stump. The canopies of two of the trees almost overtop the stump and large roots are visible on the forest floor.

Beddie (1941, T.R.S.N.Z. 71: 199-203) records many examples of natural root grafting based on direct observation. He lists puriri in his category of species where grafting is strongly suspected but definite proof is lacking. My observations offer some further support for the existence of the phenomenon in this species.

NOTES ON REWAREWA (KNIGHTIA EXCELSA)

R.O. Gardner

Cheeseman's description (1890) of rewarewa pollination by the tui and similar birds is well known. He mentions the "strong and very peculiar" and "unpleasant" odour of the flowers without further description or explanation. One does not need, however to dwell in the Danjanzen jungles to be able to recognize the smell of sour milk, so characteristic of bat-pollinated flowers. Associated features are the dark red flesh-like nature of the perianth and the copious thin nectar. Bats and other small furry animals are known pollinators for Australian Proteaceae and New Zealand bats have yielded rewarewa pollen in capture experiments (see Godley 1979).

Other facts about the course of pollination (leaving the role of the tui aside) are harder to come by. The perianth opens first both at base and apex, at the latter exposing the very tip of the club-shaped end of the style. Kirk (1899) implied that only this tip is stigmatic and that cross-pollination occurred at this early stage. Cheeseman was vague about the exact location of the stigma, but believed that it became receptive late, after the covering of its own pollen had been removed.

The stigma seems to be correctly described in Laing and Blackwell (1964) as "depressed in a small cup at the top of the style." One might guess that the pollen and nectar-soaked chests of bat or bird would come into contact with the stigma at the early stage, as the animal pushed towards the nectar exposed at the flower base.

Nor is it certain that cross-pollination is absolutely necessary. More or less isolated trees around Auckland city produce rather few fruit, but Godley (1979) has observed a lone tree in Dunedin that regularly fruits and produces godd seed. More observations should be made within the natural range of the species.

Another part of rewarewa biology that should be better known concerns its root system. Like many Austalian members of this family rewarewa develops so-called "proteoid" roots, aggregations of short fine laterals on the main roots. These fuzzy-looking rootlets are well seen on seedlings growing in a clay soil, if the plant is dug up carefully and washed.

Proteoid roots were discovered only in the 1960s. They are believed to facilitate phosporus-uptake from deficient soils. Their presence on rewarewa could explain why young plants in gumland scrub are (often by a considerable margin) faster-growing than the similar-aged manuka around.

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SOME AUCKLAND EUCALYPTS

R.O. Gardner

Eucalypts do poorly in most N.Z. species lists and ecological accounts, humbled often to mere "sp."; even the DSIR naturalized plants checklist, for example, has had to rely on forestry records, not specimens from the wild (Sykes 1982).

True, these trees are often hard to sample, mixed-species stands being especially-frustrating (and it will be noticed that no mention is made below of the Domain and Cornwall Park plantation trees). But on the positive side, eucalypts are undemanding in the press; their taxonomically-important capsules are persistent on the tree and in the litter; and their seedlings make excellent specimens readily identifiable to species or species-group.

Auckland's eucalypts and related trees, some of which are discussed below, are mainly of visual or historic interest. Naturalization takes place mostly in semi-rural conditions and only close to the parent plantings.

With the exception of E. ficifolia, our trees are all species of south-eastern Australia (including Tasmania). They are immaculately illustrated (seedlings, bark type &c.) in Boland et al. (1985). The work of Auckland enthusiast Rev. J.H. Simmonds (1927) is useful though dated in nomenclature.

Those who feel that even in New Zealand eucalypus study might require not only binoculars and boomerang but personal computer too will be attracted by the innovative scheme of Pryor and Johnson (1971), which assigns letters to subgeneric groupings so creating species code names e.g. MAKAA for E. obliqua.

Eucalyptus obliqua — messmate stringybark

This species is widespread through south-eastern Australia in coastal