Circular Number 57

Department of Agriculture
Mysore State

THE COFFEE STEM BORER
(XYLOTRECHUS QUADRIPES CHEVR)

AND

ITS CONTROL

BANGALORE:
PRINTED BY THE SUPERINTENDENT AT THE GOVT. PRESS
1937
FIG. 1.
Different stages in the life of the coffee borer.
(All the figures are magnified.)
THE COFFEE STEM BORER.
(Xylotrechus quadripes Chevr) and its control.

The coffee stem borer, also called the "white borer" has been the most serious of the insect pests of the coffee plant in Mysore. It is hardly necessary here to state the extent of the damage caused by this insect during the last five years as the planters are fully aware of the same. Several causes have contributed to the serious occurrence of the pest during the above period, and by far the most important cause being the indifferent attention paid to the general cultivation, manuring and upkeep of the estates from the time the coffee prices went down.

As a very detailed account of the insect with regard to its habits, incidence, damage, life history, etc., has been published in the Bulletin No. 11, Entomological series of the Department of Agriculture, Mysore, only the control measures that have to be adopted by the planters to minimise the trouble to a very great extent, have been mentioned here. Text figure and plate I.

I. DESTRUCTION OF BORER COFFEE STEMS.

In the bulletin referred to above the emergence of the winged borer beetles from the infested coffee stems and the commencement of egg laying by these have been mentioned to be from about the early part of October to the beginning of December every year. Every precaution should be taken to see that the winged beetles are prevented from escaping from borer-infested coffee stems that are pulled out in the estates every year during the monsoon rains. If these coffee stems are completely burnt by all planters by about the end of August every year, the incidence of borer attack will be at a minimum. However much this has been impressed on the planters by the Department for the last so many years, it is very unfortunate that this destruction of borer coffee stems is not taken up by many planters. Not only these are not
destroyed but are found thrown in heaps by the side of the roads adjoining the estates; the heaps are found systematically carted to the nearest village and stored by many to be used as fuel. (Vide Plate II B). It has also been noticed that even in some well managed estates where every care is taken to destroy the borer coffee stems in time, the coolies of the estates carry the stems thrown about on the roadside to the cooly lines and store them for fuel.

These borer coffee stems contain borer insects of all stages inside and the winged insects begin emerging regularly from October onwards until about the beginning of December. It need hardly be said that these borer coffee stems wherever they are found unburnt, form centres of borer infestation for coffee areas during October and November.

Every care should be taken by the planters to destroy by burning all the borer coffee stems pulled out in the estates before the end of August every year and all precautions taken to prevent the transport of this material from place to place.

II. Scrubbing.

As the emergence of the winged insects from borer coffee stems and the egg laying on coffee bushes in the estates continue for about two months from October of every year, a systematic scrubbing of the coffee stems goes a great way in minimising the pest in the estates. The scrubbing should start with those bushes that are in and around bad borer patches during these months.

The borer insects generally lay their eggs underneath the dry scaly bark, moss or lichens or cracks and crevices that are found in stems of coffee bushes. By a scrubbing given to the stems in October-November, the eggs and young grubs of the borer are dislodged along with the dry scaly bark, etc., from the coffee stems and these grubs being legless, are unable to crawl back to stems and damage the plants.

It is advisable to start this operation in the estates in places where there are open patches, as the incidence of the borer attack has been found to be the most in such places. The coffee bushes in the open patches and about 200 bushes all round should be treated in this manner.
PLATE I.

Coffee stem showing the injury by borer.

A. Appearance of the surface of the stem.
B. Longitudinal section of the above.
A. Borer coffee stems heaped up in an estate prior to burning.  B. Borer trees pulled out and heaped in front of a house for use as fuel.
The borer attack in well managed estates is generally found severe only in stray patches here and there, particularly in places where shade is not well regulated or is patchy. There are instances where borer trouble has been found to be general throughout the estate, but this happens only when proper attention to systematic borer removals, regulation of shade, annual cultivation and manuring have not been attended to regularly for a number of years.

