

A Few Other Species



Here is a succulent flower for a change. This may be *Huernia hystrix*. They were easy to grow – until the scale insects dropped by (May 2001).

The following piece is part of a collection of writings published on the Practical Small Cacti Malaysia site.

These Flower Too, Grow at Your Own Risk

These days, I'm just a coward. You're probably braver and more adventurous than me. Spray this chemical, spray that chemical, that kind of gardening lifestyle is just not for me. I got tired of getting my specimens killed and started buying specimens that look tougher and have open ribs, targeting the *Parodia* that used to be *Notocactus*, and *Gymnocalycium*. The three species that are happy to flower in the tropics is the surprising result – partly by accident, partly by design. If I buy say a *Mammillaria*, I don't think it would last 5 years in my hands, so I have stopped growing them. Instead of forever fighting difficult battles, I would rather grow productive and rewarding plants.

But if you can provide better care for your plants than me, here are some other species of cactus that are willing to flower in a tropical climate, to various degrees. These are plants that can be found in Malaysia, either today or some years ago. Some I have not tried, but are very interesting. Some of them died on me. Some are too big to be properly maintained.

As for the latter: In Malaysia, large cacti – usually *Opuntia* or *Cereus* – are often planted outside the fenced area of a garden. Let's call these *roadside cacti*. If a large specimen gets infested by bugs, often homeowners do not react to such things. Since a large plant is likely to survive such an infestation, they will think it is fine and so nobody will cut it down. It is difficult to remove a large and heavy spiny plant anyway. The specimen then becomes your friendly neighborhood insect headquarters, with its inhabitants ready to pounce on your smaller cactus specimens or other plants. So always keep an eye on your collection. Bugs *will* drop by. **Don't let them stay.**

Nicknames for Scientific Names

PMag = *Parodia magnifica*

PClav = *Parodia claviceps*

GBald = *Gymnocalycium baldianum*

MGeo = *Myrtillocactus geometrizans*

This naming scheme is purely for convenience. Just think of them as webchat nicknames. Some scientific names in the following sections are just best guesses.

Hylocereus undatus



Hylocereus undatus at Cactus Valley, Cameron Highlands, 2002, before dragon fruit was popular in Malaysia. The flowers are nocturnal, so they are closed in this picture.

Hylocereus undatus is widely grown in Malaysia these days for its fruit, the 'dragon fruit'. Some supermarkets use the names 'pitaya' or 'pitahaya'. Commercial dragon fruit *H. undatus* have been bred for fruit size and taste. It originates from Central America and northern South America and has been cultivated for centuries.

For information on *Hylocereus undatus*, see these websites:

LLIFLE: Search the Internet for “LLIFLE *Hylocereus undatus*”

CABI’s Invasive Species Compendium has an excellent page on *H. Undatus*:
Search the Internet for “CABI *Hylocereus undatus*” or use the following URL:
<https://www.cabi.org/isc/datasheet/27317>

I don’t grow them and I haven’t seen a dragon fruit farm up close, so I have no first-hand information on commercial cultivation in a tropical setting. One can find *H. Undatus* here and there in housing estates these days, though they are not common. Unfortunately for the tropical urban gardener, their flowers are seldom seen in urban gardens, and fruits are even rarer. I have yet to see a big specimen with flowers and fruits in an urban Klang Valley housing estate. I doubt plants grown in pots will ever be productive, and these plants may not be getting proper nutrition. They can get attacked by the usual pests too – I have come across local press reports on pest problems on dragon fruit farms.

For a very detailed paper on this species with even more information than the CABI page above, see:

Search for “Pitahaya (*Hylocereus* spp.): a short review”
Yolanda Donají Ortiz-Hernández & José Alfredo Carrillo-Salazar, **Pitahaya (*Hylocereus* spp.): a short review**, *Comunicata Scientiae* 3(4): 220-237, 2012.

Here is another paper that I found useful (both papers are free to read):

Search for “Current Status of Dragon Fruit and Its Prospects in the Philippines”
Jocelyn E. Eusebio & Ma. Cecilia S. Alaban, **Current Status of Dragon Fruit and Its Prospects in the Philippines**, submitted to the Dragon Fruit Regional Network Initiation Workshop, 2018, in Taipei, Taiwan.

