

## ***ABELIA* (CAPRIFOLIACEAE) IN THE ARKANSAS FLORA**

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### **ABSTRACT**

*Abelia X grandiflora* is reported here as occurring outside of cultivation in Arkansas. Escaped plants are documented from three counties: Conway, Garland, and Pulaski. The Garland County plants could possibly have been persistent from cultivation, although they appeared escaped. Photographs of the *Abelia* voucher specimens are provided, along with notes on *Abelia* and the morphologically similar species *Kolkwitzia amabilis*, in Arkansas.

Three records of escaped plants (one possibly long-persistent from cultivation) of *Abelia X grandiflora* (Rovelli ex André) Rehd. (glossy abelia) are documented from Conway, Garland, and Pulaski counties (Figs. 2–4) in Arkansas. This taxon has not previously been documented from outside of cultivation in the state (Arkansas Vascular Flora Committee 2006; Gentry et al. 2013). This also is the first documented occurrence of the genus *Abelia* in the Arkansas flora.

**Voucher specimens. Arkansas.** Conway Co.: Along Cedar Creek, T6N, R18W, NW portion of S33, 1 Nov 1986, *Watson 1091* (HEND). Garland Co.: Hot Springs National Park, off Sleepy Valley Rd. immediately E of intersection of Sleepy Valley Rd. and Gulpha Gorge Rd., a few, large plants persisting from prior cultivation, highly disturbed habitat of old residential area being reclaimed by the National Park Service, plants with flowers, many persistent and naturalized exotics, 18 Jul 2017, *Serviss 8578A* (HEND); N of Magnet Cove, edge of county, pine-oak forest, N side of Spanish Mountain, T2S, R17W, S34, a few plants, possibly persisting from cultivation but appeared escaped, no houses in the vicinity, many exotics, 5 Aug 2006, *Peck 06-115* (HEND). Pulaski Co.: Vicinity of Henderson Junior High, weedy greenbelt area behind school, near drainage ditch, 14 Sep 1990, *Schosser 9044* (HEND).

*Abelia X grandiflora* is a semi-evergreen shrub to 2.5 m tall, of interspecific hybrid origin between *A. chinensis* R. Brown and *A. uniflora* R. Brown (Bailey & Bailey 1976; Krüssmann 1976; Rehder 1990; Yang et al. 2011; Fig. 1A–E). It is grown for its showy, usually fragrant flowers and attractive, arching growth form. *Abelia X grandiflora* frequently is cultivated in the southern USA, including Arkansas, and previously has been reported as a component of the naturalized floras of Alabama, Arizona, Florida, Georgia, Mississippi, North Carolina, and Texas (Diamond & Woods 2009; Wunderlin & Hansen 2011; Poindexter 2013; Kartesz 2015; Weakley 2015; Keener et al. 2018; USDA, NRCS 2018).

Apparently, under natural conditions, *Abelia* species generally do not establish populations via vegetative/clonal growth and viable seed production is typically low (Landrein et al. 2017), which also has been the observation (of the authors) with Arkansas material. The origin of the escaped *Abelia* plants in Arkansas is unknown; however, establishment from horticultural discards, or possibly from seeds, seems plausible — in the horticultural trade, *Abelia* is commonly propagated through stem cuttings, and adventitious rooting of stem discards could give rise to escaped plants. Because of

its apparent limited ability to establish naturalized populations in the southern USA (Weakley 2015) and long-time and frequent use in landscaping, persistence from cultivation cannot unequivocally be excluded as the origin of at least some of the Arkansas plants. In Arkansas (Serviss 8578A) and elsewhere, *A. X grandiflora* sometimes is observed as persistent from cultivation but with the appearance of naturalization. The site for the Garland County specimen (Peck 06-115) at one time had a house in the vicinity, but it burned down during the 1930s. No other houses are present near the site. Plants at this location could have been persisting from cultivation but appearing as escaped. *A. X grandiflora* plants from the sites in Conway and Pulaski counties apparently were present as escapes—the source of their origin, however, is unknown.

