

NOTES ON THE VARIATION AND TAXONOMY OF *WATSONIA BORBONICA* (*W. PYRAMIDATA*, *W. ARDERNEI*) (IRIDACEAE) IN THE SOUTHWESTERN CAPE, SOUTH AFRICA¹

PETER GOLDBLATT²

ABSTRACT

Lomenia borbonica Pourret (1788) is an earlier name for the common Cape species formerly called *Watsonia pyramidata*, and the new combination in *Watsonia* is made here. Significant and unusual variation in the stamen and style orientation, either declinate or arcuate, characterizes southern and northern races which otherwise seem indistinguishable. The white-flowered *W. ardernei* is considered an albino sport of the northern race and is reduced to synonymy. Other synonyms of *W. borbonica* are discussed and the complete nomenclature of the species is presented.

The name *Watsonia borbonica* is a new combination based on *Lomenia borbonica* Pourret (1788), only species of *Lomenia* Pourret. The epithet was given to a plant believed to have been collected on the Isle de Bourbon, now called Réunion. *Lomenia* has long been misunderstood and was for a time considered a synonym of *Freesia* Klatt, a southern African genus. During a study of *Freesia* (Goldblatt, 1982), I discovered that *Lomenia* was congeneric with *Watsonia*. Based on the illustration in the protologue, I considered *L. borbonica* conspecific with *W. marginata* (L. f.) Ker, the basionym of which predates *Lomenia*. Later, I found the type specimen of *L. borbonica* at the Paris Herbarium (P) in 1985. The specimen is in excellent condition, and there can be no doubt that it is identical with the species presently known as *W. pyramidata* (Andrews) Klatt, and in the *Flora Capensis* as *W. rosea* Ker (Baker, 1896). The type collection is attributed to Philibert Commerson, who collected in the Mascarene Islands in 1770–1774. Commerson is thought not to have visited the Cape (Gunn & Codd, 1981), and the provenance of this and a few other Cape plants attributed to Commerson's collection remains unknown.

Nothing could be more inappropriate than for a native southwestern Cape species to have a specific epithet '*borbonica*'. However, there is no alternative but to use the earliest valid and legitimate name for a species as mandated by the 1983 Code of Botanical Nomenclature.

HABITAT AND VARIATION

Watsonia borbonica is a fairly common and well-known species of *Watsonia* of the southwestern Cape, South Africa. It is usually found in mountain habitats and is locally common and conspicuous after fires on lower slopes, but it also occurs on sandy flats and at relatively high altitudes up to 1,000 m. Its range extends from the Cape Peninsula eastward to Bredasdorp and locally north through the du Toits Kloof mountains to the Breede River floodplain near Romans River. Plants flower in the early summer, from October to early December and at high elevations into January. They prefer rocky sandstone soils but may be found on soils derived from granite.

Although *Watsonia borbonica* is not particularly variable, what may be called the northern and southern races differ in one unusual feature, the orientation of the stamens and style. The southern and typical populations have declinate stamens that lie against the lower (anterior) tepal, and when the style is receptive it lies below the stamens. Northern populations from Paarl Mountain, du Toits Kloof, and the Breede River valley have unilateral stamens that lie horizontal to somewhat arched under the upper (posterior) tepal, and the style lies between the stamens and the upper tepal. In all other features the plants appear to be morphologically identical and cannot be distinguished even on close inspection.

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² B. A. Krukoff Curator of African Botany, Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166, U.S.A.

The diagnostic features of *Watsonia borbonica* are its large flowers with subequal, pink tepals 30–36 mm long; a short, flared upper perianth tube 8–12 mm long; robust and branched habit (1–2 m tall); oblong-ovate capsules 20–30 mm long; and seeds with two wings. Pink-flowered specimens of the northern form have always been included in *W. borbonica* (as *W. pyramidata*). However, a white-flowered sport believed to have come from the northern part of its range has been recognized as *W. ardernei*, a plant that has been in cultivation for close to 100 years and is the best-known cultivated *Watsonia* species. *Watsonia ardernei* is here reduced to synonymy in *W. borbonica*.

The significance of the variation in stamen and style orientation is uncertain. It is clear that declinate stamens and style are unusual in *Watsonia*, occurring in only six other species. Arcuate stamens are more common and are found in all but one of the remaining ca. 45 species of the genus and in many other genera of Ixioideae. Presumably the declinate condition, rare in Iridaceae, is derived directly from the more common arcuate state and not independently from an ancestor with symmetrically disposed stamens. Despite the apparently gross morphological difference in stamen and style orientation between the northern and southern races of *W. borbonica*, I believe that they should be treated as a single species. I defer recognition of intraspecific taxa until my monograph of *Watsonia*, currently in preparation, is completed.

OTHER SYNONYMS

Among other species I regard as synonyms of *Watsonia borbonica* is *W. cooperi* G. Lewis, based on the illegitimate homonym *Tritonia cooperi* Baker. The type is a fragment comprising a lateral branch of the spike and three poorly pressed flowers. The leaf mounted with the flowering material has three conspicuous veins and is clearly misplaced, belonging either to a species of *Anapalina* N. E. Br. or *Tritoniopsis* L. Bolus. However, the flowering material seems to belong to *W. borbonica*. The tube and tepals are much distorted, but the stamens seem declinate, and the dimensions of the tepals and perianth tube accord with *W. borbonica*.

