

abundance by about the middle of August, at which time the ovaries began to develop more rapidly, till, by August 31, dissected specimens revealed eggs which were almost completely developed.

In 1915 the majority of captive moths did not lay eggs until the end of September or the beginning of October. By this time the moths had disappeared from the lights around buildings, the last capture being made on September 18. An examination of a summer-fallow field on September 29 resulted in the discovery of several very much rubbed females of this species, hiding under clods. Although we were unsuccessful in our attempts to find laid eggs at this time, we found that in each case the abdomen was half filled with mature eggs, which indicated that a number had been already laid. Earlier in the year, when the moths were at the height of their flight around buildings, we had examined the same field without finding as many moths as we did on this occasion, which was over a week after we had taken our last moth at the light trap.

OVIPOSITION AND EGGS.

DATE OF OVIPOSITION.

In Alberta the eggs of this moth are laid exclusively in the fall. The earliest date upon which we have an actual record of oviposition is August 30. This record was obtained in 1914. In 1915 the first eggs were obtained on September 3. The oviposition period extends probably for nearly two months, since the latest date on which we obtained eggs was October 18, and twelve only of our captured females oviposited.

LOCATION OF EGGS.

In so far as we can judge, the eggs are laid most frequently in the soil. We have not, however, found them in the field, and our observations were made under artificial conditions. In a large attic, swarming with the moths of *Euxoa auxiliaris* and *Noctua clandestina*, we placed pots in which were growing several species of common weeds, wheat, etc. Both species of moths laid their eggs exclusively in the soil, or under collections of dust. No eggs were laid upon the vegetation. The same result was obtained in 1914, in a mason jar containing earth, into which pieces of vegetation were inserted. All of the eggs laid by *E. auxiliaris*, placed in the jar, were deposited in the earth.

Johnson (1905) states that the eggs of this species are laid "almost exclusively on vegetation," and describes them as hemispherical, attached to leaves or grass by their flat side, and showing, under the magnifying glass, beautiful striations. He adds also that they turn brown when mature.

This description does not agree with that of the eggs we obtained from a number of moths, all of which were determined by Mr. Wolley Dod as *Euxoa auxiliaris*. These eggs were obtained from representatives of all of the three varieties of this species. In all cases they agreed with the illustrations (fig. 3) and descriptions we have given of them. The etchings on the chorion are so fine that they cannot be seen without a compound microscope, and in addition our eggs all turned slate-grey before hatching.

It is possible that many are laid on vegetation in Alberta, though we have found no indication that this is the case. It seems, however, that they are laid in the vicinity of vegetation whenever possible, and that summer-fallow which is absolutely clean during the oviposition period is avoided by the moths. A quantity of the small weed and volunteer growth on a summer-fallow field, in which moths were plentiful, was examined on September 29, but no eggs could be located. Neither could they be found in the soil, but it should be borne in mind that these eggs are .6 mm. only in diameter, and that on those