

1990

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### Recommended Citation

Villaseñor, Jose Luis (1989) "A New Scandent Species of *Bidens* (Asteraceae) from the Balisas River Basin, Mexico," *Aliso: A Journal of Systematic and Floristic Botany*. Vol. 12: Iss. 3, Article 12.  
Available at: <https://scholarship.claremont.edu/aliso/vol12/iss3/12>

A NEW SCANDENT SPECIES OF *BIDENS* (ASTERACEAE)  
FROM THE BALSAS RIVER BASIN, MEXICO

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ABSTRACT

*Bidens esmartinezii* from the Balsas River Basin, Michoacan and Guerrero, Mexico, differs from *B. reptans* var. *urbanii* and *B. squarrosa*, the only other climbing species occurring in the area, by its entire, mostly linear leaf lobes and its larger, brown achenes.

Key words: Asteraceae, *Bidens*, Mexico, Balsas River Basin.

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INTRODUCTION

Sherff (1929) described *Bidens* L. sect. *Greenmania* to encompass a scandent group of Neotropical *Bidens* species. The section constitutes a natural group (Roseman 1986) albeit complex, a fact which has led to differences in species interpretations (see for example Sherff 1937; Sherff and Alexander 1955; D'Arcy 1975; Nash and Williams 1976; McVaugh 1984). The members of the section can be recognized by their perennial stems and scandent habit, their linear, compressed achenes, with rather long duplex hairs on the margins, and two generally spreading stout awns.

Sherff recognized two species of the section from western Mexico (Sherff 1937; Sherff and Alexander 1955), *Bidens reptans* (L.) G. Don var. *urbanii* (Greenm.) O. E. Schulz and *B. squarrosa* Kunth, mostly occurring along the Sierra Madre del Sur. In a recent study of the section, Roseman (1986) clarified many of the questions that clouded the taxonomy of this group. She also recognized two species in western Mexico but with a somewhat different circumscription. A very distinctive third species occurs in southwestern Mexico, on the western edge of the Balsas River Basin; it is here described for the first time.

TAXONOMY

***Bidens esmartinezii* Villaseñor, sp. nov.**

Fig. 1

*Type*.—MEXICO. GUERRERO: Municipio de Coahuayutla. 11 km al N de Colmeneros, camino La Union Coahuayutla, elev. 600 m, selva baja caducifolia, 25 Oct 1983, *E. Martínez S. 5217, J. C. Soto y G. Silva R.* (Holotype: MEXU; isotypes: ENCB, NY, RSA, UC, XAL).

Lianae foliis pinnatisectis vel bipinnatisectis; folia lobis linearibus vel anguste oblongis, integris; flosculi radiorum 5, neuteri, flavi, 10–24 mm longi; flosculi discorum flavi, 6–8 mm longi; antherae brunneae; achenia matura linearia, ciliata, compressa, brunnea, erecta vel leviter curvata, 12–19 mm longa, 0.5–0.8(–1) mm lata; pappus e aristis 2, rigidis, patentibus, retrorsus barbellatis, 4–6 mm longis.

Woody freely branched vines. Young stems terete, striate; older branches with the cortex slightly suberized. Leaves opposite, 4–15 cm long, pinnately to bipinnately parted, the lobes 5–50 mm long, 1–3 mm wide, linear to narrowly oblong,

