

SOME EXTINCT OR LOST AND REDISCOVERED PLANTS—I.

While engaged in his taxonomic work on the Pea Family, the writer came across two species, which evidently have become extinct during the last century and a few which were lost but have been rediscovered. The thought struck him that other botanists might be interested in extinct and lost species, and he has therefore planned to present some notes that might call attention to such species and lead to the rediscovery of some of these so-called lost species or the establishment of the fact that they actually have become extinct within historic times.

ASTRAGALUS ROBBINSII (Oakes) A. Gray

This species was described as *Phaca Robbinsii* in Magazine of Horticulture edited by Hovey (7: 181, 1841). It had been discovered in 1829 by Dr. Robbins, after whom it was named. Oakes gives the type locality as follows: "On rocky ledges, overflowing in the spring, on the banks of the Onion River, Burlington, Vermont." In Zadock Thompson's History of Vermont there is given a list of plants of Vermont (p. 183, 1842, and reprinted in 1853), also prepared by Oakes, in which the type locality is given more definitely: "On a limestone ledge in Burlington, on the banks of Winooski River, a quarter of a mile below High Bridge, *Robbins*." As far as the writer can find this is the only locality in which the species has been found and as far as can be ascertained the type station is now destroyed. It may be of interest to trace out its history.

In the first edition of his manual (p. 103, 1848), Dr. Gray gave the distribution of the species as: "Rocky ledges of the Onion River, near Burlington, Vermont." In the second edition (p. 98, 1856), the plant appears as *Astragalus Robbinsii* A. Gray, but the distribution remained unchanged, with the addition: "Willoughby Mountain, *Mr. Blake*." This specimen of Mr. Blake, however, belongs to a closely related species, *Astragalus Blakei* Eggleston.

In the third edition (p. 98, 1862), the Willoughby locality is omitted, and in the Addenda (p. xci), Blake's specimens are referred to as a form of *Astragalus alpinus*. This treatment remained unchanged in the fourth edition (1863 and 1864).

In the fifth edition (p. 133, 1867-1880) the distribution is given as: "Rocky ledges of Onion River, at Colchester, Vermont. *Dr. Robbins* (1829): the station now obliterated." The type locality is, as far as the writer has been able to ascertain, near Burlington, but within the town of Colchester, several miles, however, from the railroad station of the latter name. The statement "now obliterated," however, was apparently then premature, for the plant has been collected later than 1867 and 1880.

In the sixth edition, the distribution given (p. 136, 1890) is modified and reads simply: "Rocky ledges, Vt." This would indicate that other localities might have been found in the meantime, but I can find no evidence to that effect.

In the new Gray's Manual (p. 516, 1908) edited by Robinson and Fernald, the distribution is again thus restricted: "Rocky Ledges of the Winooski R., Vt. (station now extinct)." As Onion River and the Winooski are the same, the distribution given is identical with that in the fifth edition of Gray's Manual, and was at this time evidently according to facts.

This is in short the history of the plant as given in the several editions of our oldest manual of the Northeastern United States. Let us, however, see what light other publications show on the subject.

In Wood's Classbook (p. 229) at least between 1851 and 1856, the distribution is copied from the first edition of Gray's Manual. In the later editions (p. 318) from 1863-1881, it was given as: "Ledges by rivers and lakes, northern Vt., rare," and in the Botanist and Florist (p. 94, 1889) as "Rocky shores, Vt." In all cases very indefinite.

In Archives of Science for Jan.-Apr., 1873, Perkins also adds to the distribution: "It has also been found by Mr. C. C. Frost on the Willoughby Mountain, &c." These specimens belong to *A. Blakei*.

In Perkins' Catalogue of the Flora of Vermont (p. 19, 1888) I find: "Near Burlington; also Hartland, and near Hanover, N. H." The last two localities refer to *A. Jesupi*.

