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Canary Island date palms (*Phoenix canariensis*) as ornamental plants: The first thirty years of the horticultural trade

Dirk H. R. Spennemann

Abstract

Initially propagated and marketed by Belgian nurseries during the second half of the 19th century, the Canary Island date palm (*Phoenix canariensis*) has found widespread use as an ornamental planting in public and private spaces in all temperate and subtropical zones of the globe. This paper traces the early period of the commercialisation of this species in European horticultural trade outlining its early marketing by the Belgian horticultural firms based in Ghent, followed by German and French competition sourcing seeds directly from the Canary Islands. The nurseries engaged in a wilful obfuscation of the nature of the plant by generating a plethora of horticultural synonyms. By the late 19th century the plant was being exhibited in botanic gardens worldwide and propagated by nurseries in Europe, North America and Australia producing quantities of plants sufficient to service the growing need for street trees and garden ornamentals.

Introduction

During the second half of the 19th and the first half of the 20th centuries, the Canary Island date palm (*Phoenix canariensis*) saw widespread use as an ornamental plant in horticultural settings, first in Mediterranean France and then in many parts of the United States, South America and Australia. The ease with which even established *P. canariensis* can be transplanted for immediate effect aided the rapid, and global, acceptance of the palm as an ornamental plant.¹ For many citizens the plant, with its decorative trunk and its lush, abundant foliage, is the very incarnation of a palm, a

visual connection to exotic lands—real or imagined. While the public appeal of the plant as a street tree and garden ornamental declined in the post-World War II era, it gained a revival during the late 20th century with palms as instant feature trees in many new housing developments in the United States, Argentina, Italy and Australia.

Compared to research into the dispersal of the true Mediterranean date palm (*Phoenix dactylifera*; Johnson et al. 2013), little work has been done on the spread and marketing of *P. canariensis*. The only survey of historic sources was a paper by Zona (2008), which focused on Europe and the United States with a shorter section on Australia. Elsewhere the current author has discussed in depth the introduction and distribution of *P. canariensis* to Australia (Spennemann 2018c). The most detailed work on the early period of dissemination is that by Rivera et al. (2013a), who reviewed the nomenclature and typification of *P. canariensis* and in doing so commented on some of the early sources. Recently Rico (2017) examined the seed morphology of *P. canariensis* and compiled a potted history of the dispersal of the plant, drawing on selected seed catalogues and horticultural magazines. Neither of the authors went into depth on the relationship of the various horticultural establishments, nor did they examine the uptake of the plant by the wider market.

This paper will review the historic evidence for the introduction and horticultural dispersal of Canary Island date palms (*Phoenix canariensis*)

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during the latter part of the 19th century, with special emphasis on the nursery trade. Given the general paucity of information and the scattered nature of the extant sources, this paper represents an initial attempt at understanding the patterns of dispersal during the 19th century.

The plant

Phoenix canariensis H. Wildpret ex Chabaud (Arecaceae) is a dioecious plant that is solely propagated by seed (Barrow 1998). The seed germinates after 85–110 days, and the plant shows its first two-leaved shoots at about one year of age. It reaches reproductive maturity and first flowers after six to seven years. The palm seeds freely, annually producing between 1,000 and 30,000 obovoid dates of 15–20 millimetres in length and 12–15 millimetres in diameter with limited fibrous flesh content. In its natural setting the palm will grow to about 18–20 metres (up to 30 metres) in height² with a stem usually of 0.6 to 0.8 metres (up to 1.2 metres) in diameter. The crown has a diameter of 10–12 metres, comprised of in excess of 100 arching, pinnate leaves of 5–6 metres (maximum 7 metres) in length. Unless affected by disease or pests, the plant can live for 200–300 years (Beech 2017), and a specimen in excess of 400 years was known (Bois 1918, p. 43). Fully mature palms weigh up to 10 tons in mass.

In its natural distribution the plant is endemic to the Canary Islands, where it has been recorded from most islands (Lipnitz and Kretschmar 1994; Sosa et al. 2016). In the pre-Spanish period, the plant, and especially the palm sap, formed part of the local diet and medicine (Rivera et al. 2014), whereas in the later period its fruit was used only for pig fodder (Noll 1873, p. 50). *Phoenix canariensis* is asserted to be of “least concern” in the IUCN Red List (Beech 2017) although it is deemed

in danger from hybridisation (González-Pérez and Sosa 2009; Morici 1998)³ and more recently from newly introduced pests, such as *Diocalandra frumenti* (González-Núñez et al. 2002).

It was quickly and widely dispersed during the second half of the 19th century as a horticultural feature plant and street tree. Today it is distributed globally in the warm temperate regions. Given its hardiness it can thrive on many soil and climatic conditions as long as temperatures do not fall below –10°C for extended periods. Its fleshy fruit is dispersed by a range of volant and terrestrial vertebrate vectors (Spennemann, unpubl. data). The plant is now considered naturalised in numerous countries on all continents bar Antarctica (Spennemann 2018d).

Horticultural production in Europe until the late 1870s

The nomenclature of the plant varied over time, with multiple naming of growth forms and “discoveries” of minor, but visually different, varieties (Tab. 1). At current state of research it is accepted as *Phoenix canariensis* H. Wildpret (Rivera et al. 2013a).

It is a common claim that *Phoenix canariensis* was not planted as an ornamental tree in Europe until the 1860s (e.g., Anonymous 1894). It was first formally reported in 1862 as growing in the newly planted gardens of Vicomte Joseph de Vigier in Nice, France (André 1888c; Foussat 1909, p. 273). According to Sauvaigo (1894a, p. 147), that introduction occurred in 1864. Bois (1918) following Chabaud (1915, p. 136) noted that Vigier had planted in his garden three specimens obtained from the Belgian plant dealer Jean Jules Linden (1817–1898).⁴ Bois also credits Vigier with being the first to plant *P. canariensis* in the open (outside the Canary Islands). Chevalier (1924, p. 195) makes the same point.⁵ Chabaud (1915, p. 137)