In addition to the scrubbing of the coffee bushes in and around the open patches in the estates, the planters would do well to have a regular programme of scrubbing of the coffee stems in the whole estate so that in the course of about two or three years this operation could be completed for all the plants in the estate. This would not only conduce to the general health of the coffee bushes but prevent ready egg laying facilities for the winged adults on the coffee stems. The winged borer beetles will have to do some searching on the coffee stems before they get suitable places for egg laying. This scrubbing operation is best done during the rainy season.

III. APPLICATION OF WOOD TAR DISTILLATE EMULSION.

The Agricultural Department has been experimenting in coffee estates for the past several years with a view to find out a simple remedy. Most of the experiments conducted have already been mentioned in detail in the bulletin referred to above.

In addition to the two methods of control mentioned already, the application to coffee stems of a high boiling coal tar or wood tar distillate made into an emulsion has been found to reduce to a great extent the destruction of the plants by the borer. A 10 per cent strength of the above materials was found to have both ovicidal and larvicidal properties and when swabbed on the coffee stems during the egg laying season (October-November), the eggs laid by the borer beetles and the young grubs hatching out of the eggs were found killed. In addition to this, the materials applied to the coffee stems were found to have a deterrent effect on the parent beetles. They were found to avoid the treated stems and thus no eggs were found laid for about a fortnight from the time of application. Of the two materials mentioned above the emulsion made out of wood tar distillate was found superior to coal
The borer removals in the case of the areas treated with coal tar emulsion were half of the untreated check, whereas in the case of the wood tar emulsion it was only one-third as compared with the check. The latter has more penetrating power and the pungent smell persists on the coffee stems for a longer time. A 80 per cent wood tar emulsion prepared by the Bhadravati Iron Works costs Rs. 2-4-0 per gallon, F. O. R., Bhadravati.

The cost of swabbing an acre of coffee stems of about 15 years of age has been found to be Rs. 6 including labour, but in the case of coffee plants of about 20 years and over the cost would be about Rs. 8. In the application of this material against the borer, the planters should keep in mind that generally only patches of coffee here and there in an estate show borer trouble and it would be enough if coffee stems on these patches and a few hundred plants all round are given the treatment. There is no necessity to treat the coffee bushes in the whole of the estate. Thus it will be seen that treatment by this method against the borer will be within the means of all planters.

The importance of scrubbing coffee stems against borer attack has been mentioned. The cost of the treatment of scrubbed coffee stems with the wood tar emulsion would be extremely low, as only a smaller quantity of the material would be required. It has been found that the dry scaly bark, moss and other growth on the stems of non-scrubbed plants absorb a large quantity of the material.

IV. THE REMOVAL AND DESTRUCTION OF BORER COFFEE STEMS IN SMALL HOLDINGS.

There are a large number of people in the coffee areas who own small areas of coffee plants about ½ acre to 5 acres and in most of these areas no care or attention is being given to the proper cultivation, manuring, etc. The owners of these small holdings pick annually whatever coffee they are able to obtain. Most of the plants in these neglected estates are found to be very badly borer-attacked and as no care is taken by the owners to pull out and destroy borer coffee bushes, these estates form centres of breeding for the borer insect and naturally become a menace to the very well managed estates in the neighbourhood.
The owners of these small holdings should pay particular attention to the proper removal and destruction of borer infested coffee bushes.

The following methods should be adopted by the coffee planters throughout the whole of the planting area in the State to enable them to keep down the borer attack to a minimum.

1. All borer coffee plants in the estates should be pulled out during the monsoon rains and completely destroyed by burning by about the last week of August every year. Every care should be taken to prevent the transport of the borer-infested stems from place to place.

2. A regular programme of scrubbing all the coffee stems in the estates will have to be carried out. It is better to start this scrubbing work on plants in and around bad borer patches in estates to begin with.

3. The coffee stems should be swabbed with wood tar distillate emulsion (available at Bhadravati Iron Works) during the height of the egg laying season of the winged borer insects, viz., middle of October to about the middle of November.

The application of this emulsion need only be made to the coffee stems in open borer patches and a few hundred plants round about them.

4. Owners of small holdings should pay attention to the removal and destruction of borer coffee stems in time.