Plant Diversity Website

Vinca minor L.

Common Names: Common periwinkle, Myrtle (6), Ground Myrtle (5), Running Myrtle, Lesser Myrtle (21)

Etymology: *Vinca* comes from the ancient Roman name for the plant, “Vincapervinca”, from which comes “periwinkle” (18). It means “bonds through bonds” and refers to the tangling nature of the plant (13). '*Minor*' means “less,” distinguishing it from a larger species of the genus *Vinca*, *V*. *major* (1, 8)

Botanical synonyms: None found (11)

FAMILY: Apocynaceae (the dogbane family)

Quick Notable Features:
¬ White latex found in stems and leaves
¬ Flowers petals pin-wheeling out from center
¬ Round, green, hollow stems, with those that bear flowers erect

Plant Height: Stems trail up to 3m; those with flowers erect to 15 cm (1, 21).

Subspecies/varieties recognized (source): None found (11).

Most Likely Confused with: *Lonicera caprifolium, Vincetoxicum* spp*., Ipomoea* spp*., Calystegia* spp*.,* and *Vinca major.*

Habitat Preference: *V. minor* grows best in partial shade and moist, well-drained soil. It is often found in woods and bluffs, and along cemeteries, roads, and other disturbed areas. Its leaves are noted to yellow in intense sun and heat (1, 5, 6, 21).

Geographic Distribution in Michigan: *Vinca minor* is reported from about half of Michigan's counties with sporadic distribution (4).

Known Elevational Distribution: The geographic distribution suggests *V. minor* prefers low to mid-level elevations, but not the higher Rocky Mountain altitudes. No source giving an exact elevational distribution was found.

Complete Geographic Distribution: Native to Europe, *Vinca minor* was introduced to America in the 1700s as an ornamental ground-cover. It is now found in every state east of the Mississippi River (and every state directly west of the river) as well as AZ, KS, ME, NE, OR, UT, TX, WA, and Washington D.C. (4, 5).

Vegetative Plant Description: *Vinca minor* is a perennial, evergreen vine. The stems are smooth, green, round, sometimes pubescent, and often hollow, although it does produce woody rhizomes. The plant forms thick sprawling mats with the flowering stems more or less erect. Its leaves are simple and arranged oppositely on the stem, though sometimes the nodes are so

close together that two pairs of leaves seem to form a whorl. The leaves are oblong-ovate to elliptical, approximately 2-5 cm long and 1-2.5cm wide, with petioles 1-3mm long. They are glossy, pinnately veined, entire, and have margins that curl away from the sun. The veins are usually white, and latex can be found in the stems and leaves (1, 3, 4, 5, 6, 19, 21).

Climbing Mechanism: Two sources mention *Vinca* twining (3, 12), but not in detail. Gardeners suggest that it only weakly climbs with apical shoots, if at all (R.J. Burnham, pers. comm.).

Flower Description: The flower is perfect and without odor. It is showy, purple to blue and occasionally white, borne singly in an axillary position on a 1-1.5cm pedicel. The calyx is five-lobed, green, and glabrous. The petals radiate from the center in an almost pinwheel-like shape forming an 8-12mm long tube with a white crest that is finely pubescent near the base. The corolla is approximately 2.5 cm in diameter. The flower has five stamens; the anthers are yellow and their tips are finely pubescent. The superior green gynoecium is two-carpellate. The style is green; the stigma is densely pubescent and white (2, 3, 5, 12, 18, 21).

Flowering Time: In Illinois, *V. minor* flowers regularly from April to May (6), and sporadically from May to September (5).

Pollinator: The flower of *Vinca minor* has “a pale white ring at its center. Special UV photography has revealed a much bolder ring, which would stand out to bees, as their eyes are very sensitive to the short wavelengths of UV light” (20).

Fruit Type and Description: The fruit is a non-fleshy follicle, approximately 2–2.5 cm long. It releases three to five seeds. It is rarely produced, but when it is, it grows upright on the stem (6, 7, 9, 15, 21).

Given how little is known about its sexual reproduction, vegetative reproduction seems more important for this species. It colonizes through rhizomes and produces adventitious roots (21).