In Britton & Brown's Illustrated Flora, first edition (2: 304, 1897), the authors gave the distribution as Vermont and New Hampshire, but they included in it also *A. Jesupi* and probably *A. Blakei*. Dr. Britton in his Manual, in both editions

(p. 553, 1901 and 1907), gives the same distribution, though in the appendix of the second edition, he admits *A. Jesupi* as a species. In the second edition of the Illustrated Flora (2: 381, 1913), the distribution is corrected, reading: "Known only from rocky ledges of the Winooski River, Vermont, station now obliterated and the species extinct, unless inhabiting some undiscovered locality."

In the Flora of Vermont by Brainerd, Jones and Eggleston (p. 54, 1900), the following remarks are found: "On limestone rocks, near High Bridge, Winooski River, Burlington. This, the only station in Vermont,¹ was destroyed in 1894 by the set back of the dam of the Vermont Electric Power Company." This was repeated verbatim in Eggleston, Kirk and Underwood's Flora of Vermont (Vermont Agr. Exp. Sta. Bull. 187: 217, 1915).

In her Flora of Burlington and Vicinity, Nellie F. Flynn (p. 53, 1911) made a similar statement: "On limestone rocks, Winooski Gorge (Robbins). This, the only known station in Vermont, was destroyed in 1894 when the new dam flooded the rocks."

The writer takes the liberty to cite the following from a letter received from Mr. Eggleston. "The statement in the two editions of the Vermont Flora and Mrs. Flynn's Flora covers the situation of *Astragalus Robbinsii*." "L. R. Jones with his students searched carefully for other localities and found none." "C. G. Pringle rediscovered the station some time in the seventies and he knew only the locality in the base of Colchester Gorge, where Jones and I collected it later. Wrong interpretations of the labels of earlier collections are to blame for the idea that *Astragalus Robbinsii* was found outside the gorge."

The history of the plant may also be traced from specimens in herbaria. My research in this line has been limited to the herbaria of The New York Botanical Garden, Columbia University, Harvard University, and the New England Botanical Club. I have written to the University of Vermont at Burlington during the summer vacation but have not yet received any answer. All specimens of the true *Phaca* or *Astragalus Robbinsii* seen are labelled, "Near Burlington," "Colchester," "High

¹ They could just as well have left out the words "in Vermont," for it has never been found elsewhere.

Bridge," or "on Winooski River," which all practically mean the type locality or very near to it, and probably were included in the flooded area. The collections contained specimens gathered by the following botanists: *Robbins*, in 1829; *Oakes* and *Cary* in 1841; *Pringle* in 1875, 1877, and 1878; *Brainerd* in 1878; *Grout* in 1891, and *Jones & Eggleston* in 1893. I have seen no specimens collected after 1894.

As stated before, the original record of specimens collected on Willoughby Mountain by Blake was erroneous, for the specimens do not belong to *A. Robbinsii*. Gray noticed the error but made another error in referring it to *A. alpinus*. Eggleston in 1895 described a new species *A. Blakei*, including among others Blake's specimens and naming it after that collector. Even since this species was described, many have mistaken the two. While visiting the Gray Herbarium last year the visitor forgot to consult the collection of the New England Botanical Club, and therefore sent in an inquiry. Miss Sanderson, librarian of the Gray Herbarium, kindly informed me that there were two sheets in the New England Botanical Club herbarium, labelled *A. Robbinsii*, collected by Churchill in 1897. She also sent these to the writer. They turned out to be, as was suspected, *A. Blakei*. The latter has been collected by quite a number of persons at different stations in the Willoughby Mountain region, and also on St. John's River in Maine by Miss Furbish and in Labrador by S. R. Butler.

As to the Hartland, Vt., and Hanover, N. H., stations, mentioned in Perkins' Catalogue, they refer to Jesup's specimens, which, together with Eggleston's own, became the basis for *A. Jesupi* (Eggleston & Sheldon) Britton. The latter is a closely related and very local species. To the two localities mentioned above should be added, Summers Falls, Plainfield, N. H., all three in the Connecticut River Valley.

From the preceding may be concluded that as far as we know *Astragalus Robbinsii* has become extinct and by the action of man. If any botanist should find the plant or has any record of having found it outside of the destroyed area, or since 1894, it would be of general interest if made known.

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