

Plant Diversity Website

Lathyrus ochroleucus Hook.

Common Names: Yellow vetchling, Cream vetchling, Wild-pea, Pale vetchling, Pale vetchling peavine (1,3,8)

Etymology: *Lathyrus* is derived from the Greek word *lathyros*, which means a legume. *Ochroleucus* is derived from the Greek words *ochros*, meaning pale-yellow, *leukos*, meaning white, and *osus*, meaning having the nature or quality of (5).

Botanical synonyms: *Lathyrus albidus* Eaton, *Lathyrus glaucifolius* Beck, *Orobis ochroleucus* (Hook.) A. Brown, *Lathyrus ochroleucus* Torr. (12,13)

FAMILY: Fabaceae (the pea family)

Quick Notable Features:

- Showy yellowish-white flowers in racemes
- Compound leaves with 3-5 pairs of leaflets
- Tendrils develop at the tip of leaf
- Slender, wingless stem

Plant Height: The plant generally grows up to 1 m (2,6).

Subspecies/varieties recognized: None found.

Most Likely Confused with: Among Fabaceae this can be confused with other species of *Lathyrus*, most species of the genus *Astragalus* (known as milk-vetch), species of *Pisum*, *Vicia*, *Amphicarpaea*, and *Wisteria*. In addition, it might be confused with the Ranunculaceae climber genus, *Clematis*.

Habitat Preference: Grows best in dry rocky woodlands, brushy ravines, stream valleys, and roadsides. It also prefers a sunny edged or slightly shaded area (1,2).

Geographic Distribution in Michigan: *L. ochroleucus* is scattered throughout the Upper and Lower Peninsula of Michigan, although it is mostly concentrated in the southeastern part of the state. In the Lower Peninsula it is found in the following counties: Alcona, Alpena, Bay, Berrien, Calhoun, Cheboygan, Gladwin, Gratiot, Hillsdale, Ingham, Ionia, Iosco, Isabella, Jackson, Kalamazoo, Kent, Lapeer, Leelanau, Livingston, Montcalm, Oakland, Osceola, Oscoda, St. Clair, St. Joseph, Tuscola, Van Buren, Washtenaw, and Wayne. In the Upper Peninsula, it is found in Alger, Bois Blanc Island, Delta, Drummond Island, Gogebic, Keweenaw, Isle Royale, Mackinac, Marquette, Menominee, and Ontonagon (14).



Known Elevational Distribution: Specific elevation restriction has not yet been found in the literature, but its occurrence decreases with increasing elevation (15).

Complete Geographic Distribution: Native to the United States and Canada, *Lathyrus ochroleucus* exists within the US in and to the north of the following states: Idaho, Wyoming, Nebraska, Iowa, Illinois, Indiana, Ohio, Pennsylvania, and New Jersey. It does not exist in the states northeast of Vermont and New York. In Canada, it is present from Quebec to British Columbia (2,12).

Vegetative Plant Description: *L. ochroleucus* is a perennial herb with a slender, wingless stem. The stem is somewhat angled and can be up to 80cm long. At the base of the stem, there are two large leafy stipules that are up to half the size of the leaflets. The petioles are 1-3cm long. The leaves are alternate and pinnately divided into 3-5 pairs of glabrous, oval to ovate leaflets. The leaflets range in size from 2-5cm long and 1-4 cm wide. Tendrils are found at the terminus of the leaf-tip. The roots of *L. ochroleucus* have nodules that contain bacteria, which can fix atmospheric nitrogen (1,6, 7,10,18).



Climbing Mechanism: *Lathyrus ochroleucus* climbs with tendrils that develop at the end of each compound leaf, replacing the terminal leaflet position. The tendrils can be branched or simple (11,19).

Flower Description: The inflorescences are racemes mostly with 5-10 perfect flowers (with both male and female organs), each 1-2cm long. The 5 sepals and 5 petals are yellowish-white and the flower is zygomorphic (1,4,18). The lateral calyx lobes are ovate. Stamens are 9+1 and the superior ovary bears a single carpel with a flat style that is pubescent on the inner surface (6).

Flowering Time: In Ohio, *L. ochroleucus* flowers from May to July (3). In Minnesota it was reported as starting to flower in early June (20).

Pollinator: Flowers are pollinated by insects, the type unspecified (2).

Fruit Type and Description: The fruit is a sessile,



glabrous legume, flat and long, measuring 4-5cm long and 4-6mm wide (1).

