



# Afrotropical ants of the ponerine genera *Centromyrmex* Mayr, *Promyopias* Santschi gen. rev. and *Feroponera* gen. n., with a revised key to genera of African Ponerinae (Hymenoptera: Formicidae)

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## Abstract

The ponerine ant genus *Centromyrmex* Mayr is redefined and its Afrotropical species are fully revised. Ten Afrotropical species are recognised of which six are described as new (*decessor*, *ereptor*, *fugator*, *praedator*, *raptor*, *secutor*). Two former infraspecific names are elevated to species rank (*angolensis*, *longiventris*) and four new junior synonyms of *sellaris* (= *arnoldi*, = *congolensis*, = *constanciae*, = *guineensis*) are established. The monotypic genus *Promyopias* Santschi is revived from synonymy and a new monotypic genus, *Feroponera*, type-species *F. ferox* sp. n., is introduced. The possibility of a *Centromyrmex* genus group is discussed and a revised key to Afrotropical genera of Ponerinae is presented.

**Key words:** Ponerinae, Afrotropical, *Centromyrmex*, *Promyopias*, *Feroponera*, taxonomy

## Introduction

The three small genera considered here all fall within the tribe Ponerini of subfamily Ponerinae as defined by Bolton (2003). *Centromyrmex* is a compact and easily recognised genus that contains only 15 species to date, distributed through the world's tropics but with a preponderance of species (10) in the Afrotropical region. As noted below, all of its species appear to be termitophagous and all are superbly adapted to this specialised predatory life style. Indeed, members of the *feae* group are so well adapted that they appear strangely helpless away from their normal habitat. When not in termitaries ants of this fossorial group are usually found singly or in small numbers in the top soil or the root-mat below the leaf litter layer, where their short, powerful, spiny legs facilitate their movement. Weber (1949) described what happened when he found a worker "just beneath the soil surface under a thin cover of dead leaves". The ant was "completely helpless when exposed to the daylight and writhed about when placed on the ground or in my palm. It made no attempt to run away, curling and uncurling without stinging, though it had a long, stout sting". In other words, it seemed unable to walk when removed from its specialised habitat and placed on a surface where it could not use its specialised legs.

*Promyopias* and *Feroponera* are both rare, monotypic Afrotropical endemics that share a number of interesting characters with *Centromyrmex* but are significantly different and merit generic status. Their relationships and possible affinities are discussed below and a consideration of whether the three together can be regarded as a monophyletic group on morphological grounds is appended. Of the three, only *Centromyrmex* has appeared in recent molecular-based phylogenetic studies, with conflicting results. In the work of Brady *et al.* (2006), *Centromyrmex* appeared as the sister-group of the *Plectroctena* group of genera, as defined by Bolton & Brown (2002), whilst in Moreau *et al.* (2006) *Centromyrmex* appeared to be the sister-group of all the rest of tribe Ponerini.

Members of *Centromyrmex* all seem to be obligate termitophages (*e.g.* Wheeler, 1936; Kempf, 1967; Léviéux, 1983; Delabie, 1995; Dejean & Fénelon, 1996, 1999). This is probably also the case with the other two genera, though both are extremely rare and their biologies remain unknown. In fact, *Promyopias* is represented by less than a dozen specimens in museum collections, and *Feroponera* is known only from its type-series of five workers. The Afrotropical species of *Centromyrmex* are fully revised here for the first time. Until now, the taxonomy of the region's species has been based entirely on inadequate and insufficiently comparative original descriptions of various taxa.

Based on published data and information gleaned from the data labels of material examined it appears that the range of termites preyed upon by *Centromyrmex*, at least in the commoner species, is very broad, but no detailed analysis of the termite prey or prey-specificity of the various species has ever been undertaken. Those termite genera definitely known to be prey are noted under the appropriate *Centromyrmex* species in the revi-