

PENSTEMON OKLAHOMENSIS (SCROPHULARIACEAE) IN TEXAS

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ABSTRACT

Penstemon oklahomensis is documented as new to the flora of Texas. Included is a key to discriminate the white-flowered *Penstemon* species of northeast Texas.

RESUMEN

Penstemon oklahomensis se documenta como nueva para la flora de Texas. Se incluye una clave para diferenciar las especies de flores blancas de *Penstemon* del nordeste de Texas.

Penstemon Mitchell (Scrophulariaceae) is the most widespread genus of Scrophulariaceae (sensu lato) in North America, with the largest number of documented species (Fernald 1950). At least 270 species (Lodewick & Lodewick 1999; Nold 1999) have been described in North America distributed from Alaska to Guatemala. Freeman (1981) recognized 22 species in the Great Plains, while Clinebell and Bernhardt (1998) suggested that no fewer than 24 species of *Penstemon* are native to the midwestern American prairies from the upper Mississippi Valley southward. Twenty-two species of *Penstemon* are currently recognized in Texas by Turner et al. (2003), with 17 species limited in distribution to the central and western portion of the state.

Recent botanical study in northeast Texas has resulted in the discovery of *Penstemon oklahomensis* Pennell, which is now documented as new to the state.

Voucher specimen: **TEXAS. Lamar Co.:** Gambill Goose Refuge near Crook Lake (Reservoir), ca. 8 mi W of Paris, 5 May 2009, W.C. Holmes, J.N. Mink & J.R. Singhurst 14514 (BAYLU).

The Gambill Goose Refuge is an area of tallgrass prairie that contains mima mounds, which are important habitat and zonation components of alfisol blackland prairies known to increase biodiversity (Collins 1975; Collins et al. 1975). Characteristic non-woody vegetation of the refuge included *Schizachyrium scoparium*, *S. tenerum*, *Tripsacum dactyloides*, *Tradescantia hirsutiflora*, *Aphanostephus skirrhobasis*, *Asclepias oenotheroides*, *Baptisia bracteata*, *Brickellia eupatoriodes* var. *texana*, *Castilleja purpurea* var. *purpurea*, *Coreopsis tinctoria*, *Croton capitatus*, *Liatris pycnostachya*, *Marshallia caespitosa*, *Penstemon digitalis*, *P. laxiflorus*, *Psoralidium tenuiflorum*, *Ruellia humilis*, *Salvia azurea*, and *Tephrosia virginiana*. The most abundant woody plant in this prairie was *Ceanothus americanus*, while others, such as *Berchemia scandens*, *Cornus drummondii*, *Diospyros virginiana*, *Prunus serotina*, *Juniperus virginiana*, *Rhus copallina* and *Zanthoxylum clava-herculis* were principally limited to marginal areas. Other rare or unusual species were *Calapogon oklahomensis*, *Manfreda virginica* ssp. *lata*, and *Platanthera lacera*.

Penstemon oklahomensis is well-marked by a white corolla with a constricted mouth. The species was considered to be endemic to Oklahoma (Pennell 1935; McGregor & Barkley 1977; McGregor & Barkley 1986). The nearest Oklahoma record of collection is southeast of Bokchito, Bryan County, which is approximately 32 miles northeast of the Lamar County, Texas, record.

Three other species of *Penstemon* in northeast Texas have white flowers: *P. digitalis* Nutt. ex Sims, *P. laxiflorus* Pennell, and *P. tubaeiflorus* Nutt. The following key, adapted from Pennell (1935), Correll and Johnston (1970), and Diggs et al. (1999), may be used to distinguish among the four species.

KEY TO THE WHITE-FLOWERED *PENSTEMON* OF NORTHEAST TEXAS

1. Floor of corolla lined internally with reddish or purplish nectar guide streaks.
 2. Corolla 20–25 mm long; nectar guides with pleats evident; staminode prominently exerted and densely bearded with yellow-orange hair _____ **Penstemon laxiflorus**
 2. Corolla 23–30mm long; nectar guides prominently rounded and ventricose; staminode included and lightly bearded with whitish or yellow hair _____ **Penstemon digitalis**
1. Floor of corolla unlined internally.
 3. Corolla 17–23 mm long; tube funnellform to trumpet-shaped from base, the lobes spreading to form an open and prominent orifice; staminode included, lightly bearded with whitish or yellow hair _____ **Penstemon tubaeiflorus**
 3. Corolla 25–30mm long; tube narrow at base, abruptly enlarged to the closed orifice (anterior three-lobes upcurve tightly against the united posterior two-lobed lip so as to close orifice of the corolla throat); staminode exerted, densely bearded with deep yellow hairs _____ **Penstemon oklahomensis**

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