

**OVERVIEW OF THE SECTION PLATYPTERIS OF
VERBESINA (ASTERACEAE) AND DESCRIPTION OF A
NEW SPECIES**

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ABSTRACT

A systematic overview of the sect. *Platypteris* of *Verbesina* is provided, including eight species. One of these, *V. jimrobbinsii*, is newly described from the fabric of McVaugh's concept of *V. platypteris*. A key to the species is provided, along with maps showing their distributions.

KEY WORDS: *Verbesina*, Asteraceae, Heliantheae, *Platypteris*, Mexico, Jalisco, Oaxaca.

Olsen (1988) provided a revision of the section *Platypteris* (Kunth) DC. of *Verbesina*. In this he recognized five species: *V. crocata* (the generitype), *V. fraseri*, *V. lottiana*, *V. ovatifolia*, and *V. vallartana*. Subsequently, an additional species, *V. barrancae*, was added to the complex by Harker and Jimenez (2002). The present additions of *V. platyptera* and *V. jimrobbinsii* bring to eight, the number of specific taxa recognized as belonging to the section.

The section *Platypteris* was first established as a genus by Kunth but subsequently treated as a section of *Verbesina* by DeCandolle, this arrangement followed by Robinson and Greenman (1899) in their synopsis of *Verbesina*.

Species of the section *Platypteris*, as understood by previous workers, including Olsen (1988), are recognized by their shrubby habits, large eradiate heads, and markedly winged stems. Interestingly, at the time of Olsen's treatment an additional taxon lurked as a possible

member of the section, this being *V. platyptera* Schultz-Bip. in Klatt. Indeed, Olsen, in a letter addressed to me in June of 1987 stated that "I am still undecided about whether I should go ahead and sink *V. platyptera* into the Section." Robinson and Greenman (1899) treated *V. platyptera* as the sole member of their section *Stenocarpha*, which was largely distinguished from section *Platypteris* by its smaller heads, ray florets, and sinuate-pinnatifid leaves.

Verbesina platyptera, in my opinion, should be positioned in the section *Platypteris*, as suggested by Olsen. It has all of the characters of that taxon except that it possesses ray florets, and the outer involucre bracts are somewhat foliaceous and reflex at maturity. Panero and Jansen (1997) studied the chloroplast DNA of several species of the section *Platypteris*, all of these hanging close one to the other. Unfortunately, they did not sample *V. platyptera* and/or *V. jimrobbinsii*, but I have little doubt but what such data will vouchsafe their position in section *Platypteris*.

The type of *V. platyptera* was obtained from along the Pacific shore of Oaxaca (Puerto de Santa Cruz, *Liebmann 454*). Nevertheless, McVaugh (1984), in his treatment of *Verbesina* for Flora Novo-Galeciana applied the specific name to inland, more montane, populations of what I take to be a very different taxon, described herein as *V. jimrobbinsii*. Olsen (1988) provided a key to the taxa of section *Platypteris* known to him and since, while listed below, and need no reevaluation, they are not further discussed in the present paper. Harker and Jimenez (2002) described *V. barrancae*, producing a key to the more western species in Mexico so as to accommodate their views. I have modified their key so as to accommodate my two new additions to the section, as follows:

Key to the western species of Section *Platypteris* in Mexico

- 1. Ray florets absent(3)
- 1. Ray florets present, albeit small and inconspicuous.....(2)
 - 2. Leaves relatively small, merely 3-lobed, not pinnately dissected; ligules of ray florets 1-3 mm long; near Santa Cruz, Oaxaca**V. platyptera**

2. Leaves relatively large, pinnately divided or dissected; ligules of ray florets minute, inconspicuous; dry forests, 300-600 m in Jalisco, Michoacan, and Guerrero.....**V. jimrobbinsii**
3. Corollas of florets evenly hispid throughout.....**V. vallartana**
 3. Corollas unevenly pubescent, mostly glabrous.....(4)
4. Heads 4-8 mm high; peduncles mostly 8-16 cm long...**V. lottiana**
 4. Heads 10-25 mm high; peduncles 0.5-7.0 cm long(5)
5. Anthers uniformly orange or yellow-orange throughout; widespread**V. crocata**
 5. Anthers dark with cream-colored appendages; environs of Guadalajara.....**V. barrancae**

VERBESINA BARRANCAE Harker & Jimenez-Reyes, *Brittonia* 54: 182. 2002. **Map 1**

This taxon is known only by collections from barrancas near the city of Guadalajara. It is closely related to *V. crocata*, as well-noted by its authors, who called to the fore both exomorphic and palynological features by which to distinguish between the two.

VERBESINA CROCATA (Cav.) Less., *Syn. Gen. Compos.* 232. 1832. **Map 2**

This is the most conspicuous, commonly encountered member of the section *Platypteris*. It is treated in some detail by Olsen (1988) and need not be further commented upon here.

