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DIVERSITY OF AROIDS (ARACEAE) IN PERLIS STATE PARK, PERLIS

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ABSTRACT

During the field collections, more than 20 aroid species were recorded and identified. They are *Aglaonema nitidum*, *A. simplex*, *Alocasia denudata* var. *denudata*, *A. lowii*; *Amorphophallus carneus*, *A. paeoniifolius*, *A. prainii*; *Arisaema roxburghii*, *A. wrayi*, *Colocasia esculenta* var. *esculenta*, *C. gigantea*; *Epipremnum giganteum*, *Homalomena coerulescens*, *H. trapezifolia*, *Pothos scandens*, *P. latifolius*, *Raphidophora beccarii*, *R. foraminifera*, *Schismatoglottis calyptrata* var. *calyptrata*, *Scindapsus hederaceus*, *S. perakensis*, *Typhonium filiforme*, *T. flagelliforme*, *T. roxburghii*, and *T. trilobatum*. It should be noted that some of the species such as *Arisaema roxburghii*, *Arisaema wrayi*, *Raphidophora beccarii*, *Typhonium filiforme* and *Typhonium flagelliforme* are considered as rare.

ABSTRAK

Semasa pengutipan di lapangan lebih daripada 20 spesies keladi telah dirakam dan dicamkan. Meraka adalah *Aglaonema nitidum*, *A. simplex*, *Alocasia denudata* var. *denudata*, *A. lowii*; *Amorphophallus carneus*, *A. paeoniifolius*, *A. prainii*; *Arisaema*

roxburghii, *A. wrayi*, *Colocasia esculenta* var. *esculenta*, *C. gigantea*; *Epipremnum giganteum*, *Homalomena coerulescens*, *H. trapezifolia*, *Pothos scandens*, *P. latifolius*, *Raphidophora beccarii*, *R. foraminifera*, *Schismatoglottis calyptrata* var. *calyptrata*, *Scindapsus hederaceus*, *S. perakensis*, *Typhonium filiforme*, *T. flagelliforme*, *T. roxburghii*, and *T. trilobatum*. Harus diingatkan bahawa kebanyakan spesies seperti *Arisaema roxburghii*, *Arisaema wrayi*, *Raphidophora beccarii*, *Typhonium filiforme* dan *Typhonium flagelliforme* adalah dianggap langka.

INTRODUCTION

Aroids are herbaceous monocotyledonous plants having heart-shape or cordiform, generally broad and pinnately veined leaves. The species are characterized by their inflorescences, which consist of a fleshy spadix surrounded by sessile small flowers and lack floral bracts. The inflorescence is covered by a specialized attractive organ called spathe.

The state of Perlis which is located in the northern part of Peninsular Malaysia and its prominent feature is a row of limestone hills with the formation of karst and razor sharp pinnacles. Setul and Chuping formations which are formed during geological era have created individual isolated hills and thus resulted in a characteristic distribution of vegetation especially the composition and diversity of the aroids. Generally the aroid species are found in a tropical areas and also are distributed world wide. This family is grouped into nine subfamilies, 106 genera and 3200 species (Croat, 1979, 1994). In Peninsular Malaysia, there are about 23 genera with 123 species (Ridley, 1925). The species are normally found in various habitats with special reference to wetlands; ranging from swamps, ponds, lakes, canals, rivers to rice fields. Some species thrive well in forest floors with good canopy coverage. To date, documents on limestone aroid are limited

A pioneer and comprehensive study on the Peninsular Malaysia Araceae had been conducted by Ridley (1925) and about 23 genera with 123 species. Other studies on the family are documented by Latiff *et al.* (1995), Ghani (1983, 1984), Neoh (1992) and Kress (1995). Mansor and Sulaiman (1997) have listed several species of aroid in swampy areas in Pondok Tanjung Forest Reserve. In addition, Sulaiman (1977) have surveyed riverine Araceae in Peninsular Malaysia.