Table 1. Synonyms and name variants of *Phoenix canariensis* H. Wildpret

Name	Status	Reference
<i>Phoenix canariensis</i> H. Wildpret	nom. cons. prop.	Chabaud 1882, 1915, p. 136ff.; Rivera et al. 2013a, b
<i>Phoenix canariensis</i> hort. ex Chabaud		Haage & Schmidt 1873, p. 20; Chabaud 1882
<i>Phoenix canariensis</i> Nabonnand	nom. nud.	Nabonnand 1871
<i>Phoenix canariensis cycadifolia</i> Chevalier	nom. nud.	Chevalier 1952, p. 220
<i>Phoenix canariensis gracilis</i>	nom. nud.	Anonymous 1889
<i>Phoenix canariensis macrocarpa</i>	nom. nud.	Haage & Schmidt 1873, p. 20; Benítez de Lugo and Wildpret 1879, p. 43
<i>Phoenix canariensis</i> var. <i>erecta</i>	nom. nud.	Chabaud 1882, p. 225, 1915, p. 142
<i>Phoenix canariensis</i> var. <i>glauca</i> [hybrid]	nom. nud.	Chabaud 1915, p. 142
<i>Phoenix canariensis</i> var. <i>macrocarpa</i>	nom. nud.	Chabaud 1915, p. 142
<i>Phoenix canariensis</i> var. <i>tenuis</i>	nom. nud.	Chabaud 1915
<i>Phoenix canariensis</i> var. <i>porphyrococca</i> Vasc. & Franco	nom. nud.	Vasconcelos and Franco 1948, p. 313
<i>Phoenix cycadifolia</i> hort. Athen Regel	nom. rej. prop.	Haage & Schmidt 1874, p. 20; Regel 1879; Chabaud 1915, p. 142; Rivera et al. 2013b
<i>Phoenix cycadifolia macrocarpa</i> Bonnel	nom. nud.	Bonnel 1881, p. 170
<i>Phoenix dactylifera canariensis</i>	nom. rej. prop.	mentioned in Regel 1879
<i>Phoenix dactylifera</i> var. <i>canariensis</i>	nom. rej. prop.	Drude 1882; Noll 1873, p. 15
<i>Phoenix dactylifera</i> var. <i>cycadifolia</i>	nom. rej. prop.	Nicholson 1901, p. 597
<i>Phoenix dactylifera</i> var. <i>jubae</i> Webb & Berthel.	nom. rej. prop.	Barker-Webb and Berthelot 1836–1850, 3(2):289; Bornmüller 1903, p. 407
<i>Phoenix erecta</i> hort. ex Sauv.	nom. inval.	Sauvaigo 1894b, p. 495
<i>Phoenix jubae</i> Webb & Berthel. Webb ex Christ	nom. rej. prop.	Christ 1885, p. 469, 1888, p. 170; Lindinger 1926, p. 12
<i>Phoenix jubae</i> var. <i>edulis</i> Chevalier	nom. inval.	Chevalier 1924, pp. 194–195
<i>Phoenix macrocarpa</i> hort. ex Sauv.	nom. inval.	Sauvaigo 1894b, p. 495
<i>Phoenix reclinata</i> hort. Andre	nom. inval.	André 1888c
<i>Phoenix tenuis</i> fol. <i>aureo-variegatis</i>	nom. nud.	Regel 1879, p. 177
<i>Phoenix tenuis</i> hort. Verschaff.	nom. nud.	A. Verschaffelt 1869, p. 13.
<i>Phoenix tenuis variegata</i> Dallièere	nom. nud.	André 1874, p. 91
<i>Phoenix vigieri</i> André	nom. nud.	Sauvaigo 1894a, p. 147, 1913, pp. 224–225; Kuntze 1903, 1905
<i>Phoenix vigieri</i> hort. Naudin	nom. nud.	Naudin 1885
<i>Phoenix vigierii</i>	nom. nud.	Karr 1883

asserted that Linden had sourced his seeds from the Royal Botanic Gardens, Kew, which had mislabelled the plant *P. reclinata*.⁶

Soon after *Phoenix canariensis* was widely grown in various gardens of Hyères as well as a formal planting adding to the existing palms at the Place des Palmiers in Hyères on the French Riviera (Murray 1864, p. 498). These plantings attained so much public fame that in the francophone world the term “Palmier d’Hyères” became one of the common names for *P. canariensis* (Smith 1882, pp. 42, 50), and hotels advertised their presence (e.g., the special advertising section in Smith (1882) where hotel owners, such as Mr. Wattlebird (Smith 1882, p. [160]), noted palms as amenities).

As far as can be ascertained, *Phoenix canariensis* first appeared in horticultural catalogues in autumn 1867 when it was offered by the nursery Ambroise Verschaffelt in Ghent (Belgium) under the name *P. tenuis*. Carrière and André (1882) asserted in a reply to an unnamed correspondent that Verschaffelt (1825–1886) had “named the plant ‘tenuis’ because of the ease of which the first specimens could be grown in pots.” Selling at francs 50 per specimen, the palm was described as “one of the most graceful *Phoenix* introduced”⁷ (A. Verschaffelt 1867a, p. 19, 1867c, p. 4). Similarly priced and worded offerings appeared in 1868 (A. Verschaffelt 1868a, p. 21, 1868b, p. 12). The price structure, compared to that of other palms, such as *P. reclinata* selling at francs 5 or *P. sylvestris* selling at francs 10, indicated that this was an unusual and rare palm. After Verschaffelt had exhibited the palm to public acclaim in 1868, the description became much more expansive. In the spring catalogue for 1869, Verschaffelt wrote,

Phoenix tenuis (see drawing opposite) is without contradiction, one of the best introductions of palm trees for the decoration of the greenhouses and apartments; it is quite [suitable] for an unheated greenhouse. Nothing is more graceful

than the *Phoenix tenuis*, which one can be convinced by examining this drawing, made from nature by our clever draftsman. I have at the disposal for my honoured customers some potted [specimens] of this beautiful palm tree, about 120 plants, at the price of fr. 75 per pot (A. Verschaffelt 1869, p. 13).⁸

That catalogue also contained the first illustration of the species (Fig. 1),⁹ a potted specimen with fifteen leaves and a low stem about two-thirds the height of the pot. While some artistic licence may have been taken, the overall habit of the plant likely is correct, especially as Ambroise Verschaffelt asserted that it was drawn “from nature.” This suggests that the depicted specimen is at least five to six years old, if not seven to eight years (Spennemann, unpubl. data).

Dispersal of Phoenix canariensis prior to commercialisation by the Ghent nurseries

The Canary Island date palm was first referenced as “*Palmeta caryotas ferentia*” (palms bearing dates) by Pliny the Elder (*Naturalis Historiae* VI 37), who noted that the plant grew abundantly in the Canary Islands.¹⁰ Zona (2008) made the case that for the modern European world the plant was first collected botanically in Tenerife in 1815 by the Norwegian botanist Christen Smith (1785–1816). As Smith soon after died of yellow fever while the expedition worked in the Congo, his plant specimens were shipped to Oslo where many plants, but not *Phoenix canariensis*, were eventually described by other botanists (Buch 1826; Munthe 2004). At least one palm was eventually grown in the Botanic Gardens of Oslo from one of the seeds that Smith had collected. This palm apparently survived until 2000 (Sunding 2004). As the palm house of the Oslo Botanic Garden was not erected until 1868, Christen Smith’s seed could not have been planted prior to that.¹¹ It appears that the planting of Christen Smith’s



Figure 1. The first known illustration of *Phoenix tenuis* as a horticultural product, depicted in Ambroise Verschaffelt's plant catalogue (1869, opp. p. 13).

seed occurred in the 1870s or early 1880s in response to the publicity *P. canariensis* had received at the time.

In fact Ambroise Verschaffelt already may have had these palms on sale as indoor plants in the early 1850s. Both Sauvaigo (1894a, p. 147) and Rodigas (1894) made the point that from the 1850s onwards Verschaffelt marketed a small palm for the interiors under the name of *Phoenix tenuis*. In Verschaffelt's catalogues *P. tenuis* was first offered in 1867.¹² The palm mentioned by Sauvaigo and Rodigas may refer to *P. reclinata*.¹³

A date of the late 1840s or early 1850s as the first introduction to European circles beyond the Canary Islands is also implied by Regel (1879), who described his species *Phoenix cycadifolia* hort. Athen, which he based on a

then reputedly about 30-year-old specimen growing in the palace gardens in Athens. The illustration of that specimen has been the subject of some debate, but it has been accepted as *P. canariensis* (Barrow 1998, p. 566; Rivera et al. 2013a, b).

