

彩色多肉植物圖鑑

PHOTO ALBUM OF SUCCULENTS IN COLOR VOL. I

麥志景◎編著

第一輯



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I . 序 言

若說蘭花是最受人喜愛的賞花植物，那麼多肉植物可算是最受人喜愛的賞葉植物了。多肉植物除了有賞葉、賞莖、賞根的價值外，其中不少更有賞花的價值。蘭花通常在開花時才美麗，其他時候，其觀賞價值較低；多肉植物則不然，一年四季都有極高的觀賞價值，若再加上會開花的話，更是額外的視覺享受了。多肉植物之吸引力可歸納為下列各點：

- (1)管理容易，耐旱，毋須經常澆水。
- (2)型態奇趣，變化多端，多色彩。
- (3)可供觀賞部份多：莖、葉、根及花。
- (4)生長迅速。
- (5)繁殖容易。
- (6)尺寸齊備。
- (7)病蟲害少。

雖然多肉植物越來越受人喜愛，但對一般大眾來說，尋找參考資料是相當困難的。直至目前為止，最具權威的多肉植物書籍仍是 Hermann Jacobson 的 *Handbook of Succulent Plants* 及 *Lexicon of Succulent Plants* 但這兩本書部份內容已是過時，大部份內容太專業，而且照片是黑白的，加上這兩套書並不容易獲得及價錢很昂貴。而市面能找到的，大多數都是錯漏百出或照片素質欠理想。圖片比較理想的是日本多肉植物會所編的「原色多肉植物寫真集」，這本書除了很難找到外，有覺欠缺栽種資料。因此，多肉植物的發展受到一定程度的障礙。筆者正希望對多肉植物的種植及推廣盡一點綿力；本書是開始，如情況許可的話，將會繼續努力，編寫第二輯、第三輯……等。

本書內的植物學名是根據 *Botanical Code, ICBN (The International Code of Botanical Nomenclature, 1988)* 及 *Cultivated Code (International Code for the Nomenclature of Cultivated Plants, 1980)*。各植物分類均已參考現時最具權威的典籍。（請參閱附錄乙）

I . Preface

Succulent plants are most famous for the charm of their leaves, just like orchids are well-known for the beauty of their flowers. Actually we appreciate succulents not only because of their leaves, but also because of their lovely stems and roots; some succulents also bear graceful flowers. When an orchid does not flower, it might not attract our sight. On the contrary, succulents are attractive in form all the year round. The advantages of growing them are as follows:

1. easy management: succulent plants can withstand drought, frequent watering is not necessary
2. great diversity in form and color
3. the beauty lies not just in flowers, but also in the stems, leaves and roots
4. grow fast
5. easy propagation
6. vary so greatly in size that each grower may choose whichever size he prefers
7. not vulnerable to pests and diseases

Although more and more people have grown a great interest in growing succulents, learnt references are still not readily available to the general public. Hermann Jacobson's expensive *Handbook of Succulent Plants* and *Lexicon of Succulent Plants* remain the best on sale. However, some information given by these two books is already obsolete or too technical. Besides, the photographs included are in black and white. Other books we can find in the market, especially in Asian Countries, are mostly unreliable, and the photographs are not in good quality. *Color Encyclopedia of Succulents*, compiled by the Succulent Society of Japan, contains the best color plates. Yet regretably, the book is not easy to find and is out of print and contains no information on cultivation. The lack of good references no doubt hinders the development of succulents growing. To remedy this, the author dedicate this volume to all interested, and hopes that more volumes would come in the future. With regard to naming, the author follows the *International Code of Botanical Nomenclature, 1983* and the *International Code for the Nomenclature of Cultivated Plants, 1980*. For precise classification, the most up-dated and authoritative references have been consulted. (Refer to Appendix B)

