Notas Científicas

Plants of an *Eucalyptus* clone damaged by Scolytidae and Platypodidae (Coleoptera)

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Abstract – Species of Scolytidae and Platypodidae were evaluated in a plantation using a clone of *Eucalyptus grandis* x *Eucalyptus urophylla* in the State of Minas Gerais, Brazil. Wood disks with galleries were taken from 15 eucalyptus trees between 0.5 and 1.5 m height. After collection, all trees attacked were burned. Woodborers obtained from these disks were identified as *Premnobius cavipennis*, *Premnobius ambitiosus*, *Dryocoetoides cristatus* (Coleoptera: Scolytidae) and *Euplatypus parallelus* (Coleoptera: Platypodidae). This is the first report of *D. cristatus*, a Brazilian native species, damaging eucalyptus, which shows its adaptation to this plant.

Index terms: *Premnobius*, *Dryocoetoides*, *Euplatypus*.

Plantas de *Eucalyptus* atacadas por Scolytidae e Platypodidae (Coleoptera)

Resumo – O objetivo deste trabalho foi avaliar o ataque de Scolytidae e Platypodidae em talhão de clone *Eucalyptus grandis* x *Eucalyptus urophylla* na região de Montes Claros, Estado de Minas Gerais, Brasil. Discos de madeira com galerias desses insetos foram retirados de 15 árvores de eucalipto entre 0,5 e 1,5 m de altura. Após a coleta deste material, as árvores atacadas foram queimadas. Os indivíduos da ordem Coleoptera obtidos desses discos foram identificados como *Premnobius cavipennis*, *Premnobius ambitiosus* e *Dryocoetoides cristatus* (Coleoptera: Scolytidae) e *Euplatypus parallelus* (Coleoptera: Platypodidae). O ataque de *D. cristatus*, espécie nativa do Brasil, ao eucalipto ainda não havia sido relatado, o que mostra sua adaptação a essa planta.

Termos para indexação: *Premnobius*, *Dryocoetoides*, *Euplatypus.*

Species of the genus *Eucalyptus* are planted in most areas of Brazil and its wood is used, mainly, to produce cellulose and charcoal. However, monocultures of species of this genus can favor the adaptation and multiplication of insects, which can become pests in these ecosystems. This can be explained by the fact that the original structure of the vegetation can determine the spatial distribution and availability of resources to insects (Moraes et al., 2002).

The fauna of insects associated to eucalyptus plantations in Brazil is extremely rich and mainly native species constitute it. Since the beginning of the commercial plantations of eucalyptus in the decade of 1960, many native insect species adapted themselves to the exotic eucalyptus, causing extensive and frequent damage. Species of the Hymenoptera (Zanuncio et al., 2002a), Lepidoptera (Zanuncio et al., 1993), Isoptera (Moraes et al., 2002) and Coleoptera (Morales et al., 2000) orders are included among the main groups of insects of forest importance.

The order Coleoptera includes species of the family Scolytidae as pests of forests in temperate regions of the world. The importance and abundance of this group is increasing in Brazil mainly with species of ambrosia beetles (Flechtmann et al., 1999, 2001), which feed on symbiotic fungi introduced and cultivated in their galleries. The presence of species of the families Scolytidae and Platypodidae are becoming relatively common in forest plantations in Brazil (Zanuncio et al., 2002b) but there are few reports on their occurrence. This makes difficult

to estimate the real damage of these insects cause in forest plantations and the adoption of control methods, eventually, used against them (Flechtmann et al., 2001).

The objective of this research was to evaluate the occurrence of Scolytidae and Platypodidae species damaging plants of eucalyptus in Montes Claros, State of Minas Gerais, Brazil.

This work was developed in a 20-hectare plantation with stakes of a clone of *Eucalyptus grandis* x *Eucalyptus urophylla*. This region underwent a dry period from April to November 2001. Plants of eucalyptus were two years old and they had average breast height diameter of 6.5 cm in December 2001 when damage by woodborers was registered. A total of 16.4% of the trees were visually evaluated as damaged by woodborers. These insects attacked healthy and dead trees and some of the alive ones had all crown leaves dead. Attacks by woodborers occurred isolated or in groups of trees and the openings of their galleries were found mainly from 0.5 to 1.5 m high on eucalyptus trunks.

