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# A NEW VIOLET FROM UTAH

With notes on a new form of

*Viola beckwithii* T. & G.

*By* W. P. Cottam

A beautiful violet strikingly different from any species heretofore reported from Utah was discovered by the writer growing on vacant property on the outskirts of Salt Lake City at the corner of 13th South and 17th East streets, April 17, 1937.* This property and neighboring areas to the east have for years been known to harbor one of the few relict colonies of *Viola beckwithii* T. & G. once so widely distributed over the Bonneville bench lands along the Wasatch front. Growing in this same area are numerous plants of *Viola purpurea venosa* (Wats.) Brainard.

The plant herein described is obviously different from either of these species with which it was found associated, but certain color markings, together with leaf and other characteristics, definitely suggest the possibility of its being a hybrid of *Viola beckwithii* x *Viola purpurea venosa*. The order of this cross (providing future research proves this form to be a hybrid) is assumed from the fact that *Viola beckwithii* produces abundant seeds from the petaliferous flowers, while *Viola purpurea venosa*, according to Professor A. O. Garrett, who has carefully observed these species for years, produces seeds only from cleistogamous flowers. Conversely, *Viola beckwithii* is not known to produce cleistogamous flowers.

Four plants, all essentially similar, were discovered growing within an area about an acre in extent. One plant was prepared as a type specimen, No. 7067, for the herbarium of the University of Utah, and the others were carefully removed to the garden for future study.

Since several years will be required to secure data necessary to test the possibility of the hybrid origin of this plant, it seems proper to regard it to be of specific rank and the following name is proposed.

## Viola bonnevillensis Cottam, sp. nov.

*Herba humilis, cristata; rami nonnulli, breves; folia pallide viridia, erecta, 2½—5 cm. longa, puberulenta, formae variabilis, ovatis usque a obovata, crasse serratis usque a profunde lobata aut partita; flores pedunculis 4-8 cm. longis; sepala lanceolata, ad basim 1 mm., 4-6 mm. longa, glabra; petala superiora erecta, ellipticis usque oblongi-obovata, purpurea; petala laterala ad basim flava, lineis 2-3 purpureis; petala inferiora maxima, obovata, ad basim flava, supra flavialbis usque a rubicunda, lineis 5-7 purpureis.*

*This property, as well as most of the bench land which harbors *Viola beckwithii*, is fast being utilized for residences.

Plant low, tufted, not exceeding 12 cm. high. Stems several, short, arising from a thickened rootstock, mostly beneath the surface of the ground. Leaves pale green, erect or ascending, 2½ - 5 cm. long, puberulent. Petioles longer or shorter than the blades. Leaf outline and margin extremely variable; ovate to obovate, coarsely serrate to deeply lobate or parted. Leaves frequently appearing almost trifoliate with lobes serrate to incised. All leaves tapering at the base. Lobes bluntly acute at the apex and in the sinus. Stipules narrowly lanceolate, 5 - 10 mm. long, membranous. Flowers with peduncles 4 - 8 cm. long. Sepals lanceolate, 1 mm. at base, 4 - 6 mm. long, glabrous. Upper petals erect, narrowly elliptical to oblong-obovate, deep lilac to dull purplish-red color. Lateral petals yellow at the base with 2 - 3 purple stripes, otherwise resembling the upper petals in color, size and shape. Lower petal largest, rhomboidal-obovate, slightly saccate at the base; yellow at the base shading to pale yellow white or reddish above; 5 - 7 purple stripes extending from base, half the length of the petal or more. Lower petal frequently splotched with light purple. Stigma lateral, style with tufted micro hairs at the gibbous summit. Ovary obliquely subglobose to ovate, glabrous.

*Viola bonnevillensis* resembles most *Viola beckwithii*, but differs from the latter in the following particulars:- Leaves are frequently not parted and the divisions of dissected leaves are never ternately or pinnatisectly divided into linear lobes. The upper petals are more elongate and of much lighter purple color. The lateral petals are more elongate and these together with the lower petal are much more conspicuously yellow in color. The style summit is less gibbous and less bearded.