VERBESINA FRASERI Hemsl., *Biol. Cent.-Amer., Bot.* 2: 187. 1881.

This species is known only from Central America, not having been collected in Mexico.

VERBESINA JIMROBBINSII B.L. Turner, *sp. nov.* **Fig. 1, Map 3**

Verbesinae platypterae Schultz-Bip. similes sed foliis profunde pinnatifidis (vs 3-lobatis vix pinnatifidis), bracteis involucri externis non foliosis, et ligulis flosculorum radii carentibus (vs ligulis praesentibus).

Arborescent shrubs 1-3 m high. **Primary stems** markedly winged, the wings 1-2 cm wide (less so on secondary stems). **Leaves** 10-30 cm long, 5-20 cm wide, deeply dissected; petioles mostly 3-6 cm long, winged throughout. **Capitulescence** a very large divaricately branched panicle, up to 20 cm long, 30 cm wide. **Heads** ca 10 mm high, 6-10 mm wide, the outer-most involucre bracts linear to linear-lanceolate, reflexed at maturity, about as long or somewhat shorter than the inner bracts. **Ray florets** 13-21, pistillate, fertile; corollas tubular 4-6 mm long, their rays poorly developed, if at all. **Disk florets** 50-60; corollas yellow, 5-7 mm long. **Achenes** as illustrated in McVaugh (1984).

TYPE: MEXICO: JALISCO. Mpio. Cihuatlan, "Hills between Bahia Navidad, and La Manzinilla on Bahia Tenacatita; east-facing summits 3 miles west of the Autlan-Navidad highway, in tropical forest; 550 m, 12 Nov. 1960, *Rogers McVaugh 21008* (holotype: LL; isotype LL)..

ADDITIONAL SPECIMENS EXAMINED: MEXICO. JALISCO: Mpio. Cihuatlan, along highway 200, 4.8 km W of intersection with highway 80, base of east-facing slopes in a seemingly tropical forest, 5 Oct 2007, *B.L. Turner et al. 7-31* [with J. Robbins, P. Waller & M. Turner] (TEX, MEXU). **MICHOACAN: Mpio. Villa Victoria, Huizontla**, "Barranca forest; shrub 3 m high," 640 m, 15 Nov 1938, *Hinton et al. 12580* (LL).

The type labels note the species to be a shrub 1-2 m high, and locally "abundant". At the type locality (exactly 4.8 km from the intersection concerned), some 40 years later, *Turner et al. 7-31* (see above) could locate only 3 plants at the site concerned, all of these at the very base of the east-facing slope along highway 200. Certainly the taxon is not now "abundant," as noted by McVaugh, but perhaps the

species was originally collected along the top of the Sierra, as suggested by his label data. We found the plants to vary from perennial herbs (1 m high, Fig. 2), to a shrub ca. 3 m high (Fig. 3, see rear cover), the latter possessing a woody stem ca 2.5 cm in diameter.

McVaugh (1984) included this taxon in his concept of *V. platyptera*, the type from relatively low elevations (30-60 m) about the port of Santa Cruz, Oaxaca. Indeed, nearly all of his description of the latter, including its illustration, relates to what is here described as *V. jimrobbinsii*. As indicated in the above diagnosis, *V. jimrobbinsii* is readily recognized by a number of characters and is largely restricted to wetter, more montane (300-700 m) sites.

The species is named for James (Jim) Robbins, former "son-in-law" and long time live-in mate with my son Matt Turner, both of whom participated in the recollection of the taxon at its type locality in the fall of 2007. Jim also provided travel funds for the botanical venture, participating in the rediscovery of plants from the type locality.

VERBESINA LOTTIANA B.L. Turner & J. Olsen, Sida 13: 41. 1988.
Map 1

This very distinct, markedly endemic species is known by only a few collections from the Mpio. La Huerta, along the Pacific slopes.

VERBESINA OVATIFOLIA A. Gray, Amer. Acad. Arts 19: 15.
1883. **Map 4**

This is a widespread, quite variable taxon. In Mexico, it is largely restricted to the more eastern provinces but extends eastward through Chiapas into Central America.

VERBESINA PLATYPTERA Sch. Bip. in Klatt, Leopoldina 23: 144.
1887. **Map 1**

This species is typified by material gathered from the environs of "Puerto Sta. Cruz" in southeastern Oaxaca, Mexico in 1842 by Liebmann. McVaugh (1984) confounded its ecomorphological boundaries by including in this material herein segregated as *V.*

jimrobbinsii as shown in Map 3. The latter is a species of more montane habitats (dry forests at elevations of 300-600 m); *V. platypteris* occurs at much lower elevations in deciduous forests along the Pacific coast.

