

THE PTERIDOPHYTES OF TAWAU HILLS PARK, SABAH

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ABSTRACT

A survey of the pteridophyte flora of Tawau Hills Park Sabah and its adjacent areas is presented, including a summary of their habitats and ecology. More than 150 numbers were collected or recorded, belonging to 83 species in 55 genera and 24 families.

INTRODUCTION

Scientific collections and documentation of Malaysian pteridophytes were initiated in the early part of the 20th Century but were few and far apart. Among the pioneers were Maxwell (1887), von Rosenburgh (1908), Ridley (1908 & 1912), Henderson (1939) Christensen & Holttum (1934) and Holttum (1959, 1963 & 1968). Holttum later continued with the revision works of a number of taxa (1978, 1981a, 1981b, 1985 & 1991) and followed by others: Wong (1983), Jermy (1984), Bidin (1980, 1983, 1984, 1985, 1986a, 1986b, 1987, 1988 & 1989), Parris (1986), Parris & Edwards (1987), Parris, Beamen & Beamen (1992), Bidin & Walker (1994) and Bidin & Go (1995). The latest estimation on the number of pteridophyte species in Malaysia stands at 1136 species (Parris & Latiff, 1995), 637 of which occur in Peninsular Malaysia, 718 in Sabah and 587 in Sarawak.

METHODS

The checklist produced is the result of fieldworks; carried out by the authors working both in the lowlands covering an area of about 5 km² within the vicinity of the Park's Office and also at higher elevations mainly along the tracks leading to the various hills in the Park.

Data on habitat has been provided. Specimens are lodged in Universiti Kebangsaan Malaysia Bangi, with duplicates in Universiti Kebangsaan Malaysia Sabah. Specimens recorded based upon field investigation by the authors without voucher specimens having collected are stated as sight record. The arrangement of the families and genera follows Parris, Beamen and Beamen (1992) except in Dryopteridaceae which follows the order of genera and species in Holttum (1991).

CHECKLIST OF PTERIDOPHYTES FROM TAWAU HILLS PARK SABAH

LYCOPODIACEAE

Lycopodiella Holub.

Lycopodiella cernua (L.) Pichi Ser.

Syn. Lycopodium cernuum Linn.

Terrestrial. Common in open place especially along trails and earthbanks (sight record).

Huperzia Bernh

Huperzia nummulariifolia (Blume) T.C. Chambers, Jermy & Crabbe

Syn. Lycopodium nummularifolium Blume

Terrestrial. In light shade. Lowlands

Huperzia phlegmaria (L.) Rothm.

Syn. Lycopodium phlegmaria Linn.

Epiphyte. Lowlands to lower montane forests in light to deep shade.

SELAGINELLACEAE

Selaginella willdenovii (Desv.) Baker

Terrestrial. In deep shade, forming thicket. Lowlands to hill dipterocarp forests.

Selaginella sp. 1

Terrestrial. Prostrate in deep shade. Lowlands to hill dipterocarp forests.

Selaginella sp. 2

Epiphyte. In deep shade. Lowlands to lower montane forests.

OPHIOGLOSSACEAE

Ophioglossum pendulum L.

Epiphyte. In light shade. Lowland forests.

MARATTIACEAE

Angiopteris evecta (G. Forst.) Hoffm.

Syn. A. subintegerrima sensu Tagawa & Iwatsuki

Terrestrial. In deep shade. Lowlands to hill dipterocarp forests.

Angiopteris angustifolia C. Presl

Terrestrial. In deep shade. Hill dipterocarp forest to lower montane forest.

SCHIZAEACEAE

Lygodium circinnatum (Burm. f) Sw

Terrestrial. Scrambling over bushes. in light shade and open habitat of the lowlands.

Lygodium merrilli Copel.

Terrestrial. Scrambling. In light shade of the hill dipterocarp forests. First reported from Sabah.

Lygodium flexuosum (L.) Sw.

Terrestrial. In open habitat scrambling over bushes and grasses. Lowlands.

ADIANTACEAE

Syngamma alismifolia (C. Presl) J. Sw.

Terrestrial. Hill dipterocarp forests. Light to deep shade.

Taenitis blechnoides (Willd.) Sw.

Terrestrial. In light shade of the lowlands and on stream banks.

VITTARIACEAE

Antrophyum callifolium Bl.

Epiphyte. In deep shade. Hill dipterocarp forests.

Antrophyum sp. I

Epiphyte. In deep shade. Hill dipterocarp forests.

Vittaria elongata Sw

Epiphyte. In light shade of the lowlands.

