

A SHORT CHRONICLE OF *EUPHORBIA COMMUTATA* (EUPHORBIACEAE) IN TEXAS

JASON R. SINGHURST

Wildlife Diversity Program
Texas Parks and Wildlife Department
3000 South IH-35, Suite 100
Austin, Texas 78704
jason.singhurst@tpwd.state.tx.us

JEFFREY N. MINK

Department of Biology
McLennan Community College
1400 College Drive
Waco, Texas 76708

WALTER C. HOLMES

Department of Biology
Baylor University
Waco, Texas 76798-7388
walter_holmes@baylor.edu

ABSTRACT

Euphorbia commutata has occasionally been mentioned as occurring in Texas, yet until now has remained undocumented. Recent field studies have resulted in the discovery of a population and collection of a specimen of the species in Red River County of northeast Texas, thus verifying its occurrence in the state. A review of pertinent literature, description of the site of occurrence, and photographs of the natural habitat, the species, and the carunculate seeds are included.

KEY WORDS: Euphorbiaceae, *Euphorbia*, Texas.

Recent field, literature, and herbarium studies of *Euphorbia commutata* Engelm. ex A. Gray (Euphorbiaceae) have resulted in confirmation of the occurrence of the species in the state of Texas. The overall distribution of the species is eastern North America from Ontario, Canada, south to Florida and west to Texas, Oklahoma, Missouri, Iowa, and Minnesota (USDA NRCS 2013). However, the Texas distribution was questionable and lacked adequate documentation. We targeted the species for study based upon its history of mention in Texas and its known distribution in Oklahoma, which includes eight counties, two (Choctaw and Mc Curtain) contiguous with northeast Texas (Oklahoma Biological Survey 2013).

One of the earliest, if not the first, mentions of *Euphorbia commutata* in Texas is in Norton (1899), where the following is cited (exactly as written): “Texas? (Heller, 1573).” Herbaria are not cited in the article for specific collections, but a list of herbaria consulted is given in the introductory comments. Of more importance is the question mark (?), for which there is no comment within the text. Most likely it indicates uncertainty of the state because of its placement or less likely determination or collector and number. Also, the entry is ambiguous in locality and provides little help toward investigation of the occurrence of the species in the state.

Cory and Parks (1937), assuming they were referencing the same species, cited the distribution of *Euphorbia commutata* in Texas as areas 4 (Blackland Prairies) and 7 (Plains country) of the divisions (vegetation regions) used in their manuscript. In today’s recognized vegetational

regions of Texas (Correll & Johnston, 1970; Hatch et al. 1990; Turner et al. 2003), this would now include the Blackland Prairies, Post Oak Savannahs, Cross Timbers and Prairies, Rolling Plains, and High Plains, which make up about 44% of the surface area of the state. The source of the records of Cory and Parks (1937) of the species in the state is not known. The species is not included in Gould's (1962) Texas checklist.

In 1970, Correll and Johnston (1970) stated that "Reports of the occurrence of *E.[uphorbia] commutata* in Texas have been based on specimens of *E. Roemeriana*." Presumably, this should include the Norton (1899) citation, but doubt remains since it was not specifically mentioned, as is occasionally the case with other problematic species (see Correll and Johnston 1970, *Dryopteris cristata* (L.) A. Gray, p. 69, as an example). Since then, *E. commutata* has not been attributed to Texas, particularly in works originating within the state (Hatch et al. 1990; Jones et al. 1997; Turner et al. 2003).

Recently, mention of the occurrence of the species in Texas has resurfaced. Geltman et al. (2011), possibly misled by sheets of *Euphorbia roemeriana* or *E. helleri* (Paul Berry, pers. comm.), included Texas in the distribution of *E. commutata*. The species is also cited as occurring in Texas in USDA NRCS (2013), based upon the distribution given in Krochmal (1952), whose geographic distributions were adapted from Muenschler (1935), Britton and Brown (1931), and Fernald (1950).

The current discussion is not intended to report *Euphorbia commutata* as new to the state, but to confirm its occurrence in Texas. We accomplish this by reporting here the discovery of a population of the species in northeast Texas.

