From Barcelona to Bordighera: Palm Gardens on Mediterranean Shores

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1. Native *Chamaerops humilis* south of Barcelona. The species occurs in large numbers on rocky limestone slopes in front of the sea.

Palms and palm landscapes are acknowledged as symbols of exoticism and as such contribute greatly in attracting people, especially tourists, to the Mediterranean region. Thus there is a need to preserve the region's many historical palm gardens. Municipalities play a very important role in the conservation of the palm heritage. Nice has a network of parks, mostly originating from ancient private properties, and is developing a new botanical garden. The cities of San Remo, Menton, Cannes, Hyères, Toulon and Le Pradet are developing comprehensive new palm collections in old, renovated gardens, often in association with the French Palm Society (Fous de Palmiers).

The northwestern part of the Mediterranean Sea and adjacent European continent have an unusually warm climate for this latitude (41–44°N). Palms reach the northern limit of their natural distribution there, with the Mediterranean fan palm *Chamaerops humilis*. This species is a typical component – an indicator – of the warmest Mediterranean vegetation zone. People realized very early on that this zone was most favorable for the cultivation of plants from warm climates, especially palms.

Chamaerops humilis

The Mediterranean fan palm occurs sporadically and is of doubtful indigenous status in the area considered. It begins to be a major component of the vegetation just south of Barcelona (Fig. 1). In France and northern Italy, it is difficult to assess its status due to urban and garden development along the coast. Some small populations, including large, mature specimens exist in apparently natural conditions (Médail & Quézel 1996). The Mediterranean fan palm is extensively used in landscaping. Its clustering and relatively small habit is unusual among the commonly cultivated palm species and, as it is native, it is especially well adapted to the climate. There is a great variability in habit, leaf color, indument and shape, which make this species even more interesting.

The date palm at Bordighera

The date palm (*Phoenix dactylifera*) has been cultivated at Bordighera, near the Italian-French border, at least since the 16th century, for religious purposes (Castellana 2001). The date palm groves are established on a succession of terraces maintained by dry stone walls built on the steep slopes of the Sasso Valley, and irrigated by a complex network of canals and tanks. The number of palm trees was estimated at around 15,000 at the beginning of the 20th century. The palms were densely planted and the largest stems generally cut to promote resprouting and maintain easy access to the crowns. The leaves were processed for both Christian Palm Sunday and Jewish New Year ceremonies.

The abandonment of the date palm cultivation and its irrigation system after World War II resulted in major changes in the landscape. In the highest parts of the valley neglected palms began to suffer or die from drought and nutrient deficiencies. Many of these palms that appeared useless and in the way were cut down. At present, 90 % of the palms have disappeared (1500 remain), but paradoxically, the visual effect of Sasso Valley has never been so pleasing as it is today. However, if nothing is done rapidly to regenerate the cultivation, the date palm will completely disappear.

Bordighera's date palms also played an important role in several respects in the 19th century development of the Riviera. Early palm landscaping was made with Bordighera's palms, the only significant source of well-grown plants before the establishment of nurseries. The German botanist Ludwig Winter created a botanical garden on the lower Sasso valley, just in front of the date palm plantings. His garden contains a great diversity of palm species, often planted in groups of several individuals. This method of planting which is now standard in botanical gardens was experimental at the time.

Great plant collectors and gorgeous palm landscaping on the Rivieras

The introduction of exotic palms outdoors in the Mediterranean region began in the early 19th century with the development of plant exploration in Asia, Australia, North and South America. Intrepid botanists, horticulturists and plant collectors brought countless new species into cultivation in European conservatories. A few species where tried and soon established in Mediterranean gardens.

From 1860, botanical collections developed rapidly in the Mediterranean region as botanists and wealthy plant-loving landowners realized the potential for the cultivation of subtropical and tropical plants. At Nice, Viscount Vigier developed a splendid garden, with a special interest for rare and new palms. He introduced three plants of *Phoenix canariensis* outdoors in 1864, bought from the famous Linden Nursery, at Gand, Belgium. *Phoenix canariensis* rapidly appeared to be a majestic palm perfectly adapted to the climate of the Riviera. Chabaud, who formally described the species in 1882, was especially active in promoting it into cultivation on the Riviera : "*The Canary date palm is the most majestic, the most sumptuous, the most marvelous of all* Phoenix *species. It grows magnificently outdoors and produces, by its exuberant and opulent vegetation as well as by its wonderful and grandiose appearance this peculiar style of the Riviera which seduces the visitors: it reigns as the master and king*" (Chabaud 1915).