The first dispersal of *Phoenix canariensis* from the Canary Islands, however, well predated the Athens specimen. André (1893) discussed and depicted mature *P. canariensis* growing in Montevideo, Uruguay, one of which had an 8-metre-tall trunk and crown with over 300 leaves. According to André, these *P. canariensis* reputedly dated to the end of the 18th or the early years of the 19th centuries and had been grown from seeds brought over by Canary Islanders migrating to Uruguay. Even though growth rates of *P. canariensis* are linked to

moisture access and especially to the length the palm was kept in a pot before planting out,¹⁴ the date range posited by André is somewhat doubtful. In 1894 the palms planted by Vigier three decades earlier had attained a total height of 10 metres and a stem diameter of 1.3 metres (Sauvaigo 1894b).¹⁵ Thus a palm with a stem height of 10 metres (total height ca.14 metres) would equate to an age of about 40–50 years—much less than the 80–100 years posited by André.

Commercialisation by the Ghent nurseries

These plants were soon exhibited at various national and international exhibitions. Ambroise Verschaffelt, for example, exhibited his palms (as *Phoenix tenuis*) at the Eighth International Exhibition of Plants in Ghent in March 1868 (Courtin 1868, p. 71), while in the same year a M Cavalier-Contet exhibited a *P. canariensis* at Bourg in France (Dufour 1868, p. 115). The plant was primarily distributed under two names: *P. tenuis* and *P. canariensis*.

The plant was marketed under the name *Phoenix tenuis* by Ambroise Verschaffelt and his erstwhile competitor and later successor, Jean Jules Linden, who bought the Verschaffelt operations in 1869 (André 1873; De Bauw 1967; Ducos 1875). Other Belgian horticultural suppliers, such as Dallièrre (1872) and de Cock (1878), also offered the plant under that name (Fig. 2). Jean Verschaffelt,

one of Ambroise Verschaffelt's sons who ran a nursery on his own account since the 1860s (De Bauw 1967; J. Verschaffelt 1864), primarily dealt in established, potted specimens, for example, selling 100 *P. tenuis* in store pots at £2/9 (Fig. 3; J. Verschaffelt 1875).

Breaking the Belgian monopoly

The other line of supply came from nurseries that collaborated directly with Hermann Josef Wildpret (1834–1908). In addition to being the lead gardener at the Jardín de Aclimatación de La Orotava (Tenerifé) between 1860 and 1893, Wildpret also carried out a substantial seed distribution business on his own account (Bolleter 1910, p. 106; Matos 1995; Wildpret 1866, 1880, 1883). Wildpret supplied the firm Charles Huber et Cie, horticulturalists at Hyères, with *Phoenix canariensis* seeds from at least 1863 onwards (Chabaud 1915, p. 138; Rivera et al. 2013a, p. 1277). Wildpret's main collaboration, however, was with the Hamburg seed merchant Albert Schenkel (Drude 1882, p. 183), with whom Wildpret later formed a joint business, Wildpret & Schenkel in Orotava¹⁶ (Eichler 1884; Göppert 1880, p. 319). Chevalier (1924, p. 195) observed that Wildpret shipped large quantities of seeds to European customers. Albert Schenkel offered the plant under the name *P. canariensis* from at least 1871 onwards. As noted earlier, a specimen of *P. canariensis* was exhibited at Bourg (France) in 1868 (Dufour 1868, p. 115), which, as the name would suggest, was a potted specimen provided as a seedling by Schenkel in Hamburg or Huber et Cie in Hyères.

The various publications, both the nursery catalogues and the horticultural magazines, tended to show small plants with some six to eleven leaves, often in pots (Spennemann 2018b). This is understandable as the main market at the time was amateur horticulturalists



Figure 2. Advertisement by Alexis Dallièrre (1872).

ALSOPHILA WILLIAMSII

(THE WEEPING TREE FERN).

JEAN VERSCHAFFELT

Having a fine stock of healthy young plants of this extremely fine and novel Tree Fern, which was imported by him, and figured and described in the *Gardeners' Chronicle* of June 6, 1874, begs to offer them at the following low prices, viz.:—

Single Plants	7s. 6d.	Per 25 Plants	100s.
Per Dozen Plants	60s. 0d.	„ 100 „	£12

The Plants, taken out of pots, may be sent, per Continental Parcels Express, at very little expense.

EARLY ORDERS SOLICITED BY

JEAN VERSCHAFFELT,
THE NURSERIES, 134, FAUBOURG DE BRUXELLES, LEDEBERG,
GHENT, BELGIUM.

N.B. The following PALMS can still be supplied in store pots:—

						£	s.	d.
PHŒNIX RECLINATA	...	...	...	...	per 100	2	8	0
PHŒNIX RECLINATA	...	...	...	...	per 1000	20	0	0
PHŒNIX TENUIS	...	...	...	...	per 100	2	8	0
PTYCHOSPERMA ALEXANDRÆ	...	...	...	...	per 100	4	0	0
SEAFORTHIA ELEGANS	...	...	...	...	per 100	2	8	0
SEAFORTHIA ELEGANS	...	...	...	...	per 1000	20	0	0
ARECA MONOSTACHYA	...	...	...	...	per 100	6	0	0

Figure 3. Advertisement by Jean Verschaffelt (1875).

who looked for small plants suitable for their houses, verandahs or greenhouses. In 1870 *Phoenix tenuis* was lauded as a plant “adapted for cool conservatories and for embellishing the flower garden during summer” (Hibberd 1870, p. 75) and recommended for the ideal cool house conservatory (André 1872), for amateur greenhouses (Hibberd 1873, p. 251) and for living rooms in general (Schmidlin 1875, p. 447, 1880, p. 443).

It was not too long until other European nurseries sold the plant. On record, for example, is that *Phoenix canariensis* / *P. tenuis* was offered by the German nurseries Laurentius

in Leipzig (Koch 1870c) and Haage & Schmidt in Erfurt (Haage & Schmidt 1872, p. 17; Koch 1870b, p. 168, n° 233, 1870c), Harmsen und Busch in Hamburg (exhibited in 1877, Sadebeck 1877, p. 274), Karl Lackner in Berlin in 1870 (as *P. reclinata*, Koch 1870a), Melchers in Bremen (exhibited in 1874, Otto 1874a, pp. 357–358); and Stüeben in Hamburg (exhibited in 1874, Otto 1874b, p. 514; exhibited in 1877, Sadebeck 1877, p. 272). In the late 1870s and early 1880s it was further offered by a wide range of Belgian nurseries, such as Jules de Cock (1878 as *P. tenuis*), F. J. Spaë (as *P. tenuis*, Pingeon 1883, p. 67), Auguste Van Geert fils

(as *P. canariensis*, Pigeon 1883, p. 68) and de Cock (1878, 1879a).

These dates are interesting as *Phoenix canariensis* does not come into reproductive maturity until it is 6–7 years old. This suggests that these German offerings originated from seed obtained from Tenerife. We can assume that the commercially viable quantity of seed from the palms at the Côte d’Azur (especially from Cannes, Hyères and Nice) would not have come on the market until the mid- to late 1870s (Nardy 1877, pp. 500–501).

