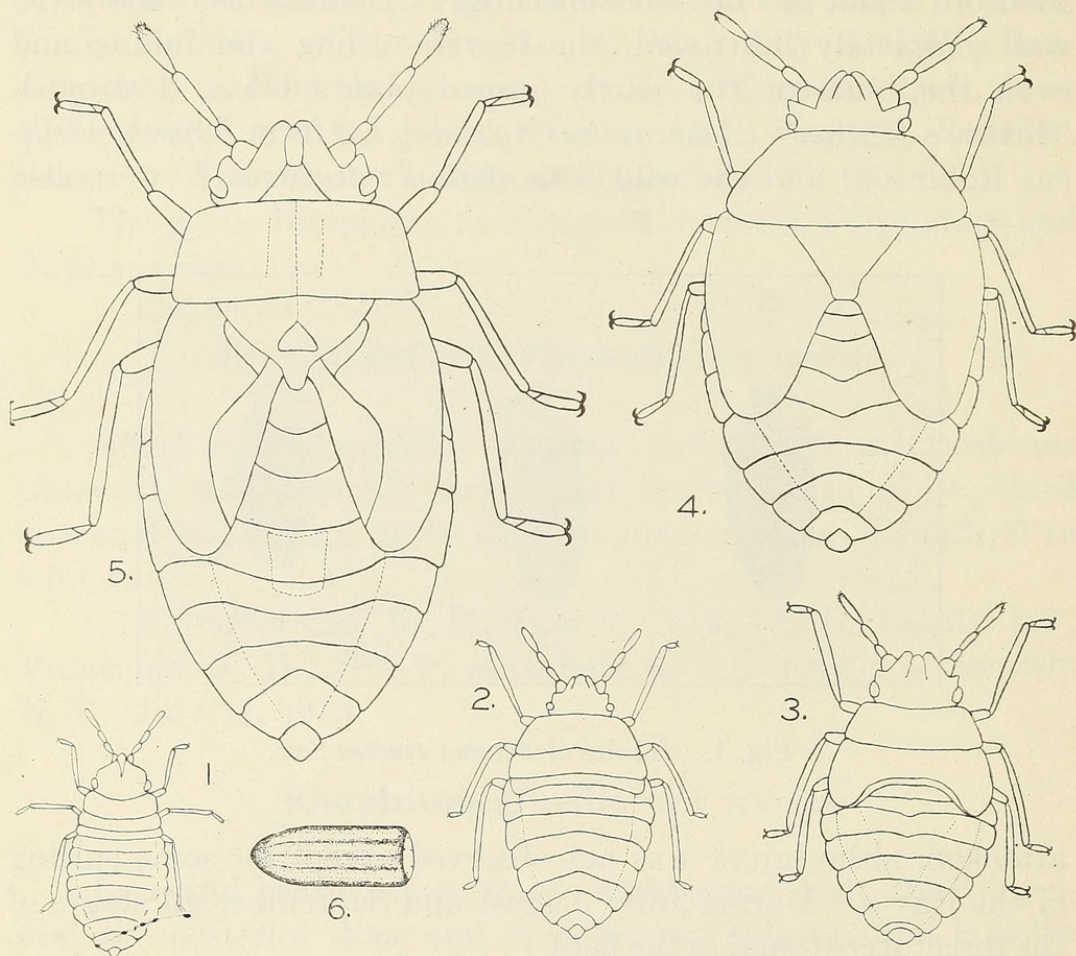


Fig. 2. Immature stages of *Piesma cinerea* Say. 1-5, first to fifth instar nymphs; 6, egg.

longitudinal ridges but little raised from the surface, the interspaces broader; end distant from the cap narrowed for about a fourth of the length into a bluntly rounding cone; scarcely narrowed to the cap which is flat, the edge bearing five very minute hemispherical chorial processes evenly spaced.



*The First Instar Nymph.*

Length .74 mm; width .35 mm. Color light yellow, eyes red, antennæ apically and tip of the beak somewhat brownish; body subdepressed, the sides nearly parallel; head nearly as long as wide, the protuberances before the eyes scarcely developed; antennæ as long as the head and prothorax together; eyes moderately prominent; beak reaches the middle coxæ; posterior edge of the prothorax not wider than the anterior; abdomen but little wider than the prothorax, the edges somewhat flattened; head and thorax finely and sparsely punctured.

*The Second Instar Nymph.*

Length .87 mm; width .53 mm. Color uniformly light yellow with a faint tinge of green; head a little wider than long, the protuberances before the eyes faintly developed; antennæ as long as the head and prothorax; thorax wider than the head, the posterior edge somewhat wider than the anterior; abdomen widest at the second segment, a little wider than the thorax, the edges flattened; head and prothorax sparsely punctate.

*The Third Instar Nymph.*

Length 1.16 mm; width .66 mm. Uniformly light yellow with a tinge of green, paler at the margins; head wider than long, the protuberances before the eyes bluntly developed; thorax wider than the head, the wing pads nearly attaining the anterior edge of the third abdominal segment; prothorax two and a half times as wide as long; antennæ minutely ciliate apically.

*The Fourth Instar Nymph.*

Length 1.75 mm; width .91 mm. Light yellow with a decided tinge of green; head wider than long, the protuberances before the eyes well developed; antennæ nearly the length of the head and prothorax, ciliate apically; prothorax nearly twice



as wide as long, posterior edge nearly twice the length of the anterior; wing pads attain the fifth abdominal segment; scutellum moderately prominent; abdomen widest at the second segment, edges thin; body sparsely punctate.

*The Fifth Instar Nymph.*

Length 2.5 mm; width 1.1 mm. Color light with green markings; antennæ with a brown tinge apically; prothorax with a light green area each side; abdomen light green, the edges and a quadrate area centrally placed on the third and fourth segments light, the quadrate area bordered with brown; head twice as wide as long, the protuberances before the eyes strongly developed; antennæ as long as the head and prothorax, ciliate at the apex; head narrowed behind the eyes; beak scarcely reaching the middle coxæ; prothorax rectangular, two and a half times as wide as long, the posterior margin but little longer than the anterior, marked with a faint ridge each side of the median line; scutellum prominent, triangular, wider than long; wing pads nearly reach the fifth abdominal segment; abdomen somewhat wider than the thorax, widest at the second segment; body coarsely and sparsely punctate.



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