Datillo, A.J. and D. Nestor. 2011. *Onosmodium bejariense* var. *subsetosum* (Boraginaceae): First report for Alabama. Phytoneuron 2011-37: 1–4.

ONOSMODIUM BEJARIENSE VAR. *SUBSETOSUM* (BORAGINACEAE): FIRST REPORT FOR ALABAMA

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ABSTRACT

The collections detailed here represent the first documented report of *Onosmodium bejariense* var. *subsetosum* for Alabama. Both populations were observed in open, transmission line rights-of-way on dry Cumberland Plateau Escarpment slopes in association with other rare plant taxa. Edaphic factors like bedrock geology, landscape position, and aspect, in conjunction with periodic clearing of woody vegetation, produce unique, open habitat along transmission line rights-of-way situated in this region.

KEY WORDS: *Onosmodium bejariense* var. *subsetosum*, Alabama Cumberland Plateau, transmission line, right-of-way

While performing botanical surveys of Tennessee Valley Authority transmission line rights-of-way in Madison County, Alabama, during 2010, we located two populations of *Onosmodium bejariense* DC. ex A. DC. var. *subsetosum* (Mack. & Bush) B.L. Turner (Figure 1). Both populations are in open rights-of-way along steep, south-facing Cumberland Plateau Escarpment slopes amongst limestone outcrops. Both are disjunct southeastward from their main geographical range and are the first documented occurrences of this taxon in Alabama (Kral et al. 2011; USDA, NRCS. 2011).

Vouchers. Alabama. **Madison Co.**: Transmission line right-of-way on dry, S-facing, Cumberland Plateau Escarpment slopes, in thin, limestone derived soils; from the intersection of Asbury road and HWY 431, proceed SE on Asbury Road about 0.75 miles to a transmission line right-of-way; several dozen individual plants present, observed in the right-of-way west of Asbury Road; 34.699780, -86.533540, 16 Jun 2010, *Dattilo 1009* with D. Nestor (TENN, AMNH); rocky transmission line right-of-way on dry, S-facing, Cumberland Plateau Escarpment slopes, in thin, limestone derived soils, 0.5 miles N of the confluence of the Paint Rock River and the Tennessee River, right-of-way just E of Clark Bluff; 34.485200, -86.468800; ca. 30 individual plants observed, 21 Oct 2010, *Nestor s.n.* (TENN, AMNH).

In the concept of Turner (1995) & Das (1965, as cited by Turner), populations of *Onosmodium bejariense* var. *subsetosum* are concentrated in Arkansas, Missouri, and eastern Oklahoma where it has been documented from at least 14, 32, and 2 counties, respectively (Fig. 2; USDA, NRCS 2011; Hoagland et al. 2004). *Onosmodium bejariense* var. *subsetosum* has also been previously reported roughly 250 miles east of its main range in Franklin and Rutherford County, Tennessee, where it is considered endangered by the Tennessee Natural Heritage Inventory Program.

The four distinct locations in Tennessee are reconciled from sight records reported to the Tennessee Natural Heritage Inventory Program and the Tennessee Valley Authority Heritage Program along with collections of taxon housed at TENN and VDB (Tennessee Valley Authority Natural Heritage Database 2011). The two Rutherford County locations, which are separated by about one mile, are located in the Inner Nashville Basin about 70 miles north of Huntsville, Alabama. These sites are found in open barrens-like habitat associated with limestone glade complexes characteristic of the region (Quarterman 1950). The two Franklin County locations are on relatively steep Cumberland Plateau Escarpment slopes with southerly exposure and limestone outcrops about 35 and 45 miles, respectively, from the Madison County collections.

Transmission line rights-of-way situated on Cumberland Plateau Escarpment slopes with southern exposure in the vicinity of Huntsville, Alabama, frequently support populations of state and globally rare species. Previously undocumented occurrences of *Blephilia subnuda*, *Cotinus obovatus*, *Desmodium ochroleucum*, and *Silphium brachiatum* were also observed in transmission line rights-of-way that support *Onosmodium bejariense* var. *subsetosum*. Knowing where these rare taxa occur on Tennessee Valley Authority rights-of-way allows the agency to conduct transmission line maintenance without adversely impacting the plants. Periodic clearing of vegetation along transmission line rights-of-way is necessary to maintain the reliability of the transmission system, but the disturbance, especially when combined with the xeric conditions inherent to steep south and west facing slopes over limestone bedrock, retards establishment and growth of woody species and favors herbaceous species that thrive in dry, open conditions.

