ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract **Element Code:** PMORC1C050
Data Sensitivity: YES

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Hexalectris warnockii*
COMMON NAME: Texas Purple Spike, Texas Crested Coralroot
SYNONYMS:
FAMILY: Orchidaceae

AUTHOR, PLACE OF PUBLICATION: Ames and Correll, Botanical Museum Leaflets 11(1): 8. 1943.

TYPE LOCALITY: Blue Creek Canyon, Chisos Mountains, Brewster County, Texas.

TYPE SPECIMEN: Warnock, B. H. (#2597).

TAXONOMIC UNIQUENESS: There are 9 species in the genus *Hexalectris*, 4 of which occur in Arizona.

DESCRIPTION: Perennial saprophyte from slender rhizome, with erect, leafless dark-reddish stem up to 30.0 cm (1.0 ft.) tall. Inflorescence of up to 7 **rich reddish purple flowers (distinctive characteristic)**, no green. Sepals and petals deep purple or maroon, 1.5-2.0 cm (0.6-0.8 in.) long). Dorsal sepal 17.0 mm (0.68 in.) long and 3.0 mm (0.12 in.) wide. Petals oblanceolate to linear-spatulate; lip (lowest) white with 3 lobes, broadly oval, 14.0 mm (0.56 in.) long and wide, lateral lobes pale pink (Correll and Johnston 1970 state "veined with purple"). Capsules 1.5 cm (0.6 in.) long and 0.5 cm (0.2 in.) wide. Coleman (1999), reports "sepals and petals purple; lip, three lobed, lateral lobes curl upwards, mostly purple from heavy veining, central lobe white with five ridges down the center crested with yellow, apex with purple spot and wavy margins."

AIDS TO IDENTIFICATION: *Hexalectris warnockii* flowers later than all other *Hexalectris* species in Arizona. *H. warnockii* differs from *H. spicata* in having fewer flowers per spike (less than 8) and with the lip crests scalloped and more or less divided. *Corallorhiza wisteriana* is about the same height, but flowers are much smaller, lip is entire and without ridges; and blooms earlier in late spring and early summer (Coleman 1999).

ILLUSTRATIONS:
B&W photos of plant in habitat (Luer, 1975: figs.1-3, p.274).
B&W photos of flower (Luer, 1975: figs.4-5, p.274).
Color photos (M. Wilson, SEINet)

TOTAL RANGE: Western Texas (Chisos and Davis mountains; Fern Canyon near Alpine; and 75 miles west of Austin), New Mexico, southeastern Arizona, Coahuila, Sonora and Baja California, Mexico (Catling 2004). An observation uploaded to iNaturalist from 2019 also puts this species in Monterrey, Mexico, which is a range expansion in Mexico (iNaturalist 2020).

RANGE WITHIN ARIZONA: Cochise County: Chiricahua Mountains, Rhyolite Canyon, Chiricahua National Monument (for a long time, this was sole site); Mule Mountains (Wentworth 1982, Catling 2004); and two sites in the Huachuca Mountains (Oversite and McClure Canyons). The Mule Mountain locality is based on a photograph (slide) confirmed by Ron Coleman, sent to him by Wentworth (Wentworth 1982, Baker 2003, Catling 2004, SEINet 2020).

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Herbaceous Perennial

PHENOLOGY: Spikes emerge in late July to early August; flowers open in early to mid-August. Individual plants usually do not bloom in successive years (Coleman 1999).

BIOLOGY: Like other members within *Hexalectris*, *H. warnockii* is fully mycoheterotrophic. For most of the year, the plant is underground, only emerging aboveground in the form of a flowering spike. Kennedy and Watson showed that *H. warnockii* is a morphologically distinct lineage within *Hexalectris* (2010), and, as is the emergent pattern with fully mycoheterotrophic plants, *H. warnockii* associates strictly with fungal members of Thelephoraceae (other members within this genus associate with other fungal families) (Kennedy et al. 2011). Floral morphology also sets *H. warnockii* apart from all other members of *Hexalectris.*

HABITAT: In humus beneath rocks and fallen oaks along streambeds.

ELEVATION: 5,000 - 7,000 feet (1525 - 2135 m).

EXPOSURE: Shady canyon bottoms up to slope in oak-mixed conifer leaf litter.

SUBSTRATE: Rich humus soil. Quartzite in Oversight Canyon, McClure Canyon probably quartzite also (Warren 1994).

PLANT COMMUNITY: Mixed oak woodland. Forest cover is mostly silverleaf oak with some pines, madrones, and manzanita (Coleman 1999).

POPULATION TRENDS: Unknown. The plants that were observed in 1992 on the Coronado National Forest have not been seen during subsequent searches from 1995 through 1999

(Coleman 2002). The IUCN lists this species as globally Endangered, with less than 250 individuals worldwide (Goedeke et al. 2015).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1996)
[Category 2 (USDI, FWS 1993)]

STATE STATUS: Highly Safeguarded (ARS, ANPL accessed 2011)
[Highly Safeguarded (ARS, ANPL 1993)]

OTHER STATUS: Forest Service Sensitive (USDA, FS Region 3 2013)
[Forest Service Sensitive (USDA, FS Region 3 1999, 2007)]
Bureau of Land Management Sensitive (USDI, BLM AZ 2017)
[Bureau of Land Management Sensitive (USDI, BLM AZ 2005, 2008, 2010)]

MANAGEMENT FACTORS: Protect from collection. Protect from maintenance activities at Chiricahua National Monument (one site next to management headquarters). Probably not of concern to BLM. This plant found at higher elevations in leaf litter. Coleman stated that this species is "one of the most difficult of southwestern orchids to see", which may lend to its patchy distribution (2002). Fruit set is also rare in this species.

PROTECTIVE MEASURES: One of the four localities in Arizona is within the Chiricahua National Monument, and another is on Fort Huachuca; this offers some protection to the plants located there.

SUGGESTED PROJECTS: Survey and monitor known populations to determine status. Survey locality on Coronado National Forest as it was not found between 1995 and 1999 (Coleman 2002). Get information about Texas populations. Targeted surveys within southern Arizona may yield new localities, as has been the case for *H. colemanii* and *H. arizonica*.

LAND MANAGEMENT/OWNERSHIP: BLM - Tucson Field Office; DOD Fort Huachuca Military Reservation; NPS - Chiricahua National Monument; USFS - Coronado National Forest.

SOURCES OF FURTHER INFORMATION

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ADDITIONAL INFORMATION:

Revised: 1991-10-30 (PLW)
1991-11-13 (SR)
1994-12-14 (DBI)
1998-01-08 (SSS)
1998-12-04(DJG)
2001-12-21 (SMS)
2020-08-07 (TME)

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