

***Yucca Freemanii*, a New Species from Northeastern Texas¹**

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YUCCA *Freemanii* Shinnars, sp. nov. Acaulis glabra ad 1.8 m. alta, foliis lanceolatis 1-4 cm. latis 15-60 cm. longis late acutis ad subacuminatis flaccidis parce filiferis, scapo tenui (sub inflorescentia 4-5 mm. crasso), panícula glabra, periantho ut videtur hypocrateriformi-globoso 3-3.8 cm. longo flavovirente, capsula oblongo-obpyriformi (interdum obpyramidali) trigona glabra 3.5 cm. longa 1.5 cm. crassa, seminibus deltoideis 8 mm. longis 5 mm. latis nigris.

Acaulescent, with one or few heads of leaves. Leaves narrowly to broadly lanceolate, 1-4 cm. wide, 15-60 cm. long with narrow petiole-like section of 3-7 cm. above the short, widely clasping base (base 1-2 cm. long, wider than long), soft and rather limp, the apex broadly acute to subacuminate (inrolled in drying and appearing narrowly acuminate), the margins with few and mostly long white threads. Scape slender (4-5 mm. thick at base of inflorescence), 1-1.8 m. high, flower-bearing in terminal $\frac{1}{4}$ - $\frac{1}{3}$. Panicle 40-60 cm. long, rather narrowly ovoid, the branches spreading-ascend-

¹Grateful acknowledgment is made to Mr. H. A. Freeman for specimens and field notes; and to Dr. Robert E. Woodson, Jr., Curator of the Herbarium, Missouri Botanical Garden, for the loan of numerous specimens, most of them determined by Trelease and McKelvey, including in particular the types of *Y. arkansana*, *Y. louisianensis*, and *Y. rupicola edentata*.

ing, 4-20 cm. long, glabrous; bracts of axis oblong-ovate, 9-15 mm. long. Perianth apparently funnellform-globose (only pressed specimens seen), pendulous, on glabrous pedicels 5-12 mm. long. Tepals rather thin, yellowish green, about equal in length, 3-3.8 cm. long; outer elliptic-ob lanceolate, with medial vein dorsally thickened toward apex, mucronate, 1.1-1.3 cm. wide; inner broadly elliptic, obtuse or barely mucronate, 1.7-2.2 cm. wide. Filaments thick, densely papillose-pubescent, 12-18 mm. long; anthers 2.5-3 mm. long. Pistil about 2.5 cm. long; ovary narrowly ovoid or ovoid-cylindric, 1.1-1.8 cm. long, about 6 mm. thick; style about 6-7 mm. long. Capsule oblong-obpyriform (sometimes obpyramidal), rounded-trigonous, slightly constricted just below equator, glabrous, about 3.5 cm. long by 1.5 cm. thick, tipped by the persistent style, and with persistent, withered, reflexed tepals at base. Seeds flat, approximately deltoid, 8 mm. long by 5 mm. wide, black. TYPE: 2.5 miles southwest of Redwater, in red sandy-clay soil, Bowie Co., Texas, *H. A. Freeman*, July 6, 1950 (in Herb. Southern Methodist University). Known also from the following collections, in the same herbarium (SMU) and in that of the Missouri Botanical Garden (Mo).

LOUISIANA. BOISSIER PARISH: old fields, Alden Bridge, *W. Trelease*, Nov. 1, 1898 (Mo, no. 148596; leaves only). WEBSTER PARISH: old fields, Minden, *Trelease*, April 14, 1901 (Mo, nos. 148597-148600, incl.; leaves only). TEXAS ANDERSON Co.: railroad north of Neches, *H. Eggert*, June 11, 1899 (Mo; leaves only). BOWIE Co.: Morris Place, 4 miles north of Texarkana, *Trelease*, May 21, 1902 (Mo, no. 148602; leaves only). Texarkana, *Trelease*, "Rec'd. May 23, 1902" (Mo, no. 148603; leaves only). SMITH Co.: Swan, *J. Reverchon*, July 9, 1902 (Mo, no. 148585; leaves only). VAN ZANDT Co.: 8.8 miles south of Canton on Texas Highway 19, *Robert Van Vleet 1631*, July 7, 1951 (SMU; whole plant, in flower). Same place and date, *Van Vleet 1632* (SMU; whole plant, in fruit). WOOD Co.: Mineola, *Reverchon*, June 2, 1903 (Mo, no. 148589; leaves only). Same place, *Reverchon Tex. Fl. 2122*, June 13 (year not given; Mo, no. 148592; leaves and fragment of inflorescence).—A number of other collections of *Reverchon*, *Trelease*, and others, consisting of leaves only, could not be positively identified; those from northeastern Texas and adjacent areas are presumably referable

