

TAXONOMIC REVISIONS OF DIPTEROCARPACEAE P.
S. Ashton IN KINABALU PARK, KUNDASANG SABAH

AHMAD FARIZ BIN NICHOLAS

BACHELOR OF SCIENCE (Hons.) BIOLOGY
FACULTY OF APPLIED SCIENCES
UNIVERSITI TEKNOLOGI MARA.

DECEMBER 2013

TABLE OF CONTENTS

	PAGE
ACKNOWLEDGEMENTS	i
TABLE OF CONTENTS	ii
LIST OF TABLES	iv
LIST OF FIGURES	v
LIST OF ABBREVIATIONS	vi
ABSTRACT	vii
ABSTRAK	viii
CHAPTER 1: INTRODUCTION	1
1.1 Background of Study	1
1.2 Problem Statement	2
1.3 Significance of the Study	2
1.4 Objectives of the Study	3
CHAPTER 2: LITERATURE REVIEW	4
2.1 Systematic study	4
2.2 Study site	5
2.3 Family of Dipterothraupidae.	6
2.4 Dichotomous key	7
CHAPTER 3: METHODOLOGY	9
3.1 Materials	9
3.2 Methods	9
3.2.1 Screening and Sorting	9
3.2.2 Grouping of DSV	10
3.3 Data Analysis	10
3.3.1 Microsoft excel	10
3.3.2 Constructing a Dichotomous key	11
CHAPTER 4: RESULTS AND DISCUSSION	13
4.1 Deposited Specimens Voucher	13
4.2 Analyzed Data	17
4.3 Examined specimens based on the diagnostic characters of the Genera.	50
4.4 Examined specimens based on the diagnostic characters of the Species.	57

	PAGE	
4.5	Previous and current data	82
4.6	Dichotomous Key	89
4.7	Each Genera's special characters	105
	4.7.1 <i>Anisoptera</i> Korth	105
	4.7.2 <i>Dipterocarpus</i> Gaertn.f	105
	4.7.3 <i>Dryobalanops</i> Gaertn.f	106
	4.7.4 <i>Hopea</i> Roxb	106
	4.7.5 <i>Parashores</i> Kurz	106
	4.7.6 <i>Shorea</i> Roxb	107
	4.7.7 <i>Vatica</i> L	107
4.8	Invalid DSV.	108
	4.8.1 <i>H. beccariana</i> Burck (SP 18147)	108
	4.8.2 <i>H. semicunenata</i> Symington (PEK (MR 300))	108
	4.8.3 <i>P. malaanonan</i> (Blanco) Merr (SP 18145).	109
	4.8.4 <i>S. dasyphylla</i> Foxw (SP 18783).	109
4.9	Unknown species of DSV	111
	4.9.1 <i>H. sp</i> (SNP 1903) deposit to <i>H. dyeri</i> F. Heim	112
	4.9.2 <i>S. sp</i> PEK (KB 266) deposit to <i>S. foxworthyii</i> <i>Symington</i>	112
	4.9.3 <i>S. sp</i> PEK (DA 942) and PEK (AB 608) deposit to <i>S.</i> <i>gibbosa</i> Brandis	112
	4.9.4 <i>S. sp</i> PEK (AB 607) deposit to <i>P. tomentella</i> <i>(Symington)</i> Meijer.	113
	4.9.5 <i>S.sp</i> PEK (MR 319) deposit to <i>S. parvistipulata</i> F .Heim	113
	4.9.6 <i>V. sp</i> (SNP 0163) and (SNP 0457) deposit to <i>V.</i> <i>albiramis</i> Slooten.	113
	4.9.7 <i>V.sp</i> (SAN 94289) deposit to <i>S. laevis</i> Ridl	114
CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS		115
	5.1 Current Taxon of Dipterocarpaceae From Kinabalu Park	115
	5.2 Dichotomous Key of Kinabalu Park Dipterocarpaceae	116
	5.3 Recommendation	116
CITED REFERENCES		119
APPENDICES		

ABSTRACT

TAXONOMIC REVISIONS OF DIPTEROCARPACEAE IN KINABALU PARK, KUNDASANG SABAH

The total number of Dipterocarpaceae Deposited Specimens Voucher (DSV) in Kinabalu Park is 143. It is categorized into 7 genera which are *Anisoptera* Korth, *Dipterocarpus* Gaertn.f, *Dryobalanops* Gaertn.f, *Hopea* Roxb, *Parashores* Kurz, *Shorea* Roxb and *Vatica* L. There are 45 species and 9 unknown species deposited. The unknown species are *H. sp* (SNP 1903) which deposited to *H. dyeri* F. Heim, *S. sp* PEK (KB 266) deposited to *S. foxworthyii* Symington, *S. sp* PEK (DA 942) and PEK (AB 608) deposited to *S. gibbosa* Brandis, *S. sp* PEK (AB 607) deposited to *P. tomentella* (Symington) Meijer, *S.sp* PEK (MR 319) deposited to *S. parvistipulata* F .Heim, *V. sp* (SNP 0163) and (SNP 0457) deposited to *V. albiramis* Slooten, and *V.sp* (SAN 94289) deposited to *S. laevis* Ridl. There are 4 invalid DSV detected. The invalid DSV are *H. beccariana* Burck (SP 18147) which the characteristics are resemble to *H. mengerawan* Miq, *H. semicunenata* Symington (PEK (MR 300)) to *S. laevis* Ridl, *P. malaanonan* (Blanco) Merr (SP 18145) to *P. tomentella* (Symington) Meijer, and *S. dasyphylla* Foxw (SP 18783) resemble to *S. parvistipulata* F .Heim. Key dichotomous of Dipterocarpaceae in Kinabalu Park is constructed based on Ashton's field characteristics.

CHAPTER 1

INTRODUCTION

1.1 Background Study

Systematic is the study of the diversity of organisms and their natural relationships which sometimes used as a synonym for taxonomy. Taxonomy is the study of the theory, practice and rules of classification of living and extinct organisms (Elizabeth and Robert, 2000). In Systematic botany study, it is classified into taxonomy monographs and taxonomy revision. A monograph is a systematic taxonomy which synthesis of all known information about the taxon of a particular species. The taxonomy revision is a comprehensive account of the taxon which incorporates much lesser details of the plant. The revision study of this paper will only restrict to Dipterocarpaceae family which referring to Kinabalu Park deposited voucher specimens (Bhattacharyya, 2005).

Dipterocarpaceae also known as timber plant is a tropical rain forests plant of Asia contains over 470 species which is well-known for its important in economic area (Dutta *et al.*, 2011). In typical low land evergreen forest in South East Asia, the family of these trees contributes to 30% of the total area (Ashton 1982). Furthermore, the origin of Asian Dipterocarps is in Gondwana, India and