

# 花花世界

## 花的繽紛世界 Wonderful Colours

Herbarium Leaflet  
植物標本室單張

# 23

繽紛麗麗的花朵為大自然添上色彩，亦為我們帶來生活樂趣。花朵之所以萬紫千紅、千嬌百媚，主要是希望吸引動物來替它們傳播花粉，繁殖下一代。在大自然中，最常見的花色是紅色、黃色、粉紅色、紫色和白色，橙色、藍色和綠色則較少見。

Charming flowers add colours to the nature and bring us enjoyment. The reason why flowers are so beautiful and colourful is to attract animals to pollinate them, which is an important part of their reproductive process. Red, yellow, pink, purple and white are the most common colours of flowers in nature. Orange, blue and green flowers are relatively rare.

### 紅色 RED

紅花荷 *Rhodoleia championii* (Rhodoleia)



紅杜鵑 *Rhododendron simsii* (Red Azalea)



紫玉盤 *Uvaria macrophylla* (Uvaria)



象牙花 *Erythrina speciosa* (Ivory Coral Tree)



花的顏色通常是由在植物組織中的色素決定，花卉的天然色素包括產生紅色和藍色的「花青素」和產生黃色和橙色的「胡蘿蔔素」，當然還有使植物成為綠色的「葉綠素」。通過混合和配合這些色素，就可以產生千變萬化的色彩。此外，花青素會隨酸鹼度改變而呈現不同色彩，使植物可透過改變組織的酸鹼度，令花的色澤轉變。

Flower colours are determined by pigments in plant tissues. Natural flower pigments include: "anthocyanins" which gives red and blue colours, "carotenoids" which gives yellow and orange colours, and "chlorophyll" which gives green colour to plants. By mixing and matching these pigments, an endless array of colours can be created. In addition, colour of anthocyanin changes with pH value. Hence, plants can change flower colours through varying pH value of their tissues.



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洋紫荊 Hong Kong Orchid Tree



錦繡杜鵑 Lovely Azalea



忍冬 Honeysuckle



大鴛鴦茉莉 Brazil Raintree



使君子 Rangoon Creeper



木芙蓉 Changeable Rose-mallow (早晨 Morning)



木芙蓉 Changeable Rose-mallow (下午 Afternoon)



又例如繡球會因應泥土的酸鹼度而變色：若在酸性泥土培植，繡球較容易吸收鋁元素，便會綻放紫藍色的花；相反，若繡球種植在中性或鹼性泥土，就會開出粉紅色的花。

Another example is Hydrangea (*Hydrangea macrophylla*). Flowers of which will change with the acidity or alkalinity of the soil. Cultivated in acidic soil, Hydrangea can absorb aluminium easier and will bloom in purplish blue. On the contrary, if Hydrangea grows in neutral or alkaline soil, its flowers will be pink.

繡球 Hydrangea (酸性泥土 Acidic Soil)



繡球 Hydrangea (鹼性泥土 Alkaline Soil)



有些植物在同一植株或同一花序中會綻放不同顏色的花，例如忍冬、大鴛鴦茉莉、使君子和馬纓丹等。這些花卉在開花期中不同的階段會有不同的顏色，例如忍冬的花會由白轉黃，而大鴛鴦茉莉的花會由紫色漸轉白色。

Some plants will bloom in different colours in the same plant or even the same inflorescence, such as Honeysuckle (*Lonicera japonica*), Brazil Raintree (*Brunfelsia calycina*), Rangoon Creeper (*Quisqualis indica*) and Lantana (*Lantana camara*). This is because these flowers undergo colour changes in different stages of flowering. For instance, Honeysuckle flowers will turn from white to yellow, while Brazil Raintree flowers will turn from purple to white.

