



UNIVERSITI PUTRA MALAYSIA

**DIVERSITY OF ORCHIDS OF THE SUMMIT REGION IN
GENTING HIGHLANDS, MALAYSIA**

NG YONG JIN

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**DIVERSITY OF ORCHIDS OF THE SUMMIT REGION IN
GENTING HIGHLANDS, MALAYSIA**



By

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DIVERSITY OF ORCHIDS OF THE SUMMIT REGION IN GENTING HIGHLANDS, MALAYSIA

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An inventory of orchid species diversity was carried out in cloud forest habitat of the Summit Region in Genting Highlands, which is one of the most developed highland regions in Peninsular Malaysia. Since 1967, construction of roads and hotel complexes has had a serious destructive impact on its physical environment and vegetation. Habitat destruction together with climate change might cause some orchid species to be extirpated locally or extinct. However, no comprehensive study on orchid diversity was conducted in this region after Benjamin C. Stone in 1978. Therefore, this study is essential to reveal the current orchid diversity of the Summit Region in Genting Highlands after a gap of three decades. The orchid species of Summit Region in Genting Highlands, including Gunung Ulu Kali, Gunung Chin Chin and Gunung Lari Tembakau were surveyed. Eight plots of 10 m x 10 m were established to study the orchid diversity and all orchids found in cloud forest habitat which is above 1500 m were recorded. An updated checklist of orchid species of Summit Region in Genting Highlands was developed with data from current survey and works done by previous researchers. As a result, 146 orchid taxa were recorded, which comprises of 51 genera, 143 species, 1 subspecies and 2 varieties, out of which 46 of them are new records to Summit Region in Genting Highlands. Thirty-four taxa

are endemic to Peninsular Malaysia, of which 19 are endemic to Pahang, Perak and Selangor states, and 1 species, *Corybas villosus* J.Dransf. & G.Sm. is endemic to Summit Region in Genting Highlands. The diversity indices used revealed that Summit Region in Genting Highlands has a moderately high diversity of orchid species. However, most of the orchid species in this region are very susceptible to extinction due to loss of habitat and climate change. An assessment of conservation status according to IUCN criteria revealed that 47 orchid taxa from Summit Region in Genting Highlands were threatened with extinction. Conservation actions are proposed to conserve the orchid diversity in Summit Region in Genting Highlands.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Master Sains

**DIVERSITI SPESIES ORKID DI PUNCAK GENTING HIGHLANDS,
MALAYSIA**

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Inventori kepelbagaian spesies orkid telah dijalankan di dalam habitat hutan awan di Puncak Genting Highlands, salah satu kawasan tanah tinggi yang paling maju di Semenanjung Malaysia. Sejak 1967, pembinaan jalan raya dan kompleks hotel telah memberi kesan kemusnahan yang serius ke atas alam sekitar dan tumbuh-tumbuhannya. Kemusnahan habitat dan perubahan cuaca mungkin telah menyebabkan kehilangan sesetengah spesies orkid di kawasan ini ataupun mengalami kepupusan. Walau bagaimanapun, tiada penyelidikan yang menyeluruh mengenai kepelbagaian orkid telah dijalankan di Puncak Genting Highlands selepas kajian yang dilaksanakan oleh Benjamin C. Stone pada tahun 1978. Oleh itu, kajian ini adalah penting untuk mendedahkan kepelbagaian orkid Puncak Genting Highlands selepas jurang 3 dekad. Spesies orkid daripada Puncak Genting Highlands, termasuk Gunung Ulu Kali, Gunung Chin Chin dan Gunung Lari Tembakau telah ditinjau. Lapan plot berukuran 10 m x 10 m telah didirikan untuk mengkaji kepelbagaian spesies orkid. Semua orkid yang dijumpai di dalam habitat hutan awan yang melebihi ketinggian 1500 m telah direkodkan. Satu senarai terkini spesies orkid Puncak Genting Highlands telah disediakan berdasarkan kajian semasa dan usaha yang dilakukan oleh para penyelidik sebelum ini. Hasilnya, 146 taksa orkid dicatatkan, terdiri daripada 51 genus, 143

spesies, 1 subspecies dan 2 varieti, dimana 46 daripadanya adalah rekod baru untuk Puncak Genting Highlands. Terdapat 34 taksa endemik kepada Semenanjung Malaysia, dimana 19 daripadanya adalah endemik kepada Pahang, Perak dan Selangor, dan salah 1 spesies, *Corybas villosus* J.Dransf. & G.Sm. adalah endemik kepada Puncak Genting Highlands. Indeks kepelbagaian menunjukkan bahawa Puncak Genting Highlands mempunyai kepelbagaian spesies orkid yang sederhana tinggi. Walau bagaimanapun, kebanyakan spesies orkid di kawasan ini sangat terdedah kepada kepupusan disebabkan oleh kehilangan habitat dan perubahan cuaca. Satu penilaian status pemuliharaan berdasarkan kriteria IUCN mendedahkan bahawa 47 taksa orkid daripada Puncak Genting Highlands diancam kepupusan. Tindakan pemuliharaan telah dicadangkan untuk memelihara kepelbagaian orkid di Puncak Genting Highlands.

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I certify that a Thesis Examination Committee has met on 9 November 2011 to conduct the final examination of Ng Yong Jin on his Master of Science thesis entitled “Diversity of Orchids of Summit Region in Genting Highlands, Pahang” in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the degree of Master of Science.

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DECLARATION

I declare that the thesis is my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously, and is not concurrently, submitted for any other degree at Universiti Putra Malaysia or at any other institution.

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Date: 9 November 2011



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