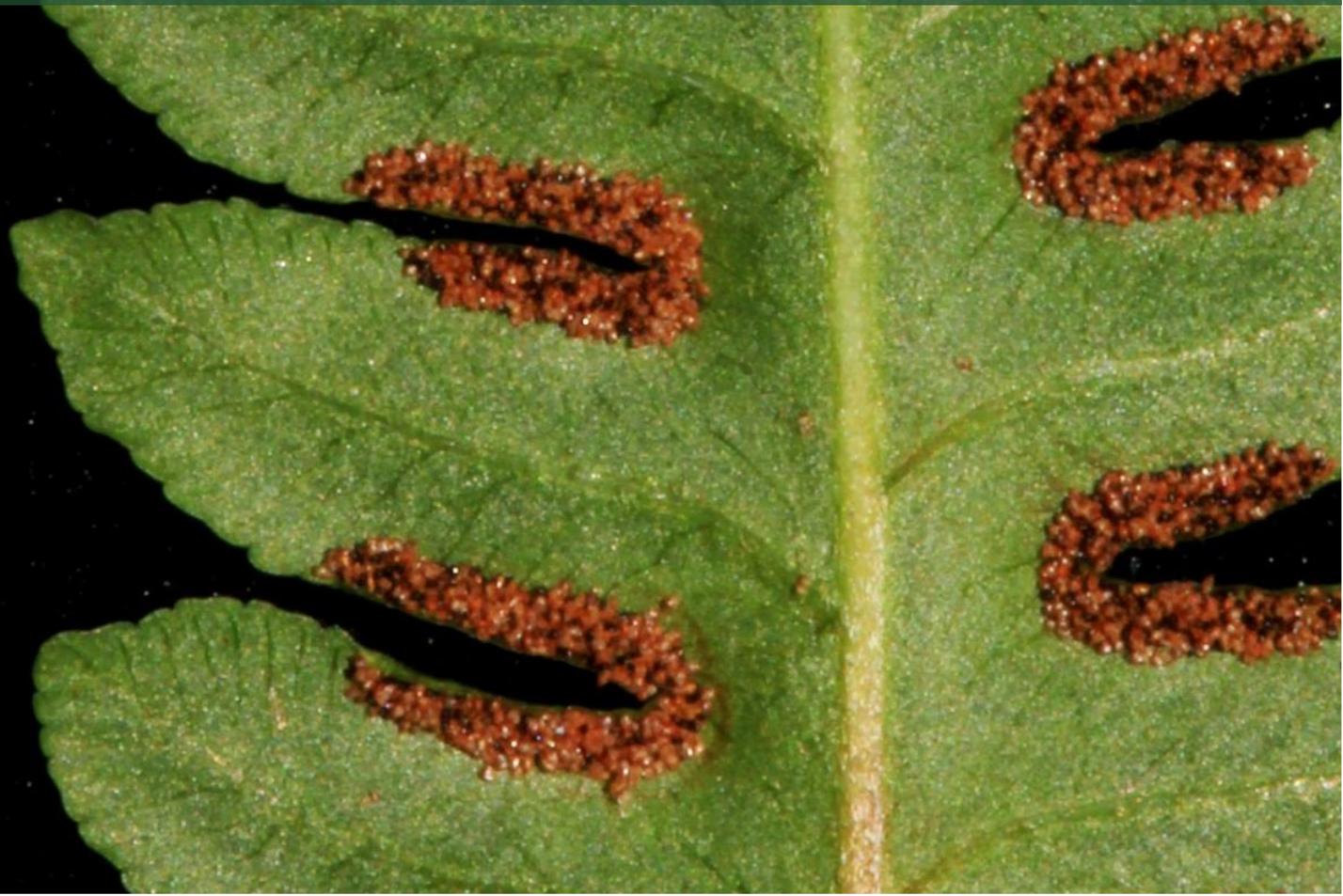




A Field Guide to the
Plants of
MacRitchie

Ferns and Lycophytes



MacRitchie Reservoir Park



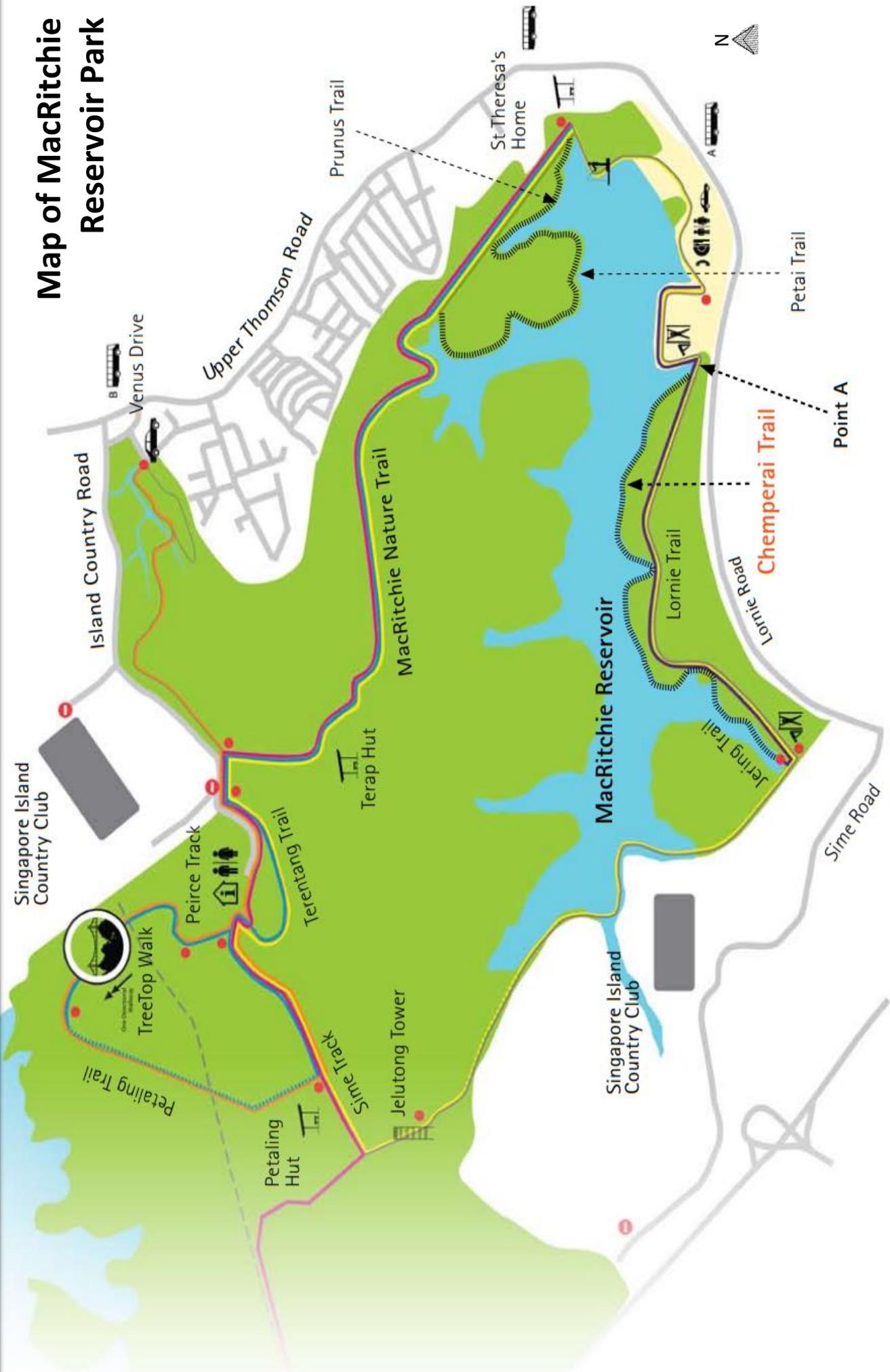
Introduction

Completed in 1867, MacRitchie Reservoir Park was Singapore's first reservoir to supply water for the growing population of the British trading port. Originally named 'Impounding Reservoir', the reservoir was renamed after James MacRitchie in 1922, the Municipal Engineer of Singapore from 1883 to 1895, to commemorate his achievement of repairing the water supply and expanding the reservoir.

