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Full Length Research Paper

Mycobiota associated with *Platypus cylindrus* (Coleoptera: Curculionidae, *Platypodidae*) in cork oak stands of North West Algeria, Africa

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Platypus cylindrus* (Coleoptera: Curculionidae, *Platypodidae*) is an important insect pest of the cork oak. These beetles maintain symbiotic relationships with many fungi that serve especially as food for the adults and larvae but also intervene in the mechanisms of establishment of the insect by further weakening the host-tree. 270 samples were taken by 3 sources: Galleries (30), mycangia and intestinal contents of male and female insects and intestinal contents of mature larvae (60 each). The results show the presence of 42 species of ambrosia fungi among which 17 are new to this association. The mycetophagy of these beetles is very rich and consisted essentially of Ophiostomatales. Other groups of fungi playing different roles were also isolated: entomopathogenic, antagonistic, saprophytic but especially pathogenic for the tree host. This group consists of many species and their dissemination by the insect and the inoculation in trees may have fatal consequences by accelerating the cycle of declining affected trees. In the present paper, we discuss the fungal species associated to the beetle, identified on the basis of phenotypic characters and ribosomal DNA sequences analysis, and their relationship with *P. cylindrus.

Key words: Forest of M'sila (Oran- Algeria), *Quercus suber*, *Platypus cylindrus*, Ambrosia fungi.

INTRODUCTION

Some Scolytinae and most Platypodinae, including the genus *Platypus* Herbst, 1793*,* are known as ambrosia beetles (Chararas, 1979). They transport fungi that are cultivated on the walls of the clean galleries of laying held of dejections and dug deeply in the wood of the plant-hosts (Batra, 1967). The mycelia covering these galleries are very rich in nitrogenized matters, which are essential not only for the adults of *Platypus,* during the period of gallery digging, but also to the larvae unable to attack wood (Balachowsky, 1949; Dajoz, 1980). These xylomycetophagous (most Platypodinae, and some genera of scolytinae: *Xyleborus*, *Xylosandrus*, *Corthylus*, *Gnatotrichus*, *Premnobius*, *Sampsonius*, etc) beetles Gnathotrichus ectosymbiotic (Francke-Grosmann, 1967) relationships of mutualism with the fungi (Beaver, 1989). This association finds its origin in the presence of specialized organs of storage and dissemination of fungi called "mycangia" (Batra, 1963; Krivosheina, 1991; Fraedrich et al., 2008; Moon et al., 2008a, b). These structures contain glands of secretion that maintain fungi spores under favorable conditions during flight and movement of adults (Levieux et al., 1991). The morphology of these structures, as well as their localization on the body, is different depending on

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Abbreviations: PDA, Potato dextrose agar; **MEA,** malt extract agar; **DNA,** deoxyribonucleic acid; **ITS,** internal transcribed spacer; **rDNA,** ribosomal DNA.