Since *V. platypteris* is poorly described in the earlier literature, I provide the following, more up-to-date, description, this largely compiled from several recent collections from SERBO (Sociedad Estudio Recursos Bioticos Oaxaca), as follows: **OAXACA**: Mpio Santa Maria Huatulco, 40-55 m., *Saynes-V. 5123, 5153, and Martinez 373* (all at TEX).

Shrubs 2.0-2.5 m high. **Stems** densely short-pubescent with stiff spreading hairs, the vestiture up to 0.5 mm high; upper mid-stems with relatively narrow wings, 1-5 mm wide. **Leaves** mostly 3-lobed, 12-20 cm long, 8-13 cm wide, moderately pubescent on both surfaces with short, stiff, broad-based hairs; petioles 4-7 cm long, winged throughout. **Capitulescence** a terminal cyme of 3-7 heads, 6-10 cm high, 8-10 cm wide, the ultimate peduncles mostly 1-3 cm long, densely pubescent with mostly upswept hairs. **Heads** (the reflexed outer-most bracts excluded) 1.0-1.4 cm high, ca 2 cm across; involucre bracts, the outer-most, loose, leaf-like, reflexed at maturity, mostly oblanceolate, longer than the inner bracts, 10-14 mm long, 2-3 mm wide. **Receptacle** somewhat convex, 3-4 mm across; pales linear-lanceolate, 7-8 mm long. **Ray florets** ca 18, yellow; tubes 2-3 mm long, enlarged upwards and forming distinct ovate to linear ligules 1-2 mm long. **Disk florets** 60-80; corollas yellow, ca 6 mm long, more or less glabrous, except for the hispid lobes.

VERBESINA VALLARTINA B.L. Turner & J. Olsen, *Sida* 13: 39. 1988. **Map 3**

This taxon is known only from the states of Colima and Jalisco, reportedly occurring in tropical deciduous forests along coastal areas from 60-400 m.

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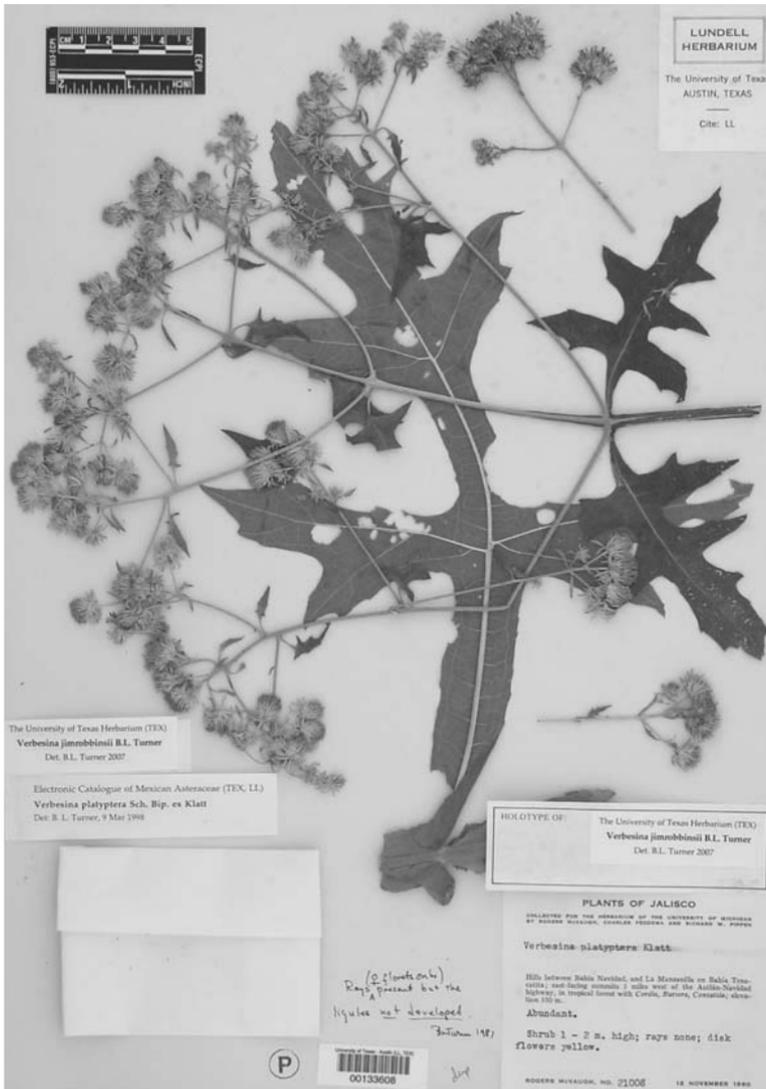


Fig. 1. *Verbesina jimrobbinsii* (Holotype: TEX).



Fig. 2. *Verbesina jimrobbinsii*, plant and flower, held next to the eponymous Jim Robbins, at type locality.

