

Intraspecific variation in *Aldama dentata* (Asteraceae: Heliantheae)

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ABSTRACT

The commonly encountered Mexican and Central American species, *Aldama dentata*, considered by most previous workers as having but two varieties, is now enriched with a third such taxon, **A. dentata** var. **salvatierra**, B.L. Turner, var. **nov.** It is known only from the state of Guanajuato, Mexico. Published on-line www.phytologia.org *Phytologia* 95(4): 264-268 (Nov. 1, 2013). ISSN 030319430

KEY WORDS: Asteraceae, Heliantheae, *Aldama*, *A. dentata*, Mexico, Guanajuato

The taxonomy of **Aldama dentata** has long been in dispute, as indicated by its considerable synonymy, some workers accepting the genus as monotypic (Fedde 1971, Rzedowski and Rzedowski 2008); others positioned it variously, as indicated by its synonymy. Recent DNA studies by Schilling and Panero (2002; 2011) have shown that the genus should be expanded to include numerous taxa previously placed in *Viguiera* (sensu lati).

Fedde (1971) treated **Aldama** as monotypic; he recognized **A. dentata** as having but two varieties, and I follow his treatment, except for the addition of a third variety, described below.

Key to varieties

1. Involucres 9-12 mm high; ligules 1.5-2.0 cm long;
inner involucral bracts acute, pubescent with bullate-based, strigose, hairs, the latter 1-2 mm long; ne Mic and adjacent Jal var. **zamorensis**
1. Involucres 5-8 mm high; ligules mostly 0.6-1.5 mm long; inner involucral bracts mostly obtuse, pubescent with shorter hairs, these not especially bullate, widespread ...(2)
2. Annual or perennial, much branched, suffruticose herbs or shrubs mostly 0.3-3.0 m high; ultimate peduncles mostly 3-10 cm long; widespread..... var. **dentata**
2. Annual, stiffly erect, mostly unbranched, herbs 30-50 cm high; ultimate peduncles, densely pilose, 1-2 cm long; Gua..... var. **salvatierra**

ALDAMA DENTATA La Llave & Lex., Nov. Veg. Descr. 14. 1824.

Perennial, or seemingly annual, herbs to 3 m high. Stems stiffly erect but often rooting at the lower nodes. Leaves mostly alternate, lanceolate, petiolate, entire to dentate. Heads, few to numerous, campanulate, radiate. Involucres, 2(3)-seriate, the bracts herbaceous and subequal, broadly ovate to elliptical, usually streaked with black lines. Receptacles convex, paleate. Ray florets neutral, sterile, the ligules well developed, yellow. Disk florets yellow, mostly completely enveloped by the scarious, subtending, receptacular bracts, these sometimes becoming indurate and markedly crinkly toward the periphery of the head. Achenes flattened radially, black, striate, glabrous, epappose or nearly so. Chromosome number, n = 17 pairs.

var. **dentata***Gymnolomia acuminata* B. Rob. ex Blake*Gymnopsis dentata* La Llave & Lex.*Gymnopsis schiedeana* DC.*Sclerocarpus acuminatus* B. Rob.*Sclerocarpus dentatus* (La Llave & Lex.) Benth. & Hook.*Sclerocarpus elongatus* (Greenm.) Greenm.*Sclerocarpus kerberi* Tourn.*Sclerocarpus schiedeanus* (DC.) Benth. & Hook.

Sin, Tam, San, Que, Hid, Nay, Jal, Col, Gua, Mic, Mex, Mor, Pue, Ver, Tab, Gue, Oax, Cps, Guatemala and southwards, 100-2000 m; all seasons.

