

LYCORIS SQUAMIGERA (AMARYLLIDACEAE) NEW TO THE ARKANSAS FLORA

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ABSTRACT

Lycoris squamigera Maxim., a native of Asia, is reported here as naturalized in the Arkansas flora. About 16 naturalized plants of *L. squamigera* are reported from Garland and Pulaski counties, growing in highly disturbed habitats. Photographs of both species of *Lycoris* that occur in the state's flora, including voucher specimens of *L. squamigera*, and notes on the genus *Lycoris* in Arkansas, are provided.

In 2006 and 2007, two naturalized occurrences of *Lycoris squamigera* Maxim. (resurrection lily) were documented from highly disturbed habitats in Garland and Pulaski counties (Fig. 1). No apparent evidence of cultivation was observed, and no home sites were in the vicinity of the naturalized plants. The discovery of *L. squamigera* adds a second species of *Lycoris* to the state's naturalized flora, as *L. radiata* (L'Hér) Herb. (surprise lily, red spider lily) previously has been documented from the state (Gentry et al. 2013). *Lycoris squamigera* is a bulbaceous perennial native to China, possibly also Japan and Korea (Bailey & Bailey 1976; Hsu et al. 1994; Ji & Meerow 2000; Fig. 2). This species is grown in the southern USA, including Arkansas, as an ornamental for its large, showy, fragrant flowers and ease of cultivation. *Lycoris squamigera* has been reported previously as a component of the naturalized floras of Alabama, Ohio, and Tennessee, thus our records from Arkansas apparently represent only the fourth documented occurrence of this species outside of cultivation in the USA (Kartesz 2015; Keener et al. 2017; USDA, NRCS 2017).

Voucher specimens. **Arkansas.** **Garland Co.:** About a dozen plants growing in disturbed pine–oak forest on ridge and valley, 4 mi S of Lonsdale and 6 mi N of Magnet Cove, edge of county, N side of Spanish Mountain, T2S R17W S34, 3 Mar 2007, *Peck 07-103* (HEND); about a dozen plants growing in disturbed pine–oak forest on ridge and valley, plants in flower, 4 mi S of Lonsdale and 6 mi N of Magnet Cove, edge of county, N side of Spanish Mountain, T2S R17W S34, 5 Aug 2006, *Peck 06-071* (HEND). **Pulaski Co.:** Four plants growing on dry slope along ARK 10, W of Little Rock, S of Lake Maumelle, T3N R19W S36, 21 Apr 2007, *Peck 07-352* (HEND).

The two species of *Lycoris* present in the Arkansas flora may reliably be distinguished with the following key.

1. Perianth segments red; leaves less than 1 cm wide **Lycoris radiata**
1. Perianth segments pale pink to lavender–pink, the tips of the segments often tinged with lavender or purple coloration; leaves 1.5 cm wide or wider **Lycoris squamigera**



Figure 1. A–B. Specimens of naturalized plants of *Lycoris squamigera* from Garland and Pulaski counties. A. Specimen from Pulaski County. B. Specimen from Garland County.

