

**ARIZONA GAME AND FISH DEPARTMENT  
HERITAGE DATA MANAGEMENT SYSTEM**

**Plant Abstract**

**Element Code:** PDNYC05040

**Data Sensitivity:** No

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Anulocaulis leiosolenus*  
**COMMON NAME:** Ringstem  
**SYNONYMS:** *Boerhaavia nummularia*  
**FAMILY:** Nyctaginaceae

**AUTHOR, PLACE OF PUBLICATION:** Torrey. 1909. Contributions to the U.S. National Herbarium 12:375.

**TYPE LOCALITY:** Great Cañon of the Rio Grande.

**TYPE SPECIMEN:** GH!

**TAXONOMIC UNIQUENESS:** About thirty genera in Nyctaginaceae world-wide with 11 or 12 of these within North America. *Anulocaulis* has five species (all with chromosome number  $n = 24$ ) occurring from southern Coahuila in Mexico to southeastern California in the United States. *A. leiosolenus* further divided into *A. leiosolenus* var. *leiosolenus* and *A. lasianthus* based on differences in aspects of the inflorescence and perianth (Spellenberg 1993).

**DESCRIPTION:** Perennial herb with erect branching stems 60.0-100.0 cm (23.6-39.4 in.) tall from a thick, tuberous root. Leaves opposite, thick, broadly oval to kidney-shaped, 3.0-15.0 cm (1.2-6.0 in.) long and 3.0-12.0 cm (1.2-4.75 in.) wide, heart-shaped at base, gray-green in color, margins lacerate or toothed. Flower stalk with numerous branches, leafless. Flowers solitary or clustered in axils of scales at nodes of stem, yellow-green, 2.5-3.0 cm (1.0-1.2 in.) long. Fruits 5.0-6.0 mm (0.20-0.25 in.) long, with longitudinal ribs and a wing encircling the middle. Perianths large, without villous hairs on the tube. Anthocarps heavily ridged, wrinkled; secrete mucilage when wetted (Spellenberg 1993).

**AIDS TO IDENTIFICATION:**

**ILLUSTRATIONS:** Line drawings of anthocarp (Spellenberg 1993:375)  
Line drawing of perianth (Spellenberg 1993:377)

**TOTAL RANGE:** Western Texas to central Arizona and southern Nevada

**RANGE WITHIN ARIZONA:** Havasu Canyon, Coconino County; Detrital Wash, Yavapai County; Camp Verde, Yavapai County and Mohave County.

### **SPECIES BIOLOGY AND POPULATION TRENDS**

**GROWTH FORM:** Herbaceous perennial

**PHENOLOGY:** July - October (August-November in Texas)

**BIOLOGY:**

**HABITAT:** Between gypsum outcrops, alkaline soils, in open shrubby areas; xeromorphic desert shrub, gypsum dunes shrubland.

**ELEVATION:** 3000-4000 ft

**EXPOSURE:**

**SUBSTRATE:** Gypsum, limestone, calcareous

**PLANT COMMUNITY:** Creosotebush desertscrub

**POPULATION TRENDS:**

### **SPECIES PROTECTION AND CONSERVATION**

**ENDANGERED SPECIES ACT STATUS:**

**STATE STATUS:**

**OTHER STATUS:**

**MANAGEMENT FACTORS:** Gypsum mining in the Verde Valley may threaten some populations. Also grazing and housing development.

**PROTECTIVE MEASURES TAKEN:**

**SUGGESTED PROJECTS:** Land conservation and active management.

**LAND MANAGEMENT/OWNERSHIP:**

**SOURCES OF FURTHER INFORMATION****LITERATURE CITATIONS:**

- Arizona Natural Heritage Program. 1981. *Anulocaulis leiosolenus* (Ringstem). US Forest Service Contract Report.
- Correll, D.S. and M.C. Johnston. 1970. Manual of the vascular plants of Texas. Texas Research Foundation, Renner, Texas. p. 593.
- Kearney, T.H. and R.H. Peebles. 1960. Arizona flora (with supplement). University of California Press, Berkeley. p. 277.
- Lehr, J.H. 1978. A catalogue of the flora of Arizona. Desert Botanical Garden, Phoenix, Arizona. p.48.
- Martin, W.C. and C.R. Hutchins. 1980. A flora of New Mexico. J. Cramer, Germany. pp. 667-668.
- McDougall, W.B. 1973. Seed plants of northern Arizona. The Museum of Northern Arizona, Flagstaff. p.160.
- Spellenberg, R. 1993. Taxonomy of *Anulocaulis*. SIDA 15(3):373-389.

**MAJOR KNOWLEDGEABLE INDIVIDUALS:**

- R. Spellenberg - New Mexico State University, Las Cruces.
- T.R. Van Devender - Sonoran Desert Museum, Tucson, Arizona.

**ADDITIONAL INFORMATION:**

- R. Spellenberg: Arizona, Nevada population rather small but individuals common; a (obligate?) gypsophile.
- T.R. Van Devender: Plants were pioneering disturbed gypsum areas.

**Revised:** 1992-12-10 (DBI)  
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