MADROÑO, Vol. 47, No. 3, pp. 204–205, 2000

HEDOSYNE (COMPOSITAE, AMBROSIINAE), A NEW GENUS FOR *IVA AMBROSIIFOLIA*

JOHN L. STROTHER
1001 Valley Life Sciences Building #2465, University Herbarium,
University of California, Berkeley, California 94720-2465

ABSTRACT

Hedosyne Strother is a new genus based on *Iva ambrosiifolia* (A. Gray) A. Gray [≡*Euphrosyne ambrosiifolia* A. Gray ≡ **Hedosyne ambrosiifolia** (A. Gray) Strother]. Plants of *Hedosyne* differ from those of *Iva* s.s. in having leaves mostly alternate, leaf blades 1–3 times pinnately divided or lobed, and capitulescences paniculiform and either ebracteate or with 3–6+ heads per bract.

In morphology-based cladistic analyses of *Iva* L. and other genera of Ambrosiinae, Bolick (1983) placed *Iva ambrosiifolia* (A. Gray) A. Gray sister to *Xanthium* L. and Karis (1995) placed *I. ambrosiifolia* sister to *Euphrosyne parthenifolia* DC. (the type and only species of *Euphrosyne*). Miao et al. (1995a, b) reviewed relationships of ivas and other Ambrosiinae with respect to variations in chloroplast DNA and nuclear rDNA; they concluded that *I. ambrosiifolia* did not result from hybridization and they placed *I. ambrosiifolia* sister to *Dicoria canescens* A. Gray.

Although they differ in their placements of some species, Bolick, Karis, and Miao et al. all considered *Iva* s.l., i.e., *Iva* sensu Jackson (1960), to include species that have closer relationships outside *Iva* s.l. than within. I agree that five species (constituting *Iva* sect. *Cyclachaena* (Fresenius) A. Gray, sensu R. C. Jackson) should be withdrawn from *Iva* s.l. and I treat them as monotypic genera: *Chorisiva* Rydberg [*C. nevadensis* (M. E. Jones) Rydberg ≡ *Iva nevadensis* M. E. Jones], *Cyclachaena* Fresenius [*C. xanthifolia* (Nuttall) Fresenius ≡ *Iva xanthifolia* Nuttall], *Leuciva* Rydberg [*L. dealbata* (A. Gray) Rydberg ≡ *Iva dealbata* A. Gray], *Oxytenia* Nuttall [*O. acerosa* Nuttall ≡ *Iva acerosa* (Nuttall) R. C. Jackson], and a new genus, *Hedosyne* [see following].

Iva s.s. and the other genera may be distinguished as indicated in the following key:

1. Capitulescences racemiform or spiciform, bracteate with 1–2 heads per bract . . . . . *Iva* s.s.
1. Capitulescences paniculiform, ± ebracteate or with 3–6+ heads per bract, or heads ± scattered.
2. Leaves all or mostly opposite, blades rarely lobed or divided, mostly deltate, triplinerved, and ± toothed . . . . . *Cyclachaena*
2. Leaves all or mostly alternate, some or all blades ± pinnately laciniate-lobed or 1–3 times pinnately divided.
3. Plants suffrutescent or shrubby; phyllaries, paleae, and cypselae ± villous . . . . . *Oxytenia*
3. Plants mostly herbs, rarely woody at base; phyllaries, paleae, and cypselae glabrous or strigillose and/or hispidulous.
4. Leaf blades laciniately lobed, the lobes mostly 3–12+ mm wide, abaxial faces ± lanate, the adaxial ± tomemtose . . . . . *Leuciva*
4. Leaf blades mostly 1–3 times pinnately divided, the lobes 1–3 mm wide, abaxial and adaxial faces ± scabrellous and/or hispidulous.
5. Heads ± scattered; herbaceous phyllaries usually 3, usually longer than the florets; lobes of corollas of functionally staminate florets erect . . . . . *Chorisiva*
5. Heads in paniculiform arrays; herbaceous phyllaries usually 5, ± equalling the florets; lobes of corollas of functionally staminate florets reflexed . . . *Hedosyne*

Hedosyne Strother, gen. nov.

A *Iva* s.s. foliis pro parte maxima alternatis 1–3-pinnatis, capitulescentiis laxe paniculiformibus ± ebracteatis vel capitulis 3–6+ ad quoque bracteam, et corollis florum pistillatorum nullis differt.