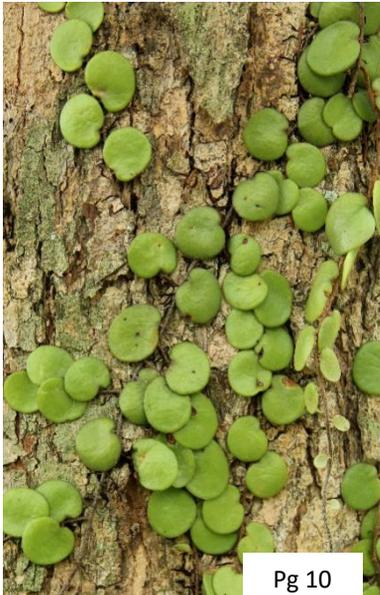
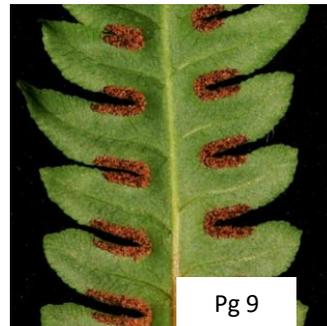
MacRitchie Reservoir Park was opened in 1967, now, it is a 12-hectare nature park, rich in biodiversity, and a very popular destination for nature and sports enthusiasts for activities like jogging, taichi, canoeing, as well as nature and lifestyle photography such as for social media and weddings.

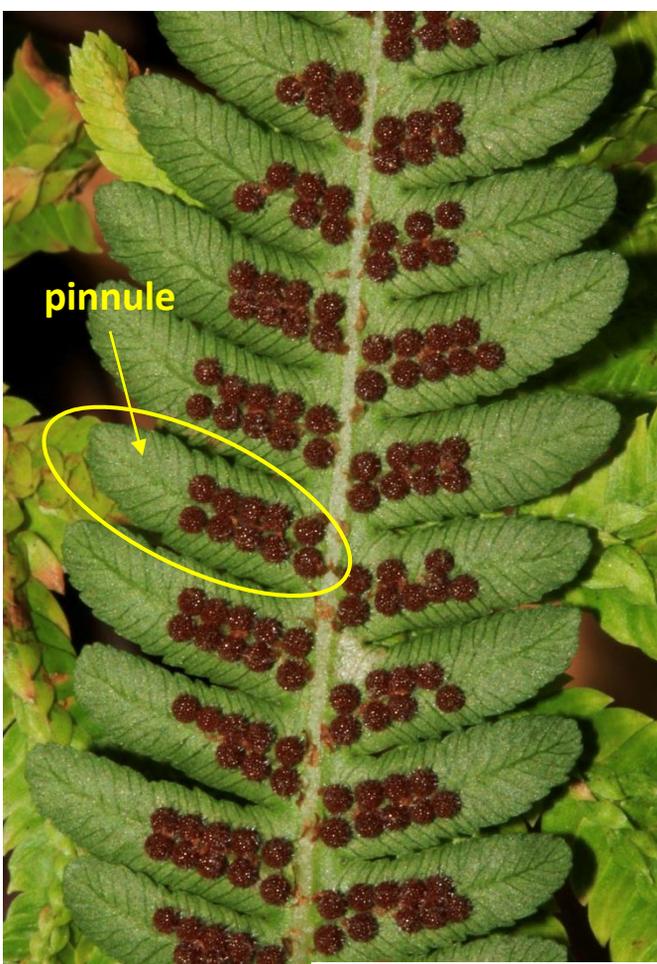
There are 12 trails spread throughout the park. Each has their unique flora and fauna waiting for curious eyes to discover. Most of the trails are designed to blend into the natural surroundings. They range from unpaved road, covered with leaf litter or wooden boardwalks winding beneath the canopy.