Very soon after its introduction onto the market, *Phoenix tenuis* was discussed as an eminently suitable but expensive plant for Parisian apartments (Robinson 1869, p. 274). Ambroise Verschaffelt (1869, p. 13) could offer only 120 plants at the high price of francs 50 each. Once the plant was grown by a wider range of nurseries, however, the costs dropped significantly. The German nursery Haage & Schmidt in Leipzig, which possibly commenced offering the plant in 1871 (Haage & Schmidt 1870 [not listed], 1871 [incomplete catalog]), by 1872 was listing *P. tenuis* with prices of Reichsmark 16/100 and RMk 12 for 4 plants with 2–3 leaves each (1872, p. 17). By 1873 the cost had dropped to RMk 12/100, while the cost for the established plants stayed the same, but “better quality” plants of 3–4 leaves were offered (Haage & Schmidt 1873, p. 20). By 1874 the cost of these 4 plants, now with “5 strong leaves” had come down to RMk 4.40 (Haage & Schmidt 1874, p. 21). In 1874 Laurentius in Leipzig sold a 1-foot-high plant for 1 Thaler (Otto 1874b). In addition to the various German¹⁷ and Belgian¹⁸ nurseries, *P. canariensis* was soon offered in Russia.¹⁹

Plant and seed production at the French Riviera

The *Phoenix canariensis* planted by Vigier in Nice attracted much public attention. Indeed, it can be posited that it was the plantings at

the French and Italian Riviera that popularised the plant to a wider audience.²⁰ François Nardy (1877, pp. 500–501), for example, commented on Vigier’s specimen, noting that the nomenclature was in utter confusion:

Another Phoenix more recently grown in the open, also promises us amazing developments. It is the Phoenix paludosa or reclinata or reclinata vera (J. Lindeve) or canariensis, or finally tenuis. While waiting for the botanical science and more long-term observations of adult specimens to shed light on this maze of names we can say that the Phoenix we are talking about is very fast-growing, with long-leaves of 3 meters and more when the plant is mature, these leaves are many and well stocked with bright intense green leaflets which they are elegantly reflected at their summit and they provide always a palm with a bushy crown. The lush garden of Mr. Vicomte Vigier, in Nice, possesses a specimen of this Phoenix of incomparable beauty and a size singular among those growing outdoors in Europe.

As time went by, sales quantities continually increased and prices dropped concomitantly. The Belgian nursery Jules de Cock, for example, offered 100 palm seedlings at 12 shillings in March 1879 (de Cock 1878, 1879a). By September of the same year the price had dropped to 10 shillings per 100 (de Cock 1879b, 1880). In 1882 de Cock sold the seedlings at the same price per 100 but also offered larger quantities at a 33% discount, asking 1,000 seedlings for £4 (de Cock 1882).

Consequently, during the mid- and late 1870s the plant was offered widely in Continental Europe and beyond. In 1874 it was offered in the Americas, for example, by the Californian nurseries of Miller and Sievers (San Francisco)²¹ and Bernard S. Fox (San José).²² Others imported and retailed Belgian seedling stock, such as the British nursery Williams (1870, pp. 273–274), who in his extensive gardening catalogue for 1870 noted that *Phoenix tenuis* was a “most elegant species, as a young plant,” but that it was of “too recent

introduction to our gardens to speak of it any other way.” The Belgian suppliers must have, at least initially, well concealed the source of their palm seeds, as the origin was not clear to the British nursery man, who suspected it of coming from the West Indies.

Phoenix canariensis was quickly picked up by various botanic gardens, such as Algiers in 1870 (Colson 1878), St. Petersburg (Russia) in 1873 (as *P. tenuis*, Trauvetter 1875a, p. 88) and 1874 (as *Ph. cycadifolia*, Trauvetter 1875b, p. 378); Hobart (Australia) in 1875 and 1877 (Spennemann 2018c), Cannes in 1876/77 (d’Épemesnil 1878) and Sydney (Australia) in 1880 (Spennemann 2018c). Numerous horticultural societies and public gardens were keen to trial the plant. During the last decade of the 19th century *P. canariensis* is on record *inter alia* for botanic and public gardens in the European cities of Athens (Regel 1879), Fiume (Joseph Karl of Austria 1889), Lisbon (Nardy 1888, 1889), Madeira (Bornmüller 1903, p. 407), Palermo (Borzi 1912; Terracciano 1897), Rome (Pedicino et al. 1883, p. 29), Vienna (Kropatsch 1882) and Zadar (Obad Šćitaroci and Bojanić Obad Šćitaroci 2014, p. 99, fn. 17)²³; the North African cities of Hamma (Thays 1888) and Cairo (Hamdy et al. 2007); the North American states of California (Masters 1902) and Florida (André 1888e); the South American city of Montevideo (André 1893; André and Gérôme 1891); and Hawai’i in the Pacific Islands (Stubbs 1901, p. 50). Colonial powers tested the plant also for its suitability in their colonial gardens, such as Imperial Germany planting *P. canariensis* in Kwai and Dar-es-Salam (both German East Africa, now Tanzania; Volkens 1898).

Likewise, the plant figured in many horticultural exhibitions, where eager amateurs as well as nurseries showed off their unusual, prize possessions. Examples are the third Paris World’s Fair (Exposition Universelle) 1878 (Cochet 1878); the Exposition d’Horticulture de

la Haute-Garonne 1881, de Marseille (Monges 1883) and the Exposition Internationale de la Société Royale D’Agriculture et de Botanique De Gand in 1883 (Pigeon 1883, pp. 67–68).

Initially, the plants were grown from seed obtained from the Canary Islands, primarily from Tenerife (Carrière and André 1882), but as *Phoenix canariensis* adapted well to the conditions at the French Riviera, and seeded freely, seed production soon shifted to Hyères (Smith 1882, p. 44) and other locales in the Riviera, such as Nice (André 1888c). Evidently the French nurseries soon outperformed the quantity of seeds supplied from Tenerife by Wildpret and Schenkel. Kerlen (1914) described the specialised nursery businesses on the Italian and French Riviera in the Mediterranean, where *P. canariensis* were grown from (de-fleshed) seed as pot plants. He noted that, subject to regular watering, the first two shoots would appear after about a year. The plants, re-potted three to four times, went on sale after about four years, when they exhibited four–five leaves. Once planted out, the palms would reach a height of three–four metres after another five years (Kerlen 1914).

One of the concerns to specialist collectors was that many of the plants grown at the French Riviera were not true to type but were in fact hybrids. The Florida horticulturalist Henry Nehrling (1853–1929) bitterly complained in 1919:

The *Phoenix* or Date Palm seeds all came from Haage & Schmidt, who obtained their supply from the Riviera. Their nomenclature is in a deplorable condition, and many hybrids came from the same lot of seeds. I planted an avenue of Canary Island Date Palms running from the house to the lake. The plants made a good growth, but scarcely one of them is true to name. They are all hybrids of *Phoenix Canariensis* fertilized with the pollen of *P. sylvestris* and *P. dactylifera*. It was necessary to order the seeds from the Canary Islands directly, and I have now a number of young plants which show their true nature (Nehrling 1919, pp. 613–614).