This is an extremely common, highly variable, taxon along the Gulf coastal slopes, being especially abundant in disturbed areas, and fallow fields of Ver and Oax. Shade-forms may occur side-by-side with sun-forms, the latter with appressed sparsely strigose stems, the former with much thicker vestiture and spreading hairs on longer leaves. Collections of this taxon from Nay, Jal and Mic tend to have outer disk florets with tangentially flattened achenes at maturity, their enclosing bracts becoming highly wrinkled and sclerified, the entire structure (i.e., bract and enclosed achene) often nearly as wide as high. These traits are, collectively, not found in specimens from eastern Mexico (*Sclerocarpus acuminatus*, of authors) and it is probable that future workers will recognize additional regional facies in this species; chromosome number, $n = 17$ pairs.

var. **salvatierra** B.L. Turner, **var. nov.** **Fig. 1**

Stiffly erect, unbranched, tap-rooted annual to 60 cm high. Stems (upper) moderately pubescent with upwardly appressed hairs, 0.5-1.0 mm long. Leaves (mid-stem), 5-7 cm long, 1.0-1.5 cm wide; petioles 2-6 mm long; blades linear lanceolate, markedly pubescent above and below, the margins entire, or nearly so. Capitulescence a terminal or axillary cymose panicle of (1)2-10 heads, the ultimate peduncles densely pubescent, 8-10 mm long. Heads (rays excluded), ca 6 mm high, 7 mm wide. Involucres, 4-5 mm high, campanulate; outer bracts ca 10 in 2 equal series, ovate to obovate, markedly pubescent. Receptacles hemispheric, ca 1 mm high, 2 mm across. Pales ca 2.5 mm long, enveloping the achene, their apices purplish-sclerose. Ray florets 5, neuter, sterile; ligules yellow, ca 5 mm long, 3-5 mm wide, Disc florets, numerous (40 plus); corollas yellow, 3-4 mm long; tubes ca 1.5 mm long; throats ca 2 mm long, sparingly pubescent with minute hairs; lobes ca 0.75 mm long. Anthers yellow. Achenes ca 2.5 mm long, obovate, glabrous, epappose.

TYPE: **MEXICO. GUANAJUATO: Mpio. Salvatierra**, "alrededores de la poblacion," 1800 m, 12 Oct 1985, *Rzedowski 39142* (Holotype: TEX).

The stiffly erect, unbranched, habit, more densely pubescent foliage, and more numerous heads on shorter ultimate peduncles distinguish this novelty from the typical var. **dentata**. Rzedowski and Rzedowski (2008) treat the above type, and several additional collections from near the type locality, as part of their broad concept of **Aldama dentata**, a treatment that I accepted early on, and such might yet prove the better alternative, considering the exceptional populational variation found in the species.

The appellation is derived from the Mpio. Salvatierra.

var. **zamorensis** Feddema, *Phytologia* 21: 313. 1971.

Known only from the vicinity of Zamora, Mic, and adjacent Jal in fallow wet fields, 1600-1800 m; Aug.

Robust, rank, perennials with harsh, spreading, hispid hairs (1-3 mm long) on the stems, the outermost disk florets radially compressed at maturity, the enclosing bracts thin and only slightly crinkled, at most; chromosome number, $n = 17$ pairs.

This taxon appears to be quite distinct, and future workers should attempt to ascertain its biological status with more certainty. However, similar variation patterns to that noted in var. **zamorensis** are found in Oax and Cps (e.g., *Ton 1934*, LL) suggesting that very divergent local populations might be found almost anywhere within the range of the broadly distributed species, **A. dentata**.

Strangely, McVaugh (1987) did not accept the validity of var. **zamorensis**, in spite of the fact that it was proposed by one of his Academic children (Feddema) in 1971, the holotype at MICH. McVaugh did, however, cite his paper in which the name was published.

Distributions of the several varieties are shown in **Fig. 2**.

ACKNOWLEDGEMENTS

My editorial assistant, Jana Kos, provided input, for which I am grateful. Distribution maps are based upon specimens on file at LL-TEX, and reports on the web and in the literature.