Map of MacRitchie Reservoir Park



Content Page





pinnule

Sori arrangement



Alsophila latebrosa

Tree Fern



Trunk

Species Name: *Alsophila latebrosa*
Family: Cyatheaceae
Common Name: Tree Fern
Distribution: South Yunan to West and Central Malesia
Conservation Status: Native to Singapore (Vulnerable)

Alsophila latebrosa or Tree Fern can grow up to 4 m tall with a single trunk. The fronds are bipinnate and can reach a length of 2 m. The sori^[1] are round, borne on the underside of each pinnule^[2].

Tree ferns can be found growing along the forest margins, open areas, in lowlands or up in the mountains.



Sori arrangement



Asplenium longissimum Spleenwort



New frond

Species Name: *Asplenium longissimum*
Family: Aspleniaceae
Common Name: Spleenwort
Distribution: Chagos Islands, Assam to West and Central Malesia
Conservation Status: Native to Singapore (Common)

Asplenium longissimum or Spleenwort is a terrestrial fern with long fronds that can grow up to 1-2 m in length. The pinnae^[3] has a pointed leaf tip with toothed leaf margin. The sori^[1] are linear and slightly curved, about 1 cm long, found on the underside of the pinnae^[3].

Spleenworts can be found under trees and in moist shaded areas.



Sori arrangement



Asplenium nidus

Bird's Nest Fern



New fronds

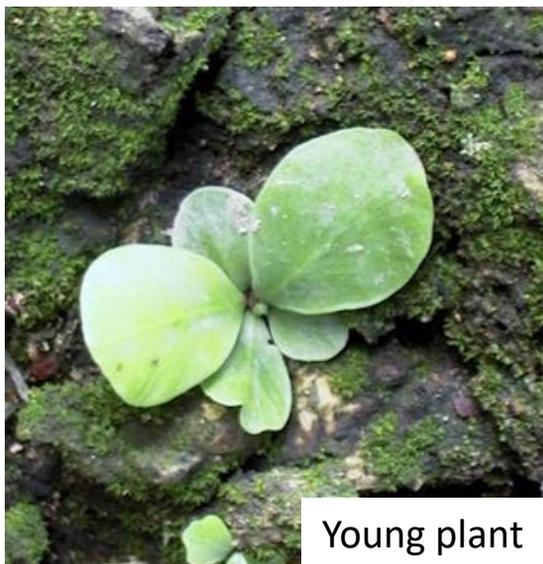
Species Name: *Asplenium nidus*

Family: Aspleniaceae

Common Name: Bird's Nest Fern

Distribution: Malesia to Northern Australia

Conservation Status: Native to Singapore (Common)



Young plant

Asplenium nidus or Bird's Nest Fern has a rosette^[4] growth form. Rain water, dead leaves and other debris are collected in the rosette and become a source of water and nutrients for the fern. The fronds have a slightly wavy edge and averages about 1.5 m long and 0.2 m wide or more. The sori^[1] are linear, found on the underside of the spore-bearing fronds.

Small animals like bats and owls can be found resting on the underside of the Bird's Nest Fern. The Bird's Nest Ferns can grow both as an epiphyte and on the ground in humid, shaded conditions.



New frond



Young frond

Blechnopsis orientalis

Centipede Fern



Species Name: *Blechnopsis orientalis*
Family: Blechnaceae
Common Name: Centipede Fern
Distribution: Tropical and Subtropical Asia to Pacific
Conservation Status: Native to Singapore (Common)

The fronds of *Blechnopsis orientalis* or Centipede Fern can grow to 2 m long and 0.6 m wide. New fronds emerge reddish, turning to green when mature. Its sori^[1] are long and narrow, arranged parallel to the midrib on the underside of the pinnae^[3].

Centipede Ferns can be found growing terrestrially in a wide range of habitats including open areas and disturbed grounds. They are rarely found in areas with deep shade.



