

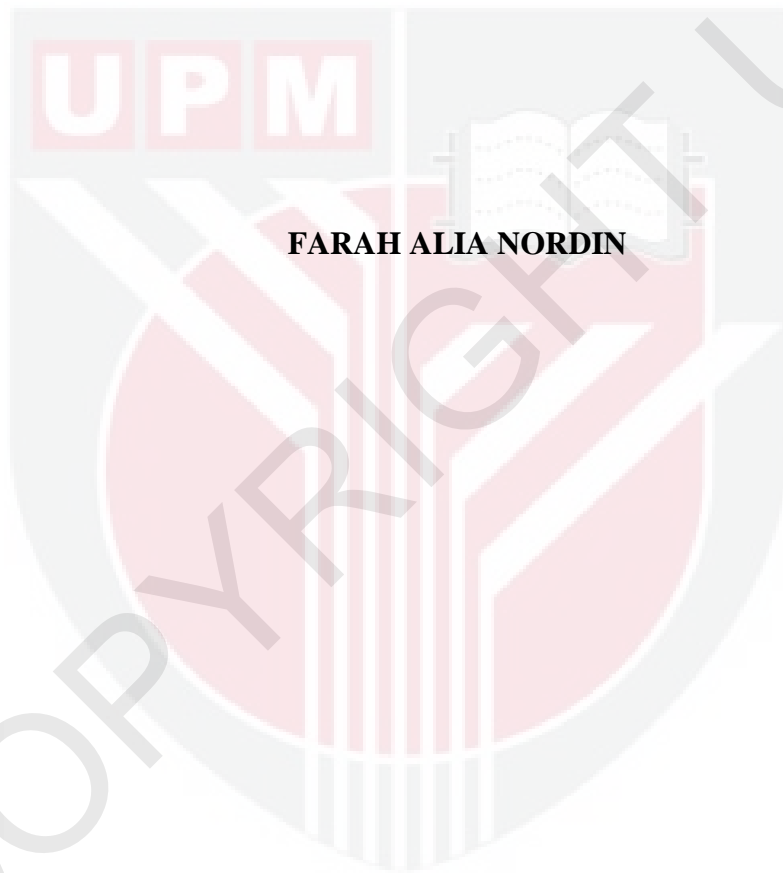


UNIVERSITI PUTRA MALAYSIA
ORCHID FLORA OF FRASER'S HILL, MALAYSIA

FARAH ALIA NORDIN

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ORCHID FLORA OF FRASER'S HILL, MALAYSIA

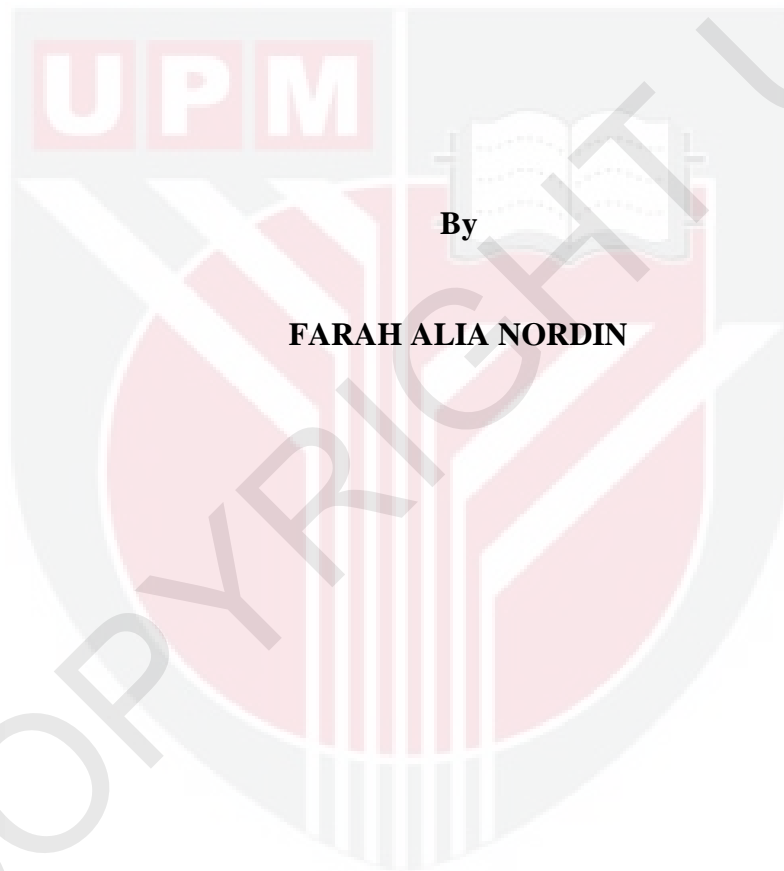


FARAH ALIA NORDIN

**MASTER OF SCIENCE
UNIVERSITI PUTRA MALAYSIA**

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ORCHID FLORA OF FRASER'S HILL, MALAYSIA



By

FARAH ALIA NORDIN

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

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DEDICATION

This thesis is dedicated to my supervisors, Assoc. Prof. Dr. Rusea Go, Dr. Mohd Nazre bin Saleh and Assoc. Prof. Dr. Ahmad Sofiman bin Othman. Their endless guides and constructive comments have benefited this thesis more than I can count.

