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## LETTERS

### Palms in Britain

*Dear Editors:*

I think it would be of interest to fellow palm fanciers trying to grow palms in colder climates, to offer an insight into conditions here in Britain. Mean annual average temperatures for low elevation areas under 500 ft above sea level vary from 46.5° F in northernmost Scotland to 52.5° F in southwest Cornwall. Average January temperatures at low elevations vary from 37° F to 44° F on the British mainland. In winter, average temperatures hardly vary for all central and eastern areas. Generally speaking the further west the milder the winters, with the highest temperatures being in southwest Cornwall. Off-shore, the Isles of Scilly have the warmest winters at 45° F in January. July temperatures at low elevations vary from 56° F to 63° F on the mainland. In summer, temperatures relate fairly strictly to latitude, with the highest being in southern England and a slight lowering of temperatures consistent with latitude the further west the station. Only on very rare occasions has the temperature reached 100° F anywhere in southern England. Generally speaking the climate can be described as having cool wet summers and mild damp, or wet winters. Diurnal temperatures fluctuations vary from 12° F to 18° F average for different stations in summer and from 6° F to 10° F average for different stations in winter. In December, sunshine averages are very low, in general 15% to 20%. Absolute minimum temperatures recorded in England vary by as much as 22° F at low altitude, with many stations in southern England having recorded -2° F to 5° F (-19° C to -15° C) this century. In many areas these low values were recorded in the winter of 1962/63. At Witney I believe the lowest

temperature on record is 1° F (-17° C) and at Oxford 0° F (-18° C). In the mildest areas of Cornwall, absolute minimums are 16° F to 18° F (-9° C to -8° C). Absolute lows on the Scilly Islands are 23° F (-5° C) for St. Marys and 26° F (-3.5° C) for Tresco Abbey Gardens on Tresco. Winters in most parts of southern England usually record a low of 12° F to 16° F (-11° C to -9° C), with occasional cold waves of up to a week with temperatures remaining below freezing for much of the time. The winter of 1962/63 is stated as being the worst ever recorded in the south and east of England (some records go back over 250 years), with many stations not recording temperatures over the freezing point for a six week period. From my own experience I have known frost as late as the end of May and as early as mid September.

The only palm which has been fairly well established in most parts of Britain is *Trachycarpus fortunei*. The plant grows best in the south to southwest of England where the relatively warmer summers promote more growth to the extent that a height of 20 to 30 feet can be expected in mature specimens. Four to five new fan leaves can be expected each year in these areas. In my area plants with crowns 30 inches or more above soil level can be said to be fully hardy in semi-exposed areas. Much larger specimens are probably fully hardy in rather exposed windswept areas open to the north and east but suffer wind damage to the leaves. I have found young plants to be most vulnerable when the crown is about 3-24 inches from soil level. During the very bad long winter of 1978/79 I lost two young specimens out of eight planted in the ground. Planted in tubs, specimens in sheltered sites will not sur-

vive a very cold winter because the root ball becomes frozen solid for long periods. My largest palm is approximately 22 years old and is planted in a windswept northwesterly site by my house and is approximately 9'6" tall. In the summer of 1980 it flowered for the first time, but as this species is dioecious there is no chance of any seed. In the milder southern and western areas this palm is hardy in all stages of its growth and seeds will germinate freely in the ground, albeit a little slowly. In Cornwall I have seen a specimen growing wild in the bottom of a valley. I am a member of the "Exotic Collection" which is primarily a private collection of cacti and other succulent plants (largest in Europe with over 10,000 species) based at Worthing on the coast of Sussex. Apart from the greenhouses which house nearly all of the succulents, a very limited number are grown outside. There are a number of *T. fortunei*, 15-20 feet tall, growing in the garden. The plants are up to 40 years old and regularly produce seed which germinates in the ground each year. Some of these specimens are of an unnamed variety with shorter more compact and stiffer leaves, which remain intact in exposed windswept conditions. Needless to say I have procured two plants for spot planting.

My knowledge of the habitat of *T. fortunei* is gleaned from textbooks. As far as I am aware it is found in central and coastal central eastern China, the Chusan Islands off Eastern China, southern Japan and the extreme south of Korea. It is found growing in areas with similar winter conditions to those of southern England and is familiar with snow and hard frosts in habitat. Mr. Brian Lamb of the "Exotic Collection" states that in the wild it is known to withstand  $-10^{\circ}\text{F}$  ( $-24^{\circ}\text{C}$ ). This temperature is probably recorded in its coldest locality such as for example Shanghai which is at the same latitude as the Chusan Islands and has recorded a low of only  $13^{\circ}\text{F}$  ( $-10.5^{\circ}\text{C}$ ) but has average

January temperatures the same as those of Witney. This limited extreme from average minima applies also to stations much further inland in China as far as I am aware. It would certainly be interesting to have a complete map of the distribution and climatic conditions where *T. fortunei* grows naturally. This may prove that this palm has varying hardiness according to provenance.

