

Systematic status of *Plectroctena mandibularis* Smith and *P. conjugata* Santschi (Hymenoptera: Formicidae: Ponerini)

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Plectroctena mandibularis Smith is the type species of *Plectroctena* F. Smith. Because there has been some doubt about its distinctness from *P. conjugata*, several techniques were used to assess the systematic status of the two species. Most crucially, several colony series contained workers of both phenotypes, and where these series included queens or males, the distinguishing feature of these specimens was not consistently related to those of the workers. Queens, males and workers did not manifest qualitative differences between the taxa, and morphological variation was continuous between the two. The putative morphological basis (funicular index) for distinguishing workers of the taxa arose from allometric variation. Putatively diagnostic colour variation in males was related to latitude, but no simple pattern of morphological variation could be correlated with geographical distribution. *Plectroctena conjugata* is therefore considered a junior synonym of *P. mandibularis*.

Key words: Ponerinae, systematics, morphometrics, biogeography, southern Africa.

INTRODUCTION

The genus *Plectroctena* F. Smith, 1858, was described to accommodate *P. mandibularis* Smith, 1858. This species has been difficult to distinguish from *P. conjugata* Santschi, 1914, the workers of which were distinguished from those of *P. mandibularis* by being smaller and having funicular segments 3–5 shorter than wide, rather than longer than wide (Table 1). Queens of *P. conjugata* apparently differ from *P. mandibularis* in being smaller, with proportionally shorter mandibles; males have a black gaster, while *P. mandibularis* males are yellow, orange-brown or reddish (Table 1).

Arnold (1926) synonymized *P. conjugata* with *P. mandibularis* on the basis that 'An examination of a specimen [of *conjugata*] sent to me by the author [Santschi] shows that it does not differ from the small variety of *mandibularis*, which is found in the coastal regions of the eastern part of the Cape Province. The species becomes progressively larger the further it is from the coast, and a complete transition series can be found from the smallest (Durban, etc.) to the largest or typical *mandibularis*, such as is found in Rhodesia'. Bolton (1974) treated the taxa as distinct, with the caveat that 'I am not convinced that the two actually represent distinct species ... the question of

whether *conjugata* is a distinct species cannot be settled satisfactorily at present, and a decision must await the amassing of more specimens of all three castes'. In particular, only three males of *conjugata* were available to Bolton for examination.

Geographic variation and small samples have consequently confounded systematic assessment and, as the behaviour of these southern African taxa is attracting contemporary attention (Villet *et al.* 1984; Peeters & Crewe 1988; Villet 1989, 1991), clarification of their systematic status is essential.

MATERIAL AND METHODS

Material in the Albany Museum, Grahamstown (AMGS), Durban Museum (DMNH), National Collection of Insects, Pretoria (SANC), Transvaal Museum, Pretoria (TMSA), and South African Museum, Cape Town (SAMC), was examined. Specimens from the same nest (*i.e.* a nest series) were assumed to belong to the same species. Several nest series contained different castes and sexes. Caste was determined by the presence of ocellar vestiges in the form of two pits at the sites of the lateral ocelli in queens (Bolton 1974). Additional collections mentioned in the list of synonyms are the Natural History Museum, London (BMNH), Museum National d'Histoire Naturelle,