

## ***Secostruma*, a new subterranean tetramoriine ant genus (Hymenoptera: Formicidae)**

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**ABSTRACT.** *Secostruma*, a very specialized new subterranean ant recovered from a soil-core sample taken in Sabah, East Malaysia, is described for the first time. Its most striking adaptations and their possible functions are discussed, and its affinities investigated. Analysis of its main features and comparison with two possible parent-groups leads to the conclusion that *Secostruma* is a member of the *Tetramorium*-group of genera.

### **Introduction**

The genus *Secostruma*, which is described and discussed below, represents yet another rare myrmicine ant taxon recovered by a specialized collecting technique. In recent years collecting by means of Berlese funnels, Winkler bags and soil-core samples has produced a wealth of extremely interesting and taxonomically important myrmicine ants from all parts of the tropics and subtropics. Some of these samples have provided our first glimpses of extant forms whose closest relatives are only known from the fossil record, for example *Tatuidris*, the only living member of the otherwise extinct tribe Agroecomyrmecini (Brown & Kempf, 1967). Others have shown remarkably wide distributions of related rare genera which appear to represent relicts of an earlier ant fauna, now mostly displaced by more recently evolved forms. In this category fall *Phalacromyrmex* from Brazil (Kempf, 1960), *Pilotrochus* from Madagascar (Brown, 1978) and *Ishakidris* from Sarawak (Bolton, 1984), all of which are now placed in a single genus-group. These specialized collecting techniques have also been

responsible for the production of evidence supporting new genus-level synonymy, the establishment of new and more accurate associations between previously known taxa, and an increase in our understanding of higher classification and phylogeny in the Myrmicinae as a whole.

Some of the recently described myrmicine genus-level taxa show vague relationships with one or two others but mostly remain mysterious (e.g. *Baracidris* (Bolton, 1981), *Indomyrma* (Brown, 1986)), whilst others can be placed confidently within well-established tribes or genus-groups (e.g. *Asketogenys* (Brown, 1972), *Cladarogenys* (Brown, 1976) *Protalaridris* (Brown, 1980a)). *Secostruma*, recovered from a soil-core sample taken in Sabah, East Malaysia, nearly falls into this last category. Although easily defined in morphological terms by means of its several striking autapomorphic developments, it nevertheless remains difficult to place with absolute certainty in a genus-group. In part this is because its autapomorphic developments have masked some characters and in part because one critical character is located on the sting, which in the holotype is completely withdrawn. As pointed out below, it is apparent that *Secostruma* falls either into the *Myrmica*-group or the very closely related *Tetramorium*-group.

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