THE PARASITISM OF EXOCARPUS HUMIFUSA, R. Br.

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Exocarpus humifusa, R. Br., is a small prostrate shrub found on Tasmanian mountain tops. Three other members of the genus are found in the State, and these extend to the mainland. The most familiar is the native cherry, which is common in the eastern states, but the Western Australian record of which is doubtful. The family Santalaceae, to which Exocarpus belongs, is noted for the root parasitic habits of its members. In Europe and Asia the parasitism of Thesium, Comandra, Osyris (1), and Santalum (2) has been fully investigated, and in Australia the genera which have been proved to enter into this unequal partnership with other plants are Fusanus, Choretrum, Leptomeria, and Exocarpus (3, 4, 5, 6, 7). In the case of Fusanus spicatus (Santalum cygnorum), the Western Australian sandalwood, the knowledge of its parasitism is of economic importance, as it is useless to attempt to cultivate this valuable tree in the absence of a host plant.

Exocarpus humifusa possesses a well-developed root system, ramifying through the soil a few inches from the surface and coming into frequent contact with the roots of other plants. Its roots are white, rather fleshy, and devoid of root hairs. These characters are common amongst root parasites. Where they come into contact with other roots—either their own or those of other species—haustoria are formed. These are minute disc-like outgrowths which are visible to the naked eye, and usually one line in diameter when fully developed. Because of their small size they do not penetrate far into large roots, the fusion being between the cortical cells of the host and the parenchymatous cells of the haustorium. The haustoria are consequently easily detached from the host root, and care has to be exercised during the digging operations in order to get them out intact.

The habits of Exocarpus humifusa were investigated in January, 1928, at Lake Fenton, National Park. The plant is fairly common on the rocky mountain sides in the higher altitudes where the predominant trees are Eucalyptus gunnii, E. coccifera, and E. urnigera. It grows with Telopoa truncata, Orites diversifolia, Hakea lissosperma, Olearea pinifolia, various epacrids, and others, and examination showed that it attacked them all indiscriminately. Some plants belonging to the family Santalaceae show a preference in hosts, and Leptomeria spinosa in Western Australia was found on Eremea pilosa only. A wide range of hosts such as that possessed by this Tasmanian species is a great advantage, and increases the plant's chances of survival. It must be remembered that the death of the host means the death of its dependant, and that a one host parasite is limited in distribution to the area occupied by the victim species, and also has a restricted food supply in that area.
REFERENCES.


(2) Barber, C. A.: The haustorium of Santalum album. Memoirs of the Dept. of Agriculture in India, I., part ii., 1907.


NOTES ON THE GENUS PORIA.

By
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THE PORIAS AND PORIA-LIKE FUNGI WITH DEFINITELY COLOURED HYPHÆ.

The genus *Poria* is admittedly one of the most difficult groups amongst the Basidiomycetes to deal with from a systematic point of view. The position is to a great extent chaotic. Many of the descriptions are very meagre, and it is often impossible to refer plants correctly to known species without access to the actual type specimen. Many species seem variable, due often to the differences between a young plant only establishing itself and an old one which has had ample time to develop fully. Through the kindness of the late Dr. C. G. Lloyd, Miss E. M. Wakefield, Dr. James R. Weir, and Dr. G. H. Cunningham, we have had some of our Australian species identified or have received identified foreign species for comparison. The present paper is part of an attempt to hall-mark by specific names some of our Australian species. In spite of its representing years of laborious work, many complete recastings, and the condensation of pages of manuscript, we feel far from satisfied with the result, and present this part as a present "jumping-off ground" which may have to be re-erected later on a modified basis.

From an examination of many specimens of Australian Porias and Poria-like fungi, we think that they are best divided primarily by the colour of the hyphae as seen under the microscope under two divisions, viz., those with the hyphae not coloured or only slightly so and into those with the hyphae quite distinctly coloured. With the latter we deal in this paper, dividing them again into those with hyphae dull yellowish, with hyphae yellowish-brown, and with hyphae livid brown or more or less fuscous or purplish brown. The following key is an attempt to differentiate briefly the Australian species we have examined under these three sub-divisions.