



香港的馬兜鈴

The Aristolochiaceae Plants in Hong Kong

馬兜鈴科全世界有6屬，400多種，其中馬兜鈴屬 (*Aristolochia*) 是種類最多，分布最廣的一屬，有300多種，分布於熱帶和亞熱帶地區，中南美洲尤盛，少數產於溫帶；細辛屬 (*Asarum*) 有90多種，分布於北溫帶，少數在北美洲。這兩個屬在香港都有分布，共有6種。

Aristolochiaceae, the Birthworts family, contains 6 genera and more than 400 species in the world. *Aristolochia* is the largest genus with 300 species, widely distributed in the tropics and subtropics, mainly in central and south America and a few in temperate zone. *Asarum* is the second largest genus with 90 species, mostly distributed in north temperate region of eastern Asia, and a few in north America. There are two genera and 6 species of Aristolochiaceae in Hong Kong.

香港細辛

Asarum hongkongense S. M. Hwang et T. P. Wong Siu

此種是香港特有的珍稀植物，也是細辛屬分布於香港的唯一代表，生於大嶼山海拔600-800米的山坡灌叢或草叢中，為多年生草本，有許多纖維狀根從莖節上長出，根芳香氣味不明顯；葉稍肉質，卵狀心形，上面有光澤；葉柄很長。花鐘狀，紫綠色，上部有三個卵形裂片，4-7月開花。



Perennial herb with long prostrate rhizomes and numerous slightly aromatic fibrous roots arising from rhizome nodes. Leaves slightly fleshy and ovate-heart-shaped; petioles very long. Flowers campanulate, purplish green, with 3 ovate lobes at upper part. Flowering from April to July. It is a rare species endemic to Hong Kong, and the only representative of *Asarum* in Hong Kong. It grows in thickets and open grasslands of Lantau Island at altitude of 600-800m.



香港馬兜鈴

Aristolochia westlandii Hemsl.

木質大藤本，長可達10米，常攀附於大樹上；葉紙質至革質，狹披針形，基部窄耳形；總狀花序常僅一花開放；花紫紅色而有網脈，有腐臭味，花被管中部膝狀彎曲；檐部近盤狀，直徑可達13厘米，是本屬中花較大的一種，顏色絢麗，形狀奇特，3-4月開花。香港境內分布較少，生於大帽山海拔約500米山谷林下。

Woody vine, up to 10m high, usually climbing on trees. Leaves papery to leathery, narrowly lanceolate, narrowly auriculate at base. Flowers in axillary racemes, usually with only one flower blooming, purplish red, marked with reticulate nerves, and with a putrid smell; tube of perianth geniculate-curved in middle, limb nearly plate-shaped, 13 cm in diameter. Flowering from March to April. This rare species can be found in the forest of Tai Mo Shan at altitude up to 500 m. It has larger flowers in comparison with other species in the family. It is a very attractive plant with colourful and strange-shaped flowers.



福氏馬兜鈴（通城虎）

Aristolochia fordiana Hemsl.

草質藤本，塊根圓柱狀，細長。葉薄革質，卵狀心形。總狀花序有花3-4朵，腋生，每花基部有卵形苞片；花與耳葉馬兜鈴相似，惟其不同點在於花被管基部不為柄狀，與子房連接處不具關節，舌片頂端鈍。蒴果長圓形或卵形，種子無翅，卵狀三角形，背凸腹凹，具小疣點。花果期為3-7月。生於大帽山和大嶼山等的山谷林下灌叢中或山坡石隙中。



Herbaceous vine with slender terete tubers. Leaves thinly leathery, ovate-heart-shaped. Racemes axillary, 3 to 4-flowered, each flower bearing ovate bracts at base. Flowers similar to those of *A. tagala* but differing from that by the base of perianth-tube not stalk-like, not articulate at the place connate to ovary and the perianth-lip obtuse at apex. Fruit a capsule, ellipsoidal or ovoid. Flowering and Fruiting from March to July. It occurs in valley thicket or hill-slope stone crevices of Tai Mo Shan and Lantau Island.

印度馬兜鈴（耳葉馬兜鈴）

Aristolochia tagala Champ.

