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Source: *Lundellia*, 2004(7) : 39-43

Published By: The Plant Resources Center, The University of Texas at Austin

URL: <https://doi.org/10.25224/1097-993X-7.1.39>

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A NEW VARIETY OF *STANLEYA PINNATA* (BRASSICACEAE) FROM THE BIG BEND REGION OF TRANS-PECOS, TEXAS

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Abstract: A new infraspecific taxon of the widespread western species *Stanleya pinnata* is described from the Big Bend Region of Trans-Pecos, Texas as var. **texana**. The taxon is distinguished from other varieties of *S. pinnata* in having smaller flowers, nearly glabrous gynophores, and lanceolate entire leaves which are, so far as known, never deeply divided or pinnate. It is isolated from the closest known populations of *S. pinnata* by some 500 km and is represented by small populations largely restricted to bare gypso-calcareous outcrops in southern Brewster Co., Texas. In addition, the long recognized *S. pinnata* var. *integrifolia* is reduced to the rank of forma **integrifolia**.

Keywords: Brassicaceae, *Stanleya*, Texas.

Rollins (1993) presented an account of *Stanleya* in which *S. pinnata* (Pursh) Britton was treated as having four varieties: 1) var. *bipinnata* (Greene) Rollins, occurring from central and southern Wyoming to southwestern Colorado; 2) var. *integrifolia* (C. W. James) Rollins, occurring from western Kansas to Utah (excluding his reference to Texas collections, which are here considered to be specimens of var. *texana*); 3) var. *inyoensis* (Munz & Roos) Reveal, occurring in the deserts of western Nevada and eastern California; and 4) the typical var. *pinnata*, occurring from North Dakota to Kansas and westwards to California. The var. *integrifolia* was said by Rollins to differ from var. *pinnata* in having its "upper cauline leaves broadly ovate and lower cauline leaves entire or sparsely divided." Considering its essentially sympatric, and "sometimes intrapopulation occurrence with the var. *pinnata*," the var. *integrifolia* would perhaps seem more reasonably treated as but a form of var. *pinnata* and is so reduced in the present paper.

The present novelty differs from *S. pinnata* var. *integrifolia* (sensu Rollins 1993) in having upper leaves linear lanceolate, the lower leaves nearly always entire, and having smaller flowers with glabrous gynophores, or nearly so. Additionally, the

known populations are isolated from their more northern relatives by some 500 km or more (Fig.1).

Stanleya pinnata* var. *texana B. L. Turner, var. nov. Figs. 2, 3.

TYPE: UNITED STATES. Texas. Brewster Co.: exactly 4 mi from intersection with highway 118 along Agua Fria road, ca. 20 plants observed along edge of dry drainage way where it crosses the road; bare calcareous-gypseous outcrops, 3 May 2001, Gayle & B. L. Turner 21413 (HOLOTYPE: TEX; ISOTYPE: SRSC).

Ab *Stanleya pinnata* var. *integrifolia* floribus parvioribus (petala 8–10 mm longa vice 11–20), gynophoris glabris (vice valde pubescentium basi), foliis superioribus lineatis-lanceolatis (vice foliorum "late ovatorum" descriptorum ab Rollins, 1993), foliis inferioribus semper integris (vice pinnatorum, sparsim divisorum, aut rara integrum) differt.

Suffruticose, brittle-stemmed HERBS mostly 0.5–1.5 m high. Leaves glabrous, linear-lanceolate, entire, gradually reduced upwards, at first the surfaces glaucous and covered with a fine farinosity, the latter easily removed by a stroke of the fingers; with age and disappearance of the farinose layer, the leaves are mostly dark green. PRIMARY INFLORESCENCES mostly 30–60 cm long,