either to this species or to *Y. louisianensis* Trel.

It is with especial pleasure that I name this species for Mr. H. A. Freeman of Garland, Texas, formerly biology instructor at Southern Methodist University; a zealous student of the *Hesperiidae* and other Lepidoptera, and author of numerous articles on them. In addition to collecting for the S.M.U. Herbarium the type of the new species and a topotype of *Y. arkansana* Trel., he has made extended and most valuable field observations of Southwestern species of the very difficult genera *Yucca* and *Agave*, in connection with his studies of the yucca- and agave-skippers.

Yucca Freemanii was not distinguished by Trelease from his *Y. louisianensis* (Ann. Rep. Mo Bot. Gard. 13: 64-65, 1902), the common species of sandy areas of northeastern Texas, east of the Blackland Prairie. Mrs. McKelvey, in her treatment of the more western species ("Yuccas of the Southwestern United States," Part Two, pp. 156-160, 1947), listed *Y. louisianensis* with query as a synonym of her *Y. arkansana* var. *paniculata*, described from Bastrop County, Texas. As Mrs. McKelvey remarks, the study of yuccas from herbarium material is most difficult, and she herself did not do field work in extreme eastern Texas. I do not agree with her tentative assignment of *Y. louisianensis* to *Y. arkansana*. On the basis of the usual and characteristic distribution patterns of Texas plants, I suspect that her var. *paniculata* is to be referred to *Y. louisianensis*, maintaining the latter as a distinct species. I separate the species in northeastern and north-central Texas as follows:

- 1a. Leaf margins minutely toothed or smooth, not shredding
—*Y. pallida* McKelvey
- 1b. Leaf margins shredding into prominent white threads (these often largely disappearing late in the year)
 - 2a. Inflorescence panicle, with branches in more than half its length, elevated well above the leaves; plant 1-4 m. high, flowering late May-July
 - 3a. Panicle branches glabrous; scape 1-1.8 m. high, slender (4-5 mm. thick at base of inflorescence); leaves 1-4 cm. wide, broadly acute or subacuminate, rather soft and limp; flowering mid June-July.....*Y. Freemanii* Shinnery
 - 3b. Panicle branches densely pubescent; scape 1.5-4 m. high, stout (5-10 mm. or more thick at base of inflorescence); leaves 0.4-2 cm. wide, narrowly acute or acuminate, rather firm and stiff; flowering late May-June (sporadically later)
—*Y. louisianensis* Trel.
 - 2b. Inflorescence spicate-racemose, occasionally with 1-2 branches near base, borne close to or even partly below the summit of the leaves; plant 0.6-1.2 m. high, flowering late April-mid May
—*Y. arkansana* Trel.

Some question exists regarding the identity of *Y. arkan-*

sana. Mr. Freeman's observations on this species near the type locality, supported by an examination of the type (naked rocky hills on the Fourche south of Little Rock, Arkansas, *George Engelmann 182*, May, 1837; Mo, no. 148399) and other collections from the general area, indicate that the real *Y. arkansana* is taller-growing and has softer, longer, and often wider leaves than does the common plant of northern Texas going by that name. Unfortunately all but two of the Arkansas specimens seen consisted of leaves only. Since considerable variation exists in the Texas plants, the name *arkansana* is provisionally retained for them.