

adapted for cave life. Ants are not exceptional in this regard. Other adventitiously cavernicolous animal taxa are often very varied in their ecology; some other arthropod groups, such as the European copepods, resemble the ants in that the cave species are typically widely distributed on the outside (Hesse, Allee, and Schmidt, 1951).

The question can now be raised, whether there are any ant species that are troglobitic, i.e. limited to caves. *Erebomyrma urichi* is clearly excluded on the basis of information just given, and the accumulated evidence makes it improbable that any other member of the genus is troglobitic. *Paratrechina (Nylanderia) troglodytes* Weber of Cuba, originally recorded from a shallow cave, has been shown to be a junior synonym of *P. (N.) myops* (Mann), which has been found in soil away from caves in two montane localities in Cuba (Brown, 1955). A related species, *microps* M. R. Smith, occurs in places remote from caves on Puerto Rico. *Proceratium cavernicola* (Borgmeier), described from a queen found in the Chilibrillo Caves of Panama, has been recognized as a synonym of *P. micrommatum* (Roger), known from several non-cavernicolous series collected in Central America and Cuba (Borgmeier, 1957; Brown, 1958).

There remain at least four ant species known only from single collections made in caves. *Brachymyrmex cavernicolus* Wheeler (1938) was found beneath a stone near the mouth of Balaam Canche Cave, Chichén Itzá, Yucatan. It is pale yellow in color and has small eyes, which perhaps suggest a normally cavernicolous habit. But it belongs to a genus the taxonomy of which is in outstandingly poor condition, so that the possibility exists that non-cavernicolous series have been recorded in the literature under other names, as in the cases of the *Paratrechina* and *Proceratium* species just mentioned. The African cavernicoles *Leptogenys jeanneli*, *Strumigenys stygia*, and *Smithistruma marginata* have already been discussed. They belong to otherwise non-cavernicolous groups and show no apparent morphological adaptation to cave life themselves. Clearly, until stronger evidence is produced, the existence of troglobitic cave ant species must be considered in great doubt.

Enlarging on this point, let us ask why there are so few (if any) troglobitic ants or, for that matter, troglobitic social insects of any sort. The following hypothesis is proposed. The reproductive unit in social insects is the colony, and it follows that natural selection operates on the colony as a unit. Further, the singly prefertilized mother queen of a monogynous colony ordinarily contains the whole of the transferable genetic material, and, since she stores the sperm of