
A review of trunk-forming species of *Furcraea* (*Agavaceae*) in cultivation in the UK

J.C. DAVID

Botany Department, RHS Garden Wisley

Introduction

Members of the genus *Furcraea* are monocarpic rosette-forming plants distributed from Mexico into tropical South America. In the wild and in cultivation they make dramatic features due to the large size of their inflorescences, which can reach up to 9m in height and over 2m across, and resemble gigantic yuccas. One species, *F. foetida* (syn. *F. gigantea*), is grown widely in the tropics for the high quality fibre that can be obtained from the leaves. It was the first species to be introduced into cultivation in the UK, being grown at Hampton Court in 1690 (Baker, 1888). Most of the species have tough, rigid leaves, often with marginal spines, but a few (treated by Baker, *l.c.* in subgenus *Roezlia*) have more flexible leaves and lack marginal spines. In that group he included two Mexican species, *F. bedinghausii* and *F. longaeva*, and plants under these two names have been most widely cultivated in the UK since the middle of the nineteenth century. Both these species form distinct trunks over 1m in height and have been reported as being successfully grown outside in milder parts of the British Isles, nowhere more so than Tresco Abbey Gardens on the Isles of Scilly, generally under the name of *F. longaeva*.

In the treatment of the genus in the *European Garden Flora* (Couper, 1986), four species are mentioned as trunk-forming: *F. selloa*, *F. foetida*, *F. bedinghausii* and *F. roezlii*. The first two species are distinct in that they have rigid, rather than leathery flaccid leaves; the latter two species are separated on the basis of trunk height, the habit and colour of the leaves. Rather curiously *F. longaeva* is not

mentioned. Nor is that species mentioned in Irish & Irish (2000) which suggests that it is not currently in cultivation in the US.

In recent years, with the increased interest in growing a wider range of exotics in British gardens, more species of *Furcraea* have appeared in commerce. For years only plants under the name of *F. longaeva* were offered but in the *RHS Plant Finder 1998–99*, *F. bedinghausii* appeared, and rapidly became offered by a number of nurseries that specialize in hardy exotics. Although the species is not new to horticulture, as it is recorded in gardening literature from the 1880s, it seemed to disappear from cultivation in the early part of the twentieth century. Its reappearance raised a question as to its relationship with what is in cultivation under the name of *F. longaeva*; a problem further compounded by the appearance of a wholly unfamiliar species name, *F. parmentieri*, for the first time in the *RHS Plant Finder 2007–2008*, under a collector's code suggesting a new introduction. It became clear that the naming of the species grown in the UK had become confused.

Historical survey

To assist with resolving the problem of the correct name for the plants grown outside in the UK it was necessary to investigate the origin of the plants under these names.

1. *Furcraea longaeva* Karw. & Zucc.

This species was first discovered by Baron Wilhelm Friedrich von Karwinski on Mount Tanga¹ in Oaxaca Province of Mexico, growing at 10,000 feet, in May 1829. It was named and described in 1833, and according to Loudon (1838) was brought to England by Francis Rauch in 1833 (Fig. 1). Only seven plants were introduced and six were sold to Messrs Loddiges' nursery (Loudon, 1838). It flowered in the conservatory of the Regent's Park Botanic Garden in the summer

¹ The modern name and location of this mountain has not, as far as I have been able to determine, been established in botanical literature. It is possibly the one now known as Monte Fiscal-Santos, between San Francisco Cajonos (96° 15' W, 17° 10' N) and Villa de Mitla, west of Oaxaca. Originally known as Mount Tanga, it was re-named for two martyrs who met their end on the mountain.

ARBORETUM.

PART III.



Fig. 1 *Furcraea longaeva*, after J. G. Zuccarini (1833), from Loudon's *Arboretum et Fruticetum Britannicum* (1838).

Zuccarini's original illustration has been designated as the lectotype of the species.

2402

of 1864 and was described and illustrated for *Curtis's Botanical Magazine* t.5519 (1865). It is next cited, with an engraving taken from a photograph, in flower in a garden in the Scilly Isles in 1876 (Fig. 2). There is a further photograph and a painting by Frances le Marchant reproduced in King (1985) which date from 1875 (although King states that the date of introduction was 1894). From that point on the *Furcraea* growing at Tresco, for that was "the garden in the Scilly Isles", has frequently been reported as *F. longaeva* (see Hunkin, 1944; Arnold-Forster, 1948, with the memorable plate facing p. 330). The connection with the following species is made possible by material in the herbarium at Kew. Together with the specimens in the cultivated folder for *Furcraea*, there is a letter and photograph from Thomas Algernon Dorrien-Smith to Mr Dyer, dated 14 November 1881. The photograph is of a plant that flowered in 1875 and is remarkably similar to the engraved plate published in *Gardeners' Chronicle* cited above. In the letter Dorrien-Smith asks for Kew to determine if the plant is *F. longaeva* or not. He comments that the plants had produced many offshoots² and that these had flowered that year [1881]. He also notes that the original plants were there when he came to Tresco Abbey in 1872.