草質藤本，長達2米；塊根長圓柱形，常有數節相連，長可達2米，直徑3-5厘米。葉紙質，卵心形或近圓形，無毛。總狀花序腋生，有花3-5朵。花被管直，基部柄狀，與子房連接處有關節，其上膨大呈球狀，管口漏斗狀，檐部一側為舌片；果實近球形，成熟時由基部向上開裂成6片，果頂相連，果柄下垂，隨果實分裂成6條，形似倒掛的“鈴”。生於海拔60-500米林中或林緣。本種為稀有蝴蝶的寄主，縱使在香港郊野較常見。



Herbaceous vine, about 2 m long, tubers long terete, usually with several internodes, up to 2 m long, 3-5 cm in diameter. Leaves papery, ovate heart shaped or suborbicular, glabrous. Racemes axillary, 3 to 5-flowered. Perianth tube straight, stalklike at base, jointed at the place connate with ovary, enlarged and globose in upper part, mouth of perianth tube funnel shaped, one side of limb being a lip. Fruit a capsule, subglobose, splitting into 6 valves from base to apex when matured, fruit stalk pendulous, also splitting into 6 strips, but remain united at the apex, making the fruit in appearance of an upside down hanging bell. Flowering and fruiting nearly all the year. It grows in forests or thickets at altitude up to 500 m. It is a host for rare butterflies, although this plant species is relatively common in Hong Kong.

長葉馬兜鈴

Aristolochia championii Merr. & Chun

木質大藤本，有紡錘形的塊根；葉的質地和形狀均與香港馬兜鈴相似，唯其葉基部是圓形或心形可以區別，總狀花序多花，常生於莖下部的葉腋；花較小，花被檐部直徑4-6厘米，盤狀，有腐臭味。蒴果卵形或長橢圓形，長6-8厘米，成熟時由上向下6瓣開裂。花果期6-11月。生於香港島海拔300-500米山谷林中或灌叢中。花顏色艷麗而奇特，通常有多朵同時開放，經栽培後可作為庭園觀賞植物。



Woody vine with fleshy fusiform tubers. Shape and texture of leaves are very similar with that of *A. westlandii*, but can be distinguished by its rounded or shallowly cordate leaf base. Racemes many-flowered, usually on the lower part of the stem; flowers with a putrid smell, limb 4-6 cm in diameter, plate shaped. Fruit a capsule, ovoid or ellipsoid, 6-8 cm long, dehiscent from apex to base. Flowering and Fruiting from June to November. It usually grows in forests and thickets of Hong Kong Island at altitude of 300-500 m. This species is a potential ornamental plant for gardens because its flowers are very colourful and peculiar, and several blooming at the same time.

海邊馬兜鈴

Aristolochia thwaitesii Hook. f.

直立亞灌木，高50-70厘米，有橢圓形的塊根；葉匙形或倒披針狀長圓形，基部漸狹至楔形。總狀花序多花，生於莖下部落葉痕上，花與上述兩種區別在於花被管上部又再彎曲並擴大成圓筒狀有5-6齒的檐，花開後，花梗下彎而使花檐橫置近地面。蒴果球形。花果期3-9月。生於香港島近海的山坡灌叢中、竹林中或石隙中。花形奇特，顏色美麗，亦為良好的觀賞植物。



Erect subshrub, up to 70 cm high, with ellipsoidal tubers. Leaves spatulate or oblanceolate-oblong, attenuated to cuneate at base. Racemes many-flowered, at leaf traces of the lower part of stem. It differs from the last two species mentioned above by the upper part of perianth-tube curved again and expanded into a 5 to 6-toothed limb. After flowering, the pedicel curved downward and the limb transversely laid near ground. Fruit a capsule, obovoid. Flowering and Fruiting from March to September. The species grows in thickets on hill-slopes, seaside, bamboo groves and stone crevices of Hong Kong Island at altitude up to 500 m. It is also an attractive ornamental plant for its colourful and peculiar flower.

