

MEXICAN PINGS

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Introduction

Mexico contains about 25% of the world's *Pinguicula* species (19 out of 51 species on the CPN World CP list, 1986), including many of the most beautiful species. The group known as the orchid-flowering butterworts is probably the best known of the Mexican pings. But, there are several other groups and some interesting species from these groups will be discussed here. The orchid-flowering butterworts, especially, and most other Mexican pings are difficult to distinguish from one another because they are vegetatively very similar, and the leaves show commonly distinctly different forms that vary with the season. In the summer growing season the plants have long, fleshy leaves, while during the winter months the plants form tight rosettes of small, thin leaves.

Mexican pings commonly grow at high altitudes, generally between 1500 and 3000m, and are found in calcareous or alkaline soils associated with pine and oak forests. Growing conditions range from nearly total shade to full sun, on banks, cliffs and even epiphytically. Because of these cooler growing conditions Mexican *Pinguicula* can be easily grown in the temperate regions of the world. As a result, they are fairly well suited to the temperature range found in a house, although they generally need considerably more humidity than is found in most homes.

Cultivation

I have grown these plants for a number of years now and find them easy to cultivate and flower. These plants can be easily cultivated indoors in an aquarium, outdoors in a protected environment in mild climates, or in a greenhouse where the climate can be controlled.

Soil medium.—I have used many soil mediums in the past, but the one I favor at present is a 2:1:1 mixture of peat, sand, and perlite, filled to about 2 to 3cm below the rim of the pot. The remainder of the pot is filled with live, or dead, coarse sphagnum moss, and the plant is inserted into the sphagnum moss. Favorable results can also be obtained using the peat, perlite, sand mix discussed above, using straight sphagnum moss, or just a peat sand mix. I suggest you experiment and see what works best in your growing conditions. Gypsum and lime are also commonly added to the soil but I have found their use unnecessary for good results.

Water levels.—Always use pure, distilled or rain water. During the summer the plants can sit in a tray which is always filled with water. While during the winter I wait for the sphagnum moss that the plants are growing in starts to look dry before I water, and then I water minimally so the water isn't sitting around for weeks which could cause fungus or rot.

Light.—Medium light, under benches is generally too dark. Indoors they can be grown under fluorescent light at a distance of between 6 to 12 inches. The more light the more color will develop on the leaves.

Temperature.—I try to keep my plants above 45° F, although they have experienced temperatures near freezing with no ill effects. Summer temperatures in excess of 100° F have been experienced for short periods by the plants with no ill effects either. But, the ideal temperature range for these plants is between 50° and 80° F, with cool nights.

Humidity.—Ideally between 40% and 80%.

Dormancy.—Some of the Mexican species experience a winter rest state, which is easily recognized by the short, thick leaves that form in a tight rosette during the winter months. *Pinguicula gypsicola* is a particularly excellent example.

Containers.—Generally the larger the better, and they do not need to be deep. A single plant of most of the taxa below can be grown in a 4-inch pot, but some like *P. moranensis*, will quickly outgrow the smaller container and should, for best display, be grown in an 8-inch pot. I generally grow several plants of the same species together in large shallow pots. For species like *P. ehlersia* and *P. esseriana* a 6-inch pot is ideal and can handle 4 or 5 plants. For plants like *P. moranensis* and *P. agnata*, I commonly grow a single plant in an 8-inch pot, or with two or more specimens in a 10- or 12-inch pot.

Propagation methods

These plants can easily be grown from seed. The fresher the seed the better. I grow seedlings in a peat, sand mix and they do well.

The best way to propagate these plants is by leaf cuttings, which are best taken in winter but can be collected any time. An entire leaf is detached from the plant near its point of attachment, and then one of three things can be done with it: 1.) The leaf can be pulled out a short way from beneath the remaining leaves, but still partially covered by its leaves. New plants will develop at the point of attachment with the plant and after a few weeks (2 to 4 generally). Then the leaf can be pulled the remainder of the way out from beneath the plant and either left associated with the larger plant or transferred to an individual pot; 2.) The leaf can be detached and laid on the surface of the growing medium with the tip that was attached to the parent plant partially buried in the soil. Sometimes these will dry out, but generally they will form new plantlets at the tip. This method is slightly less successful than that of number one; or 3.) In a method shown to me by Steve Smith, the leaf can be detached, put into a zip lock bag and left in a dark drawer for 3 to 6 weeks, where about 50% of the leaves will form plantlets. This last method produces larger plantlets because of the lack of light. Last winter I was able to develop plantlets on every leaf of *P. oblongiloba* with which I used this method, but had no success with *P. agnata*.

Species descriptions

All the taxon here are easy to grow and should provide hours of satisfaction to the grower. Man-made hybrids are now starting to appear among the *Pinguicula* and a couple hybrids are discussed and illustrated here.