Type: *Euphrosyne ambrosiifolia* A. Gray ≡ *Iva ambrosiifolia* (A. Gray) A. Gray ≡ *Hedosyne ambrosiifolia* (A. Gray) Strother.

The name *Hedosyne* comes from the Greek word hedosyne, meaning delight (see Brown 1956), and is, I believe, a suitable name for a sister or stepsister to Euphrosyne, one of the three Graces. As here circumscribed, *Hedosyne* includes a single species:

Hedosyne ambrosiifolia (A. Gray) Strother, comb. nov. Basionym: *Euphrosyne ambrosiifolia* A. Gray, Pl. Wright. 1:102. 1852, as *ambrosiaefolia.* ≡ *Iva ambrosiifolia* (A. Gray) A. Gray in A. Gray et al., Syn. Fl. N. Amer. 1(2): 246. 1884. ≡ *Cyclachaena ambrosiifolia* (A. Gray) Rydberg N. L. Britton et al., N. Amer. Fl. 33:10. 1922. —Type: western Texas or adjacent New Mexico, May–Oct. 1849, *C. Wright* "310" (GH; isotypes: UC! US).

Cyclachaena lobata Rydberg in N. L. Britton et al. N. Amer. Fl. 33:10. 1922. ≡ *Iva ambrosiifolia* (A. Gray) A. Gray subsp. *lobata* (Rydberg) R. C. Jackson, Univ. Kansas Sci. Bull. 41:838. 1960. —Type: Mexico, Nuevo León, Monterrey, Aug 1911, *Alban and Arsene 208* (US; isotype: MO).

Habit annual. **Stems** erect, 1–5(–10) dm. **Leaves** mostly alternate, petioles 5–12(–45) mm long, blades deltate or ovate to lanceolate in outline, mostly 3–5(–9) cm long, 4–5(–8) cm wide, 1–3 times pinnately divided, ultimate lobes oblong to lance-linear, 1–3 mm wide, faces scabrellous and/or hispid, usually gland-dotted. **Capitulescences** loosely paniculiform, ± ebracteate or heads 3–6+ along an axis from the axil of each bract; peduncles 3–12+ mm long. **Involucres** ± hemispheric, 2–3+ mm high. **Phyllaries** 10–12+ in 2+ series, free, the outer 5 ± herbaceous, about equalling the florets, the inner phyllaries scarious to membranous, equalling or shorter than the outer. **Pistillate florets** 5–10, corollas none. **Functionally staminate florets** 5–10(–20+), corollas funnelform, 1.5–2 mm long, the lobes soon reflexed. **Receptacles** hemispheric; paleae spatulate to linear, membranous. **Cypselae** pyriform, ± obcompressed, 1.4–1.7 mm long, finely striate, glabrous (said to become muricate in age); pappus none. $x = 18$.

Plants of *Hedosyne ambrosiifolia* usually grow in sandy, sometimes gypseous or calcareous soils, often in disturbed places (roadsides, washes, etc.) in southwestern United States (Arizona, New Mexico, Texas) and northwestern Mexico (Chihuahua, Coahuila, Durango, Nuevo León, San Luis Potosí, Sonora, Zacatecas).

Acknowledgments

I thank B. Baldwin, R. C. Jackson, G. Nesom, and A. R. Smith for help in various ways.

Literature Cited

Bolick, M. R. 1983. A cladistic analysis of the Ambrosiinae Less. and Engelmanniinae Stuessy, Pp. 125–141. *in* N. I. Platnick and V. A. Funk (eds.), Advances in cladistics, Vol. 2.

Brown, R. W. 1956. Composition of scientific words, revised edition. Published by the author, Baltimore, Md.

Jackson, R. C. 1960. A revision of the genus *Iva*. University of Kansas Science Bulletin 41:793–876.

Karis, P. O. 1995. Cladistics of the subtribe Ambrosiinae (Asteraceae: Heliantheae). Systematic Botany 20:40–54.

Miao, B., B. L. Turner, and T. J. Mabry. 1995a. Chloroplast DNA variations in sect. *Cyclachaena* of *Iva* (Asteraceae). American Journal of Botany 82:919–923.

———, ———, and ———. 1995b. Systematic implications of chloroplast DNA variation in the subtribe Ambrosiinae (Asteraceae: Heliantheae). American Journal of Botany 82:924–932.