

**PHYLLOSTACHYS AUREA RIV. (GRAMINEAE; BAMBUSEAE) IN TEXAS**

Mike Borowski and Walter C. Holmes

Department of Biology, Baylor University, Waco, Texas 76798-7388 U.S.A.

and

Jason Singhurst

Texas Parks and Wildlife Department, Route 1, Box 87, Mexia, Texas 76667  
U.S.A.

ABSTRACT

*Phyllostachys aurea* is shown to be widely distributed in the eastern part of Texas.

KEY WORDS: Gramineae, *Phyllostachys*, Texas

*Phyllostachys aurea* Riv., commonly called yellow bamboo, is a native of China that was introduced into the southern United States prior to 1870 (Rehder 1986) as an ornamental, barrier planting, or for soil stabilization and erosion control. The plant is a vigorous colonizer and readily escapes containment or is commonly abandoned. The size of some colonies, sometimes over 100 m in length, indicates that the species, once established, can persist for extended periods of time. The species may grow to 6 m tall and forms dense stands, often to the exclusion of other vegetation. The genus *Phyllostachys* is characterized by the culms being flattened on one side above each node, a trait useful in distinguishing it from the native *Arundinaria gigantea* (Walt.) Muhl. Additional traits of *Phyllostachys aurea* are its yellow stems, leaf sheathes generally without spots but with two tufts of bristles at the apices, and presence of 2-3 linear leaves 5-12 cm long and 1-2 cm wide at the tip of each branch. Additional information can be found in Allen (1992).

The plant is included as part of the naturalized flora of Louisiana by Allen (1992) and by Thomas & Allen (1993). It is also present in Mississippi (pers. comm. with Sidney McDaniel of IBE). Gould (1975) did not include *Phyllostachys* in his treatment of the grasses of Texas nor was it included in the latest checklist of the