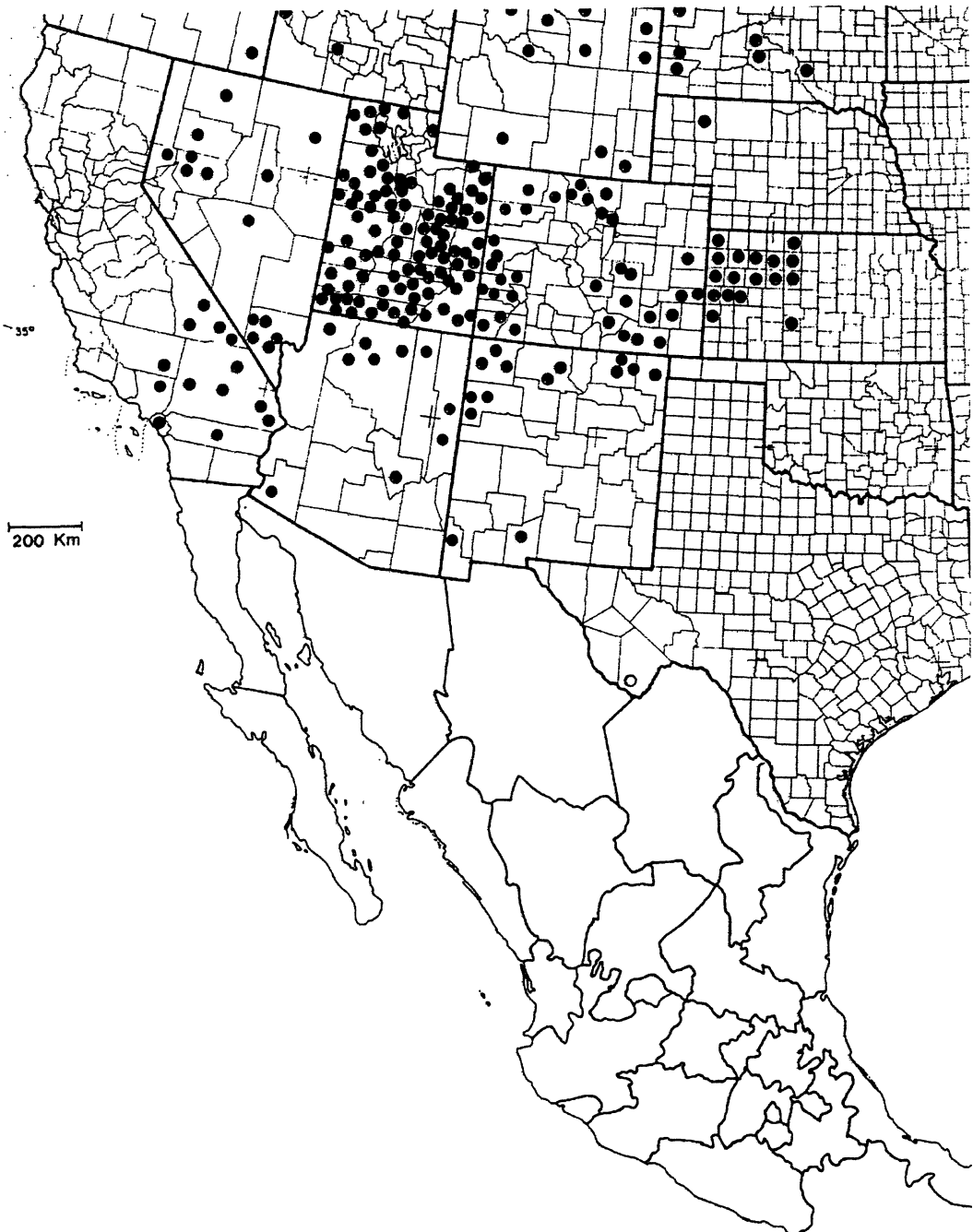


FIG. 1. Distribution of *Stanleya pinnata* var. *texana* (open circle, Trans-Pecos, Texas) and var. *pinnata* (closed circles).



FIG. 2. *Stanleya pinnata* var. *texana* at type locality.

secondary inflorescences 20–30 cm long. PEDICELS ca. 1 cm long. SEPALs of mature buds (just before dehiscence) ca. 8 mm, elongating to 8–10 mm. PETALS 8–9(–10) mm long, the blades 4–5 mm long, the claws densely hispidulous, 4–5 mm long. STAMENS 6 (4 long and 2 short), the longer extending about 2 mm beyond the petals, hispidulous below. FRUITING PEDICELS ca. 1 cm long. PODS 5–8 cm long, torulose, gla-

brous or nearly so, including the gynophore, the latter ca. 1–2 cm long; ovules 10–20, the seeds usually 8–12, the latter brown and wingless, 2–3 mm long.

ADDITIONAL SPECIMENS EXAMINED: **UNITED STATES. Texas. Brewster Co.:** S of Alpine, 24 Jul 1989, *Bacon 343* (NMSU); silty flats along road to Agua Fria Mt., ca. 1 mile SE of Terlingua Creek, 14 May 1959, *Correll & I. M. Johnston 21928* (LL); Terlingua outcrops on road to Agua Fria Mt., 16 Jun



FIG. 3. *Stanleya pinnata* var. *texana*, flowers at anthesis.

1963, Correll & Wasshausen 27851 (LL, SRSC); W of Agua Fria Mt., 13 Apr 1936, Cory s.n. (GH); 6 miles NE of Agua Fria Springs, 13 Apr 1936, Cory 18569 (GH); Terlingua Creek, Sep 1883, Havard 70 (GH); desert washes near Terlingua, 1 Apr 1942, Nelson & Nelson 5027 (GH, TEX); 4.6 mi WSW along road to Agua Fria Mt., betonite clay hills with sparse vegetation, 11 Apr–26 May 1981, Powell 3604 (SRSC, TEX); Road to Agua Fria Mt., W of highway 181, 26 May 1984, Powell 4342 (SRSC, TEX); ca. 5 mi W of Highway 118 along Agua Fria 1985, Poole 2640a (TEX); common locally, 3.5 mi N of Terlingua, road, 18 Apr 1961, Rollins & Correll 6191 (GH, LL); 3 mi SE of Hen Egg Mt., 12 Jun 1949, Turner 1088 (GH, SRSC); N of Terlingua ca. 10 mi, 3 Apr 1938, Warnock C303 (GH, SRSC, TEX) gyp flats N of Agua Fria Mt., 31 Jul 1961, Warnock 18513 (SRSC, TEX).

