

***Tetramorium pacificum* MAYR, 1870, *T. scabrum* MAYR, 1879 sp.rev., *T. manobo* (CALILUNG, 2000) (Hymenoptera: Formicidae) – three good species**

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Abstract

By combining morphological and molecular analyses we scrutinize the taxonomic status of selected ant species of the *Tetramorium bicarinatum* (NYLANDER, 1846) species group. We confirm *Apomyrmex manobo* CALILUNG, 2000 as a member of the genus *Tetramorium*, and evaluate whether *T. manobo* and *T. scabrum* MAYR, 1879, which currently is a junior synonym of *T. pacificum* MAYR, 1870, are specifically distinct from *T. pacificum*. Morphometry shows clear differences between workers of the three ants. Sequence comparison of 700 bp of the mitochondrial *COI* gene confirms that they constitute separate species, embedded in the *T. bicarinatum* species group. Thus, we confirm *T. manobo* as a valid species and revive *T. scabrum* sp.rev. from synonymy. Pronounced morphological variation between *T. scabrum* populations indicates the possible existence of more than one species. We discuss our findings in terms of plesiomorphy and / or convergent evolution of worker morphology. *Tetramorium manobo* appears to be a Philippine endemic restricted to the subregion "Greater Mindanao", where it inhabits forest habitats. In contrast, on the Philippines *T. pacificum* is found only in disturbed habitats. Additionally, we review the ants of the *T. bicarinatum* group currently known from the Philippines and add the first record of *T. obtusidens* VIEHMEYER, 1916.

Key words: *Tetramorium bicarinatum* group, *Tetramorium pacificum*, *Tetramorium scabrum*, *Tetramorium manobo*, *Tetramorium obtusidens*, Oriental region, Indo-Australian region, morphometry, mitochondrial DNA, taxonomy.

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Introduction

The myrmicine ant genus *Tetramorium* MAYR, 1855 comprises about 450 acknowledged species and subspecies worldwide (SHATTUCK & BARNETT 2001). The *T. bicarinatum* (NYLANDER, 1846) species group, as outlined by BOLTON (1977) based on worker morphology, encompasses some twenty species, half of which occur in the Oriental and Indo-Australian regions. The *T. bicarinatum* group has gained wide though dubious name recognition because several of the species have been introduced to non-native ranges around the globe, including green houses in temperate regions (e.g., MCGLYNN 1999).

The sad occasion of the memorial issue in honour of our friend Stefan Schödl prompted us to complete work on certain ants of the *T. bicarinatum* group, an effort that Stefan had envisaged and partly begun. Stefan's interest in *Tetramorium* had been stimulated by Barry Bolton, and he had focused on the *T. bicarinatum* group after travelling to the south-eastern Philippine islands with the senior author (HZ) in 2000. The work was further stimulated by the finding of an ant on Leyte which appeared to be similar to but not identical with *T. pacificum* MAYR, 1870. Together with HZ, Stefan had planned to describe the ant as a new species. It soon became clear, however, that CALILUNG (2000) had in the meantime presented the ant to science,

though under a newly established monotypic genus, proposing the name *Apomyrmex manobo* CALILUNG, 2000. In 2000, by courtesy of Augusto C. Sumalde, former Director of the Museum of Natural History, University of the Philippines Los Baños, Stefan was able to borrow the holotype of *A. manobo*, originating from Mount Apo in southern Mindanao, Philippines, and to compare it with material from Leyte. Conspecificity was confirmed by Stefan Schödl and HZ based on some of the morphological characteristics used in this paper.

BOLTON (2003: 227, 269) synonymized the genus *Apomyrmex* with *Tetramorium* and commented: "The name *Apomyrmex* should never have been published. From the description and figures its type species is obviously a *Tetramorium* of the *bicarinatum* group, close to or synonymous with *T. pacificum*. The author's motives for describing *Apomyrmex* remain a mystery but are probably best ascribed to deficient knowledge of ant taxonomy. For now, the combination of the type species of *Apomyrmex* is *Tetramorium manobo* comb. n., until its status can be properly assessed."

Stefan continued to believe that the ant was a good species distinct from *T. pacificum*. We started our follow-up work by looking through the ants compiled by Stefan and HZ and arrived at the subjective hypothesis that there are