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Figure 1. *Onosmodium bejariense* var. *subsetosum* in a transmission line right-of-way west of Asbury Road. Madison County, Alabama. a. Mid to lower stem, b. Inflorescence, c. Adaxial leaf surface, d. Leaves and stem.

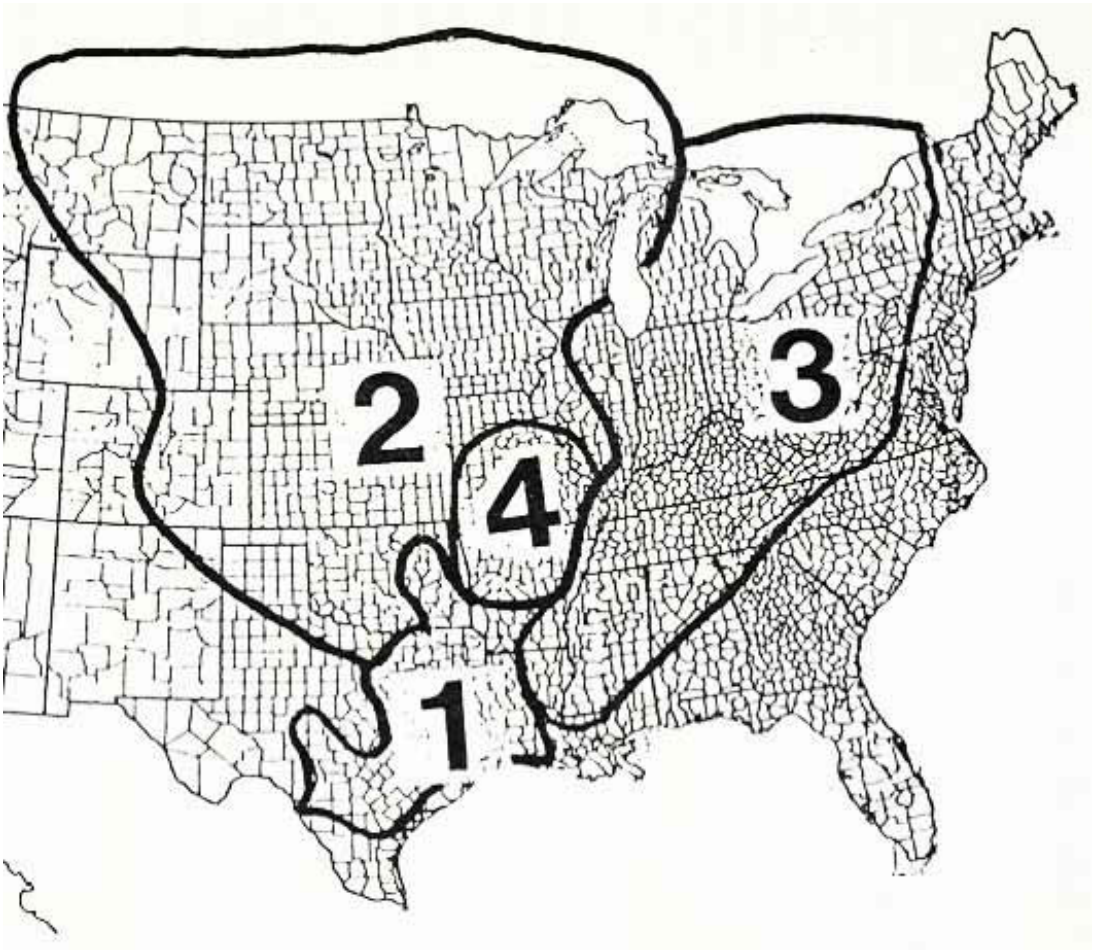

Figure 2. General distribution of the varieties of *Onosmodium bejariense* — (1) var. *bejariense*, (2) var. *occidentale*, (3) var. *hispidissimum*, (4) var. *subsetosum*. From Turner (1995), by permission.