Scolytinae and Platypodinae (Coleoptera: Curculionidae) Borers in the Forest Environment: From the Nursery to the Field

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Bark and ambrosia beetles (Scolytinae and Platypodinae) are a diverse group of beetles who usually attack and colonize trees and shrubs. Their species are fairly difficult to identify, due to their small size, within-species variation and paucity of taxonomists. Most species are associated with fungi, and they have a cryptic life inside their host plants. In Brazil, the coffee berry borer, *Hypothenemus hampei*, and the mango bark beetle, *Hypocryphalus mangiferae*, are well-known agricultural pests. However, in forest-like environments, throughout roughly the last decades of the 20th century its status could be broadly considered as a nuisance at best, and economic damage was restricted to particular cases, and generally associated with bad management practices or extreme weather conditions. Accordingly, most studies on these beetles were centered in surveys and seasonal variation in abundance. In the last 15-20 years, though, this situation has significantly changed, and reports of beetles inflicting economic damage to a broad range of tree species are becoming quite common. Those reports stretch from damage by killing tree saplings in nurseries to attacks on trees of different physiological maturity in the field to damage in sawmills. We have registered reports of bark and ambrosia beetle attacks in plantations of poplar trees (*Populus deltoides*), Brazil nuts (*Bertholletia excelsa*), paricá (*Schizolobium amazonicum*), coconut trees (*Cocos nucifera*), pecan (*Carya illinoinensis*), several Rosaceae fruit trees such as apple (*Pyrus sylvestris*), peach (*Prunus persica*), plum (*Prunus domestica*), nectarine (*Prunus persica* var. *nucipersica*) and quince (*Cydonia oblonga*), common fig (*Ficus carica*), grape (*Vitis vinifera*), vegetable sponge (*Luffa cylindrica*),chayote (*Sechium edule*), and rubber trees (*Hevea brasiliensis*) among others, from north to southern Brazil. In several occasions beetle attacks are associated with fungi, in events that suggest they might be black swan events.

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