As indicated by the above citations, *Stanleya pinnata* var. *texana* is known to Texas by numerous collections from the immediate environs of Agua Fria Mountain. It was first collected by V. Havard in 1883, but not subsequently collected until 1936 by the late V. L. Cory. In spite of the

numerous localized collections, the taxon is very rare with most populations being quite small, consisting of 1 to 30 individuals. No doubt the size and striking beauty of the plants accounts for its assemblage by the relatively few collectors to venture into the area concerned. Indeed, it is seemingly much rarer than the threatened and/or endangered *Cryptantha crassipes* I. M. Johnst. (Boraginaceae) with which it occurs. Both taxa are restricted to about the same substrates within an area bounded by a radius of ca. 10 km (Poole, 1994).

Rollins (1939, 1993) treated the presently circumscribed variety as part of his concept of *S. pinnata* var. *integrifolia*, the latter recognized by its mostly entire lower leaves, this typified by material from El Paso Co., Colorado (Goodman and Lawson 1995). Judging from its sporadic occurrence over a large area with var. *pinnata*, and its co-occurrence with the same, I take var. *in-*

tegrifolia to be but a form of the former, and reduce this as follows:

Stanleya pinnata var. *pinnata* f. **integrifolia** (E. James) B. L. Turner, forma and stat. nova. Based upon *Stanleya integrifolia* E. James, in Long, Account Exped. Pittsburgh 2: 17. 1823. TYPE: U.S.A. Colorado. El Paso Co. (see Goodman and Lawson 1993).

Rollins (1939) accredited (by map symbol) the occurrence of *Stanleya.pinnata* var. *pinnata* to the Agua Fria Mt. area of Texas, but this was not shown in his subsequent treatment (Rollins, 1993). While I have not seen forms of var. *texana* with lower leaves pinnate or divided (from among the estimated 15,000 leaves of var. *texana* examined in the field) I discerned only a single lobed leaf at the base of a single plant (Turner s.n., TEX) having otherwise entire leaves (this after an examination of several hundred plants of the taxon over a large area about the type locality). In short, it would not be surprising to find such leaf forms occasionally among natural populations, but it is unlikely that such forms would possess the other distinguishing characters of var. *pinnata*: namely the markedly pubescent gynophores and large petals.

It is interesting to note that Welsh et al. (1987), in their account of *Stanleya* for Utah, treated *S. pinnata* var. *integrifolia* as a distinct species, commenting that "Our material is distinctive and about equivalent in diagnostic features as exists among the other species of *Stanleya* in Utah." This contrasts with the treatment of Albee et al.

(1988) for Utah in which *S. integrifolia* was included within their concept of *S. pinnata*. The var. *integrifolia* occurs nearly throughout the range of *S. pinnata* (*sensu* Rollins, 1993), and as is clear from the comments of Harrington (1954) in his treatment of *S. pinnata* var. *integrifolia* for Colorado, "This variety intergrades rather commonly with the typical form of the species" a comment with which I concur, hence its reduction to forma in the present paper.

As is obvious, the new variety, *Stanleya pinnata* var. *texana*, is named for its restriction to the state of Texas, as shown in Fig.1.

ACKNOWLEDGEMENTS

I am grateful to my wife Gayle Turner for the Latin diagnosis and to I. A. Al-Shehbaz and A. M. Powell for reviewing the manuscript.

LITERATURE CITED

- Albee, B. J., L. M. Schultz and S. Goodrich. 1988. *Atlas of the Vascular Plants of Utah*. Utah Museum Natural History, Occasional Publications 7: 1-670.
- Goodman, G. J. and C. A. Lawson. 1995. *Retracing Major Stephen H. Long's 1820 Expedition*. Norman, OK: Univ of Oklahoma Press.
- Harrington, H. D. 1954. *Manual of the plants of Colorado*. Sage Books, Denver, CO.
- Poole, J. 1994. Terlingua Creek Cat's-eye Recovery Plan. U.S. Fish Wildlife Service, Region 2, Albuquerque, NM.
- Rollins, R. C. 1939. The cruciferous genus *Stanleya*. *Lloydia* 2: 115-121.
- Rollins, R. C. 1993. *Stanleya*, in *The Cruciferae of Continental North America*. pp. 810-817.
- Welsh, S. L., N. D. Atwood, S. Goodrich and L. C. Higgins [eds.]. 1987. A Utah Flora. Great Basin Naturalist Mem. 9: 1-184.