

Steyermark, J. A. 1963. *Flora of Missouri*. Iowa State University Press, Ames. 1728 pp.

Vines, R. A. 1960. *Trees, shrubs and woody vines of the southwest*. The University of Texas Press, Austin. 1104 pp.

Scientific Name: *Willkommia texana* Hitchc. var. *texana*

Synonyms: None.

Common Name: Texas willkommia

Global/State Ranks: G3G4T3S3

Federal Status: None.

Global Range: Endemic to Texas (plants of the Paraná Basin of northern Argentina are presumably all var. *stolonifera*).

State Range: Coastal Plain of southeast and south Texas, with records from Aransas, Brazoria, Bee, Calhoun, Cameron, Galveston, Harris, Kenedy, Kleberg, Refugio and San Patricio counties (Hill, 1982; TEX-LL, 2003; US; WWF per TAMU browser, 2000); reported by Turner et al. (2003) from Chambers County, but no voucher specimen has come to light. The type specimen, 21 July 1897, *J. G. Smith s.n.* (US), has been attributed to Ellis County but may have come from the Beeville area.

Description (adapted from Hatch, Schuster & Drawe, 1999): Short-lived perennial grass forming small clumps; culms rather slender, up to 40 cm tall; leaf blades 4-10 cm long, 1-3 mm wide; ligule a ciliate membrane; panicles of several appressed spicate branches with flowers on only one side; spikelets sessile, about 4 mm long, awnless, containing a single floret; first glume short; second glume and lemma about equal in length.

Similar Species: None.

Habitat: Mostly localized in sparingly-vegetated shortgrass patches on small edaphically-influenced sites within a matrix of taller prairies; halophytes such as *Isocoma drummondii* and *Sporobolus pyramidatus* often dominate such sites.

Phenology: A warm season grass flowering primarily in the fall.

Comments: No significance as a forage plant (Gould & Box, 1965).

Illustrations: Line drawings appear in Diggs, Lipsomb & O'Kennon (1999), Gould (1975), Gould & Box (1965), and Hatch, Schuster and Drawe (1999); a black-and-white photo appears in Silveus (1933).

Type specimen: [County not stated:] Ennis and Beeville, 21 July 1897, *J. G. Smith s.n.* (US).

Selected References:

- Diggs, G. M., Jr., B. L. Lipscomb and R. J. O'Kennon. 1999. Shinnery and Mahler's illustrated flora of North-central Texas. Botanical Research Institute of Texas, Ft. Worth. 1626 pp.
- Gould, F. W. 1975. The grasses of Texas. Texas A & M University Press, College Station. 653 pp.
- Gould, F. W. and T. W. Box. 1965. Grasses of the Texas Coastal Bend. Texas A & M University Press, College Station. 186 pp.
- Hatch, S. L., J. L. Schuster and D. L. Drawe. 1999. Grasses of the Texas Gulf prairies and marshes. Texas A & M University Press, College Station. 355 pp.
- Hill, S. R. 1982. Distributional and nomenclatural notes on the flora of the Texas Coastal Bend. *Sida* 9(4): 309-326.
- Silveus, W. A. 1933. Texas grasses. Privately published, San Antonio. 782 pp.

Turner, B. L., H. Nichols, G. Denny and O. Doron. 2003. Atlas of the vascular plants of Texas. Two volumes. Sida Botanical Miscellany, Botanical Research Institute of Texas, Fort Worth. 888 pp.

Scientific Name: *Xyris chapmanii* Bridges & Orzell

Synonyms: Treated in synonymy under *Xyris scabrifolia* in the treatment for the Flora of North America (Kral, 2000) yet still recognized by many botanists.

Common Name: Chapman's yellow-eyed grass

Global/State Ranks: G2S2

Federal Status: None.

Global Range: Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina and Texas (Bridges & Orzell, 1990; Edwin Bridges pers. comm., 2003).

State Range: State range: Freestone, Henderson, Leon, Van Zandt and Wood counties (Bridges & Orzell, 1990; Jason Singhurst pers. comm., Jan 2004).

