

***HYMENACHNE AMPLEXICAULIS* NEW FOR LOUISIANA**

LOWELL E. URBATSCH
Department of Biological Sciences and Herbarium
Louisiana State University
Baton Rouge, Louisiana 70803
leu@lsu.edu

and

JOHN K. SAICHUK
LSU AgCenter Extension Specialist
Southwest Region, 1373 Caffey Road
Rayne, Louisiana 70578
JSaichuk@agcenter.lsu.edu

ABSTRACT

Hymenachne amplexicaulis, West Indian marsh grass, is reported new to Louisiana. In the continental United States this pantropical, wetland species was previously known only from Florida. The species is a forage plant in wet, tropical areas but has become an unwanted pest, replacing native plants where recently introduced.

An unknown grass, brought to attention by JKS, was first noticed by a rice farmer growing as several sporadic clumps along the banks of a canal that served the irrigation needs for rice production near the community of Gueydan, Vermilion Parish, Louisiana. Specimens were collected by Doug Leonards and pressed, dried, and delivered to the LSU Herbarium for identification.

The initial identification of *Hymenachne amplexicaulis* (Rudge) Nees was made using the interactive key by Watson and Dallwitz (1992). Comparisons with published descriptions and with authentic material from various on-line sources all supported that determination (Wunderlin & Hansen 2008; Center for Aquatic and Invasive Plants 2014). The species name is based on *Panicum amplexicaule* and the type specimen also compares favorably with the unknown, BM 000938735 “ex. herb Rudge” (JSTOR Global Plants Initiative 2014).

Voucher specimen. **Louisiana.** Vermilion Par.: ca. 0.4 mi S of La. Hwy 14 and ca. 0.34 mi E of Alvie Rd. or ca. 2 mi WSW of the community of Gueydan, sporadic clumps on canal banks near inlet of rice irrigation pump with other clumps nearby, 30.01487° N, 92.54222° W, ca. 1 m elevation, 27 Nov 2013, *Leonards s.n.* (LSU 135072).

The geographic range for *Hymenachne amplexicaulis* includes west tropical Africa, Australia, the Caribbean, China, India, Malesia, Mexico, Papuasia, and South America (Clayton et al. 2006). Prior to this report West Indian marsh grass was known in the USA from the southern half of peninsular Florida and Leon county in northern Florida (Wunderlin & Hansen 2008; Robert K. Godfrey Herbarium 2014; USDA, NRCS 2014.). Leon County, approximately 500 miles to the east, is the documented location nearest the Vermilion Parish site.

Opinions apparently differ on whether the taxon is native to the USA. Barkworth (2003) noted that it is native to Florida. The U.S. National Park Service (2009) indicates it was first reported in a ponded pasture in Palm Beach County, Florida, more than 30 years ago. Whether this was the result of natural or intentional introduction could not be determined. The species is grown as cattle forage in wet, tropical areas and could have been planted in Florida for that purpose.



Fig. 1. *Hymenachne amplexicaulis* specimen collected in Vermilion Parish, Louisiana.



Fig. 2. *Hymenachne amplexicaulis* morphology. Left: spikelets, primary glume and sterile lemma evident in image on the left; base of primary glume and secondary glume shown on the right. Right: transverse section of culm internode filled with aerenchymatous tissue.

The mode of introduction of *Hymenachne amplexicaulis* to Louisiana is unknown and thus highly speculative. Seeds or vegetative means from node-bearing stem fragments can accomplish propagation of this species. Southern Louisiana is a potential stop along the Mississippi flyway, a major route for migrating tropical birds (Birdnature 1988) and seed transport from Florida, Mexico, or South America is a likely scenario. The movement of vegetative fragments by agricultural equipment, boats, or by water is another possibility. Water can flow through breaches in the Intracoastal Waterway into irrigation canals in southern Louisiana. However, plant fragments traveling through the Intracoastal Waterway from Florida, Mexico, or elsewhere most likely would encounter seawater and the salt tolerance of *H. amplexicaulis* is unknown.

In Florida *Hymenachne amplexicaulis* is regarded as an ecological threat because it displaces native maidencane (*Panicum hemitomon*) communities and invades various freshwater wetlands such as streams, cypress swamps, and marshes. It colonizes or invades disturbed, wet sites including drainage canals and pastures. Plants can also grow as floatant in open water. In nutrient rich wetlands, mature plants form extensive colonies by producing stolons that extend many feet underwater (Center for Aquatic and Invasive Plants 2014; U.S. National Park Service 2009).

