

**Taxonomy and distribution of *Euphorbia chaetocalyx*, *E. crepidata* and *E. fruticulosa*
(Euphorbiaceae)**

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ABSTRACT

The taxonomy and distribution of three species of the genus *Euphorbia* (*E. chaetocalyx*, *E. crepidata* and *E. fruticulosa*) from north-central Mexico and closely adjacent USA are elucidated.

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Attempts to identify anomalous Mexican gypsophiles has occasioned the present paper, the following species being especially worrisome; these have been treated as belonging to either *Chamaesyce* or *Euphorbia* by various workers, but I follow the nomenclature suggested by the DNA studies of Yang et al. (2012).

Euphorbia chaetocalyx (Woot. & Standl.) Tidestr., Proc. Biol. Soc. Washington 48: 40. 1935.

Johnston (1975) recognized two varieties within this taxon, as follows:

1. Glandular appendages usually with 3 linear-lanceolate lobes; north central Mexico and closely adjacent Texasvar. **triligulata**
1. Glandular appendages otherwise; south central USA.....var. **chaetocalyx**

var. **chaetocalyx** Woot. & Standl., Contr. U. S. Natl. Herb. 16:144. 1913. **Map 1**
Chamaesyce chaetocalyx (Woot. & Standl.) Tidest.

This is the common variety of the species, widely distributed over the southwestern USA.

var. **triligulata** (Wheeler) M.C. Johnst., Wrightia 5: 139. 1975. **Map 2**
Chamaesyce chaetocalyx var. *triligulata* (Wheeler) Mayfield
Chamaesyce triligulata (Wheeler) B.L. Turner
Euphorbia fendleri var. *triligulata* Wheeler

In my elevation of this taxon to specific status (Turner et al. 2003) I had only examined a few exceptional sheets from Brewster Co. Texas, such as pictured by Poole et al. (2007) and those from closely adjacent Mexico. Subsequent study of additional material from more western trans-Pecos, Texas has shown the taxon to intergrade with typical populations of *E. chaetocalyx*, especially along the Rio Grande, hence my acceptance of its varietal status herein. I should note that my colleague, James Henrickson would agree with my present taxonomy, for he prepared an excellent unpublished account of the taxon in 2003 entitled "Regarding the validity of *Euphorbia* (*Chamaesyce*) *triligulata* (M. C. Johnson) B. L. Turner," in which he refuted its specific status; he pasted this epistle on a herbarium sheet, depositing it in the herbarium proper, my not having seen this until the spring of 2016. I consider his views to be "right on."

Euphorbia crepitata Wheeler, Contr. Gray Herb. 127: 60. 1939. **Map 3***Chamaesyce crepitata* (Wheeler) Mayfield

This species is readily distinguished by its glutinous lower stems, as well noted by Johnston (1977); he recognized two infraspecific taxa from among the complex:

1. Leaves mostly 3-9 mm long, 0.5-5.0 mm wide; involucre glands usually markedly appendaged; plants mostly some distance sw of Cuatro Cienagas, Coa.....var. **longa**
1. Leaves mostly smaller; glands weakly appendaged, if at all; plants mostly in and about the vicinity of Cuatro Cienagas.....var. **crepitata**

var. **crepitata***Chamaesyce crepitata* (Wheeler) Mayfield

TYPE: MEXICO. "4 mi W of Cuatro Cienagas," 24 Aug 1938, *I.M. Johnston 7160* (GH).

var. **longa** M.C. Johnston, *Wrightia* 5: 139. 1975.*Chamaesyce crepitata* var. *longa* (M.C. Johnst.) Mayfield

TYPE: MEXICO. COAHUILA: **Mpio. San Pedro**, 50 km NE of San Pedro de las Colonias, near Puerto de Ventanillas (26 00 N, 102 44 W), 1240 m, gypsum soils, 17 Aug 1973, *Hendrickson* (sic) 12502 (TEX).

The two taxa, while largely allopatric, intergrade throughout their regions of near contact, as indicated in Map 3.

Euphorbia fruticulosa Engelm. ex Boiss., Prodr. [DC] 15: 38. 1862. **Map 4**

Johnston (1975) recognized two varieties within this complex:

1. Stems, foliage and fruits glabrous.....var. **fruticulosa**
1. Stems, foliage and fruits markedly pilose.....var. **hirtella**

var. **fruticulosa***Chamaesyce fruticulosa* (Engelm. ex Boiss.) Millsp.

This is the commonly collected variety, represented by numerous sheets at TEX, the type reportedly collected by *J. Gregg (506)* in 1848-49 in the vicinity of Saltillo, Mexico.

var. **hirtella** M.C. Johnst., *Wrightia* 5: 141. 1975.*Chamaesyce fruticulosa* var. *hirtella* (M.C. Johnst.) Mayfield

Distribution of the two taxa is shown in map 4. There is no intergradation between these at all, in spite of the numerous sheets of var. **fruticulosa** available.

This taxon is represented by two sheets at TEX (holotype and isotype, the latter not mentioned in Johnston's original description). The only other collections known to me are those of Palmer, collected in 1890 from near the type locality of var. **hirtella**, this also called to the fore by M. H. Huft by annotation of the holotype at TEX, noting that he had examined two Palmer collections at US, such also mentioned by Johnston in his discussion of the type locality (this being in the "Sierra de Solis," (ca 25 40 N, 103 10 W). Indeed, it would seem that var. **hirtella** is a populational thing, after persisting over such a long period of time and having been collected at least twice, it might be deserving of specific status; **or** else it is a most remarkable pilose **forma** of the typical variety. As noted above, I could find no intermediates of

any kind among the many sheets of typical **fruticulosa** at TEX. DNA and additional field study of the taxon is much needed!

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