METHODOLOGY

A field survey on the family Araceae was conducted at limestone hills in Perlis between 28 September 1999 to 5 October 1999. The plants were collected

and subsequently made into herbarium specimen for future references. The species were identified based on Henderson (1954), Ridley (1925), Bown (1988), Hay (1996a, 1996b), Hettterscheid (1996), Bogner and Nicolson (1991) and Mayo *et al.* (1997)

RESULTS AND DISCUSSION

A total of 14 Araceae genera were found in Perlis limestone hills and the genera are *Aglaonema*, *Alocasia*, *Amorphophallus*, *Amydrium*, *Anadendrum*, *Arisaema*, *Colocasia*, *Epipremnum*, *Homalomena*, *Pothos*, *Raphidophora*, *Schismatoglottis*, *Scindapsus* and *Typhonium*. Some of the genera such as *Aglaonema*, *Alocasia*, *Arisaema*, *Homalomena*, *Pothos*, *Scindapsus*, *Raphidophora*, *Schismatoglottis* and *Typhonium* have the ability to grow as terrestrial plants under the forest canopy. Only *Amorphophallus*, *Colocasia* and *Epipremnum* could adapt to higher light intensity which were the open places and disturbed areas. *Raphidophora*, *Scindapsus*, *Pothos* and *Epipremnum* are strictly climbers.

Based on the classification from Bogner and Nicolson (1991), the Araceae in limestone hills of Perlis can be grouped into five subfamilies namely Aroideae, Pothoideae, Philodendroideae, Monsteroideae and Colocasioideae (Table 1). The genera *Arisaema*, *Amorphophallus* and *Typhonium* are grouped in subfamily Aroideae. Two species of *Arisaema* are *A. roxburghii* and *A. wrayi*. *Amorphophallus carneus*, *Amorphophallus paeoniifolius* and *Amorphophallus prainii* were found in a more open sites. *Typhonium filiforme* could only survive growing in between the rocks on limestone hills.

Colocasioideae consist of genera *Colocasia* and *Alocasia*. Each genus is represented by two taxa in limestone hills namely *Colocasia esculenta* var. *esculenta* and *C. gigantea* and *Alocasia denudata* var. *denudata* and *A. lowii*. *Homalomena* and *Schismatoglottis* are grouped in subfamily *Philodendroideae*. Two species of *Homalomena* that are *H. coerulescens* and *H. trapezifolia* have been recorded. Small colonies of *Schismatoglottis calyprata* var. *calyprata* are found in limestone hills.

Climbers are represented by *Amydrium humile*) and *Raphidophora beccarii* and *R. foraminifera* in the subfamily Monsteroideae. Only *Pothos scandens* and *P. latifolius* which are also climbers belong to the subfamily Pothoideae.

The Classification of Araceae based on inflorescences types is shown in Table 2. Eighteen species of Araceae found in limestone hills in Perlis have unisexual flower and 10 species have bisexual flower type. It should be noted that all unisexual flower species are ground flora whereas bisexual flowers are climbers.

Table 1: Classification of Araceae (After Bogner & Nicolson, 1991).

Subfamily	Tribe	Genera
Pothoideae		Pothos
Monsteroideae	Anadendreae	Anadendrum
	Monstereae	Amydrium
		Raphidophora
		Epipremnum
Scindapsus		
Philodendroideae	Philodendreae	Homalomena
		Schismatoglottis
Colocasioideae	Aglaonemateae	Aglaonema
	Colocasieae	Colocasia
Aroideae		Alocasia
	Thomsonieae	Amorphophallus
	Areae	Arisaema
		Typhonium

Table 2: Classification of Araceae based on inflorescence and flower types.

Unisexual flower

Arisaema roxburghii and *A. wrayi*

Amorphophallus prainii, *A. carneus* and *A. paeoniifolius*

Alocasia denudata var. *denudata* and *A. lowii*

Aglaonema nitidum and *A. simplex*

Colocasia esculenta var. *esculenta* and *C. gigantea*

Homalomena coerulescens and *trapezifolia*

Schismatoglottis calyptrata var. *calyptrate*

Typhonium filiforme, *T. roxburghii*, *T. flagelliforme* and *T. trilobatum*

Bisexual flowers

Amydrium humile

Anadendrum montanum

Epipremnum giganteum

Pothos scandens and *P. latifolius*

Raphidophora beccarii and *R. foraminifera*

Scindapsus perakensis, *S. hederaceus* and *S. perakensis*

CONCLUSION

More intensive study is needed especially on the ecological aspect and also the adaptation of the family to the limestone areas.

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