If your plants are not flowering, there are some tips in the above papers.

The biggest problem with *H. Undatus* is that it’s not a small plant. A productive plant occupies a lot of space, just look at the pictures on the Internet. Unless an urban gardener is well prepared for the size of a healthy and productive plant, maintaining the plant will become an issue. It’s not a desert plant and will not produce fruits from nothing, so it will need fertilization. It will also need to be checked for bugs; if an infestation occurs, it’s not going to be easy dealing with a large plant.

Finally, if you plan to grow them from seed, you will probably not get fruits of the same size as the big ones you bought from the supermarket. So, if you are planning to grow *Hylocereus undatus* in your tropical garden, be aware of all these issues. If you long for a bountiful harvest, be prepared to invest time and effort, first in studying online material and papers, and second in doing all that is necessary to produce big healthy plants.

Cereus



Found at Kompleks PKNS Shah Alam, March 2017. Looks like *Cereus hildmannianus* to me. One fruit. Also note the damage on older stems.

A roadside cactus. Occasionally one can see *Cereus* outside of houses or along roads in Malaysia. Large specimens, such as the plant in the above picture, are also sometimes planted as landscaping. Large specimens may produce flowers. I have inspected one specimen in a housing estate that had pale yellow flowers that did not fully open. These days it's easier to come across a dragon fruit plant in a housing estate rather than a columnar *Cereus*.

Since these plants are quite spiny, large and heavy, they are probably not maintained by homeowners. They often have scars on older stems. Usually, a large plant can survive occasional bouts of disease.

Pereskia

Pereskia has both leaves and spines and will grow to become tree-like. Some specimens will flower all the time. Its spines are very sharp, so trimming a specimen can be an unpleasant experience. I had a *Pereskia* once, it became a mess because maintenance is such a pain. If you are considering *Pereskia*, imagine yourself maintaining it each month, then decide whether you still want to do it. This species is usually spread by cuttings passed from gardener to gardener. Some cacti growers use it as a stock plant in grafting.

Epiphyllum and *Schlumbergera*



An *Epiphyllum* in bloom in a housing estate in Klang Valley, Malaysia (May 2018). A few stems have spilled over the garden wall or fence and are in bloom. The stem seen at left is reddish, perhaps due to exposure to too much sunlight or heat.

Epiphyllum is a family of epiphytic or climbing cacti from Central America. *Epiphyllums* have flat stems that look like long leaves with notches. Like *Pereskia*, this is another cactus that is rarely found at nursery retail but is spread by cuttings passed from gardener to gardener. I don't grow these because I do not want to maintain a large plant with long stems. Occasionally one may come across a flowering specimen. Flowers are white in colour. I have never seen any *Epiphyllum* hybrids with brightly-coloured flowers in urban Klang Valley, Malaysia.

I have seen flowering Christmas cactus (*Schlumbergera*) sold on rare occasions at plant nurseries in Klang Valley. *Schlumbergera* is also an epiphytic cacti, but from Brazil. *Schlumbergeras* have segmented stems, while *Epiphyllums* have non-segmented stems. I am including *Schlumbergera* here because it may well be possible to grow them and have them to flower in Malaysia. In commercial operations, Christmas cactus plants are made to flower by exposure to short days. In other words, forced. I have no idea whether *Schlumbergera* is willing to flower naturally in Malaysia.

Opuntia



Opuntia with red flowers and yellow flowers, Cactus Valley, Cameron Highlands, Malaysia, 2002.



Opuntia cochenillifer is the species commonly found in urban Klang Valley, Malaysia. This one was found in a housing estate. Ripe fruits are purple in colour (March 2018).

Opuntia is another roadside cactus. Generally, *Opuntia* is more common than *Cereus* in urban gardens in Malaysia. These specimens are also almost never maintained. Specimens with a lot of scarring may be infested. And when it gets windy, your plants may be in danger¹.

