B-81: Microbial flora of shot-hole borer galleries

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The shot-hole borer beetle (*Xyleborus fornicatus*) which has a symbiotic relationship with the Ambrosia fungus. *Monacrosporium ambrosium*, is a serious pest of the tea plant. Successful brood development of the beetle in the host plant depends on the growth of the fungus along the walls of galleries. It has been suggested that the beetle totally depends on the fungus for its sterol requirements.

A microbiological study of galleries in various stages of development was undertaken to detect the presence of other fungi in the galleries and also to find out whether the Ambrosia fungus plays a role in preventing the growth of other fungi during the life cycle of the beetle.

Three types of galleries were collected: *Type I.* Pencil size stems with galleries occupied by the beetle; *Type II.* Pencil size stems with galleries abandoned by the beetle. Tissues around the gallery were alive, but the moisture content was less than of Type I gallery; *Type III.* Stems which are slightly larger than pencil size. The galleries contained dead tissues in the primary stage of wood rot.

Apart from yeast and bacteria, the Ambrosia fungus was the only microorganism present in Type I galleries, Numerous colonies of *M. ambrosium* and a few colonies of a species of *Fusarium* were isolated from Type II galleries. *M. ambrosium*, *Aspergillus niger, Aureobasidium pullulans*, 2 *Scytalidium* sp., *Graphium* sp., *Mucor recuorus, Fusarium* sp. and one unidentified fungus were isolated from Type III galleries.

M.ambrosium did not show inhibitory effects on any of the fungal cultures isolated from galleries. However, *M.ambrosium* grew competitively with the