Except for last year, southern Louisiana has experienced a series of mild winters that may have allowed *Hymenachne amplexicaulis* to become established. Observations will be made at the Vermilion Parish site to determine whether this species survived the recent winter, suggesting that it is sufficiently cold tolerant to persist in the central Gulf region thus giving it the potential to become a pest.

In coastal and central Queensland Australia, the species has become an unwanted pest of stream banks, wetlands, and irrigation ditches. It has also invaded low-lying sugarcane fields, fish habitats, and natural wetlands of high conservation value. It has been declared a “class 2 pest” by the Australian Department of Agriculture, Fisheries and Forestry 2014.

Hymenachne amplexicaulis may be more widely established along the Gulf Coast but overlooked because of its similarity to another panicoid, wetland species, *Sacciolepis striata* (L.) Nash, American cupscale. Field biologists should look critically at *S. striata* when making identifications. Both taxa grow in similar habitats, are strongly rhizomatous, have broad, auriculate leaf blades and elongated, congested panicles. Features characteristic of *H. amplexicaulis* are solid, pithy internodes, symmetrically attached spikelets, and non-saccate, 5-nerved secondary glumes, while in *S. striata* the internodes are hollow, spikelets are asymmetrically attached, and secondary glumes are saccate and 11–12 nerved (Wipff 2003). A herbarium specimen, spikelets, and culm internode cross-section are shown in Figures 1 and 2.

LITERATURE CITED

- Australian Department of Agriculture. 2014. *Hymenachne* Fact sheet. Fisheries and Forestry. <<http://www.daff.qld.gov.au/>> Accessed 7 May 2014.
- Barkworth, M.E. 2003. *Hymenachne*. In M.E. Barkworth et al. (eds.). Flora of North America North of Mexico. Poaceae, part 2, Vol. 25. <<http://herbarium.usu.edu/webmanual>> Accessed 8 May 2014.
- Birdnature. 1988. North American Migration Flyways. <<http://www.birdnature.com/flyways.html>> Accessed 14 May 2014.
- Center for Aquatic and Invasive Plants. 2014. *Hymenachne amplexicaulis*, West Indian marsh grass. Univ. of Florida, Gainesville. <<http://plants.ifas.ufl.edu/>> Accessed 7 May 2014.
- Clayton, W.D., M.S. Vorontsova, K.T. Harman, and H. Williamson. (2006 onwards). GrassBase - The Online World Grass Flora. <<http://www.kew.org/data/grasses-db.html>> Accessed 9 May 2014.
- JSTOR Global Plants Initiative. 2014. *Hymenachne amplexicaulis* type specimens. <<http://plants.jstor.org/search>> Accessed 8 May 2014.
- Robert K. Godfrey Herbarium. 2014. Florida State University, Tallahassee. <<http://herbarium.bio.fsu.edu/database.php>> Accessed 9 May 2014.
- USDA, NRCS. 2014. The PLANTS Database. National Plant Data Team, Greensboro, North Carolina. <<http://plants.usda.gov>> Accessed 7 May 2014.
- Watson, L. and M.J. Dallwitz. 1992 onwards. The grass genera of the world: descriptions, illustrations, identification, and information retrieval; including synonyms, morphology, anatomy, physiology, phytochemistry, cytology, classification, pathogens, world and local distribution, and references. Version: 5 Feb 2014. <<http://delta-intkey.com>>
- Wipff, J.K. 2003. *Sacciolepis*. In M.E. Barkworth et al. (eds.). Flora of North America North of Mexico. Poaceae, Vol. 25, part 2. <<http://herbarium.usu.edu/webmanual>>. Accessed 8 May 2014.
- Wunderlin, R.P., and B.F. Hansen. 2008. Atlas of Florida Vascular Plants. S.M. Landry and K.N. Campbell (application development), Florida Center for Community Design and Research. Institute for Systematic Botany, Univ. of South Florida, Tampa. <<http://www.plantatlas.usf.edu/>>. Accessed 7 May 2014.
- U.S. National Park Service. 2009. West Indian Marsh Grass fact sheet. Plant Conservation Alliance's Alien Plant Working Group. Last updated 7 Jul 2009. <<http://www.nps.gov/plants/alien/fact/hyam1.htm>>. Accessed 7 May 2014.