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Algae 2020, 35(2): 157-165
<https://doi.org/10.4490/algae.2020.35.5.31>

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Morphological and molecular evidence for the recognition of *Hypoglossum sabahense* sp. nov. (Delesseriaceae, Rhodophyta) from Sabah, Malaysia

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Culture isolates of the genus *Hypoglossum* (Delesseriaceae, Rhodophyta) were obtained and their development and morphological structure over many years were followed in the laboratory. Molecular data (*rbcL*, large subunit ribosomal DNA, and cytochrome *c* oxidase subunit I) were obtained from these strains and evidence presented to recognize the new species: *Hypoglossum sabahense* from Sabah, Malaysia. Because various aspects of morphology in culture specimens differ significantly from types based on field specimens we have to rely mainly on the molecular criteria in ascribing a new taxonomic name here. This also is complicated by the major lack of molecular phylogenetic evidence for *Hypoglossum* and other Delesseriaceae. The 'Germling Emergence Method' and 'serendipity' are proving valuable in discovering significant new taxa from laboratory cultures which otherwise might never be known.

Key Words: COI; Delesseriaceae; *Hypoglossum*; LSU; Malaysia; new species; *rbcL*

INTRODUCTION

The world's coasts are underexplored for their macroalgal diversity. In remote locations, phycologists are often constrained by limited time in the field and / or rudimentary laboratory facilities. Also, in tropical coral reef locations, much of the actual macroalgal diversity may not be conspicuous during diving surveys due to

the naturally intense grazing activity in such ecosystems (e.g., Freshwater et al. 2017). In this context, the development of the Germling Emergence Method has enabled numerous new records and discoveries of macroalgal taxa around the world (Peters et al. 2015). The approach consists of collecting substratum samples in sterile tubes



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Received April 10, 2020, Accepted May 31, 2020

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