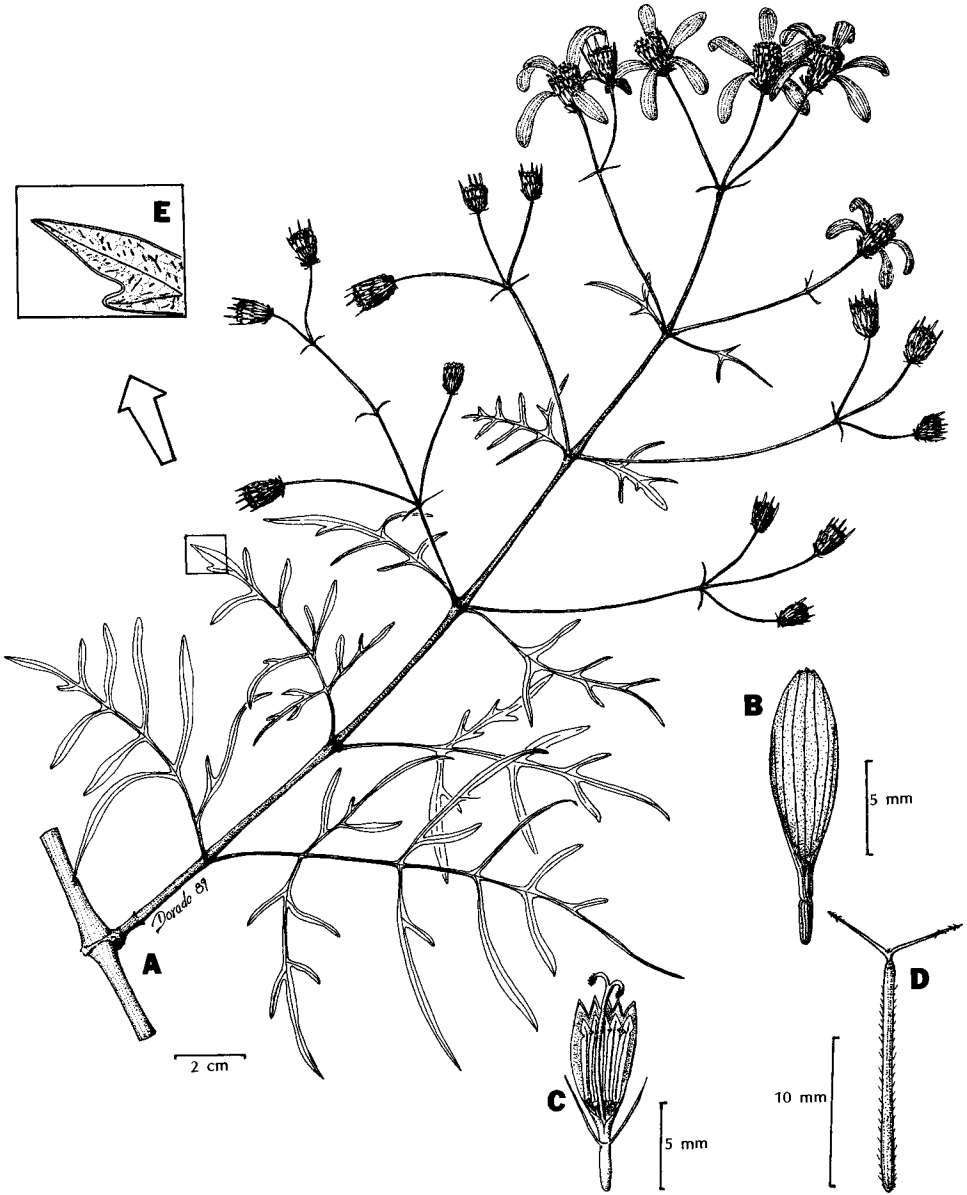


Fig. 1. *Bidens esmartinezii* (from Martínez 5217 et al.).—A. Branch.—B. Ray floret.—C. Disc floret.—D. Mature achene.—E. Foliar lobe showing secretory canals visible as dark lines (enlarged about five times).

acute to acuminate, entire, with secretory canals appearing as short dark lines in the lamina, adaxially glabrous, the mid-veins strigulose abaxially, the sinuses frequently pilose, the lateral lobes sometimes falcate; petioles slender, narrowly winged, abaxially pubescent on the dilated base, forming a pilose, eventually glabrescent ring around the node. Heads heterogamous, radiate, in terminal paniclelike capitulescences, irregularly cymose, on divaricate lateral branches. Peduncles 15–55 mm long, glabrous except at the very base where joined with the

