

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract

Element Code: PMORC1R0Q0

Data Sensitivity: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Malaxis porphyrea* (Ridley) Kuntze

COMMON NAME: Purple Adder's mouth, Purple Malaxis, Cochise Adder's-mouth Orchid

SYNONYMS: *Microstylis porphyrea* Ridley, *Microstylis purpurea* S. Watson, *Malaxis ehrenbergii*

FAMILY: Orchidaceae

AUTHOR, PLACE OF PUBLICATION: *Malaxis porphyrea* (Ridley) Kuntze, Revisio Generum Plantarum 2: 673. 1891. *Microstylis porphyrea* Ridley, Journal of the Linnean Society, Botany 24: 320. 1888.

TYPE LOCALITY: United States of America, Arizona, Huachuca Mountains, Tanner Canyon

TYPE SPECIMEN: HT: GH-62181. J.G. Lemmon 2881 (under *Microstylis purpurea*), July 1882. IT: AMES.

TAXONOMIC UNIQUENESS: Species *porphyrea* is one of 11 species in the genus *Malaxis*. Four of these species, *porphyria*, *corymbosa*, *soulei* and *tenuis* are found in Arizona

DESCRIPTION: Herbaceous plant that grows from a swollen stem with a few fibrous roots; plants 16-45 cm (6.3-17.7 in) tall, pseudobulbs 5-10 mm in diameter. Leaves 1, within proximal 1/3 of stem; blade orbiculate-ovate or ovate-lanceolate, 4.1-8.5 x 0.2-0.45 cm, apex obtuse to acute. Inflorescences racemes, 6-25(-34) cm (2.4-10[-13.4] in); rachis slightly angled; floral bracts triangular to lanceolate, 1-2 x 0.5 mm, apex acute; pedicels not crowded, 2.5-5 mm. Flowers 16-133, resupinate, purple to deep maroon or greenish maroon in color. each flower 5 x 1.5 mm. Sepals glabrous, not papillose; dorsal sepal lanceolate, 1.8-2.5 x 0.5-1.2 mm, margins revolute, apex acute; lateral sepals lanceolate-elliptic, falcate, 1.8-3 x 0.6-1.2 mm, apex acute. Wispy petals are purple, linear to filiform, slightly falcate, 1.8-3 x 0.1-0.4 mm, apex obtuse, and strongly recurved, folding backwards to cross behind the ovary. Triangular to triangular-lanceolate shaped purple lip, with whitish yellow triangular ridge in center, 1.8-3 x 1.3-2 mm. The sepals, petals, and lip are covered with tiny papillae. The column is less than 1 mm high with two pairs of bright yellow pollinia. The capsule is ascending, ellipsoidal to almost spherical, 5 x 3 mm. (Coleman, 2002; Falk et al. 2001; FNA 1993+).

AIDS TO IDENTIFICATION: *Malaxis porphyrea* differs from *M. tenuis* by color and shape of flowers. *M. porphyrea* has purple flowers while *M. tenuis* has green. In addition, the shape of lip and lateral sepals, and general appearance of inflorescence is also different. (Falk et al., 2001).

Malaxis porphyrea and *M. wendtii* (Wendt's adder's-mouth orchid) can be separated using the following criteria: The sepals of *M. wendtii* are papillose while the sepals of *M. porphyrea* are essentially glabrous, although they have prominent cell structures that may appear to be very small papillae; the lip of *M. wendtii* is linear to linear-lanceolate with a narrowly acuminate apex, and the auricles at the base of the lip are broad and diverging, while the lip of *M. porphyrea* is nearly triangular to triangular-lanceolate with a broadly acuminate apex, and the auricles at the base of the lip are narrow and nearly parallel. Also, *M. wendtii* has a denser inflorescence and the flowers are not quite as intensely colored as in *M. porphyrea*. (R.A. Coleman, W. Jennings, pers. comm., in FNA 1993+).

