

understanding of the taxa involved. He recognized just seven genera, distributed in three tribes, as follows.

Ceropachyini: *Cerapachys*, *Simopone*, *Sphinctomyrmex*, *Leptanilloides*

Cylindromyrmecini: *Cylindromyrmex*.

Acanthostichini: *Acanthostichus*, *Ctenopyga*.

Coincidentally, he discarded the idea of a subfamily Ceropachyinae and reverted to the concept of these three tribes being members of the subfamily Ponerinae. He speculated on the possible relationships of Ceropachyini and Cylindromyrmecini to the ectatommine ponerines, but did not reach any solid conclusions. As for the Acanthostichini, Brown (1975) considered 'Amblyoponini, Ectatommini, and Typhlomyrmecini in turn as possible acanthostichine ancestors, but the evidence for each of these origins is as yet insufficient to be convincing'.

An alternative to this three tribe arrangement, Brown said, would be to consider all three to belong to a single phyletic lineage. He cited the specialized worker pygidium, the biaculate male hypopygium, and the form of the larval mandibles, as support for this hypothesis. Yet he concluded that at present he was 'forced to be sceptical of the monophyletic hypothesis', and correctly considered that a 'polyphyletic taxon would only aggravate confusion and misunderstanding'.

Brown (1975) also referred to Emery's (1901) old idea that the ceropachyines may be close to the Army Ant subfamilies Dorylinae and Ecitoninae. The idea still has much merit and will be investigated in detail in a later paper. For the moment, a number of features displayed by the dorylines and ecitonines appear to exclude them from membership of the same subfamily as the ceropachyines, though the distinctly possible existence of an 'Army Ant group' of subfamilies remains to be investigated in detail. On the side of the alitrunk the propodeal spiracle in the dorylines and ecitonines is usually large, always high on the side and far forward, where it is closely associated with a metathoracic endophragmal pit. In ceropachyines the propodeal spiracle is small, low on the side, at or behind the midlength of the sclerite, and is not associated with an endophragmal pit. The ceropachyine condition is considered apomorphic as, ancestrally, abdominal spiracles are located close to the leading edge of each segment. Metapleural lobes (=inferior propodeal plates) are absent from ecitonines and dorylines, except for *Aenictus*, and pygidium is usually reduced. Among ceropachyines the pygidium is reduced only in *Leptanilloides*, but here it is very specialized and overhung by the sixth tergite, a feature not seen in Army Ant subfamilies. In *Dorylus* the pygidium is bidentate, though the nature of this armament is different from that seen in ceropachyines. The dorylines have also lost the depressed proprioceptor zone on the petiolar sternite, though this is retained in ecitonines. Finally the dorylines and ecitonines have grossly modified and highly characteristic males, and dichthadiiform queens. Although some approach to the latter is made in a very few ceropachyine queens, the grotesque 'sausage-fly' males are not developed, although a few *Sphinctomyrmex* appear to be evolving in this direction. Instead they retain, in general, a remarkably ponerine habitus (Brown, 1975).

During this current survey of the formicid abdomen, to see what light, if any, can be shed on the internal phylogeny of the ants, it became apparent that the ceropachyines were very distinct from the remainder of subfamily Ponerinae. The ceropachyine taxa share several derived characters which are lacking in the Ponerinae, and exhibit the plesiomorphic state of several apomorphies developed by the remaining ponerines. These findings and their application to the classification of the ant subfamilies are discussed below.