Disks of about 15 cm thick with galleries of woodborers were cut using a chainsaw from the trunks of 15 eucalyptus trees. These disks were taken to the Laboratory of Forest Entomology of the Department of Animal Biology, Universidade Federal de Viçosa, State of Minas Gerais, where they were dissected with a chisel and hammer. Voucher specimens of Scolytidae and Platypodidae obtained from these disks were sent to the Universidade Estadual Paulista, Ilha Solteira Campus, to be identified and deposited in the Museum of Entomology.

Three Scolytidae species, *Premnobius cavipennis* (Eichhoff 1878), *Premnobius ambitiosus* (Schaufuss 1897) and *Dryocoetoides cristatus* (Fabricius 1801), and one Platypodidae species, *Euplatypus parallelus* (Fabricius 1801), were identified, and more than 90% of the insects belong to the species of *Premnobius*.

A total of 25 galleries with *Premnobius* spp. were examined and 70% of them had only one individual of these species. The main gallery of *Premnobius* spp. varied from 0.5 to 4.0 cm deep into the softwood with perpendicular galleries irradiating at both sides. These galleries presented niches about 3 mm wide in which *P. cavipennis* and *P. ambitiosus* laid their eggs. They represent rearing galleries in a similar manner as mentioned for the first species by Browne (1962).

The number of individuals of *P. cavipennis* per gallery varied from 0 to 35 larvae and from one to 24 adults. Males of the tribe Xyleborini do not fly and mated females colonize trees. However, because they present parthenogenesis, virgin females of Xyleborini can also lay fertile eggs. For this reason the presence of more than one individual of *P. cavipennis* in a gallery indicates that the pioneering female successfully colonized the host tree and additional individuals represent, certainly, its progeny.

Both *Premnobius* species are native from Africa (Wood, 1982). *Premnobius ambitiosus* is normally captured in low numbers in reforestation of *Pinus* and *Eucalyptus* in Brazil but *P. cavipennis* is very common in plantations of *Eucalyptus* north of the Capricorn tropic (23° South Latitude) (Flechtmann et al., 2001). This species is polyphagous (Wood, 1982) with reports of attacks to eucalyptus (Andrade, 1962) presenting economic damage to healthy and stressed trees (Rocha, 1993).

Three individuals of *D. cristatus*, two females and one male, were found. This species is poorly studied but it is known to be native from Central and South America, including Brazil, attacking native tree species (Wood, 1982), but they were not previously reported on eucalyptus plants.

The species *E. parallelus* is also of African origin but it is distributed all over the tropical areas of the world due to wood trade (Wood & Bright Junior, 1992). Only one individual, male and alive, of *E. parallelus* was found per gallery. This species is monophagous and the presence of males inside the galleries indicates that this is the pioneering sex (Wood, 1982). *E. parallelus* is considered the most destructive Platypodidae of the world (Wood & Bright Junior, 1992). The presence of an isolated male per gallery should be explained by one of the following hypothesis: the male did not succeed in attracting the females; the eucalypt clone is not suitable for its development; or the insect attacks older eucalypt trees.

Scolytidae frequently attack stressed plants (Beaver, 1988). The occurrence of a drought period might have stressed the eucalyptus trees and turned them more susceptible to be colonized by Scolytidae and Platypodidae which, eventually, may have caused or accelerated the process of death of these plants.

This work reported aspects of biology, damage and identification of species of Scolytidae and Platypodidae associated to eucalyptus plants in Brazil. Trees with

galleries of the woodbores were cut and burned while the neighboring ones were maintained. This procedure was enough to remove the attack and damage by Scolytidae and Platypodidae species to eucalyptus trees.

Acknowledgements

To Prof. Carlos Alberto Hector Fletchmann, from Unesp, for identification of the collected material; to "Conselho Nacional de Desenvolvimento Científico e Tecnológico" (CNPq), "Coordenação de Aperfeiçoamento de Pessoal de Nível Superior" (Capes) and "Fundação de Amparo à Pesquisa do Estado de Minas Gerais" (Fapemig), for grants and scholarships.

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Received on June 2, 2004 and accepted on February 11, 2005