ILLUSTRATIONS: B&W line drawing (Falk et al., 2001).
Color photos of plant and habitat (Falk et al., 2001).
Color photos of plant and parts (Coleman, 2002: plate 18).
B&W line drawing (North American Native Orchid Alliance, 1997: p. 334).
Line drawing (in FNA 1993+, at <http://www.efloras.org/>)

TOTAL RANGE: Arizona, New Mexico, Texas, and northern Mexico.

RANGE WITHIN ARIZONA: It is found in Apache, Cochise, Coconino, Pima, and Santa Cruz counties. Although it appears to skip Graham and Greenlee counties, it most likely is in both of these counties, but has not yet been documented there. More specifically, it is found on the Mogollon Rim, White Mountains, Chiricahua Mountains, Huachuca Mountains, Santa Rita Mountains, Rincon and Santa Catalina Mountains.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Perennial forb/herb.

PHENOLOGY: Flowers to mid July to early September. Grows from a swollen rhizome that develops into a cornlike structure with a few fibrous roots. The aboveground growth starts about the beginning of July with the onset of the monsoon rains. Usually first blooming occurs in late July, and the plants stay in bloom through August and into September in years when the rains arrive late. The rate of fruit set is very low. The few plants that fruit, produce only one or two capsules per plant.

BIOLOGY:

HABITAT: Mixed conifer forest. Most commonly found near slightly damp, mossy or grassy places in slightly open forest areas. FNA (1993+), reports “Open coniferous and mixed forests on dry slopes.”

ELEVATION: 6,920 to 9,200 ft (2110-2806 m).

EXPOSURE: Not specified.

SUBSTRATE: Rich organic litter humus.

PLANT COMMUNITY: Mixed conifer forest of Douglas fir, White fir, Ponderosa pine, and Southwestern white pine. *Malaxis porphyrea* blooms near *M. abieticola* (slender-flowered adder’s-mouth orchid), *M. corymbosa* (Huachuca Mountain adder’s-mouth), *M. soulei* (= *M. macrostachya*, Chiricahua adder’s-mouth orchid), *Goodyera oblongifolia* (giant rattlesnake-plantain), and *Platanthera limosa* (Thurber’s bog orchid). Earlier in the year *Schiedeella arizonica* (Indian-braids) blooms nearby, as does *Corallorhiza maculata* (spotted coralroot), *C. striata* (striped coralroot), and *C. wisteriana* (spring coralroot). (Coleman, 2002).

POPULATION HISTORY AND TRENDS: This species is widely scattered in both Arizona and New Mexico, and exists in large colonies in a few locations. Sometimes it is locally common. There are 17 known occurrences in Arizona, and was recently re-documented from Saguaro National Monument (the Rincon Mountains). It is highly susceptible to disturbance. For example, “campers digging in a meadow destroyed a major colony in the Chiricahua Mountains of Cochise County, Arizona, during 1999. (Coleman, 2002).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None

STATE STATUS: Salvage Restricted (ARS, ANPL 1999)

OTHER STATUS: None

MANAGEMENT FACTORS: Highly susceptible to disturbance such as recreation, development, logging, and mining.

PROTECTIVE MEASURES TAKEN: *M. porphyria* is listed as Salvage Restricted under the Arizona Native Plant Laws. It has no other special status designations. Populations within the Fort Huachuca Military Reservation and Saguaro National Monument have some additional protection and some other populations (both in Arizona and New Mexico) occur in designated wilderness areas and are therefore protected from development, logging and mining (Coleman 2002).

SUGGESTED PROJECTS: Known occurrences on the Mogollon Rim, and many of the collections in the Santa Rita and Huachuca mountains have not been re-documented for many decades. These sites should be revisited to determine if the species is still extant.

LAND MANAGEMENT/OWNERSHIP: DOD – Fort Huachuca Military Reservation; USFS – Apache-Sitgreaves, Coconino, and Coronado National Forests; USNPS – Saguaro National Monument; and Private.

SOURCES OF FURTHER INFORMATION

REFERENCES:

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION:

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