

An artificially disjunct population of coastal indigo, *Indigofera miniata* (Fabaceae), new to Missouri

CLAIRE CIAFRÉ¹

ABSTRACT. — *Indigofera miniata* is reported new to Missouri from a population discovered in Clark County. Identification features and potential establishment vectors are discussed.

Indigofera miniata Ortega, known as coastal indigo or scarlet pea, was found in a warm-season grass planting within Rose Pond Conservation Area in Clark County, Missouri. According to General Land Office notes written in 1820, the Rose Pond area had been part of a large marsh system surrounded by sand prairie. Given a long history of anthropogenic land use, however, there is no remnant sand prairie left in the area and the marsh is much reduced in size. The majority of Rose Pond area was purchased in 1983 by the Missouri Department of Conservation (MDC), ultimately resulting in the 382-acre conservation area (MDC 2015). The higher ground surrounding the extant marsh had been farmed, primarily with corn and soybeans, until acquisition. Since acquiring the land, MDC staff have planted warm-season grasses in some of the upland areas; these plantings are burned at approximate three-year intervals (K. Noel, MDC, personal communication).

On 9 July 2017, members of Missouri Native Plant Society visited Rose Pond to explore the extant marsh. On the hike in to the marsh, the author discovered a small population of an unknown legume. A voucher specimen was collected by the author and later identified as *I. miniata* by Justin Thomas. Six stems were present at this site, all growing within a 1 m² area in the southeast warm-season grass planting. Associated species included *Schizachyrium scoparium*, *Poa pratensis*, *Ambrosia psilostachya*, and *Heterotheca subaxilaris*.

One or two individuals were beginning to bloom on July 9. No developing seeds were observed at that time, nor during a follow-up visit by MDC Natural History Biologist Krista Noel the week of July 26. This is consistent with the phenology for the species in Oklahoma, where it is known to bloom from May to August (Folley 2011). It is likely that these specimens were visited too early in the growing season to observe seed formation, but it is unknown whether successful fruiting will occur this far north.

Voucher specimen: **U.S.A. MISSOURI: CLARK CO.:** Rose Pond Conservation Area, six stems present. WGS84 coordinates -91.506874, 40.33273, 9 July 2017, Ciafré 2 (MO).

¹ CLAIRE CIAFRÉ — NatureCITE: Center for Integrative Taxonomy and Ecology, 1530 E. Farm Road 96, Springfield, MO, 65803. email: cmciafre@gmail.com

Coastal indigo is a perennial that commonly grows in sandy soils and on sand dunes in the southern great plains (Contu 2012, Kartesz 2015). It can be distinguished from *Tephrosia virginiana* (L.) Pers. (goat's rue) and *Glycyrrhiza lepidota* Pursh (American licorice) using the following key adapted from the Keys to the Flora of Arkansas (Smith 1994, Yatskievych 2013):

- 1. Plants procumbent or prostrate to ascending; leaflets alternate, 5-7(-9)/leaf; fresh corolla purplish-red, ca. 8-9 mm long.....*Indigofera miniata*
- 1. Plants erect or ascending; leaflets opposite, ≥ 9 /leaf; fresh corolla mostly other colors and > 9 mm long
 - 2. Leaflets glandular-punctate.....*Glycyrrhiza lepidota*
 - 2. Leaflets not glandular-punctate.....*Tephrosia virginiana*

This species is known to occur in native grasslands and roadsides in southern Kansas, Oklahoma, eastern Texas, southwest Arkansas, Louisiana, southern Alabama, Georgia, and Florida (Great Plains Flora Association 1986, Kartesz 2015). This new population is more than 300 miles from the nearest record in Oklahoma (Kartesz 2015).

It is unlikely that this population is a native element of the region's flora. The unspecified sand-adapted variety of *S. scoparium* seed used by MDC at this site originated in Oklahoma, where coastal indigo often co-occurs with this grass. It is assumed that this seed was chosen because of its adaptation to the conditions at Rose Pond (Krista Noel, MDC, personal communication). Given the highly disturbed nature of the site and its distinct separation from other populations, introduction to the site via seed contamination is the most likely explanation. The restoration seed was planted in the late 1990s, so if this population did come from Oklahoma seed, it has persisted for at least fifteen years, but has not apparently spread extensively (K. Noel, MDC, personal communication).

This species is easily overlooked because of its procumbent habit. Most members of *Indigofera* disperse by way of explosive dehiscence, making long-distance movement difficult (Chauhan and Pandey, 2014). While it is unlikely to naturally spread to another site, it may do so via farm equipment, in hay, or in collected seed. Other sandy sites where Oklahoma seed sources have been utilized should also be identified and surveyed for this species. Botanists working in sandy soil along the Mississippi river corridor should also keep an eye out for this species.

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