

**Phylogenetic and Haplotype Analyses Offer Insights Towards Conservation of
Pteroptyx tener Olivier, 1907 (Coleoptera: Lampyridae) Populations from
Malaysia**

ABSTRACT

The synchronous-flashing firefly, *Pteroptyx tener* Olivier, 1907 is a congregating firefly with high economic value for the ecotourism industry. However, the populations of *P. tener* are increasingly being threatened due to habitat destruction. The assessment of genetic variation within and among populations of the species from Malaysia might play a major role in conservation and management programs. Objectives of this study were to investigate the relationships among *P. tener* from five populations in Malaysia (Peninsular Malaysia and Borneo (Sabah) using cytochrome oxidase subunit I (COI), and to obtain its haplotype information. A total of 50 sequences of *P. tener* were used in the Neighbour-Joining (NJ), Maximum Parsimony (MP), and Bayesian Inference (BI) phylogenetic analyses and successfully formed several distinct clades of West and East Malaysia (East Coast and West Coast of Peninsular Malaysia) with moderately to highly supported bootstrap values and posterior probabilities. Several haplotype analysis parameters are presented; low nucleotide diversity (PiT, 0.01893), haplotype number (Hn, 19), and high haplotype diversity (Hd, 0.89469). Our findings assumed that the geographical isolation due to the inability for flying long distances without help by the wind and flooding in tidal rivers. The data