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A NATIVE OCCURRENCE OF CAROLINA MOONSEED (*COCCULUS CAROLINUS*) IN VIRGINIA – Carolina Moonseed (*Cocculus carolinus*) is a native, scrambling, perennial vine of the largely tropical family Menispermaceae, reaching its

northeastern range limit in Virginia (Kartesz, 1999). Although it is largely herbaceous in such northern climes, plants are often woody at their base or, in the case of more southern specimens, capable of producing lengthy woody stems (Godfrey, 1988).

This paper reports the first definite occurrence of *Cocculus carolinus* in a natural habitat in Virginia. Previous reports of this species in Virginia have been limited to adventive occurrences in Albemarle, Clarke, Fairfax, Henrico, King George, and Prince Edward counties (Wieboldt, 2006). Previous observations by one of us (JFT) in the South Carolina Coastal Plain have been of presumably native occurrences in limestone or marl-influenced plant communities and bottomlands, but numerous populations of the species in that state are located in weedy habitats as well. Not surprisingly, floristic works describe a large range of occupied habitats from "…fencerows, waste places…" (Rhodes, 1997) to distinctly natural habitats such as "…rocky open woods, dolomite and limestone glades, alluvial ground…" (Kurz, 1997). Apparently, this native species has weedy tendencies but also can be found in habitats where few if any exotic species have penetrated, making the report of its presence in southwestern Virginia noteworthy.

The species was first noted for Cumberland Gap National Historical Park by Pounds et al. (1989) in a report prepared for the National Park Service. This report listed the species as a floristic component of the Park (providing only general locality data). It was assumed by the first author that this occurrence was another naturalized population. However, in 2001, during investigations of an outcropping of the Newman Limestone formation between Lewis Hollow and "The Pinnacle" on Cumberland Mountain, *Cocculus carolinus* was noted as a common component of a rocky, calcareous, woodland community at an elevation of approximately 640 m (2,100 ft).

This relatively narrow band of habitat runs generally in a northeast-southwest direction along the eastern slope of the mountain, turning more or less westward near the Kentucky-Tennessee-Virginia border. Framing this outcrop is a limestone woodland supporting numerous calciphilous plant species. Since the outcrop is rather narrow and elongated, a mixture of forest-dwelling and sun-loving herbs dominate beneath the broken canopy. Characteristic species of this habitat include *Quercus muhlenbergii, Q. rubra, Fraxinus americana, Juglans nigra, Juniperus virginiana, Cercis canadensis, Ostrya virginiana, Frangula caroliniana, Celtis tenuifolia, Parthenocissus quinquefolia, Toxicodendron radicans, Muhlenbergia tenuiflora,* and *Solidago sphacelata*. Plants of *Cocculus* are often seen sprawling over bedrock and boulders, and are seldom found far from the exposed portion of the outcrop. Six plant species of restricted distribution in Virginia (*Carex purpurifera*, *Cheilanthes alabamensis, Eupatorium incarnatum, Helianthus hirsutus, Philadelphus hirsutus,* and *Sisyrinchium albidum*) also occupy this rocky habitat at Cumberland Gap National Historical Park. Despite timely searches, no fertile individuals of the Carolina Moonseed have been found.

The species accounts for *Cocculus carolinus* in regional floras (noted above) must necessarily describe the entire range of habitats occupied by the plant and therefore provide little insight into what "native" habitat consists of elsewhere in the United States. Using VegBank (2006), an ecological database for vegetation plot data submitted by ecologists, we were able to discern patterns among naturally occurring plant community types containing *C. carolinus* rangewide. Of the 27 association-level community types known to contain the species, 17 specifically mention calcareous, mafic, or circumneutral substrates being present, while the remainder of the communities are alluvial in nature, regardless of base status. In either case, it seems that in relatively natural habitats, the species seems to be most common in forests and woodlands with high nutrient availability.

Continued inventory of calcareous and mafic outcrops in Virginia may turn up additional native occurrences of *C. carolinus*, but given the known range of the species and the tropical affinities of the Menispermaceae, the southern and western boundaries of the state contain the most promising areas for future discoveries.

Voucher specimens of *Cocculus carolinus* from Cumberland Gap National Historical Park are listed below. Herbarium abbreviations follow Holmgren & Holmgren (1998).

Lee County, Virginia:

Limestone ledges west of Lewis Hollow. *L. Pounds CG84-103*, 10 September 1984 (TENN).

On ledges of outcropping limestone, 0.9-1.4 miles northeast of The Pinnacle. *J. F. Townsend 2690*, 13 September 2001, with J. C. Ludwig (Cumberland Gap National Historical Park herbarium).

Forming a tangle with *Smilax rotundifolia* and *S. bona-nox* among broken limestone ledges above S-facing cliff, west of Lewis Hollow on Cumberland Mountain, 1.6 mi NE of Cumberland Gap. Elevation ca. 2000 ft. *T. F. Wieboldt #11525*, 22 September 2004, with C. E. Stevens and Chip Morgan (VPI); two other specimens to be distributed.

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