Much natural and horticultural variation, produced through a combination of hybridization and introgression among taxa, exists within the genus *Abelia* (Landrein et al. 2017). Taxa of *Abelia* are often difficult to identify and species boundaries, at least in certain instances, are blurred (Landrein et al. 2017). A number of horticultural varieties and forms exist for *A. X grandiflora*, and this taxon has been used repetitively in hybridization and introgression with other *Abelia* species to produce a variety of additional cultivars (Krüssmann 1976; Yang et al. 2011; Landrein et al. 2017). The literature indicates that *A. X grandiflora* is of hybrid origin between *A. chinensis* and *A. uniflora*; however, molecular studies conducted by Landrein et al. (2017) indicate the parental taxa of *A. X grandiflora* are equivocal, with *A. macrotera* (Graebn. and Buchw.) Rehd., rather than *A. chinensis*, the other possible parental taxon (*A. macrotera X A. uniflora*) for this hybrid. As a result, precise

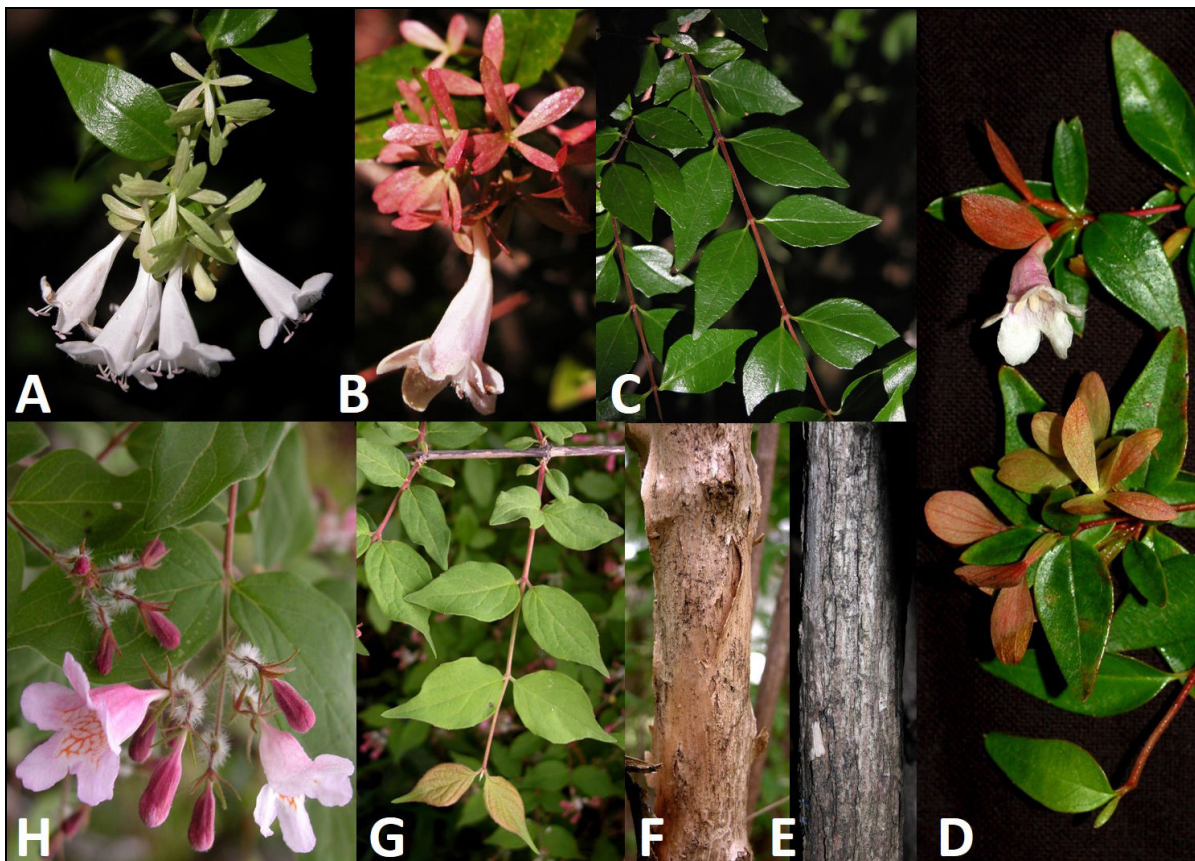


Figure 1. *Abelia X grandiflora* and *Kolkwitzia amabilis* for comparison (from cultivated plants in Arkansas). (A-E) *Abelia X grandiflora*: (A-B) Flowers (notice the red-colored sepals on Fig. B, which is typical post-anthesis). (C) Leaves and stem. (D) Plant with somewhat wider sepals than those shown in Figs. A and B (photo credit: Renn Tumilson). (E) Mature bark. (F-H) *Kolkwitzia amabilis*: (F) Mature bark. (G) Leaves and stem. (H) Flowers (notice the conspicuous, bristly-hirsute trichomes on the pedicels and ovaries).



Figure 2. Voucher specimen of *Abelia x grandiflora* from Conway Co., Arkansas (photo credit: Heather May). The plant was present as an escape along Cedar Creek. Notice the wide corollas, seemingly wider than observed for some *A. x grandiflora*, including the specimens from Garland and Pulaski counties. The sepals, which are more typical for *A. x grandiflora*, are narrowly lanceolate to oblong, and variable in number, from 2–5 per flower.