Seed Description: The seed is glabrous, rough, and cylindrical. It is unwinged (7, 15, 16).

Dispersal Syndrome: The follicle is dehiscent, releasing the seeds upon splitting open (3). Although no literature was found on dispersal, the lack of hair or wings on the seed implies it falls straight to the ground.

Distinguished by: *V. minor* is distinguishable from *Lonicera caprifolium* and *Lonicera japonica* by the latex within its soft tissues, glabrous stems, and its fuller, rotate corolla (usually a deep purple) as opposed to the *Lonicera* spp. bilabiate pale purple, pink, yellow, or white corolla. If a fresh specimen is not available, the leaves or stems are good characters as well. Leaves of *L. caprifolium* are connate and *V. minor*’s are not. *L. japonica*’s stems are pubescent apically and sometimes woody nearer older growth, while the stems of *Vinca minor* are round and hollow.

V. minor is distinct from *Vincetoxicum* spp. by its matting form, larger flowers, and

glabrous petals.

Although its flower closely resembles both *Ipomoea* spp. and *Calystegia* spp., *V. minor*'s pin-wheeling petals, matting form, round, hollow, glabrous stems, and opposite leaf arrangement provide obvious differences. Furthermore, a close inspection of *Ipomoea* and *Calystegia* will reveal their petals fused in a cone, as opposed to the tube and separate petal structure of *Vinca*. *Calystegia* also often has large bracts covering its sepals.

It is distinguished from *V. major* by its smaller leaves and flowers, glabrous calyx, and matting habit. *V. minor* is also much hardier in cold temperatures (and more tender in heat).

Other members of the family in Michigan (number species): *Apocynum* (three species). In this information, I include Asclepiadaceae as a sub-family within Apocynaceae; doing so adds *Cynanchum* (two species) and *Asclepias* (twelve species) (3). *V. major* is also grown in gardens in Michigan, and was only recently reported as escaped from cultivation in Grand Traverse County (4, 22).

Ethnobotanical Uses: *V. minor* leaves are bitter, but useful. Crushed, they can be put on wounds as an astringent, or used to make a mouthwash for gingivitis and sore throat. When eaten, the leaves can be used to treat nosebleeds, internal bleeding, and heavy menstrual bleeding. They also contain the alkaloid vincamine which can be used to increase blood flow, as well as assist in chemotherapy. The roots can also be used to reduce blood pressure (10, 14).

Phylogenetic Information: Apocynaceae is in the Gentianales, within the class Magnoliopsida. Within the order, Asclepiadaceae is either a sub-family or the closest relative to Apocynaceae. Members in both families have similar alkaloids and are used to develop drugs for chemotherapy (14). Closely related beyond that is the Rubiaceae, a family well known for producing coffee, ipecac, and quinine. While Rubiaceae is composed mostly of shrubs or trees, its flower morphology and growth sequence is similar to that of Apocynaceae (17).

Interesting Quotation or Other Interesting Factoid not inserted above:

- *Vinca mino*r is intensely invasive, more so than other species in the genus because it is much hardier. It chokes natural vegetation by matting densely; when unable to twine, its long stems will usually only grow 7-15 cm off the ground forming a thick ground cover that excludes other species. It does, however, have a natural disease, stem blight (*Phoma exigua var. exigua*). This fungus kills new stems soon after spring growth (1, 2, 3).
- Most of *Vinca minor*'s common names are misleading. It is not a 'true' myrtle in the sense that it is not part of the Myrtle family (Myrtaceae). *Catharanthus roseus* also has the common name myrtle (also a false myrtle, and a member of the Apocynaceae) and the common name periwinkle. The two plants are very similar, both being members of Apocynaceae; however, *C. roseus* is only found in the southern United States, is semi-woody, and evergreen in tropical weather. *V. minor* is notably weaker in very warm weather, and its leaves tend to yellow in full sun and intense heat. *Catharanthus* is a false periwinkle as well; to be true, it would have to have been part of the *Vincapervinca* genus from which the name 'periwinkle' is derived (4, 15, 22).
- It is used for basket-weaving (10).