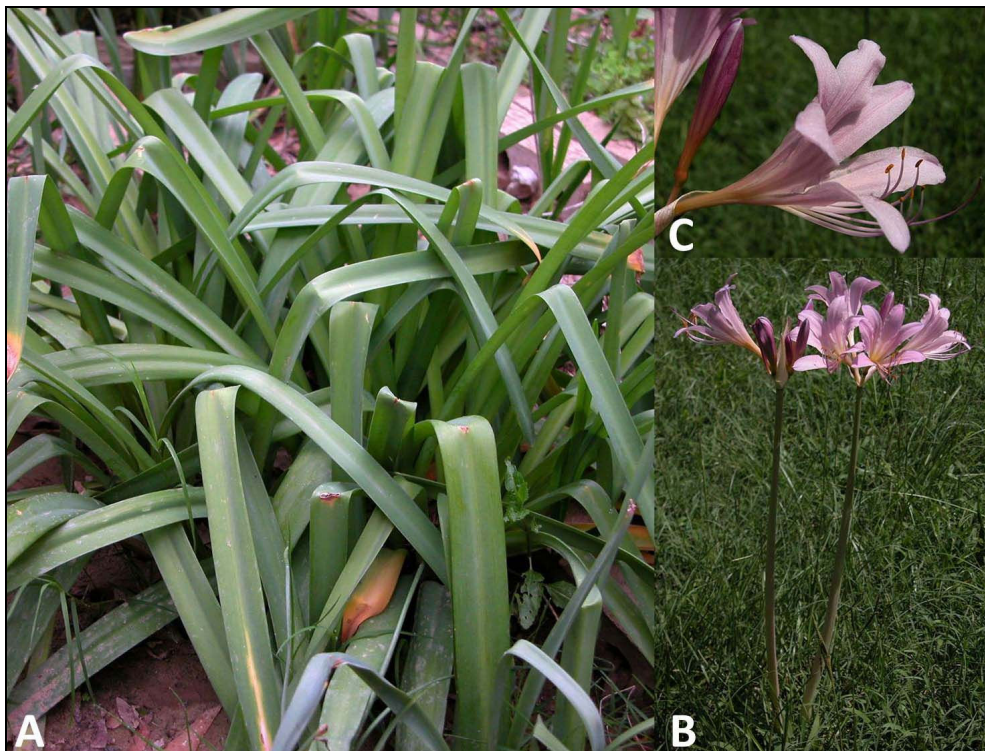


Figure 2. *Lycoris squamigera*. A. Leaves. B. Scapose inflorescences – notice no leaves are present during flowering. Leaves are produced during late winter and spring, followed by flowers in mid to late summer after leaf senescence. C. Close-up view of flower.

Both species of *Lycoris* are relatively common in cultivation in Arkansas; however, *L. radiata*, a bulbaceous perennial native to China, Japan, Korea, and Nepal (Hsu et al. 1994; Ji & Meerow 2000), is more frequently encountered as naturalized and persisting from cultivation in the state (Figs. 3–4). At present, it has been documented from three Arkansas counties (Gentry et al. 2013); however, based on our observations is likely much more widespread in the state’s flora than current records indicate. *Lycoris radiata* is typically observed in open, disturbed sites, waste places, fields, and lawns, but also on embankments, slopes, ravines, stream sides, and woods, where presumably water and/or gravity has facilitated dispersal of bulbs and/or possibly seeds for establishment of naturalized plants. The flowers of *L. radiata* are frequented by certain species of butterflies, such as the cloudless sulfur (*Phoebis sennae* — Fig. 5A). Plants multiply and presumably spread asexually via bulblets; however, it is unclear as to whether establishment by seed occurs in Arkansas plants. Fertile diploid and sterile triploid forms of *L. radiata* exist and are nearly identical morphologically (Hsu et al. 1994; Ji & Meerow 2000).



Figure 3. *Lycoris radiata*. A. Leaves. B Scapose inflorescences; the leaves in *L. radiata* follow a similar pattern to those of *L. squamigera*, with the exception of appearing soon after flowering, during mid to late autumn. C. Close-up of flower.



Figure 4. A–B. Naturalized *Lycoris radiata* in Clark Co., Arkansas. A. Plants of *L. radiata* growing on lower bank of small, intermittent stream; a portion of the streambed may be seen in the right one-third of the photograph. B. *Lycoris radiata* on a steep slope of a wooded ravine in Clark County. Several clumps of naturalized *L. radiata* plants, similar to that shown in the photograph, were present at this location.



Figure 5. A. Cultivated plants of *Lycoris radiata* in Arkansas, where two male cloudless sulfur butterflies (*Phoebis sennae*) may be seen foraging on the flowers. B. Long-persistent plant of *L. squamigera* from Hot Springs National Park in Garland County, growing at an old, remnant home site (photo credit: Brook Olsen).

In Arkansas, *L. squamigera* often is long-persistent following cultivation, which at times may give the plant the appearance of naturalization (Fig. 5B). Establishment of *L. squamigera* in Arkansas, and elsewhere, may be limited to bulblets, as apparently it is sexually sterile and possibly of interspecific hybrid origin (Kurita 1988; Hsu et al. 1994; Howard 2001), although Ji and Meerow (2000) treated it as a species, without any apparent reference to hybrid status. A combination of anthropogenic and natural processes may facilitate dispersal of bulblets, similar to the mechanisms proposed by Serviss et al. (2016) that have undoubtedly contributed to establishment of a number of sterile, hybrid taxa of *Narcissus* in the state.

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