A NOTE ON THE GENUS ULTRACOELOSTOMA COCKERELL (HOMOPTERA : MARGARODIDAE)

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SUMMARY

The occurrence of a species of **Ultracoelostoma** Cockerell on **Dracophyllum** spp. and the probable occurrence of parthenogenesis in the genus is recorded.

The endemic scale-insect **Ultracoelostoma assimile** (Maskell)—the only species described in the genus—occurs characteristically on the trunks and branches of **Nothofagus** spp. (Fagaceae). The slender white anal wax-tubes protrude through the sooty-mould fungus (**Capnodium** spp.) which grows on the excreted honeydew. The species has also been recorded from **Phyllocladus trichomanoides** D. Don (Podocarpaceae) by Maskell (1891), and from **Laurelia novae-zelandiae** A. Cunn. (Monimiaceae) by Brittin (1936), though the specific identity of the specimens concerned requires confirmation. The morphological variations noted by Brittin (1936) in specimens from **Nothofagus** suggests that more than one species may be present on this food-plant.

Larvae, second-instar females, and adult females of a species of **Ultracoelostoma** were collected from the endemic **Dracophyllum paludosum** Ckn. (Epacridaceae) near Waitangi, Chatham Islands, by the author on 4.xi.59. The only morphological difference so far observed between these specimens from **Dracophyllum** and those of **U. assimile** from **Nothofagus** is in the smaller size of the tarsal claw in the specimens from **Dracophyllum.** The hard waxy tests of the specimens from **Dracophyllum** tend to be smaller, more elongate, and more exposed on the bark. Similar specimens were collected later from **D. longifolium** (J. R. et G. Forst.) on the Auckland Islands (L.J.D.), Stewart Island (Macarthur) and at Arthurs Pass (L.J.D.). The species was not found by myself or Mr. V. D. Zotov on **Dracophyllum** spp. on Campbell Island, and it has not been found so far on **D. longifolium** in the North Island. The genus **Ultracoelostoma** has not previously been recorded from Chatham Is., Auckland Is., or Stewart Is. or from food-plants of the genus **Dracophyllum.**

Nothofagus does not occur on the Chatham, Auckland, or Stewart Is. and the other genera (**Phyllicladus** and **Laurelia**) recorded as food-plants of **U. assimile** are also absent from these islands. At Arthurs Pass **Ultracoelostoma** was present on **D. longifolium** growing at 3,000 ft. but not on the surrounding **Nothofagus solandri** (Hook. f.) var. **cliffortioides** (Hook. f.), though this latter food-plant is infested at lower altitudes. This suggests that the

Ultracoelostoma population on **Dracophyllum** has a strong preference for this food-plant and is probably restricted to it, and is likely to be biologically distinct from the population of **U. assimile** on **Nothofagus.**

Brittin (1935) reported having observed the emergence of large numbers of males of **U. assimile** and considered, since adult females were not present at the time, that they might mate with second-instar females. Maskell apparently saw no males of **U. assimile,** and neither males nor tests of a different form which might be those of males, have been observed by myself on either **Nothofagus** or **Dracophyllum.** It would be difficult for males to emerge from tests like those of the females since they are hard and waxy with a small aperture and contrast strongly with the soft cottony male tests of the related **Coelostomidia** Cockerell. If males were present Brittin's suggestion of their mating with second-instar females is regarded as improbable, and mating with the adult female would be difficult or impossible since the aperture of the test is occluded by the cast skin of the second-instar female. In the absence of confirmation of the occurrence of males it is highly probable that the females are parthenogenetic.

Ultracoelostoma will probably be found to occur on **Dracophyllum** throughout the South Island and its occurrence on Stewart Island is to be expected in view of the probable Pleistocene land-connection. There are two possible explanations of the occurrence of **Ultracoelostoma** on **Dracophyllum** in the more distant Auckland and Chatham Islands. It may have established as the result of wind-dispersal of first-instar larvae from New Zealand. Successful establishment would be more likely if the species were parthenogenetic, as it appears to be. Such larvae are likely to have been derived from **Dracophyllum** as it is less probable that larvae from **Nothofagus** would adapt to the same new food-plant genus on both islands. It is equally possible that the association of **Ultracoelostoma** with **Dracophyllum** is an old one resulting from a Tertiary land connection between both the Auckland and Chatham Islands and New Zealand.

REFERENCES

BRITTIN, G., 1935: Notes on the genus **Coelostomidia** with description of new species and table for identification. **Trans. Proc. R. Soc. N.Z. 65:** 63-74.

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