Matelea baldwyniana (Asclepiadaceae*) new to the Texas flora

Jason R. Singhurst
Non Game and Rare Species Program, Texas Parks and Wildlife Department,
4200 Smith School Road, Austin, TX 78704, USA
jason.singhurst@tpwd.texas.gov

and

Walter C. Holmes
Department of Biology, Baylor University, Waco, TX 76798-7388, USA

ABSTRACT

The occurrence of *Matelea baldwyniana* (Asclepiadaceae) is documented in Texas. A small population was discovered in an oak-hickory forest in Grayson County. This is the first documented record for the species in the state, now considered a rare peripheral in Texas considering its close distribution in adjacent Oklahoma. *Published online* ***www.phytologia.org*** *Phytologia 103(4): 86-89 (December 22, 2021). ISSN 030319430.*

KEY WORDS: Texas, Grayson County, Asclepiadaceae, *Matelea*, rare peripheral, Oak-Hickory Forest.

The genus *Matelea*, commonly known as milkvine, is native to the Western Hemisphere where about 200-250 species occur in the United States, Mexico, Central America, South America, and the Caribbean Islands (Moore 2021). Due principally to slight differences in the flowers and fruits, current taxonomical efforts have realigned some species of *Matelea* into the genus *Gonolobus*. *Matelea baldwyniana* (Sweet) Woodson occurs in seven states in the southeastern and south-central United States including Alabama, Arkansas, Florida, Georgia, Mississippi, Missouri, and Oklahoma. The species prefers limestone and dolomite glades and dry, rocky, open woods on calcareous substrates (Moore 2021).

Matelea baldwyniana, which we report as new to Texas, is a perennial herbaceous vine that flowers from April through June. The stems are brown in color and twine and climb on other vegetation to about three meters. The following technical description of *Matelea baldwyniana* modified from *www.missouriplants.com* is provided. The stems (Figure 2) have milky latex, hirsute hairs with some glandular pubescent. Leaves (Figure 2) are simple and opposite with petioles 5-6 cm in length. Leaf blades are 5-16 cm in length, broadly ovate to orbicular, bases cordate, margins entire, apices acute to acuminate, surfaces scabrous above from swollen pubescence, and may appear punctate because of the swollen hairs. Flowers are 5-lobed, 7-13 cm long, petals 2-3mm broad, exterior pubescence similar to that of the stems, glabrous internally, petals blunt or slightly emarginate. Corona is 5-lobed, 0.5 mm long, alternating with appendages. Calyx is 5-lobed, 3-4 mm long, lanceolate, spreading or slightly recurved, densely brown-glandular. Follicles are 6.5-9.0 cm long and tuberculate. Seeds are 7-9 mm long, ovate, narrowly winged with the terminal tuft of hairs to 3 cm long and white to light cream-colored to tan. *Matelea baldwyniana* appears similar to *M. decipiens* (Alex.) Woodson in vegetative characteristics, but is easily differentiated by its flower structure (Figure 1 and www.missouriplants.com).

*We are following George Yatskievych in *Steyermark's Flora of Missouri* Vol. 2, revised edition, in recognizing Asclepiadaceae in the traditional sense.

Matelea baldwyniana was discovered on 16 May 2018 by Sheryl Sorrels of Grayson County, Texas. Sorrels submitted photographs to iNaturalist and to North Texas regional Botanist Jeff Quayle for

