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NOTES OF TWO VARIETIES OF *CRYPTOCORYNE CILIATA* (ROXBURGH) SCHOTT. FROM SARAWAK, MALAYSIA

A. Simon, I.B. Ipor, C.S. Tawan and S. Norhasmah

SUMMARY

Sarawak, being blessed with a rich flora of many different types of species, has been acknowledged as one of the most complex ecosystem in the world. Among these unique plants is the *Cryptocoryne ciliata* (Roxburgh) Schott, also known as "Keladi Laut" and "Bakong" (Melayu Samarahan). The *C. ciliata* thrived well in the brackish inner tidal zones as well as fresh water, ditches and canals. There are two varieties of *C. ciliata* vis. *C. ciliata* var. *ciliata* that possesses lanceolate to broad lanceolate leaf laminae and the *C. ciliata* var. *latifolia* where the leaf laminae are egg-shaped or heart-shaped. The study on these varieties was carried out along the Sungai Sarawak and Samarahan to determine the growth pattern, biomass partitioning and morphological characteristics. The photosynthetic rate of both varieties was also measured.

Keywords: *Cryptocoryne ciliata*, biomass partitioning, photosynthetic rate

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INTRODUCTION

Cryptocoryne is an aquatic plant known to people who kept them in aquariums (Holttum, 1969; Jacobsen, 1976; Mühlberg, 1982). It is also known as tropical-bog, "kiambang batu" (Melayu Sarawak), "kelatai" (Iban), "hati-hati paya" (Semenanjung Malaysia), "keladi laut", "bakong" (Melayu Samarahan), "Teron Amun" (Melanau) and "tropical ajer" (Banjarmasin, Kalimantan). The *Cryptocoryne* can be

commercially exported and apparently has high prices in the international aquarium markets such as in Singapore and Japan. There are nearly 50 species of *Cryptocoryne* in the South-east Asia. All but the *Cryptocoryne ciliata* grows firmly rooted to the bottom of freshwater forest streams (Polunin, 1989). Jacobsen (1985) however recognize 11 species of *Cryptocoryne* in Sarawak. Until recently, two species have been described which are the *Cryptocoryne uenoi* (Sasaki, 2002) and *Cryptocoryne yujii* (Bastmeijer and Bogner, 2002).

Cryptocoryne ciliata (keladi laut) can be found throughout most of Asia and also the Malay Peninsula (Jacobsen, 1985). It can also be found at the South-east Asiatic mainland, Kalimantan, Java, Sumatra, Celebes, Moluccas Islands and New Guinea (Mühlberg, 1982; Hay *et al.*, 1995). The *C. ciliata* grows in the brackish inner tidal zones as well as fresh water, ditches and canals (Jacobsen, 1985; Polunin, 1989) where it is found on the mudflats together with other mangrove plants (Jacobsen 1985). There are two varieties of *C. ciliata* (Mühlberg, 1982 & Rataj, 1975). The *C. ciliata* var. *ciliata* possesses lanceolate to broad lanceolate leaf laminae. It forms long creeping runners eventually producing slips. Another variety, which is the *C. ciliata* var. *latifolia* the leaf laminae are ovate to or cordate. The plant forms no runners, but many short, lateral shoots. The present study is mainly to determine the morphological characteristics and growth pattern of both varieties of *C. ciliata*.

MATERIALS AND METHODS

Morphological characteristics of *C. ciliata*

The morphological characteristics of the fertile specimens collected were recorded. These include the vegetative characteristics namely the rhizomes, cataphylls, leaves, fruits and inflorescences.

Growth pattern and biomass allocation of *C. ciliata*

Three quadrates of 1 m x 1 m were established randomly for both varieties of *C. ciliata*. This was to determine the total number