Young frond

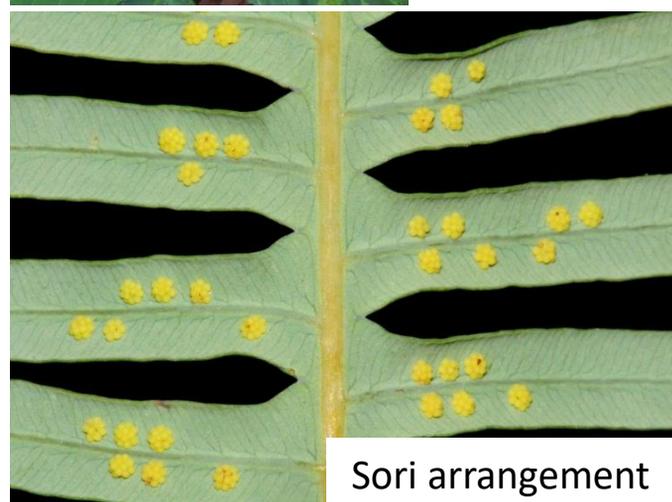


Dicranopteris linearis

Resam



Young frond



Sori arrangement

Species Name: *Dicranopteris linearis*

Family: Gleicheniaceae

Common Name: Resam

Distribution: Tropical Africa and Tropical Asia

Conservation Status: Native to Singapore
(Common)

Dicranopteris linearis or Resam is a terrestrial fern which spreads horizontally and can easily form a dense mat. The main stem splits into 2 and subsequently, branches out several times. Its sori^[1] are found on the underside of the furthestmost pinnae^[3].

Resam can be found growing along forest margins, open ground, colonising disturbed ground and poor soils.



Sori arrangement



Drynaria quercifolia Oak Leaf Fern



Nest fronds



Rhizome

Species Name: *Drynaria quercifolia*

Family: Polypodiaceae

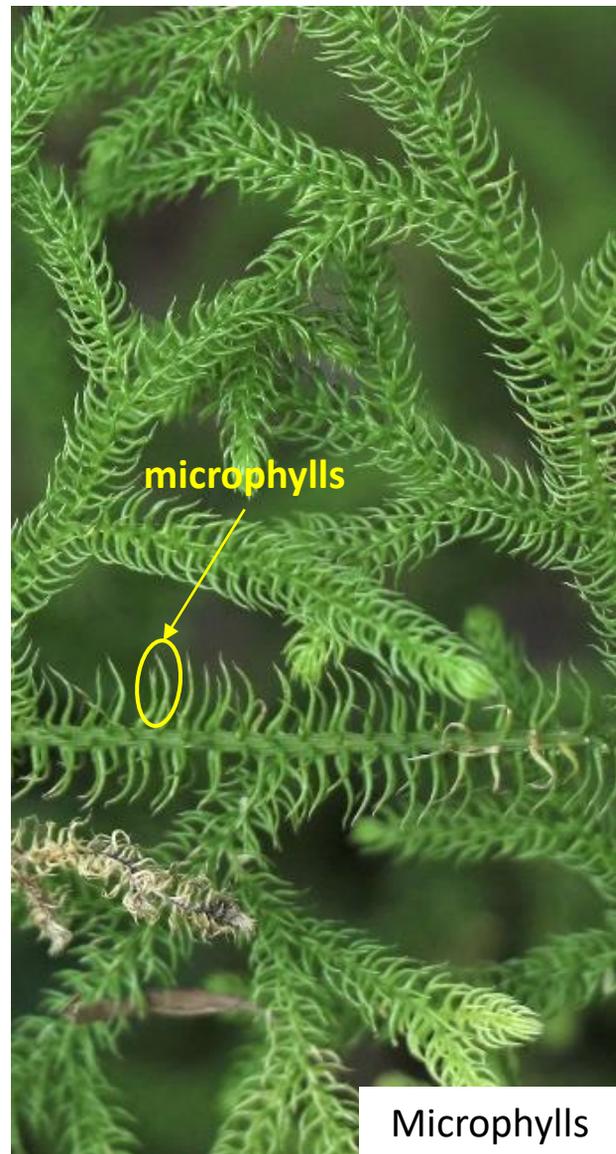
Common Name: Oak Leaf Fern

Distribution: Hainan to Tropical Asia and Tropical Australia

Conservation Status: Native to Singapore (Common)

