

eventually the bark becomes separated from the wood. About two months after the first eggs are laid, the first extrusion holes are formed from which the chips are emitted. These oblong holes are approximately 4 mm. long and 2 mm. wide and occur in the majority of cases on the lower surfaces of a log. At about the time the extrusion holes are formed, the larvae begin to excavate holes in the wood. Of 23 living larvae, the progeny of two females, only eight had begun to make galleries into the sapwood on Sept. 15, 1942. During the first fall, the holes are extended into the wood to a maximum depth of about two inches. As in the case of the extrusion holes, the mouths of the wood galleries are found generally on the sides and lower surfaces of logs. Feeding continues throughout the following year and by the spring of the second year a U-shaped tunnel is formed. By this time the larvae are practically full grown.

*Pupa:* The pupa is formed in a chamber at the end of the larval gallery. This chamber is oblong in cross section and varies from 6.3 to 12.7 mm. in thickness and from 11.0 to 25.4 mm. in width. It may be 50.8 mm. or more in length. The pupal chamber usually extends to within about 6.3 mm. from the surface of wood; some, however, extend to within only 25.4 mm. while others have been found as close as 1.6 mm. or less. Generally the chamber is constructed on a slope so that the pupa rests on one side.

The prepupal stage must be exceedingly short, since from all galleries examined in June and July of 1942, only one specimen was taken. Minor changes occurred in this specimen during the 20 minutes

between its removal from the gallery and its preservation. The first signs of pupal transformation were observed on June 5 when only one pupa could be found in many galleries examined. The duration of the pupal stage is approximately one month.

As the pupa matures, the first signs of true adult characters become evident in the eyes. These organs change colour from a yellowish-white to a bright pink and soon after assume the black pigment of the adult. Subsequently, blackening of the cuticular surfaces becomes evident, first at the extremities of the appendages such as the claws, the distal ends of the mandibles, the edges of the wings, and also around the joints of the legs. Blackening continues progressively backwards, especially on the mandibles.

*Parasites:* Only one parasite of *M. n. morgani* is definitely known. It has been tentatively placed in the genus *Ichneumon*. Another ichneumonid belonging to the genus *Doryctes* has been found in the larval galleries of *Monochamus*, but its relationship with the host is not definite.

In 1941 a dipterous maggot was taken from a gallery in which the sawyer larva was partially destroyed. An attempt to rear this specimen was unsuccessful. Parasitism by Diptera has not been observed since that time.

*Disease:* Apparently *Monochamus* is relatively free from disease. Over a two-year period, only two specimens showing definite symptoms of disease were found. Both were dead adults in their pupal cells and at the time of examination (July 29, 1942) were entirely black and reeked with a strong sickly odour.

A COLONY OF *TROPIDISCHIA XANTHOSTOMA* NEAR WELLINGTON, B.C. (Orthoptera: Stenopelmatidae).—On September 28, 1946, while examining a shallow well near Hammond Bay, B.C., I found it occupied by a colony of the strange spidery cave crickets, *Tropidischia xanthostoma* (Scudder). I counted six adults, and noted that there were several times as many nymphs, although I could not make an exact check of these. One pair of adults I noticed in coitu.

When alarmed the insects leaped or fell into the water, where they were evidently quite at home. They swam powerfully to the sides of the well, and re-

mained quietly clinging to the concrete below the water level without showing any signs of anxiety to regain the surface.

Normal water level is not over six feet down. The well is completely lined with concrete, the masonry extending a foot or so above ground level, where it is covered with rough planks. Many of the immature crickets were clinging upside down to these planks when I first disturbed them.

I had descended the same well on a previous occasion, during May of 1945, but at that time no crickets were seen.—Richard Guppy, Wellington, B.C.