I also dedicated this thesis to my family for the love and passion they always share with me.



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment
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ORCHID FLORA OF FRASER'S HILL, MALAYSIA

By

FARAH ALIA NORDIN

April 2012

Chairman: Associate Professor Rusea Go, PhD

Faculty: Science

A diversity study of the orchids has been carried out in Fraser's Hill and it was the first scientific study specifically on the diversity of orchids done in Fraser's Hill. The main aim of this study is to produce a proper scientific documentation on the orchid flora of Fraser's Hill and their current conservation status. Fourteen monthly field visits have been made to Fraser's Hill from August 2009 until December 2010. A total of 191 species in 74 genera from 3 subfamilies were recorded. Ninety - two species in 16 genera are new records to Fraser's Hill which 83 species were collected from field surveys and another 9 were gathered from unpublished herbarium specimens. From the account, seven species are new records to Malaysia and four to Peninsular Malaysia. The most outstanding feature of the orchids of Fraser's Hill is they consist of both Malesian flora and Burmese – Thai element. Thirty – three species are recognized as endemic to Peninsular Malaysia including two species that were previously recorded only from Sumatra but were found in Fraser's Hill; *Bulbophyllum farinulentum* and *Dipodium conduplicatum*. *Taeniophyllum campanulatum*, a species confined to Fraser's Hill and previously claimed to be extinct was collected in this study. Through observations, resort development, road construction, natural disaster, local climate change and human disturbances were

threats to the orchids and their habitats in Fraser's Hill. From the conservation assessment conducted in this study, two species were proposed to be extinct locally; *Corybas fornicatus* and *Dendrobium hymenopterum*. Eighty species were identified as threatened species and 11 were treated as rare. Pine Tree Trail and Bishop Trail stand out for *in – situ* conservation sites in Fraser's Hill because they houses the most diverse orchid species including the extremely rare species *Dendrobium derryi* and *Macropodanthus alatus*.



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

FLORA ORKID DI BUKIT FRASER, MALAYSIA

Oleh

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Pengerusi: Profesor Madya Rusea Go, PhD

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Satu kajian kepelbagaian anggerik telah dijalankan di Bukit Fraser dan ia merupakan satu kajian saintifik yang pertama kali dilakukan khusus hanya kepada kepelbagaian anggerik di Bukit Fraser. Matlamat utama kajian ini adalah untuk menghasilkan satu dokumen saintifik yang lengkap mengenai flora anggerik di Bukit Fraser dan status pemuliharaan mereka yang terkini. Sebanyak empat belas lawatan lapangan telah dilakukan ke Bukit Fraser pada setiap bulan sejak Ogos 2009 hingga Disember 2010. Sebanyak 191 spesies dalam 74 genera daripada 3 subfamili telah direkodkan. Sebanyak 92 spesies dalam 16 genera adalah rekod baru bagi Bukit Fraser iaitu 83 spesies telah dikumpul di lapangan dan 9 lagi diperolehi daripada spesimen herbarium yang tidak pernah diterbitkan. Daripada jumlah tersebut, tujuh spesies adalah rekod baru kepada Malaysia dan empat kepada Semenanjung Malaysia. Satu fakta yang paling ketara mengenai anggerik di Bukit Fraser adalah mereka mengandungi kedua – dua ciri flora Malesia dan elemen Burma – Thai. Tiga puluh tiga spesies anggerik telah dikenalpasti sebagai endemik kepada Semenanjung Malaysia termasuk dua spesies yang sebelum ini hanya telah direkodkan dari Sumatra turut dijumpai di Bukit Fraser iaitu *Bulbophyllum farinulentum* dan *Dipodium conduplicatum*. *Taeniophyllum campanulatum*, satu spesies yang endemik hanya kepada Bukit Fraser

dan dianggap pupus sebelumnya telah dijumpai di dalam kajian ini. Melalui pemerhatian, pembangunan resort, pembinaan jalan, bencana alam, perubahan cuaca setempat dan kegiatan manusia telah dikenalpasti sebagai ancaman kepada anggerik dan habitat mereka di Bukit Fraser. Daripada penilaian pemuliharaan yang telah dijalankan di dalam kajian ini, dua spesies anggerik dicadangkan sebagai telah pupus dari Bukit Fraser iaitu *Corybas fornicatus* dan *Dendrobium hymenopterum*. Lapan puluh spesies anggerik telah dikenalpasti sebagai spesies terancam dan 11 spesies berada dalam bahaya kepupusan. Pine Tree Trail dan Bishop Trail telah dikenalpasti sebagai kawasan yang paling sesuai untuk pemuliharaan *in – situ* kerana kedua – dua kawasan ini mempunyai kepelbagaian spesies anggerik yang paling tinggi termasuklah spesies yang paling dalam bahaya kepupusan seperti *Dendrobium derryi* dan *Macropodanthus alatus*.

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This thesis submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Master of Science. The members of the Supervisory Committee are as follows:

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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 other institutions.

FARAH ALIA NORDIN

Date: 3 April 2012