Near the Spanish border, at Collioure, another prominent French botanist, Charles Naudin, developed an experimental garden where he introduced many plant species, and especially palms, between 1868 and 1878. Among the palms planted were *Trachycarpus martianus*, *Butia yatay* and *Jubaea chilensis*. As Chabaud did with *Phoenix canariensis*, Naudin spent much energy to promote

the cultivation of *Jubaea*. He obtained seeds from Chile, encouraged nurserymen to grow it and wrote numerous articles about this palm in horticultural reviews. As numerous seeds were imported on several occasions, the cultivation of *Jubaea* was established on a wide genetic basis, resulting in a great diversity of shape, color, growth patterns and fruit size of the trees (Fig. 2).

In late 19th–early 20th century, two dedicated plant collectors were especially active with palm introduction on the French Riviera – Dr. Axel Robertson Proschowsky at Nice and Eugene Mazel at Golfe Juan. Just like today's palm enthusiasts, they introduced – with more or less success – about every palm species potentially suitable for outdoors cultivation available in the seed and nursery market. Their observations on frost hardiness were especially interesting. Robertson Proschowsky maintained *Acrocomia aculeata*, *Copernicia alba*, *Chambeyronia macrocarpa* and *Livistona mariae* among many other species. Mazel grew a sizable specimen of *Polyandrococos caudescens* and *Rhopalostylis sapida* flowered in his garden in 1882. Golfe Juan was at the forefront of palm cultivation at this time. Apart from Mazel's garden, Edouard André, the well known landscaper, had his garden there (Villa Colombia) with interesting palms. André also designed a magnificent palm garden at Golfe Juan for the Count of Eprémesnil (Le Jardin des Cocotiers), with impressive plantings of *Syagrus romanzioffiana* producing a very tropical effect. Nabonnand, immortalized by the hybrid × *Butiagrus nabonnandii*, also established a nursery at Golfe Juan.

At the time all these botanical and collector's gardens were being developed, palm landscaping flourished everywhere in the cities of the Riviera (Fig. 3). Luxurious hotels all had palm gardens (Fig. 4). Numerous urban parks, public or private, were also created at that time, mixing English style with formal palm compositions. Rows of *Washingtonia filifera* are especially typical of these parks (Fig. 5). *Livistona australis*, *Sabal bermudana* and *Jubaea chilensis*, three species now rarely planted, are also constant features of these old gardens.

Hidden treasures in the countryside

Away from the cities of the Riviera, the *chateaux* of the countryside also had parks beautifully landscaped with palms. Prosperity came principally from the development of vineyards and some visible sign of wealth had to be demonstrated. This could be a single *Phoenix canariensis*, *Washingtonia filifera*, *Jubaea chilensis*, or a whole planting of numerous species (Fig. 6). A fine example is the Chateau de la Moutte at Saint Tropez, which has extensive palm collections including several very large *Jubaea*, many *Butia*, *Brahea*, *Washingtonia*, *Phoenix* and *Chamaerops*. A similar assortment of species is found in Parc des Capellans at Saint Cyprien. Sometimes a whole plot a palms was planted, in rows, just as people planted vines.

Modern palm landscaping

Modern palm landscaping relies heavily on the availability of mature – or at least large – specimens. Fast growing species such as *Phoenix canariensis*, *Washingtonia robusta* or *Syagrus romanzoffiana* are produced in large quantities in Italy, France or Spain. Many other species are directly imported as mature plants from their country of origin. Unfortunately, several pests and diseases were also introduced with the palms (Mercier & Louvet 1973). Such introductions may seriously threaten palm cultivation in the Mediterranean region.

Conclusions

Palm fashion is spreading around the Mediterranean shores, and urban landscapes show daily changes towards more palm plantings. The long history of palm introduction in Mediterranean Europe gives countless opportunities for the visitor to discover beautiful gardens and palm specimens (Fig. 7). However, the development of the ornamental palm business has its drawbacks. Measures need to be taken to promote palm plantings and species diversity without compromising the future of palm landscaping with the introduction of new pests and diseases, which can quickly become out of control.

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6. *Phoenix canariensis* and *Washingtonia filifera* on side of a farm in Roussillon, France. Vineyard on the foreground.

7. Villa Garnier at Bordighera with its beautiful palms.

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2 (upper left). A surprising octostichous specimen of *Jubaea chilensis* at Parc Magnol, Montpellier. 3 (upper right). 1880's park "Alsace-Loraine" at Nice, inspired from English style, mixing palms (25 m tall *Phoenix canariensis, P. reclinata, Washingtonia filifera, Trachycarpus fortunei*) and conifers. 4 (lower left). An elegant *Howea forsteriana* in front of a hotel at Menton, French Riviera. 5 (lower right). A spectacular row of *Washingtonia filifera* in Park de l'Indochine, Nice.

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