

DISCOVERY OF *RHYNCHOSIA PRECATORIA* (FABACEAE) IN
EVERGLADES NATIONAL PARK, FLORIDA, U.S.A.

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ABSTRACT

The discovery of *Rhynchosia precatoria* DC in the eastern United States is reported. The population found in Everglades National Park, Miami-Dade County, Florida, represents a new addition to the flora of Florida and only the second report for the continental United States.

RESUMEN

El descubrimiento de *Rhynchosia precatoria* DC. en el este de Estados Unidos se reporta. La población se encuentra en el Parque Nacional de Everglades, el Condado de Miami-Dade, Florida, representa una nueva adición a la flora de la Florida.

While surveying for rare plants under a cooperative agreement between The Institute for Regional Conservation and the National Park Service as part of the Critical Ecosystem Studies Initiative (CESI), a species of *Rhynchosia* was verified to be *Rhynchosia precatoria* by Woodmansee and Sadle, who first observed it in February 2002 while visiting a rockland hammock on Long Pine Key, Everglades National Park. In addition to several seedlings, a large plant in flower was observed growing into the forest canopy. Plants were observed again by Woodmansee, Sadle, and National Park Service biologist Jonathan Taylor the following summer, but the plants were sterile. Woodmansee and Sadle observed plants at this station again in October 2003, as well as in an additional rockland hammock 2 km away. A partial fertile specimen was collected in February 2004 in the second hammock and identified as *Rhynchosia precatoria*. Within the two hammocks adult plants number approximately 20 individuals with more than 100 seedlings. The species appears to be well established at both sites based on the presence of multiple life stages and scattered distribution. After Hurricanes Katrina and Wilma, this species proliferated at one of the sites in areas where the forest canopy was damaged by one of the storms. Plants appear to persist in a seedling stage until a gap in the canopy is created. When this occurs, plants grow rapidly to the canopy level and begin to produce flowers and fruit.

Of the *Rhynchosia* species found in Florida (Wunderlin & Hansen 2003), *R. precatoria* (especially young plants) most closely resembles *Rhynchosia swartzii* (Vail) Urban. In Florida, *R. swartzii* is a rare species in light gaps of rockland hammocks in Miami-Dade County and the Florida Keys (Gann et al. 2002). Both *Rhynchosia* species have similarly shaped rhombic to ovate leaves possessing yellow glands. The essential distinguishing characteristic between the two is that *R. precatoria* seeds are distal to the point of funicular attachment, whereas *R. swartzii* seeds are central or sub-central. Additional differences occur in that *R. precatoria* leaflets are larger than 6 cm long and that it is a liana growing to 10 m high in the canopy. It is a vine with a flattened woody stem measuring to over 3 cm wide, and has seeds that are both red and black. *Rhynchosia swartzii* leaves are less than 6 cm long, grows to only a few meters in length, its stem is less than 1 cm wide, and it has seeds that are entirely red (Correll & Correll 1982; Grear 1978).

Rhynchosia precatoria is also very similar to *R. phaseoloides*, a species found in the Caribbean, South America and Southern Panama (Grear 1978). *Rhynchosia precatoria* lacks stipels, has flowers with pedicel length of 1–3mm and corolla length of 8–12mm while *R. phaseoloides* has setiform stipels and flowers with pedicels length of 0.5–1mm and corolla length of 7–8mm. Measurements of the original collection and a

subsequent collection indicate that the Florida plants are consistent with *R. precatoria* as described by Grear (1978).

Rhynchosia precatoria is also reported for extreme southern Arizona, the only other location in the continental United States (USDA, NRCS 2011). This species is reportedly cultivated in the United States (Grear 1978) and seeds are available for sale on the Internet. Cultivated plants of *R. precatoria* in South Florida are not known to the authors. It seems to be a relatively recent arrival to Florida, however, because it was not reported throughout the years, despite extensive exploration in this region by botanists including John Kunkel Small, Frank C. Craighead Sr., Lloyd L. Loope, and George N. Avery. The location of the two populations is fairly remote and within Everglades National Park, so it is conceivable that this species arrived on its own by natural means. South Florida has many elements in the flora with largely tropical distributions. However, virtually all of the tropical species have at least one occurrence in the West Indies, which *R. precatoria* does not. Obvious human impacts at both sites are relatively limited and the flora is dominated by native plant species. Brazilian-pepper (*Schinus terebinthifolius*), which is found in nearly all hammocks of Everglades National Park, is the primary invasive species found at the site where *R. precatoria* was discovered. Based on a lack of clear evidence to indicate the likely means of arrival of this species in Florida, the nativity of this species is considered by the authors to be unknown.

Voucher specimen: **FLORIDA. Miami-Dade Co.:** Everglades National Park, Long Pine Key, Palma Vista #2 Hammock, occasional in rock-land hammock, vining 4 m or more into the canopy within light gaps of tree falls, flowers yellow, seeds red and black, EVER-672, collected with Everglades National Park permit # EVER-2003-SCI-0084, it is presumed native, 10 Feb 2004, *Woodmansee 1366* (FTG).

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