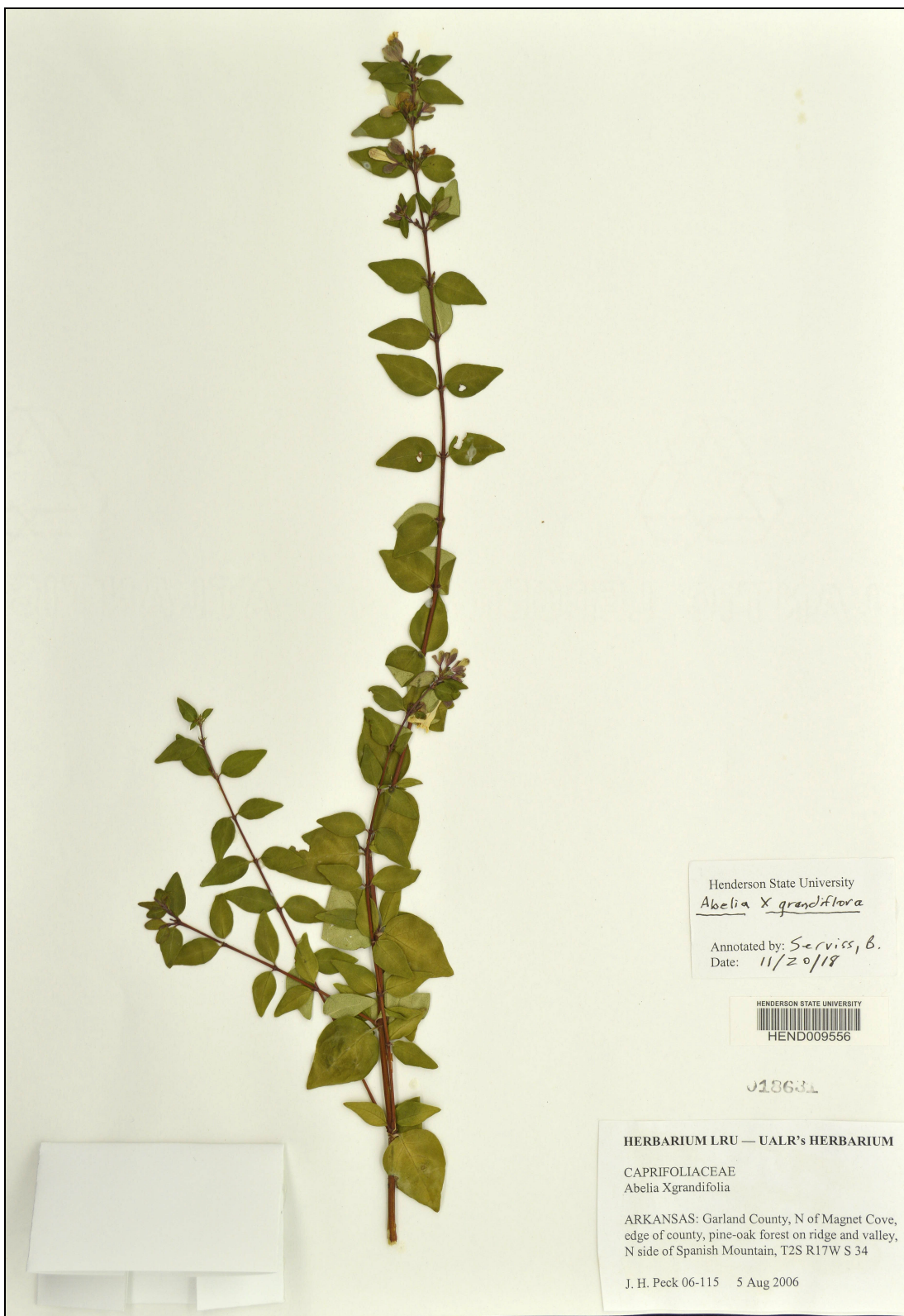


Figure 3. Voucher specimen of *Abelia X grandiflora* from Garland Co., Arkansas (photo credit: Heather May). Plants apparently were escaped at this site, or if persistent from cultivation, had the appearance of naturalization. Although the specimen only has a few flowers present, each flower has only two sepals that are elliptic in shape.