Drynaria quercifolia or Oak Leaf Fern produces two types of fronds, nest and foliage. The nest fronds are sessile^[5] and oak like in appearance. They wrap tightly together to form a nest-like structure, giving it its name. This structure helps to capture debris which protects the 'woolly' rhizome from strong light and wind. The green foliage fronds have long stalks and are deeply lobed almost to the midrib. Sori^[1] are round, found on the underside of the foliage fronds.

Oak Leaf Ferns grow among the crevices on rocks and boulders.



Microphylls

Palhinhaea cernua

Scrambling Clubmoss



Species Name: *Palhinhaea cernua*

Family: Lycopodiaceae

Common Name: Scrambling Clubmoss

Distribution: Tropical & Subtropical regions

Conservation Status: Native to Singapore (Common)

Palhinhaea cernua or Scrambling Clubmoss is a terrestrial clubmoss which creeps over ground. Aerial stems arise vertically from the main stem, much-branched which makes the plant look like a miniature pine tree. Its tiny microphylls are yellowish green to bright green, soft, and needle-like (2 – 5 mm long). Pendulous cone-like structures containing sporangia^[6] may be observed at the tips of the branches.

Scrambling Clubmoss are found growing along forest margins, within the grasslands, on the slopes of hills, mountains and cliffsides.



Sori bearing lobe



Platycerium coronarium

Staghorn Fern



Shield fronds

Species Name: *Platycerium coronarium*

Family: Polypodiaceae

Common Name: Staghorn Fern, Crown Staghorn

Distribution: Cambodia, Laos, Myanmar, Thailand, Vietnam, West and Central Malesia

Conservation Status: Native to Singapore (Common)

Platycerium coronarium or Staghorn Fern is a large epiphytic fern with two distinct types of fronds; erect shield fronds (infertile) and pendulous spore-bearing (fertile) fronds. The shield fronds are fan-shaped with fingers-like lobes at the tips. Fertile fronds can grow up to 2 m long, bifurcates^[7] continuously to form net-like structures hanging below the shield fronds. Sori^[1] are found on the surface of kidney-shaped lobes which are part of the fertile fronds.

Staghorn Ferns can be found growing as epiphytes on large mature trees in the forests or along roadsides.



Pteris tripartita Giant Brake Fern



Sori arrangement



Young frond

Species Name: *Pteris tripartita*

Family: Pteridaceae

Common Name: Giant Brake Fern

Distribution: Tropical Africa to Pacific; naturalized in several countries such as USA (Florida) and Puerto Rico

Conservation Status: Native to Singapore (Endangered)

Pteris tripartita or Giant Brake Fern is a big terrestrial fern that grow up to 2 m tall. It has wide-spreading fronds and the main stem branches into 3 pinnae^[3]. Each is further divided into deep-lobed pinnules^[2]. The sori^[1] are borne along the margins on the underside of the pinnules.

The Giant Brake Fern can be found growing in constantly wet grounds such as swamps, trail margins and on disturbed grounds.



Sori arrangement



Pyrrosia piloselloides

Dragon's Scale Fern



Fronds

Species Name: *Pyrrosia piloselloides*

Family: Polypodiaceae

Common Name: Dragon's Scale Fern

Distribution: China to Japan, Malesia

Conservation Status: Native to Singapore (Common)

Pyrrosia piloselloides or Dragon's Scale Fern is a small, creeping, epiphytic fern. Its fleshy fronds are oval, measuring about 1 cm across. The fertile fronds are linear, about 3 - 12 cm long. The sori^[1] are borne along the edge of the underside of the fertile fronds.

The Dragon's Scale Fern can be found growing on the surface of tree trunks as epiphytes.



