

old bud scales. In the spring when the buds begin to swell and show green at the tips, the half-grown larvæ begin to emerge from their hibernating quarters and bore into the tips of the opening buds. The emergence from the hibernating quarters often covers a very long period in Nova Scotia, and shows the futility of attempting to control bud-moths by spraying the rapidly opening buds when the larvæ are entering them. In 1912, the first larvæ entered the bud on May 2., and the last on May 11, emergence thus covering a period of ten days; in 1913 the first larvæ entered the bud on April 25, and the last on May 6, giving a period of twelve days; in 1915 the first larvæ entered the bud on May 9, and the last on May 23, a period of fifteen days.



Fig. 2.—Apple blossom cluster attacked by bud moth, torn open to show (a), larva in the act of feeding, (b), pupa. (Original.)

As the bud containing the young bud-moth opens, the larva confines its attention to one or two leaves, tying down additional leaves to its cluster, as food is required. At this period the Oblique-banded leaf-roller and the Green bud-worm do not feed under cover to such an extent as the eye-spotted bud-moth and the lesser bud-moth.

During June and July, the bud-moths pupate in the leaf cluster on the tree, and in a couple of weeks the adults emerge to deposit their eggs. In clean, open wind-swept orchards large numbers of the adults perish at this time by being blown from the trees into open fields, pastures, etc. The eggs of all four species are deposited on the leaves; those of the eye-spotted bud-moth and green-bud-worms singly on the under side of the leaf; those of the oblique-banded leaf-roller in a cluster on the upper side of the leaf, and those of the lesser bud-moth in a row on the under side of the leaf in the suture next to the midrib.

The larvæ of the Eye-spotted bud-moth and Green bud-worm on emerging feed as semi-leaf miners next to the midrib, during the late summer and fall. The larva of the Oblique-banded leaf-roller, although it feeds under a protecting web, may almost