On April 5, 2006, Singhurst observed in Red River Co., Texas, a sterile population of *Euphorbia commutata* growing with *Prenanthes barbata* (Torr. ex A. Gray) Milstead ex Cronq. on a recently acquired addition to Lenox Woods Preserve (lands owned by the Nature Conservancy of Texas). A goal of spring 2013 was to relocate the previously observed *Euphorbia* population while conducting a survey in Red River County for occurrences of *Thalictrum arkansana* B. Boivin (Arkansas meadow-rue, a species of concern in Texas). However, a new population of *E. commutata* was discovered during this survey and time constraints did not allow a search for the originally observed population. The original [observed] site of *E. commutata* is 2.3 miles due south [from the location cited below] on an arm of Pecan Bayou. This site is a mesic hardwood terrace with seasonal seepage on narrow banding slopes. The newly discovered site is as follows:

Voucher. TEXAS. Red River Co.: 3.5 mi S of the jct. of Tex. Hwy 195 and [Red River] County Rd. 2245, N on private road 0.8 mi, then E on private forest road 0.4 mi to southern arm of Little Pine Creek, mesic hardwood forest dominated by *Quercus alba*-*Quercus shumardii*-*Carya alba*-*Ulmus rubra*, 20 Apr 2013, J.R. Singhurst & H. Peters 19327 (BAYLU). Figs. 1, 2 and 3. This population consisted of 17 plants (by count), nine of which were flowering and/or fruiting.

This location is in the Pineywoods Ecoregion portion of Red River County. The surrounding uplands are dominated by *Pinus taeda*, *Pinus echinata*, *Quercus stellata*, *Q. falcata*, and *Q. marilandica* (managed pine plantations with some mixed natural regeneration). The specific site where *Euphorbia commutata* occurs is a mesic hardwood forest with gently sloping terrain and terraces above an arm of Little Pine Creek (Fig. 3). Other dominant species include *Quercus alba*, *Q. shumardii*, *Q. muhlenbergii*, *Carya alba*, and *Ulmus rubra*. The shrub layer includes *Vaccinium corymbosum* and *Lindera benzoin*. The herbaceous vegetation consists of *Agrimonia rostellata*, *Botrychium virginianum*, *Dioscorea villosa*, *Mitchella repens*, *Myosotis macrosperma*, *Podophyllum peltatum*, *Polygonatum biflorum*, *Polystichum acrostichoides*, *Prenanthes barbata*, *Sanicula odorata*,

Taenidia integerrima, *Thalictrum arkansanum*, *T. dasycarpum*, *T. thalictroides*, *Viola pedata*, *V. pubescens*, and *Zizia aurea*. The invasive *Lonicera japonica* also is present.

ACKNOWLEDGEMENTS

We thank the Gray Herbarium for information and the Brooklyn Botanic Garden for search for a specimen (*Heller* 1573). Arnold Tiehm of the University of Nevada, Reno, provided information on the collections of A.A. Heller. Dmitry Geldman of the Komarov Botanical Institute, St. Petersburg, Russia, Mark Mayfield of Kansas State University, and Paul Berry of the University of Michigan provided other assistance. We are also indebted to the Nature Conservancy of Texas for access to the lands under their control in Red River County. We also thank Guy Nesom, editor of *Phytoneuron*.

LITERATURE CITED

Britton, N.L. and A. Brown. 1931. Illustrated Flora of the Northeast United States, Canada, and British possessions. Charles Scribner's Sons, New York.

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

Cory, V. L. and H. B. Parks. 1937. Catalogue of the Flora of Texas. Texas Agricultural Experimental Station Bull. 550, Agricultural and Mechanical College of Texas, College Station.

Fernald, M.L. 1950. Gray's Manual of Botany. American Book Company, New York.

Geltman, D.V., P.E. Berry, R. Riina, and J. Peirson. 2011. Typification and synonymy of the species of *Euphorbia* subgenus *Esula* (Euphorbiaceae) native to the United States and Canada. J. Bot. Inst. Texas 5: 143–151.

Hatch, S.L., K.N. Gandhi, and L.E. Brown. 1990. Checklist of the Vascular Plants of Texas. Texas Agric. Exp. Sta. MP-1655, College Station.

Gould, F.W. 1962. Texas Plants — A Checklist and Ecological Summary. MP-585. Texas Agricultural Experiment Station, College Station.

Jones, S.D., J.K. Wipff, and P.M. Montgomery. 1997. Vascular Plants of Texas, A Comprehensive Checklist. Univ. of Texas Press, Austin.

Krochmal, A. 1952. Seeds of weedy *Euphorbia* species and their identification. Weeds 1: 243–255.

Muenschler, W.C. 1935. Weeds. The MacMillan Co., New York.

Norton, J.B.S. 1899. A revision of the American species of *Euphorbia* of the section *Tithymalus* occurring north of Mexico. Missouri Bot. Garden Ann. Report 1900. 85–144.

Oklahoma Biological Survey. 2013. Oklahoma Vascular Plants Database. <www.biosurvey.ou.edu/biodiv.html> Accessed 27 August 2013.

