Proceedings of the Indiana Academy of Science
(1997) Volume 106 p. 329-332

THE REDISCOVERY OF *LATHYRUS OCHROLEUCUS* (LEGUMINOSAE) IN INDIANA

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ABSTRACT: The pale vetchling peavine (*Lathyrus ochroleucus*) has not been reported in Indiana since the late 1930's. Field reconnaissance by the Indiana Department of Natural Resources prior to 1993 located no live specimens of *L. ochroleucus* at the locations recorded by earlier botanists. *Lathyrus ochroleucus* was subsequently listed as extirpated in Indiana. In 1994, two small populations of *L. ochroleucus* were discovered growing in rural Steuben County, Indiana. These populations are thriving and reproducing. *Lathyrus ochroleucus* is worthy of being upgraded to endangered status in Indiana.

KEY WORDS: Extirpated, *Lathyrus ochroleucus*, rare plants, Steuben County, Indiana.

INTRODUCTION

Lathyrus ochroleucus Hook., pale vetchling peavine, is listed as an extirpated vascular plant species in Indiana (Indiana Department of Natural Resources, 1993). A rhizomatous, perennial herb, *L. ochroleucus* is a trailing or climbing vine with cream-colored, pea-like inflorescences. In the *Flora of Indiana*, Deam (1940, p. 618) described the habitat frequented by the species as follows: "Infrequent to rare in dry soil in black and white oak woods in the northern [Indiana] counties." In *Plants of the Chicago Region*, Swink and Wilhelm (1994, p. 443) note: "This species is rare in our area except in the timbered portions of the hill country in our northern sector. It usually occurs in the thin soil of dry oak woods, probably the quintessential vetchling of closed savannas northward."

The natural range of *Lathyrus ochroleucus* is from Quebec west to Mackenzie, British Columbia, and south to New Jersey, Illinois, Iowa, South Dakota, Wyoming, and Washington (Britton and Brown, 1970; Gleason and Conquist, 1991). The pale vetchling peavine reaches its southern limit in northern Indiana and is found in three States adjacent to Indiana. The plant is found along the Indiana border in Berrian, St. Joseph, and Hillsdale Counties in Michigan and northward into the Upper Peninsula (Voss, 1985). Swink and Wilhelm (1994) report that they have seen voucher specimens of *L. ochroleucus* from Berrian County in Michigan, Lake and McHenry Counties in northeastern Illinois, and Racine and Walworth Counties in southeastern Wisconsin. The vetchling is also reported in the literature (Swink and Wilhelm,1994) from Cook, DuPage, and Kane Counties in northeastern Illinois and from Porter and LaPorte Counties in northwestern Indiana (the authors have not seen voucher specimens from these

locations). The state-threatened *L. ochroleucus* is listed only from Williams and Lucus Counties in Ohio (Ohio Department of Natural Resources, 1984).

Historical records show that *Lathyrus ochroleucus* once lived in Porter, LaPorte, Kosciusko, Noble, DeKalb, LaGrange, and Steuben Counties in northern Indiana (Deam, 1940). Initially, *L. ochroleucus* was listed as a threatened plant species in Indiana (Bacone and Hedge, 1980). Since the plant had not been reported in Indiana since the late 1930's and had not been located during extensive field reconnaissance by the Indiana Department of Natural Resources in the early 1990's, *L. ochroleucus* was ultimately listed as extirpated in Indiana (Indiana Department of Natural Resources, 1993; Homoya, pers. comm). A random search by the senior author near his home in Steuben County, Indiana, revealed two small populations of *Lathyrus ochroleucus* in bloom in mid-May 1994.

The genus *Lathyrus* (Leguminosae) is closely related to the genus *Vicia* (Deam, 1940; Voss, 1985; Gleason and Conquist, 1991; Swink and Wilhelm, 1994). Both genera are composed of herbaceous, trailing or climbing vines with pea-like inflorescences and even-pinnate leaves ending in a tendril (Deam, 1940). In the field, the two genera are easily separated because *Lathyrus* has larger flowers, fewer and larger leaves, and larger stipules than *Vicia* (Newcomb, 1977). In addition, *Lathyrus* is pubescent along the entire length of its style, whereas *Vicia* is pubescent only at the summit (Deam, 1940; Voss, 1985). Within the genus, *Lathyrus ochroleucus* is distinguished from the other species by having: 1) more than two, ovate, glabrous leaflets (18-28 mm wide and 35-55 mm long); 2) obliquely-attached, semi-sagittate or semi-cordate, foliaceous stipules (10-20 mm broad); and 3) 2-12 flowered, peduncled, cream-colored inflorescences (Britton and Brown, 1970; Deam, 1940; Swink and Wilhelm, 1994; Voss, 1985; Gleason and Conquist, 1991). The fruit of *L. ochroleucus* is a sessile, glabrous, oblong-linear pod that is 2.5-5.0 cm in length (Britton and Brown, 1970).

