

Plant Diversity Website

Mikania scandens (L.) Willdenow

Common Names: Climbing Hempweed, Climbing Hempvine, Climbing Boneset, Guaco (4)

Etymology: *Mikania* is named for Joseph Gottfried Mikan (1743-1814), a professor at the University of Prague. The species name, *scandens*, comes from the Latin *scandere*, meaning "to climb" (10, 11, 12).

Botanical synonyms (1):

Eupatorium scandens Linnaeus

Mikania angulosa Raf.

Mikania batatifolia auct. non DC. [misapplied]

Mikania scandens (L.) Willd. var. *pubescens*
(Nutt.) Torr. & Gray,

Willoughbya heterophylla Small

FAMILY: Asteraceae, the Daisy Family

Quick Notable Features:

- twining, climbing stem with opposite leaves
- deeply cordate leaves with an acute apex
- one of very few climbing members of
Asteraceae in Michigan

Plant Height: 2.5-3.0m (9)

Subspecies/varieties recognized (source): *Mikania scandens* var. *pubescens* (Muhl) T & G

Most Likely Confused with: *Mikania micrantha* or *Mikania cordata* are most likely impostor candidates. Leaf shape is similar to *Ipomoea* spp. and climbers of the Convolvulaceae (8, 13).

Habitat Preference: Prefers moist sites, particularly swamps, near water's edge with at least partial sun and soil pH between 5.7 and 7.5. Forms dense mats over thickets of brush and small trees (1, 9, 10, 13). It can be found in oligohaline sites in the southeastern United States (18).

Geographic Distribution in Michigan:

Collected in Muskegon in 1894, this plant has been rarely noted in the state of Michigan. Its existence has been registered in the Muskegon State Game Area (2,20).



Known Elevational Distribution: Most common at low elevations on the shores of lakes and marshes, however it is sometimes found further inland (13).

Complete Geographic Distribution: Found in most states east of the Mississippi River, as well as Missouri, Arkansas, Louisiana, Oklahoma, Texas and Northern Mexico and the Bahamas. It is most common in the southern United States along the Atlantic Ocean and the Gulf of Mexico. This plant is a noxious weed in Hawaii and other Pacific Islands (1, 4, 8, 13).

Vegetative Plant Description: Leaves simple, acuminate, coarsely dentate or shallowly, unevenly lobed (sinuate), 1.5-8 cm wide and 2.5-14 cm long with a deeply cordate base. Leaves bear 3-7 strong basal veins, giving them a palmate venation and are arranged oppositely at swollen nodes along the slightly four-angled, glabrous stem. Petioles are slender and shorter than the leaf blades, 1 to 10 cm long (8).



Climbing Mechanism: The plant is an apical twiner that climbs dextrally (from left to right). Dextral climbing is unusual in this genus (14, pers. obs.).

Flower Description: "...flowers in small heads 5-7 mm long, crowded in round-topped, lateral and terminal, modified panicles (corymbs); involucre bracts four, linear-lanceolate, 4 - 5 mm long, attenuate, often purplish tinged, with an additional smaller bract; corolla pink, pale purplish, or rarely white" (13).



Flowering Time: The U.S. Fish and Wildlife Service's survey of the Great National Swamp indicates that *M. scandens* flowers from late August until October in New Jersey, while Florida accounts claim it blooms all year (15, 16).

Pollinator: Small, aggregated tubular flowers and floral nectaries suggest pollination by insects. "Composite inflorescences are generally outcrossing and attract a wide array of generalist pollinators (butterflies, bees, flies and beetles)..." (12).

Fruit Type and Description: The indehiscent fruit is "an achene, oblong, 1.5 to 2.5 mm long, brownish black, five-angled" (8).



Seed Description: Because the fruit is a plumed achene (a single-seeded fruit that does not open), the seed is dispersed with the achene. No reports give features of seeds of this species.

Dispersal Syndrome: Seeds are primarily wind-dispersed but can be moved unintentionally by people or animals. Whether wind-dispersed or by animals, the pappus bristles are the main mechanism (see image). They can act as a parachute or sail or can catch onto an animal via the same feature or can be modified into a barb or awn. Vegetative reproduction is more important than sexual reproduction in this species as broken stems can re-root and form new plants. The nodes root when in contact with the soil (8, 12, 13, 18).

Distinguished by: "[T]he inflorescence is habitually looser and more paniculate in *M. micrantha* than in *M. scandens*; the inflorescence in *M. scandens* is mostly crowded with round-topped corymbs. The phyllaries (bracts) of the heads are acute in *M. micrantha* rather than attenuate as in *M. scandens*. *M. micrantha* seems never to show the purplish coloration which is nearly always present in *M. scandens*. Although the leaves vary greatly in contour both in *M. scandens* and in *M. micrantha*, they tend on the whole to be more sharply angled and triangular-sagittate or -hastate in *M. scandens* and more oval, cordate, and merely crenate in *M. micrantha*" (8).

