

## ARABIS PERSTELLATA IN TENNESSEE

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The continued interest of Dr. E. Lucy Braun in *Arabis perstellata* during the years following her original description of it in 1940 resulted in an excellent account of the growth habit and of other significant characteristics of the species (1956). However, even with Dr. Braun's original descriptive data (1940), the supplemental information she has provided, and with the type and topotype specimens before me for study, it has been difficult to decide whether new collections of an *Arabis* from Tennessee should or should not be referred unequivocally to *A. perstellata*. The plants in question were first seen and collected in April, 1959, by Dr. R. B. Channell of Vanderbilt University, along a calcareous bluff of Stones River in Davidson County, Tennessee. Since then, Dr. Channell has made three ample collections, (one of these with Dr. Kenneth A. Wilson) with the plants in various stages of development, and he has guided me to the locality so that I could make first hand observations.

The Tennessee plants, from their morphology, belong to *Arabis perstellata* without doubt, but they differ in certain particulars from Kentucky populations which formed the basis for the original description of the species. As pointed out by Braun, *A. perstellata* is related to the species previously known as *A. dentata* (Torr.) T. & G. the name used by Hopkins in his monograph of *Arabis* in eastern North America (1937). The name *Arabis dentata*, which originated with Torrey in the genus *Sisymbrium*, is untenable in *Arabis* because it is a later homonym. Fernald (1946) renamed *A. dentata* as var. *Shortii* of *A. perstellata*, and more recently Gleason (1952) raised var. *Shortii* to specific rank, an action approved by Braun (1956) since it restored the original relationship she thought obtained with respect to the two entities involved.

In the present brief study, the first question I have sought to resolve to my own satisfaction is whether the very local *Arabis perstellata* and the widely distributed *A. Shortii* are, in fact, distinct species as maintained by Gleason and by Braun or whether a single species with several varieties, as



proposed by Fernald, best represents the facts. The evidence I have adduced coincides with that expressed by Braun (1956) and I am convinced that *A. perstellata* and *A. Shortii* should be regarded as separate species.

Up to the present, *Arabis perstellata* has been known from a relatively restricted area in northern Kentucky along the calcareous bluffs of Elkorn Creek in Franklin County. This area is approximately two hundred miles northeast of the Stones River, just east of Nashville, where Dr. Channell discovered an extensive population of *A. perstellata* that I think is somewhat different from the Kentucky population and is deserving of nomenclatural recognition.

***Arabis perstellata* E. L. Braun, var. *ampla* Rollins, var. nov.**

Herba perennis, caulibus 4-8 dm. longis, foliis radicalibus viridibus amplis 8-15 cm. longis,  $n=7^1$ .

Type in the Gray Herbarium collected in rich woods along calcareous bluffs of Stones River, about 1 mile northwest of junction of Couchville Pike and Fuqua Road, off Fuqua Road and about 3 miles northeast of Una, Davidson County, Tennessee, May 28, 1960, *R. B. Channell* 7998; isotype at Vanderbilt University. Other collections from the same general locality: April 7, 1959, *R. B. Channell* 7707 (GH; VDB); April 20, 1959, *Kenneth A. Wilson and R. B. Channell* 709 (GH; VDB); April 25, 1960, *Reed C. Rollins, R. B. Channell, Otto T. Solbrig, Frank J. Hilferty and David G. Lloyd* 6012 (GH; VDB); May 20, 1960, *R. B. Channell* 7966 (GH; VDB).

The most striking features of var. *ampla* are the large leaves terminating the main axis and the greatly elongated fertile branches. In fact, the dimensions of leaves and branches in var. *ampla* are two to three times those of var. *perstellata*. In addition, the leaf-margins are more nearly entire being shallowly repand to dentate and uncommonly toothed in var. *ampla*, whereas they are usually dentate, toothed or lobed in var. *perstellata*, the lower cauline leaves and some of the leaves of the vegetative axis being lyrate-pinnatifid. In var. *perstellata*, the dense covering of trichomes produces a whitish to greyish-green appearance, whereas in

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<sup>1</sup>Chromosome count made by Dr. Otto T. Solbrig.



var. *ampla*, the trichomes are much less dense and the plants are green or only slightly greyish.

The growth habit of var. *ampla*, appears to be very much like that of var. *perstellata*. The main axis is terminated by a tuft of petiolate leaves and the fertile branches arise laterally below this terminal group of active leaves in the axils of leaves of the previous growing season. The leaves of the lateral fertile branches are strongly auriculate except toward the base of the branch. In both varieties, the early season leaves are more toothed or lobed than are those developed later in the season. Var. *ampla* is more lax and weak-stemmed than var. *perstellata* and the leaves seem to have a thinner texture than do those of var. *perstellata*. As to the nature and distribution of the trichomes, the varieties are similar except for the relative abundance per unit of surface area, the density being much greater in var. *perstellata*.

From all of the evidence we have at the present time, each variety of *Arabis perstellata* is very restricted in distribution. The new variety *ampla* of Tennessee represents a significant range extension for the species and it appears that the Kentucky and Tennessee populations have been separated long enough to have evolved distinctive features worth nomenclatural recognition. — GRAY HERBARIUM OF HARVARD UNIVERSITY.

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