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Chromosome Number of the Sandstone Rockhouse Endemic *Thalictrum mirabile* (Ranunculaceae), and Clarification of its Endemism.—Sandstone rockhouses are semicircular recesses extending far back under cliff overhangs that are large enough to provide shelter for humans. Four ferns and seven flowering plants appear to be endemic, or nearly so, to sandstone rockhouses in the eastern United States (1, 2). The endemics have been classified following a cytologically based scheme: paleoendemic, neoschizoendemic, holoschizoendemic, patroendemic, or apoendemic (1, 3). A diploid or polyploid species with no apparent closely related extant diploid ancestor is a paleoendemic. Schizoendemics have the same chromosome number as their closely related parental taxa but are of various ages: geographically restricted, youthful species (neoschizoendemic) and widespread, "mature" or ancient species (holoschizoendemic). A restricted diploid species ancestral to a widespread polyploid is a patroendemic, whereas a restricted polyploid derived from a widespread diploid is an apoendemic.

Thalictrum mirabile Small (Ranunculaceae) was the only endemic flowering plant of the rockhouses that lacked a chromosome count, and thus it was classified tentatively as a neoschizoendemic (1). The purpose of my study was to (1) determine the chromosome number of *T. mirabile*, and (2) evaluate the species' classification as a neoschizoendemic.

Thalictrum mirabile grows mostly around plunge basins and groundwater seeps/springs and at the heads of streams on the floor of rockhouses, and it is present on wet cliffs with slight overhangs (1, 4). The species was reported from Kentucky, Tennessee, North Carolina, Georgia, and Alabama by Park and Festerling (4). On the other hand, it is not listed for Tennessee by Wofford and Chester (5), North Carolina by Radford et al. (6), or Georgia by Jones and Coile (7). *Thalictrum mirabile* is very similar to its putative parental taxon, *T. clavatum* DC. The species are distinguished primarily by achene morphology (1, 4, 8). *Thalictrum clavatum* occurs in rich woods, on cliffs and seepage slopes, and along streams from Virginia to Kentucky south to South Carolina and Georgia (4, 9).

Jensen (10) reported that *T. clavatum* from western North Carolina had a meiotic chromosome number of $n = 7$. The base chromosome number (x) in *Thalictrum* is seven (8). Although Keener (9) included Jensen's (10) chromosome count of *T. clavatum* in his treatment of *Thalictrum*, other recent taxonomic manuals (4, 8) have not. Moreover, the chromosome number of *T. clavatum* was omitted from Darlington and Wylie (11) and from Bolkhovskikh et al. (12), even though that of other species of *Thalictrum* in Jensen (10) was included in both sources.

I used young flower buds to determine the meiotic chromosome number of *T. mirabile* (cf. 13). Flower buds were collected from several genets in a population of *T. mirabile* in a rockhouse in Powell County, Kentucky, on 7 May 1999. A voucher specimen is deposited at OS (*Walck* 568). Plant material was placed in a 3:1 solution of absolute ethanol:glacial acetic acid for 2 days, and then transferred to 70% ethanol for 1 day. Anthers were removed from buds, placed in acetocarmine, macerated on a microscope slide, and then squashed with a cover slip. Slides were observed with a compound microscope, and chromosomes counted.

The chromosome number for *T. mirabile* was determined to be $n = 7$. This count is identical to that reported for *T. clavatum* (10). Thus, it is most appropriate to keep *T. mirabile* as a neoschizoendemic.

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