II . 鳴 謝

雖然本書早在五年前已開始構思，時至今天方得正式面世，實在有賴尹錦柱兄之功勞。此外，本書之所以順利出版，筆者謹以至誠向一班好友致以萬二分謝意，首先感謝余君偉先生將本書的中文部份譯成英文，多謝鄧琳和先生及黃秉荃先生整理本書之草稿，最後更多謝簡汝強先生對本書的編排、內容等給予寶貴的意見。

II . Acknowledgements

I started working on this book five years ago. Without Mr. Wan Kam-Chu's support, however, this book could hardly be published. Some friends of mine have also helped me all the way through. Eric Yu translated the Chinese manuscript into English. Mr. Tang Lam-wo and Mr. Wong Ping-chuen laboriously did the editing. Kan Yu-keung gave me invaluable advice on the arrangement and content of this book. I wholeheartedly thank them all.

Ⅲ . 多肉植物的基本認識

多肉植物具有標準植物的型態，惟其根、莖或葉特別肥大，能貯存大量水份，並能耐旱。在廣義上，仙人掌應包含在多肉植物內。狹義來說，仙人掌以外的多肉植物，才屬多肉植物，所以多肉植物有時被分為「仙人掌」及「其他多肉植物」。仙人掌與其他多肉植物的主要分別是仙人掌有「刺座」，而其他多肉植物（如大戟科、龍樹科、夾竹桃科、部份蘿藦科），即使有刺，刺是表皮的一部份，而不是從刺座長出來的。

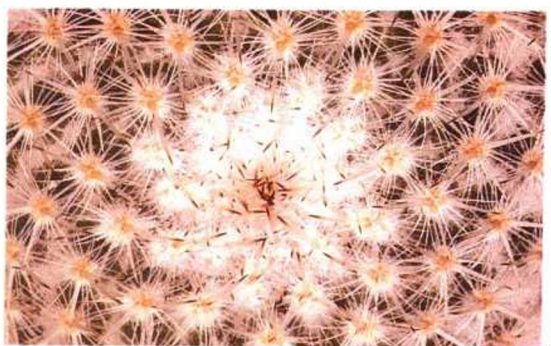


圖 A . 仙人掌的刺 (從刺座長出)
Figure A. Cactus spines(grow out of areoles)



圖 B . 多肉植物的刺 (從表皮長出)
Figure B. Thorns of succulent(part of the epidermis)

《生態及習性》

〔仙人掌類〕

(1)沙漠型：

光線非常充足，溫度方面，白天高，夜間低，濕度低，雨量極少，於極疏水的土壤生長；夏天生長。

(2)熱帶雨林型：

半陰；溫度高但相差不大，濕度高；附生於樹上；通氣良好；生長期為夏天。

(3)高地性型：

光線極高，溫度較低。秋天生長。

〔其他多肉植物〕

其生長環境類於仙人掌。生長期與其屬及品種有關。一般可分為：

(1)冬 型：夏天休眠，冬天生長。

(2)夏 型：冬天休眠，夏天生長。

(3)春秋型：夏、冬休眠，春、秋生長。

《管 理》

〔光線〕

應盡量給予光線，只要不灼傷植物。在春天時須特別留意突然陽光強照，引致日灼，大多數的品種都能慢慢適應較強的光線。以下一些原則可供參考：

- (1)同科同屬：
 - i) 葉面白點較少者需陽光較少。
 - ii) 落葉種比常綠種需陽光較多。
 - iii) 暗綠色葉者，需陽光較淺綠色者少。
- (2)葉肥多肉，表面有蠟質者需較多陽光。
- (3)斑葉種需陽光比原種為少，但不能太陰，否則可能失去斑紋。
- (4)木本類需要陽光多，草本則少。
- (5)在生長期中，陽光必須充足。
- (6)在盛夏，無論任何品種都應進行遮光（約30%）。
- (7)表面有白毛和多刺仙人掌需陽光多。
- (8)休眠期應避免太強陽光，特別當溫度高時。
- (9)熱帶森林型類的需陽光較少。
- (10)百合科中的 *Aloe*, *Gasteria*, *Haworthia* 需要較少陽光。

