

THE FELT FUNGUS, *SEPTOBASIDIUM* J. J. McRitchie¹

INTRODUCTION: The fungus *Septobasidium* has been associated with numerous woody plant genera (1,4) including *Acer*, *Camellia*, *Carya*, *Citrus*, *Cornus*, *Liquidambar*, *Magnolia*, and *Quercus*. Many species of the fungus have been described; however, those described by Couch (3) were not validly published because of the lack of Latin description. Most species occur with scale insects, but are often reported only on their plant hosts.

SIGNS: The fungus is brown, felty, perennial, lichen-like, and may frequently surround small tree branches (Fig. 1). Species of the genus *Septobasidium* are epiphytic, usually on trees, and associated with scale insects. The fungus is superficial on the plant, but parasitizes the insects which are feeding on the plant host (6).



Figure 1. Small branch of *Liquidambar styraciflua* surrounded by the thallus of *Septobasidium* sp.

Within the fungal thallus is a labyrinth of tunnels and chambers. Each chamber contains a single scale insect directly in contact with the tree bark. Tunnels open to the surface. *Septobasidium* may involve entire colonies of scale insects whereas other genera of felt fungi parasitize single insects.

LIFE CYCLE: In the spring, basidiospores are formed on the surface of the fungus. Sporulation (budding) coincides with the production of live young by female insects within the thalli. Some young remain where they are born; others crawl to the outside. They then crawl back into the thallus or settle on uncolonized bark. Those entering the thallus assure its survival and growth; whereas, those settling upon clean bark distribute the fungus.

If the infected insect returns to the thallus, it becomes surrounded by hyphae which grow from the chamber or tunnel floor. These anastomose with hyphae emerging from the insect's body.

If the infected insect settles on fresh bark, hyphae emerging from it grow and form a small thallus. Other infected scale insects may become associated with the thallus. The mouthparts of the insect are not covered by the hyphae and it is able to feed normally.

BENEFITS: Both the fungus and the insect benefit from the association, therefore the relationship is a mutualistic symbiosis. Although the scale insects can live without the association, it is a rare and difficult life. The thallus protects the insect from unfavorable environmental conditions and from hymenoptera. On the other hand, infected insects lose their mobility, are often rendered infertile, and remain dwarfed.

Insects act as sole agents of fungus dispersal. They also feed on medullary, ray cells in the woody tissues of their host plant. Nutrients are then assimilated from their blood by fungal hyphae. In nature, *Septobasidium burtii* is obligately associated with scale insects (2).

EFFECTS ON THE PLANT: Damage to the plant has been attributed to certain species of *Septobasidium*; however, it is probable that this damage is due to the activity of feeding insects, not direct parasitism of the plant host by the fungus (1).

CONTROL: If warranted, control may be achieved by pruning affected branches and spraying with a copper fungicide as a preventative (5).

SURVEY AND DETECTION: Look for a brown soft, leathery, felt-like fungal growth covering twigs and small branches.

LITERATURE CITED

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