THE STATUS OF *STRELITZIA JUNCEA*

At the time of the publication of the first edition of Hortus Kewensis by W. Aiton in 1789 only one species of *Strelitzia* (*S. reginae* Ait.) was in cultivation at Kew. It was recorded as having been introduced by Sir Joseph Banks in 1773. It is clear from contemporary writings that Banks had received it from his sponsored collector, Francis Masson, who had accompanied the Swedish botanist Carl Peter Thunberg in that year on a botanical expedition to the eastern Cape. They travelled as far east as Coega a few miles north east of Port Elizabeth and must have collected plants or seed or both along their route.

When the second edition of the Hortus Kewensis was published in 1811 the number of "species" of *Strelitzia* in cultivation at Kew was six, including the arborescent *S. alba* (L.f.) Skeels (= *S. augusta* Thunb. also sent to Banks by Masson). The other five were all within the *S. reginae* complex (*S. reginae*, *S. ovata* Ait., *S. farinosa* Ait., *S. angustifolia* Ait. and *S. parvifolia* Ait.) and all introduced from the Cape without exact origin or location. *S. parvifolia*, which concerns us most, was introduced by Sir Joseph Banks and probably collected by Masson during his second visit to the Cape. Aiton described his *S. parvifolia*, the small-leaved *Strelitzia*, as having a scape equal in length to the petiole, which is 20 times longer than the linear lanceolate leaf. There is no type preserved at Kew.

Sir James Smith writing under the heading of *S. reginae* in Rees's Cyclopaedia 1819, comments that *S. angustifolia* is a mere variety of *S. reginae* and that offsets of an original root gradually diminished in size and breadth of their leaves, became first *S. angustifolia* and then *S. parvifolia* of Hort. Kew. Similar varieties may have been freshly imported from the Cape, but in his view that did not prove their specific difference. "In some specimens the leaf dwindles to a point". This last observation clearly refers to *S. juncea* Link.

This passage was quoted in Feb. 1821 when Ker-Gawler described and illustrated *S. parvifolia* var. *juncea* in the Botanical Register 6, t. 516. Shortly

afterwards in the same year this concept was given specific status as *S. juncea* Link in Enum. Pl. Hort Reg. Berol. 1 : 150, whether or not on the same plant is uncertain. While there is appreciable leaf variation within the *S. reginae* complex and between it and *S. juncea*, no structural difference has been observed in their flowers, which does tend to reduce the importance placed on the difference in the leaves.

In 1893 J. G. Baker at Kew published a synopsis of the Genera and Species of the Musaceae in Ann. Bot. 7, in which he recognized two acaulescent species of *Strelitzia, S. reginae* with four varieties and *S. parvifolia* with variety *juncea*. Thus, when Wright monographed the genus *Strelitzia* for Flora Capensis, 5,3: 318 (1913), he followed Baker closely and added only one further variety under *S. reginae*.

The position remained relatively unchanged until Moore & Hyypio in the the U.S.A. published their comments on *Strelitzia* in Baileya 17: 65 (1970). Since distinctions from *S. reginae*, other than the lack of a leaf-blade, are not apparent in *S. juncea* and, since in their view its distribution in South Africa was not well documented, they reduced *S. juncea* to *S. reginae* and added that, if desired, it could be designated as a cultivar—*juncea*. To this proposal I objected. But writing from Pretoria, with a hazy memory of 40 years earlier, I had written to Professor Moore stating erroneously that *S. reginae* occurred with *S. juncea* near Uitenhage in the eastern Cape and that intermediate forms corresponding to what had been called *S. parvifolia* and *S. angustifolia* occurred there and this suggested to me that hybridization was the cause of the intermediate forms.

My wishful thinking was corrected by Mrs Noel Urton of Port Elizabeth, who has studied the local *Strelitzias* for 30 years. While *S. juncea* was common in the vicinity of Uitenhage, no *S. reginae* occurred there. She was uncertain of the application of the name *parvifolia*, because of some variation in the leaves of *S. juncea* near Uitenhage. In the great majority of plants the leaves had practically no lamina, others had a small lamina and yet a few others a lamina up to 15 cm long and 3,75 cm broad. I went back to square 1.