2. *Furcraea bedinghausii* K. Koch

Like *F. longaeva*, this is a species that originated from Mexico. It was first found by Benedikt Roezl, in Mexico, in January 1857 on Mount Acusca [Ajusco], south of Mexico City, at a height of 4000m (Roezl, 1881). It seems that he was the source of material that entered into cultivation in Europe in the 1860s, initially through Berlin Botanic Garden. The species received a succession of different names over the ten years that followed its introduction but the one that became fixed in the literature was *F. bedinghausii*, named after the Belgian gardener who first flowered it in 1863.

² King (1985: 59) quotes from a letter from Thomas Algernon's wife dated 31 August 1876 saying that the *Furcraea* "has thrown out hundreds of little green shoots all over the hanging branches where the flowers were."



FIG. 16.—FOURCROYA LONGEVA IN A GARDEN IN THE SCILLY ISLES.

Fig. 2 An engraving, taken from a photograph, of the *Furcraea* which flowered on Tresco in 1875, published in *The Gardeners' Chronicle* (1876).

It did not receive a mention in UK horticultural literature until a report by a Mr E. Woodall, who had managed to flower the plant outside against a wall in his garden in Scarborough in the summer of 1890. Mr Woodall had obtained his plant in Nice two years previously, as *Beschorneria yuccoides*, and sent flowering material to Kew for identification. This material was used for a plate and description in *Curtis's Botanical Magazine* t.7170 (1891). William Watson, then Assistant Curator at Kew, in an article on *Furcraea*s in *The Garden* later that year, makes mention of Mr Woodall's achievement but also links it to the plants grown at Tresco. He cites the letter from Dorrien-Smith stating that both plants [of *Furcraea*] present in the garden in 1872 had flowered in 1875 and that they had produced "offshoots" from which further plants had been grown. In the article, Watson draws attention to the other names which this species has been given, amongst which is *Yucca parmentieri*. Watson's article is accompanied by an engraving from a photograph of a plant that had flowered at Adare Manor, County Limerick, which had been grown in a conservatory there.

The species is subsequently reported in *The Garden* as flowering at Trelissick in Cornwall in the summer of 1897. The note states that while *F. longaeva* flourishes at Tresco, *F. bedinghausii* is far more ornamental on account of its pendulous inflorescence forming a curtain around the flower stem. Later reports of *F. bedinghausii* include flowering in South Devon in 1909 (*Gardeners' Chronicle* ser. 3, **46**: 340, 1909), at Pendarves, Camborne, Cornwall in the summer of 1913 (*Gardeners' Chronicle*, ser. 3, **54**: 166–167, 1913) and much more recently in 1972 when it flowered in a garden in Kingsbridge, S. Devon (*JRHS* **79**: 538, 1972). On all these occasions the plants had originated from Tresco, and were received under the name of *F. bedinghausii*, which makes it rather odd that in more recent times even Tresco Abbey Garden has reverted to referring to the plant as *F. longaeva* (King, 1985; Nelhams, 2000: 142).

3. *Furcraea roezlii* André

This name was introduced by André (1887) for a *Furcraea* that flowered in the Jardin d'Acclimatation at Hyères in the south of France. The plant had been grown under the name *Roezlia regia*; the genus name already being in use for a genus in the *Melastomaceae*, André renamed the plant as *F. roezlii*. In his account André gives no indication as to the source of the plants but distinguishes the species from other species of *Furcraea* on account of the spread out appearance of the petals, in contrast to the campanulate appearance of the flowers in the other species. Subsequently André (1895) noted that *F. roezlii* was identical to *F. bedinghausii* Koch based on Baker (1888). However, Trelease (1920) maintained the two species as separate, distinguishing them on the relative length of the leaves and on other features of the leaves. In *F. roezlii*, the leaves are said to be up to 2 metres long, rather concave and often recurved; in *F. bedinghausii* the leaves were given as 50–60cm long, short and stiff, and rather flat. This treatment has been followed by Irish & Irish (2000) who add that the two species also differ in leaf width (*F. roezlii*, approx. 8cm; *F. bedinghausii*, 5–7cm). It is interesting to note that in the same account the trunks of *F. roezlii* are stated to reach 4m, whereas Trelease (1920) gives the height as 1–2m.

Taxonomy

The confusion over the identity of the species in cultivation can be resolved as the Mexican trunk-forming species were revised by García-Mendoza (2000) who provided a key to the species. A translation of the key is provided below:

Key to *Furcraea*

- 1 Leaves with denticulate margins.....2
- 1' Leaves with dentate or dentate-denticulate margins.....5
- 2 Bulbils present, leafy.....3
- 2' Bulbils absent.....4
- 3 Flowers (3.5–)4.5–5.5cm in length, ovary tomentose; leaves 60–90(–120) × 5–10cm, lanceolate, glaucous*F. parmentieri*