The accompanying photographs were taken in mid May and as you can see the flowers are emerging.

Different palm genera and species will withstand differing amounts of frost according to atmospheric and ground conditions. A striking example is *Washingtonia filifera* and to a lesser degree its sister *W. robusta*. I have grown these plants from seed and in the damp cold of our winter they are susceptible to only a few degrees of frost before being killed outright. Yet according to information from the U.S.A. in letters printed in *Principes* they are capable of withstanding much lower temperatures in drier conditions. In contrast to this I have wintered outside *Livistona australis* seedlings in a 6" pot placed on concrete in sheltered conditions, when the temperature has dropped to  $12^{\circ}\text{F}$  ( $-11^{\circ}\text{C}$ ), the pot has frozen solid but the seedlings all survived. *L. australis* is supposed to be much more tender than *W. filifera*, but is probably fully hardy in mild parts of Cornwall (probably depending on seed provenance), whereas that latter certainly would not be. *L. chinensis* is also reported to be quite hardy in Cornwall. An example of conflicting experience is *Sabal palmetto* which Plantimpex of Belgium state has been wintered outside with adequate shelter from wind, snow and damp for a number of years. In such conditions they state that along with *Butia capitata*, *Jubaea* (*J. chilensis*), *Sabal minor*, *Trachycarpus martianum*, *Chamaerops humilis* and *Brahea edulis* etc. it has withstood  $1^{\circ}\text{F}$  ( $-17^{\circ}\text{C}$ ). According to Brian Lamb of the

"Exotic Collection" *S. palmetto* failed to survive average winters with protection at Worthing and did not survive at Tresco Abbey Gardens either. Yet according to a British publication, *Sabal* spp. are hardy in sheltered well-drained sites in southern England. I understand that in the wild *S. palmetto* can withstand low temperatures for very brief periods. Perhaps ground temperature is an important factor. From palms obtained from Dr. David Griggs (*S. minor*, *S. louisiana* and *Rhapidophyllum hystrix*) and Plantimpex (*S. palmetto* and *S. etonia*), I shall try to unravel the truth in the years to come. Also I am experimenting with *Jubaea chilensis*, *Butia capitata* and *Trachycarpus martianus*.

*Chamaerops humilis* is hardy in the milder areas of England and can be cultivated successfully (although damaged in severe winters) in coastal Sussex. Inland it may be grown if protected in severe winters. Mr. Spinks of Thornton Hall Gardens, Ulceby, South Humberside states that with protection *C. humilis* withstood the winter of 1978/79 (the longest cold winter since 1947/48) with temperatures down to 5° F (-15° C) undamaged. In addition he states that both *J. chilensis* and *Butia capitata* survived the same winter under open-ended cloches with only slight leaf tip browning at 18 months old. He recalls seeing a plant of *T. martianus* growing in an area by the coast as a mature specimen. *Phoenix canariensis* is much more tender than the aforementioned pinnate palms; in my experience it is not able to withstand temperatures of less than 15° F (-9.5° C) in protected conditions as young plants. Three *Jubaea chilensis* are known to be growing in a garden in south Devon and in 1973 the largest was stated to be 23' to the crown with a 10' trunk girth. Growth must be fairly slow as these plants were apparently planted between 1900 and 1910. A large specimen is recorded to have been growing at the entrance to the Royal Botanic

Gardens, Kew in the 1880's; subsequent attempts to grow it outside have apparently failed. I wonder if seed provenance has a part to play in determining hardiness of this palm. If any Palm Society member has any information on this point it might be of interest. *Phoenix canariensis* will probably survive in the mildest parts of southwest Cornwall and is certainly fully hardy at Tresco Abbey Gardens (Isles of Scilly) where I have seen several large specimens 30-40 ft tall along with at least one other pinnate palm of which I do not know the name. At this garden there are numerous other tender plants such as tree ferns (*Dicksonia*, *Cyathea*), some lower altitude Eucalypts and Acacia etc. from Australia, many species of *Agave*, *Aloe*, *Mesembryanthemum*, *Opuntia*, and many other plants which cannot stand much frost and damp. One large shrubby *Aeonium* (succulent) has been naturalized in the Scilly's which is probably the most northerly latitude at which any *Aeonium* can be grown outside (around 50° north).

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### **Euterpe macrospadix**

5 November 1981

Dear Natalie:

I suggested when we last talked that certain comments from Bob Wilson's letter of September 8 to me ought to be excerpted for the next letters column or at least for the column sometime! Here are the excerpts:

"... in reference to the palm which you feature in Figure 6 (*Principes* 25: 51) as, 'Another dwarf *Chamaedorea* of the Punta de Arenas montane forest.' I have given this species the provisional name of *C. 'dwarf pumila'* as it is a miniature form of the true *C. pumila* (as iden-