

## The genus *Marattia* (Marattiaceae) in Malaysia

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**ABSTRACT** Three species of *Marattia* are enumerated for Malaysia. These are *M. sylvatica* and *M. sambucina*, both in Sabah and Sarawak, and *M. pellucida* in Sabah and a new record for Peninsular Malaysia.

**ABSTRAK** Tiga spesis *Marattia* yang terdapat di Malaysia diuraikan. Spesis tersebut adalah *M. sylvatica* dan *M. sambucina* dari Sabah dan Sarawak, dan *M. pellucida* yang sebelum ini hanya diketahui dari Sabah dilapor sebagai rekod baru untuk Semenanjung Malaysia.

(*Marattia*, Malaysian pteridophytes)

### INTRODUCTION

*Marattia* Swartz is a genus of the fern family Marattiaceae, the other genera being *Angiopteris*, *Danaea* and *Christensenia* (Brummitt 1992; Camus 1990). With the exception of *Danaea* which is a temperate genus, the others are tropical genera. Copeland (1958) enumerated *Marattia* as having about 60 species, distributed throughout the world with nine of them occurring in Malesia. *Marattia* is characterised by a number of characters, including the usually large bipinnate fronds, in which each pinna is attached to the main rachis at a pulvinus. The sporangia occur as a double row on either side of a vein and are fused laterally; these fused sporangia form a synangium (as also in *Christensenia* Maxon, except in that genus the synangia comprise of radially fused sporangia forming a circular group). In Malaysia, *M. sylvatica* Blume has been recorded for Sarawak by Parris *et al.* (1984) and for Sabah by Parris *et al.* (1992) and Tagawa (1974). Parris & Latiff (1977) also recorded an additional species, *M. sambucina* Blume, from both Sabah and Sarawak. In Sarawak, this species was found in the Bario Highlands (Jaman *et al.*, 1998) while in Sabah, it has been found at Sayap in the Kinabalu Park (Jaman & Latiff, 1995).

In 1997, during a field trip to the Genting Highlands in Pahang, Peninsular Malaysia, one of the authors (Zulkapli) found *M. pellucida*, which previously had been documented for Malaysia only from the Crocker Range in Sabah. With this finding, a total of three species of *Marattia* are now recorded for Malaysia.

### Key to the species

1. Stipe and main rachises tuberculate throughout, dark green; pinnae-rachis wing up to 1 mm wide throughout; pinnae sessile, 12-46 x 4-12 mm ..... 2.  
**M. sambucina**
1. Stipes and main rachises smooth, light green or yellowish green; pinnae-rachis winged, up to 0.5 mm wide; pinnae sub-sessile to 2 mm, petiolate, 2.3-13 x 1-1.9 mm ..... 2
2. Rachises light green, synangia usually with 6-8 pairs of sporangia; pinnae sub-sessile; veins visible but inconspicuous .....  
**1. M. pellucida**
2. Rachises yellowish green, synangia usually with 10 or more pairs of sporangia; pinnae with petiole up to 2 mm long; veins

conspicuous ..... 3. *M.*  
*sylvatica*

1. *Marattia pellucida* C. Presl

*Marattia pellucida* C. Presl, Suppl. Tent. (1845)  
10; Copel., Fern Fl. Philipp. 1 (1958) 26.  
*M. sambucina* sensu C. Chr. Philipp. J. Sci. 2C  
(1907) 184, non Blume (1828).

