

Lygodium species Climbing fern

Introduction

The genus *Lygodium* contains 45 species, most of which occur in tropical and subtropical regions. Ten species are reported to occur in China^[152].



Species of *Lygodium* in China

Scientific Name	Scientific Name
<i>L. conforme</i> C. Chr.	<i>L. microstachyum</i> Desv.
<i>L. digitatum</i> Presl	<i>L. polystachyum</i> Wall.
<i>L. flexuosum</i> (L.) Sw.	<i>L. salicifolium</i> Presl
<i>L. japonicum</i> (Thunb.) Sw.	<i>L. subareolatum</i> Christ
<i>L. microphyllum</i> (Cav.) R. Br*	<i>L. yunnanense</i> Ching

* Listed as *L. scandens* (L.) Sw. in several sources

I. *Lygodium japonicum* Japanese climbing fern

Taxonomy

Order: Eufilicales

Family: Lygodiaceae

Genus: *Lygodium* Sw.

Species: *Lygodium japonicum* (Thunb.) Sw.

Description

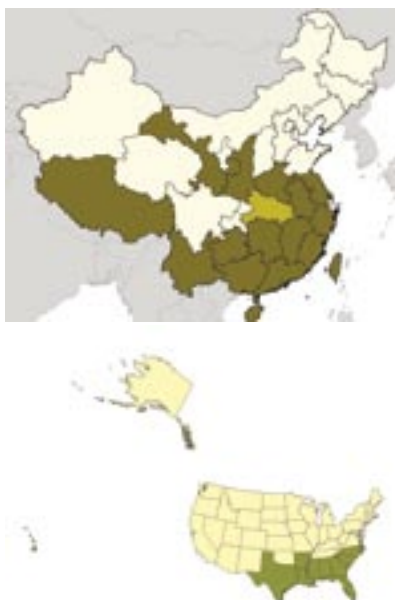
Lygodium japonicum is a climbing fern reaching a height of 1-4 m. The numerous, opposite, compound leaves are 9-11 cm long. The petiole is 1.5 cm long and gray pubescent. The sterile leaves are triangular in overall outline, 10-12 in both length and width. The 2-4 pairs of pinnae (primary leaflets) are alternate on the stem that is about 4-8 mm, pubescent, and with narrow wings. Each pinna is ovoid, 4-8 cm long and 3-6 cm wide. The pinnules (primary leaflets) are 2-3 paired, alternate, nearly sessile, ovoid triangular, and palmately divided into 3 shortly broad lobes.

The terminal lobe is 2-3 cm long and 6-8 mm wide, with an obtuse apex, subcordate base, and irregular crenulate margin. Fertile pinnae are ovoid triangular, about 10-20 cm in both length and width. The pinnae are 4-5 paired, alternate, oblong-lanceolate, 5-10 cm in length and 4-6 cm in width. Each pinna has 3-4 pairs of

ovoid triangular pinnatifid pinnules. Sporangia, borne along the margin in two rows, are glabrous, dark brown, and 2-4 mm in length^[83, 180].

Habitat and Distribution

L. japonicum occurs along roadsides, forests, forest margins or thickets of hillside slopes, crop field margins, at elevations up to 1000m^[83, 180]. It is a common component of the perennial plant population^[204]. *L. japonicum* occurs primarily south of the Yangtze River in the provinces of Anhui, Fujian, Guangdong, Guizhou, Hunan, Guangxi, Jiangsu, northern Shaanxi, Taiwan, Yunnan, and Zhejiang^[56, 117, 152]. North of the Yangtze River, *L. japonicum*



occurs in thickets on the south slopes of the Qinling Mountains at elevations of 560-1100m^[80] and the provinces of Gansu, Henan, and Shaanxi^[80, 152]. This species may also occur in the southern Dabieshan Mountain area in Hubei province^[31].

Economic Importance

L. japonicum is medicinally useful^[83].

Related Species

L. microstachyum Desv., although similar to *L. japonicum* in appearance, has narrower and longer lobes, and occurs in thickets at elevations of 150 m in Fujian, Guangdong, Guangxi, Taiwan, and Yunnan provinces^[152].

II. *Lygodium microphyllum* Old World climbing fern

Taxonomy

Order Eufilicales

Family Lygodiaceae

Genus *Lygodium* Sw.

Species *Lygodium microphyllum* (Cav.) R. Br. [= *Lygodium scandens* (L.) Sw.]

Description

Lygodium microphyllum is a fern that can climb up to a height of 7 m. Numerous papery pinnately compound leaves are borne on a short stem about 2-4 mm long, oppositely on the main stem with internode about 7-9 cm in length. The sterile leaves are imparipinnate (divergent lobed for the terminal leaflet), oblong, 7-8 cm long and 4-7 cm wide, opposite along the lower part of the stem, with petiole about 1-1.2 cm in length. Each sterile frond consists of about 4 pairs of pinnae (leaflets), which



grow alternately 8 mm apart along the rachis. The leaflet is ovoid triangular, about 2 cm long and 1.5 cm wide, with a crenulate margin, truncate or subcordate base, and an obtuse apex. Fertile fronds are oblong, 8-10 cm long and 4-6 cm wide. Each frond has 4-5 pairs of leaflets that are triangular, 1.5-3 cm long and 1.5-2 cm wide, obtuse apically, with noticeable 2-3 branched leaf veins. Brown sporangia about 3-5 mm, occur along the margins of fertile pinnae^[83, 180]

Habitat

L. microphyllum forms thickets, at elevations about 100-152 m. and also occurs along stream banks and roadsides where there is abundant sunshine. It is an indicator of acid soil, growing best at pH 4.5-5.0^[83, 152, 180].

Distribution

L. microphyllum occurs in western Fujian, Guangdong, Guangxi, Hainan, Hunan, Jiangxi, Taiwan, and southeastern Yunnan provinces^[117, 152].



Economic Importance

L. microphyllum is used medicinally in China^[83].

Natural Enemies of *Lygodium*

Two fungi and seven arthropods are associated with the genus *Lygodium*. All can be hosted by *L. japonicum*^[89].

Fungi

Phylum	Family	Species	H. R.	Ref.
Anamorphic <i>Mycosphaerella</i>		<i>Pseudocercospora lygodii</i> Sawada ex Goh & W.H. Hsieh	m	[129]
		<i>Pseudocercospora polypodiacearum</i> D.N. Shukla, A.K. Singh, P. Kumar & Kamal	m	[129]

Arthropods

Order	Family	Species	H. R.	Ref
Acariformes	<i>Eriophyidae</i>	<i>Floracarus perrepae</i> Knihinicki and Boczek	n/a [‡]	[89]
	Tenuipalpidae	<i>Brevipalpis</i> sp.	n/a ^{†‡}	[89]
Coleoptera	<i>Coccinellidae</i>	<i>Epilachna chinensis</i> (Weise)	p [†]	[75]
Homoptera	Margarodidae	<i>Icerya purchasi</i> Maskell	p [†]	[165]
Lepidoptera	Crambidae	<i>Neomusotima conspurcatalis</i> Warren	n/a [‡]	[89]
	Noctuidae	<i>Callopistria</i> sp.	n/a [‡]	[89]
Thysanoptera	Thripidae	<i>Octothrips lygodii</i> Mound	n/a [‡]	[89]

[†] Hosted by *L. japonicum*

[‡] Hosted by *L. microphyllum*