

**FIRST REPORT OF *EUPHORBIA HYPERICIFOLIA* (EUPHORBIACEAE)
FOR NEW YORK STATE**

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ABSTRACT

Euphorbia hypericifolia L. is documented from New York state for the first time, representing a northward range extension for the species in North America. A key to the identification of *Euphorbia* subg. *Chamaesyce* sect. *Anisophyllum* of New York City is included.

In late July 2018, the second author (EL) observed a member of *Euphorbia* subg. *Chamaesyce* sect. *Anisophyllum* growing under a mature hedge of yew (*Taxus baccata*) on the Upper West Side of Manhattan (New York County) and posted the observation to iNaturalist. After reviewing that observation and a later observation of the same plant in flower and fruit, the third author (NT) identified the plant as *Euphorbia hypericifolia* L. In late August, herbarium specimens were prepared from the Manhattan population and identified by DA and EL. In October, a second population was documented growing along a fence in Bronx County, New York, and identified by DA and NT (Figs. 1 and 2). The presence of two spontaneous populations from areas that have not been recently disturbed or planted suggest that the plants are persistent and naturalized in New York City.

Under natural conditions sect. *Anisophyllum* are found in habitats such as gravel bars, rock outcrops, barrens, glades, alvars, and sand dunes. They may be early successional in these habitats or form part of the climax community. In urban areas such as New York City, they are very common in sidewalk cracks, vacant lots, garden beds, and other open, disturbed areas. Most species produce abundant small seeds with a layer of mucilage that becomes sticky when wet, facilitating transport by humans and animals (Jordan & Hayden 1992).

Euphorbia hypericifolia is native to the American tropics and is likely adventive in the USA (Steinman et al. 2016). It is introduced to Asia and the Pacific Islands (Steinman et al. 2016). It has previously been reported east of the Mississippi from Louisiana, Alabama, Florida, Georgia, South Carolina, and Maryland but not New York state (USDA, NRCS 2018; Werier 2017; Steinman et al. 2016; Weakley 2015; Shetler & Orli 2000).

Voucher specimens. USA. New York. New York Co.: New York City, Manhattan, 165 West End Avenue, between 66th and 70th Streets, 40.777044, -73.98671 (WGS 84, ±10m), ca 15 m elev., 29 Aug 2018, *Atha, Levine, & Kreilick 16039* (NY). **Bronx Co.:** New York City, grounds of the New York Botanical Garden, NW of the Enid A. Haupt Conservatory, 40.864573, -73.882556 (WGS 84, ±5m), ca 33 m elev., 1 Oct 2018, *Atha 16043* (NY).

Key to *Euphorbia* subg. *Chamaesyce* sect. *Anisophyllum* of New York City

- 1. Plants glabrous.
 - 2. Leaves linear or oblong, entire; stipules filiform; exclusively on maritime beaches ***Euphorbia polygonifolia***
 - 2. Leaves oblong, elliptic or orbicular, toothed or sub-entire; stipules triangular; widespread.
 - 3. Plants prostrate, often rooting at the nodes; leaves elliptic or orbicular; stipules appressed ***Euphorbia serpens***
 - 3. Plants erect; leaves oblong; stipules spreading ***Euphorbia hypericifolia***
- 1. Plants pubescent.
 - 4. Plants typically with a primary erect or ascending stem; stem pubescence an indistinct longitudinal line of hairs; fruits glabrous ***Euphorbia nutans***
 - 4. Plants typically with many branching, prostrate stems from the base; stem pubescence evenly distributed; fruits pubescent or glabrous.
 - 5. Stem hairs typically appressed, curved; largest leaves to 1 cm long; fruits 1.0–1.3 mm long, conspicuously pubescent; seed coat reddish brown ***Euphorbia maculata***
 - 5. Stem hairs typically spreading, \pm straight; largest leaves \geq 1 cm long; fruits ca 1.5 mm long, glabrous; seed coat black ***Euphorbia vermiculata***



Figure 1. *Euphorbia hypericifolia*, whole plant, Bronx County, New York (Atha 16043, NY).



Figure 2. *Euphorbia hypericifolia*, close up showing glabrous stems, leaves, and fruits and spreading triangular stipules (Atha 16043, NY).

Euphorbia hypericifolia is now known from New York and Bronx counties, New York, and probably occurs elsewhere in New York City and perhaps also the Northeast. Prior to this publication four species in sect. *Anisophyllum* were reported for New York City: *E. polygonifolia*, *E. maculata*, *E. nutans*, and *E. vermiculata* (Atha & Boom 2018). An additional species, *E. serpens*, was reported from the Bronx as a ballast plant and nearby in Nassau County (Lamont et al. 2014). It has recently been observed in Kings County, New York, as part of the Newtown Creek Alliance and Hudsonia plant survey of Newtown Creek (<https://www.inaturalist.org/observations/14347860>), suggesting the species is indeed persistent and naturalized in the region.

Of the species currently known from New York City, *Euphorbia hypericifolia* is most like *E. nutans* in gross morphology. These are the only two species of the section in our area that are erect-ascending with relatively large oblong leaves, but *E. nutans* has less prominent, appressed stipules, minutely hairy stems, leaves usually with a few long hairs near the base and sometimes over the adaxial surface, cyathia not held in dense glomerules, and larger seeds. Another upright or ascending species with relatively large leaves is *E. hyssopifolia*. It is a Tropical American species that may also be native to the southern USA north to South Carolina (Steinman et al. 2016). The species has recently been observed from Richmond, Virginia (<https://www.inaturalist.org/observations/16259840>), and identified by photo but it should be vouchered and verified from specimens, especially with seed. With the warming climate, northward migration of the species and the flow of goods and people into New York City, it is probably only a matter of time before *E. hyssopifolia* is found in the New York City area.

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LITERATURE CITED

- Atha, D. and B. Boom. 2018. State of New York City's Plants 2018. Center for Conservation Strategy. The New York Botanical Garden, Bronx.
- Jordan, M.S. and W.J. Hayden. 1992. A survey of mucilaginous testa in *Chamaesyce*. *Collectanea Bot.* 21: 79–89.
- Lamont, E.E., D. Werier and S.D. Glenn. 2014. Noteworthy plants reported from the Torrey Range – 2011 and 2012. *J. Torrey Bot. Soc.* 141: 95–108.
- Shetler, S.G and S.S Orli. 2000. Annotated Checklist of the Vascular Plants of the Washington - Baltimore Area, Part I, Ferns, Fern Allies, Gymnosperms, and Dicotyledons. Department of Botany, National Museum of Natural History, Smithsonian Institution, Washington, DC.
- Steinmann, V.W., J.J. Morawetz, P.E. Berry, J.A. Peirson, and Y. Yang. 2016. *Euphorbia* Linnaeus sect. *Anisophyllum*. Pp. 251–293, in *Flora of North America*, Vol. 11. Oxford Univ. Press, New York and Oxford.
- USDA, NRCS. 2017. The PLANTS Database National Plant Data Team, Greensboro, North Carolina. <<https://plants.usda.gov/core/profile?symbol=RUCR2>> Accessed 1 October 2018.
- Weakley, A.S. 2015. Flora of the Southern and Mid-Atlantic States, working draft of May 2015. Univ. of North Carolina Herbarium, North Carolina Botanical Garden, Chapel Hill.
- Werier, D. 2017. Catalogue of the vascular plants of New York State. *Mem. Torrey Bot. Soc.* 27: 1–542.