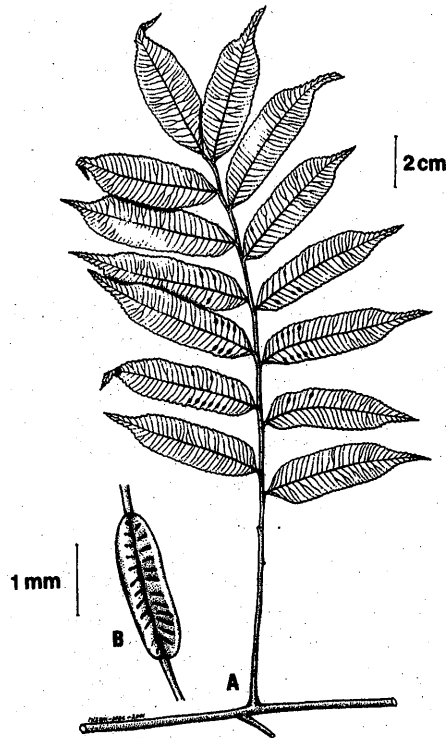


Figure 1. *Marattia pellucida*

Rhizomes erect, stipes with stipules at the base, smooth, light green, fleshy, to c. 60 cm long. Frond 2-3 pinnate: main rachises smooth, pinnae-rachises narrowly winged toward their apices; wings up to 0.5 mm wide, segregated at pinnae stalks; pinnae slightly asymmetric at base, elliptic, lowest pinnae much smaller than middle pinnae, broadly cuneate on basiscopic side and truncate on acroscopic sides, sub-sessile; paler on abaxial surfaces, margin coarsely serrate; terminal leaflets similar to lateral ones; veins mostly simple, rarely forked; synangia 1-3 mm long, with 6-8 pairs of sporangia.

**Material examined.**

PENINSULAR MALAYSIA. PAHANG. Genting Highlands Road, hill dipterocarp forest, *Zulkapli s.n.* 1997 (KLU, UKMB). BORNEO. SABAH. Penampang, Crocker Range, Km 49.5 on Kota

Kinabalu-Tambunan Road, oak-laurel forest, 1350-1500 m, *Beaman et al.* 10458 (UKMB).

The pinnae of the Genting Highlands specimen are almost sessile and the pinna apices are caudate, whereas the Sabah specimen has pinnae with petioles up to 0.5 mm long, and the apex is long acuminate. The Genting Highlands specimen represents a new record for Peninsular Malaysia.

Ecology: A terrestrial fern in submontane forest up to 1500 m, in deep shade.

Distribution: Borneo, Philippines, New Caledonia and Peninsular Malaysia.

**2. *Marattia sambucina* Blume**

1. *Marattia sambucina* Blume, Enum. Pl. Javae (1828) 256; Tagawa & Iwatsuki, Fl. Thailand 3(1) (1979) 42;

2. R. Jaman & Latiff, Sayap-Kinabalu Park Sabah (1995) 73; Parris & Latiff, Malay. Nat. J. 50 (1997) 261.
3. *Marrattia brooksii* Copel., *Philipp. J. Sci.* 7(2) (1912): 59.

Rhizome erect; stipe with stipules at the base, tuberculate, dark green, fleshy, to c. 27 cm long. Frond tripinnate: main rachis tuberculate and more-or-less asperulous towards their apices, pinnae-rachises tuberculate at base and winged throughout towards their apices, wings up to 1 mm wide, segregated at pinnule attachments; pinnae slightly asymmetric at base, elliptic; proximal pinnae more reduced than middle pinnae, cuneate at bases, basiscopic pinnules wider than acroscopic ones, sessile; glaucous on abaxial surfaces, margin coarsely serrate; terminal leaflets broad, longer than the rest, with cuneate base; veins simple; synangia 1-1.5 mm in diameter, with 6-9 pairs of sporangia.

**Material examined.**

BORNEO. SABAH. Kota Belud, Kinabalu Park, Sayap, Wariu Trail, hill dipterocarp forest, c. 870 m, 5 June 1992, *Jaman, RJ 4017* (UKMB).

SARAWAK. Bario, track to Lelang of Arul Dalan, hill dipterocarp forest, c. 1020 m, 14 May 1995, *Jaman & Jueng Katu, RJ 4301* (UKMB).

