

The petiolulate lateral leaflets, the shorter flowers and fruits and the more numerous seeds are the chief characters, then, of the new species which may very appropriately be known as

Staphylea Brighamii, spec. nov., *S. trifoliae* peraffinis; foliolis lateralibus petiolulatis basi non haud obliquis, laminis 6–8 cm. longis circa 3 cm. latis, petiolis 5–8 mm. longis; floribus brevioribus circa 6 mm. longis, sepalis purpureo-tinctis; capsula plus minusve purpureo-tincta solum circa 3 cm. longa et fere 3 cm. diametro; seminibus saepius 6–7.

Very similar to *S. trifolia* but lateral leaflets petiolulate and not at all oblique at base; blades 6–8 cm. long, about 3 cm. broad, petioles 5–8 mm. long: flowers shorter, about 6 mm. long, sepals purplish: capsule more or less tinted with purple only about 3 cm. long and nearly as thick; seeds often 6 or 7.—OHIO: near Toledo, Oct. 1, 1917, and May 6, 14, 1918, *H. C. Brigham* (TYPE, Gray Herb.).

GRAY HERBARIUM.

THE AMERICAN REPRESENTATIVES OF *EQUISETUM* *SYLVATICUM*.

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EUROPEAN descriptions of *Equisetum sylvaticum* and many American descriptions copied from them are nearly uniform in describing the branches as rough; thus, we find Schkuhr saying: "Rami verticillati, numerosi . . . scabri,"¹ or Milde writing "Die Aeste . . . rauh,"² while European figures very regularly show sections of the branches with conspicuous trichome-like spicules. These descriptions and illustrations have always been perplexing to certain American students who have been familiar with the plant of our woodlands and meadows, which is generally called *E. sylvaticum*, because in the American plant the branches are so universally glabrous or smooth. Examination of the material in the Gray Herbarium and the herbarium of the New England Botanical Club shows that there are 194 sheets of North American specimens and of these 194 sheets 188 have the branches

¹ Schkuhr, *Krypt. Gewächse*, 170 (1809).

² Milde, *Gefäss.-Crypt.* in *Schles.* 432 (1858).

quite smooth or with the merest suggestion of scabridity on the angles, while 4 have a more definite scabrousness on the young branches. Only 2 sheets, however, have the angles sufficiently scabrous to be comparable with the bulk of European specimens. One of these sheets, in which the branches are conspicuously scabrous, is the type of *E. sylvaticum*, var. *squarrosus* A. A. Eaton¹ from near Nome City, Alaska. The other material is from Parry Sound on Georgian Bay, Ontario. These two plants, from near Cape Nome and from Parry Sound, are inseparable from characteristic European specimens and must pass as essentially typical *E. sylvaticum*. Occasionally in Europe the branches are smooth as in the American plant, but the European material has so generally scabrous branches that few European authors, if any, have made note of smooth branches in the European plant. On the other hand, the tremendous preponderance of specimens with smooth branches in America (188 out of 194 sheets now before the writer) indicates that the smooth-branched tendency is the normal variation in North America, and as such it should be definitely designated as a geographic variety.

Just as the European plant differs in the degree of branching, the American is highly variable, but in general these variations in the degree of branching are of minor importance and for the most part not of sufficient constancy to merit special notice. It so happens, however, that the only name available for the smooth-branched American plant is one which was given by Milde to one of the less common variations, a northern tendency in which the branches are simple or subsimple or only very slightly forked. This, the plant found in Greenland, Labrador and much of the cooler region of Canada, was described very definitely by Milde as var. *pauciramosus* "Caulis erectus, inferne nudus, sublaevis, rami subsimplices. Labradoria (herb. Breutel). (Fig. 2.)"² The figure illustrating this variety shows it to be the characteristic plant of much of Labrador, Newfoundland and Quebec. This more slender form of the American plant, with the simple or subsimple smooth branches, and a very similar, though often larger, development of the same variation, occurs southward to Massachusetts, Connecticut and Ohio and very locally in the Selkirk Mountains of British Columbia.

A commoner American plant, however, has the branches very

¹ A. A. Eaton, Fern Bull. ix. 36 (1901).

² Milde, Mon. Equiset. 292, t. 9, fig. 2 (1865).

freely forking, much as in the European var. *pyramidale* Milde, but var. *pyramidale* has the scabrous angles of the branches characteristic of most European material, while the freely forking American plant is clearly only an extreme form of var. *pauciramosum*. Other variations in America of less pronounced character than those just discussed have been identified by the late A. A. Eaton with Milde's varieties and forms of the European plant, but so far as the writer can find from examination of Mr. Eaton's American material referred to var. *capillare* (Hoffm.) Willd., var. *robustum* Milde, var. *praecox* Milde, etc. these American plants are all phases of the smooth-branched North American var. *pauciramosum*. The form with freely forking branches, the only form of var. *pauciramosum* which seems to merit a special designation, is less common northward than the form with simpler branches, but in the southern part of the range it is distinctly more abundant, being the common plant of southern New England, southward into Pennsylvania and locally westward to British Columbia.

The three most pronounced American variations of *E. sylvaticum* may be briefly defined as follows:

E. SYLVATICUM L. Sp. Pl. ii. 1061 (1753). Branches copiously scabrous, especially along the lower internodes.—Common in Eurasia.¹ In North America apparently very local. The following specimens have been examined: ONTARIO: Parry Sound, Georgian Bay, August 21, 1901, *E. L. Moseley*. ALASKA: among alder and willow, 11 miles west of Nome City, August 5, 1900, *J. B. Flett*, no. 1524 (type of var. *squarrosus* A. A. Eaton, Fern Bull. ix. 36).

Var. *PAUCIRAMOSUM* Milde, Mon. Equiset. 292, t. 9, fig. 2 (1865).—Greenland and Labrador south to New England and locally westward to British Columbia; also eastern Asia and rarely in Europe. Material slightly transitional to the preceding has been seen from New Hampshire, Vermont, Massachusetts and Yukon.

Var. *PAUCIRAMOSUM*, forma ***multiramosum***, n. f., ramis valde furcatis laevibus.—Southern Labrador and Newfoundland to Pennsylvania, locally westward to British Columbia. TYPE in Gray Herb. collected by A. A. Heller at Penryn, Lebanon County, Pennsylvania, May 30, 1889.

GRAY HERBARIUM.

¹ The writer can find no basis for the extreme restriction of the European range of this plant given by Mr. Eaton, who says "It grows from the highest north in Europe to about 71° N. Lat." — Fern Bull. ix. 34 (1901).



Fernald, Merritt Lyndon. 1918. "THE AMERICAN REPRESENTATIVES OF EQUISETUM SYLVATICUM." *Rhodora* 20, 129–131.

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