

black, conical tops being visible. Most of the eggs were found in the basal half of the leaf, and none at the tips where the veins were finer. The basal ends were inserted only slightly in the tissue, and each egg could be easily removed.

By the third week in June, a few second stage nymphs, many third and fourth, and a few fifth, were found. By the end of the first week in July, quite a few adults of the first brood were present together with many fifth stage nymphs. Eggs were deposited soon afterward in uninfested leaves, and during the last week in July first stage nymphs of a second brood were observed. During the last part of August and first part of September adults of a second brood appeared and later went into hibernation. Thus it is seen that there are two generations, each requiring about six weeks. On account of the extended oviposition period, it is possible at times to find all nymphal stages and adults and more or less overlapping of the broods takes place.

After hatching, the nymphs feed in colonies on the under leaf surface, causing a discoloration of the upper surface. In severe infestations, the leaves become yellow and dry, and many fall to the ground. The dorsal surfaces of all nymphs are covered with minute spines in addition to the larger tubercles and spines. As the nymphal stages advance, the insects tend to become broader and flatter; the lateral margins become flatter and more conspicuous, and the spines and hairs more pronounced.

*Egg*.—Length 0.51 mm. Greatest width 0.14 mm. Elongate oval, slightly curved when viewed laterally. Basal end rounded, gradually narrowing to distal end, which is covered with a conical cap, below which is a constriction. Widest at basal third. Basal one-half to one-third translucent, remainder dark brown to black.

*First Nymphal Stage*.—Length 0.5 mm. Greatest width exclusive of spines 0.2 mm. Broadly elliptical. General colour brown, lightest at posterior end of thorax and anterior end of abdomen. Fine median dorsal line beginning on head and extending through the second abdominal segment. A single broad, dorsal light band extending from head to posterior end of abdomen. Entire dorsal surface covered with minute spines. Eyes not