Vaginularia trichoidea Fee

Syn. *Monogramma trichodea* (Fee) Hook.

Epiphyte. Hill dipterocarp forests. Deep shade.

PTERIDACEAE

Pteris furcans Baker

Terrestrial. Light shade. Hill dipterocarp forests.

Pteris tripartita Sw.

Terrestrial. Light shade. Hill dipterocarp forests.

HYMENOPHYLLACEAE

Vandenboschia maxima (Blume) Copel.

Syn. *Trichomanes maximum* Blume

Epiphyte. Lowlands to hill dipterocarp forests. Deep shade.

GLEICHENIACEAE

Dicranopteris linearis (Bunn. f.) Underw.

Terrestrial. In open habitats of the lowlands forming thickets especially by roadsides.

Gleichenia truncata (Willd). Spreng

Terrestrial. In open habitats by the tracksides. Hill dipterocarp forests.

DIPTERIDACEAE

Dipteris lobbiana (Hook.) T. Moore

Terrestrial. On shallow stream beds and earthbanks. Partly shaded. Lowlands.

POLYPODIACEAE

Aglaomorpha heraclea (Kunze) Copel.

Syn. *Drynariopsis heraclea* (Kunze) Ching

Epiphyte. Open or lightly shaded. Lowlands.

Platyserium ridleyi H. Christ

Epiphyte. Open or lightly shaded. Lowlands.

Pyrrosia angustata (Sw.) Ching

Epiphyte. Open or lightly shaded. Lowlands.

Paragramma longifolia (Blume) T. Moore

Epiphyte. Lightly shaded. Lowlands.

Colysis marcophylla (Blume) C. Presl

Epiphyte. Lightly shaded. Hill dipterocarp forests.

Selliguea heterocarpa (Blume) Blume

Epiphyte. Lightly shaded. Lowlands.

Leptochillus sp.

Terrestrial. In deep shade. Lowlands.

Microsorium heterocarpum (Blume) Ching

Terrestrial. Lightly to deeply shaded. Lowlands.

Microsorium punctatum (L.) Copel

Terrestrial. Light shade. Lowlands.

Lecanopteris pumila Blume

Syn. *Lecanopteris carnosa* (Reinw.) Blume
Epiphyte. In light shade. Lowlands.

Phymatosorus nigrescens (Blume) Pichi Serm.
Syn. *Microsorium nigrescens* (Blume) Copel
Epiphyte. In light shade. Lowlands.

Thylacopteris papillosa (Blume) Kunze
Syn. *Polypodium papillosum* Blume
Epiphyte. In light shade. Hill dipterocarp forests.

Goniophlebium percussum (Cav.) W.H. Wagner & Grether
Syn. *Polypodium verrucosum* (Hook. & F.A. Bauer) Mett.
Epiphyte. In light shade. Lowlands to hill dipterocarp forests.

Selliguea taeniata (Sw.) Parris
Syn. *Crypsinus taeniatus* (Sw.) Copel
Phymatopteris taeniata (Sw.) Pichi Serm.
Epiphyte. Light shade. Lowlands.

Selliguea sp. I
Epiphyte. Light shade. Lowlands.

Loxogramme avenia (Blume) C. Presl
Epiphyte. Light to deep shade. Hill dipterocarp forests.

GRAMMITIDACEAE

Prosaptia contigua (G. Forest.) C. Presl
Syn. *Ctenopteris contigua* (Forst.) Holtt.
Epiphyte. Light to deep shade. Hill dipterocarp forests.

Scleroglossum pussillum (Blume) Alderw.
Syn. *Scleroglossum sulcatum* (Kuhn) Alderw.
Epiphyte. Light to deep shade. Hill dipterocarp forests.

CYATHEACEAE

Cyathea sp.
Terrestrial. Light shade. Lowlands.

DENNSTAEDTIACEAE

Lindsaea parasitica (Roxb. ex Griffith) Hieron

Syn. *Lindsaea scandens* Hook.

Terrestrial. Deep shade, climbing. Lowlands to hill dipterocarp forests.

Microlepia sp.

Terrestrial. Deep shade. Lowlands

THELYPTERIDACEAE

Pneumatopteris sp. I

Terrestrial. Light shade. Lowlands

Pronephrium hosei (Baker) Holttum

Terrestrial. Light shade. Lowlands.

Pronephrium firmulum (Baker) Holttum

Terrestrial. Light to deep shade. Lowlands to hill dipterocarp forests.

Pronephrium nitidum Holttum

Syn. *Thelypteris urophylla* (Wall. ex Hook.) K. Iwatsuki

Terrestrial. Light to deep shade. Lowlands to hill dipterocarp forests.

