

A NOTE ON THE HABITS OF A MAY-FLY
AND THE DAMAGE CAUSED BY ITS NYMPHS.

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(With kind permission of the Officer-in-charge,
Bureau of Fisheries, Bangkok).

On the 14th August, 1936, the Bureau of Fisheries received a report from Nai Thon Sritachitta, Superintendent of the Bung Borapet Station, concerning damage to the automatic gates of a dam, caused by a kind of boring aquatic animal locally called "*prieng nam chual*". The word "*prieng*" is a misleading one in Siamese as it is also applied to teredos and barnacles. The Bureau therefore instructed the Superintendent to send specimens of this *prieng* and also pieces of the damaged woods for examination.

On inspection the said *prieng* were found to be the nymphs of a may-fly. Later in September it was reported from the station that a species of may-fly was understood to be their adult form. More specimens were sent to Bangkok and these were entrusted to M. R. Chakrathong Thongyai, entomologist of the Department of Agriculture and Fisheries. He stated that these insects and their nymphs bore great resemblance to a species of may-fly, *Povilla corporaali* (Lestage), reported as found in Java and India.¹⁾

During the course of my study on the hatching of the eggs of *Notopterus chitala* (Buchanan) at Bung Borapet from February to July, 1937, I took the opportunity to observe the habits of this black-winged may-fly and its nymphs. However, previous observations had been casually made by Nai Keheng Thiemmet and Nai Sangud Naikitasena, and their notes are included in the following statements. I was informed that four or five years ago the nymphs were unknown in that swamp (Bung Borapet) and the abundance of this species of may-fly was not so great as it is now. At night I saw the insects swarm in enormous numbers toward the lamp lights. Some fell on the floor of the house and vibrated their wings rapidly,

1) Chopra, B.: The Indian Ephemeroptera (may-flies). *Records of the Indian Museum*, Vol. XXIX, Part II, pp. 91-138, 1927.

these together causing a sound like that of falling rain. I noticed that these ephemerids only appeared from just after dark until late in the morning.

In the swamp the insects are likely to lay their eggs on the surface of the water where there are objects for attachment. On rare occasions they drop into water far from their aimed destination. Their eggs are discharged immediately after the insects touch the surface of the water. This was shown when one evening I caught one of the insects and placed it in a glass of water; the eggs were discharged at once. The characters of the eggs are very peculiar. They are in a pair of subcylindrical, sticky, green strings, each having the length of about three centimetres. Accompanying the eggs are fine adhesive filaments which look like a spider's web. These fine filaments serve to bind the strings of eggs to roots of Java weed, to stumps, or to objects under water. These ephemerids lay their eggs once for all as they are unable to fly off from the water afterward. Many times I saw that, while discharging their eggs on the floor of the house and on pieces of furniture, they could not free themselves from these adhesive filaments and the strings of their eggs.

Within two or three days the green color of the eggs changes into grey and the whole strings become greatly swollen, each string of eggs now reaching the length of about ten centimetres. The eggs hatch in from fifteen to twenty days. A nymph, newly hatched, has a length of one and one-half millimetres. As the nymphs are burrowers they try hard to swim to stumps or remains of trees, into which they excavate burrows for shelter, though I am inclined to believe that they actually eat the wood matter while boring. Each burrow serves as a shelter for one nymph. How the nymphs excavate their burrows excites no wonder when one sees their strong biting mouth parts. The burrows are nearly cylindrical in shape. Each burrow varies in size according to the size of the nymph inhabiting it, the holes becoming larger and larger as the nymphs grow. The largest burrow made by a nymph measured 0.6 centimetre in diameter and 2.50 centimetres in length. Each burrow is lined with a thin

layer of a substance probably secreted by the nymph. When a nymph is fully grown, this substance is broken off at the ends and the insect flies off. I do not know how many times a nymph of this species undergoes moulting during developmental stages. It may be worth mentioning here that a nymph produces a sound like that of a small cricket, especially when its home is disturbed. An easy way to collect the nymphs is to dry in the sun the wood inhabited by them. Within a few minutes the nymphs will emerge from their burrows. By this way the people residing near the swamp obtain them for fish bait.

From an economical standpoint, the impairment caused by the nymphs of this species of may-fly might be viewed as serious as that caused by teredos and other burrowing mollusks. I observed that hard wooden materials used in construction in the swamp as well as remains of woody plants were heavily bored by these nymphs. In a ferry-boat that was in place for repair I saw in the after part of the bottom about twenty burrows inhabited by these nymphs; the wood of the boat was still hard. I was told that the boat had been in the water for only five months after the last repairs had been made. Curiously enough, the nymphs did not attack the bamboo stakes which were put in the water for the featherbacks to lay their eggs on.

I am thankful to Nai Boon Chuay Indrambarya for his kind suggestions in the preparation of this note. The drawings for the accompanying illustrations were made by Nai Keheng Thiemmet.

EXPLANATION OF PLATES.*Plate 12.*

Fig. 1.—Fully grown female nymph, showing the powerful cutting jaws. 7 × natural size.

Fig. 2.—Nymphs in their burrows.

Plate 13.

Photographs of pieces of hard wood riddled by burrows.

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Figure 1.

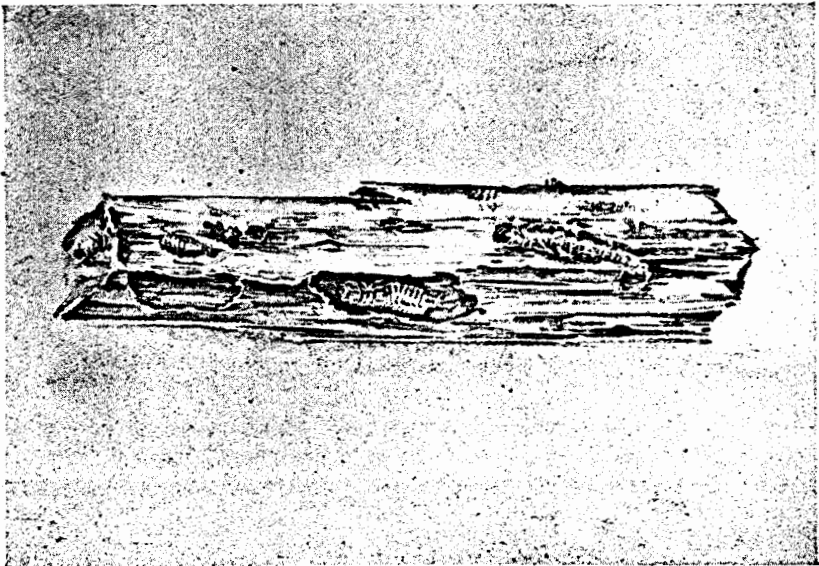


Figure 2.