other peduncles and beneath the involucre; basal bract linear, 6–15 mm long; bracteoles 1–2, alternate, smaller, linear, sometimes absent. Flowering heads 2–5 cm wide across the rays, 9–11 mm high. Involucre 4–7 mm wide, campanulate; outer involucre bracts 7–9, 3–5 mm long, green, linear, acute, glabrous; inner involucre bracts 4–5 mm long, 1–1.3 mm wide, brown, lanceolate, striate, with scarious margins, pilose at the apex, otherwise glabrous. Receptacle flat, 2–3 mm wide; receptacular bracts undifferentiated from the involucre bracts, somewhat longer, up to 10 mm long, glabrous. Ray florets 5, neutral, the ligules 9–23 mm long, 3–5 mm wide, yellow, 7-nerved, elliptic, 2–3-toothed at the apex, the tubes short, about 1 mm long; disc florets 13–23; corollas 6–8 mm long, yellow with dark veins, the tubes short, about 1 mm long, the throats more or less cylindrical, the lobes 5, 0.6–1.0 mm long, triangular, papillate at the apex. Anthers 2.5–3.0 mm long, brownish, with triangular to lanceolate apical appendages, sagittate basally, the anther collars about 0.3 mm long, brownish, thickened. Style branches 2–2.6 mm long, long-attenuate at the apex, recurved at maturity; stylopodium about 0.6 mm long, 0.4 mm wide, broadly oblong. Mature achenes 12–19 mm long, 0.5–0.8(–1) mm wide, linear, tangentially compressed, brown, erect or slightly curved, pilose at the apex, with antrorse duplex hairs (0.1–)0.3–0.5 mm long at the margins, otherwise glabrous. Pappus of 2 awns generally spreading, 4–6 mm long, with 6–13 retrorse barbs in the upper portion, sometimes 1 or 2 antrorse barbs.

*Additional material examined.*—MEXICO. MICHOACAN: ca. 12.6 km al S de El Guayabito, ca. 17 km al S de la desviación a Infiernillo, por la carr. Nueva Italia-Playa Azul, elev. ca. 650 m, selva baja caducifolia, 20 Oct 1982, J. L. Villaseñor 311, E. Martínez y R. Torres (ENCB, MEXU, RSA, UC).

*Bidens esmartinezii*, known only from the above collections, occurs in tropical deciduous forests on the western edge of the Balsas River Basin, at the boundary of the Mexican states of Guerrero and Michoacan. It can be distinguished from *B. reptans* var. *urbanii* (recognized as *B. mexicana* Sherff by Roseman [1986]) and from *B. squarrosa* by its entire, linear to narrowly oblong leaf lobes, versus ovate to lanceolate leaflets with serrate to dentate margins found in these two species. Although Roseman (1986) indicated blackish achenes to be a diagnostic feature in the section, *Bidens esmartinezii* differs in having brown achenes. Achenes of *B. esmartinezii* are also larger (12 mm or more) than those observed in the other two species found in the area (less than 12 mm long).

*Bidens esmartinezii* can be separated from the other members of the section occurring in western Mexico as follows:

1. Leaves 3–5 lobed; lobes ovate-lanceolate to lanceolate, serrate; outer involucre bracts (3–)4–8 mm long; achenes 5–11 mm long ..... *B. squarrosa*
1. Leaves pinnatifid to bipinnatifid; lobes ovate-lanceolate to linear, serrate or entire; outer involucre bracts 1–5 mm long; achenes 8–19 mm long.
  2. Leaf lobes ovate-lanceolate to lanceolate, serrate; disk corollas 3.5–4.5 mm long; achenes 8–10 mm long; awns 3–4 mm long ..... *B. reptans* var. *urbanii*
  2. Leaf lobes linear to narrowly oblong, entire; disk corollas 6–8 mm long; achenes 12–19 mm long; awns 4–6 mm long ..... *B. esmartinezii*

The species epithet honors Esteban Martínez (now at MEXU), a very active Mexican plant collector and botanist, who has collected in several remote areas in Mexico.

## ACKNOWLEDGMENTS

I thank S. Carlquist, T. Elias, A. Liston, J. Strother, D. Thompson, and S. Zona for reviews of the manuscript and their valuable comments and suggestions. I am grateful to Oscar Dorado for the preparation of Figure 1. Finally, the curator of NY kindly lent type material for study.

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