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REVISION OF THE *PHLOX AUSTROMONTANA* (POLEMONIACEAE) COMPLEX IN UTAH

Stanley L. Welsh¹

ABSTRACT.—The taxa centering around *Phlox austromontana* Coville are revised. Named as a new variety is *P. austromontana* var. *lutescens* Welsh from eastern Garfield County, Utah. A new combination is provided as *P. austromontana* var. *jonesii* (Wherry) Welsh.

Taxa within the genus *Phlox* have been reviewed preparatory to completion of the Utah flora, a summary revision of all indigenous, adventive, and commonly cultivated plant species for Utah. Observations made during that review demonstrated the need for modification of contemporary concepts within the complex of forms centering around the concept of *Phlox austromontana* sensu lato. The species has been interpreted by contemporary authors as consisting of a single polymorphic taxon, or of a closely allied species pair, i.e., *P. austromontana* and *P. jonesii*.

Transitional morphological features tend to obscure the populations, which are often more or less geographically or topographically correlated. This is a general problem in the genus, and *P. austromontana* merely exemplifies that problem. Thus, it is not surprising that the various taxa represented in herbaria previously should have been subjected to differential treatment. Some named portions of the variation have been reduced to synonymy, when the transitional morphology was interpreted as taxonomically negligible. *Phlox austromontana* var. *prostrata* consists of sprawling plants with long internodes and occurs in much of the middle elevation portions of Washington County, Utah. The calyces of this variety are ordinarily conspicuously hairy. The *jonesii* phase is similar to the *prostrata* phase in having sprawling stems with long internodes, but the calyces are glabrous in extreme examples. Where the two phases meet in Zion Canyon, the type locality for the *jonesii* phase, there is a mixing of characters. Brightly colored pink flowers charac-

teristic of the *jonesii* phase have either glabrous calyces or hairy ones like the *prostrata* materials. The overlapping characteristics seem to indicate variation that should be recognized within a species in this genus. Therefore, the *jonesii*, *prostrata*, and *austromontana* phases are treated at varietal level.

Examination of the large series of specimens in this species at the herbarium of Brigham Young University demonstrated the existence of a robust, subligneous specimen taken from crevices in the Cedar Mesa Sandstone along the margin of Cataract Canyon in eastern Garfield County, Utah. The specimen had creamy yellowish flowers when collected, and, because of its growth habit and flower color, was initially determined as a *Leptodactylon*. The leaves are simple, however, not digitate as in that genus. The flowers have dried a lemon yellow color and are thickly cartilaginous, unlike any other portions of the *austromontana* complex, but other features, including lax stems, long leaves, and carinate intercostal membranes of the calyx, indicate affinity with *P. austromontana*. The species is, therefore, revised as follows.

Phlox austromontana Coville Desert Phlox. Plants caespitose, cushion or matlike, from a pluricipital caudex and taproot, mainly 0.5–3 dm wide; herbage pilose-puberulent to subglabrous or the calyx glabrous to villous externally; leaves opposite, mainly 5–20 mm long, simple, linear-subulate; flowers solitary, sessile or subsessile at branch tips; calyx urceolate to campanulate, glabrous to villous, the intercostal membranes carinate, the lobes vil-

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lous internally; corolla white, blue, pink, lavender, or yellowish, the tube 8–15 mm long; styles 2–9 mm long. This is a complex assemblage of variants, some sufficiently distinctive and sufficiently geographically correlated as to warrant taxonomic recognition. The morphology is, however, wholly confluent. Trends within the diversity are recognized at varietal level.

1. Plants more or less open, the internodes typically apparent; plants of western Kane and much of Washington counties 2
- Plants variously open to compact; distribution various 3
- 2(1). Calyx usually glabrous, the leaves (or some of them) 20–35 mm long; corollas usually bright pink; morphology transitional to the next *P. austromontana* var. *jonesii*
- Calyx at least moderately villous, the leaves typically 10–22 mm long; corolla commonly white *P. austromontana* var. *prostrata*
- 3(2). Flowers yellowish (fading lemon yellow); leaves 10–25 mm long; calyx campanulate *P. austromontana* var. *lutescens*
- Flowers white, pink, or lavender (sometimes fading to cream in color); leaves mostly less than 15 mm long; calyx turbinate to subcylindric. *P. austromontana* var. *austromontana*

Var. *austromontana* [*P. densa* Brand, type from Frisco]. Mixed desert shrub, salt desert shrub, pinyon-juniper, sagebrush, mountain brush, and ponderosa pine communities at 1525 to 3050 m in Beaver, Carbon, Duchesne, Emery, Garfield, Iron, Juab, Kane, Millard, Piute, Sanpete, Sevier, Tooele, Uintah, Washington (type from Beaverdam Mountains), and Wayne counties; Nevada, California, and Arizona; 159 (xxiii).

Var. *jonesii* (Wherry) Welsh, comb. nov. [based on: *Phlox jonesii* Wherry Notul. Nat. Acad. Nat. Sci. Philadelphia 146: 8. 1944; holotype—Washington County, Zion Canyon, 7 May 1923, M. E. Jones sn US!]. Ponderosa pine, pinyon-juniper, and mountain brush communities at 1435 to 2600 m in Kane and Washington counties; endemic; 12 (ii). This variety forms intermediates with both var. *prostrata* and var. *austromontana*. It is partially sympatric with both.

Var. *lutescens* Welsh, var. nov. Affinis et similis *Phlox austromontana* Coville var. *austromontana* sed in corollis lutescentibus et plus crassis et calycibus campanulatis differt. TYPE: USA Utah. Garfield Co., T33S, R14#, SW 1/4 S1, along Orange Cliffs Rd, E of Hwy 95, 1373 m elev., rimrock-blackbrush, ash, squawbush community, 11 May 1983, S. L. Welsh, B. Welsh, M. Chatterley 21972 (Holotype BRY; isotypes 4, distributed previously as *Leptodactylon watsonii* [Gray] Rydb.). The specimens collected were taken from a large population of suffrutescent, rounded, cushions growing in crevices in rimrock of Cedar Mesa Sandstone, and, because of the peculiar flower color and growth habit, were mistaken for the superficially similar *Leptodactylon watsonii*.

Var. *prostrata* E. Nels. Mountain brush and pinyon-juniper communities at 1220 to 2135 m in Washington (type from Silver Reef!) County; endemic (?); 14 (0).

LITERATURE CITED

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