

Systematic Study of Genus *Hornstedtia* Retz. in Sarawak

ABSTRACT

A systematic study on genus *Hornstedtia* (Zingiberaceae) in Sarawak was conducted based on morphological, anatomical and palynological characteristics. The study was conducted from May 2013 – March 2014 at various localities in Sarawak. The objectives of the study were to obtain the distributions and habitats of *Hornstedtia* species in Sarawak, to compare and produce the detail morphological characteristics of *Hornstedtia* species, to obtain the anatomical and palynological characteristics of *Hornstedtia* species in Sarawak and to prepare field identification key of *Hornstedtia* species found in Sarawak. The morphological study focused on six major characteristics including plant appearances, rhizomes, leaves, inflorescences, flowers and fruits. Thirteen taxa of *Hornstedtia* have been recorded in this study including two newly discovered taxa namely *Hornstedtia putih* Angela, Tawan and Meekiong sp. nov. and *Hornstedtia merahjambu* Angela, Tawan and Meekiong sp. nov.. Kuching division recorded the highest number of species with ten species followed by Miri with five species. The *Hornstedtia* species favor damp areas, near stream and alluvial forest. *H. reticulata* was the most wide spread species recorded in this study. The anatomical study of petiole of *Hornstedtia* showed that the petiole of *Hornstedtia* were sulcate shape with either acute or obtuse margin. Two types of stomata were identified: anomocytic and brachyparatetracytic. The epidermal cells of *Hornstedtia* are either isodiametric or rectangular and most species have hexagonal shape. All pollen grains of *Hornstedtia* species were spheroidal, inaperturate with reticulate exine ornamentation. The field key of thirteen taxa of *Hornstedtia* was constructed based on morphological characteristics.

Keywords: Zingiberaceae, *Hornstedtia*, Systematic, Sarawak.

Kajian Sistematis terhadap Genus Hornstedtia Retz. di Sarawak

ABSTRAK

Kajian sistematis terhadap genus Hornstedtia (Zingiberaceae) di Sarawak berdasarkan ciri morfologi, anatomi dan palinologi telah dilaksanakan. Kajian dijalankan bermula dari Mei 2013 – Mac 2014 di beberapa lokasi di Sarawak. Objektif kajian ialah untuk mendapatkan taburan dan habitat spesies Hornstedtia di Sarawak, membandingkan serta mendokumentasikan ciri – ciri morfologi yang terperinci bagi spesies Hornstedtia, mendokumentasikan ciri – ciri anatomi dan palinologi spesies Hornstedtia di Sarawak dan menyediakan kekunci lapangan bagi spesies Hornstedtia yang ada di Sarawak. Kajian morfologi ditumpukan kepada enam ciri utama iaitu rupa bentuk pokok, rizom, daun, infloresens, bunga dan buah. Dalam kajian ini, tiga belas taksa termasuk dua spesies baru Hornstedtia putih Angela, Tawan dan Meekiong sp. nov. dan Hornstedtia merahjambu Angela, Tawan dan Meekiong sp. nov. telah direkodkan. Bahagian Kuching merekodkan bilangan spesies terbanyak dengan sepuluh spesies diikuti Miri dengan lima spesies. Spesies Hornstedtia tumbuh subur di kawasan lembab, berdekatan sungai dan hutan alluvial. H. reticulata direkodkan sebagai spesies yang mempunyai taburan meluas dalam kajian ini. Kajian anatomi terhadap tangkai daun menunjukkan bahawa tangkai daun Hornstedtia adalah melengkung sama ada dengan margin yang tajam atau tumpul. Dua jenis stomata yang dikenalpasti adalah: anomositik dan brasiparatetrasitik. Sel epidermis Hornstedtia adalah isodiametrik atau segi empat tepat dan kebanyakan sel epidermis berbentuk heksagon. Semua debunga Hornstedtia berbentuk bulat, tidak mempunyai apertur dan mempunyai permukaan yang menyelirat. Kekunci lapangan tiga belas taksa Hornstedtia telah dibina berdasarkan ciri morfologi.

Kata kunci: *Zingiberaceae, Hornstedtia, Sistematis, Sarawak.*