Compared to *Viola purpurea venosa*, the petals of *Viola bonnevillensis* are broader and purple on both sides. The leaves are decidedly more lobated and taper at the base.

In general *Viola bonnevillensis* possesses an assemblage of leaf and floral characters peculiarly intermediate between *Viola beckwithii* and *Viola purpurea venosa*. The hybrid nature of this plant is further suggested by the fact that for the past two years flowers have appeared on the garden specimens without the production of fruits.

## Color Varieties of **Viola beckwithii** T. & G.

On the dry bench lands east of Salt Lake City, two color varieties of *Viola beckwithii* are commonly observed in early April. The more common color form is characterized: Upper petals dark violet, the others white, yellow at the base, the yellow spot of the lower petal pencilled with deep purple veins. The other color variety, less common than the above, differs from it in the three lower petals which vary in color from light orchid to a shade of violet only slightly less deep than the upper petals.

On April 4, 1939, several specimens were observed and some collected (No. 7289) at Garfield and 17th East Street, Salt Lake City, which differ rather strikingly from color varieties above mentioned in that all petals are white, or the upper ones merely light purple at the base. The entire flower has an albino appearance except for the bright yellow base of the three lower petals. The purple lines so prominent in the yellow spot of the spurred petal of the two common varieties are very faint in this new form.

Since the purple-white color form of *Viola beckwithii* is the most common one found in Utah, students are likely to assume that this is the type described by Torrey and Gray (7). Beckwith collected the type specimen in Agate Pass of the Quartz Mountains, Nevada, which, says Heller (2), "seems to be somewhere in the region of Reese river, and no doubt is in Eureka county." The only reference to the color of the type appearing in the original description states (6) "lower petals barely saccate at the base, purple, with yellow claws, the upper shorter and deep violet."

Jones (3) described *Viola beckwithii* as being "locally abundant at Weiser, Idaho," and after a rather minute comparison with our Utah form says, "The white petals have a yellow base, the purple petals a greenish base."

C. P. Smith (5) noted the "true" and white colored from of *Viola beckwithii* at Logan, Utah and was so impressed with the latter that he gave it varietal rank as follows:

"*Viola Beckwithii cachensis* n. var.

"Petalis superioribus purpureis-violaceis, petalo inferiorique petalis lateralibus albis puris, unguibus flaventibusque purpureis-striatis.

"Upper petals violet-purple, lower and lateral petals *pure white*, the claws yellow and purple-veined as in the species. Otherwise with the characters of true *Beckwithii*."

