MEXICAN SPECIES OF *HELIOMERIS* (ASTERACEAE: HELIANTHEAE)

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ABSTRACT

The genus *Heliomeris* is treated as having three species in Mexico: *H. hispida, H. multiflora* (including *H. longifolia*) and *H. obscura*. A key to the species and an abbreviated synonymy is provided, along with maps showing their distribution. *Phytologia 94(2): 237-244 (August 1, 2012).*

KEY WORDS: Asteraceae, Heliantheae, *Heliomeris, Viguiera*, Mexico

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The following, forthcoming, treatment of *Heliomeris* for Mexico follows the format established in my treatment of the Comps of Mexico (Turner 1979), the most recent issue appearing in Turner (2009).

HELIOMERIS Nutt.

Annual or, tap-rooted, erect perennial herbs to 1 m high. Leaves alternate or opposite, linear to ovate, variously pubescent. Heads, in open paniculate cymes, or solitary. Involucres, hemispheric to campanulate. Receptacles convex to conical, paleate throughout. Ray florets, pistillate, neuter; ligules, yellow. Disc florets mostly numerous, perfect, fertile; corollas yellow, the tube short and abuptly flaring into a broad cylindrical throat. Anthers, black, or reddish-brown. Achenes, relatively small, glabrous, epappose. Base chromosome number, x = 8.

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Heliomeris was treated within the large genus *Viguiera* by Blake (1918), but subsequent workers have treated the group as distinct, this largely supported by DNA studies (Schilling and Jansen 1989; Panero 2007; Schilling and Panero 2011). Schilling (2006) recognized *Heliomeris* as having five species, all restricted to the western U.S.A. and Mexico. The genus is readily separated from *Viguiera* by its epappose, glabrous achenes.

Key to species

1. Leaves and stems coarsely hispid-pubescent throughout, the longer hairs 1.5-2.0 mm long; a relatively rare species of wet places or standing water; Son, Chi.....**V. hispida**
1. Leaves and stems not as above, at least some, or most of the hairs softer and shorter, 0.5-1.5 mm long .....(**2**)

2. Leaf blades broadly ovate to deltoid, 1-2 times as long as wide, the margins serrate; se Pue and adjacent Oax .....**V. obscura**
2. Leaf blades lanceolate to linear-lanceolate, 3-8 times as long as wide, the margins entire or nearly so; widespread .....**V. multiflora**

HELIOMERIS HISPIDA (A. Gray) Cockerell, Torreya 18: 183. 1918. **Map 1**

Gymnolomia hispida (A. Gray) Rob. & Greenm.
Gymnolomia hispida var. *ciliata* Rob. & Greenm.
Heliomeris hispida var. *ciliata* (Rob. & Greenm.) Cockerell
Heliomeris multiflora var. *hispida* A. Gray
Viguiera ciliata var. *hispida* (A. Gray) Blake

Known in Mexico by only a few collections from n Son, also closely adjacent U.S.A., low swales with standing water and along stream sides, oak woodlands, 1200-1600 m; Sep-Oct.

Annual herbs to 60 cm high, resembling **H. multiflora** but very rough-hispid with rigid white hairs to 2.5 mm long; chromosome number, n = 8 pairs (*Keil 13588*, TEX).

In southeastern-most Arizona, along the San Pedro River (ARIZ), the species appears to grade into, or form hybrids with, *H. multiflora.*

HELIOMERIS MULTIFLORA Nutt., J. Acad. Nat. Sci. Philad., ser. 2, 1: 171. 1848. **Map 2**

This is an exceedingly widespread variable species occurring in the Rocky Mountains from the Canadian border southwards to central Mexico. In Mexico I recognize 2 varieties, as follows:

1. Heads 4.0-5.5 cm across the expanded rays; outer involucral bracts reflexed, 8-15 mm long; subalpine areas, Mount Mohinora, Chi.....
.....var. **macrocephala**
1. Heads 1.5-4.0 cm across the expanded rays; outer involucral bracts erect, mostly 3-8 mm long; pine-oak forests, so far as known, not subalpine; widespread .....var. **multiflora**

var. **macrocephala** Heiser, Indiana Acad. Sci. 88: 368. 1979.
Viguiera multiflora var. *macrocephala* (Heiser) B.L. Turner

Known only from subalpine forests of Chi (spruce-fir forests of Sierra Mohinora) and outlier populations in the U.S.A. (Cochise Co., Ariz.), reportedly between 3000-3300 m; Aug-Oct.

Much-resembling var. **multiflora** but the leaves broader (15-40 mm wide), ovate to lanceolate-elliptic, having softer appressed hairs, the heads much larger, and the outer bracts much longer and mostly reflexed. Additionally, the disc florets are more numerous and their corollas larger.

