

The first Missouri occurrences of *Cerastium dubium* (anomalous mouse-eared chickweed)

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ABSTRACT. – *Cerastium dubium* is reported new to the Missouri flora from two counties in eastern Missouri. A detailed description is provided based on local populations.

Cerastium dubium (Bastard) Guépin (= *Cerastium anomalum* Waldst. & Kit. ex Willd.; *Stellaria dubia* Bastard; *Dichodon viscidum* (M. Bieb.) Holub – see Tropicos.org) is a Eurasian member of the Caryophyllaceae. Commonly called anomalous mouse-eared chickweed, three-styled chickweed, or doubtful chickweed, its first reported appearance in North America was in Washington state in 1966 (Hitchcock and Cronquist 1973). Since then, the plant has been discovered in Illinois (Shildneck and Jones 1986), and is now known from scattered populations in several states bordering Missouri: Illinois, Kentucky, Tennessee, Arkansas, and Kansas. Yatskievych (2006) discusses *C. dubium* and mentions that although the species had not been reported in Missouri, its arrival is anticipated. According to Yatskievych, the plant generally resembles *C. nutans* or *C. brachypodum*, but with the unique characters of three styles and a straight capsule with 6 apical teeth at dehiscence.

In March of 2012, while rototilling a garden plot at his residence near Labadie, in Franklin County, Missouri, the first author discovered a small population of plants unfamiliar to him, growing with *Lamium amplexicaule* and *Stellaria media*. The flowers of this plant were somewhat showier than the common *Stellaria*, with wider and less deeply cleft petals. The centers of the flowers were bright yellow due to anthers and profusely shed pollen. The plants appeared to belong to the genus *Cerastium*, having cylindrical fruits which were at that time immature. However, the very narrow leaves of the plants were unlike the more common Missouri species of *Cerastium*. Application of the keys in Mohlenbrock (2002) led to the tentative identification of *Cerastium dubium*. A few days later, mature fruits were found in a dehiscent state, with the capsule opening via 6 apical teeth, and this character, along with the three styles in the flowers, strongly supported the identification. This is the first report for *C. dubium* in Missouri.

The population comprised an estimated 24-48 individuals, and appeared to be persistent, having been observed in most subsequent years through 2017. During this short period the size of the population remained relatively constant. In 2016, the first author discovered much larger populations on private property about 1.3 km east and northeast of the original site. One of these

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populations, comprising thousands of plants, lies in the Labadie Bottoms, which in late December 2015 was inundated with Missouri River floodwaters.

In early March 2016, while driving along some fallow agricultural fields in New Madrid County, Missouri, the second author spotted an unfamiliar plant that was later confirmed to be *C. dubium*. Subsequently, it was collected in similar habitats in Mississippi and Scott counties. *Cerastium dubium* is a winter annual that completes most of its life cycle before fields are worked in the spring. It was very common at all locations and likely to occur in similar habitats (alluvial fields along large rivers) throughout the Bootheel.

Figure 1 provides detailed images of the species. Specimen images are available online through the Missouri Botanical Garden's database at www.tropicos.org. All voucher specimens are deposited at the Missouri Botanical Garden (MO). A detailed species description from *Flora of North America* may be found at <http://www.efloras.org/>.



Figure 1. *Cerastium dubium*, Franklin County, Missouri. **A:** older plant showing cespitose growth form; **B:** inflorescence branches; **C:** flower and immature capsule; **D:** mature capsule. All photos by Steve Turner.

Specimens cited. **U.S.A. MISSOURI:** CAPE GIRARDEAU CO.: Headwaters Public Access Ramp between I-55 and Old US Hwy 61, shrubby roadside between cultivated fields. 37.2456° N, 89.5644° W, 24 April 2016, *G. Davidse 42840*. FRANKLIN CO.: residence at 125 Skyview Lane, overwintered garden plot, 38.5367° N, 90.8683° W, 21 March 2012, with *Lamium amplexicaule* and *Stellaria media*, *S.R. Turner 12-019*; near Labadie, residential lawn along Maple Hill Lane, 38.5244° N, 90.8611° W, 9 April 2015, with *Stellaria media*, *Taraxacum*, grasses, *S.R. Turner 15-005*; 18 April 2015, *S.R. Turner 15-018*; near Labadie, in small agricultural plot adjacent to Labadie Bottom Road, 38.5934° N, 90.8544° W, 9 April 2016, with *Ranunculus abortivus*, *Thlaspi arvense*, *Capsella bursa-pastoris*, *Lamium amplexicaule*, *Cerastium pumilum*, *S.R. Turner 16-010*. MISSISSIPPI CO.: ca. 1 mile west of intersection of US Hwy 60 and MO Hwy 77, ca. 1 mile west of Wilson City, fallow agricultural field, 36.9214° N, 89.2431° W, 24 April 2016, *G. Davidse 42864*. NEW MADRID CO.: along County Road 404, ca. 2.5 air miles directly E of New Madrid, abundant on roadside, edge of fallow field. 36° 35' 24" N Lat., 089° 29' 13" W Long., elevation 89 m, 21 March 2016, *Gerrit Davidse 42774*; St. John's Bayou Public Access, ca. 1 air mile E of New Madrid along MO Hwy WW. Fallow field between base of levee and forest edge. 36.5914° N, 89.5114° W, 24 April 2016, *G. Davidse 42847*. SCOTT CO.: intersection of MO Hwy D and MO Hwy N, ca. 9.5 air miles SE of Benton, in fallow cornfield, 37.0406° N, 89.4042° W, 24 April 2016, *G. Davidse 42823*.

A composite description of Franklin County specimens follows: **Stems** to 40 cm, lax to ascending, sometimes numerous from a cespitose base, slightly viscid, densely pubescent with glandular hairs, these sometimes sparser toward the base. **Leaves** progressively smaller toward the top of the plant, opposite, sessile, entire, blades single nerved, linear to narrowly lanceolate, bluntly to sharply pointed, to 3 cm long and 3 mm wide, moderately to densely pubescent with stalked glands. **Nodes** remote, slightly swollen. **Inflorescences** dichasial cymes, with flowers on pedicels to 1 cm and longer than the sepals. **Bracts** reduced in size but otherwise similar to leaves, densely pubescent with stalked glands, margins green and herbaceous. **Sepals** 5, free to base, 5 mm long, lanceolate, light green, with pointed tips, margins often hyaline, densely pubescent with stalked glands. **Petals** 5, white, free to base, 8 mm long with a 1.0-1.3 mm apical notch. **Stamens** 10, filaments 2.0-2.3 mm long, with yellow anthers shedding bright yellow pollen. **Ovary** oblong, 1.3-1.9 mm long, green. **Styles** 3, white. **Fruits** cylindrical, straight (not curved), up to twice the length of the sepals, often with persistent styles, papery, translucent, tan in color, and opening via 6 teeth at the capsule apex. **Seeds** numerous, ovate, 0.7 mm x 0.6 mm, flattened, 0.2-0.3 mm thick, strumose or papillate, brown.

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