It was at this juncture that I raised the interest of Prof. J. G. C. Small and Dr H. A. van de Venter of the University of Port Elizabeth in the problem. It was for his thesis on the distribution, leaf morphology, embryology and germination of the acaulescent species of *Strelitzia* Ait. that Dr van de Venter was awarded his Ph.D. in 1974.

Dr van de Venter plotted the distribution of *S. reginae* from the farm Ventershoek near Patensie in the Humansdorp District eastwards at intervals in coastal districts to southern Natal and thence with a wide break to Zululand. *S. juncea* was found in abundance north-west of Uitenhage and in two other relatively small populations, the one north of Port Elizabeth and the other near Patensie in the presence of *S. reginae*. It was this natural association of *S. reginae* and *S. juncea* at Patensie, which I had hoped to find, to help explain the intermediate forms which had reached Europe in the early days before any artificial hybridization had been possible in gardens. Patensie was on the direct route taken by Thunberg and Masson and was the most likely site from which Masson shipped his first specimen of *S. reginae* to Banks, and here there occurs naturally a complete range of forms between *S. reginae* and *S. juncea*.

Beginning with seed from segregated wild stock of *S. reginae* and *S. juncea*, Dr van de Venter observed no difference in the germination of their seedlings until the development of the second lamina. Those of *S. juncea* were somewhat smaller. After the eighth leaf of *S. juncea*, successive leaves showed a progressive reduction in the size of the lamina in contrast to the increasing size in *S. reginae*. After the eighth leaf of *S. juncea*. there was also a progressive lengthening of successivepetioles. In his view, the distinctive development patterns between the two plants were genetically governed.

With this background, he suggested that the intermediate forms between *S. reginae* and *S. juncea*, which he studied in the wild at Patensie, were the result of hybridization between the two species, but that it might seem tempting to speculate that *S. juncea* arose in the first place as a mutation of *S. reginae*.

It has long been accepted in plant taxonomy that hybridization and mutations are factors in the evolution of new taxa worthy of specific status, so in either case *S. juncea* could retain its specific identity and status.

Relative to the status of *S. parvifolia*, Dr van de Venter states that a few isolated wild clones could be identified as such, but that nowhere did he find a pure stand conforming to the description. On anatomical features, his material showed a close relationship to *S. reginae* and could be regarded as an extreme form of it, but there appeared no direct correlation with *S. juncea*. Thus, in his view, one can only conclude that the application of the old, epithet *parvifolia* is ambiguous and should not be allowed to confuse the application of the name *S. juncea* for an extensive and relatively uniform wild population in the district of Uitenhage.

Where typical specimens are grown together either singly or in mass, for example at Kirstenbosch Botanical Garden and in various parks and other gardens, they retain their characteristics and those of *S. juncea* are invariably taller than those of *S. reginae*. It is also interesting, but not surprising, that if the two species are grown together with inadequate light for normal photosynthesis, *S. juncea* is the first to show signs of dejection.

It is relevant to remark here on the name *S. teretifolia* Barrow ex Steud., Nom. Bot. ed. 2, ii: 645 (1840), which Wright *l.c.* referred to under the heading "Imperfectly known species, but suggested that it was equal to *S. parvifolia* var. *juncea*. It seems certain that the trivial epithet *teretifolia* was derived from its use by John Barrow in his Account of Travels into the Interior of Southern Africa in the years 1797 and 1798 'published in London 1801. On p. 189 we read: "The *Strelitzia regina* also, now in full and beautiful bloom, grew everywhere in wide-spreading patches in the vicinity of the Great Fish River, but not one of the new species, discovered about twenty mile to the northwards of Swartkop's river, could be found among them. The cerulean blue nectarium of the reginae seemed to be uniformly faded, and it lost its colour by a short exposure to the weather, which did not appear to be the case with that of violet-blue of the *teretifolia*."

There is little doubt that this is a reference (possibly the earliest) to *S. juncea* Link as we see it, and it is of considerable interest to have Barrow's early assessment of the problem we have discussed above.

In a letter received from Prof. Harold E. Moore, since this article went to press, he proposes to give varietal rank to *S. juncea* ander *S. reginae* and there is mutual regret that oue views do not coincide.

R. A. Dyer