Pinguicula agnata.—This species is easy to grow, has large, thick, elongate leaves and does not form a winter bud. The flowers are moderately large, white with light blue around the throat and at the end of the petals. It is also characterized by a short spur (fig. 1).

P. ehlersae.—Forms a tightly rosette of long, thick, narrow leaves which do not differ from Winter to summer. The flower is light lavender with a moderately-short spur and the flower generally appears to bend in the middle (fig. 2).

P. esseriana.—This plant is very similar to *P. ehlersae*, being indistinguishable when not in flower. Its flower is similar to a small version of *P. moranensis*, but with a beautiful light purple hue that almost seems to shine (fig. 3).

P. gypsicola.— This distinctive plant is easily recognized by its long, narrow, pointed leaves. The flower is purple and very similar to *P. moranensis*, but differs in having narrower petals which are thinner and more rounded than in *P. moranensis* (fig. 4). This species and *P. moranensis* are a couple of the orchid-flowering butterworts, *P. sp.* 'Guatamala' may also belong to this group.

P. moranensis.—Plants of *P. moranensis* can grow quite large (to 24cm diameter) and are quite variable both vegetatively and floristically. The leaves of this taxon are large, broad, and thin. The plant does not generally form a distinct winter resting bud, but growth slows and some forms develop shorter leaves. This flower is large, up to 5cm from top to bottom, with a long spur. The color is quite variable: from purple (fig. 5) to lavender, red, and even a white clone is now being cultivated.



Figure 1.—Flower of *P. agnata*.



Figure 2.—Flower of *P. ahleriae*.
ALL PHOTOS BY AUTHOR



Figure 3.—Flower of *P. esseriiana*.

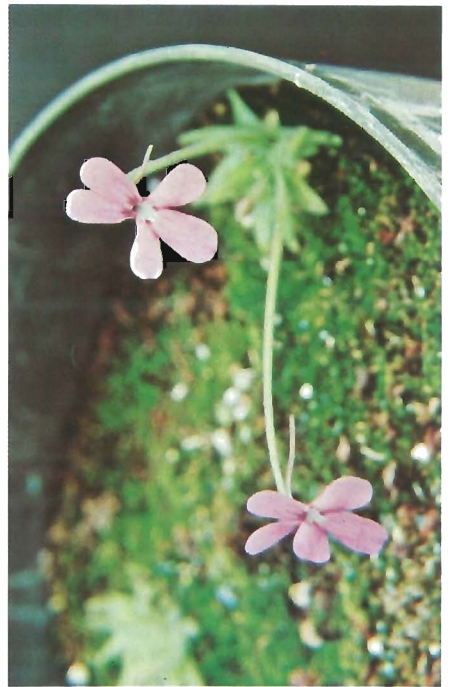


Figure 4.—Flower of *P. gypsicola*.



Figure 5.—Flower of *P. moranensis*,
J. Mazrmas collection.