Description (adapted from Bridges & Orzell, 1990): Perennial with solitary or loosely caespitose stems 4.5-9.5 dm tall, the bases deeply set in the substrate. **Leaves** erect, linear, grasslike, spirally twisted, mostly 47-58 cm (18-23 inches) long, mostly 2-4 (1/16 - 1/8 inch) mm wide, the sheath 1/5 to 1/3 times as long as the blade. **Flowers** in headlike spikes at the end of spirally twisted scapes 48-92 cm long and 1.5-2 mm (less than 1/8 inch) wide at apex, its sheath lustrous brown to red-brown; spikes broadly ovoid, acute, 6-13 mm (1/4 - 1/2 inch) long and 5-8 mm (3/16 - 5/16 inch) wide, containing several flowers partially concealed behind tightly imbricate orbicular bracts about 6 mm (1/4 inch) wide and long; petals 3, yellow, the blades 3 mm (1/8 inch) long.

Similar Species: All species of *Xyris* are superficially similar and difficult to distinguish from one another. Bridges and Orzell (1990) provided a key that can be inserted into those that appear in the two major references on southeastern *Xyris* (i.e., Kral, 1966 and Godfrey & Wooten, 1979), thus allowing the separation of this recently-described species from its look-alike congeners.

Habitat: Mostly in soft, spongy, peaty substrates in deep muck seepage bogs; sometimes in muckiest parts of hillside seepage bogs. Consistent associates include *Eriocaulon decangulare*, *Rhynchospora macra*, *Scleria reticularis*, *Aristida virgata*, *Coreopsis linifolia*, *Eryngium integrifolium*, *Fuirena squarrosa*, *Lachnocaulon digynum*, *Oxypolis filiformis*, *Sarracenia alata*, *Xyris fimbriata* and *Xyris scabrifolia* (Bridges & Orzell, 1990)

Phenology: Flowering August-September, with seed maturing September through October (Bridges & Orzell, 1990).

Comments:

Illustrations: None known.

Selected References:

- Bridges, E. L. and S. L. Orzell. 1990. *Xyris chapmanii*, a new species from the Gulf Coastal Plain of the southern United States. *Phytologia* 68(5): 382-389.
- Godfrey, R. K. and J. W. Wooten. 1979. Aquatic and wetland plants of the southeastern United States. Monocotyledons. The University of Georgia Press, Athens. 712 pp.
- Kral, R. 1966. *Xyris* (Xyridaceae) of the continental United States and Canada. *Sida* 2: 177-260.

Kral, R. 2000. Xyridaceae. Pp. 154-167 in: Flora of North America Committee. 2000. Flora of North America north of Mexico. Volume 22. Magnoliophyta: Alismatidae, Arecidae, Commelinidae (in part), and Zingiberidae. Oxford University Press, New York. 352 pp.

Scientific Name: *Yeatesia platystegia* (Torr.) Hilsenbeck

Synonyms: *Tetramerium platystegium* Torr.

Common Name: Texas shrimp-plant, Torrey tetramerium

Global/State Ranks: G3G4S3S4

Federal Status: None.

Global Range: Coahuila, Nuevo León, Tamaulipas and southern Texas (Hilsenbeck, 1989).

State Range: South Texas Plains and southern part of the Edwards Plateau, including Duval, Kinney, McMullen, Starr, Terrell, Uvalde, Val Verde and Webb counties (Hilsenbeck, 1989; Mase, 1979, Texas BCD, 2002).

Description (adapted from Correll & Johnston, 1970): Low, multi-branched shrub usually less than 2 ft. tall. **Leaves** opposite, entire, elliptic-lanceolate to linear, to 2 in. long and 1/2 inches wide. **Flowers** in terminal spikes with conspicuous greenish-yellow, heart-shaped bracts; corolla pale lavender, two-lipped, the upper lip with a single lobe, the lower with 3 lobes.

Similar Species: None. The bracts of the inflorescence are a conspicuous characteristic, unique among shrubs within its range.

Habitat: In south Texas, this shrub occurs in a variety of thorn shrublands on gravelly uplands, sometimes in saline or gypseous soils (Lonard, Everitt & Judd, 1991). On the Edwards Plateau, Texas shrimp plant occurs in canyon woodlands or shrublands on mesic to dry limestone slopes.

Phenology: Flowering throughout the year with appropriate rainfall.

Comments:

Illustrations: A color photograph appears in Everitt, Drawe & Lonard (2002); line drawings appear in Hilsenbeck (1989) and Wasshausen (1966).

