Plant Diversity Website

Ampelopsis aconitifolia Bunge

Common Names: Monk's-hood-vine, monkshood vine (1,2).

Etymology: The genus *Ampelopsis* is derived from from the Greek word *ampelos*, for 'vine'. The epithet *aconitifolia* is likely a combination of *Aconitum* and *folium* (11), referring to the similarity of the leaves of *A. aconitifolia* to the leaves species of the genus *Aconitum* (Ranunculaceae).

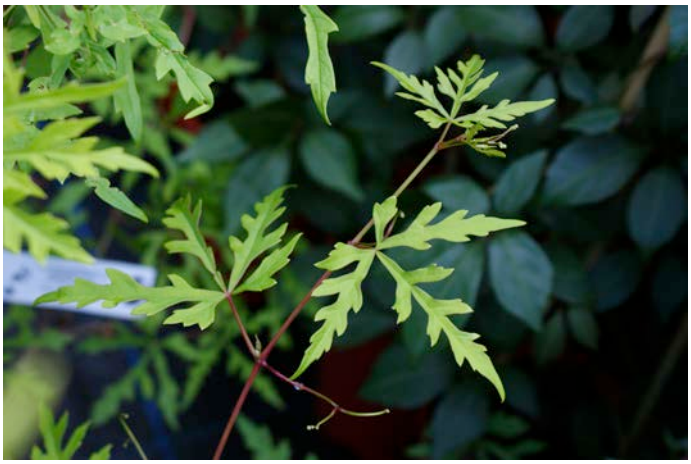
***Botanical synonyms**: Vitis aconitifolia* (9).

FAMILY: Vitaceae (the grape family)

Quick Notable Features:
¬ Liana with 2-3 branched tendrils opposite the leaves
¬ Palmately compound leaves with pinnately lobed leaflets
¬ Cymose inflorescence of greenish flowers
¬ Yellow to orange round berry

Plant Height: Up to 12 m (9).

Subspecies/varieties recognized (1):
A. aconitifolia var. *aconitifolia*
A. aconitifolia var. *cuneata* Diels & Gilg
A. aconitifolia var. *dissecta* (Carrière) Koehne
A. aconitifolia var. *glabra* Diels & Gilg
A. aconitifolia var. *palmiloba* (Carrière) Rehder
A. aconitifolia var. *setulosa* Diels & Gilg
A. aconitifolia var. *tomentella* Diels & Gilg



Most Likely Confused with: *Ampelopsis brevipedunculata*, *Vitis* ssp., *Parthenocissus* ssp., *Aconitum napellus, Cannabis sativa*.

Habitat Preference: Although largely a cultivated species in Michigan, it can grow in thickets and forest edges. Monkshood vine prefers open habitats, and in its native range it is found in grasslands, valleys, and shrublands (2,5).

Geographic Distribution in Michigan: The Monk's-hood-vine has been collected outside of cultivation only in Wayne County (2).

Known Elevational Distribution: In China, *A. aconitifolia* grows to elevations of 2200 m (5).

Complete Geographic Distribution: Native to northern China and Mongolia. In the United States, *A. aconitifolia* has escaped from cultivation in MI, NC, NJ, OH, PA, and New England. The species is also found in eastern Europe, in the Carpathian Mountains (2,3,6,12).

Vegetative Plant Description: *A. aconitifolia* is a fast growing, deciduous woody vine with tight bark bearing longitudinal ridges. The tendrils are 2-3 branched and borne opposite the leaves. The thin stipules are glabrous or slightly pubescent, brownish, approximately 2.3 mm long, 1-2 mm broad, and apically obtuse. The petioles are also glabrous, or slightly pubescent, and 1.5-2.5 cm long. The alternate leaves are palmately compound with 3 or 5 nearly sessile, pinnately lobed leaflets with irregularly toothed margins. The leaflets are lanceolate to rhomboid, apically acuminate, basally cuneate, 4-9 cm long, 1.5-6 cm broad, and sparsely pubescent below (2,5,9).

Climbing Mechanism: Monkshood vine uses its branched tendrils to climb (9).

Flower Description: The cymose inflorescence of *A. aconitifolia* is borne on a glabrous or slightly pubescent peduncle (1.5-4 cm long), opposite to the leaves, or less often borne on the tendrils. The nearly glabrous pedicels bear inconspicuous, greenish, perfect flowers developing from ovoid buds. The calyx is 5-parted and glabrous. The corolla is glabrous and composed of 5 oval petals 1.7-2.7 mm long. The 5 stamens have oval anthers. The ovary is superior, 2-locular, with 2 ovules per locule, and adnate to a well-developed floral disk. The style is cone-shaped, with a simple stigma (2,5,9).