陽光不足的徵狀：

- (1)落刺（仙人掌）
- (2)尖端陡細（尖頂）、或莖幹柔軟下垂
- (3)畸形
- (4)落葉
- (5)不開花
- (6)病蟲害增加



圖 C . 綠葉種

Figure C. Green-leaved form



圖 D . 斑葉種

Figure D. Variegated form

〔溫度〕

視不同品種及類型而異，一般不能低於 5℃，不能高於 35℃。冬型的需較低溫度；夏型則較高；春秋型的不能太低或太高。

最適合溫度：日 18℃ - 26℃ 夜 7℃ - 13℃

〔通風〕

通風可以不斷供給新鮮空氣，促進新陳代謝，增加吸收養份能力，亦可調和溫度及濕度，加速植物生長及加強植物的抵抗力。

〔濕度〕

大部份多肉植物（除熱帶雨林型外）生長於乾燥地方，濕度不宜太高。生長期可略高（～ 50 %），但冬夏濕度低一些較好（～ 30 %），濕度過高引致菌害較多。

〔澆水〕

根據植物的類型而定，以下為一些原則：

- (1) 生長期應多澆水，植料表面見乾後隔一两天方澆透。休眠期初應節制澆水，通常乾後一星期方澆，不用澆透。休眠期中及末時，應停止澆水，可一個月給少量水份。
- (2) 高度肉質化的其他多肉植物需要較少水份，如象蹄、象腳等。
- (3) 新購入及剛移植的植物應暫停澆水，隔 5 至 7 天方澆少量水，當生長正常後方正常澆水。

〔盆〕

可容許一年之生長為原則，不宜太大。

〔植料〕

包含以下成份混合組成：

- (1) 疏水部份（如粗河沙、真珠岩、蛭石、蛇木屑）
- (2) 保肥部份（如泥炭土）
- (3) 基肥（無機緩解肥或有機肥如骨血粉、骨粉等）
- (4) 石灰質以改良酸鹼值（如蠟殼粉、蛋殼或石膏粉）

不同類型的多肉植物所選擇的混合比例是有所不同，一般來說，越肉質化的品種所用的疏水部份應越多，而保肥部份則越少，熱帶雨林型則需要多些保肥部份及不宜加入石灰質。

〔施肥〕

以磷鉀肥為主，氮肥為副。施肥方法以基肥為主，追肥為副。基肥可選用發酵過的雞、牛或蝙蝠糞或骨粉。生長期追肥每二星期一次。

〔換盆〕

應定期換盆、換培植土以促進植物的生長，換盆時剪去枯根。大概每一至二年換盆一次，換盆最好選擇生長期初或休眠期末進行。

《繁殖》

可分為有性（種子）及無性繁殖（營養體繁殖）兩種。無性繁殖可分為分株法、莖插法、葉插法、嫁接法、胴切法，此外還有根插法、壓條法、組織培植法等。不同品種的繁殖所用的方法可能有不同。在進行繁殖時，可留意以下各點：

(1)分株時，盡可能使各個株體帶根

(2)扦插：

i) 切割後 4-5 日，甚至一星期後，待切口乾結甚至長根，方可栽種。

ii) 切割後或早期栽種，應置於陰涼處。

iii) 所有分割用的刀應該經過消毒。

iv) 傷口如果很大，應塗上殺菌粉。

v) 插葉所取的葉盡可能取全葉及較嫩的葉。插葉時不宜將葉插入「土中」，應斜放在「土上」。

(3)綴化種必須採用扦插法方能保持原來綴化狀態。



圖 E . 有性繁殖
Figure E. Sexual propagation



圖 F . 無性繁殖
Figure F. Asexual propagation

《結論》

多肉植物的管理（選擇適當的植料、光線、溫度、澆水、濕度、施肥等）是視乎植物類型、生長季節、生長狀態、習性及品種而定。充份了解所栽種植物的生態及習性，再加上栽種者的耐心、愛心及細心，必能使多肉植物長得茂盛，充滿生氣，栽種者亦樂在其中，增添不少生活色彩。