Pronephrium salicifolium (Wall. ex Hook.) Holttum

Syn. *Abacopteris salicifolia* (Wall. ex Hook.) Holttum.

Terrestrial. Light to deep shade. Lowlands to hill dipterocarp forests.

Mesophlebion motleyanum (Hook.) Holttum

Syn. *Thelypteris motleyana* (Hook.) Holttum

Terrestrial. Light to deep shade. Hill dipterocarp forests.

Sphaerostephanos heterocarpus (Blume) Holttum

Syn. *Cyclosorus heterocarpus* (Blume) Ching

Terrestrial. Light shade. Lowlands.

ASPLENIACEAE

Asplenium nidus L.

Epiphyte. Open or lightly shaded. Lowlands

Asplenium phyllitidis. Don ssp. *malesicum* Holttum

Epiphyte. Open or lightly shaded. Lowlands.

Asplenium pellucidum Lam.

Epiphyte or terrestrial on limestones. Light shade. Lowlands.

Asplenium nitidum Sw.

Syn. *Asplenium glaucophyllum* Aldrew.

Epiphyte. Light to deep shade. Lowlands.

Asplenium salignum Blume

Terrestrial on rocks. Open to light shade. Lowlands.

Asplenium normale D. Don

Terrestrial on rocks. Deep shade. Hill dipterocarp forests.

Asplenium sp. I

Epiphyte. Deep shade. Hill dipterocarp forest.

Asplenium tenerum G. Forst.

Epiphyte. Deep shade. Hill dipterocarp forests.

Asplenium vittaeforme Cav.

Syn. *Asplenium squamulatum* Blume

Terrestrial on rocks. Open to lightly shaded. Lowlands.

Asplenium sp. I

Epiphyte. Light to deep shade. Lowlands.

WOODSIACEAE

Diplazium bantamense Blume

Syn. *Diplazium tabacinum* Copel.

Terrestrial. Deep shade. Lowlands to hill dipterocarp forests.

Diplazium crenatoserratum (Bl.) Moore

Terrestrial. deep shade. Lowlands to hill dipterocarp forests.

Diplazium sarzagonense (C. Presl) C. Presl

Terrestrial. Deep shade. Lowlands to hill dipterocarp forests.

Diplazium xiphophyllum (Baker) C. Chr.

Terrestrial. Deep shade. Hill dipterocarp forests.

DRYOPTERIDACEAE

Ctenifis vilis (Kunze) Ching

Terrestrial. Open to light shade. Lowlands.

Pleocnemia conjugata (Blume) Presl
Terrestrial. Open to light shade. Lowlands.

Tectaria angulata (Willd.) C. Chr.
Terrestrial. Light shade. Lowlands.

Tectaria singaporeana (Wall.) Ching
Terrestrial. Light to deep shade. Lowlands.

Helogonium stenosemioides (Baker) C. Chr.
Terrestrial. Light shade. Lowlands.

Didymochlaena trunculata (Sw.) Sw.
Terrestrial. Deep shade. Lowlands to hill dipterocarp forests.

LOMARIOPSIDACEAE

Bolbilis heteroclita (C. Presl) Ching
Terrestrial. Light to deep shade near stream. Hill dipterocarp forests.

Bolbitis sinuata (C. Presl) Hennisman
Terrestrial. Light to deep shade. Hill dipterocarp forests.

Elaphoglossum melanostictum (Blume) T. Moore
Syn. *Elaphoglossum peninsulare* Holttum
Epiphytes. Deep shade. Hill dipterocarp forests.

DAVALLIACEAE

Humata repens (L. fil.) Diels
Terrestrial. Deep shade. Hill dipterocarp forests

Davallia divaricata Blume
Terrestrial on rocks. Light shade. Hill dipterocarp forests.

Davallodes borneense (Hook.) Copel
Terrestrial on rocks. Light to deep shade. Hill dipterocarp forests.

OLEANDRACEAE

Oleandra pistillaris (Sw.) Cav.
Terrestrial. Light shade. Hill dipterocarp forests.

NEPHROLEPIDACEAE

Nephrolepis auriculata (L.) Trimen.
Syn. *Nephrolepis biserrata* (Sw.) Schott
Terrestrial. Open places. Lowlands.

Nephrolepis falcata (Cav.) C. Chr.
Terrestrial. Open places. Lowlands.

Blechnaceae

Blechnum orientale L.
Terrestrial. Open to light shade. Lowlands.

Stenochlaena palustris (Burm.f) Bedd.
Terrestrial. Scrambling over bushes. Open places in the lowlands.

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