In fact hybridization of *P. canariensis* with *P. dactylifera* had been observed as early as the late 1870s (Kerchove de Denterghem 1878; see also André 1888b; Watson 1891) but seemed of little concern to the commercial production of ornamental palms.

The market for *Phoenix canariensis* and *P. tenuis* continued unabated. In the press the plant was widely discussed as best suited for house decorations, windows and verandahs (Anonymous 1901, 1902; Henderson 1892, p. 214; Hudson 1882; Roehrs 1892; Wills 1892, p. 87). The descriptions in the horticultural press of various famous gardens at the French and Italian Riviera added to the plant's "cachet" (André 1888a; Gallé 1878, p. 179; Nardy 1888; Ricasoli 1890; Riffaud 1889; Sauvaigo 1891, 1894b). In addition, when the craze of highly ornamental temporary flowerbeds ("carpet beds") raged in Europe at the turn of the 20th century, young *P. canariensis* were often used in central focal features (Götze 1896; Martinet 1897; Möller 1890a, 1890b). Indeed, *P. canariensis* was marketed as being suitable for "lawns, parks, pleasure grounds, terraces, vestibules [and] conservatories" with the marketing slogan "Italy in England" (Hooper & Co. 1885).

Even as late as the 1880s, amateur horticulturalists won prizes at European flower shows for their *Phoenix canariensis*. As these are too numerous to summarise, examples from Amsterdam (André 1887), London (Anonymous 1882), Lyon (Viviand-Morel 1886, p. 408) and Vienna (Kropatsch 1882) shall suffice. Some of these were grown in heated greenhouses well beyond their normal distribution (Anonymous 1882).

Mass production

European nurseries initially provided potted specimens to their overseas customers. On occasion, private individuals even imported

well-established, sizeable trees on their own account.²⁴ As this was impractical, the European nurseries soon sold seeds to American horticultural firms. In an attempt at maintaining a grip on the American market, the Ghent firm Wallem et Legrand even established a branch nursery in Los Angeles in October 1884 (Legrand 1885), where it offered, *inter alia*, *Phoenix tenuis* grown from (imported) seed.

Specimens planted in the United States and Australia soon were mature enough to provide seed sources of their own, thus allowing local nurseries to offer large quantities of the plant. By the late 1880s and early 1890s *Phoenix canariensis* had become standard nursery stock in Europe, the United States and Australia,²⁵ both as plants and soon after also as seeds. The California Seed, Bulb and Plant Company (1898) in Los Angeles sold a new crop of California-grown *P. canariensis* seed at prices of \$1 for 300 seeds, \$2 for 1,000 and \$10 for 5,000.²⁶ In the United States *P. canariensis* (and *P. tenuis*) was on record from nurseries in California,²⁷ Florida,²⁸ Illinois,²⁹ Louisiana,³⁰ New York,³¹ Ohio³² and Pennsylvania.³³ Despite local production, imports of established plants continued, however, as is exemplified by the following comment in *The Florist's Exchange*:

Phoenix canariensis is still imported by some dealers and used by the large decorators with good effect, but Phoenix generally are but little grown in this country, with the exception of California and the South, where they are used to advantage outdoors (Taplin 1906).

Australian nurseries too had thousands of *P. canariensis* seedlings and juvenile plants under cultivation to satisfy a booming demand (see review in Spennemann 2018c).

In the European market Belgian and German greenhouse-based nurseries, which had dominated the market for potted specimens for so long, were soon eclipsed by those from

the south of France, where the plant could be readily grown in the open. A centre of this trade was Hyères, where in 1888 the Jardin d'Acclimatation had 50,000 *Phoenix canariensis* under cultivation in various stages of growth (André 1888d). According to Foussat (1909), during the first years of the 20th century Hyères shipped some 362,000 young palms annually. To make use of the climate, some Belgian companies, such as Jean Jules and Lucien Linden, even set up branch nurseries in Hyères (e.g., the Compagnie Méridionale d'Horticulture in 1888; Durnerin 2013; Linden 1888).

British nurseries, which could not profitably grow *Phoenix canariensis* from seed, imported potted specimens from Belgium or the Côte d'Azur, and presumably also from Germany. In August 1887, for example, the firm Protheroe and Morris (1887) offered 1,000 *P. canariensis* at a plant sale in London. Given the accelerated production, it is not surprising that the unit price per seed steadily decreased (Tab. 2).

Orchestrated nomenclatural confusion

Given the range of nurseries involved and competition for a limited market, it is not surprising that the nurseries tried to differentiate themselves by offering *Phoenix canariensis* under a broad range of synonyms. It would appear that Ambroise Verschaffelt marketed the plant under *P. tenuis*, while Linden initially used the confusing name *P. reclinata*.³⁴ Schenkel, as well as Huber & Cie, both collaborating with Wildpret, marketed them under *P. canariensis*. It was soon noted that *P. canariensis* and *P. tenuis* were identical (e.g., Neubert 1873), but this did little to stop the confusion.³⁵

Rather, the nurseries exploited this confusion, in part intentionally, in part unintentionally. As the plant was of relatively recent introduction to the nursery trade

and usually grown from imported seed, the horticulturalists generally were unaware of the natural range of growth and leaf forms. Consequently, variations in form, gloss and colouring of the leaves were happily marketed as different varieties by the nurseries and accepted as such by competitors and enthusiasts.³⁶ The German nursery Haage & Schmidt in Erfurt, for example, simultaneously offered four growth forms of the same species under different names. Examples of the horticultural synonyms are *Phoenix canariensis* (Haage & Schmidt 1873, p. 20, 1874, p. 20); *P. canariensis macrocarpa* (Benítez de Lugo and Wildpret 1879, p. 43; Haage & Schmidt 1873, p. 20, 1874, p. 20); *P. cycadifolia* (Haage & Schmidt 1874, p. 20; Regel 1879; Van Houtte 1881b, p. 37) and *P. tenuis* (Haage & Schmidt 1872, p. 17, 1873, p. 20, 1874, p. 21; A. Verschaffelt 1869, p. 13).

In the 1890s the nursery Haage & Schmidt also offered *Phoenix canariensis* under the name *P. vigieri* (Kuntze 1905), an appellation that had been previously used by some Belgian horticulturalists (André 1888c) and reputedly generated by Vigier himself (Weitgand 1884). Haage & Schmidt did use this term, presumably, in order to capitalise on the fame the specimens in Vicomte Vigier's garden had accrued. It is not surprising, of course, that *P. vigieri* was the *nom de rigueur* in Nice itself (Guiraud 1884).

As noted above Linden (1857, p. 56) offered the plant in Ghent under the name *Phoenix reclinata* (André 1888c; Sauvaigo 1894b) even though *P. reclinata* is a separate and formally recognised species (i.e., the Senegal Palm). To make the confusion even greater, an article in the *Gardener's Chronicle* (London) asserted that *P. canariensis* was a name applied by the horticultural trade to *P. reclinata* (Anonymous 1883).

