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Leptogenys khammouanensis sp. nov. (Hymenoptera: Formicidae). A Possible Troglobitic Species of Laos, with a Discussion on Cave Ants

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ABSTRACT—The new species *Leptogenys khammouanensis* sp. nov. is described from two caves of the Khammouan karst (Laos). It is characterized by a set of striking morphological characters (reduced eyes, light pigmentation, slender body and very elongated legs and antennae), which recall the troglobiomorphic traits of cave arthropods. Relations between caves and ants are discussed at this occasion, in the light of the recent biological explorations of caves in Southeast Asia. The classical view that ants are rare and unimportant in caves is challenged. Ants are actually major and regular components of guano assemblages in many caves of the region, but none of these guano species exhibit cave-related adaptation in its external morphology. Conversely, ants are very rare in low-resources habitats, where only accidental occurrence of outside species are reported in Southeast Asia. *Leptogenys khammouanensis* has been found only in such an oligotrophic environment, very deep in the cave and far from any guano deposits. Its presence there, together with its troglobiomorphic traits, support the idea that *Leptogenys khammouanensis* might be the first truly troglobitic ant.

Key words: *Leptogenys*, taxonomy, troglobiomorphy, cave ants, Laos

INTRODUCTION

The pantropical genus *Leptogenys* presently includes 215 species of which 54 species and 28 subspecies are known from the Oriental region. African species have been revised by Bolton (1975) and Melanesian species by Wilson (1958). A revision of the Neotropical species by J. Lattke is on the way. No similar work exists for the Oriental region. Most species were described posteriorly to the only treatment of the Asian *Leptogenys* by Mayr (1879). The species of India have been keyed out by Forel (1900) and Bingham (1903), and Chinese fauna has recently been revised with several new species described (Xu 1996, 2000; Zhou 2001).

In this work, we describe *Leptogenys khammouanensis* sp. nov. collected in two caves of Laos. It exhibits the combination of morphological characters which defines troglobiomorphy in arthropods (Christiansen, 1965): reduced eyes, elongate appendages (legs and antennae), light color. The possible troglobitic status of the new species is discussed in the context of our knowledge of Southeast Asia cave ants.

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MEASUREMENTS AND INDICES

All measurements were made on specimens in alcohol using a Leitz Weitzlar Stereomicroscope at magnifications of ×150, ×100, and ×50 for total Length. Measurements (in millimeters) and abbreviations used here are based on Bolton (1975),Ward (1989) and Roncin (2002). Total Length (TL): Total length of an individual, from the mandibular apex to the gastral apex. Head Length (HL): Length of the head, excluding the mandibles. This measurement is taken in frontal view on the sagittal line from the foremost point of the clypeal margin (or its projection if situated laterally to the line) to the most posterior point on the occipital margin (or its projection). Head Width (HW): Maximum head width of the head measured in full-face view excluding the eyes. Scape Length (SL): Length of the first antennal segment, excluding the condylus. Cephalic index (CI): (HW / HL) × 100. Scape Index (SI): (SL / HW) × 100. Eye Diameter (EL): Maximal length of eye. Pronotal Width (PrW): Maximum width of pronotum in dorsal view. Mesosoma Length (ML): Diagonal length of the mesosoma, measured in lateral view from the point at which the pronotum meets the collare to the base of the propodeal lobes. Often called Weber's length of mesosoma. Petiole Height (PH): Height of the petiole measured in profile from the apex of the ventral (subpetiolar) process vertically to a line intersecting the dor-