III .The ABC of Succulent Plants

A succulent plant has the morphological features of a standard plant; yet its root, stems or leaves are swollen. That is why it can store a great quantity of water and withstand drought. In a broad sense, cacti belong to succulent plants. In a narrower sense, however, cacti are excluded. Sometimes, succulents are classified into *cacti* and *other succulents*. Cactus is distinctive for the presence of areoles. Some other succulents (Euphorbiaceae, Didiereaceae, Apocynaceae, Asclepiadaceae, Agavaceae) may bear thorns/spines, but the thorns/spines are part of the epidermis and do not grow out of areoles.

Succulent Groups

Cacti:

- (1) desert type
strong light; high day temperature and low night temperature; low day humidity and high night humidity; scarce rainfall; highly permeable porous soil; grows in summer
- (2) tropical rain-forest type
half-shaded; steady high temperature; high humidity; grows on trees/rocks; good ventilation; grows in summer
- (3) highland type
dazzling light; quite low temperature; grows in fall

Other succulents:

The habitat resembles that of cacti. The period of growth depends on the family, genus and species concerned

- (1) Winter type:
dormant in summer and grow in winter
- (2) Summer type:
dormant in winter and grow in summer
- (3) spring-fall type:
dormant in summer and winter, grow in spring and fall

Management

Light

As much light as possible, so long as it does not hurt the plant. In spring time, however, much attention is needed to avoid sudden exposure to strong sunlight which might cause sunburn. Given sufficient time, most species do adapt to strong light. Below are some guidelines to follow:

- (1) plants of the same family and genus:
 - i) the less white spots on leaf surface, the less light needed
 - ii) those which shed leaves need more light than the evergreen ones
 - iii) those with darker green leaves need less light than those with light green leaves
- (2) plants with highly succulent leaves and wax on leaf surface need more light
- (3) variegated forms need less light than their corresponding green forms but if too little light is allowed, the patterns on the leaves would fade
- (4) shrubs need more light than herbs
- (5) during the growing period, sufficient light is necessary
- (6) in the hottest days of summer, all plants need shading (about 30%)
- (7) plants which bear white hairs and cacti with numerous thorns/spines need more light
- (8) during the dormant period, avoid strong sunlight, especially when the temperature is high
- (9) the tropical rain-forest type needs less light
- (10) *Aloe*, *Gasteria* and *Haworthia* of the Liliaceae family need less light.

Symptoms indicating insufficient sunlight:

- (1) shed spines (Cacti)
- (2) elongated or slender stem
- (3) deforming
- (4) shed leaves
- (5) fail to produce flowers
- (6) vulnerable to pests and diseases

Temperature

Depend on the succulent types and species. In general, it must not be lower than 5 °C , nor be higher than 35 °C . The winter type needs a lower temperature while the summer type needs a higher temperature. The spring-fall type, however, cannot withstand too low nor too high temperatures. Optimum: 18°C to 26°C during the day and 7°C to 13°C at night.

Ventilation

Ventilation is of utmost importance, since supply of fresh air accelerates metabolism, promotes the intake of nutrients, buffers humidity and temperature, and promotes plant growth and increases resistance to pests and diseases

Humidity

The majority of succulent plants, except the tropical rain-forest type, live in dry areas. Thus high humidity is inappropriate. During the growth period, however, humidity could reach as high as 50%. In summer and winter, humidity should be lower (about 30%), for high humidity may render the plants susceptible to pests and diseases.