I used to have a pot of *Opuntia microdasys* – those small ‘bunny ear’ cactus – a long time ago. It looked very attractive at first. Then I quickly learnt to hate it. First, it has glochids, clusters of extremely fine barbed spines that will stick fast on your fingers and cause irritation². Don’t brush your eyes with your glochid-laden fingers! Second, the dense glochids are a dust magnet. Before long, spider mites destroyed the specimen. To all urban gardeners in Malaysia: please don’t buy or grow any more *Opuntia*!³



Here’s another succulent flower. This is some kind of *Stapelia*, possibly *Stapelia gigantea*. The flower of this species is supposed to smell, but I can’t recall any bad memories of a foul-smelling flower. The stems have a velvety texture. A large specimen with many stems can be hard to maintain (January 2001).

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- 1 I had a few trays of small GBalds indoors near a window, bug-free rooted offsets maintained in a soilless mix. Then a scale infestation happened. The worst affected was the tray nearest to an open window. What does that tell you?
 - 2 Later, you will learn that glochids are quite amazing thingies. But of course I still hate glochids.
 - 3 *Opuntia* (the prickly pear) inspired the chinese name for cactus, 仙人掌 (which can be literally translated as fairy’s palm), and cacti are sometimes considered an auspicious plant and may be recommended as house plants in feng shui guides. I have *zero interest* in those sort of things. Buying an auspicious plant is not gardening. Let’s just say I prefer to stick to science – in cactus cultivation, I always try to do things for good, sound reasons. Why do I need to buy a plant for luck? Meh. I have already enjoyed *hundreds* of cactus flowers in just a few years.

Mammillaria



Nice, as long as there is no bug attack. This *Mammillaria* has two growing points – splitting of the growing point may be due to insect damage. At the upper right is a *Mammillaria* with spider mite damage. December 2001.

Mammillarias are still the most popular spiny type of commodity cacti on sale. They are native to a large region from the United States down to northern South America. Most species in commodity cacti shipments have been selected for their beautiful spines, so a shipment of new *Mammillarias* is very, very attractive and very, very tempting indeed. But unsold stock of such commodity cacti can look pretty awful. In hypermarkets, old stock are often etiolated⁴ due to insufficient light indoors.

In a hot, humid and dusty tropical climate, growing *Mammillaria* is not a simple thing. Most species have softer skin compared to GBald, for instance. *Soft and juicy* is bad news. In a large collection, these specimens will be the first targets of bugs. Spider mites tend to attack *Mammillarias* first since they are usually the most common soft-skinned plants in a collection. The many spines and hair or wool also encourage dust and hence, spider mites.

To reduce the incidence of spider mites, I wash off dust by spraying water. Remember, a hot urban tropical environment is quite dusty. Unfortunately, washing off dust with water becomes a dangerous thing to do because of the parts of the soft stem touching the soil. Spider mites scarring and damage often occurs on the lower parts of a plant, so water splashing on soil can cause fungi infection on damaged lower stems. The end result is a steady procession of *Mammillarias* dying from rot.

4 New growth stretched out, and tending to yellow.



Probably some kind of *Mammillaria elongata* with a berry or seed pod, August 2000.
Keeping the pot at ground level was a bad idea. When a specimen has proliferated into a large clump, maintainability becomes a problem.

As discussed earlier, *Mammillarias* are also difficult to clean if scale insects attack. These are small and spiny plants. If you attempt manual scale removal, you usually end up puncturing a specimen in multiple locations. It is not a good idea to puncture a soft and juicy plant. Once weakened, the risk of dying goes up – a scarred and damaged specimen will always be scarred and damaged.

Certain species of *Mammillaria* are willing to flower in a tropical climate. Often, you will see flowers on one or two specimens in a large shipment of commodity cacti. Some of the most common flowering species have magenta flowers (see next page.) Sometimes berries or pods can be seen. *Mammillaria elongata* is the species most commonly seen with seed pods.

If you wish to grow *Mammillarias* in a tropical climate, please perform your own evaluations. I have stopped growing them for so long (over 10 years) that I can't really offer solid advice on whether you should grow them or not. Many of my older plants have been grown in a moderately rich soil mix, so it's possible that their survival rate can be improved with a different type of soil mix. Also, consider the effects of evolution: Cacti with soft skins are probably not very long-lived plants in their natural habitats, but some have to flower in order to procreate within a lifetime of a few seasons.

To be a successful grower of *Mammillaria* in an urban tropical climate, one must have a plan that covers all risks and threats and execute that plan consistently over many years. It's not impossible, but to achieve long-term success, you need to be aware of what you are getting into.