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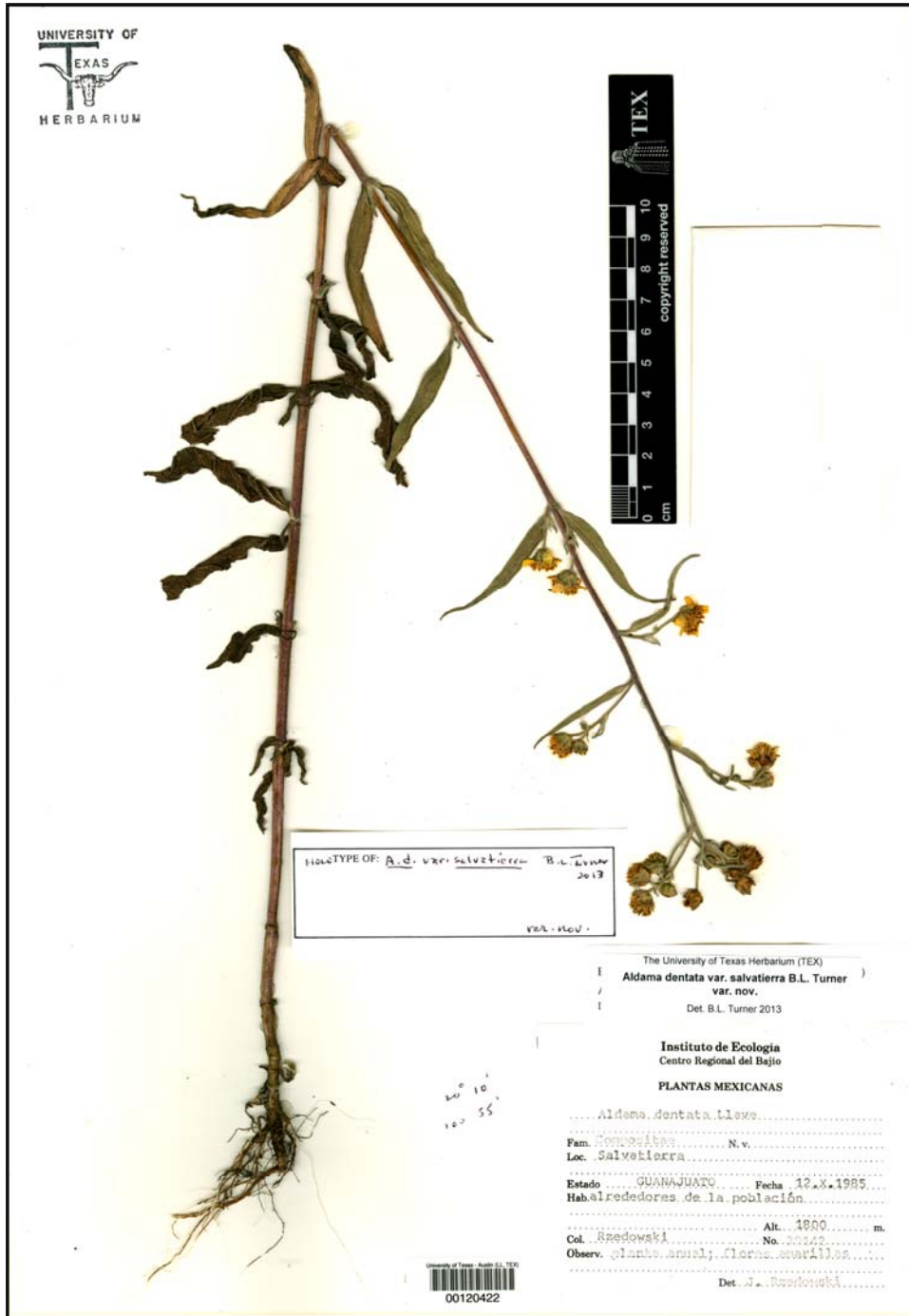


Fig. 1. Holotype of *Aldama dentata* var. **salvatierra**.

