



Revision of the *Pachycondyla sikorae* species-group (Hymenoptera: Formicidae) in Madagascar

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Abstract

The Malagasy ponerine *Pachycondyla sikorae*-group is revised and a worker-based key to species is presented. Fourteen species are recognised, of which 13 are described as new. The species group is redefined and divided into two species complexes: the *sikorae*-complex (*P. gorogota* sp. n., *P. haratsingy* sp. n., *P. ivolo* sp. n., *P. maeva* sp. n., *P. mialy* sp. n., *P. nosy* sp. n. and *P. sikorae* Forel) and the *vohitravo*-complex (*P. agnivo* sp. n., *P. antsiraka* sp. n., *P. daraina* sp. n., *P. rovana* sp. n., *P. tahary* sp. n., *P. vohitravo* sp. n. and *P. zoro* sp. n.). All 14 species are endemic to Madagascar and distributed across the rainforests in the east and the transitional humid habitats in the northwest of Madagascar. Distribution maps of each species are included.

Key words: Taxonomy, *Pachycondyla*, *Euponera*, *P. sikorae*-group, Madagascar

Introduction

The ant genus *Pachycondyla* F. Smith has been shown to be broadly non-monophyletic (Ward 2011; Schmidt 2013). The Malagasy region includes six *Pachycondyla* lineages. The two most diverse lineages include the *wasmannii*-group (8 species) and the *sikorae*-group (14 species). The four remaining lineages include only one species each (*P. ambigua*, *P. darwinii*, *P. melanaria*, and *P. obscurans*). Since the first description of *Pachycondyla sikorae* by Forel in 1891 as *Euponera sikorae*, no additional species in the *sikorae*-group have been described. Recent research surveys of the arthropods of Madagascar have provided a wealth of new specimens belonging to this species-group. A revision of the Malagasy *Pachycondyla sikorae*-group is part of a larger effort to revise the Malagasy ants in order to better understand and manage the island's biodiversity.

Workers of the *P. sikorae* species-group are generally distinguishable from those of other ponerine groups in Madagascar by the presence of the dorsolateral circular pit or fovea near the base of the mandibles, the thick petiole node, and occasionally a deep metanotal groove. The species-group shows remarkable variation in morphology and presents useful diagnostic characters to separate its species. Among these characters are the shape of the clypeus, the development of the metanotal groove, the presence of sharp teeth or tubercles on the posterolateral margin of the petiolar node, the form of the petiolar node, and the size of the eyes. The shape of the clypeus divides the species-group into two species complexes.

Although the *P. sikorae* species-group is widespread in Madagascar and known to occupy the humid forests in the east and transitional forest habitats in the northwest of the island, nearly all species are rarely collected and have been recorded from a limited number of specimens. Little information is available on the ecology and reproductive biology of the group, but across these habitat ranges workers have been found foraging through the leaf litter and the forest floor, while colony nest sites vary from within soil layers and under rocks to inside rotten logs.

The present study is the first revision of the Malagasy *P. sikorae*-group and is based primarily on the morphology of the worker caste. As very few male specimens were collected with workers from the same colony, males are not included in this revision. Overall, 14 species are recorded, of which 13 are newly described.