Selected References:

- Correll, D. S. and M. C. Johnston. 1970. Manual of the vascular plants of Texas. Texas Research Foundation, Renner. 1881 pp.
- Everitt, J. H., D. L. Drawe and R. I. Lonard. 2002. Trees, shrubs and cacti of South Texas. Revised edition. Texas Tech University Press, Lubbock. 249 pp.
- Hilsenbeck, R. A. 1989. Taxonomy of *Yeatesia* (Acanthaceae). Systematic Botany 14(3): 427-438.
- Lonard, R. I., J. H. Everitt and F. W. Judd. 1991. Woody plants of the Lower Rio Grande Valley, Texas. Miscellaneous Publication Number 7, Texas Memorial Museum, The University of Texas at Austin. 179 pp.
- Mase, R. 1979. Status report on the distribution of *Tetramerium platystegium* Torrey. Appendix B in Mase, R. 1979. A vegetation resource evaluation of Rhodes Ranch, Live Oak and McMullen counties, Texas. Environmental Technical Services Co., Austin.
- Wasshausen, D. C. 1966. Acanthaceae. Pp. 223-282 in Lundell, C. L. 1966. Flora of Texas, volume 1. Texas Research Foundation, Renner. 407 pp.

Scientific Name: *Yucca cernua* Keith

Synonyms: None.

Common Name: nodding yucca

Global/State Ranks: G1G2S1S2

Federal Status: None.

Global Range: Endemic to East Texas.

State Range: Known from a six square kilometer area in west-central Newton County and adjacent eastern Jasper County (Keith, 2003).

Description (adapted from Keith, 2003): A trunkless yucca forming solitary clumps. **Leaves** mostly 40-70 cm (16-28 inches) long, 3.5-6.5 cm (1 3/8 - 2 1/2 inches) wide at widest point, glaucous and bluish-green when young, yellowish-green to olive-green and flat to slightly concave in age, the margin corneous, yellowish and denticulate but not bearing exfoliating fibers. **Flowers** pendant on nodding branches in a long panicle in the upper half of a woody scape 2-4 m (6-12 feet) tall; tepals 6, white or slightly greenish, mostly 3.5-5 cm (1 1/2 - 2 inches) long and about half as wide. **Fruit** a dry, dehiscent, somewhat woody capsule 3.2-4.5 cm (1 1/4 - 1 3/4 inches) long and 2-2.5 cm (3/4 - 1 inch) wide.

Similar Species: Like other yuccas in gross feature but quite distinct from other species in Texas in forming solitary (not colonial) clumps; in having flat leaves with corneous (not filiferous) margins; and in having tall scapes bearing nodding branches.

Habitat: Openings in and margins of pine-hardwood forests on brownish acid clays of the Redco Series (Keith, 2003). Associates include *Eurybia hemisphaerica*, *Helianthus angustifolius*, *Panicum anceps*, *Solidago canadensis*, *Tridens strictus*, *Carex flaccosperma*, *Symphotrichum dumosum* and other generalists (Keith, 2003).

Phenology: Plants in either flower or fruit have been observed June - November (Keith, 2003).

Comments:

Illustrations: Color photographs and line drawings of various parts appear with the type description in Keith (2003).

Selected References:

Keith, E. L. 2003. *Yucca cernua* (Agavaceae, series Rupicolae), a new species from Newton and Jasper counties in eastern Texas. *Sida* 20(3): 891-898.

Scientific Name: *Yucca tenuistyla* Trelease

Synonyms: None.

Common Name: white-rim yucca

Global/State Ranks: G3S3

Federal Status: None.

Global Range: Endemic to Texas.

State Range: Southern Edwards Plateau and South Texas Plains, but details of distribution unclear due to paucity of voucher specimens. According to the Missouri Botanical Garden's Tropicos database, collections include an 1843 specimen by Ferdinand Lindheimer from "about Galveston;" an 1845 Lindheimer specimen from New Braunfels; and an undated Trelease specimen from Sealy. Reported by McAlister (1999) from Matagorda Island in Calhoun County.

Description (adapted from Correll & Johnston, 1970): a trunkless yucca, i.e., with leaves forming a rosette at ground level. **Leaves** soft and mostly recurving, about 5 dm long and 1-1.5 cm wide, dark green, lanceolate and long attenuate, the margins white and with exfoliating hairs, the tip not stiffly pointed. **Flowers** in a woody-stalked panicle about 1 m tall and held above the tips of the leaves; tepals 6, white, somewhat thick and waxy, pointed at the tip; style white. **Fruit** a stout dehiscent woody capsule.