The reasons for treating *Watsonia ardernei* Sander and *W. ardernei* Hort. ex Mathews & L. Bolus as conspecific with *W. borbonica* have already been outlined, but the existence of the

homonyms applied to the same species is puzzling. Possibly Mathews & Bolus believed that the name as described by Sander in a nurseryman's catalogue was not valid, hence their formal recognition of a name already in use. The white-flowered form, originally collected at Romans River near Wolseley, on which *W. ardernei* (both of Sander and of Mathews & Bolus) is based is no longer known in the wild. It probably comprised one or a few individuals that were introduced into gardens and then multiplied. The plant named *W. iridifolia* var. *obrienii* by N. E. Brown is based on cultivated plants from the same source as the type material of *W. ardernei*.

The complete synonymy of *W. borbonica* is outlined below. All type specimens cited have been seen.

SYNONYMY

Watsonia borbonica (Pourret) Goldbl., comb. nov. *Lomenia borbonica* Pourret, Hist. & Mem. Acad. Roy. Sci. Toulouse (Acta Acad. Sci.) 3: 74 & tab. 5. 1788. TYPE: said to have been collected on Réunion (Ile de France) but clearly from the SW Cape, *Commerson s.n.* (holotype, P).

Gladiolus pyramidalis Lam., Encyc. Meth. 2: 726. 1786. hom. illeg., non Burm. f. (1768), which is *Ixia patens* Aiton (Lewis et al., 1972: 302). TYPE: South Africa. Cape: precise locality unknown, collector unknown (holotype, P—Herb. Lamarck).

Gladiolus iridifolius varietas *speciosa floribus roseis* Jacq., Ic. Rar. Pl. tab. 235. 1793.

Neuberia rosea (Ker) Ecklon, Top. Verz. 37. 1827, nom. illeg., genus sine descr.

Watsonia pyramidata (Andrews) Klatt, Durand & Schinz, Consp. Fl. Africa 5: 194. 1895; Stapf, Bot. Mag. sub tab. 9261. 1931; L. Bolus, Fl. Pl. Africa 25: tab. 974. 1946; Lewis, Flora Cape Peninsula 238. 1950. *Gladiolus pyramidatus* Andrews, Bot. Rep. 5: tab. 335. 1803. *Watsonia rosea* Banks ex Ker, König & Sims, Ann. Bot. 1: 230. 1804, Bot. Mag. tab. 1072. 1807; Baker, Handbk. Irid. 158. 1892, Flora Cap. 6: 177. 1896, nom. illeg. superfl. pro *Gladiolus pyramidatus* Andrews. TYPE: South Africa. Cape: precise locality unknown, illustration in Bot. Rep. tab. 335 (lectotype here designated).

Watsonia striata Klatt, Abh. Nat. Ges. Halle 15: 352. (Erganz. 18). 1882. TYPE: South Africa. Cape: Cape Town, *Spielhaus s.n.* (holotype, B—Herb. Lubeck, believed destroyed). Identity determined from description only.

Watsonia iridifolia var. *obrienii* N. E. Br., Gard. Chron. ser. 3, 6: 350. 1889; Klatt, Durand & Schinz, Consp. Fl. Africae 5: 193. 1895. TYPE: South Africa. Cape: not known; authentic material present at Herb. Kew (probably originally from Romans River farm, Tulbagh Div., flowered at Kew from

plants sent from St. George's Park, Port Elizabeth).

W. obrienii van Tubergen, Gard. Chron. ser. 3, 16: 701. 1894, nom. nud. (not a valid combination based on *W. iridifolia* var. *obrienii* as suggested by Marais, Kew Bull. 35: 172. 1980).

Tritonia cooperi Baker, Handbk. Irid. 192. 1892, Flora Cap. 6: 122. 1896, hom. illeg., non Klatt (1882), which is *Tritonia cooperi* (Baker) Klatt. *Watsonia cooperi* L. Bolus, J. Bot. 67: 135. 1929; Lewis, J. S. African Bot. 7: 55. 1941. *Tritonia quinquenerata* Foster, Contr. Gray. Herb. 114: 46. 1936, nom. nov. pro *T. cooperi* Baker, hom. illeg. TYPE: South Africa. Cape: Worcester Div., *Cooper 3182* (holotype, K, sketch at BOL). (The type sheet comprises a flowering stem and poorly pressed flowers of *W. borbonica* and a leaf of a species of *Anapalina* or *Tritoniopsis*.)

Watsonia ardernei Sander, New Plants for 1897: 18, 20 & fig. 1897, Catalogue 44. 1899. TYPE: not known, figure in New Plants for 1897 (lectotype here designated).

Watsonia ardernei Hort. ex Mathews & L. Bolus, Ann. Bolus Herb. 4: 25–26. 1925; Fl. Pl. Africa 19: tab.

750. 1939, hom. illeg., non *W. ardernei* Sander (1897). TYPE: South Africa. Cape: Romans River farm, Tulbagh Distr. (cult. Kirstenbosch), *Tredgold s.n.* (lectotype, BOL 17839, here designated; isolectotypes, BM (as *Arderne s.n.*), BOL).

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