Watering

Depend on the succulent types. Here are a few guidelines:

- (1) During the growth period:
more frequent watering; when you see that the soil surface dries up, water thoroughly one or two days later.
- (2) During the dormant period:
greatly reduce watering. As a general rule, when the soil surface dries up, water after a week and need not water thoroughly
- (3) In the middle and at the end of the dormant period, stop watering; may give a small quantity of water once a month.
- (4) Other highly succulent plants like *Conophytum* and *Lithops* need even less water
- (5) Plants newly bought or repotted: stop watering; give a small amount of water after 5 to 7 days. Water regularly only after they have grown normally.

Pots

Not too big, just enough for a year's growth is appropriate

Compost

A mixture of the following:

1. Ingredients for increasing aeration in soil:
such as sharp builder's sand, perlite, vermiculite and osmunda fibre
2. Ingredients for retention of fertilizers:
such as peat or peat moss
3. Food:
such as slow-release organic fertilizers like bone & blood meal
4. Sweetener ingredients to correct any excess acidity:
Lime (oyster or egg shells) or gypsum

Different types of succulents require different composition of the mixture. In general, the more succulent the plant, the more porous ingredients and the less peat is needed. The tropical rain-forest type, on the contrary, needs more peat and no lime or gypsum.

Fertilizer

To supplement the inadequate amount of food available in the compost during growth period, feed the plants regularly. The fertilizer chosen should have higher phosphorus and potassium contents but lower nitrogen content. For slow-release fertilizer, one may choose guano of chicken or bat, or blood and bone meal. As for liquid fertilizer, apply once every two weeks.

Repotting

Repot regularly, usually once every 1 to 2 years. Renew compost to promote plant growth and trim away dead roots. The best time for repotting is at the onset of the growth period or during the end of the dormant period.

Propagation

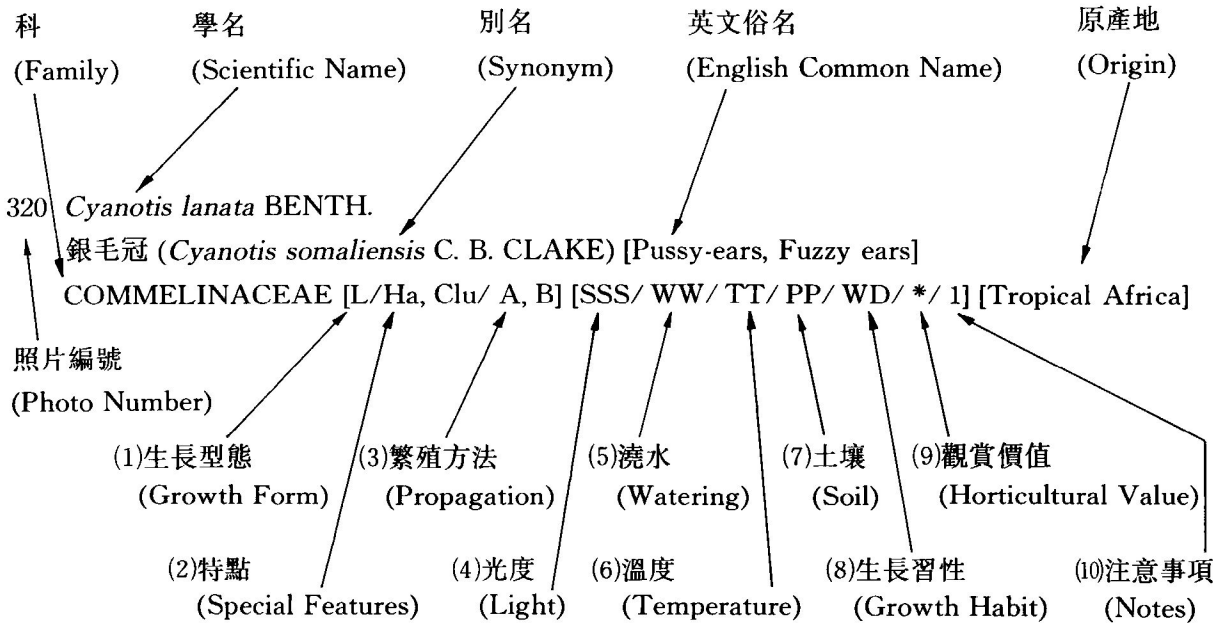
There are two kinds of propagation, sexual(seeds) and asexual(vegetative). Asexual propagation includes offsets, cuttings(stem, leaf or root), grafting, layering and tissue culture. The method used depends on species. The following are some guidelines:

- 1) Offsetting: plantlets with roots are preferable
- 2) Cutting:
 - i) plant the cuttings 4 to 5 days, or even a week later; wait until the cut surface dries up or grows roots
 - ii) place the cuttings or newly planted cuttings in a shaded area
 - iii) knives used for cutting must be sterilized before use
 - iv) if the cut surface is large, put on some fungicides
 - v) for leaf-cutting, we should choose a whole leaf and a younger one. To plant it, we should place the leaf obliquely on the soil, rather than directly into the soil.
- 3) To retain the original crest forms, stem cutting must be employed

Conclusion

The management of succulent plants depends on the plant types, the growth period, the growing habits, and the species concerned. We must fully understand the growing habits of the plants we grow, and apply our patience, love and care. Only then would the plants thrive and enrich the colors of our lives.

IV. 本書使用法 HOW TO USE THIS BOOK



(1) Growth Forms 生長型態

- | | |
|-------------------------------|-----|
| Bo = Bonsai-like | 盆景型 |
| Bu = Bulb | 球莖型 |
| C = Caudiciform
/Pachycaul | 塊莖型 |
| Cl = Climber | 攀緣型 |
| Cr = Creeper | 爬行型 |
| Ep = Epiphytic | 附生型 |
| G = Grafted | 嫁接 |
| L = Leaf succulent | 葉厚 |
| S = Stem succulent | 莖厚 |



圖G. 盆景型
Figure G. Bonsai-like

(2) Special Features 特點

- | | |
|-----------------------|------|
| Clu : Clustering | 羣生 |
| Co : Colourful | 彩色 |
| Cr : Cristation | 綴化 |
| D : Difficult to grow | 較難栽種 |
| Ha : Hairy | 有毛 |



圖H. 球莖型
Figure H. Bulb

HS : Highly Succulent	極肉質化
Mi : Miniature	迷你
Mo : Monstrosity	石化
NFl : Nice Flower	美花
NFo : Nice Foliage	美葉
NSp : Nice Spine	美刺
Pr : Highly pruinose	披粉
Sc : Scent	有香味
Sp : Strong spine	強刺



圖 I . 塊莖型
Figure I. Caudiciform/Pachycaul

(3) Propagation 繁殖

A : Offshoot	分株法
B : Stem-cutting	莖扦插
C : Leaf-cutting	葉扦插
D : Seed	種子繁殖
E : Grafting	嫁接法
F : Removing apical meristem and rooting offshoots	胴切法

(4) Light 光

SSS : Full sunlight except during mid-day in summer season	強光
SS : Semi-full sunlight(20 - 30 % shading)	中光
S : Shady (50 % shading)	普通光

(5) Watering 澆水

WWW : Keep soil moist, never dry out but avoid soaking	經常濕潤
WW : Keep soil moderately moist, let soil dry slightly between waterings	表土乾後方澆水
W : Allow soil dry out completely between waterings	乾透後方澆水

(6) Temperature 溫度

TT : High temperature (25 - 35 °C)	高溫
T : Low temperature (10 - 25 °C)	低溫

(7) Soil 土壤

PPP : Very porous soil	十分疏水
PP : Porous soil	疏水
P : Soil with good water retention ability (higher proportion of peat or fine osmun-da fibre)	保水

(8) Growing Habit 生長習性

SD : Summer dormancy(temperature > 28°C)	夏眠
WD : Winter dormancy(temperature < 10°C)	冬眠
SWD : Summer and winter dormancy (temperature > 28°C and < 10°C)	夏冬眠