

EUPHORBIA HETEROPHYLLA (EUPHORBIACEAE)
IN SOUTH CAROLINA, NORTH CAROLINA, AND VIRGINIA, U.S.A.

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ABSTRACT

Euphorbia heterophylla (Euphorbiaceae) is found persistent well north of its current native range. New records are reported and diagnostic characteristics are discussed, including distinction from *E. cyathophora*, to which the name was previously misapplied.

RESUMEN

Euphorbia heterophylla (Euphorbiaceae) se encuentra persistente bastante más al norte de su área nativa normal. Se aportan nuevas citas y se discuten características diagnósticas, incluyendo la distinción de *E. cyathophora*, a la que previamente se le había aplicado mal el nombre.

Euphorbia heterophylla L. (Euphorbiaceae) is an herbaceous annual, distributed from South America to southern North America (e.g., Berry et al. 1999; Jørgensen & León-Yáñez 1999; Stevens et al. 2001; Weakley 2015). The name was previously misapplied by Radford et al. (1968) to a taxon exhibiting deeply lobed bracteal leaves (at least in the Carolinas) and presently referred to *E. cyathophora* Murray (e.g., Stevens et al. 2001; Weakley 2015). *Euphorbia heterophylla* can be distinguished from *E. cyathophora* by the following character states: (1) cyathial gland with a circular opening (Fig. 1D vs. elongated elliptical opening in *E. cyathophora*), (2) bracteal leaves that are paler green than stem leaves, with or without purple-spots (Fig. 1C vs. strongly demarcated red or green base in *E. cyathophora*), and (3) angular seeds with a small caruncle and pronounced longitudinal dorsal ridge, but lacking a distinct transverse tubercular ridge near the middle (vs. cylindrical seeds lacking both a caruncle and longitudinal dorsal ridge, but with a distinct transverse tubercular ridge near the middle in *E. cyathophora*; Fig. 2.) (Long & Lakela 1976; Small 1933; Weakley 2015). *Euphorbia heterophylla* was previously reported in the southeastern United States only from Florida, Georgia, Alabama, Mississippi, and Louisiana (Small 1933; Weakley 2015; USDA, NRCS 2017). The taxon has not been reported for South Carolina, North Carolina, or Virginia by USDA, NRCS (2017) or Weakley (2015). However, this fall, a densely growing population of about 500 stems was found in a city park in Raleigh, in the Piedmont of North Carolina. The individuals ranged in size from 5 to 150 cm in height. The infestation was spreading outward from a partially shaded untended bed. The population's origin was likely associated with landscaping, as the bed contained ornamentals and decaying mulch. A survey of nearby city parks found no other populations. A follow-up search of previous collections in the SERNEC portal (<http://sernecportal.org>) revealed additional unreported specimens from adjoining states. One of these came from a population in Norfolk, Virginia (*Rebecca White s.n.*, NCU!, [3 Dec 1990]), and bears a label indicating a population in a shaded garden persistent for many years prior to the collection. The other specimen was taken from populations in Florence (*L. Swails s.n.*, FMUH!, [22 July 1985]). In follow-up conversations, Mark Mayfield (KSC) noted the existence of additional specimens from South Carolina, which we confirm: Colleton County, *Robert Folk s.n.*, USCH!, [9 Oct, 2013], Florence County, *Duncan Tyson s.n.*, USCH!, [3 Sept 2014]), and Sumter County, *John Nelson 34565*, USCH!, [12 Sept 2015]. The species appears to be occurring widely on the South Carolina coastal plain (M. Mayfield, pers. comm.). The persistence of a population as far north as Virginia demonstrates the ability of the species to grow well north of its current natural range and the potential for human-mediated northward range extension. We here add to the records cited above the new North Carolina collection:

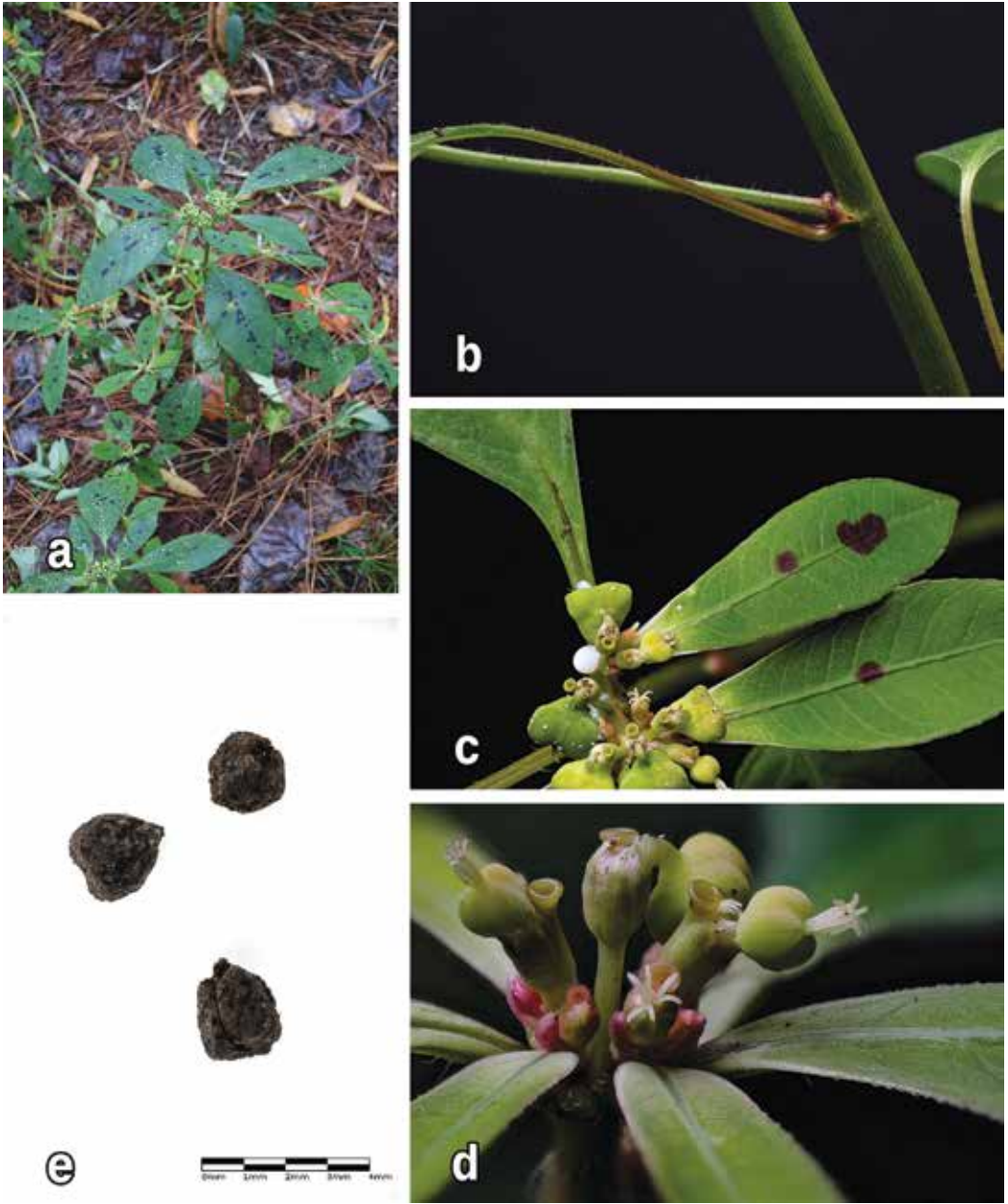


FIG. 1. Morphology of *Euphorbia heterophylla*: **A.** Habit; **B.** Leaf axil; **C.** Pleiochasia of several cyathia; **D.** Detail of several dichasia of cyathia (an older dichasium in the rear and two younger, reddish-tinged cyathia in the foreground); note the round gland opening on the rim of the cyathia; **E.** Seeds. Photos from Isabella Cannon Park, Raleigh: A–D. Suchoff; E. S. Smith.