Similar Species: Much like *Yucca louisianensis* and *Yucca constricta*, in both of which the style is green rather than white.

Habitat: Unknown but assumed to be various sorts of grassland.

Phenology: Flowering in the spring.

Comments: A poorly known species, submerged by some authorities (e.g., Vines, 1960) within the more widespread *Yucca constricta*. Hess & Robbins (2002) suggested that *Yucca tenuistyla* might be nothing but a variant of *Yucca flaccida*. Turner et al. (2003) apparently accidentally omitted the species due to the absence of specimens from the University of Texas herbarium (TEX-LL).

Illustrations: Various illustrations reportedly appear with the type description (Trelease, 1902).

Selected References:

- Hess, W. J. and R. L. Robbins. *Yucca*. Pp. 423-439 in: Flora of North America Committee. 2002. Flora of North America north of Mexico. Volume 26. Magnoliophyta: Liliidae: Liliales and Orchidales. Oxford University Press, New York. 723 pp.
- McAlister, W. 1999. Vascular plant list, Matagorda Island. October 1999 draft. Unpublished manuscript, United States Fish & Wildlife Service. 12 pp.
- Trelease, W. 1902. Annual report of the Missouri Botanical Garden 13: 53-54.
- Vines, R. A. 1960. Trees, shrubs and woody vines of the southwest. The University of Texas Press, Austin. 1104 pp.

Scientific Name: *Zephyranthes refugiensis* F. B. Jones

Synonyms: None.

Common Name: Refugio rain-lily

Global/State Ranks: G2G3S2S3

Federal Status: None.

Global Range: Endemic to Texas.

State Range: Goliad, Refugio and San Patricio counties.

Description (adapted from Correll & Johnston, 1970): Perennial forb with leaves and flowers that appear a few days after heavier rains; root a subglobose bulb 2-2.5 cm wide; leaves few, basal (stem leaves absent), narrow and grasslike, to 25 mm long and 2-3 mm wide; flowers dark lemon yellow, to 45 mm long, about half of which is a narrow elongate tube; flower expanded at apex into six tepals.

Similar Species: Four other yellow- to orange-flowered rain lilies occur in the Coastal Bend and South Texas: *Cooperia jonesii* (*Zephyranthes jonesii*), *Cooperia smallii* (*Zephyranthes smallii*), *Habranthus tubispathus* (*H. texanus*) and *Zephyranthes pulchella*. Diagnostic features of *Zephyranthes refugiensis* include its capitate stigma and short perianth tube (shorter than the spathe but about twice as long as the filaments).

Habitat: Open swales on tight sandy loam (Jones, 1961; Jones, 1977).

Phenology: Flowering after substantial rains from July to November (Jones, 1961).

Comments: Said by Flagg & Flory (1976) to be a wild backcross of *Zephyranthes jonesii* (*Cooperia jonesii*), itself of hybrid origin involving *Zephyranthes chlorosolen* (*Cooperia drummondii* of Texas authors) and *Zephyranthes pulchella*, with the yellow-flowered parent, *Zephyranthes pulchella*.

Illustrations: A digital image of the type specimen is available on the w³TROPICOS website of the Missouri Botanical Garden (www.mobot.org). A color photograph of a related species, *Zephyranthes pulchella*, is provided in Richardson (1995).

Type specimen: Refugio Co.: ca. 1/2 mi E of county courthouse, Refugio, abundant in open pasture, the site low and flooded by recent rainfall, water 1-3 inches in depth, soil a sandy loam type, bulbs subglobose, 2-2.7 cm in diameter, perianth segments yellow, 26 Oct 1960, *F. B. Jones 4353* (isotypes: MO, CCM, TEX).

Selected References:

- Correll, D. S. and M. C. Johnston. 1970. Manual of the vascular plants of Texas. Texas Research Foundation, Renner. 1881 pp.
- Flagg, R. O. and W. S. Flory. 1976. Origins of three Texas species of *Zephyranthes*. *Plant Life* 32: 67-80.
- Jones, F. B. 1961. A new *Zephyranthes* from southern Texas. *Rhodora* 63: 214-216.
- Jones, F. B. 1977. Flora of the Texas Coastal Bend. Second edition. Welder Wildlife Foundation, Sinton. 262 pp.
- Richardson, A. 1995. Plants of the Rio Grande delta [revised edition of "Plants of Southmost Texas"]. University of Texas Press, Austin. 332 pp. + 94 plates.