

South Carolina Palms

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Successful palm introduction to an area experiencing minimum Zone 8 temperatures is currently being investigated by several institutions and Palm Society members. *Sabal palmetto* is native to South Carolina and is the state tree but when sold for landscaping, specimens of this species are usually dug from wild stands as it grows too slowly for artificial propagation. *Trachycarpus* grows well throughout the state and further north, but is also exasperatingly slow. *Rhapidophyllum hystrix* and *Sabal minor* are easily able to withstand Zone 7 temperature to 0° F or below (Popenoe, 1973), but the absence of a trunk reduces their desirability as street plantings or major landscaping subjects. Cole (1973) records the survival of other *Sabal* species, *Jubaea chilensis*, and *Washingtonia filifera* in Tennessee during extremely cold winters with temperatures much lower than South Carolina experiences, but his method of protection is not practical for larger specimens and street plantings.

Many palms are described as suitable for Zone 8 but experience by the Columbia Zoological Park and Palm Society members has not borne this out. *Washingtonia robusta*, *Phoenix roebelenii*, and *Livistona chinensis*, for instance, are described by some Florida and California nurseries as viable in Zone 8 and therefore able to withstand 10–20° F. Most of these however have been found to be damaged immediately by temperatures below 20° F. Low humidity in California may increase tolerance to low temperatures but probably not much below 20° F. After two winters, one extremely mild, one average, and the other very cold and snow-filled, selected species

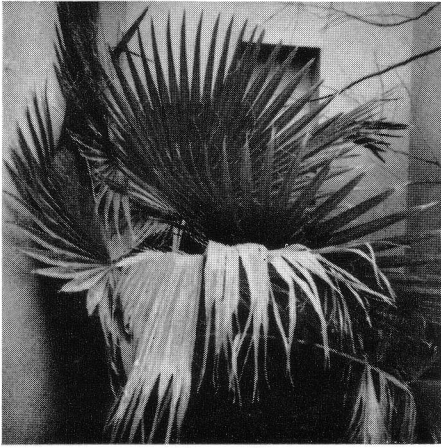
not ordinarily utilized or sold within the state are beginning to stand out as suitable for central and coastal South Carolina, at least in protected locations.

Columbia Palms

While palms are becoming more common within Columbia and central South Carolina, the variety planted has been very limited—*Sabal minor*, *Sabal palmetto*, *Trachycarpus fortunei*, and *Butia capitata*. All of these easily withstood record lows of 6° F and heavy snow in 1972, the larger individuals completely unaffected.

In 1972, the Columbia Zoological Park, looking for species new to the area, received specimens, many 4–6 feet high, of *Phoenix reclinata*, *Livistona chinensis*, and *Washingtonia robusta*. These plants were subjected to snow, sleet, and temperatures to 6° F in the winter of 1972–73. Some of the plants had not been set out and were still in containers or ball and burlap; most plants were completely defoliated but began producing new growth by late spring. Large *Washingtonia robusta* in 30-gallon containers fared much better. Not only was the defoliation less severe but new growth was initiated much earlier and completed by midsummer. The protection afforded the roots probably had much to do with the renewed vigor and hardiness of these plants since the ball and burlaped specimens were only 10 percent recovered by late spring. The weather conditions mentioned above are, fortunately, in the extreme, never having occurred previously in the history of the area; temperatures normally do not go below 18° F.

Winter conditions in 1973–74 and

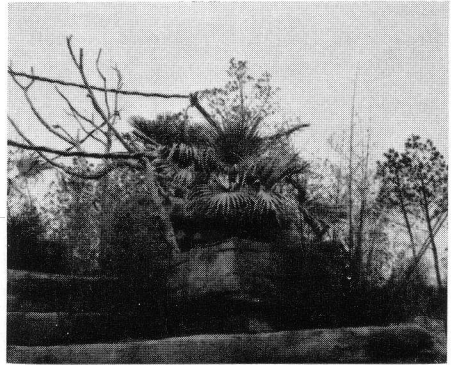


1. *Washingtonia robusta* in outside exhibit of birdhouse at Columbia Zoological Park. After one winter and exposure to wind and cold, this species fared quite well.

1974-75 were much milder (typical), with no snow and cold periods in both winters going below 18° F. In addition to the species mentioned previously (Fig. 1 and Fig. 2), other species were added to the Park's collection or that of the writer:

Washingtonia filifera, *Jubaea chilensis*, *Brahea armata*, *Brahea edulis*, *Chamaerops humilis*, *Chamaedorea microspadix*, *Trachycarpus wagnerianus* (identified by Myron Kinnach), *Livistona australis*, *Phoenix canariensis* × *Phoenix sylvestris*, *Butia capitata* × *Arecastrum romanzoffianum*, *Sabal texana*, *Sabal etonia*, *Sabal causiarum*, *Sabal domingensis*.

