

**Vascular Plants of Williamson County**  
*Vernonia* × *guadalupensis* Heller [Asteraceae]

*Vernonia* × *guadalupensis* Heller is a name that was applied to perennial herbs later recognized as being interspecific hybrids between *V. lindheimeri* Engelm. & A. Gray and *V. baldwinii* Torrey (Shinners, 1950). In range, *Vernonia lindheimeri* occurs growing in full sun on shallow soil over exposed limestone; *V. baldwinii* occurs growing in full sun but also frequently in partial and nearly full shade, including woodlands and sunny vegetation with tall grasses. Wherever the two habitats abut, hybrids between the parents can occur, because they would share the same pollinators and likely are fully interfertile. Hybridization results in progeny that are intermediate between the two parents, and there may be what appears to be a hybrid swarm, including individuals crossing with other hybrids or hybrids backcrossing with the parents.

In Williamson County, a hybrid locality occurs at Berry Springs Park and Preserve, Georgetown. Under a power line on the northwest parcel of the park, along a north-south 100-meter transect, occurs *V. lindheimeri* on the north at the park boundary and *V. baldwinii* at the south on the margin of woodland, with a series of hybrids between the two ends of the transect. The hybrid population was discovered in June, 2014, by the Williamson Chapter of the Native Plant Society of Texas doing a plant survey of the property (Kathy McCormack).

The presumed hybrids, often referred to as *V. guadalupensis*, are so variable from plant to plant that the range of each feature, even for a dozen individuals, is too broad to produce a tight description. Moreover, although it is a useful label for plants of a particular form and origin, *V. guadalupensis* is not a usable scientific name in the context of modern plant systematics. Nowadays, to have a correct and legitimate scientific binomial or trinomial, a taxon should refer to a lineage that is presumed to be monophyletic, i.e., all descendents can be traced back as one unbroken lineage from a single ancestral population. In this particular case of ironweed, each time the two parents come into contact (sympatric), hybrids can be produced and persist, hence there are numerous sites of hybrid origin in central Texas and *guadalupensis* must be a rejected name.

Hybrid individuals (“*guadalupensis*”) are easy to recognize, if the observer has flowering shoots of all three specimens in hand. The following are easy characters to observe for the two parents and a truly intermediate individual in the Georgetown population. There are additional features of flowers than could also be included.

Of *Vernonia lindheimeri*: **Leaves** are sessile having a narrow, linear blade; the upper surface of the blade is dark green with scattered, collapsed hairs and sessile glandular hairs deeply sunken in pits; the margins are entire and strongly inrolled to the lower side (revolute); the lower surface is densely white-hairy so that lateral veins and sessile glandular hairs are not visible, and the nonglandular hairs are collapsed and usually 1+ mm long. The **peduncle** supporting each head is always longer than the involucre (ca. 10 mm long); it is densely white-hairy with concealed sessile glandular hairs and has a

couple of awl-shaped bracts along the axis to 2.5 mm long. The **involucre** is densely white-hairy; phyllaries of the middle series are oblanceolate and acute with a well-defined purple point at the tip, and each phyllary has long white hairs from below midpoint, which conceal any sessile glandular hairs and extend to the margins. The **pappus** consists of an outer series of scales longer than 1 mm, and bristles are 7.5–8 mm long.

Of *Vernonia "guadalupensis"*: **Leaves** are short-petiolate and have a narrowly elliptic blade; the upper surface of the blade is green with scattered, collapsed hairs and sessile glandular hairs usually deeply sunken in pits; the margins have stout, hard teeth and are flat or only slightly inrolled to the lower side; the lower surface is green and short-hairy so that raised lateral veins and glandular hairs are visible, and the nonglandular hairs are collapsed and < 0.5 mm long. The **peduncle** supporting each head is  $\geq$  the involucre (ca. 9 mm long) and conspicuously ridged and has a couple acuminate bracts 2–4 mm long along the axis. The **involucre** is sparsely hairy so that the outlines of phyllaries are clearly visible; phyllaries of the middle series are elliptic and obtuse to rounded lacking a point at the tip, and nonglandular hairs on the exposed surface are short and sparse among many sessile glandular hairs, phyllary margins are short-ciliate. The **pappus** consists of an outer series of scales longer than 1 mm, and bristles are ca. 7 mm long.

Of *Vernonia baldwinii*: **Leaves** are petiolate (petioles to 5 mm long) and have a broadly elliptic blade; the upper surface of the blade is green with scattered, turgid hairs and sessile glandular hairs only shallowly sunken in pits (glandular heads often at or above leaf surface); the margins are serrate with well-developed teeth having callous points and are flat; the lower surface is green and short-hairy so that raised lateral veins and sessile glandular hairs are visible, and the nonglandular hairs are turgid and < 0.5 mm long (tips often collapsed). The **peduncle** supporting each head is  $\leq$  the involucre (ca. 7 mm long) and conspicuously ridged and may have an acuminate bract ca. 3.5 mm long along the axis. The **involucre** lacks nonglandular hairs on the outer surface so that the outlines of phyllaries are clearly visible; phyllaries of the middle series are ovate and acute without a point at the tip, and there are many sessile glandular hairs above midpoint, phyllary margins are short-ciliate. The **pappus** consists of an outer series of scales 0.5–0.9 mm long, and bristles are ca. 6 mm long.

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