In Mexico, a number of collections (4 or more) of this taxon have been made, all from the subalpine areas of Sierra Mohinora (3000-3300 m). Heiser, in his original description, noted that "*Correll and Gentry 23230 (*TEX) from three miles south of La Rocha is somewhat transitional between var. *macrocephala* and var. *multiflora.*" The latter collection, from ca 7000 ft, seems more typically *H. multiflora* than var. *macrocephala*; indeed, the latter might be treated at the specific level, being much more distinct than the various varieties proposed for *H. multiflora* in his treatment of *Heliomeris* for the North American Flora (Schilling 2006). The latter worker did not account for the, presumably relic, population in Cochise Co., Arizona, U.S.A. (*Psedotsuga* woodlands in the Huachuca Mts.) but I can find little to separate such plants from the two remote areas concerned.

var. **multiflora**
Gymnolomia annua Rob. & Greenm.
Gymnolomia brevifolia Greene ex Woot. & Standl.
Gymnolomia longifolia Rob. & Greenm.
Gymnolomia multiflora (Nutt.) Benth.
Gymnolomia multiflora var. *annua* M.E. Jones
Heliomeris brevifolia (Woot. & Standl.) Cockerell
Heliomeris longifolia (Rob. & Greenm.) Cockerell
Heliomeris longifolia var. *annua* (M.E. Jones) W.F. Yates
Heliomeris multiflora Nutt.
Heliomeris multiflora var. *brevifolia* (Woot. & Standl.) Yates

Viguiera annua (M.E. Jones) Blake
Viguiera longifolia (Rob. & Greenm.) Blake
Viguiera ovalis Blake
Viguiera shrevei Steyermark

Son, Chi, Coa, Nue, Dur, Zac, San, Gua, Jal, Mic, Cps and adjacent U.S.A., grass lands and pine-oak forests, 1000-2400 m; Jun-Nov.

Erect perennial herbs to 1 m high; leaves linear-lanceolate, 5-10 cm long, 0.5-1.0 cm wide; petioles 1-5 mm long; blades with 1 or 3 major nerves, pubescent with short, soft or hispid, mostly appressed hairs, the margins entire or nearly so; heads mostly 10-50 in a loose terminal, leafy, capitulescence; involucres 2-3 seriate, the bracts narrowly lanceolate, herbaceous throughout, subequal, appressed or the outer series rarely reflexed; receptacle globose or nearly so, paleate; ray florets 8-15, the ligules 10-15 mm long, yellow; disk florets numerous, yellow; achenes 2-3 mm long, glabrous, epappose; chromosome numbers, n = 8 or 16 pairs.

A widespread highly variable species, as might be ascertained from the synonymy given.

Heliomeris longifolia is essentially the same as *H. multiflora*, said to differ from the latter by its mostly annual habit, somewhat smaller heads and longer, somewhat narrower leaves (Schilling 2006). Out of deference to previous workers, I have long accepted the two taxa as distinct species, but believe their recognition is largely arbitrary. If combined, as done here, the earlier name is *H. multiflora*, this typified by specimens collected in the Rocky Mountains of the U.S.A. *Heliomeris longifolia* is typified by material collected in western Texas (30 miles east of El Paso) by Wright. In the latter area, specimens occur (SRSC, TEX) that may be seemingly annual or perennials, the heads of various sizes and the leaves of various widths. Strother (1999), in his treatment of Chiapas plants, in which *H. longifolia* was recognized, echoed the same reservations regarding such recognition: "The type of *Heliomeris longifolia* may prove to be conspecific with that of *H. multiflora*."

Recognition of *H. longifolia* var. *annua*, sensu Yates and Heiser (1979) seems also arbitrary, the type from Defiance, New Mexico said to differ from typical *H. longifolia*, by its branching habit, somewhat smaller leaves and smaller heads (Schilling 2006). I have been unable to segregate the taxa concerned with reasonable conviction.

HELIOMERIS OBSCURA (Blake) Ckll., Torreya 18: 183. 1918.
Map 1

Known only from se Pue and adjacent Ver, xerophytic shrublands, 2000-2200 m; Sep-Oct.

Annual tap-rooted herbs 30-50 cm high; much-resembling **V. multiflora,** but markedly different because of its broadly ovate or deltoid leaves, these sometimes weakly 3-lobed; the margins decidedly serrate; chromosome number, n = 13 or 14 pairs.

ACKNOWLEDGEMENTS

Thanks to my close colleague, Jana Kos, for editing the manuscript and to the herbaria of ARIZ and NMU for the loan of selected specimens.

