

Attempts to recreate *Passiflora* ‘Kew Gardens’

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The parentage of the cultivar often known as *P. ×kewensis* was first questioned ten years ago. Kugler [1] noticed that it could not be the hybrid that originated at the Royal Botanic Gardens (RBG), Kew in the 1880's [2] as a cross of *P. kermesina* LINK & OTTO with *P. caerulea* L. That hybrid, the original *P. ×kewensis*, was thought to have been lost from cultivation, but recent investigations showed that it still exists, albeit under the name *P. ‘Amethyst’*. The rediscovery of the origin of that *P. ×kewensis*, more accurately known as *P. ×kewensis* ‘Amethyst’, has been described in detail elsewhere [3,4].

In order to avoid confusion, the cultivar erroneously described in many modern collections as *P. ×kewensis* has been renamed (Figure 1) [5] since the earliest known herbarium specimen, dating from 1954, is held at RBG, Kew. However, it is likely that *P. ‘Kew Gardens’* is much older. Thus very few *Passiflora* hybrids appeared between the end of the 19th Century and the early 1980's. Evidence that it originated in the 19th Century is provided by a painting (Figure 2) by Eliza Eve Gleadall from a floral collection of 1834. This depicts a plant that bears a strong resemblance to *P. ‘Kew Gardens’*.

In his earlier discussion, Kugler [1] suggested that what is now known as *P. ‘Kew Gardens’* was almost certainly a hybrid of *P. racemosa* BROT., as judged by the texture of the leaves and other features. Kugler thought that it could be related to *P. ×amabilis*. That cultivar also had red petals and sepals with an almost pure white corona. However, it is now fairly certain that *P. ×amabilis*, while no longer in cultivation, was a hybrid of *P. racemosa* and *P. alata* CURTIS. This conclusion is based on the considerable similarity of early depictions of *P. ×amabilis* with both *P. ×cardinalis*, an old cultivar still in cultivation (Figure 3), and recently-produced hybrids of *P. racemosa* and *P. alata* such as *P. ‘Wilgen Heintje’* and *P. ‘Stockumer Rot’* [6]. These hybrids differ from *P. ‘Kew Gardens’* principally in the texture of the leaves and in having much longer coronal filaments.

The 1954 herbarium sheet mentioned above, although wrongly labelled as *P. ×kewensis*, has been annotated in different handwriting with the words “see *P. racemosa*”: consistent with the view that it is related to *P. racemosa*. Assuming that it was a simple hybrid, Kugler suggested that the second parent could have been *P. mucronata* LAM. This conclusion was based on the white coronal filaments of *P. ‘Kew Gardens’* and the tendency for the flowers to open quite late in the day. It may be noted that *P. mucronata* is a bat-pollinated species that opens in the early

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hours of the morning, has white flowers, large stipules and simple leathery leaves. Other possibilities have been discussed [5] including the suggestion that *P. 'Kew Gardens'* was a complex cross of *P. racemosa*.

No confirmed hybrids of *P. mucronata* have been described, and this species has often proved reluctant to flower in cultivation. However, in 2004 one of us (FD) was able to fertilise *P. mucronata* with pollen from *P. racemosa*. The resulting hybrid flowered in 2005 (Figure 4). In the summer of 2005, *P. mucronata* flowered at the National Collection of Passiflora in Somerset. It was used to pollinate *P. racemosa*, and the resulting seeds germinated, grew to maturity and flowered in summer 2006 (Figure 5).

A comparison of Figures 4 and 5 with Figure 1 shows that neither cross of *P. mucronata* with *P. racemosa* produced deep red flowers. In both cases, the leaves were unlobed and similar to those of *P. mucronata*. However, while *P. 'Kew Gardens'* normally produces two and three-lobed, often asymmetric, leaves, under some conditions it can form unlobed leaves. The hybrid where *P. mucronata* was the female parent (Figure 4) had a tendency to flower on terminal branches with short internodes ('pseudoracemes'), but the sepal awns, the distribution of glands on the leaves and the flower opening time (late afternoon to ten o' clock the following morning) were similar to *P. 'Kew Gardens'*. Both hybrids formed buds similar to those of *P. 'Kew Gardens'*, where the outer surfaces of the sepals were dull pink. The hybrid where *P. mucronata* was the male parent (Figure 5) had flowers that opened at night. A remarkable feature of both crosses (Figures 4 and 5) is that the flowers have so little coloration. Almost all known F₁ hybrids of *P. racemosa* have red petals and sepals, but clearly, when crossed with *P. mucronata*, such 'red genes' been almost entirely suppressed.

Although it is possible that a further cross of *P. racemosa* and *P. mucronata* might produce a plant that is more similar to *P. 'Kew Gardens'*, the experiments described here suggest that it could have a different parentage. Support for this conclusion came from an unexpected observation. During a recent visit to Brazil, one of us (JV) visited the private botanical garden owned by Harri Lorenzi. Here *P. galbana* MAST. and *P. mucronata* were growing side by side. These two species are closely related, and distinguishing them has proved difficult. Their flowers and foliage are quite similar, but the fruit on those plants in Brazil were quite different. With *P. galbana*, the fruit has a hexagonal cross-section with a similar shape to that of e.g. *P. capsularis*. But the fruit of *P. mucronata* has a circular cross-section. The fruit of *P. galbana* were also described as six-sided in a recent publication describing the *Passiflora* of Chapada Diamantina [7].

The relevance of this becomes clearer when it is noted that the fruit of *P. 'Kew Gardens'* is unlike that of either *P. racemosa* or *P. mucronata*, but does resemble the fruit of *P. galbana*. In other words, here is evidence that *P. 'Kew Gardens'* could be a hybrid of *P. racemosa* and *P. galbana*. As was the case with *P. mucronata*, there are no known hybrids of *P. galbana*. Not only is it possible that the two species have become confused in some European collections, but it is likely that what has been cultivated in Europe as *P. galbana*, may just be another clone of *P. mucronata*. It is hoped that this matter can be resolved when seeds from that clearly authentic *P. galbana* can be brought into wider cultivation.

Figure 1. *P.* 'Kew Gardens'



Photo: Les King

Figure 2. Unidentified passion flower (1834) showing some similarity to *P.* 'Kew Gardens'



Source: Eliza Eve Gleadall, *The Beauties of Flora*, Plate 1, lithographed by Dean and Munday, 40 Threadneedle Street, London, 1834

Figure 3. *P. ×cardinalis* (*P. racemosa* × *P. alata*)



Photo: Les King

Figure 4. The hybrid *P. mucronata* (♀) × *P. racemosa* (♂)



Photo: Franz Düll

Figure 5. The hybrid *P. racemosa* (♀) × *P. mucronata* (♂)



Photo: John Vanderplank

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