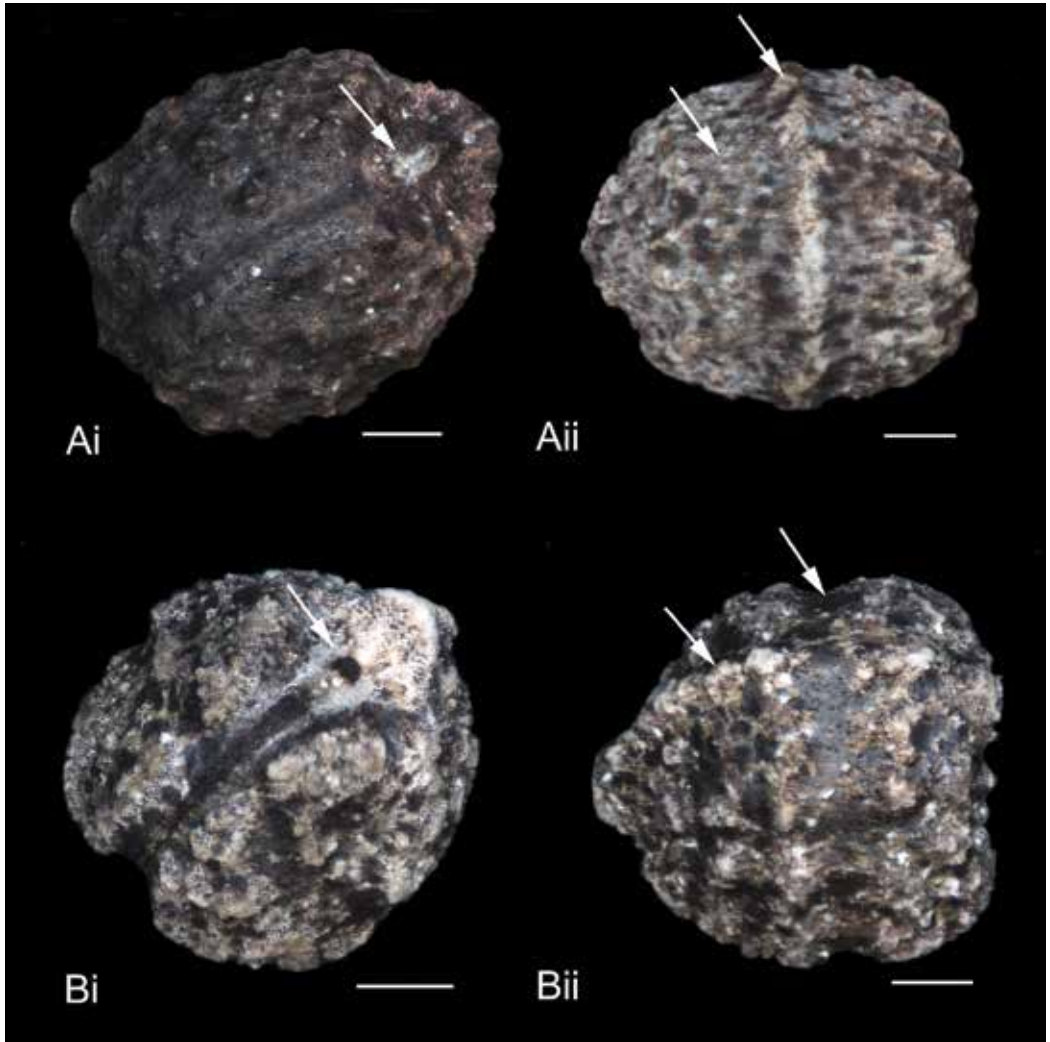


FIG. 2. Seeds of *Euphorbia cyathophora* (A) and *E. heterophylla* (B): **Ai**, Ventral view, note absence of caruncle (arrowed); **Aii**, Dorsal view, note transverse, tubercular ridge at near medial position (rightmost arrow) and lack of dorsal, longitudinal, tubercular ridge (leftmost arrow). **Bi**, Ventral view, note minute, black caruncle (arrowed); **Bii**, Dorsal view, note relatively broad, non-tubercular band at near medial position (rightmost arrow), as well as pronounced dorsal, longitudinal, tubercular ridge (leftmost arrow). Ai based on *Nelson 28712* [SC](USCH); Aii based on *Nelson 27967* [SC](USCH); B based on *Anderson 9896* [FL](USCH). Scale bars = 0.5 mm.

Voucher specimen: U.S.A. NORTH CAROLINA. Wake Co.: Raleigh, Isabella Cannon Park, partially shaded, untended landscape bed, 35.79325°, -78.66997°, 112 m elev., 24 Oct 2017 (fl, fr), *Stephen Smith s.n.* (NCSC).

ACKNOWLEDGMENTS

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