

Hardiness of *Trachycarpus Fortunei*

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Our present information about cold tolerance in palms seems to indicate that the windmill palm, *Trachycarpus Fortunei*, a species of Eastern Asia, is among the hardiest if not the most hardy of all palms. It is said to be "the only truly hardy species in Britain" and this is verified by the recent note (*Principes* 2: 74-75, 1958) about a plant of this species which has been growing for some years in the Royal Botanic Garden in Edinburgh, Scotland, located at 56° north latitude. This is very likely as far north as any palm has been recorded growing outdoors. It should be remembered, however, that the tempering influence of the Gulf Stream makes the climate of the British Isles far milder than most lands lying at similar latitudes.

Although *Trachycarpus Fortunei* does not grow in North America at any such high latitudes (an equivalent spot in the New World would be high on the coast of Labrador!), it is grown under as severe winter conditions, if relative temperatures are compared, in at least two locations on this continent. One of these locations is Victoria, British Columbia (48.5° north latitude); the other is Hampton, Virginia (37° north latitude).

If one examines the geographical distribution of winter temperatures, it will be seen that Edinburgh, Hampton and Victoria—as well as the northern natural limits of this palm in Eastern Asia — all fall approximately on the same January isotherm of 40° F. In other words, the severity of winter cold, the main limiting factor in the distribution of palms, is approximately the same at all these locations where this palm can be grown. It should be added

that these locations have the other common feature in that all are situated on or close to the sea thus receiving the benefit of the ameliorating influence of the ocean⁸ during periods of sudden cold which may exert severe damage even a short distance inland.

A few years ago, while on a trip to the Pacific Northwest, I noted a specimen of the windmill palm growing outdoors in one of the parks in Victoria, British Columbia. In response to my recent inquiry asking about this palm, Mr. W. H. Warren, Park Administrator of Victoria, very kindly supplied the following information on this species which has been growing at Victoria for about 15 years.

"We had three windmill palms, *Trachycarpus Fortunei*, given to us in the 1920's. They were about 10 feet high in 1930. One died of freak frost November 11 and 12, 1955, when the temperature suddenly dropped to 12° F. I would say that they just survive here and no more.

"Records for one of our lowest months in recent years was in January, 1955, mean temperature 26.1° F., lowest 6.4° F. I suspect it was several degrees colder in Beacon Hill Park where another died from cold. We have just one left." (From letter dated April 29, 1958)

In early March of the present year a colleague, Dr. J. T. Baldwin, Jr., Professor of Botany at the College of William and Mary, drove me to see several palms which he had observed growing on the grounds of a private home at 1400 Chesapeake Avenue, Hampton, Virginia. This property lies on the bay front at Hampton Roads and the palms themselves are growing,

therefore, within several hundred feet of the water. The plants proved to be three fine specimens of *Trachycarpus Fortunei*, averaging about 15 feet tall. Although much younger than the fifty-year old (?) specimen at Edinburgh (see Figure 50 in April, 1958 *Principes*), they appear considerably taller. It was a distinctly novel, in fact almost incongruous, sight to see palms growing at that latitude associated with such northern shade trees as elms and maples. Although these Hampton, Virginia, palms had just passed through one of the worst winters experienced, they were in surprisingly good shape. To be sure the older leaves in early March showed considerable browning, presumably from the cold, but the younger leaves were far less damaged. Past years' infructescences were still holding a small quantity of the ripe, blue, pea-sized fruits.

Unfortunately, at the time of our visit, the owner of the property, Mr. Herbert D. Hinman, was away, but in subsequent correspondence the basic information about his palms and how they have been handled at his home was learned. Mr. Hinman apparently first became interested in palms during nine years residence in Panama where he had ample opportunity to observe them. On his return to Virginia from the tropics he decided to attempt to grow a few palms at his Hampton home and happily settled on just the right species. The young plants "about 24 to 30 inches high" were obtained around 1940 from Fruitland Nurseries of Augusta, Georgia. They were probably several years old when purchased and so from this one would estimate that the plants are now about 25 years old. Good-sized holes were dug outdoors and filled with well prepared soil into which the palms were planted. Even when small the palms required little

attention and no winter covering, though they were shielded the first several winters with a canvas windbreak. About four years after planting flowers began to be produced. Since then the palms have bloomed annually, producing abundant viable fruits.

As for culture, Mr. Hinman reports "I did pour vitamin B water down their throats when they were little. That is, I would water them by pouring slowly, so three or four quarts would be absorbed and hardly wet the ground." In recent years the trees have been fed regularly with commercial fertilizer placed in holes drilled around the plants. Mr. Hinman believes that his fertilizer program has resulted in better than normal growth although he suggests that perhaps the palms may have a shorter life span than if they had been allowed to grow slowly at their normal rate.

With regard to the effect of the Hampton winter climate on this palm, Mr. Hinman has this to say:

"Over their lifetime they have never been hurt by cold here; this is the first time and I believe that was from ice. We as a rule do not have temperatures below 20° F. or perhaps one or two mornings of 18° F. As a rule these palms are green, fresh and beautiful. I believe the temperature this winter [1957-1958] has gotten down to near 5° F. one or two mornings [as compared with the '28° frost' (4° F.) of 1941, the lowest on record at Edinburgh]. My palms don't look so well this spring due to the fact that this was the hardest winter that they have ever had. The leaves that were evidently iced and blown by the wind will have to be cut off. It was very cold for this section and continued so and with a high wind a lot of the time out of the north during the cold period. The worst thing I think for a palm along the coast



Fig. 65. *Trachycarpus Fortunei* at Hampton, Virginia.

all the way to Florida is a freeze after a rain — that is a change from rain to sleet resulting in freezing in the palm head. I have seen this happen to palms farther south. These [his specimens of *Trachycarpus*] never have frozen in the top.”

From the above we can agree with the statement of Mr. James Keenan of the Royal Botanic Garden at Edinburgh that *Trachycarpus Fortunei* “can scarcely be called tender.”

Another palm which may approach the hardiness of the windmill palm is the South American *Butia capitata* which I have seen growing at not-too-great-a-distance south of Norfolk in coastal Virginia and North Carolina. At Savannah, Georgia, at the USDA's Barbour Lathrop Plant Introduction Station, this species of *Butia* has withstood temperatures of 11° F. It is of interest to note that in both *Trachycarpus* and *Butia* the palm trunk is well protected. In the case of *Trachycarpus* there is a heavy mat of hairs, while in *Butia* the mass of old leaf stubs may serve the same purpose. It may well be

that this sort of natural protection helps the species to exist during the short periods of lethal colds which they must occasionally endure at their northern limits of range.

WHAT'S IN A NAME?

Howeia (hów ee a) was proposed by Beccari for the genus of palms that includes the common florist's palms known in the trade as *Kentia*. The name comes from that of the island on which they are native—Lord Howe Island off the coast of Australia 435 miles northeast of Sydney. The name is often spelled *Howea* but, although Beccari himself used the latter version at times, the original spelling should be followed.

Nypa (née pa) is a vernacular name in the Moluccas carried over into the technical name. This spelling was used by Wurmb who first described the genus. A later spelling, *Nipa*, used by Thunberg is frequently but incorrectly used.

Ptychosperma (tie ko spér ma) comes from the Greek words *ptyx* (a fold or