

XVII. *Note on the Habits of Scolytidæ and Bostrichidæ.*

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THERE seems to be much difference of opinion among Entomologists as to whether the little wood-boring beetles of the families *Scolytidæ* and *Bostrichidæ* do really injure and destroy trees, or whether they only attack such as are already diseased and partially dead from some other cause. Believing that the habits of the exotic species will help to clear up this question, I beg to offer a few observations on those which I have met with in the Malayan Archipelago.

The species of these islands are not generally larger than those of Europe, a great number being about a line in length, and the largest only five lines. They appear to be very numerous in species, about twenty generally occurring in each locality I have visited, while at Dorey, in New Guinea, I captured no less than thirty-eight distinct species, about equally divided between the two families. I have taken about half of these in the house, whenever I have inhabited one newly built in the forest, as at Macassar and Dorey, and the rest under bark in various stages of decay, or flying about fallen trees. Every species has been taken invariably on or in the vicinity of cut or dead trees. Never in the course of five years, almost daily spent in the forests, have I seen a single individual of either of these families attacking healthy living trees, or have found any traces of them having bored into such trees.

On the other hand, whenever a tree falls or is cut down, they are the first to attack it. In about four or five days dozens of minute holes may be seen on the trunk and branches, from each of which a little fine wood-dust falls down, and on carefully watching we may generally discover some of the insects pushing out the dust with the truncate extremity of the elytra. In some trees I have detected two or three species at work, in others only one. Some of the smallest attack cut and drying bamboos; others bore into hard dry boleti. No doubt, however, there are species that attack several trees indiscriminately. I had cut down

a large tree in the Aru Islands, of a kind containing abundance of milky sap, which hardened on exposure to air very much like "gutta percha." A few days after I found on it dozens of a species of *Scolytidæ*, with their abdomens protruding from the holes they had bored, but all dead. With a remarkable deficiency both of *instinct* and *reason*, the little creatures had dug their own graves, and were all glued fast by the hardening of the milky sap. In a few days more there were hundreds so killed; indeed it appeared as if not one escaped. It seems evident, therefore, that this tree could not have been the proper food of this species, or the right place to deposit its eggs. I have since observed exactly the same occurrence in another locality.

In my hut in the Macassar forest, built for me of freshly cut bamboos, palms and timber, the *Scolyti*, &c. literally swarmed. In a little more than a month, several pints of wood dust, as fine as flour, had accumulated on the foot of the posts and on some of the beams. In the stillness of evening their never ceasing jaws could plainly be heard at work, producing a slight sharp creak. In this house I took almost all my Macassar species.

Now these facts lead us to conclude that the *Bostrichi* and *Scolyti* attack only dead wood, generally in the first stage of drying or decay; for if their proper and usual food was living wood, why should they all rush as to a feast directly a tree is cut and begins to dry?

It may be said there are other species that attack living trees, but the negative evidence is very strong against such a supposition, which is besides altogether a gratuitous and unnecessary assumption if not supported by direct evidence. In five years' search after insects in the eastern forests I have never met with one, and the thousand sharp eyes of European Entomologists do not appear to have been more successful. This is the more extraordinary, as it is evident that a tree cannot be injured or killed in a moment; weeks, perhaps months, would be required before any part of the wood or bark would become actually dead, and during all this time the little round holes that the insects bore, and the wood-dust that has no other exit, must be easily discovered.

I am led, therefore, to conclude that the *Scolyti*, &c. attack wood in which the vital forces have ceased to act; and they are able to detect this before any external change has taken place. It is only at a later period that we observe the tree to be suffering, and in the parts most affected we discover the *Scolyti* to have been at work, and erroneously impute the mischief to them. As well

might we impute the death of an animal to the flies and their larvæ which a few hours afterwards attack it.

It now becomes a question whether the supposed criminals are not really our benefactors,—teaching us, by their presence, that there is something wrong, before we could otherwise perceive it. We may then be induced to inquire into the state of the soil or of the atmosphere, and be led to examine what diseases or what enemies may be at work on the roots or on the foliage of our trees as the points most likely for decay and death to originate in. Let us not forget that noble maxim of English law,—that every one is to be considered innocent till he is proved guilty; since it is just possible that further inquiry may discover, in the much-abused *Scolytus*, a warning friend instead of an insidious enemy.

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XVIII. *Descriptions of South African Tineina collected by R. TRIMEN, Esq., in 1858-9. By H. T. STANTON, Esq., F.L.S., &c.*

[Read February 6th, 1860.]

MR. TRIMEN not having specially attended to the *Micro-Lepidoptera* in this country before his departure for the Cape of Good Hope, I had not anticipated that he would have brought back with him any representatives of the South African *Tineina*. But in this respect I have been agreeably disappointed. Mr. Trimen brought home three species of the genus *Tinea*, two of the long-horned group, and two of the genus *Hyponomeuta*.

The three *Tineæ* are all new species; of the long-horns, one (*Adela Natalensis*) I had already obtained from Herr Guenzius, who collected for some time at Natal; and the other species, which is the type of a new genus, had already been described by Zeller, under the name of *Ceromitia Wahlbergi*, from specimens collected by Wahlberg in Caffraria. One of the *Hyponomeutæ* likewise appears to have been described by Zeller, but the other seems to be new. Among Mr. Trimen's captures were one or two other *Tineina*, but they were not in a state to be described. Mr. Trimen also brought home several *Tortricina* of interesting forms, but I have restricted myself solely here to the representatives of my own groups.