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Morphology of *Myelophycus cavum* in Korea and Phylogeny of *Myelophycus* (Dictyosiphonales, Phaeophyta) Based on RuBisCo Spacer Region

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Myeolophycus is a dictyosiphonalean brown algal genus that exclusively occurs in the northwest Pacific. The genus includes two species: *M. cavum* and, as the type species, *M. simplex*. Although *M. simplex* commonly occurs in China, Japan, and Korea, *M. cavum* was reported only in Japan. We here report the occurrence of *M. cavum* in Korea for the first time. The species grows in the upper tidal zone in Boryong and Bigeumdo on the west coast, and Wando on the south coast, Korea. Thalli are twisted and hollow, having parenchymatous tissue with medullar and cortical cells, and uniseriate paraphyses. Unilocular sporangia are terminal on cortical cells. Rhizoids are multicellular filaments. Sequences of the RuBisCo spacer region were determined in ten samples of *M. cavum* (four locations), *M. simplex* (two locations), and relatives (*Analypus japonicus*, *Asperococcus fistulosus*, *Chordaria flagelliformis*, and *Puntaria latifolia*). Phylogenetic analyses of the RuBisCo spacer region sequences strongly support the monophyly of the genus *Myelophycus*. The sister relationships of *Myelophycus* to other dictyothalean and chordarialean relatives indicate that the genus may be placed in neither the Asperococcaceae nor the Punctariaceae as currently recognized. Additional sampling of relatives, together with use of other molecular studies, is necessary for the phylogenetically supported position of this taxonomically interesting genus