至於馬纓丹，在花序中央的花蕾呈粉紅色，在中圈剛盛放的花是黃色，而在花序最外圍並已衰老的花則呈橙色至紫紅。由於有多種花色，因此馬纓丹又叫做五色梅。這種花瓣顏色轉變，通常是在授粉後發生，目的是令已授粉的花不再吸引傳粉者（即是說：「這裏再沒有花蜜，請移玉步往隔鄰吧！」）。這既能節省傳粉者的體力，亦可增加新開花朵接觸傳粉者的機會，提高傳粉效益。為甚麼植物要保留變色但已沒有授粉需要的花朵呢？其中一個原因是增加植物對傳粉者的遠距離吸引力。在同一花序或枝條上長著不同顏色的花朵，使植物更加顯得色彩繽紛，尤其是一些花型細小的草本植物，這種安排能令傳粉者在遠處已察覺花朵的存在，被吸引前來採蜜。



馬纓丹 Lantana

For Lantana, flower buds in the center of inflorescence are pink, newly opened flowers in the middle ring are yellow and the aging flowers at the outermost edge of the inflorescence are orange to deep purple. Because of such variation of colours, Lantana is also known as "Five-coloured Mume" in Chinese. This kind of petal color change usually occurs after pollination. The purpose is to make pollinated flowers no longer attractive to pollinators (that is to say: "No more nectar! Please move to the next door!"). This will help to save energy of newly opened flowers being visited by pollinators. The pollination efficiency will thus be enhanced.

Why do plants retain colour-changed flowers without pollination need? One of the possible reasons is to increase attractiveness of the plant to pollinators in a distance. With different coloured flowers on the same inflorescence or branch will make a plant appear more colourful. In particular for those herbaceous plants with small flowers, such arrangement will enable pollinators to be aware of the flowers in a distance and attracted to the flowers for nectar.

#### 參考資料 References

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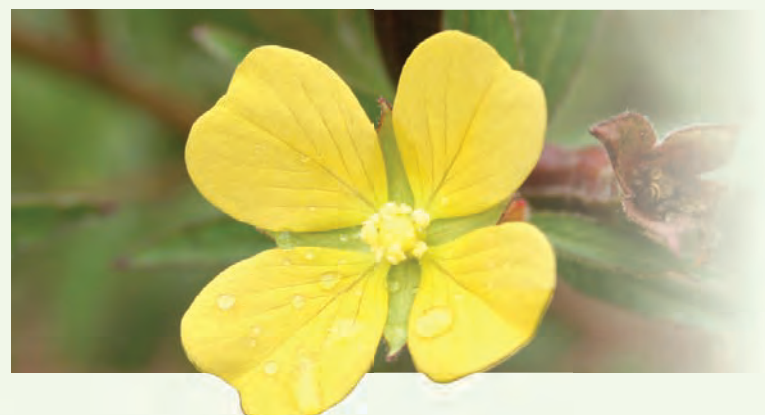


## 黃色 Yellow

假鷹爪 *Desmos chinensis* (Desmos)



毛草龍 *Ludwigia octovalvis* (Primrose Willow)



苞舌蘭 *Spathoglottis pubescens* (Buttercup Orchid)



黃槿 *Hibiscus tiliaceus* (Cuban Bast)



## 紫色 Purple

毛麝香 *Adenosma glutinosum* (Adenosma)



桔梗 *Platycodon grandiflorus* (Balloon Flower)



杯藥草 *Corylanthera paucisquama*

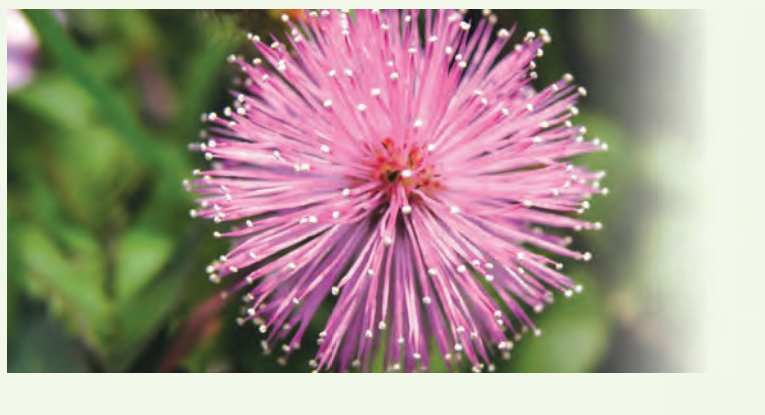


織草 *Burmannia itoana* (Ito Burmannia)



## 粉紅 Pink

含羞草 *Mimosa pudica* (Sensitive Plant)



羊角杜鵑 *Rhododendron moulmianense* (Westland's Rhododendron)



## 白色 White

木荷 *Schima superba* (Schima)



