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Research Article

Tetrastigma diepenhorstii (Miq.) Latiff (Vitaceae), a New Host of *Rafflesia tuan-mudae* Becc. (Rafflesiaceae) in Borneo

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Rafflesia tuan-mudae Becc. (Rafflesiaceae) is endemic to Borneo and was recorded from Sarawak and probably Kalimantan. Previous records showed that *Tetrastigma rafflesiae* (Miq.) Planch. (Vitaceae) is the only host plant for *R. tuan-mudae*. In this study the host plants were collected each time *R. tuan-mudae* was observed or collected. Out of 20 *Tetrastigma* specimens collected infected by *R. tuan-mudae*, 14 were identified as *T. diepenhorstii* (Miq.) Latiff while 6 belonged to *T. rafflesiae*. Therefore, a new host for *R. tuan-mudae* is recorded and descriptions for each host are presented.

1. Introduction

Rafflesiaceae is a plant family that consists of eight genera *Apodanthes* Poit., *Bdallophytum* Eichler, *Cytinus* L., *Mitrastema* Makino, *Pilostyles* Guillemin, *Rafflesia* R. Br. ex Gray, *Rhizanthes* Dumort., and *Sapria* Griffith with about 55 species recorded. All members in this family are obligate parasites and rootless and have no chlorophyll and therefore are dependent on the host plants for water, nutrients, and survival [1]. Currently, the genus *Rafflesia* consists of about 34 species and is distributed in the Southeast Asian region [1–6].

Some species of the genus *Tetrastigma* (Miq) Planch. (Vitaceae), a woody vine, are the host plants for *Rafflesia* species [1]. *Tetrastigma* is distributed mainly in the Asian tropics, ranging from India to China, across Southeast Asia, eastward towards Fiji and extending towards subtropical Australia [7]. The species climb using tendrils, which develop opposite the leaf [8]. There are a few that have been reported as the host plant for many *Rafflesia* species, namely, *T. curtisii* (Ridl.) Suess., *T. diepenhorstii* (Miq.) Latiff, *T. glabratum* Planch., *T. papillosum* Planch., and *T. rafflesiae* Planch. [1, 9–11]. However, the latter is the host plant for most *Rafflesia* species and also for *Rhizanthes zippelii* (Blume) Spach [1, 9]. Establishing the identity of the host plants is difficult mainly because they were usually not collected together with the *Rafflesia* [1]. Observations of 771 herbarium specimens from various herbaria such as BO, KEP, SAN, SAR, SING, SNP, and UKMB showed that there were only two records of *Tetrastigma* as the host. An example is shown by *R. keithii* (Coll. number SNP4088) where *T. diepenhorstii* is mentioned. Moreover, the hosts that were collected were sterile with no fruits or flowers, thus making reliable identification virtually impossible [1]. An ongoing study by Wan Nuur Fatiha Wan Zakaria is in progress to identify the sterile *Tetrastigma* species using molecular tools.

Rafflesia tuan-mudae Becc., commonly known as *Pakma* by the locals [12], is one of the *Rafflesia* species endemic to