Title : Species diversity of stingless bees (Hymenoptera, Meliponini) in Northeastern Thailand

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Major : Zoology

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ABSTRACT

Stingless bees are highly eusocial insects. They play a crucial role in terrestrial ecosystems by pollinating native plants and economically crops. Honey and propolis possess notable antimicrobial and anti-inflammatory properties. Recently, more than 600 species have been reported worldwide in tropical and subtropical regions. Approximately 34 species have been reported in Thailand, most of them were reported from the southern region. In other regions, such as northeastern Thailand, reports were relatively low. This study aimed to investigate the species diversity of stingless bees in northeastern Thailand. Adult specimens were collected by sweep netting and hand picking at the external nest entrances. A total of 2,039 individuals were collected, representing 3 genera and 9 species, including *Homotrigona fimbriata*, *Homotrigona apicalis*, *Homotrigona* sp.1, *Lepidotrigona* cf. *terminata*, *Tetragonula collina*, *Tetragonula hirashimai*, *Tetragonula* (*Tetragonula*) sp.1, *Tetragonula* (*Tetragonula*) sp.2, and *Tetragonula* (*Tetragonula*) sp.3. The genus *Tetragonula* was the most diverse, with 5 species, followed by *Homotrigona* with 3 species and *Lepidotrigona* with 1 species, respectively. *Tetragonula* (*Tetragonula*) sp. 1 could not be assigned to any described species and is therefore considered a putative undescribed species. Phylogenetic analysis based on the mitochondrial COI gene showed low intraspecific divergence (0.2–0.3%) compared with

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substantial interspecific divergence within the genus (9.4–18.7%).

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