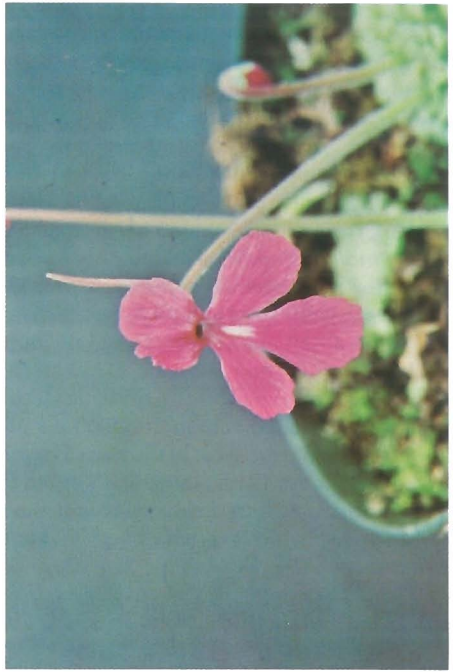


Figure 6.—Flower of *P. sp. 'Guatemala.'*



Figure 7.—Flower of *P. x 'moia.'*

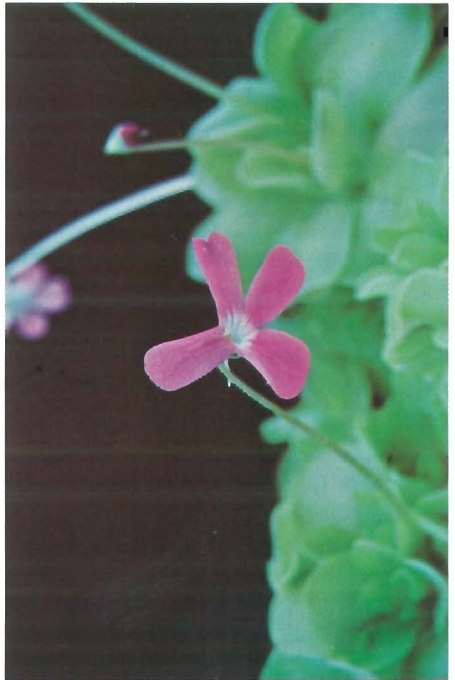


Figure 8.—Flower of *P. x 'weser.'*

P. sp. 'Guatemala'.—This unidentified species collected in Guatemala by Aric Bendorf is being introduced into cultivation by Leo Song, CSUF. The plant looks very similar in its vegetative parts to a small *P. moranensis*, but forms a distinct winter resting rosette, and the flower is distinctly different. The flower is a light purple color and is generally similar to *P. moranensis*, but can be distinguished by the lower petal being much longer than the other petals, by the spur which is long, but which curves upward, and finally by the top two petals, which commonly recurve back over the stem (fig. 6). Although rare at present, this taxon is easy to propagate and should become generally available in the near future.

P. "mola" (*P. moranensis* x *P. gypsicola*).—This plant forms a tight rosette of leaves during the winter, which expand to about 12cm during the summer. The summer leaves are indistinguishable from a small *P. moranensis*. The flower of this hybrid is very beautiful. It is pink, with a well marked throat and the bottom petal has a slight undulate margin (fig. 7).

P. "weser" (*P. moranensis* x *P. ehlersae*).—Because the name of this and the preceding plant have not been officially recognized, they are considered *nomina nuda* (naked names) and so are included here in quotes. This plant is easiest to grow of any of the above and flowers freely during most of the year. The plant is similar to *P. moranensis*, but doesn't grow larger than about 12cm diameter. Without the flower it is almost indistinguishable from *P. "mola"*, but it flowers freely making it easily recognizable. The flower is smaller than *P. moranensis*, seldom exceeding 5cm maximum diameter and is purple with a small white throat swatch (fig. 8).

I would like to thank Mary McGann, U.S.G.S. and Leo Song, C.S.U.F. for reviewing the article and adding their helpful criticism. I would also like to hear from other people about their experiences growing these plants.

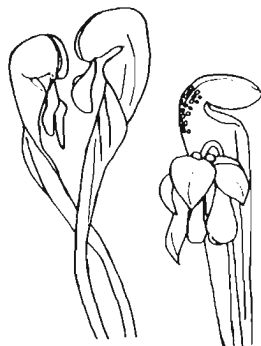
Cultivating *Utricularia Reniformis*

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The cultivation of *U. reniformis* is very worthwhile for this striking epiphyte has both elegant leaves as well as stunning flowers. The plant grows mainly upon trees laden with moss in tropical Brazil but also can be found growing terrestrially in swamps. Their long, branching stolons intertwine with the moss and bark, securely fastening the bladderwort to the trunk and branches. The large, reniform leaves are situated on top of ascending 12 inch stems and it is these elegant leaves that gave the plant its Latin name. The flowers are said to be large and orchid-like, but my plants never produced them, possible because they were disturbed several times for divisions or the exact amount of light has not reached them. Some orchid species have exact light requirements to produce their blooms.

Since this species is such a large plant, one would expect gigantic traps but unfortunately this is not the case. The traps are small but liberally produced and nourishment comes from the trapping and digestion of minute crawling creatures.

There are two varieties in cultivation; a large, robust form and a smaller one. I grow the larger form which does very well in live Sphagnum moss placed in a large glass bowl. The 5-inch bowl is placed in a 55 gallon terrarium which also houses my *Nepenthes*, *Drosera*, *Pinguicula* and other *Utricularia* species. The bowl is placed next to the side of the tank for easy viewing of the traps and stolons.



CARNIVOROUS PLANT NEWSLETTER

Official Journal of the
International Carnivorous
Plant Society



Volume 16, Number 4
December 1987

Front cover: *P. X "Sethos"* (*P. caudata* X *P. ahlersae*) is a very vigorous grower and produces abundant flowers was produced by Harald Weiner of West Germany in 1981. Photo by Chuck Powell, II.

Back cover: *P. gypsicola* painted by R. Scott Bennett.

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Copy deadline for the March 1988 issue is December 1, 1987.

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PUBLISHER: The International Carnivorous Plant Society by the Fullerton Arboretum, California State University, Fullerton, CA 92634. Published quarterly with one volume annually. Typesetting: California State University, Fullerton Reprographic Center. Printer: Kandid Litho, 129 Agostino Rd., San Gabriel, CA 91776. Circulation: 817 (221 new, 596 renewal). Dues: \$10.00 annually. \$15.00 foreign. Reprints available by volume only ©1987 Carnivorous Plant Newsletter. All rights reserved.

CARNIVOROUS PLANT NEWSLETTER

VOLUME 16, Number 4

DECEMBER 1987