A search by Indiana Department of Natural Resources, Division of Nature Preserves, of their element occurrence records indicated that Indiana botanists began to report *L. ochroleucus* in 1905 and that reports of the species ended in 1938. Several of the sites listed were revisited in 1979 and 1980. In every case, the habitat for the plant had been destroyed, and the species was not observed. Following its rediscovery in 1994, an extensive literature search, which was carried out in April 1995, revealed no other new accounts. The senior author's voucher specimen was confirmed by Michael Homoya (pers. comm.) and is deposited in the Indiana University Herbarium. An element occurrence record for *Lathyrus ochroleucus* was filed with the Indiana Department of Natural Resources, Division of Nature Preserves, by the author in June 1994.

The two small populations of *Lathyrus ochroleucus* are located on the well-drained, south-facing bank of a county road in central Steuben County, Indiana. The revegetated road cut is located within a steeply-sloped, Casco gravelly sandy loam soil unit (U.S. Department of Agriculture, 1981). Both sides of the east-west traversing road are lightly to moderately forested with mature

trees. The populations of *Lathyrus ochroleucus* are located within the edge of this dry forest community which is composed of both native and introduced vascular plant species. Canopy associate species include white oak (*Quercus alba*), red oak (*Q. rubra*), shagbark hickory (*Carya ovata*), and white ash (*Fraxinus americana*). Sub-canopy associate species include flowering dogwood (*Cornus florida*), sassafras (*Sassafras albidum*), mapleleaf viburnum (*Viburnum acerifolium*), and autumn olive (*Elaeagnus umbellata*). Herbaceous associates include but are not limited to pussy toes (*Antennaria plantaginifolia*), rue anemone (*Anemonella thalictroides*), Kentucky bluegrass (*Poa pratensis*), Canada bluegrass (*Poa compressa*), poverty oat grass (*Danthonium spicata*), Pennsylvania sedge (*Carex pensylvanica*), short-headed bracted sedge (*C. cephalophora*), smooth brome (*Bromus inermis*), heart-leaved aster (*Aster sagittifolius*), big-leaved aster (*A. macrophyllus*), round-lobed hepatica (*Hepatica americana*), woodland sunflower (*Helianthus divaricatus*), prairie phlox (*Phlox pilosa*), and Solomon's seal (*Polygonatum canaliculatum*).

Lathyrus ochroleucus bloomed for a period of approximately three weeks in middle to late May. Several of the plants produced fruit in mid to late June in both 1994 and 1995. In 1995, a high percentage of the maturing pods were consumed by white-tailed deer. The two small populations are located approximately 50 m apart at the top of the road embankment. The western plot had approximately 21 plants within an area of approximately 2.3 m^2. The eastern plot had approximately 57 plants within an area of approximately 27.0 m^2. The two populations are located within the standard 22.5-foot (6.9 meters) county-owned right-of-way but are beyond the normal limits of roadside mowers. Threats of extirpation to these populations of *Lathyrus ochroleucus* include changes in the habitat due to accumulation of oak leaf litter, shading by the exotic, invasive *Elaeagnus umbellata* sub-canopy species, browsing by the local deer population, and potential road widening. Given the location of these populations, the species may be able to withstand a limited amount of disturbance. However, open woods and savannas, the preferred habitat for *L. ochroleucus*, are declining in area across its normal range, due to development pressures and the suppression of fire (Swink and Wilhelm, 1994). Since *L. ochroleucus* has been rediscovered in Indiana, the species should be upgraded to endangered status.

ACKNOWLEDGMENTS

The authors wish to thank Mike Homoya for his encouragement as well as for his review and comments on this manuscript. Special thanks go to the senior author's grandmother, Elizabeth Felton Wilson, for instilling a desire in him to pursue amateur botany.

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