3rd Instar. Length 16 mm. Head pale brown with two vertical dark brown bars, body fuscous or brown, the longitudinal lines a pale lemon colour, spiracular line white to yellow edged above with dark brown.

4th Instar. August 17, length 25-28 mm. Head as before, body a dark chocolate colour, all the stripes, including the spiracular, a pale lemon colour each finely edged with black.

5th Instar. August 26. Length 35 mm. Head pale brown with four vertical fuscous bars, body chocolate with strongly contrasting black-edged yellow dorsal, subdorsal and spiracular lines. In some cases body colour is black between dorsal and subdorsals, vinaceous between subdorsals and spiracular, underside vinaceous, shading into beige. Length when full-fed 40 mm.

As the larva grew older it rested quietly, when not feeding, extended along a leaf-stalk or on the mid-rib on the underside of a leaf, the yellow stripes of the larva tending to blend it into the leaf or stalk. If touched it rolled into a ring and dropped to the bottom of the container.

Pupa. Pupated September 7 and 8. Pupa 17 mm. x 5 mm., slender, thorax with fine transverse rugosities or wrinkles, abdominal segments coarsely punctate except for a smooth central band on the first three; colour dark mahogany brown; cremaster a stout dorso-ventrally flattened process terminating in two parallel spines, the whole 1 mm. long. The larva made a cocoon of earthen particles cemented together with silk, just beneath the surface of the ground.

Summary. Ovum, July 4 - 14 (10 days). Larva July 14 - September 8 (57 days). Pupa September 8 - May or June (8-10 months). Total days from egg to adult approximately 365 days.

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Insect Population in Pigeon Manure

On February 16, 1954, a citizen brought me about a gallon of pigeon manure from the belfry of an old church in Vancouver, stating that it was a sample from some two tons that had accumulated over the years. A farmer had contracted to remove the manure. Finding certain insect larvae in it, he wondered if the insects would be detrimental to his greenhouse crops and asked his friend to have the material examined.

The manure was fairly solid and compressed, damp and heavy with odd sticks and feathers and the remains of a dead bird incorporated into it; the surface, of recent deposition, was dry and flaky. There was relatively little smell to it.

Picked over bit by bit, it yielded:—

1. Scores of larvae of *Tenebrio molitor* L., the yellow meal worm, in all sizes and instars from very small to mature—but no pupae or adults; there was one elytron.
2. Many dead adults of *Sitodrepa panicea* L., the drugstore beetle, but no larvae.
3. Two adult *Ptinus fur* L., the white-marked spider beetle, and one larva, all alive.
4. Several small Staphylinid bettles.
5. Moth larvae of two distinct species, one fully ⅝ inch long, active, and non-silk spinning.
6. A few empty cases of *Tinea pellionella* (L.), the case-making clothes moth.
7. A number of full grown, thin, thread-like larvae of *Scenopinidae*, window flies. These maggots have distinct heads and are predacious.
8. Many predacious, small Hemiptera, two adults and the rest nymphs. I have not identified them yet.
9. Two half grown, living *Lepisma saccharina* L., or silver fish,
10. Two empty puparia of, probably, blow flies.

To my surprise, there were no mites and no larvae of muscoid Diptera; none of the insects was of much nuisance value. —*G. J. Spencer, University of British Columbia.*