馬兜鈴植物的傳粉機制 Pollination mechanism

本科植物依靠昆蟲進行傳粉。為了吸引傳粉者，馬兜鈴植物的花不僅都有艷麗色彩，並散發著腐臭味，而且花的結構也高度特化以適應傳粉的需要。花被多數下部合生成管狀上部開展成為檐部，雌雄蕊深藏於管的基部。花被管的寬窄及管口的大小與傳粉者體形的大小密切相關。花被管直而管口大的花適應體形大的昆蟲傳粉。而花被管狹窄，構造複雜而彎曲，管口又小，如馬兜鈴屬植物的花，則適應於小昆蟲（主要是一些小蠅和螞蟻）傳粉。授粉前，雌蕊先成熟，花上舉，檐部張開寬大的口，讓帶著花粉的昆蟲進入管內，然後滑入囊內，而管內有許多倒向的硬毛，防止昆蟲在開花時離去，囊內有蜜腺或柱頭分泌的營養物質提供它們的食物。授粉後花萎縮，露出開裂的花藥，使昆蟲帶著花粉到其他花傳粉，然後花梗下彎而使花下垂，管口閉合。這就是馬兜鈴科植物的傳粉過程。

Aristolochiaceae plants are pollinated by insect. In order to attract pollinators, the flowers have beautiful colour and sent forth a putrescent odour. The structure of flower is also highly specialized to adapt to the needs of pollinators. The perianth of most birthworts usually unite into tube at lower part, and open at mouth to form a limb at upper part. The androecium and gynoecium are hidden in the base of tube. The size of perianth-tube and mouth is closely related to the size of pollinator. The flowers with straight perianth-tube and wide mouth are adapted to the large pollinators. And the flowers with curved perianth tube and narrow mouth, such as those of *Aristolochia* species, are adapted to the small pollinators such as small flies and ants. Before pollination, the pistils are matured at first. Then the flower ascends and widely opens the mouth. The pollinator carrying pollens comes into the perianth-tube and slide into the sac. There are many retroactive hairs to prevent the pollinator to leave in anthesis. There are nectars in the sac to provide food for the pollinator. After pollination, the flower withers and the anthers are shedding their pollens. The pollinator will bear the pollens to visit another flower. Then the pedicel curves downward and the mouth closed, completing the pollinating process.

馬兜鈴科植物與蝴蝶的關係

The relationship between birthworts and butterflies

部分蝶類專以馬兜鈴科植物為其食料。雌蝴蝶被馬兜鈴科植物的氣味所吸引而產卵於其上，隨後卵孵化成幼蟲及發育為成蟲，均以其嫩枝、幼芽及葉作為食料，蛹通常發現在寄主的莖基部，就是說這類蝴蝶的整個生活史均是在馬兜鈴科植物上完成的。印度馬兜鈴是黃扇鳳蝶 (*Troidini helena*) 和金翼鳳蝶 (*T. aeacus*) 等珍貴蝴蝶的主要食料。

Some butterflies only take birthworts as their food. Due to the attraction of the smell of birthwort, female butterflies lay their eggs on the leaves of birthworts. Their caterpillars are fed on new shoot, leaves and buds of birthworts. Their pupae are generally found near the base of the stem of birthworts. So the whole life cycle of some butterflies are carried out on birthworts. *Aristolochia tagala* is the main food of rare and valuable butterflies such as *Troidini helena* and *T. aeacus* etc.

馬兜鈴科植物的藥用價值 Utilization

馬兜鈴屬和細辛屬的植物多數有肉質根，多為民間的常用中藥。用於治療喉痛、胃痛、風濕關節炎等，有解毒、消炎、鎮痛之功效。馬兜鈴屬植物含有馬兜鈴酸、輪環藤酮、土青木香酸等成分，古代用於分娩鎮痛和抗癌。細辛屬多數種類含有揮發油，主要成分為甲基丁香酚、黃樟醚、細辛酮等，用於香料製造和防腐等。

Most species of *Aristolochia* and *Asarum* have fleshy roots and most of them are common traditional and herbal medicines. They are applied for curing throat-soar, stomachache, rheumatic arthritis etc., with the function for detoxication, anti-inflammation, relieving pain. The plants of *Aristolochia* contain aristolochia acid, cycloclanoline and debilic acid etc. In ancient time, *Aristolochia* species were used to relieve pain for childbirth and for antitumor. Most species of *Asarum* contain essential oil, of which the main constituents are methyl eugenol, safrole and asarylketone etc. They are used in manufacturing perfume and antiseptic.

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