Even as late as the 1890s, when it was well and truly known that *Phoenix canariensis* and

Table 2. Global price (in US\$) of *Phoenix canariensis* seeds, 1881–1914 (based on Spennemann 2018a)

Year	<i>P. canariensis</i>	<i>P. tenuis</i>	<i>P. canariensis macrocarpa</i>	<i>P. cycadifolia</i>
1881	8.66	10.83		6.50
1889	4.59	4.59		
1890	3.50	1.66	2.99	2.99
1891	6.38	4.59		
1892	3.46	1.59	2.72	2.99
1893	0.63	0.77	2.45	2.45
1894	0.63	0.77	2.59	2.45
1895	0.57	0.73	1.49	2.04
1896	0.77	0.97		
1897	0.37	0.45	1.50	1.50
1898	0.51	0.45	1.49	1.49
1899	0.44	0.45	1.36	1.49
1900	0.36	0.39	1.35	1.49
1901	0.37	0.43	0.98	1.49
1902	1.05	1.40	0.92	1.49
1903	1.68	2.87		
1904	1.85	2.58		
1907	0.17	0.35	0.92	1.41
1908	0.17	0.35	0.92	1.41
1909	0.17	0.30	0.92	1.41
1910	0.17	0.30	0.92	1.40
1911	0.17	0.30	0.92	1.40
1912	0.17	0.30	0.92	1.40
1913	0.17	0.34	0.00	1.40
1914	0.17	0.31	0.92	1.40

P. tenuis were the same species (Neubert 1873), some nurseries continued to obfuscate the issue, offering both as separate species, while claiming the origin of *P. tenuis* was unknown.³⁷ The situation was not helped by the fact that

some horticultural textbooks not only listed both as separate species (e.g., Bellair and Saint-Léger 1900, p. 1289 [*P. canariensis*] and p. 1293 [*P. tenuis*]) but also provided illustrations for both (see Spennemann 2018b).³⁸

The nurseries were of course keen to offer varieties for the “discerning” amateur enthusiast and collector. The Ghent nursery Alexis Dallière, for example, exhibited a variety labelled *Phoenix tenuis variegata* at the international exhibition in Florence in 1874 (André 1874, p. 91). The same nursery offered another variety, labelled *Phoenix tenuis fol. aureo-variegatis* (Regel 1875, p. 177) at the same venue in the following year. In his review of the Florence exhibition of 1875, Regel noted that the latter plant “was still too young to be evaluated.” Clearly, these were minor variants in leaf shape and leaf colouring that demonstrated the range of form under which *P. canariensis* naturally occurs. As late as 1889 nurseries were trying to market form variants, such as *P. canariensis gracilis* (Anonymous 1889). It should be noted that none of these varieties appear to have been stable enough to be fixed and propagated on a larger and reliable scale.

Uses

Even though *Phoenix canariensis* had been first formally planted in 1864 out by Vigier in Nice, the plant was primarily grown by horticultural enthusiasts either indoors or in non-heated conservatories/glass houses. During the late 1870s and early 1880s, *P. canariensis* became a feature tree in private gardens in the French and Italian Riviera (Gallé 1878; Nardy 1877). The street plantings of the late 1880s with palm-lined corsos and promenades created an exotic ambience that came to symbolise the Riviera and concomitant, albeit assumed, life of wealth and leisure. These planting schemes were exported to the United States (Zona 2008) and Australia (Spennemann 2018c).

Due to its hardiness, the plant found uses other than ornamental. A treatise on colonial agriculture, for example, recommended the use of *Phoenix canariensis* for the stabilisation of

coastal dune systems as the plant was resistant to salt-laden sea air and for the creation of wind breaks on the edge of inland oases, as long as the plant could be watered (Rivière and Lecq 1900, pp. 687–688).

Use of the fruit as animal fodder and of the inflorescences as brooms never eventuated beyond the Canary Islands where it had been practiced traditionally (Benítez de Lugo and Wildpret 1879, p. 43). In France attempts to develop a cottage industry making mats and baskets plaited from the leaves and canes shaped from the midribs never succeeded (Guisabu and Vanden-Berghe 1882, p. 749). *Phoenix canariensis* was planted as a crop to cut the young leaves for use in wreaths and similar funerary ornaments in the United States (Credner 1887) and Germany (Kerlen 1914) as well as for church decorations on Palm Sunday.

Conclusions

Even though Ambroise Verschaffelt was the first nursery to formally offer the plant, the lineage of *Phoenix canariensis* in Europe is more complex (Fig. 4). Despite holding a central role, the Belgian dealers competed with each other and thus followed different routes. One lineage comes from Tenerife via Kew to Jean Jules Linden, another from Tenerife to Verschaffelt, and a third from Tenerife to Charles Huber.

The Vigier specimen, which had been planted out in 1864, came from Linden, who likely sold potted plants rather than seeds, implying that the palms would have been grown from seed germinated in 1861 or 1862.³⁹ Since Linden had obtained his seed from Kew, it follows that the seed must have come to Kew shortly before (i.e., between 1859 and 1860). It is very tempting to assume that Wildpret, being the head gardener at Orotava since 1860, was Kew’s supplier, possibly in order to establish an exchange of botanic material.

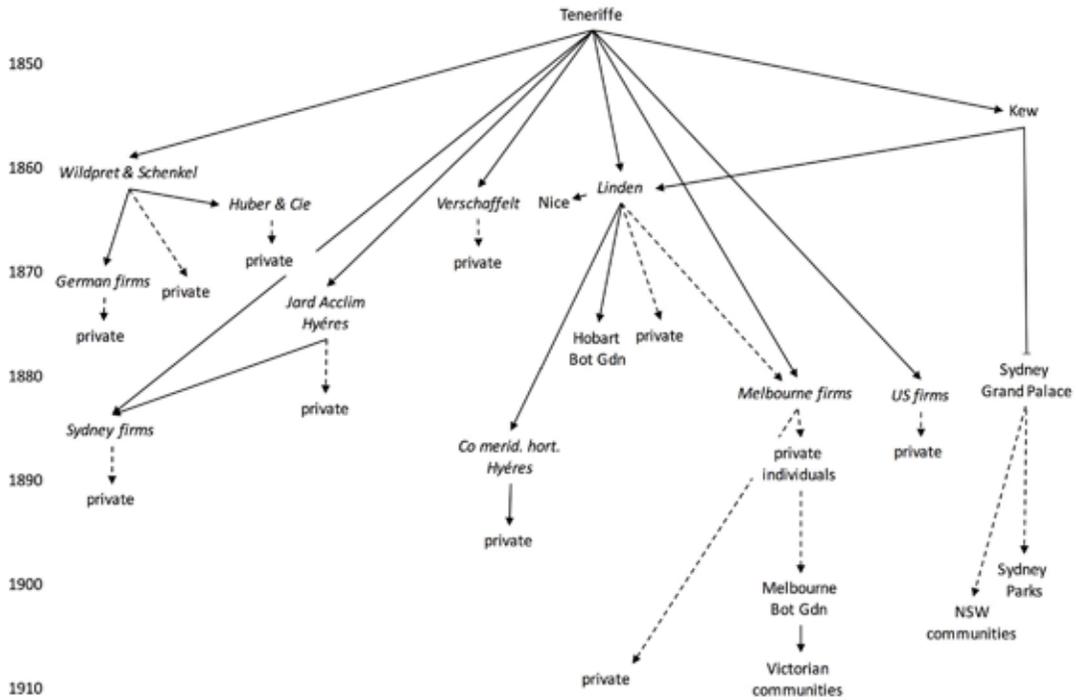


Figure 4. Schematic model of the development of *Phoenix canariensis* in the horticultural industry.