A small *Mammillaria* in a 2 inch pot that I got from Cameron Highlands, Malaysia (2002). Specimens with magenta flowers can sometimes be seen in new shipments of commodity cacti. I have no idea what species the importers ship these days.

When you buy a *Mammillaria* with flowers or flower buds, they can put on a good show for a while. The above picture was taken a week after I bought some specimens from Cameron Highlands in 2002. However, I have no idea about the long term behaviour of such plants when it comes to producing flowers in an urban tropical climate – I haven't grown them well for a long enough period of time to form solid conclusions. Too little data.

Given my cactus cultivation habits, I still think they will not survive for many years in my hands. After quite a few years I realized it was futile to continue buying *Mammillaria*. So I have trimmed my collection down to size to focus on the more rewarding trio of PMag, PClav and GBald. I am no longer tempted by the beautiful specimens on sale, not even those with flowers⁵.

5 If any cacti retailer in Malaysia thinks statements like this discourages gardeners from buying cacti: boo hoo, too bad. I hereby challenge them to demonstrate successful multi-year cultivation of all those species on sale in a dusty urban tropical environment. Please teach buyers how to grow the plants based on *actual multi-year experience*.

Frailea



Left: A *Frailea*, just purchased (1999). 2 inch pot. The tufts are seed pods.

Right: Another *Frailea*, repotted after purchase (2000).

Small *Frailea* specimens appear fairly regularly in stocks of commodity cacti. In its native habitat in Brazil and Uruguay, it hides in the ground in the dry season by way of a tapering taproot that can contract. Commercial mass-produced specimens are probably grown as fast as possible; if they are not allowed to display dry-season behaviour, then these plants will have only a small taproot.

Many species of *Frailea* are cleistogamous⁶. But they can set seed, as seen in the picture above. *Frailea* with seed pods are sometimes seen on sale at retail. Ripe seed pods are dry and fragile; plants are often self-fertile and seeds should be sown and not stored for too long. As they are short-lived cacti, these plants are willing to flower and produce seeds. But it's not a very hard-skinned genus – they are about as tough as *Mammillarias*.

I think this species will flower in the tropics if grown well. Only you won't be able to see any flowers, because they (almost always) won't open. All you will see are woolly tufts. Since it is not long-lived, you will need to either buy new plants to replace dead ones, or grow them from seed.

Other Species

I've seen *Matucana madisoniorum* flower in Malaysia before, but I have no idea of its long-term behaviour in a tropical climate. Intriguing, but probably not as prolific as GBald. *Matucana madisoniorum* has attractive orange-red flowers and its stem can be completely spineless. In the past, it regularly appears at plant nursery retail; perhaps commodity cacti these days are less diverse. Other species of *Matucana* are interesting, but small spiny plants may not be easy to maintain.

⁶ Having flowers that do not open. Often self-pollinating.



A *Rebutia* in a 2 inch pot, 2002. This picture was taken at the same time as the *Mammillaria* on page 10, a week after purchase from Cameron Highlands, Malaysia.

Some *Rebutia* may be willing to flower in Malaysia, but I lack any long-term behaviour data. *Rebutias* are high altitude cacti from the highlands of Bolivia and Argentina. The specimen above is probably freshly-imported with flower buds. So a specimen with buds will put on a good show for a couple of weeks. I've seen *Rebutia* in bloom at Cactus Valley, Cameron Highlands, perhaps the cooler weather does them good. But they do not seem to produce as many flowers as the best specimens seen in Internet pictures.

Since these are soft-skinned cacti, this specimen did not last very long in my hands. If you want to grow them, it will be like trying to grow an alpine plant in the hot and humid lowlands. But it's also a mass-produced commodity cactus, so it can be done. Just don't let the bugs get to them.

Echinopsis may also flower in Malaysia, but very, very rarely so. In the past, I've probably grown some kind of generic *Echinopsis* for years without it doing anything except offset profusely. I have seen one specimen flower in person once – it had white petals and the flower tube was very long. Another time was in a newspaper story. So it's not very willing to flower in the Malaysian climate.



Mostly *Melocactus* specimens at Cactus Valley, Cameron Highlands, 2002. For *Melocactus*, it's easier to look for fruits than flowers. There is one pink fruit on the plant in the 6 o'clock position. The large *Parodia* at the lower right looks like PClav. Also note what appears to be a *Mammillaria* in very poor condition at the lower right corner of the picture.

