

## Tobago Island Fungus-growing Ants (Hymenoptera: Formicidae)<sup>1</sup>

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The island of Tobago, lying within sight of Trinidad, would seem to have a depauperate fauna compared with that of the larger island since it is smaller and less diverse, physically and biologically. It is 26 miles long and some 7 miles at the widest. Trinidad is within sight of Venezuela and is reported to have been attached to it until about 6000 B.C. (Rouse 1964). Despite the closeness of the three land masses "the prevailing winds and current proceed westward from the Guianas past Trinidad to Margarita Island. . . . When the Orinoco is in flood it muddies the sea past Trinidad, and some of the debris is carried into the Lesser Antilles" (*loc. cit.*).

During my year's residence in Trinidad and visits during other years the trade wind coming from the east was familiar and welcome on the east coast facing Tobago. So far as insects carried by winds are concerned, the direction of movement would be more likely from Tobago to Trinidad. The Guiana coast is too far away to be a probable factor. While the southwestern corner of Trinidad is muddied by the Orinoco, this part of the island is like a sandspit and carriage of live fungus-growing ants together with their fungus would seem to be extremely hazardous, if indeed they could start up their symbiotic existence when they landed. However the intermediate island of Soldado Rock (Worth, 1967) did have a live *Atta cephalotes* female shown to me by J. M. Cherrett in 1967 (Cherrett MS).

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The most reasonable explanation for the origin of the Tobago attines, it appears to me, is that they were acquired directly from Trinidad, either by physical connection of the land masses or by temporary islets.

In consequence of the above factors, the finding in 1967 of an attine, *Cyphomyrmex bigibbosus* Emery, that was known in Trinidad only by a single dealate female from rain forest (Weber 1945) suggests that there may be local pockets of habitat in both islands that permit relict species to survive. With the increasing disappearance of primitive forest, such species may soon become extinct. A second attine that is abundant in Trinidad was also found for the first time in 1967 in Tobago. Both were in the patches of relatively untouched forest in the higher parts of the island between Roxborough and Bloody Bay. Both species were relatively common in the then largely primitive forest of British Guiana in 1935-6 (Weber 1946).

The present efforts at exterminating the two largest attines of Tobago, *Acromyrmex octospinosus* Reich and *Atta cephalotes* L., are at least locally successful and, in an island of this size, these efforts may soon be more widely successful. The latter species was noted here in 1935 (Weber 1945). The present fragmentary notes therefore may be worth recording for a condition soon to change. The species known to me from brief 1965 and 1967 collecting are as follows:

#### ***Cyphomyrmex rimosus* Spinola**

Widely distributed but inconspicuous. Colonies had mature males and females 7 July 1965 and were on grassy slopes, nesting in black soil under the shade of trees. Also a regular inhabitant of forests and cultivations, probably at all elevations on the island. The most widely distributed attine, from Florida to Argentina. Fungus in yeast-like and mycelial forms.

#### ***Cyphomyrmex bigibbosus* Emery**

A nest close to one of *Trachymyrmex relictus* and one of *Myrmicocrypta buenzlii* in clay on the crest of a steep, wooded

ridge. Males were present 31 August 1967. The fungal mycelium was very different from that of *Cyphomyrmex rimosus*, having a flocculent growth with clusters of hyphal terminations that were slightly swollen. The substrate was heterogeneous and vegetal.

**Mycetophylax conformis** (Mayr)

Seashore (E. O. Wilson, pers. commun.).

**Myrmicocrypta buenzlii** Borgmeier

Nesting as above and about 50 meters distant. A large, mature colony with a single compact fungus garden of small cells. The chamber was 9 cm down in reddish clay and was 9 cm high by 12 × 14 cm laterally. The substrate was vegetal, finely comminuted and tan in color. In soil about the garden were mites and Collembola. The fungul mycelium was flocculent but growing more in tufts on the substrate than that of *bigibbosus*. No sexual brood was present on 31 August 1967 nor in Trinidad colonies at the same time.

**Trachymyrmex relictus** Borgmeier

Colony with alates 31 August 1967 in patch of forest near top of main ridge of island. The entrance to the nest was a bare hole 10 mm in diameter. Known from Trinidad and Surinam.

**Trachymyrmex urichi** Forel

Forested areas.

**Acromyrmex octospinosus** Reich

Nesting in hillside at road cut through low trees and bushes. Had alates on 7 July 1965. Found also in cultivations, including low-lying coconut of plantations and in the most undisturbed forest on main ridge of island. A part of a garden with workers was successfully adopted by a fertilized female of the

species from Trinidad and the resulting colony maintained in the laboratory for more than two years (Weber 1967).

### **Atta cephalotes** L.

Not found in low-lying, heavily cultivated areas where it must formerly have existed. A colony with queen was taken in a steep, grassy area on top of main ridge of island on 31 August 1967. The colony, judging from its size, must have originated from a nuptial flight of April or early May. There was a single crater and poorly developed trails of a few meters in length. The single garden was 10–15 cm in diameter (estimated volume 1,000–1,200 cc) and rested on pieces of angular rock. The female could have come from a parental nest in any direction, there being patches of forest on all sides. There had been much damage by a hurricane several years before. All workers were less than 10 mm in length, the soldier caste not yet having been formed. The colony grew rapidly in the laboratory and in two months the garden had doubled in size.

#### SPECIES PROBABLY OCCURRING IN TOBAGO

No intensive collecting of attines appears to have been made on Tobago and other species will probably be found when this is done. These would be in Trinidad-type habitats and include:

*Cyphomyrmex rimosus* subsp. *trinitatis* Weber; *Mycocepurus smithi* Forel; *Apterostigma urichi* Forel; *Apterostigma mayri* Forel; *Apterostigma auriculatum* Wheeler; *Sericomyrmex urichi* Forel; *Trachymyrmex cornetzi* Forel; *Trachymyrmex bugnioni* Forel.

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