Flowering Time: In Missouri, it flowers from July to August (5).

Pollinator: In the genus *Ampelopsis*, the floral disk is well developed and produces nectar (5,8), which may attract insects for pollination. However, no literature on specific pollinators has been found.

Fruit Type and Description: The round berries (6-8 mm in diameter) are yellow to orange and produce 1-4 (most commonly 2-3) seeds (2,5,9,14).

Seed Description: The globose seeds of *A. aconitifolia* are brown, 4-9 mm long, and 3.7-6 mm broad. The seed coat (testa) is reported as smooth or granular (6,13). The “chalazal knot [is] rounded, raphe [is] attenuate, ventral holes [are] furrowed upward 1/3 from base” (5).

Dispersal Syndrome: The fruits of *A. aconitifolia* are consumed by birds capable of seed dispersal (14).

Distinguished by: *Ampelopsis brevipedunculata* has simple leaves, often palmately lobed, and its berries are speckled and bright blue. The leaves of *A. aconitifolia* are palmately compound, leaflets pinnately lobed, and its berries are yellow to orange. *Vitis* ssp. (grapes) have a characteristic shredding and peeling bark, the leaves are simple, the corolla is apically fused, and the berries are dark bluish to black. *A. aconitifolia* has tight bark, and the corolla is free. *Parthenocissus* spp. have unlobed and regularly toothed leaflets, the tendrils are 4-12 branched and may end in adhesive disks (especially in *P. quinquefolia*), and the fruit is dark blue-black. In *A. aconitifolia*, the leaflets are pinnately lobed and irregularly toothed, and the tendrils are 2-3

branched and never end in adhesive disks. *Aconitum napellus* (garden's monkshood) is an erect herb with no tendrils. The leaves are similarly shaped (belonging to the genus for which the species *A. aconitfolia* is named), but the flowers are blue, zygomorphic, conspicuous, and shaped like a "hood", later developing into 3 follicles. *A. aconitifolia* is woody and climbing, with greenish, actinomorphic, inconspicuous flowers, later producing a berry. *Cannabis sativa* (marijuana) is an erect herb with palmately compound leaves and up to 11 leaflets (3 or 5 in *A. aconitifolia*) with unlobed serrate margins. The flowers of *C. sativa* are unisexual (perfect in *A. aconitifolia*) and female flowers produce an achene (2,5).

Other members of the family in Michigan (number species): *Ampelopsis* (1), *Parthenocissus* (2), *Vitis* (4) (source 2).

Ethnobotanical Uses: Monk's-hood-vine is used as an ornamental plant (6), however medical uses or plant edibility were not found in the literature.

Phylogenetic Information: The genus *Ampelopsis* is included in the Vitaceae family, in the Vitales order of Core Eudicots. Vitaceae is the only family in the order Vitales, and it is subdivided into two subfamilies: Leeoideae and Vitoideae. All members of the family native to North America (including grapes – *Vitis* ssp.) and *Ampelopsis* are from the Vitoideae subfamily (4). The genus *Ampelopsis* has "about 30 species: Asia, Central and North America, with most species in E. Asia and two species in SW Asia; 17 species (13 endemic) in China" (5). The genus is paraphyletic and divided into two subclades: pinnately leaved (sect. *Leeaceifoliae*), and simple or palmately leaved (sect. *Ampelopsis*). *A. aconitifolia* is within the simple or palmately-leaved subclade along with 5 other species, including *A. brevipenduculata*, its closest relative. Section *Ampelopsis* is closer to the genus *Rhoicissus*. Soejima & Wen (2006) conclude that "both morphological and phylogenetic data suggest that *Ampelopsis* needs to be redefined and the "*Leeaceifoliae"* group may need to be raised to the generic rank" (8).

Interesting Quotation or Other Interesting Factoid not inserted above: *A. aconitifolia* var. *glabra* is reported as invasive by the Missouri Botanical Garden (7), and should be avoided as a gardening choice. A study in New England estimates that the species is potentially invasive there due to its similarity to the invasive *Ampelopsis brevipenduculata* (12,14). *Erysiphe necator*, a fungus that causes powdery mildew in many members of Vitaceae and one of the most damaging pests in California's vineyards, also infects and damages *A. aconitifolia* (10).

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