野百合 *Lilium brownii* (Chinese Lily)



香港木蘭 *Magnolia championii* (Hong Kong Magnolia)



四藥門花 *Loropetalum subcordatum* (Hong Kong Witch-hazel)



## 其他 Others

橙黃玉鳳花 *Habenaria rhodocheila* (Red-clawed Habenaria)



翼葉老鴉嘴 *Thunbergia alata* (Black-eyed Susan)



常山 *Dichroa febrifuga* (Anti-febrile Dichroa)



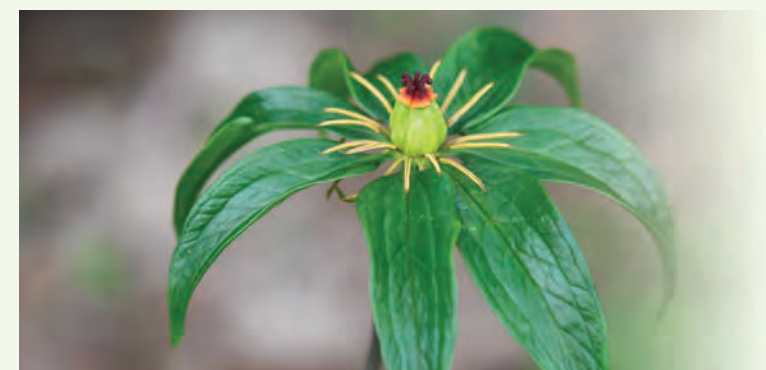
綠花崖豆藤 *Millettia championii* (Champion's Millettia)



可愛花 *Eranthemum pulchellum* (Blue Eranthemum)



華重樓 *Paris polyphylla* var. *chinensis* (Love Apple)

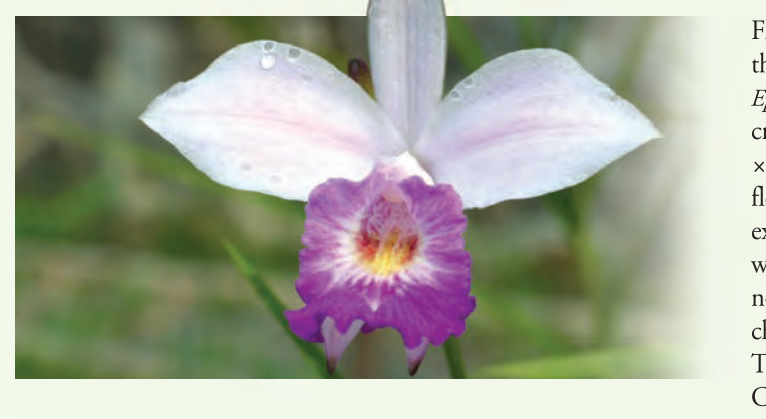


## 千變萬化的顏色 A Kaleidoscope of Colours

花卉的顏色千變萬化，有些花卉可以在同一朵花展現不同色彩（例如竹葉蘭和樹蘭），有一些則利用顏色深淺和對比產生特別的圖案（例如洋紫荊的線條、錦繡杜鵑的斑點），亦有一些花色會隨時間或環境因素而改變。例如木芙蓉的花在早晨初開時是白色，到中午逐漸轉為粉紅，到晚上顏色加深成紫紅色，這種變化就像人喝醉酒時的面色由白轉紅，故此木芙蓉又被稱為「醉酒芙蓉」。



竹葉蘭 Bamboo Orchid



樹蘭 *Epidendrum ibaguense*

Flowers display a kaleidoscope of colours. Some exhibit different colours in the same flower such as Bamboo Orchid (*Arundina graminifolia*) and *Epidendrum ibaguense*, while others make use of colour depth and contrast to create special patterns such as stripes in Hong Kong Orchid Tree (*Bauhinia × blakeana*) and spots in Lovely Azalea (*Rhododendron pulchrum*). Some flowers will change their colours with time or environmental factors. For example, flowers of Changeable Rose-mallow (*Hibiscus mutabilis*) are white when they bloom in the early morning and then gradually change to pink in noon. Towards the evening, the colour deepens into purple-red. Such colour changes resemble that of a drunken face turning from white to red. Therefore, Changeable Rose-mallow is also known as "Drunken Rose" in Chinese.