identification. Quayle forwarded the photos to Mark Fishbein of Oklahoma State University, an authority on milkweed vines (Apocynaceae and Asclepiadaceae-Gonolobinae) for confirmation. Neither Correll and Johnston (1970), Jones (1997), Kartez (2015) nor USDA, NRCS (2021) had records of the species in Texas. A site survey was made on 8 July 2021 by Singhurst for collection of additional data and voucher specimens. The *Matelea baldwyniana* population occurred in an intermittent portion of Shawnee Creek drainage. The soils are underlain by limestone and shale on the Bolar – Aledo complex, stony clay loam soils that developed on moderately steep slopes (3 to 20%) along ridge lines. Several flowering individuals of *Matelea baldwyniana* were documented in a small population in an oak-hickory forest dominated by *Quercus muhlenbergii*, *Q. stellata*, *Q. velutina*, *Carya myristiciformis*, *Carya texana*, *Celtis laevigata*, *Fraxinus americana*, *Juniperus virginiana*, *Maclura pomifera*, *Ulmus americana*, and *U. rubra*. Other commonly associated woody flora recorded at the site included *Cercis canadensis*, *Cornus drummondii*, *Ilex decidua*, *Morus rubra*, *Parthenocissus quinquefolia, Sapindus saponaria*, *Sideroxylon lanuginosum*, *Smilax bona-nox*, *S. tamnoides*, *Symphoricarpos orbiculatus*, *Toxicodendron radicans*, *Viburnum rufidulum*, and *Vitis cinerea*. Herbaceous flora commonly present included *Bromus pubescens*, *Cocculus carolinus*, *Dichanthelium acuminatum*, *Galium circaezans*, *Helianthus hirsutus*, *Matelea gonocarpos*, *Ruellia caroliniensis*, *Packera obovata*, *Passiflora lutea*, *Podophyllum peltatum*, *Sanicula canadensis*, *Verbesina alterniflora*, *Vernonia texana*, and *Zizia aurea*.

Voucher specimen: **Texas**. Grayson County: 0.4 miles north of the jct. of Hwy 91 and Yellow Jacket Road on Yellow Jacket Road, east side of Yellow Jacket Road. Population in an Oak-Hickory Forest at the base of steep slope underlain by limestone and growing in clay loam soils, 8 July 2021, *Jason Singhurst and family* (BAYLU).

Future study of this recently documented *Matelea baldwyniana* site is warranted including documenting the extent of the population, information about reproduction, suggestions for future management, and locating additional potential sites in similar adjacent regions.

ACKNOWLEDGMENTS

We thank Sheryl Sorrels for providing observations of *Matelea baldwyniana*, the photo and support for documenting this new species of the Texas flora. We are also grateful to iNaturalist, botanist Jeff Quayle who was a driving force in promoting this manuscript, and Mark Fishbein of Oklahoma State University.

LITERATURE CITED

Correll, D. S. and M. C. Johnston. 1970. Manual of the Vascular Plants of Texas. Texas Research Foundation, Renner, Texas.

Jones, S. D., J. K. Wipff, and P. M. Montgomery. 1997. Vascular Plants of Texas: A Comprehensive Checklist Including Synonymy, Bibliography, and Index. University of Texas Press, Austin, Texas.

Kartesz, J. T., The Biota of North America Program (BONAP). 2015. *North American Plant Atlas.* (http://bonap.net/napa). Chapel Hill, N.C. [maps generated from Kartesz, J.T. 2015. Floristic Synthesis of North America, Version 1.0. Biota of North America Program (BONAP). (in press)].

Missouri Plants. 2021. Photographs and descriptions of the vascular plants of Missouri, USA. *Matelea baldwyniana (Sweet) Woodson, Climbing milkweed. (*www.missouriplants.com/Matelea_baldwyniana_page.html*, 31 August 2021).*

Moore, D. 2021. Baldwyn's Milkvine (*Matelea baldwyniana*). (https://www.fs.fed.us/wildflowers/plant-of-theweek/matelea_baldwyniana.shtml, 31 August

2021). United States Department of Agriculture Forest Service. **Forest Management, Rangeland Management, & Vegetation Ecology - Botany Program.** Washington DC.
USDA, NRCS. 2021. The PLANTS Database (http://plants.usda.gov, 31August 2021). National Plant Data Team, Greensboro, NC 27401-4901 USA.

Figure 1. *Matelea baldwyniana* in flower, Grayson County, Texas (Photo by Sheryl Sorrels).

Figure 2. *Matelea baldwyniana* twining stems and leaves with hirsute hairs and some hairs with glandular pubescence, Grayson County, Texas (Photo by Jason Singhurst).