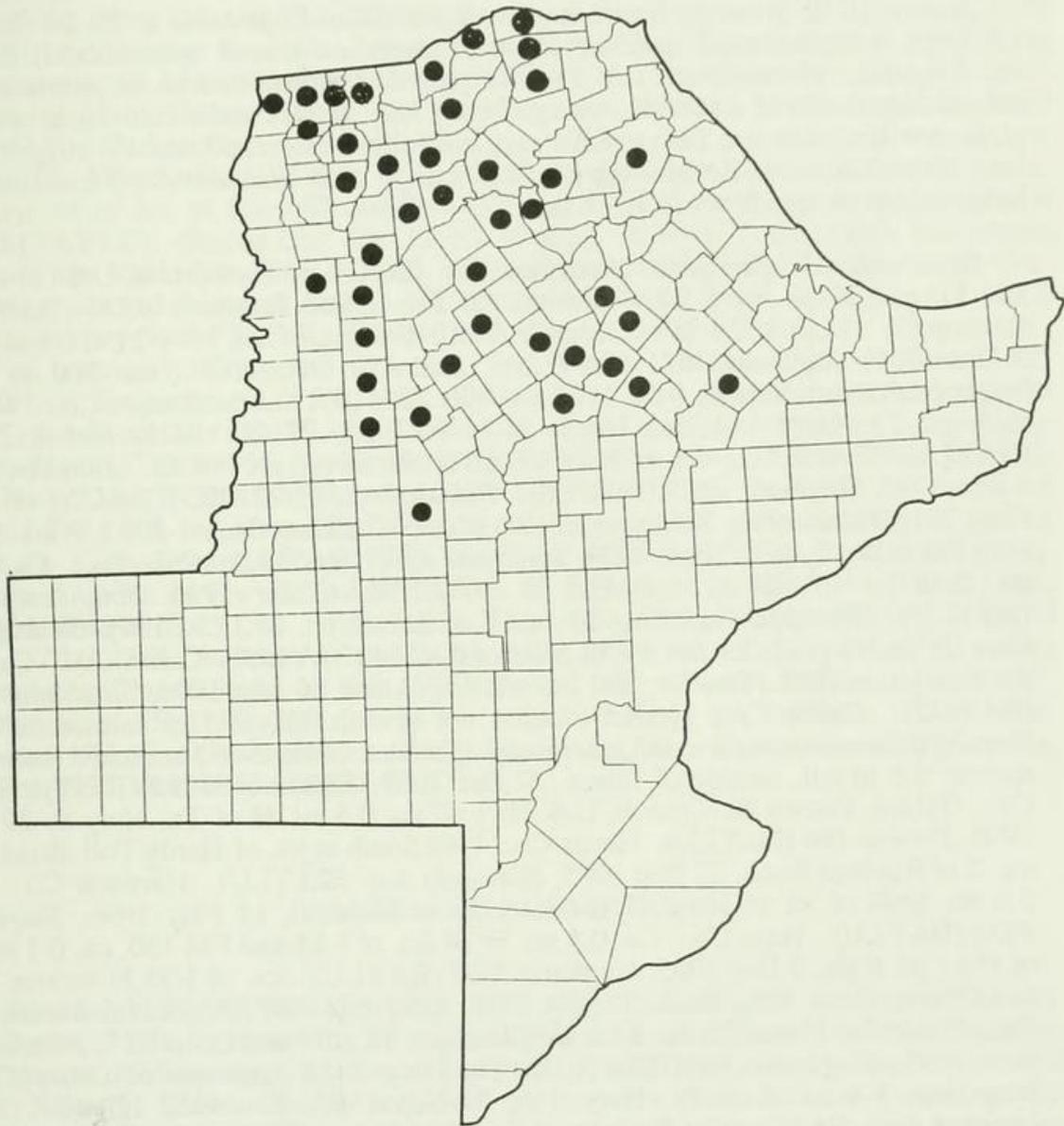


Figure 1. Distribution of *Phyllostachys aurea* in Texas.

vascular plants of the state (Hatch *et al.* 1990). Its widespread occurrence in Texas (Figure 1), spread to areas where it seems not to have been intentionally planted, and persistence, warrants its inclusion as part of the naturalized flora of Texas.

Jenzan (1976) gives the intermast period of *Phyllostachys aurea* as 28-29 ( $2 \times 14-15$ ) years, a figure based on observations of plants introduced to [mainland] Europe and England. He mentions that the time period is more fixed in the center of the natural distribution of a species and synchrony may be lost under cultivation or if the plants are feral, thus the Texas plants may not follow this schedule. He suggests the long interval between flowering evolved to escape seed predation. At this time, no fertile materials are known from Texas.