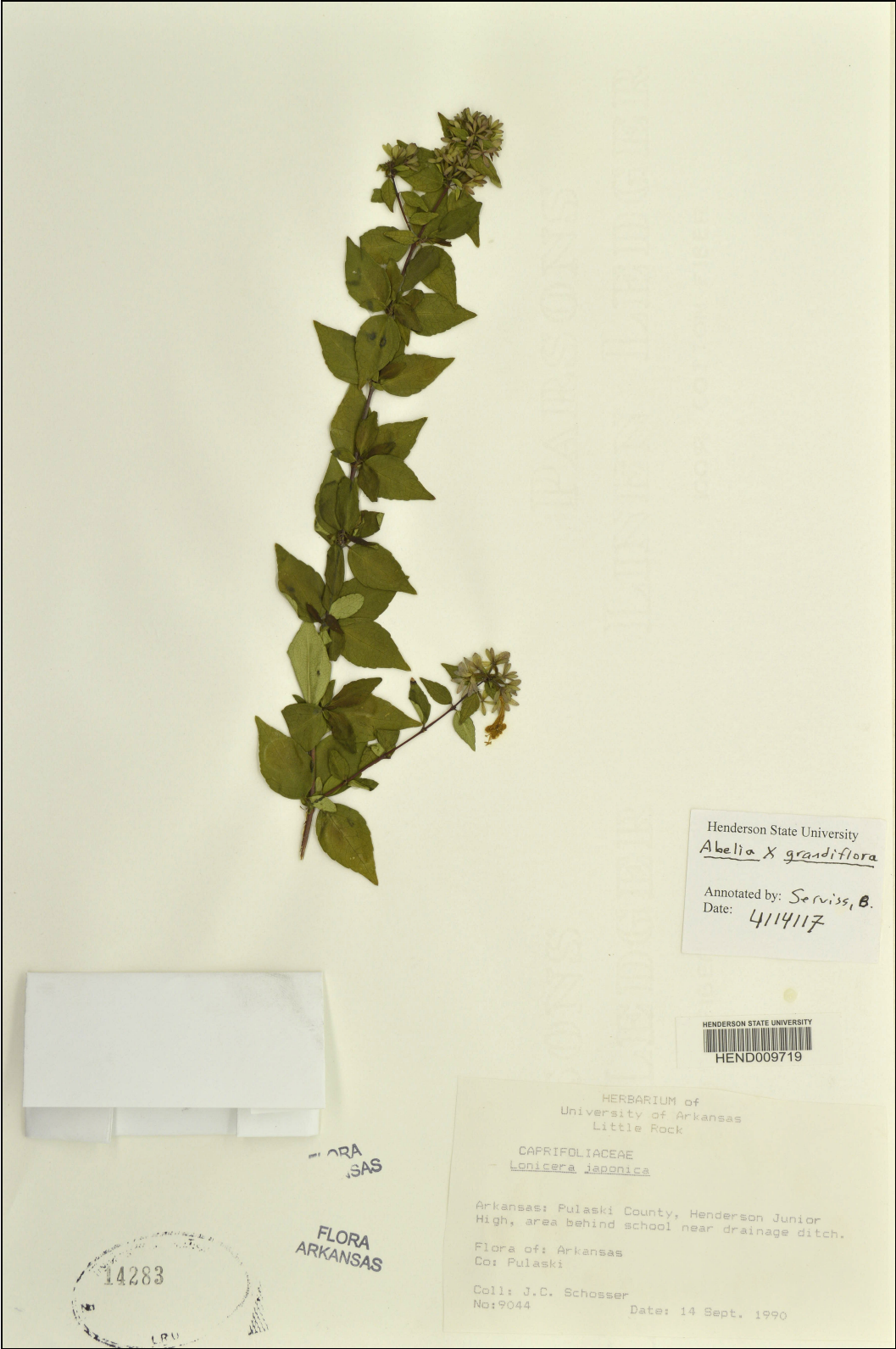


Figure 4. Voucher specimen of *Abelia x grandiflora* from Pulaski Co., Arkansas (photo credit: Heather May). The plant was present in an urban greenbelt in Little Rock.

identification of cultivated or escaped plants of *Abelia* may be difficult. The plants documented here appear to fit reasonably well within the morphological boundaries of *A. X grandiflora*.

The *Abelia X grandiflora* specimen from Conway County (Fig. 2) has large flowers (corollas 20-21 mm long and nearly as wide, with some pink coloration, but with the typically narrow sepals that vary in number from 2 to 5 per flower. The Garland County specimen (Fig. 3) appears to fall within the range of characteristics for *A. X grandiflora*, but the flowers have only two sepals, which are elliptic in shape and wider than the lanceolate to oblong sepals often present on specimens of *A. X grandiflora*. Similar plants to the Garland County specimen are cultivated on the Henderson campus and possess elliptic sepals that number from 2 (most common condition) to 4 per flower on the same plant.