The early production and dispersal of *Phoenix canariensis* to Australia was a mixture of controlled production by Belgian horticultural firms and the organised acquisitions by botanical gardens and acclimatisation societies as well as an uncontrolled import by enthusiasts. The seed was originally supplied by Wildpret and later Schenker to Kew as well as to Belgian, French and German horticultural firms. Potted specimens were then distributed with seed production commencing soon after by rival horticultural establishments in Belgium, Germany and the French and Italian Riviera. From there the plant was dispersed to Australia and the United States, where local seed production commenced. As *P. canariensis* reaches reproductive maturity and first flowers after five to ten years (Borzi 1912), a near-decadal delay between the first introduction of the plant and the commencement of local seed production exists.

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Notes

1. See, for example, this quote: “It is quite a common spectacle [in Pasadena] to see a seven- or ten-ton palm tree being carted along the roads. You can purchase a house in this up-to-date town and for £20 a contractor will plant three or four large palm trees in front of the dwelling, and in a few weeks the place will have quite an ancestral appearance” (Anonymous 1903).
2. A photographed specimen of 28.6 metres existed on Tenerife until it died in 1918 (Bois 1918).
3. Hybridization of *Phoenix canariensis* with *P. dactylifera* had been observed as early as the 1880s (André 1888b).
4. By 1885 one of the palms had developed a crown with a 13-metre diameter (Lackner 1885, p. 255).

- The Verschaffelt origin was mentioned also by Watson (1891).
5. Otto Kuntze (1905) insisted that this was a different species that only existed in horticultural settings but that had remained very consistent. He asserted that he had never seen one of these in the Canary Islands even though he had visited all of them bar Ferro. Following André, he referred to the plant as *Phoenix vigieri* (Kuntze 1903, 1905).
 6. See also the 11 December 1882 correspondence between Justin-Benjamin Chabaud (1833–1915), director of the Jardin Botanique at Saint Mandrier at the Côte d'Azur and Joseph Dalton Hooker (1817–1911) of the Royal Botanic Gardens, Kew (cited in Chabaud 1915, p. 137). Hooker was certainly instrumental in dispersing *Phoenix canariensis* to botanical institutions across the world as the 1879 or 1880 introduction to Sydney attests (Turner 1919; see also discussion in Spennemann 2018c).
 7. “[*Phoenix tenuis* (un des plus gracieux *Phoenix* introduits)” (A. Verschaffelt 1867c, p. 4).
 8. *Phoenix tenuis* (V. dessin ci-contre). C'est sans contredit, pour la décoration des serres et des appartements, une de meilleurs introductions en fait de Palmiers ; il est tout-à-fait de serre froide. Rien de plus gracieux que le *Phoenix tenuis*, ce dont on peut se convaincre en examinant ce dessin, fait d'après nature par notre habile dessinateur. J'ai à la disposition des me honorables clients quelques potées de ce beau Palmier, contenant environ 120 plantes au prix de fr. 75 la potée (A. Verschaffelt 1869, p. 13).
 9. Barrow (1998, p. 556) noted that according to the *Index Londinensis*, *P. tenuis* was first illustrated by Ambrose Verschaffelt (1863b, p. 13), but this could not be verified in the catalogues. Moreover, the *Index Londinensis* listing *Phoenix* spp. (Stapf 1929–1931, 5:70) did not include reference to that illustration.
 10. This was taken up with modification by the medieval encyclopaedist Solinus (1572, p. 240), who conflated two entries and interpreted them as “*Palmeta caryotas ferentia multa nux pinea*” (many pine nut carrying date palms). See explanation and critique by Martinus Delrio (Solinus 1572, p. 58).
 11. It seems that the plant soon outgrew the glass house. In consequence, in 1955 the Oslo Gardens chose to lower the plant, in a pot, to the basement (Røsjø 2016). By 1967 it was reported as being 8.5 metres tall (Sunding 1967). A dormancy period of 52 years for Christen Smith's palm seed sounds excessive, but this discrepancy cannot be explained at the time of writing.
 12. *Phoenix tenuis* is not listed in A. Verschaffelt 1858a, 1858b, 1860, 1861, 1862a, 1862b, 1863a, 1863b, 1864a, 1864b, 1865, 1866a, 1866b.
 13. *Phoenix reclinata* is a multi-stemmed species with a less full crown than *P. canariensis*. Ambrose Verschaffelt did not offer *P. reclinata* in his catalogues (1858a, 1858b, 1860, 1861, 1862a, 1862b, 1863a, 1863b, 1864a, 1864b) until 1865 at a price of francs 10 (1865a, p. 6, 1866b, p. 8), dropping the price to 5 (1866a, p. 16) and then not offering it (1867b, p. 7). In supplement catalogues Verschaffelt offered the “real *Phoenix reclinata*” at the price of francs 5 (with discounts for quantity purchases of francs 50 for 12 palms and francs 75 for 25 palms (1867c, p. 4, 1868a, p. 21, 1868b, p. 12). That comment can be construed as a stab at Jean Jules Linden initially selling *P. canariensis* under the name *P. reclinata*. In 1869 when Linden had taken over the company, the catalogue stressed that *P. reclinata* was often confused with *P. leonensis* and *P. farnifera* (A. Verschaffelt 1869, p. 13). In fact, *P. leonensis* is a synonym of *P. reclinata*.
 14. For example, the Philadelphia-based firm Bell and Sons (1905a, b) sold a 35-year-old *Phoenix canariensis* that had been kept potted throughout and had attained a height only of 8 feet with a crown of similar dimensions.
 15. Regel's 30-year-old palm in Athens had only a 3.25-metre-tall stem with 0.9-metre diameter. As little is known about the life history of the palm apart from Regel's article (1879), that information needs to be read *cum grano salis*. The small size of the palm, compared to the Vigier specimens, suggests that palm was either a stunted specimen that had been kept potted for a prolonged period prior to being planted out in the Athens gardens or that the age of the plant was overestimated by Regel. The latter appears more probable as Regel's illustration shows a plant with comparatively few leaves (Regel 1879; Spennemann 2018b).
 16. On record for at least 1880 and 1883, later it was referred to as Albert Schenkel in Hamburg, Etablissement für Samencultur in Orotova (Teneriffa), Samen und Zwiebeln, Zierkork etc. (Beck 1893).
 17. In addition to the already mentioned firms of Haage & Schmidt in Erfurt, later JE Schmidt (Otto 1881), Harmsen und Busch in Hamburg (exhibited in 1877, Sadebeck 1877, p. 274), Laurentius in Leipzig, Melchers in Bremen (Otto 1874a) and Stüeben in Hamburg (Otto 1874b, 1882; Sadebeck 1877), we have reference to Seemann and Goepel, of Wandsbeck near