Note: This species differs from *M. sylvatica* in having tubercles throughout the dark green stipe and rachises. Three plants with sterile fronds, up to 60 cm in height were observed at the Sayap locality. A plant was taken and planted in the Fern Garden of the Universiti Kebangsaan Malaysia. The plant adapted well to the new habitat and produced fertile fronds after eight months. Copeland (1912) described *M. brooksii* from a specimen collected at Mt. Poi, Sarawak. He noted the species as having "fleshy-wrinkled" rachises and synangia comprising of 3-7 "cells" (sporangia). A comparison of the descriptions of *M. brooksii* and *M. sambucina* leaves no doubt that these taxa are conspecific.

Ecology: Terrestrial fern, at submontane forest 800-1000 m, in deep shade.

Distribution: Vietnam, Thailand, Java, Borneo, Ceram Island and the Philippines.



Figure 2. *Marattia sambucina*

### 3. *M. sylvatica* Blume

1. *Marattia sylvatica* Blume, Enum. Pl. Javae (1828) 256; Parris *et al.*, Plants of Mount Kinabalu 1, Ferns and
2. Fern-allies (1995) 93; Parris & Latiff, Malay. Nat. J. 50 (1997) 261.
3. *M. pellucida* sensu C. Chr. & Holttum, Gard. Bull., Sing. 7 (1934) 209, non C. Presl (1845).

Rhizomes erect; stipes smooth, light green, fleshy, to c. 60 cm long, with stipules at the bases. Fronds tripinnate: main rachises smooth, pinnae-rachises narrowly winged toward their apices, wings interrupted at pinnule stalks; pinnae slightly asymmetric at their bases, elliptic; proximal pinnae more reduced than middle pinnae, broadly cuneate on basisopic sides and truncate on acroscopic sides, stalks short, c. 1-1.5 mm long; blades paler on abaxial surfaces, margin coarsely serrate; terminal leaflets similar

to lateral ones; veins simple or once forked; synangia 1-3 mm in diameter with 6-8 pairs of sporangia.

#### Material examined.

BORNEO. SABAH. Kota Belud, Kinabalu Park, Sayap, Tepisung Trail, hill dipterocarp forest, c. 1040 m, 4 June 1992, *Jaman RJ 3979* (UKMB); Kinabalu Park, Eastern Shoulder, 1200 m, RSNB 1532 (SING); Kiau-Tahubang river, 1000 m, *Parris 11533* (K); Penibukan, 1200 m, *Clemens 32066* (K); Tenompok, 1500 m, *Clemens 27428* (K); 1500 m, *Clemens 30459* (K); 1400 m, *Holttum SFN 25391* (SING).

Ecology: A terrestrial fern in hill forest and lower montane forest, at 1000-1500 m elevation.

Distribution: Borneo, Philippines, Java and New Guinea.

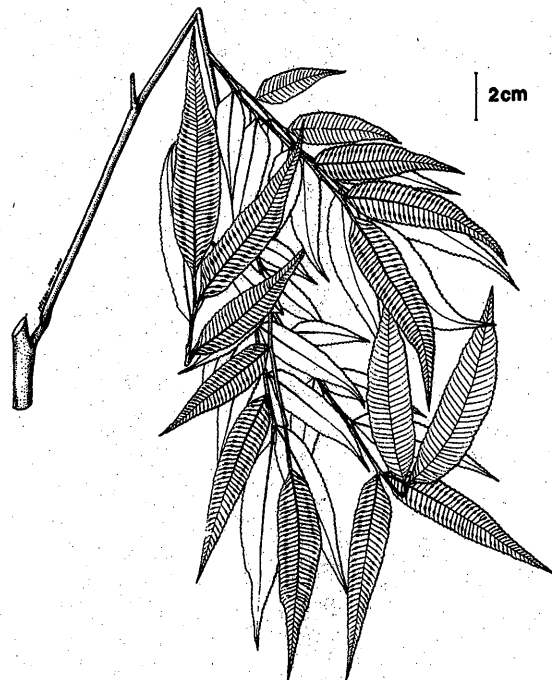


Figure 3. *Marattia Sylvatica*

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