10-1970

Collecting slime flux feeding Coleoptera in Japan

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(The Entomologists' Record, *continued from p. 252.)*

3.0061 Collecting slime flux feeding Coleoptera in Japan.—Sappy wounds of injured or diseased trees entice a wide variety of insects. Carter (1945) stated that when fluxing is prolific or long continued, air-borne bacteria, yeasts, and fungi contaminate the oozing sap, ferment it and produce the material called slime flux. Apparently the oozing flux is toxic to the flux site and so prevents callusing by the tree. Consequently, the same tree usually can be a good collecting site for insects from year to year.

My stay in Japan spanned four years, and collecting at flux sites was one of the most fruitful areas of endeavor. As soon as the vascular system of a tree became active in the spring the slime flux began to ooze out and attract insects. The best trees to visit were usually elms which possibly suffered from wetwood. April and May saw only a few insects feeding at the trees in the Tokyo area, but their numbers and kind greatly increased in June, July, and August; an abrupt decline in insect activity occurred in September.

During the day in the prime months, numerous species of nymphalid butterflies could be encountered and easily captured (species of *Hestina, Kaniska, Nymphalis, Vanessa, Polygonia, Neope*). Flies, wasps, and occasionally slugs were seen also feeding in very close proximity to one another and in apparent harmony. Only a new arrival or departure would send a nervous twitch through the group.

Beetles, however, were the most prevalent visitors to the sap flows. Nitidulids (*Librodor japonicus* Motschulsky) were always to be found buried in the slime flux or hiding in adjacent cracks and crevices. Helotids *(Helota gemmata* Gorham) were seen less commonly but were usually in the same surroundings as the nitidulids. Scarabs, especially the Cetoniinae (*Protaetia orientalis* Gory and Percheron, *Rhomborrhina japonica* Hope, *R. polita* Waterhouse) were very abundant during the day. The cetonines invariably kept to the higher or tree-top feeding areas and only rarely visited a lower flux site. An extendable 15 ft. net was an essential piece of equipment and enabled one to catch 20-30 of these swirling insects in one sweep. During the first two years of collecting, the rhinoceros beetle (*Allomyrina dichotoma* L.) could be found during the day, but after the second year they could be observed only at night.

Insect activity at the flux sites increased sharply with the advent of darkness. Wood roaches, long-horned grasshoppers and a variety of moths made their appearance. Carabids (*Damaster blaptoides* Koller, *Nebria* sp.) would venture near the sap flows, and the nitidulids and helotids remained active. Curculionids (*Ectatorrhinus adamsi* Pascoe, *Hylobius abietis* L.) occurred in considerable numbers on three or four trees in one

very localized area. The most frequently encountered beetles, however, were the elaterids, lucanids, scarabs, and cerambycids.

The elaterids *Tetrigus lewsi* Candèze, *Spheniscosomus cete* Candèze, *Stenagostus umbratilis* Lewis, *Melanotus legatus* Candèze, and *Selatosomus onerosus* Lewis were collected with ease, there normally being several individuals at each of the 20 or so collecting trees.

Lucanids were very abundant and seemed to be climbing about nearly everywhere; it was not uncommon to see 10-20 individuals on just one flux site. Species taken were *Psalidoremus inclinatus* Motschulsky, *P. inclinatus* var. *inflexus* Harold, *Serrognathus titanus* Saunders, and *Macrodorcas rectus* Motschulsky. The beam of a flashlight would cause a number of them to start and maintain an alert or defensive posture while others, seemingly oblivious to the light, continued lapping up the flux. Even though all the individuals on a tree might be collected, returning a half hour later would reveal a host of replacements feeding at the flow.

Like the stag beetles, the rhinoceros beetle (*A. dichotoma* L.) came to feed at the flux sites in numbers, often flying in with a heavy droning of great wings, their eyes glowing in the flashlight beam like orange embers. Collecting 50 of these beetles a night was not an unreasonable goal. Another dynastine, *Eophileurus chinensis* Faldermann, was taken on less numerous occasions.

Among the cerambycids, *Mallambyx raddei* Blessig fed at the flow sites frequently as did the highly elusive, beautifully green *Chloridolum japonicum* Harold. The latter were wary and would rapidly run up the tree within a matter of seconds after a light was shown.

The optimum time for night collecting began at about 8:30 PM and lasted until about 2 AM. The majority of the beetles had retired after this time, leaving the slime flux to the moths and roaches. This method of collecting was a continual source of excellent material and personal pleasure because one never knew what new and unexpected creature could be waiting on the next tree.

Literature cited: Carter, J. C. 1945. Wetwood of elms. Bull. Illinois Nat. Hist. Survey, 23: 407-448.–**Brett C. Ratcliffe,** *2231 Griffith, Lincoln, NB 68503*

Accepted for publication: September 19, 1970.

Descriptors: Lepidoptera; Coleoptera. Orthoptera; Slime flux feeding; Japan.

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