Seed Description: The seeds are olive to brown in color, smooth, and 3-3.5mm long (1).

Dispersal Syndrome: No information found.

Distinguished by: *Lathyrus ochroleucus* is distinguished from other *Lathyrus* species by its yellowish-white flowers. Most of the other species have flowers that are purple or pink. Additionally, *L. latifolius* has only 2 leaflets, compared to 6-10 in *L. ochroleucus*. The fruit of *L. odoratus* and *L. hirsutus* is pubescent, whereas the fruit of *L. ochroleucus* is glabrous. *L. ochroleucus* is distinguished from species of *Astragalus* because *L. ochroleucus* lacks hairs on the stem and fruit. Species of *Astragalus* usually have more than 10 leaflets, compared to 6-10 in *L. ochroleucus*. *L. ochroleucus* can be distinguished from species of *Clematis* since *Clematis* includes species that have opposite, compound leaves and lobed, coarsely toothed leaflets. The fruit of *Clematis* is a flat achene, arranged in a dense cluster, instead of a legume (4).

Members of the family in Michigan (number species): *Amorpha* (2), *Amphicarpaea* (1), *Anthyllis* (1), *Apios* (1), *Astragalus* (3), *Baptisia* (4), *Caragana* (1), *Cercis* (1), *Chamaecrista* (2), *Cladrasis* (1), *Colutea* (1), *Crotalaria* (1), *Cytisus* (1), *Dalea* (1), *Desmodium* (12), *Genista* (1), *Gleditsia* (1), *Glycine* (1), *Gymnocladus* (1), *Hedysarum* (1), *Kummerowia* (1), *Lathyrus* (9), *Lespedeza* (13), *Lotus* (1), *Lupinus* (2), *Melilotus* (2), *Mimosa* (1), *Orbexilum* (1), *Phaseolus* (2), *Pisum* (1), *Pueraria* (1), *Robinia* (3), *Securigera* (1), *Senna* (1), *Strophostyles* (1), *Tephrosia* (1), *Trifolium* (9), *Vicia* (8), *Vigna* (1), *Wisteria* (1) (8,14).

Ethnobotanical Uses: The plant has been used to treat stomach aches. The leaves and roots have been fed to ponies before races by Ojibew Indians into order to enhance the pony's spirit and make it livelier. The Ojibwe Indians also eat the seeds and roots (2,9).

Phylogenetic Information: Fabaceae belongs to the order Fabales, which is closely related to Fagales, Cucurbitales, and Rosales within the clade, Eurosids I. Within Fabaceae, *L. latifolius* belongs to the subfamily, Faboideae (also known as Papilionoideae). Members of this subfamily are characterized by the papilionaceous flowers. *L. latifolius* is included in the Fabaceous tribe Fabeae (also known as Vicieae and thus close to the genus *Vicia*) (12,16,17).

Interesting Quotation or Other Interesting Factoid not inserted above:

"Many plants of this genus [*Lathyrus*] are eaten by livestock and have been used successfully in various parts of the world. However, they are generally viewed with suspicion because some cause a type of poisoning called lathyrism, which results from eating too much vetchling seed over long periods of time. Epidemics of lathyrism date back to ancient Greece, but cases in humans usually occurred during famines when people were forced to eat vetchling almost exclusively. After 10 days to 4 weeks, this can cause progressive loss of coordination, ending in irreversible paralysis. Vetchling is not generally considered poisonous but these plants should be approached with caution" (11).

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- 2) Plants For a Future, 1996-2008.
<http://www.pfaf.org/database/plants.php?Lathyrus+ochroleucas> (1/14/10)
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- 10) <http://wisplants.uwsp.edu/scripts/detail.asp?SpCode=LATOCH> (1/20/10)
- 11) <http://www.borealforest.org/herbs/herb19.htm> (1/20/10)
- 12) ILDIS Legumes of the World <http://www.ildis.org/LegumeWeb/6.00/taxa/11474.shtml> (1/14/10)
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- 1) Images of flowers: <http://www.minnesotawildflowers.info/flower/cream-pea>
- 2) Images of leaves: <http://www.minnesotawildflowers.info/flower/cream-pea>
- 3) Flower close-up: Andy Fyon, ontariowildflower.com: <http://www.ontariowildflower.com>

PRIMARY AUTHORS: Andrea Friedmann, with edits by Robyn J. Burnham and Cristine V. Santanna

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