

## Some Comments on *Passiflora pittieri*

by Larry Gilbert

Here in the research greenhouses at the University of Texas in Austin, I have grown *Passiflora pittieri* for some twenty years and have solved most the problems of cloning and maintaining these plants to flowering size. I have noticed that the best results have been from stem cuttings of 18 to 24 inches in length, that come from large woody branches with mature leaves. A good technique is to make a diagonal cut just below a node, dip the cut in rooting hormone powder



*P. pittieri* flower (photo by L. Gilbert)

and immediately place the cut end in distilled water in a 2000 ml flask or 1 gallon plastic Clorox jug. The water should be shallow (1½ to 2 inches deep) allowing most of the stem to be exposed to saturated air. It helps to stuff tissue into the bottle mouth to maintain that condition. We have obtained rapid root production by simply leaving cuttings in the green house next to the source plant. Once roots are extensive, we carefully plant one to four cuttings (depending on size) in a six inch square pot rigged as a hanging basket. This reduces the invasion of soil insects from pots on floor or bench. It may be advisable to treat with systemic insecticide (oxymyl) early if any root gnats are around or use the biological control, Gnatrol. Also, protect new meristems with sulphur dust or miticides if you do not use systemics.

Once the cuttings are established in small pots, *i.e.* the root system is extensive and new leaves have been produced, we move them to a standard-sized hanging pot. Finally, when the plants outgrow their hanging pots, we move them to tall, slender pots such as those used for small citrus trees. *P. pittieri* grow long tap roots and do better if roots can grow down more than out.

A former Ph.D. student in the Gilbert lab, Jack Longino, studied *P. pittieri* in the field in Costa Rica. He documented that these plants often go eighty days between episodes of new shoot production. Pruning plants in sunny situations speeds up new shoot production. Axillary buds are few and difficult to assess. One problem in making cuttings of this species, therefore, is making sure that a sufficient number

of viable buds are available on the stem. It appears that cuttings will follow an internal signal and track their source plant with respect to shoot growth. These cuttings from plants in a dormant phase may produce roots but not shoots, and, with no leaves available to support the stem and roots, the cuttings die. Strong light on such stems may penetrate the bark and hit a layer of photosynthetic tissue just below. This may be one reason for the greater success of cuttings in well-lit greenhouses.

With respect to the cuttings following a physiological schedule set in the source plant, we have noted that cutting taken from a large *P. pittieri* and moved to a different house initiated flowering months later and simultaneously with the source plant! These plants were much too small to have flowered had they been started from seed.

*P. pittieri* is a rainforest canopy liana. Although seedlings and stump sprouts are found in the forest interior, we probably walk by the large trunks of mature vines without knowing it. *P. pittieri* transplanted into screen houses on the Osa (Costa Rica) in 1979 have grown from 3 cm basal stem diameter to about 16 cm in 1996. Woody vines of 15 cm basal diameter elaborate huge tangles of leaves and branches in the full sun of the forest canopy. That is where flowers and fruit will be. While we have never knowingly found the mother of all *P. pittieri*, one of those huge unidentified liana trunks we walk by in the Osa forest could be it.

With respect to Jan Meerman's problems with flea beetles on this species (*see last issue - Ed.*), I have found that *P. pittieri* grown in *Passiflora* gardens near natural habitat are attacked by 4-5 flea beetle species normally associated with other *Passiflora*. These in-



*P. pittieri* fruit (photo by L. Gilbert)

sects normally avoid the forest habitats of *P. pittieri* where only one specialist, *Pedelia sirena*, commonly attacks it. Catherine Duckett, with a M.A. from U.T. Austin and a Ph.D. from Cornell, now at the University of Puerto Rico, is the person to whom *Passiflora* flea beetles should be sent for identification.