

† **Normanbya Normanbyi**, n. tr.

*Cocos Normanbyi*, W. Hill, Rept. Brisbane Bot. Gard. 1874, p. 6, apud Von Mueller.

*Areca Normanbyi*, F. Muell. Fragm. Phyt. viii, 235 (1874).

*Saguerus Australasicus*, Wendl. & Drude, Linnæa, xxxix, 219 (1875), apud Muell. Fragm. Phyt. xi, 56.

*Ptychosperma Normanbyi*, F. Muell. Fragm. Phyt. xi, 56, 57 (1878).

*Drymophlæus Normanbyi*, F. M. Bailey, Queensl. Fl. v, 1678 (1902).

*Normanbya Muelleri*, Becc. in Agric. Coloniale, x, 615, Firenze (1916).

Queensland.

## THE WINDMILL OR CHUSAN PALM

Probably the hardiest of the palms introduced into the United States and well tested is the tree known as the windmill palm or prevailingly as *Trachycarpus excelsus*, from China. On the Atlantic side of the Continent this palm stands as far as the piedmont of North Carolina. Visitors to the Royal Botanic Gardens at Kew, England, will recall the trees of it on the grounds. A tree growing in the open on the property of Dr. F. C. Brown at Durham, North Carolina, is shown in Fig. 99, having been photographed for me by Professor H. L. Blomquist of Duke University. I have leaf specimens from the Biltmore estate, North Carolina, taken in 1894. The windmill palm is freely planted in southern California. In Florida Mowry writes (*Palms of Florida*, Bull. 184, Fla. Exp. Sta.): "This species seemingly does not thrive in sandy soils in the southern part of the state, but is grown with success in the extreme northern portion, particularly where planted in a clay soil". It was listed as "the hardiest of all exotic palms" in former years by the Berckmans Nurseries and I took a specimen long ago from a tree in the open on their place at Augusta, Georgia. I have recently seen established trees, one about eighteen feet tall, on the grounds of Dr. Benjamin W. Hunt at Eatonton, Putnam Co., Georgia. I have taken the palm also at New Orleans. On the Pacific side the windmill palm is reported standing as far north as Coos Co., Oregon, near the ocean.

The nomenclature of the windmill palm discloses an interesting complication. It was first well described and illustrated by Martius in his great *Historia Naturalis Palmarum* in 1849 as *Chamærops excelsa*, the name having been taken from Thunberg's *Flora Japonica*, 1784. The description in Thunberg, however, shows that he did not intend the palm we now know as *Trachycarpus* although the treatment itself does not disclose the identity of his plant. Thunberg's account apparently covers two very different palms; it is only by consulting the specimens he left that we can make sure of the one to which the name should apply. Martius himself was aware of the situation.

The first definite separation of the windmill palm from the genus *Chamærops* occurs in an extended article by J. Gay on "Le *Chamærops excelsa*" in *Bulletin de la Société Botanique de France*, 1861; in this essay the oriental palms of this relationship are separated in the genus *Trachycarpus* on the authority of Hermann Wendland. The *Chamærops excelsa* of Thunberg is transferred as *Trachycarpus excelsus*, following the determination of Martius.

It has long been recognized that the *Trachycarpus* of Thunberg is not exclusively the plant to which the name has been applied in the past eighty years. It has remained for Rehder to work out the case very recently in the *Journal of the Arnold Arboretum* (July, 1930). He has obtained a photograph of Thunberg's type, at Upsala, and has reviewed the literature. Thunberg had the cane-palm known as *Rhapis flabelliformis*, although his character "caulis arboreus excelsus" is at variance. Thunberg had a form or variety  $\alpha$  and a variety  $\beta$ , and cited the older work of Kaempfer. The former in Kaempfer is *Trachycarpus*. The latter in Kaempfer is undoubtedly a *Rhapis* (*R. humilis* according to Rehder); the type specimen of Thunberg, however, is another *Rhapis*, *R. flabelliformis*, and to this plant the description apparently was meant to apply. Therefore, on the suggestion of the late Augustine Henry, Rehder makes the new combination *Rhapis excelsa*, Henry (*R. flabelliformis*, L'Her.).



FIG. 99. WINDMILL PALM in North Carolina.—  
*Trachycarpus Fortunei*.

This inevitable transfer of Thunberg's *Chamærops excelsa* to *Rhapis* forces us to find another name for the windmill palm. Fortunately such a name is at hand in *Chamærops Fortunei* of W. J. Hooker in *Botanical Magazine*, 1860 (t. 5221). This name was bestowed on "Mr. Fortune's Chusan Palm", planted in England, on the assumption that it is specifically distinct from *Chamærops excelsa* in the following particulars: "A more robust species, with more compact and appressed matted network of fibres amongst the bases of the petioles, much stouter shorter petioles, less glaucous more shining foliage, far broader segments of the leaves, and pendulous apices to these". The flowers of the two are said to be nearly alike, and the fruit was unknown (the figures of the fruit in t. 5221 being an error).

The question now remains as to whether there are really two species, the one traditionally called *Trachycarpus excelsus* and *T. Fortunei*. As long ago as 1894 Beccari and J. D. Hooker considered them to be the same, according to the treatment in the *Flora of British India* (vi, p. 436); this decision is repeated by Beccari in *Webbia*, 1905 (i, p. 41) and again in 1921 (v, p. 167), and followed by Blatter in his recent work, *Palms of British India and Ceylon*. This is also the disposition adopted by Forbes & Hemsley in their enumeration of the plants of China (1903); also by Elwes & Henry in the extensive work on the *Trees of Great Britain and Ireland* (1913) and by Bean in *Trees and Shrubs Hardy in the British Isles* (1921) although in these cases under the name *Trachycarpus Fortunei*.

In 1904 Makino divided the species into two parts,—var. *typicus* for *T. excelsus* itself and var. *Fortunei*. This treatment as to var. *Fortunei* I followed in my *Manual of Cultivated Plants*, 1924. Since that time I have had opportunity to observe windmill palms in many places and have come to the conclusion that cultivated *T. Fortunei* is not separable from *T. excelsus*. Growers point out differences in seedling trees, as they do also in seedlings of the queen palm (*Arecastrum Romanzoffianum*, better known as *Cocos plumosa*), but I have not been able to discover that the unlikenesses are constant or botanically significant. Persons do not seem to realize that palms may vary from seeds as do arborvitæ and silver maples. It is not unreasonable to expect that races or strains may differ in hardiness, as do Douglas fir and other plants. It is significant that the separations within this species have been made on cultivated plants; studies of wild plants may disclose differences.

The botanical synonymy of the windmill palm may be stated, on the basis of present knowledge, as follows:

**Trachycarpus Fortunei**, Wendl. Bull. Bot. Soc. France, viii, 429 (1861).

*Chamærops excelsa*, Martius, Hist. Nat. Palm. iii, 251, t. 125 (1849),  
not Thumb.

*Chamærops Fortunei*, Hook. in Bot. Mag. t. 5221 (1860).

*Trachycarpus excelsus*, Wendl. Bull. Bot. Soc. France, viii, 429 (1861).