

The mines are seldom straight for any distance, the general pattern being meandering, with a characteristic doubling back from the moulting chambers in a direction parallel to the previous mine (Fig. 3). The first-stage mines, unless numerous, do not appear to cause much damage, the cambium being seldom penetrated. They appear as dark red or black lines in the bark. Thus it is usually in this stage that the tree, if vigorous enough, can arrest *N. enysi* attack. The first instar is usually present in the field from mid-December to April.

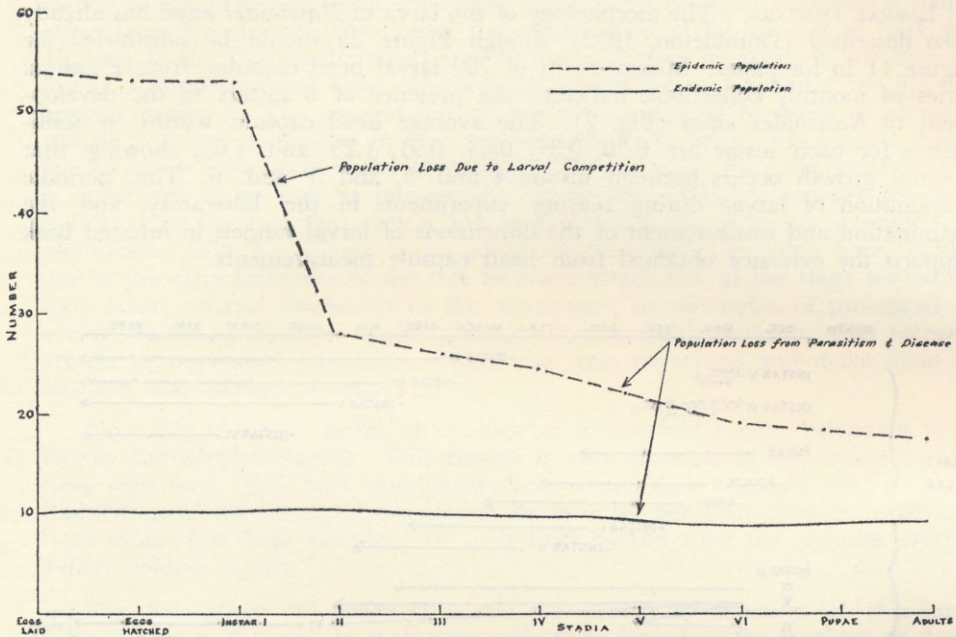


FIG. 5. THE REDUCTIONS OF POPULATIONS OF *NASCOIDES ENYSI* SHARP BY NATURAL CONTROL FACTORS SHOWING THE EFFECT OF LARVAL COMPETITION IN THE EARLY STAGES OF LARGE POPULATIONS. THE DATA REPRESENTED IS THE MEAN POPULATION COUNTS FROM RANDOM COLLECTIONS OF SQUARE FOOT BARK SAMPLES FROM EPIDEMIC & ENDEMIC INFESTATIONS.

In feeding, the larva moves the head and thorax from side to side and up and down, thus forming a tunnel which is almost rectangular in cross-section, but having the short sides convex. It is the lateral movement of the head and thorax that probably determines the meandering pattern of the mine. When ready to pupate, the sixth-stage larva constructs the pupal chamber in the bark. It then ceases feeding and when all food is eliminated from the gut the colour changes from dark cream to a lighter cream and the fat bodies become noticeable through the larval skin. The abdomen shortens and widens, and the prothorax wrinkles. On the ninth or tenth day, following the cessation of feeding, the pupa can be seen lying within the last larval skin. On the tenth or eleventh day, a longitudinal rupture occurs in the dorsum of the prothorax and within the V-shaped suture. This is followed by a transverse rupture behind the larval head capsule, forming a T-shaped opening through which the pupa emerges in about 24-48 hours. The pupae vary in size, according to the size of the larvae from which they develop, and the pupal period is 24-44 days, averaging 29 days. The pupa, at first creamy-white, has been illustrated by Dumbleton (1932). About eight days after pupation the eyes become pinkish, and on the tenth day they are almost black. The head capsule begins to darken two days later, the frons, vertex, scapes of antennae and mandibles being