Turner, B.L., H. Nichols, G. Denny, and O. Doron. 2003. Atlas of the Vascular Plants of Texas. Vol. I—Dicots; Vol. II—Ferns, Gymnosperms, Monocots. Sida, Bot. Misc. 24, 1 and 2.

USDA, NRCS. 2013. The PLANTS Database. National Plant Data Team, Greensboro, North Carolina. <<http://plants.usda.gov>> Accessed June 2013.



Figure 1. *Euphorbia commutata*. (Singhurst & Peters 19327, BAYLU). Photo by Singhurst.

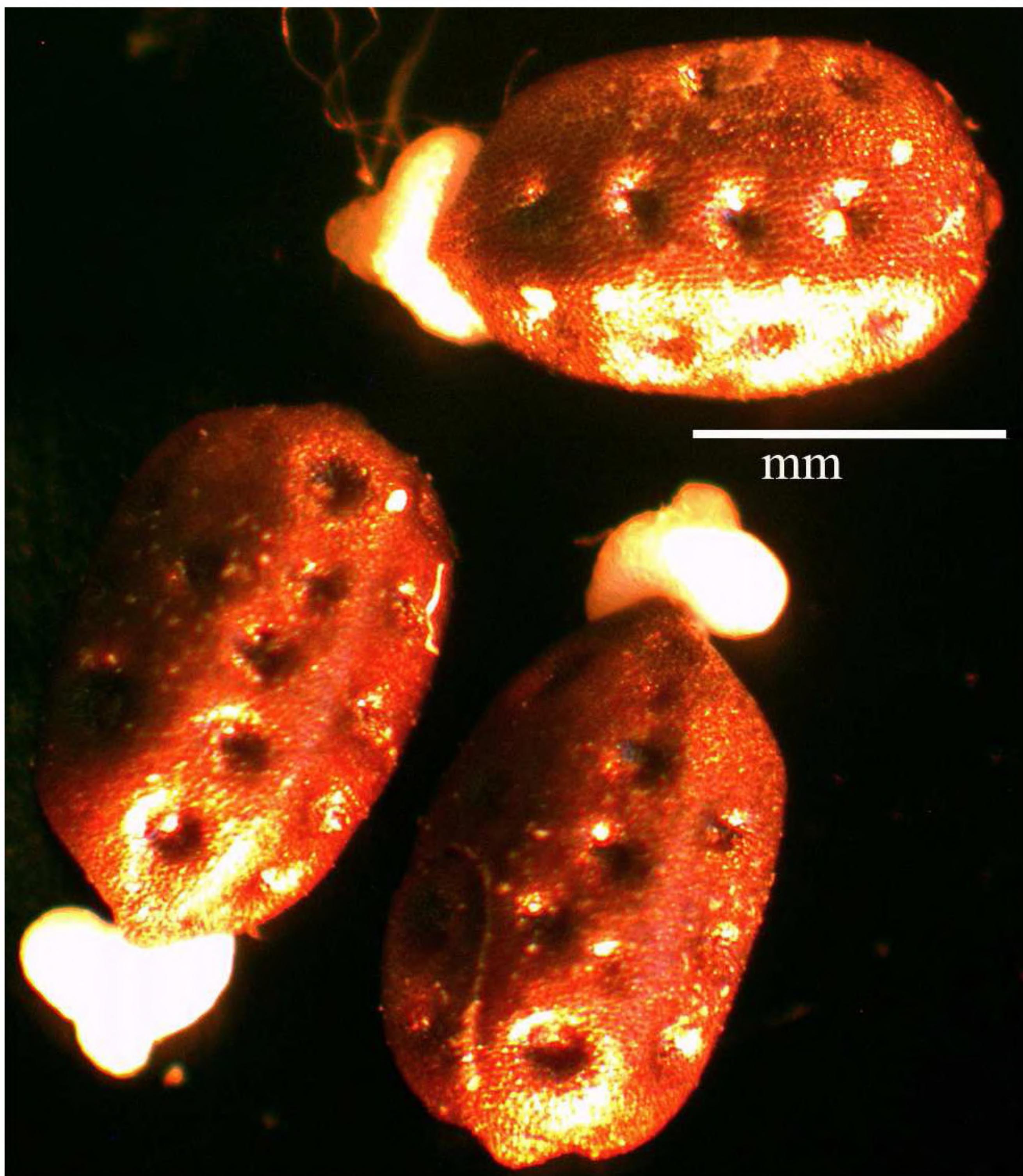


Figure 2. Seeds of *Euphorbia commutata* (Singhurst & Peters 19327, BAYLU). Photo by Mink.



Figure 3. *Euphorbia commutata* mesic hardwood forest habitat. Photo by Singhurst.