Representative specimens: Anderson Co.: Ca. 0.9 mi E of jct. of U.S. Hwy 84 and Loop 256 on Hwy 84, Palestine, 20 Feb 1996, *Singhurst 4776* (BAYLU). Bastrop Co.: N. side Tx. Hwy 21, ca. 3.6 mi NE of jct. of Tx. Hwy 21 and FM 535, 3 Dec 1995, *Singhurst 3621* (BAYLU). Bell Co.: Royal St., ca. 200 m E of Stagecoach Road, Salado, 9 Jul 1995, *Holmes 7805* (BAYLU). Bosque Co.: Walnut Springs, Tx. Hwy 144, ca. 150 m N of FR 927, 27 Oct 1995, *Holmes 7939* (BAYLU). Bowie Co.: Jct. of Hwy 67 and Sulfur River, ca. 0.8 mi. N on Hwy 67, 6 Mar 1996, *Singhurst 4809* (BAYLU). Burnet Co.: FM 2147, 1/2 mi. W of U.S. Hwy 281, 28 Jan 1996, *Wivagg s.n.* (BAYLU). Callahan Co.: I-20, 1.7 mi. E jct. with FM 604, Clyde, 10 Feb 1996, *Singhurst 4775* (BAYLU). Cass Co.: Ca. 1.15 mi. S of jct. of FM 1154 & FM 96 on FM 96, 6 Mar 1996, *Singhurst 4810* (BAYLU). Cherokee Co.: Ca. 2.3 mi. E of Alto at jct. of U.S. Hwy 69 and Tx. Hwy 21 on Hwy 21, 29 Jan 1996, *Singhurst 4764* (BAYLU). Collin Co.: Ca. 0.3 mi. S of jct. of Park Place Dr. and Jupiter Rd., Allen, 30 Mar 1996, *Singhurst 4817* (BAYLU). Dallas Co.: [exact location not given] cultivated in calcareous clay, forming a dense thicket 6 m tall, evergreen, specimen consists of 2 branches from root sprouts 0.6 m tall, outside of fence, 20 Dec 1967, *Shinners 32022* (BRIT). Erath Co.: Dublin, Patrick St. Church, U.S. Hwy 67 ca. 0.5 mi. N of Tx. Hwy 6, 29 Mar 1996, *Stevens 196* (BAYLU). Harris Co.: I-45 South at jct. of Hardy Toll Road, 1/2 mi. S of Rayford Road, 27 Dec 1995, *Borowski s.n.* (BAYLU). Harrison Co.: Ca. 5.6 mi. ENE of jct. of Hwy 43 and Hwy 59 at Marshall, 14 May 1996, *Singhurst 4838* (BAYLU). Hays Co.: Ca. 0.5 mi. W of Jct. of I-35 and FM 150, ca. 0.1 mi. N of FM 150, Kyle, 3 Dec 1995, *Singhurst 3627* (BAYLU); Jct. of I-35 N service road and County Road 105, Buda, 22 Oct 1995, *Borowski 185* (BAYLU). Henderson Co.: S side Tx. Hwy 175, ca. 5 mi. WNW of jct. Tx. 175 and Loop 317, Athens, 26 Nov 1995, *Singhurst 3628* (BAYLU); Tx. Hwy 2329 near arm of Cedar Creek Reservoir, 3-4 mi. S of Tx. Hwy 316, 24 Sep 1995, *Borowski 179* (BAYLU). Houston Co.: Ca. 0.3 miles E of jct. of Tx. Hwy 21 and FM 2967 on Tx. Hwy 21, 3 Dec 1995, *Singhurst 3629* (BAYLU). Jasper Co.: Ca. 4.8 mi. ENE of jct. of Hwy 96 and FM 1007 at Browndell, Rocky Reserve, The Nature Conservancy of Texas, 15 Apr 1996, *Singhurst 4833* (BAYLU). Kaufman Co.: Ca. 0.4 mi. E of jct. of old Hwy 174 and FM 274 in Kemp, 15 Mar 1996, *Singhurst 4816* (BAYLU). Lee Co.: Ca. 2.0 mi. NE of jct. of FM 619 and FM 695 on FM 695, 31 Jan 1995, *Singhurst 4765* (BAYLU). Leon Co.: 0.75 mile N of Centerville on W service road of I-45, 26 May 1995, *Holmes 7697* (BAYLU). Limestone Co.: Tx. Hwy 14 between Groesbeck and Mexia, 0.2 mi. S of Park Road 28 (entrance to Ft. Parker State Park), 16 Sep 1995, *Holmes 7886, Do, & Morgan* (BAYLU). Madison Co.: Ca. 3.7 mi. W of jct. of Tx. Hwy 21 and FM 1428 on S side of Tx. Hwy 21, 3 Dec 1995, *Singhurst*

