

*Aulacopone* thus emerges as a genus close to *Heteroponera* which, like *Proceratium* and the *Bradoponera*/*Discothyrea* line, shows adaptations to a cryptobiotic lifestyle, though these have probably been separately, and convergently evolved in the three lineages. The full degree of cryptobiotic specialisation cannot be assessed until workers of *Aulacopone* are collected, and checked for fronto-clypeal structure, palpal formula, mesosomal ankylosis, and relative development of the eyes, pilosity and gastral reflexion. The genus can reasonably be considered an ancient ectatommine relict, very restricted in distribution, and perhaps more readily analogous to the extinct Baltic Amber and Florissant ectatommines than to extant species. Incidentally, in addition to *Bradoponera meieri* and *Gnamptogenys europaea*, the Baltic Amber fauna includes *Electroponera dubia* Wheeler, which might link the *Acanthoponera*/*Heteroponera* and *Ectatomma*/*Paraponera* lineages, according to Brown. In addition I have seen, courtesy of Drs. G. D. Dlussky and A. P. Rasnitsyn, an indubitably ectatommine male from the Miocene of Kirgiziya S.S.R., in Soviet Central Asia.

The presence of these extinct or extant palearctic relicts supports Brown's view that ectatommine evolution has occurred mainly on the larger continental land masses of Eurasia, North America, and perhaps Africa; with the various lineages successively retreating, under pressure from more recently evolved groups, into the peripheral southern land areas of Australasia and South America. This model satisfactorily explains the present distribution of *Gnamptogenys* and the less derived and more peripheral *Heteroponera*, especially in the Indo-Australian area. The absence today of epigaeic ectatommines in Eurasia, Africa and much of North America is explained as a result of their past retreat under pressure from the rising subfamily Myrmicinae, which itself seems derived from an ectatommine stock, with the Baltic Amber *Agroecomyrmex duisburgi* Mayr providing a plausible intermediate. *Proceratium* and *Discothyrea*, unlike the epigaeic ectatommine genera, are both represented in North America, Eurasia (including Japan), and Africa, in addition to the other peripheral southern continents, where *Discothyrea* has its richest development. The recluse habits of these ants might explain their survival in areas which now lack, and perhaps have lost, epigaeic ectatommines. These were certainly once present in Eurasia and North America at least, as evidenced by the fossil record.

The likely cryptobiotic habits of *Aulacopone relictus* might also