- Hamburg, who in 1881 sold one-year-old seedlings in store pots at 15s/100 and at £6/10 per 1000 (Seemann & Goepel 1881); in 1890 that company experienced a shortage of *P. tenuis* due to the hard winter of 1888, which was exacerbated by fungal attack (Seemann & Goepel 1890). Some of the production was on a large scale, even in Germany. For example, by 1906 the nursery Neubert in Wandsbeck, near Hamburg, had 18,000 PC under cultivation (Beissner 1906).
18. Louis van Houtte of Ghent offered *Phoenix canariensis* (francs 2.00/10 seeds), *P. cycadifolia* (fr 1.50/10) and *P. tenuis* (fr 2.50/10) as seeds (Van Houtte 1881b, pp. 37–38), as well as *P. tenuis* (fr 50 for 3 plants) as plants (Van Houtte 1881a, p. 117). See also Dallière (1884).
 19. Emil Ruppert of St Petersburg (Russia), who used to purchase seedlings from Germany but now grew *Phoenix tenuis* from seeds (Dörr 1887).
 20. By the 1880s the horticultural use of *Phoenix canariensis* had moved from private gardens and parks to palm-lined boulevards and promenades, such as at Nice, Cannes and Hyères (André 1888c). See also Parguel (2009) and Campodonico et al. (2015).
 21. Cited after Zona (2008) but not listed in Miller & Sievers 1874 catalogue. Documented as growing in 1877 in Woodward's Gardens in San Francisco (E. J. Hooper 1877, p. 193).
 22. Bernard S. Fox offered both *Phoenix canariensis* and *P. tenuis* in his nursery catalogue of 1874 according to Streatfield (1984, p. 76).
 23. Not all attempts were successful. For example, efforts to grow *Phoenix canariensis* in the Bretagne had to be abandoned due to adverse climatic conditions (Clos 1897, p. 179).
 24. For example, in 1898 a Mr John Bader donated a 20-foot-tall specimen with a crown of 20-foot diameter to a local park in Pittsburgh. Bader had acquired the plant on a trip abroad (Anonymous 1898b).
 25. The first documented presence of *Phoenix canariensis* in Australia dates to 1877 when the Royal Society of Tasmania acquired (from an unspecified supplier, probably Linden) an unspecified number of *P. tenuis* for its gardens in Hobart (Abbott 1878, p. 30). In the mid-1880s, the nursery Law, Somner and Co. (1886) sold potted specimens, which would have been grown from imported seed and would have been at least 2–3 years old.
 26. See also the Southern California Acclimatizing Association (1899) selling 1,000 seeds at \$2.50.
 27. For example, the Californian nurseries Thomas A. Cox & Co. and Berger & Co. in San Francisco and Orcutt Seed and Plant Company in San Diego sold *Phoenix canariensis* and *P. tenuis* US\$2/100 seeds (Orcutt 1889, p. 1); *P. tenuis* \$2/100 and *P. canariensis* \$0.30/10, \$2.50/100 (Cox & Co. 1890, p. 33, 1891, pp. 33–34, 1892, p. 35); *P. tenuis* \$0.50/100 seeds, \$3.50/1000 and *P. canariensis* \$0.40/100 seeds, \$2.75/1000 (Berger & Co. 1896). *P. tenuis* offered in Santa Barbara, \$1/plant (Stevens 1893, p. 10).
 28. *Phoenix canariensis* (“a favourite species in cultivation for scenic effect”) and *P. tenuis* were marketed by the Florida nursery Reasoner Bros. (1887); *P. canariensis* and *P. tenuis* were offered by Pike and Ellsworth (1892, p. 36, 1893, p. 39).
 29. In December 1897 the nursery Wittbold in Chicago, Illinois, offered *Phoenix canariensis* in 5- to 7-inch pots, with heights between 18 and 30 inches (measured from top of pot to top of tallest leaf) and between 4 and 10 leaves. They were being offered at prices ranging from US\$0.50 to \$1.00 for single specimens and from \$5 to \$12 per dozen (Wittbold 1897, 1898). Some Chicago nurseries reported that *P. canariensis* returned by customers as the leaves were too stiff (Anonymous 1898a).
 30. *Phoenix tenuis* was grown in the open in New Orleans (Lester 1883). Even though the nursery offered them, the plants were addressed as “trash,” i.e., not special.
 31. *Phoenix tenuis* was sold by the New York nursery of Siebrecht and Wadley (1886, p. 12, 1889, p. 64); as well as seeds for *P. tenuis* by Charles Schwake (1895a, b) at US\$0.60/100 and \$4/1000.
 32. The nursery J. H. Heiss (1898) in Dayton, Ohio, offered *Phoenix canariensis* in 4½- to 5-inch pots at US\$30/100.
 33. W. T. Bell & Sons of Franklin, Pennsylvania, offered a 6-foot-high *Phoenix tenuis* (1899) and an 8-foot-high *P. tenuis*, measuring 6 feet across (1902). The firm also dealt in mature plants, offering a “specimen palm *Phoenix tenuis* for sale” described as “thirty-five years old, eight feet high and broad” with an asking price of US\$25 ex pot (1905a, b). The Philadelphia company Henry A. Dreer offered both *P. canariensis* and *P. tenuis* (1898a, p. 41, 1898b, p. 41) and 60–72-inch-high *P. canariensis* (1899, p. 27, 1900, p. 8, 1901). For the Christmas season 1905 Dreer (1905a, b) sold *P. canariensis* in 7-, 8- and 9-inch tubs with heights ranging from 2½ to 4½ feet and priced between \$2 and \$6.
 34. Linden later used the name *P. tenuis* in his catalogues for 1869, 1870 and 1873 according to Rivera et al. (2013a).

35. In 1903 Kuntze, following Sauvaigo (1899, pt. 2, pp. 66–67), dismissed *Phoenix tenuis* hortorum altogether arguing that it was a collective title for juvenile plants of various *Phoenix* species that were primarily grown for use in living rooms (Kuntze 1903).
36. For example, Gilbert Nabonnand (1871), chief gardener at Lord Brougham's château Eléonore at Cannes, stated that he had both *Phoenix canariensis* and *P. tenuis* in his collection. For the seed production by Nabonnand, see Tournay (2009).
37. For example, Henry A. Dreer of Philadelphia offered both *Phoenix canariensis* and *P. tenuis* (1898a, p. 41, 1898b, p. 41). In California, the Sunset Seed and Plant Co. offered both *P. canariensis* and *P. tenuis*, noting that the latter was “[a] recent but very elegant addition to the family; it resembles *P. canariensis* in general appearance, but is more slender and finer in all its parts. Perfectly hardy. Habitat unknown” (1896, p. 81). Morris claimed that “[t]he native Date-palm of the Canaries deserves more than a passing notice. It was introduced into cultivation as *Phoenix tenuis*, and its origin not given” (1896, p. 69). Other authors noted that the origin of *P. tenuis* was still unclear and speculated it might have come from the Cape of Good Hope (Lund 1884, p. 258).
38. Both *Phoenix canariensis* and *P. tenuis* seeds were offered as separate species by Sevin, Vincent & Co. (1904, p. 26). The Erfurt nursery Haage and Schmidt (1922, p. 136) offered even four variants: *P. canariensis* (RMk 0.50/20 seeds; RMk 1.80/100 seeds), *P. canariensis macrocarpa* (RMk 0.50/10; 3.60/100), *P. cycadifolia* (RMk 2.30/10; 22.50/100) and *P. tenuis* (RMk 0.70/20 seeds; 3.00/100).
39. This may well explain the difference in year attributions for the Vigier specimen.
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