Leaves

Selaginella intermedia

Spikemoss



Species Name: *Selaginella intermedia*
Family: Selaginellaceae
Common Name: Spikemoss
Distribution: India, Malesia, Thailand, Vietnam
Conservation Status: Native to Singapore (Vulnerable)

Selaginella intermedia is a small terrestrial spikemoss. It has stems that grow almost in an upright position and is much-branched towards the tips. Each branch has 2 rows of big leaves and 2 rows of small leaves. Leaves are tiny and scale-like. Sporangia^[6] are cone-like in appearance, found at the tip of the branches.

Spikemoss can be found growing on moist grounds rich in organic matter, along trails and water streams of the forest.



Taenitis blechnoides

Ribbon Fern



Sori arrangement

Species Name: *Taenitis blechnoides*

Family: Pteridaceae

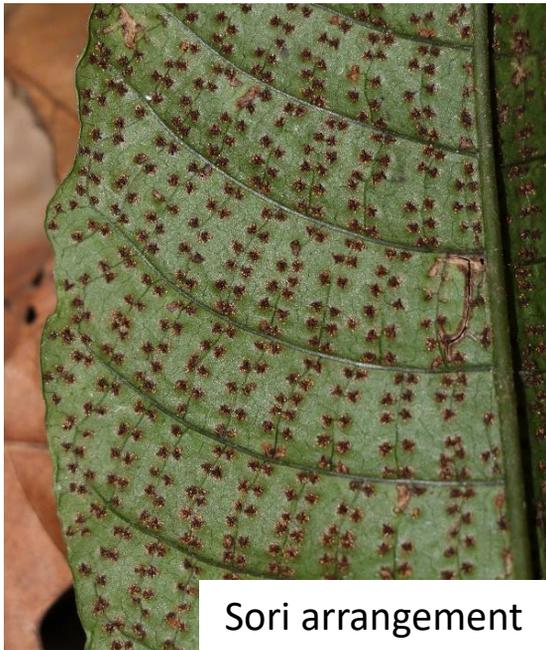
Common Name: Ribbon Fern

Distribution: Tropical and Subtropical Asia to Northern Australia and Pacific.

Conservation Status: Native to Singapore (Common)

Taenitis blechnoides or Ribbon Fern have pinnate fronds that can grow to 40 cm long and 30 cm wide. The pinnae^[3] are linear, growing up to 25 cm long and 4 cm wide. The leaf margins can be smooth, wavy or rolled towards the underside of fronds. Sori are linear, arranged in two lines parallel to its midrib on the underside of the pinnae.

Ribbon Ferns can be found along lightly shaded path, streambeds and between rocks. It is rarely seen in deeply shaded locations.



Sori arrangement



Fronds

Tectaria singaporiana

Monitor Lizard Fern



Species Name: *Tectaria singaporiana*

Family: Tectariaceae

Common Name: Monitor Lizard Fern, Paku Biawak

Distribution: Malasia

Conservation Status: Native to Singapore (Common)

Tectaria singaporiana or Monitor Lizard Fern is a terrestrial fern that can grow to 85cm tall. Fronds can reach 40 cm long and 10 cm wide. The bumpy texture of fronds are attributed to the presence of sori^[1], found on the underside. Sori are round, covering the entire underside of the fronds. The leaf stalk is thin and black coloured.

Monitor Lizard Fern can be found in the undergrowth, especially in damp and lightly shaded areas or along slopes in the forest.

Glossary

- [1] Sorus Plural, Sori. A cluster of spore-producing structures (sporangia) usually located on the underside of the fern leaves.
- [2] Pinnule Plural, Pinnules. A segment of a fern leaflet (Pinnae).
- [3] Pinna Plural, Pinnae. A single fern leaflet.
- [4] Rosette Arrangement of foliage in a radiating or circular pattern
- [5] Sessile Attached to the base, lacks a stalk or peduncle.
- [6] Sporangium Plural, Sporangia. The structure that produces spores.
- [7] Bifurcates Divides into two parts or branches

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