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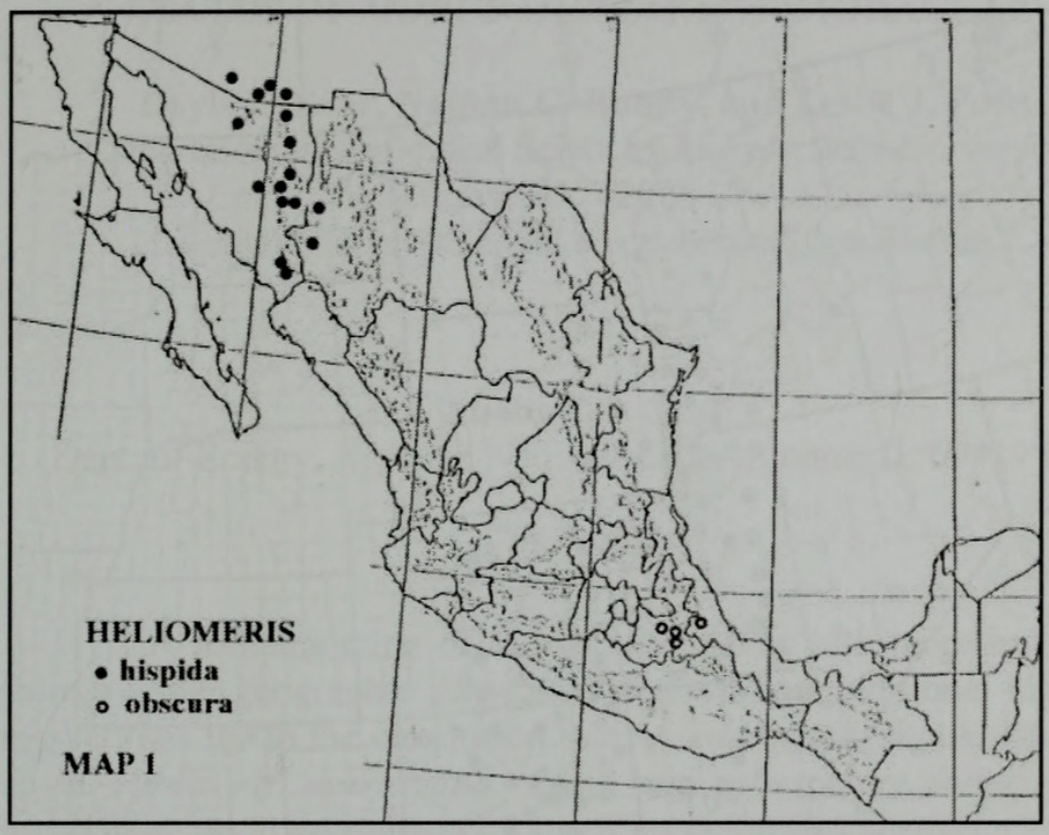
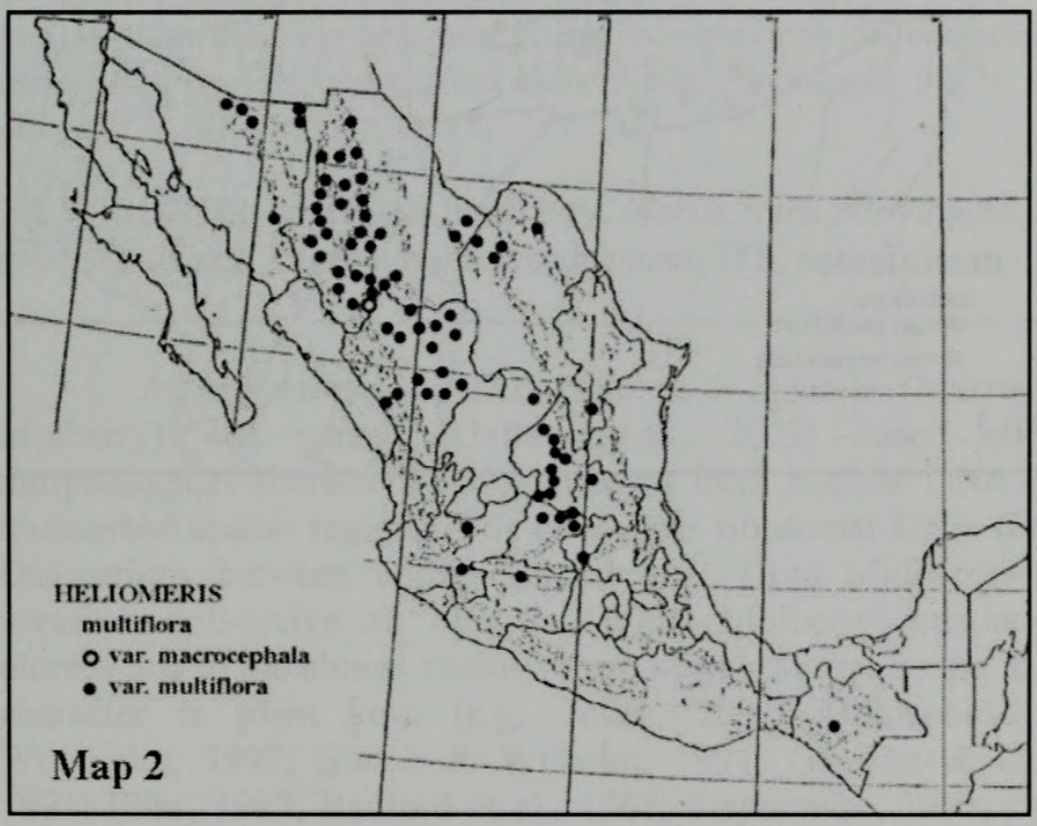
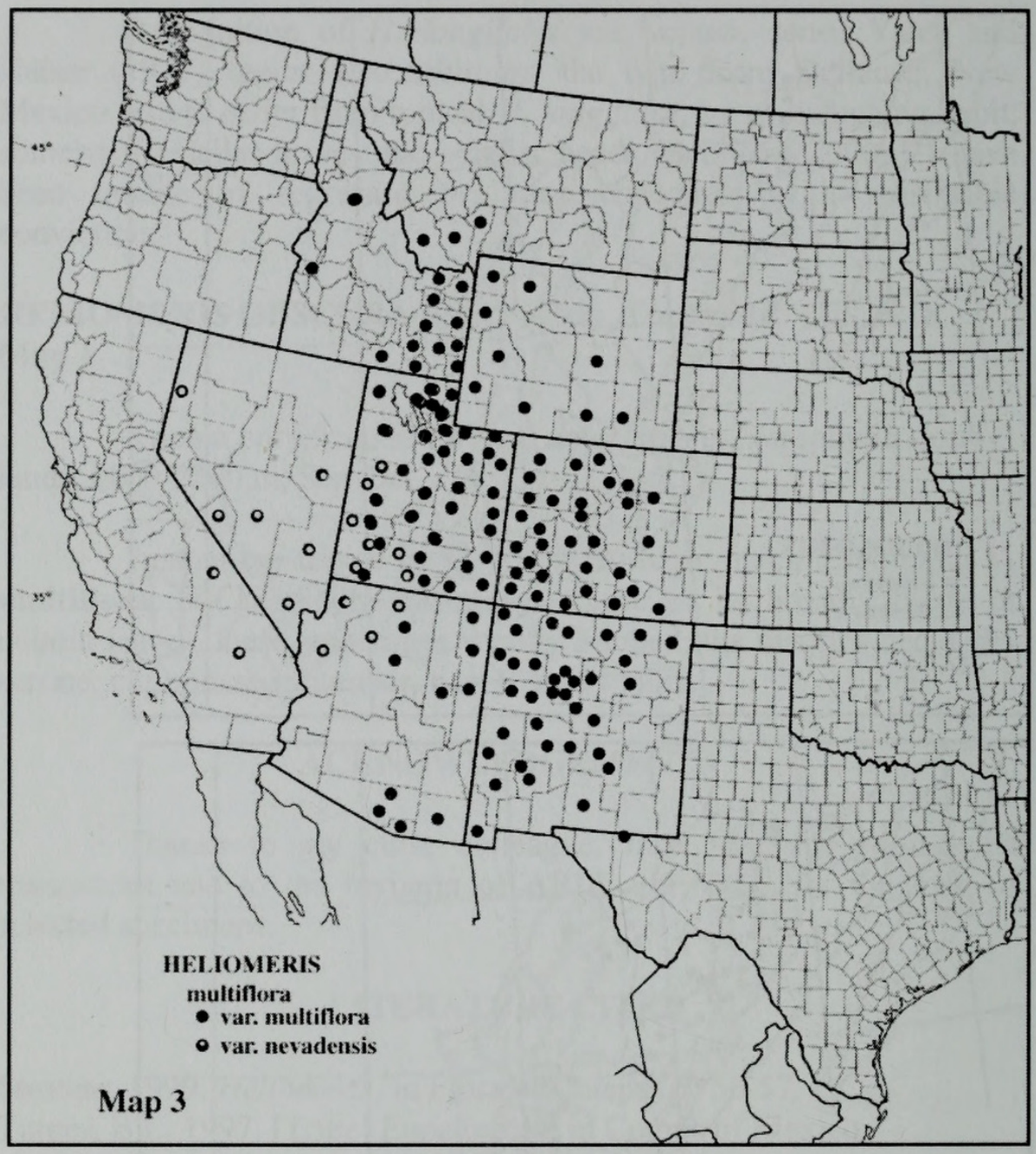

HELIOMERIS
• hispida
o obscura
MAP 1


HELIOMERIS
multiflora
o var. macrocephala
• var. multiflora
Map 2


45°
35°
HELIOMERIS
multiflora
var. multiflora
var. nevadensis

Map 3