I've seen many *Melocactus* in Cameron Highlands with seed pods⁷. *Melocactus* plants will produce a special flowering stem – known as a cephalium – from the top of the specimen when it is mature (see above picture.) The cephalium has bristles and wool to hide buds and immature fruits from predators. Unfortunately, this protective behaviour of the cephalium also leads to small and inconspicuous flowers. If you do a picture search for 'Melocactus' on the Internet, most pictures will not show mature specimens with open flowers. Instead, its fruits pop up when mature and are often pink in colour to attract animals to disperse its seeds.

I don't grow them so their propensity to flower in Malaysia cannot be confirmed. They range from Mexico to Brazil and the Caribbean, so some are actual tropical cacti. It's possible to find *Melocactus* on sale in Malaysia as commodity cacti but they are comparatively rare compared to those *Mammillarias*. I find it impossible to identify the species of *Melocactus* on sale, because juvenile specimens all look alike. Sometimes larger plants with cephaliums are available.

⁷ If you ask me, I think there are very few fruits in the picture. Yes, there are a lot of cephaliums, but the plants in the picture do not look productive to me. But the purpose of the cephalium is to produce flowers and fruit. Those plants are *supposed* to spend their growing season producing flowers and fruit. So the Cactus Valley management is probably not getting the most out of these non-desert plants.



A few commodity cacti from Cameron Highlands, 2002. Note the *Rebutia* and the *Mammillaria* on the left, you have already seen pictures of them in bloom. The two spiny specimens on the right are probably varieties of *Parodia haselbergii* – sometimes you can see these at retail in bloom with small yellow or orange-red flowers. Unfortunately densely spined species are also very good dust attractors.

Some species of *Gymnocalycium* and *Parodia* (or *Notocactus*) can also flower in the hot tropical lowlands of Malaysia. *Parodia leninghausii* (picture on next page) has already been discussed as a species that may be willing to flower in the tropics, but is too densely-spined to be an easy-to-grow species. As far as willingness to flower is concerned, one will be hard-pressed to find species that can better the trio of PMag, PClav and GBald.

I've had a *Gymnocalycium damsii* flower once (light pink flower colour) but it didn't last very long. Another had an off-white flower and it didn't last very long either. Then there are two long-lasting specimens that I bought from a Klang Valley nursery in 2002: one seems to be *Gymnocalycium stenopleurum* and it has flowered twice (off-white flower colour); the other may be some kind of *Gymnocalycium stellatum* – not very big, has a very hard skin and is almost impervious to bugs but no flowers yet. So they are not crazy bloomers like GBald.

Finally, I had one *Copiapoa tenuissima* specimen for a while that produced one yellow flower. It didn't last very long in my hands because I was force-feeding the plant⁸. But it did produce many offsets and that one flower before things went south.

⁸ It was a kind of casual testing to weed out species that were difficult to cultivate. Anything that survived is worth a closer look. Many short-lived cacti will fail this test, because they are not as durable as long-lived types.



A large pot of *Gasteria* with flower stalks, surrounded by *Parodia leninghausii*, at Cactus Valley, Cameron Highlands, 2002. I grow a pot or two of *Gasteria* because their thick leaves are very tough. They are survivors and bugs have not managed to do a significant amount of damage to their leaves over the years.

There are probably many other cacti that are willing to flower in Malaysia, because what has been discussed is just what I have seen with my own eyes. There are many columnar cacti from Brazil, for example, whose natural habitat is in the highland-grassland-subtropical-tropical climate range. And so on. But large or uncommon imported specimens will not be cheap. To the average tropical urban gardener, commodity cacti are still the most widely available plants.

In summary, the plants that have been discussed here is not a comprehensive list. After all, my experiences are mostly limited to the hot and humid tropical lowland climate of urban Klang Valley, Malaysia. And finally, getting the plants is one thing, after acquiring them you need to care for them successfully. If you are able to cultivate perfect specimens much like those mass-produced stuff, then you'd probably be successful with a lot of these species. If you provide somewhat spotty care for your plants like me, sticking to PMag, PClav and GBald is more rewarding. ♦

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Colophon

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