



FIG. 6. Cladogram (inverted) of the *fulgens* group, imposed on the known geographical distribution of the species in New Caledonia.

exposure of the Chesterfield Reefs. Only 1 of the 18 species of *Rhytidoponera* in New Caledonia has reached the adjacent Loyalty Islands, another strong indication of limited vagility. Moreover, the New Caledonian *Rhytidoponera* are notably habitat-limited, being more or less confined to mesic forest environments (Ward, 1984).

The same arguments can be applied to other New Caledonian ants which belong to Indo-Australian genera (or species groups within genera) with wingless queens. These include the dolichoderine genus *Leptomyrmex*, and the ponerine genera *Leptogenys*, *Prionogenys*, *Cerapachys*, and *Sphinctomyrmex* (Emery, 1914; Wheeler, 1934; Wilson, 1957). These primitively apterous species impart an archaic, continental flavor to the ant fauna of New Caledonia. They can be constricted with the more phylogenetically advanced myrmicine ants among which there is a conspicuous amount of secondary winglessness on New Caledonia (Wilson, 1971), presumably due to insular selection pressures against dispersal. Some of these myrmicines may represent more recent (mid-Tertiary) arrivals on the island. A parallel distinction has been made by botanists between ancient and more recent elements in the flora (e.g., Thorne, 1965).

The present study provides limited res-

olution of species-level relationships in the New Caledonian *Rhytidoponera*. If we accept a sister group relationship between *R. opaciventris* and *R. aquila*, then the partially resolved cladogram of the *fulgens* group can be mapped onto the known geographical distribution of the species. The result (Fig. 6) indicates that the history of this group is one of allopatric differentiation, limited dispersal, and marginal (if any) secondary sympatry. Ward (1984) suggested the same vicariance pattern for several *pulchella* group species, but the lack of confident resolution of species relationships within this group precludes confirmation of this pattern in the present study.

Finally, the radiation of the *pulchella* group into a foliage-gleaning niche unoccupied by congeners may have been relatively rapid, or at least involved multiple, contemporaneous differentiation of taxa. In this case, the evolutionary history of this group would be better represented by a multifurcating bush than by a "fully resolved" bifurcating tree.

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