The deeply cordate leaves and acutely pointed tips of the leaves of *Ipomoea pandurata* and *Ipomoea purpurea*, and other members of Convolvulaceae could be confused for *M. scandens* as well, but this confusion is easily resolved. While *M. scandens* has its leaves arranged oppositely, Convolvulaceae have alternate leaves; their leaves and stems also contain white latex, while *M. scandens* does not. In flower, *M. scandens* has densely aggregated inflorescences, characteristic of Asteraceae, while members of Convolvulaceae have a determinate inflorescence, sometimes a solitary flower, with a strongly connate, funnel-like, plicate corolla (12).

Other members of the family in Michigan (number species):

<i>Ambrosia</i> -3	<i>Lapsana</i> -1	<i>Matricaria</i> -3	<i>Mikania</i> -1	<i>Solidago</i> -22
<i>Polymnia</i> -2	<i>Aster</i> -28	<i>Anthemis</i> -3	<i>Dyssodia</i> -1	<i>Chrysopsis</i> -2
<i>Arctium</i> -2	<i>Bellis</i> -1	<i>Chrysanthemum</i> -5	<i>Iva</i> -2	<i>Haplopappus</i> -1
<i>Centaurea</i> -11	<i>Echinacea</i> -2	<i>Achillea</i> -3	<i>Krigia</i> -2	<i>Inula</i> -1
<i>Silybum</i> -1	<i>Parthenium</i> -3	<i>Tanacetum</i> -2	<i>Hypochaeris</i> -1	<i>Callistephus</i> -1
<i>Onopordon</i> -1	<i>Eclipta</i> -1	<i>Artemisia</i> -11	<i>Leontodon</i> -2	<i>Boltonia</i> -1
<i>Carduus</i> -2	<i>Galinsoga</i> -2	<i>Adenocaulon</i> -1	<i>Picris</i> -1	<i>Erigeron</i> -7
<i>Cirsium</i> -10	<i>Silphium</i> -4	<i>Xanthium</i> -2	<i>Tragopogon</i> -3	<i>Liatris</i> -7
<i>Antennaria</i> -5	<i>Bidens</i> -9	<i>Heliopsis</i> -1	<i>Agoseris</i> -1	<i>Madia</i> -1
<i>Filago</i> -1	<i>Conyza</i> -1	<i>Helianthus</i> -15	<i>Taraxacum</i> -2	<i>Sonchus</i> -3
<i>Anaphalis</i> -1	<i>Petasites</i> -3	<i>Grindelia</i> -1	<i>Hieracium</i> -14	<i>Chondrilla</i> -1
<i>Gnaphalium</i> -6	<i>Erechtites</i> -1	<i>Helenium</i> -3	<i>Crepis</i> -3	<i>Prenanthes</i> -3
<i>Pluchea</i> -1	<i>Cacalia</i> -2	<i>Verbesina</i> -2	<i>Kuhnia</i> -1	<i>Lactuca</i> -8
<i>Vernonia</i> -2	<i>Guizotia</i> -1	<i>Calendula</i> -1	<i>Eupatorium</i> -9	<i>Megalodonta</i> -1
<i>Arnica</i> -1	<i>Coreopsis</i> -5	<i>Ratibida</i> -2	<i>Senecio</i> -9	<i>Thelesperma</i> -1
<i>Arnoseris</i> -1	<i>Echinops</i> -1	<i>Gaillardia</i> -2	<i>Tussilago</i> -1	<i>Cosmos</i> -2
<i>Cichorium</i> -1		<i>Rudbeckia</i> -5	<i>Euthamia</i> -2	(2)

Ethnobotanical Uses: Used by the Seminoles to treat itchy skin. Also used for circumcision, wounds, and tumors. Planted as an ornamental, cover crop, and for cattle feed (4, 5, 6, 7, 8).

Phylogenetic Information: The genus *Mikania* is a member of the family Asteraceae (Compositae). Within that family, *Mikania* is a member of the tribe Eupatorieae of the subfamily Asteroideae. Also in this tribe are the genera *Ageratum*, *Carphephorus*, *Eupatorium*, *Garberia*, *Iva*, and *Liatris*. The flowers of the tribe are usually disks with short lobes (occasionally long),

the pappus is formed into bristles, and their glandular style branches have very long stigmatic lines (12).

Interesting Quotation or Other Interesting Factoid not inserted above:

- Forms dense mats that shade out many other species
- One of many vines studied in detail by Charles Darwin (14)
- The species was the focus of a study in which it was transplanted to flooded areas; there it was found to be flood resistant due to an increase in aerenchyma tissue and stem stomata in flood conditions (17).

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