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Phylogeny and systematics revision of *Cordyceps sensu stricto* in Taiwan

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Purpose: *Cordyceps* species are entomogenous fungal group and have a long history of use as tonics and folk medicines that can be useful to cancer and diabetes treatments in traditional Chinese medicines. Numerous name changes have taken place in cordyceps-like taxa, after the classification based on morpho-molecular data and the application of one fungus one name after the amendment of ICN. Knowledge of the *Cordyceps* in Taiwan is based on relatively few records that are scattered throughout the literature. Therefore, Surveys of cordyceps-like species were conducted to establish a baseline on the information of *Cordyceps s. s.* in Taiwan through a search of bibliographic records, analysis of existing specimens kept in herbaria and new collections made by the authors.

Methods: A total of 39 fresh cordyceps-like isolates were collected and their morphological characteristics were recorded. Phylogenetic reconstruction using single and multi-locus (ITS, LSU, *tef1*, *rpb1* and *rpb2*) DNA sequences data were used to evaluate the natural classification of new strains.

Results: Within this phylogenetic framework and considering the diagnostic morphological characters, four new species are described. In addition, three new reports are also made.

Conclusions: This study delivers a robust basis for a more comprehensive exploration of diversity and biogeography of *Cordyceps s. s.* in Taiwan.

Keywords: *Cordyceps*, Entomogenous fungi, New record, New species, Phylogenetic analysis