*Kolkwitzia amabilis* Graebn. (beauty bush) is morphologically similar to *Abelia X grandiflora* (see comparisons in Fig. 1). It is a deciduous shrub to 2.5 m tall, native to China (Bailey & Bailey 1976; Krüssmann 1976; Yang et al. 2011) and also cultivated in Arkansas (Fig. 1F–H). It has been observed in Arkansas by the authors (and others) as persistent from cultivation, appearing as possibly escaped (*Serviss* 8565, HEND; *Baker* 10-0056, ANHC, HEND). Although not currently known outside of cultivation in Arkansas, *K. amabilis* has been documented from the naturalized floras of a number of other states (Kartesz 2015; Weakley 2015; USDA, NRCS 2018). A key to the two species is provided here.

1. Flowers with corolla white to pinkish-white, sepals 2–5 per flower, even on same plant; pedicels, ovaries, and fruits glabrous to pubescent but not densely bristly-hirsute; leaves pubescent only on the abaxial (lower) surface ..... **Abelia X grandiflora**
1. Flowers with corolla pale to dark pink, sepals 5; pedicels, ovaries, and fruits densely bristly-hirsute; leaves pubescent on both surfaces ..... **Kolkwitzia amabilis**

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#### LITERATURE CITED

- Arkansas Vascular Flora Committee. 2006. Checklist of the Vascular Plants of Arkansas. Arkansas Vascular Flora Committee, Fayetteville.
- Bailey, L.H. and E.Z. Bailey. 1976. Hortus Third. A Concise Dictionary of Plants Cultivated in the United States and Canada. Vol. 2. MacMillan.
- Diamond, A.R. and M. Woods. 2009. Noteworthy collections: Alabama. *Castanea* 74: 440–443.
- Gentry, J.L., G.P. Johnson, B.T. Baker, C.T. Witsell, and J.D. Ogle. 2016. Atlas of the Vascular Plants of Arkansas. Vascular Flora Project, Univ. of Arkansas, Fayetteville.
- Kartesz, J.T. 2015. Taxonomic Data Center. The Biota of North America Program (BONAP). Chapel Hill, North Carolina. <<http://www.bonap.org/index.html>> Accessed November 2018.
- Keener, B.R., A.R. Diamond, L.J. Davenport, P.G. Davison, S.L. Ginzburg, C.J. Hansen, C.S. Major, D.D. Spaulding, J.K. Triplett, and M. Woods. 2018. Alabama Plant Atlas. [S.M. Landry and K.N. Campbell (original application development), Florida Center for Community Design and Research. University of South Florida]. Univ. of West Alabama, Livingston.
- Krüssmann, G. 1976 (1984). Manual of Cultivated Broad-Leaved Trees and Shrubs. Vol. 1. Timber Press, Portland, Oregon.

- Landrein, S., S. Buerki, H-F. Wang, and J.J. Clarkson. 2017. Untangling the reticulate history of species complexes and horticultural breeds in *Abelia* (Caprifoliaceae). *Ann. Bot.* 120: 257–269.
- Poindexter, D.B. 2013. Vascular flora and plant communities of Alleghany County, North Carolina. *J. Bot. Res. Inst. Texas* 7: 529–574.
- Rehder, A. 1990. Manual of Cultivated Trees and Shrubs Hardy in North America. Sec. Ed., Revised and Enlarged, in T.R. Dudley (ed.). Biosystematics, Floristic, and Phylogeny Series, Vol. 1. Dioscorides Press, Portland, Oregon.
- USDA, NRCS. 2018. The PLANTS Database. National Plant Data Team, Greensboro, North Carolina. <<http://plants.usda.gov/java/>> Accessed November 2018.
- Weakley, A.S. 2015. Flora of the Southern and Mid–Atlantic States. Working draft of 21 May 2015. Univ. of North Carolina Herbarium (NCU), Chapel Hill. <<http://www.herbarium.unc.edu/flora.htm>> Accessed November 2018.
- Wunderlin, R.P. and B.F. Hansen. 2011. Guide to the Vascular Plants of Florida. Third Edition. Univ. Press of Florida, Gainesville.
- Yang, Q., S. Landrein, J. Osborne, and R. Borosova. 2011. *Abelia*. Pp. 644–645, in Z.Y. Wu and P.H. Raven (eds.). *Flora of China*, Vol. 19 (Cucurbitaceae through Valerianaceae, with Annonaceae and Berberidaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis.