

A preliminary survey of Aroids (Family Araceae) in Maliau Basin, Sabah, Malaysia

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ABSTRACT. Fourteen Aroids genera (Family Araceae) were collected during a field expedition to Maliau Basin from 11 to 15 March 2005. The genera are *Aglaonema* (*A. nitidum*); *Alocasia* (*A. cuprea*, *A. longiloba*, *A. princeps*, *A. macrorrhiza*, *A. scabriuscula*); *Amorphophallus* (*A. sp.*); *Amydrium* (*A. medium*); *Anadendrum* (*A. montanum*); *Colocasia* (*C. esculenta*, *C. oresbia*); *Homalomena* (*H. humilis*, *H. sp.1*, *H. sp.2*); *Aridarum* (*A. nicolsonii*); *Bucephalandra* (*B. motleyana*); *Epipremnum* (*Epipremnum giganteum*); *Pothos* (*Pothos sp.*); *Rhaphidophora* (*R. korthalsii*); *Schismatoglottis* (*S. calyptrata*, *S. viridissima*, *Schismatoglottis sp.*) and *Scindapsus* (*S. pictus*). The most dominant genera found are *Homalomena* and *Schismatoglottis*. Most of the species, except *Amorphophallus sp.*, were generally widely distributed along undisturbed riverbanks. It is generally concluded that most of aroids are found in wet areas particularly along river banks.

Keywords: Aroids, Maliau Basin, Malaysia.

INTRODUCTION

The aroids or Family Araceae are abundantly found on the forest floor in tropical rainforests including in Borneo. The Araceae, comprising nine subfamilies, 106 genera and 3200 species, is mainly tropical and is distributed worldwide (Croat 1979, 1994). There are two major centres of species diversity, i.e. tropical Asia and tropical America, with 43 and 36 indigenous genera, respectively.

The family is defined by having minute sessile flowers on spadix and covered by a spathe. Depending on the genus, the spadix may bear either unisexual or bisexual flowers. Most of the climbers have bisexual type of flowers while others have unisexual flowers. Ecologically, aroids can be found in streams, ponds and canals, terrestrial habitats, tidal mud, swamps and wasteland, forest floor, climbers, epiphytes and rheophytes. Some aroids species such as *Homalomena sagittifolia*, *Homalomena coerulescens*, have been widely used as medicinal plants (Kress, 1995). In addition, *Typhonium flagelliforme* (syn. *Typhonium divaricatum*) have shown promising results in fighting cancer (Neoh, 1992; Teo, 1996).

METHOD

A preliminary survey on aroids in Maliau Basin, Sabah was conducted between 11 to 15 March 2005. Several habitats including forested areas and riverside ecosystems were visited. The main study areas were riverine ecosystems of Sabandar river and Ginseng camp. Other sites included tracks to Sabandar Fall and Maliau Fall.

Each station was 100 m long and all the Araceae found were recorded. Specimens were collected and kept at the Herbarium, School of Biological Sciences. Identification was based on Henderson (1954), Bown (1988), Boyce (2004), Boyce *et al.* (2001), Hettterscheid & Ittenbach (1996), Mayo *et al.* (1997), Hay (1996a & b) and Bogner & Nicolson (1991). A

living collection was kept at the Floral Garden, Universiti Sains Malaysia for conservation purposes.

RESULTS

Fourteen genera and 23 species of Araceae were found in the sites surveyed at Ginseng Camp, Sabandar river and Fall, and the track to Maliau Fall (Table 1). The species are *Aglaonema* (*A. nitidum*); *Alocasia* (*A. cuprea*, *A. longiloba*, *A. princeps*, *A. macrorrhiza*, *A. scabriuscula*); *Amorphophallus* (*Amorphophallus* sp.); *Amydrium* (*Amydrium medium*); *Anadendrum* (*A. montanum*); *Colocasia* (*C. esculenta*, *C. oresbia*); *Homalomena* (*H. humilis*, *H. sp.1*, *H. sp. 2*); *Aridarum* (*A. nicolsonii*); *Bucephalandra* (*B. motleyana*); *Epipremnum* (*Epipremnum giganteum*); *Pothos* (*Pothos* sp.); *Rhaphidophora* (*R. korthalsii*); *Schismatoglottis* (*S. calyprata*, *S. viridissima*, *Schismatoglottis* sp.) and *Scindapsus* (*S. pictus*).

Most of the aroids species were found along riverbanks, while *Aridarum nicolsonii* and *Bucephalandra motleyana* survived as rheophytic on granite. Genera such as *Anadendrum*, *Rhaphidophora*, *Scindapsus*, *Epipremnum* and *Pothos* occurred mostly as climbers and *Amorphophallus* sp. survived well under the canopy near the track to Maliau Fall.

The subfamily Pothoideae was represented in only one species. *Pothos* sp. is a climber found near the Maliau Fall. The subfamily Monsteroideae was represented by *Rhaphidophora*, *Amydrium*, *Anadendrum*, *Epipremnum* and *Scindapsus*. *Rhaphidophora korthalsii* thrived well along the river bank of Salandar river as a climber. Other species found include *Anadendrum montanum*, *Amydrium medium*, *Epipremnum giganteum* and *Scindapsus pictus*.

Table 1: Aroids species (Family Araceae) in Maliau Basin, Sabah.

Subfamily	Genus and Species	Locality	
		Salanjar Fall	Maliau Fall
Pothoideae	<i>Pothos</i> sp.	-	+
Monsteroideae	<i>Anadendrum montanum</i>	+	+
	<i>Amydrium medium</i>	+	+
	<i>Rhaphidophora korthalsii</i>	+	+
	<i>Epipremnum giganteum</i>	+	+
	<i>Scindapsus pictus</i>	+	+
	Philodendroideae	<i>Homalomena humilis</i>	-
<i>Homalomena</i> sp. 1		+	-
<i>Homalomena</i> sp. 2		+	-
<i>Schismatoglottis calyprata</i>		+	+
<i>Schismatoglottis viridissima</i>		+	-
<i>Schismatoglottis</i> sp.		+	+
<i>Bucephalandra motleyana</i>		+	-
<i>Aridarum nicolsonii</i>		+	-
<i>Aglaonema nitidum</i>		+	-
Colocasioideae		<i>Colocasia esculenta</i>	+
	<i>Colocasia oresbia</i>	+	-
	<i>Alocasia cuprea</i>	+	-
	<i>Alocasia longiloba</i>	+	+
	<i>Alocasia princeps</i>	+	+
	<i>Alocasia macrorrhiza</i>	+	+
	<i>Alocasia scabriuscula</i>	+	-
Aroideae	<i>Amorphophallus</i> sp.	-	+

Philodendroideae, consists of five genera and were found under the forest canopy near river banks. *Homalomena humilis*, *H. sp.1* and *H. sp. 2.* were recorded. *Schismatoglottis* was represented by *S. calyptrata*, *S. viridissima* and one unconfirmed species. Other species found were *Bucephalandra motleyana*, *Aridarum nicolsonii* and *Aglaonema nitidum*. This subfamily had the highest number of recorded species.

The Colocasioideae subfamily was represented by seven species. *Colocasia esculenta* and *C. oresbia* were found in open places while *A. cuprea*, *A. longiloba*, *A. princeps*, *A. scabriuscula* and *A. macrorrhiza* were primarily forest species. *Amorphophallus* sp. of subfamily Aroideae is the only terrestrial species found on the track near the Maliau Fall.

DISCUSSION

Bown (1988) noted that the high proportion of aroids that survive in high humidity and shaded areas are either aquatic or semi-aquatic plants. They are normally found as rheophytes, marginal and marsh species. Hence, it is not unusual for the family to be concentrated mainly in riverine and perennial habitats of the Maliau Basin primary forest.

A total of 14 genera of aroids, from 31 genera recorded in Borneo, were recorded during the expedition (ca. 50%) in the Maliau Basin Conservation Area. Two Bornean endemic species, *Bucephalandra motleyana* and *Aridarum nicolsonii*, were recorded in this area.

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