3631 (BAYLU). Marion Co.: Ca. 1.8 mi S of jct. of Hwy 43 and Hwy 49 at Smithland, 14 May 1996, *Singhurst 4837* (BAYLU). McLennan Co.: Slopes and bluffs above the Brazos River, Cameron Park, Waco, 16 Feb 1995, *Holmes 7593* (BAYLU). Morris Co.: Dangerfield State Park, ca. 1.7 mi. SSE of Jct. of park road and Hwy 49, 7 Mar 1996, *Singhurst 4813* (BAYLU). Nacogdoches Co.: 4 mi. E of jct. of Tx. Hwy 21 and FM 225 on Tx. Hwy 21, 3 Dec 1995, *Singhurst 3632* (BAYLU). Newton Co.: Ca. 1.9 mi. N of jct. of Hwy 87 and R255 at Mayflower Community, 15 Apr 1996, *Singhurst 4836* (BAYLU). Palo Pinto Co.: Ca. 0.9 mi N of jct. of Hwy 180 and Hwy 281 on Hwy 281, 22 Dec 1995, *Singhurst 3989* (BAYLU). Parker Co.: Ca. 1 mi. W of jct. of Hwy 180 and South Bowie St. on Hwy 180, Weatherford, 23 Dec 1995, *Singhurst 3990* (BAYLU). Sabine Co.: Ca. 0.7 mi. W of Jct. of Hwy 87 and FM 2426 on FM 2426, 15 Apr 1996, *Singhurst 4835* (BAYLU). Shelby Co.: Ca. 2.3 mi. N of jct. of Hwy 7 and county line across from White Rock Cemetery, 17 Mar 1996, *Singhurst 4815* (BAYLU). Smith Co.: Management and Research Station, Tx. Parks & Wildlife Dept., Tyler; ca. 1.3 mi. S of jct. of Hwy 64 & FM 848, 15 Mar 1996, *Singhurst 4814* (BAYLU). Tarrant Co.: Jct. of University Drive and Colonial, Fort Worth, 14 Oct 1995, *Borowski 183* (BAYLU); Embankment of Tx. Hwy 121 and Tx. Hwy 329 near Bedford, 14 Oct 1995, *Borowski 184* (BAYLU). Travis Co.: Road leading to Nature Center, Zilker Park, Austin, 7 Oct 1995, *Borowski 182* (BAYLU); Tx. Hwy 71, 2 mi. N of jct. with Tx. Hwy 2244, 7 Oct 1995, *Borowski 180* (BAYLU). Tyler Co.: Ca. 2.4 mi. S. of Jct. of FM 1943 and Hwy 69 at Warren, ca. 0.5 mi. ENE on road along N side of John H. Kirby Forest, 15 Apr 1996, *Singhurst 4834* (BAYLU). Upshur Co.: Ca. 2.3 mi. S of Jct. of Hwy 259 & FM 2706, S of Lonestar on Hwy 59, 5 Mar 1996, *Singhurst 4808* (BAYLU). Walker Co.: Huntsville, Old Madisonville Hwy at Smith Hill, 27 Jan 1996, *Stevens 171* (BAYLU). Williamson Co.: County Road 481 across from Adina Church Road, 10 Feb 1996, *Stevens 187, Gooch, & Holmes* (BAYLU). Wilson Co.: FR 1107, 200 m N of Jct. with U.S. Hwy 87, Pandora, 9 Feb 1996, *Stevens 173, Gooch, & Holmes* (BAYLU). Wood Co.: County Road 1600, Alba, 24 Sep 1995, *Borowski 178* (BAYLU).

#### ACKNOWLEDGMENTS

We wish to thank Charles M. Allen of NLU for reviewing the manuscript, Sidney McDaniel of IBE for reviewing the manuscript and his comments on the distribution of the species in Mississippi, the curator and staff of BRIT for access to specimens, and Dan Wivagg, Robin Gooch, and Jeff Stevens for assistance in searching for *Phyllostachys* colonies. Special recognition is extended to the Endangered Resources Branch and Resource Program of the Texas Parks and Wildlife Department for access to public lands under their jurisdiction.

#### LITERATURE CITED

- Allen, C.M. 1992. *Grasses of Louisiana*, 2nd. ed. Cajun Prairie Habitat Preservation Society, Eunice, Louisiana.

- Gould, F.W. 1975. *The Grasses of Texas*. Texas A. & M. University Press, College Station, Texas.
- Hatch, S.L., K.N. Gandhi, & L.E. Brown. 1990. *Checklist of the Vascular Plants of Texas*. The Texas Agr. Exp. Sta., College Station, Texas.
- Jenzan, H.J. 1976. Why bamboos wait so long to flower. *Ann. Rev. Ecol. Syst.* 1976. 7:347-391.
- Rehder, A. 1986. *Manual of Cultivated Trees and Shrubs Hardy in North America*, 2nd ed. Dioscorides Press, Portland, Oregon.
- Thomas, R.D. & C. M. Allen. 1993. Atlas of the vascular flora of Louisiana, Vol. 1: ferns & fern allies, conifers, & monocotyledons. Natural Heritage Program, Louisiana Department of Wildlife and Fisheries, Baton Rouge, Louisiana.