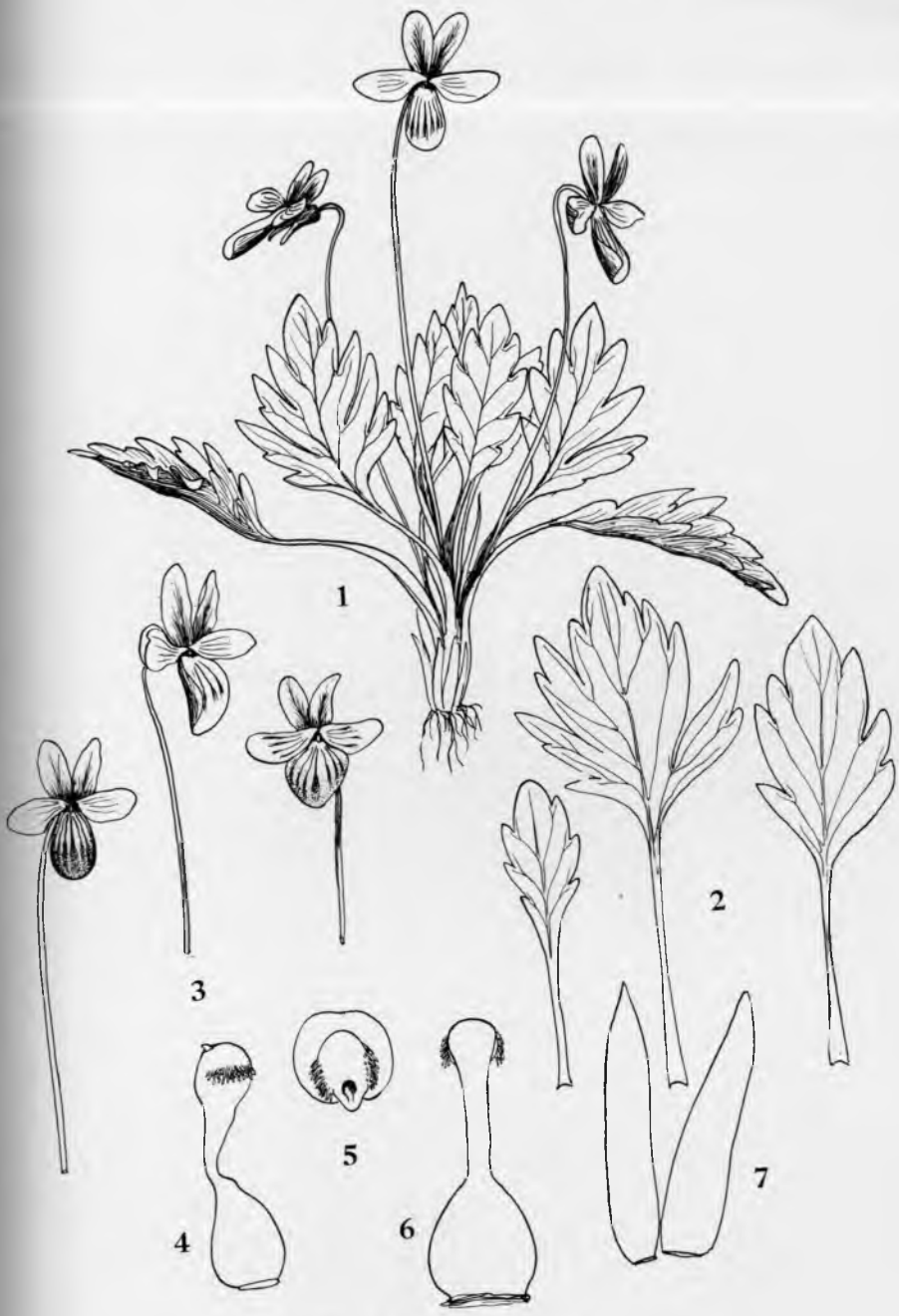
Since the publication of Smith's variety in 1912, Garrett (1) has published three editions of *Spring Flowers of the Wasatch Region*, none of which recognized the white colored variety. Also neither Tidestrom (6) nor Ryberg (4) recognized Smith's variety.

Field observations show that the lower three petals are variable in their concentration of the violet pigment, shading from deep violet to pale purple and white. The albino form described in this paper proves also that the upper petals may lose their pigmentation. In the absence of fixed color character of *Viola beckwithii*, it would seem unjustifiable to recognize varieties on color alone.

Grateful acknowledgments are due to Dr. R. V. Chamberlin for the Latin diagnosis and to Dr. Seville Flowers for the figures.

## Plate I

1. Habit of Plant × ⅔.
2. Three typical leaves × 1.
3. Three typical flowers × 1.
4. Side view of pistil × 20.
5. Top view of pistil × 20.
6. Dorsal view of pistil × 20.
7. Sepals × 8.




Viola bonnevillensis

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(1) Garrett A O., 1911-12-17-27-36. Spring Fl. Wasatch Reg.

(2) Heller A. A., 1910. Muhlenbergia 6:40-41.

(3) Jones Marcus E., 1900. Cont. to West. Bot. 9: 48-49.

(4) Rydberg P. A., 1917-22. Flora of Rocky Mts. and Adj. Plains.

(5) Smith C. P., 1912. Muhlenbergia 7: 136-138.

(6) Tidestrom, 1926. Flora of Utah and Nevada: 25 U. S. Natl. Herb.

(7) Torrey and Gray, 1885. Pac. R. R. Rep. 2: 119.