-
- 3' Flowers 2.5–3.2cm in length, ovary pilose; leaves (90–)120–160 × 6–10cm, linear to linear-lanceolate, green *F. martinezii*
- 4 Flowers (2.5–)3–3.5cm in length, pilose, yellowish; capsules (3.5–)4–5 × 2.5–3(–3.5)cm, subglobose..... *F. longaeva*
- 4' Flowers (5–)5.5–6.5(–7)cm in length, glabrous, green; capsules 5.5–7(–8) × 2–3(–3.5)cm, oblong *F. quicheensis*
- 5 Flowers 3.5–4cm in length; bulbils 4–7(–8.5) × 1.2–1.6cm, conical; leaves with marginal teeth up to 2–4mm *F. macdougallii*
- 5' Flowers 6.5–7.5(–8)cm in length; bulbils 5–7(–11) × 4.5–6.5cm, spheroidal to broadly conical, marginal teeth to 5–6(–8)mm.... *F. niquivilensis*

In the treatment by García-Mendoza (2000), *Furcraea bedinghausii* is considered as a synonym of *F. parmentieri*, which turns out to be the earliest name provided for this species. From the key and the descriptions provided by García-Mendoza, the two species can be compared (Table 1).

It is therefore evident that there is only one species of *Furcraea* that, at present, is widely grown outside in the UK and it is the species with pendent branch ends to the inflorescence and which bears bulbils after flowering, namely *F. parmentieri*.

Table 1. Comparison of *F. parmentieri* and *F. longaeva*

Character	<i>F. parmentieri</i>	<i>F. longaeva</i>
Inflorescence branch ends	pendent	straight
Bulbils	present	absent
Leaves	glaucous	dark green
Leaf length (cm)	60–90(–120)	120–160
Leaf width (cm)	5–10	10–14(–17)
Underside	roughened	smooth

This is borne out by a study of the material held in the herbarium at Kew which, in addition to the material cited above from Tresco, includes specimens of the Tresco plant that flowered in 1881, with bulbils and seed pod. There is also the specimen from Mr Woodall that was used for the illustration in the *Botanical Magazine* cited above, as well as specimens from plants grown at Kew (1878) and La Mortola (1895). All have been identified by Baker as *F. bedinghausii*.

It seems highly likely that after its initial introduction in 1833, *Furcraea longaeva* was lost to cultivation in the UK some time in the 1860s or 1870s. This name should not be used for plants currently being grown as hardy exotics in our gardens.

Nomenclature

Furcraea parmentieri (Roezl ex Ortgies) García-Mendoza, *Boletín de la Sociedad Botánica de México* **66**: 115, 2000.

Basionym: *Yucca parmentieri* Roezl ex Ortgies, *Gartenflora* **8**: 278, 1859.

= *Furcraea bedinghausii* K. Koch, *Wochenschrift des Vereines zur Beförderung des Gartenbaues in den Königlich Preussischen Staaten für Gärtnerei und Pflanzenkunde* **6**: 233, 1863.

= *Roezlia regia* Lem., *L'illustration Horticole* **10**: 43, 1863.

= *Roezlia bulbifera* Roezl, *Deutsche Gärtner-Zeitung* **5**: 154, 1881 (nom. illegit.).

= *Fourcroya roezlii* André, *Revue Horticole* **59**: 353, 1887.

REFERENCES

André, E. (1887). *Fourcroya Roezlii*. *Revue Horticole* **59**: 353–354.

André, E. (1895). *Fourcroya Bedinghausii*. *Revue Horticole* **67**: 468–469.

Arnold-Foster, W. (1948). *Shrubs for the Milder Counties*. London: Country Life.

Baker, J.C. (1888). *Handbook of the Amaryllideae*. London: George Bell & Sons.

Couper, C.J. (1986). *Furcraea*. In: Walters *et al.* (eds). *The European Garden Flora* **1**: 277–278. Cambridge: Cambridge University Press.

-
- García-Mendoza, A.** (2000). Revisión taxonómica de las especies arborescentes de *Furcraea* (Agavaceae) en México y Guatemala. *Boletín de la Sociedad Botánica de México* **66**: 113–129.
- Hunkin, J.W.** (1944). *Furcraea longaeva* at Tresco. *Journal of the Royal Horticultural Society* **69**: 355.
- Irish, M. & Irish, G.** (2000). *Agaves, Yuccas and Related Plants*. Portland, Oregon: Timber Press.
- King, R.** (1985). *Tresco – England’s island of flowers*. London: Constable.
- Loudon, J.C.** (1838). *Arboretum et Fruticetum Britannicum* vol. 4. London: Longman, Orme, Brown, Green & Longmans.
- Nelhams, M.** (2000). *Tresco Abbey Garden*. Truro, Cornwall: Dyllansow Truran.
- Roezl, B.** (1881). Mitteilungen über die wertvollsten der von mir in Nord, Zentral und Süd Amerika sowie in Westindien entdeckten und in Europa eingeführten Pflanzen. *Deutsche Gärtner-Zeitung* **5**: 154–156. (Translated as Notes sur les découvertes botaniques les plus remarquables faites en Amérique. *La Belgique Horticole* **33**: 123–139, 1883.)
- Trelease, W.** (1920) *Furcraea*. In: Standley, P.C., *Trees & Shrubs of Mexico*. *Contributions from the United States National Herbarium* **23**(1): 105–107.