These species suffered little or no damage when subjected to minimum temperatures of 18° F. Unfortunately, many of these species, *Brahea* spp., *Washingtonia filifera*, and *Jubaea chilensis*, are unobtainable from Florida nurseries and must be shipped from California. *Washingtonia robusta*, the only *Washingtonia* readily available from Florida nurseries, suffered slight tipburn and together with *Livistona*



2. *Livistona* sp., planted in elevated windy cold exposure, was virtually undamaged after 17° F winter lows. Palm in back is *Trachycarpus fortunei*.

chinensis would require a sheltered location or mechanical protection when grown in the Columbia area. The *Sabal* varieties mentioned above were obtained from Palm Society members or grown from Seed Bank seed and were not numerous enough for area marketing. The same is true of purposeful hybrids.

Charleston Palms

The coastal city of Charleston (Zone 9) is warmer than Columbia and in addition is favored by the Gulf Stream. The lowest recorded temperature in 25 years is 14° F and many species of palms not seen in Columbia, 100 miles away, are over 30 feet tall in Charleston. These species—*Phoenix canariensis*, *P. dactylifera*, *Livistona chinensis*, *Chamaerops humilis*, and both species of *Washingtonia*—are often very old, being present in photographs which date to 1935. In searching for new, cold-hardy species (Terrell and Del Porto, personal communication) additional exotic species to those tried in Columbia were tried through two winters. These were:

Butia eriospatha, *Trithrinax acanthocoma*, *Phoenix sylvestris*, *Acoelorrhapha wrightii*, *Rhapis* sp., *Arengia engleri*, *Syagrus coronata*, *Arikuryroba*

schizophylla, *Arecastrum romanzoffianum*, *Phoenix sylvestris*, *Phoenix* sp., *Phoenix rupicola*, *Phoenix reclinata*.

Admittedly, many of the above additions have not been exposed to unduly severe conditions such as temperatures below 20° F. *Rhapis* sp., *Syagrus coronata*, *Phoenix sylvestris*, and others were exposed to 14° F while covered with five inches of snow and survived, quickly recovering during the spring (1973). Although many of these species would never be suitable in unprotected locations, many old homes of this city have enclosed courtyards which offer a great deal of protection from wind, snow, and severe freezes, thus protecting some of the borderline species for the palophile. Future winter testing will undoubtedly add new insight into their suitability for different locations, and

additional species soon to be available from seedlings still in greenhouses will be reported on later.

Conclusion

Cold-hardy species are being tested for South Carolina. While the potential variety is greater for Charleston (Zone 9) than Columbia (Zone 8), the use of hybrids and desert or western species, in conjunction with mechanical protection, could add new promise to the small list of palms grown within the state.

LITERATURE CITED

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PALM BRIEFS

Commercial Use of *Chamaedorea elegans*

A Florida nurseryman, Roger Nason of Delray Beach, is credited with developing the use of the palm *Chamaedorea elegans* as a house plant. The first commercial production of these plants in pots took place in 1945 when Nason obtained 25 pounds of seed from Mexico. Three years later the sale of seed to the world horticultural trade amounted to 100 pounds, and its use spread to Europe and the Far East.

The source of seed is still primarily Mexico, where last year 70,000 pounds of seed were shipped to nurserymen all over the world. There are about 2,000 seed per pound with germination approximately 60 percent. This means that last year approximately 84,000,000 palm seedlings were produced. Mexico is the only good source of seed, although small quantities are shipped from Guatemala.

The palm is known in the plant trade as "Neanthe bella," a name that has no scientific standing. It has character from the first leaf which makes it so desirable as a small house plant. The best strain of seed has a broad leaf. The seed is collected by Indians from the wild, but as of 1975 about 15 percent of the crop will be from cultivated mother plants. It takes about four years for a stock plant to produce seed.

There is currently no shortage of seed, and the quantity shipped next year will undoubtedly go to 40 tons. The only limiting factors in seed production are insufficient rain to permit plants to set seed or dry winds that tend to make the mother plant drop the seeds before maturity.

Natives of Mexico are now growing seed plants, but 90 percent of the worldwide sales are handled by L. E. Guerra of Mission, Texas. Guerra is an American citizen of Mexican origin and is considered to be the "father" of the trade in "Neanthe bella" palm.