

**DIVERSITY AND DISTRIBUTION OF ORCHIDS IN SELECTED SITES IN
PERLIS, PENINSULAR MALAYSIA**

By

WENDY YONG SZE YEE

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,
in Fulfilment of the Requirement for the Degree of Master of Science**

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of the requirement for the degree of Master of Science**

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Faculty : Science

Perlis is the smallest and northernmost state in Peninsular Malaysia, bordered by Thailand in the north and Kedah in the south. Most of the remaining forested areas in Perlis lie in a continuous belt along the western border. The forests lie mainly on hilly terrain of limestone, which is part of the Setul and Chuping limestone formation. The forest in Perlis is characterized as semi-deciduous forest and influenced by the monsoonal season, floristically unique to Peninsular Malaysia. Thus, Perlis is well-known to have many species unique only to limestone and endemic to the northern part of Peninsular Malaysia and Perlis. However, most of the studies on limestone flora, including Orchidaceae in the northern parts of Peninsular Malaysia were concentrated on Langkawi Islands. Therefore, the diversity and distribution of Orchidaceae in Perlis is still poorly known. In this study, 11 limestone hills and a granite hill in the western part of Perlis have been botanized. The diversity and distribution of orchids in Perlis are discussed. A total of 117 taxa in 50 genera representing 4 subfamilies were recorded. Sixty two species and 20 genera are new records for Perlis. Out of these, nine species and one genus

are new records for Malaysia. *Dendrobium hughii* and *Taeniophyllum intermedium* are endemic to Malaysia. Perlis orchids consist mainly of the Indo-Malayan floristic element, which contribute about 98% at the generic level and 94.6% at species level, of the total orchids collected. In a comparison with other surrounding regional orchids, the Perlis orchids show stronger affinity to Thailand orchids than to Malayan orchids. The Perlis orchid flora is thus part of the Indo-Malayan orchid flora, with the geographic, climatic, and floristic as the contributing factors.

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

**KEPELBAGAIAN AND TABURAN ORKID DI LOKALITI-LOKALITI
TERPILIH DI PERLIS, SEMENANJUNG MALAYSIA**

Oleh

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Perlis merupakan negeri yang terkecil dan terletak di bahagian paling utara Semenanjung Malaysia, yang bersempadan dengan Thailand di sebelah utara dan Kedah di sebelah selatan. Kebanyakan kawasan hutan di Perlis adalah terletak di bahagian barat Perlis yang meliputi kawasan bukit batu kapur, merupakan sebahagian daripada batu kapur Formasi Setul dan Formasi Cuping. Hutan di Perlis terdiri daripada hutan semi-luruh dan dipengaruhi oleh iklim monson yang kuat dan unik kepada Semenanjung Malaysia. Oleh itu, Perlis terkenal dengan mempunyai spesies-spesies yang unik kepada bukit kapur dan endemik kepada Perlis. Tetapi, kebanyakan kajian mengenai tumbuhan batu kapur, termasuk famili orkid, di utara Semenanjung Malaysia adalah lebih tertumpu di Pulau Langkawi berbanding Perlis. Oleh itu, kepelbagaian dan taburan orkid di Perlis masih kurang diketahui. Sebanyak 11 kawasan bukit batu kapur dan satu bukit granit telah ditinjau dalam kajian ini. Kepelbagaian dan taburan orkid di Perlis juga telah dibincangkan. Sejumlah 117 taksa dan 50 genus yang diwakili oleh 4 subfamili telah

direkodkan. Enam puluh dua spesies dan 20 genus telah dikenalipasti sebagai rekod baru bagi Perlis. Sembilan spesies dan 1 genus daripada jumlah tersebut adalah rekod baru bagi Malaysia. *Dendrobium hughii* dan *Taeniophyllum intermedium* adalah endemik kepada Malaysia. Sebahagian besar orkid di Perlis terdiri daripada elemen floristik Indo-Malaya, yang menyumbang kira-kira 98% pada aras genus dan 94.6% pada aras spesies, daripada jumlah orkid yang direkodkan. Dalam satu perbandingan antara orkid di Perlis dengan orkid di negara-negara jiran, orkid di Perlis menunjukkan pertalian yang lebih rapat dengan orkid di Thailand berbanding dengan orkid di bahagian Malaya. Oleh itu, ini menunjukkan orkid di Perlis adalah merupakan sebahagian daripada orkid di Indo-Malaya, di mana faktor geografi, iklim dan floristik adalah faktor penyumbangannya.

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.

I certify that an Examination Committee has met on 15 May 2006 to conduct the final examination of Wendy Yong Sze Yee on her Master of Science thesis entitled "Diversity and Distribution of Orchids in Selected Sites in Perlis, Peninsular Malaysia" in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The Committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

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DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UPM or other institutions.



WENDY YONG SZE YEE

Date: 15 May 2006

TABLE OF CONTENTS

	Page
ABSTRACT	ii
ABSTRAK	iv
ACKNOWLEDGEMENTS	vi
APPROVAL	viii
DECLARATION	ix
LIST OF TABLES	xiii
LIST OF FIGURES	xiv
LIST OF PLATES	xxi
LIST OF ABBREVIATIONS	xxii
CHAPTER	
1 INTRODUCTION	1
2 LITERATURE REVIEW	4
2.1 Classification of Peninsular Malaysian Orchids	4
2.2 Orchids diversity and distribution in Peninsular Malaysia	6
2.3 Diversity and Limestone Endemics	8
2.4 Threats in Perlis	12
2.5 Perlis	14
2.6 Geological Features of Perlis	18
2.6.1 Setul Formation	19
2.6.2 Chuping Formation	20
2.6.3 Granite	20
2.7 Forest and Flora of Perlis	23
2.8 Present Status of knowledge on Orchid	26
2.8.1 Peninsular Malaysia	26
2.8.2 Perlis	28
3 METHODOLOGY	
3.5 Areas covered	32
3.6 Field Collections	33
3.7 Herbarium Specimens Preparation	34
3.8 Species Identification and Enumeration	35
4 RESULTS	36
4.1 Orchids diversity in Perlis	36
4.2 Orchids distribution in Perlis	41
4.3 Classification of Perlis Orchids	48

4.4	Artificial key to the Subfamilies and Genera of Orchidaceae in selected sites in Perlis	50
4.4.1	Artificial key to the subfamilies of Perlis Orchids	50
4.4.2	Artificial key to the Genera in Subfamily Orchidoideae	51
4.4.3	Artificial key to the Genera in Subfamily Epidendroideae	51
4.5	Taxa Enumeration	56
5	DISCUSSION	370
5.1	Diversity of orchid in Perlis	370
5.1.1	Species diversity	370
5.1.2	Morphological diversity	373
5.2	Distribution of Perlis orchids	376
5.2.1	Geographic distribution of Perlis orchids	376
5.2.2	Orchids distribution in Perlis	380
6	CONCLUSION AND RECOMMENDATIONS	392
	REFERENCES	397
	APPENDICES	403
	BIODATA OF THE AUTHOR	422