Literature and websites used:

1. Seymour, E.L.D., Ed. 1946. *The New Garden Encyclopedia*. New York, NY, USA: Wm. H. Wise & Co.
2. Wood, A. 1854. *Class-Book of Botany.* Claremont, New Hampshire, United States: Crocker and Brewster.

3. USDA Weed of the Week: Common Periwinkle. Last modified: February 2006. http://www.na.fs.fed.us/fhp/invasive_plants/weeds/
4. USDA, NRCS. The PLANTS Database. Last modified: November 2006. http://plants.usda.gov. National Plant Data Center, Baton Rouge, LA 70874-4490 USA.
5. Invasive Species. Last modified: July 2006. http://www.invasive.org/browse/subject.cfm?sub=3081
6. Iverson, L.R., D. Ketzner, & J. Karnes, Illinois Natural History Survey and USDA Forest Service. Illinois Plant Information Network. 1999 - 2006. http://www.fs.fed.us/ne/delaware/ilpin/ilpin.html
7. Western Australian Herbarium, Department of Environment and Conservation. FloraBase - The Western Australian Flora, 1998–2006. <http://florabase.calm.wa.gov.au/>
8. Brown, R.W. 1956. *Composition of Scientific Words*. Washington, D.C., USA: Smithsonian Institution Press.
9. The Missouri Botanical Garden's eFloras Plant Database, 1995-2006. http://www.efloras.org/
10. Plants For A Future, 1996-2003. Last modified: June 2004 http://www.pfaf.org/database/plants.php?*Vinca+minor*
11. The International Plants Name Index, 2004 – 2006. Last updated: December 2006. http://www.ipni.org/index.html
12. Tenaglia, D. Missouri Plants: *Vinca minor*, 2000 - 2006. Last modified: March 2003. http://www.missouriplants.com/Blueopp/*Vinca_minor*_page.html
13. Steere, W.C., ed. 1966. *Wild Flowers of the United States*, Volume Three. New York City, New York, USA: The New York Botanical Garden.
14. Conroy, T. 2002. Activity of vinorelbine in gastrointestinal cancers. *Critical reviews in oncology/hematology* 42(2): 173-178.
15. Fernald, M.L. 1950. Gray's Manual of Botany, 8th ed. New York, USA: American Book Co.
16. Voss, E.G. 2004. *Michigan Flora Volume III: Dicots Concluded.* Ann Arbor, Michigan, United States: University of Michigan.
17. Stevens, P.F. Angiosperm Phylogeny Website. Last modified: May 2006. http://www.mobot.org/MOBOT/research/APweb/
18. Gleason, H.A. 1963. *The New Britton and Brown Illustrated Flora of the Northeastern United States and Adjacent Canada.* New York, New York, USA: Hafner Publishing Co., Inc.
19. Gleason, H.A. & A. Cronquist 1991. *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*. Bronx, New York, USA: The New York Botanical Garden.
20. Bob Fulcher, *The Meaning of Flowers*. Tennessee Department of Environment and Conservation: Tennessee Conservationist Magazine. Last updated: May 2000. http://www.state.tn.us/environment/tn_consv/archive/flowers.htm
21. John Hilty. Illinois Wildflowers. Last updated: 2006. http://www.illinoiswildflowers.info/weeds/plants/periwinkle.htm
22. *Michigan Flora Online*. A.A. Reznicek, E.G. Voss, & B.S. Walters. February 2011. University of Michigan. Web. March 12, 2013. http://www.michiganflora.net/species.aspx?id=2839

Image Credits:

1) The habit image was downloaded from Flickr as part of a Collective Commons Agreement from ODuranDuran at http://www.flickr.com/photos/kmdphotos/2496958081/
2) The flower is copyright Don Herbison-Evans, from Flowering Plants in Australia http://australian-insects.com/lepidoptera/plants/

PRIMARY AUTHOR: ReBecca Sonday with edits and additions from Robyn J. Burnham

For additional information on Michigan Plant Diversity web pages please contact Robyn J. Burnham via email: rburnham“at”umich.edu