

areas with similar climates. Mr. Stevenson has shown how, as long as the differences between palms are well appreciated, a simple and accurate guide can be produced by a self-professed amateur relatively cheaply. The format he has so successfully exploited could be used elsewhere in the world for popular guides.

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## NOTES ON CULTURE

Member J. Garrin Fullington has had good success in growing *Ceroxylon* to the three- and four-leaf stage in Richmond, California. He writes: "I attribute my success to several factors: (1) I live in an area with cool nights 50°-55° during even the warmest part of the year, (2) I have used a very porous soil mix containing decomposing wood and forest soil at the suggestion of Dr. Mardy Darian, (3) I have kept the plants very moist and semishaded with weekly, dilute foliar feeding. If there is a need for a fungal association with the roots, as has been suggested, the soil mix I use apparently provides it."

## Transplanting Seedlings of Wild Palms

This note concerns the collector who is in the field, but cannot find seed or is not sure of the seed available and wishes to bring back living seedlings from the wild.

First bear in mind that when digging or pulling out a seedling you may be destroying over 90% of the roots. With most of the roots gone, the remaining leaves will transpire water dehydrating the seedling into irreversible shock, so even if you return with a beautiful seedling full of leaves, it is often only a matter of time before the leaves show their ultimate color, brown.

The following steps are based on the premise that the functional root hairs and their relationship to dehydration are the critical keys to transplanting survival.

1) Most important, cut off *all* foliage above the petioles, leaving the petioles to protect the bud during shipping. This effectively reduces transpiration.

2) Do not try to get the complete root system, especially if the seedling is relatively large (i.e., has 5 or more leaves or is 1 inch thick at the base). Instead be content to get just the maximum amount so that, when packed into plastic bagging, roots won't be crushed or smashed during shipment home. Long, broken roots are worthless.

3) If possible dip the remaining roots in root-stimulating hormones (do not use dry powders) before packing the roots in damp sphagnum or even wetted newspaper.

4) Packing in damp, airy, medium sphagnum is best, because of the fungus-inhibiting properties of this moss. If sphagnum isn't available, a very dilute solution of Dexon may be used.

5) Ship the plants, preferably by air freight, and if you cannot be there upon their arrival try to obtain competent help to perform the next step.

6) Again soak the seedling's roots in root-stimulating hormones, allowing 20-30 minutes for the soaking using *warm* water, about 100° F.

7) Replant in highly organic soil or soil mix and pour the warm soaking solution thoroughly through the repotted seedling's medium.

8) If the seedling is very rare or known to be difficult to transplant, a high humidity chamber should have been prepared before the arrival of the seedlings. This chamber should be capable of producing bottom heat as well as high humidity. The purpose of the bottom heat is to help the plant direct its ener-

gies toward the life-sustaining function of reestablishing root hairs, which may occur within 24 hours, especially if the root-stimulating hormones were applied immediately after collecting. The *very* highly saturated air retards transpiration, which in turn avoids the shock of dehydration, the killer of seedlings.

The final step of air-moisture saturation can easily be accomplished by the use of steam-producing humidifiers, sold through drug stores, especially during winter months.

It is best to get a plastic water chamber of at least 1½ gallons capacity. Do *not* constantly add water when the level drops to a point where steam production ceases. Instead, empty out the remainder and replace with fresh water; this prevents the build-up of salts that prevents steam production in areas where water is hard. In areas of soft water, adding baking soda will help produce more steam.

If foliage has not been removed and you decide to take the risk of leaving it on, then be sure to *keep the humidifiers working around the clock*, and water with warm water a minimum of every 12 hours or better four times every 24 hours. This manner of watering with warm water was recently advocated by John Turner. If the seedling or plant to

be transplanted is set at its final site, then erecting a wooden frame and covering it with polyethylene to create an individual greenhouse for the seedling works very well.

I have successfully applied these principles on *Cyrtostachys lakka* and on pritchardias from the Hawaiian islands which required over 10 days from collected time to replanting time. The same system worked on ceroxylons, chamaedoreas, etc. from Colombia.

To summarize the most basic points: remove all foliage, soak roots in root hormones immediately, slip in sealed plastic bags, reestablish over bottom heat, saturate air with steam, and water frequently with warm water. If dipping in rooting hormones is impossible in the field, then spray the hormones on the roots from a spray bottle immediately upon returning to your lodging, in any case before packing and shipping.

M.E. DARIAN, D.V.M.

**Classified**

WANTED TO BUY: air parcel post-size palm seedlings for beginning collection; also *Amherstia nobilis*. Lewis F. Knudsen. Jessups Estate, Nevis, West Indies.

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I certify that the above statements made by me are correct and complete. Signed, Mrs. Theodore C. Buhler, Executive Secretary.