

Additions to the Moss Flora of Kentucky. II.¹

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SINCE publishing a short list of additions to the moss flora of Kentucky in 1954 (Crum, 1954), I have received for determination some 500 specimens of mosses collected by Dr. Mary E. Wharton in connection with her studies on the flora of Kentucky's oil-bearing shales. An unusually complete and representative series, the collection includes a number of species not previously reported from Kentucky, and I have added to the following list a few new records from my own collections of 1954 and 1955, mostly from the vicinity of Louisville.

In the course of other investigations I have had occasion to examine a few of the specimens reported by Fulford and Shacklette in their checklist of Kentucky mosses (1942). As a result of revision, two species can be deleted from the Kentucky flora: *Rauia scita* (P.-B.) Aust. (on rock at bridge before Falls, McCreary Co., *Kay E. Baur*, Apr. 15, 1934) is a mixture of species but predominantly *Thuidium minutulum* (Hedw.) BSG, which was doubtless mistaken for *Rauia*. *Funaria americana* Lindb. (on soil, Woolper Creek, Boone Co., *Kay E. Baur*, May 11, 1934) is *F. flavicans* Mx. instead. (Both specimens are to be found at the University of Cincinnati.)

Complete sets of Dr. Wharton's specimens are deposited in the herbaria of the University of Michigan and the National Museum of Canada. My own collections are at the University of Louisville, as well as the National Museum of Canada.

Dicranum rugosum Brid. Oak-hickory woods, 1 mi. S. E. of Harg, Estill Co., *Wharton* 419; open pine woods with good needle cover, pH 4.0, 1½ mi. N. of hotel, Olympian Springs, Bath Co., *Wharton* 490; chippy shale slope, Slate Branch, Rockcastle Co., *Wharton* 630.—Apparently reaching here its southern limit of distribution, *D. rugosum* is fairly common northward and was previously known from Newfoundland to British Columbia and south to Oregon, Minnesota, Ohio and West Virginia.

Orthotrichum pusillum Mitt. On bark of oak, about 4 mi. N. of Lebanon Junction, Bullitt Co., *Crum* 2612; on bark of juniper, about

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1 mi. W. of Hebron Presbyterian Church, S. of Okolona, Bullitt Co., *Crum* 2746; wooded slopes above Cedar Creek, about 5 mi. E. of Shepherdsville, Bullitt Co., *Crum* 2664; thin, dry woods near Tunnel Hill Baptist Church, N. E. of Elizabethtown, Hardin Co., *Crum* 2695; rather dry woods above the Ohio River, about 6 mi. E. of Milton, Carroll Co., *Crum* 2732, 2734.—Grout (1946) gave the range of this species as "New England to Florida, west to Illinois and Missouri." With Dr. L. E. Anderson I have recently made a special study of *O. pusillum* and its American relatives and have confirmed the distribution of *O. pusillum* in the following states: Georgia, Kentucky, Mississippi, Missouri, New Jersey, New York, North Carolina, Pennsylvania, South Carolina, Tennessee, Texas, Vermont and Virginia. It appears, therefore, that the range given by Grout is at least essentially correct, but it is equally clear from the specimens in his herbarium and from his statements in the literature that he did not properly distinguish *O. pusillum* from *O. pumilum* Dicks. In *O. pusillum*, the capsules are barrel-shaped, very pale, smooth or nearly so when dry and empty, with exothecial cells poorly differentiated in longitudinal bands four cells wide and with the peristome split into 16 irregular divisions which are usually erect. *O. pumilum*, however, has oblong-ovoid, dark-brown capsules, strongly plicate and sometimes more or less strangulate when dry, with exothecial cells clearly differentiated in bands eight cells wide and with eight peristome teeth, reflexed when dry. Both species occasionally produce propagula on their leaves.

Thelia lescurii Sull. On dry soil at top of knob, just north of Tom Wallace Lake, Jefferson Co., *Crum* 2646.—New England to Wisconsin, south to the Gulf; more abundant southward (Grout, 1928-39). This species is at best poorly differentiated from *T. asprella* Sull. and seems to intergrade rather freely with it. Habeeb (1950) reduced *T. lescurii* to a variety of *T. asprella*, and Gier and Kennedy recently (1955) carried out some cultural experiments designed to show that *T. asprella* and *T. lescurii* are ecological forms. I have had but limited experience with *T. lescurii*, and although I am aware of the difficulties in identification of at least some specimens, I am not yet convinced that *T. lescurii* should be abandoned. (Dr. H. S. Conard kindly called my attention to this species in my collections.)

Calliergonella schreberi (BSG) Grout. On the ground on a shaded, rocky bank, 1¾ miles S. E. of Jeffersonville, Montgomery Co.,

Wharton 1885.—Very common in the North from Alaska to Nova Scotia, south to Virginia in the mountains of eastern United States. This species is most commonly assigned to *Pleurozium*, but it should be noted that the moss genus *Pleurozium* Mitt. 1869 is invalidated as an orthographic variant of the earlier *Pleurozia* Dum. 1835 (an hepatic).

Eurhynchium pulchellum var. *robustum* (Röll) Jenn. Wooded slopes above Cedar Creek, about 5 mi. E. of Shepherdsville, Bullitt Co., *Crum* 2663; 1 mi. E. of Harg, Estill Co., *Wharton* 455.—Eastern Canada to Minnesota southward to Louisiana.

Plagiothecium elegans (Hook.) Sull. On shale, wooded N. E. slope, 4 mi. S. E. Plummer's Hill, Fleming Co., *Wharton* 3890; on moist shale bank, 1½ mi. N. of West Bend, Powell Co., *Wharton* 201.—One of the more distinctive species of a difficult and troublesome genus, *P. elegans* is a slender, attractive moss bearing clusters of filamentous brood-bodies on the stems. It is also known to occur widely across Canada and the northern United States south to California in the West, and to Long Island, New Jersey and (along the mountains) North Carolina and Tennessee in the East.

Plagiothecium sylvaticum (Brid.) BSG. On shale in a ravine, 2 mi. N. W. of Stanton, Powell Co., *Wharton* 5306.—A common, widespread species known from Alaska, Canada and eastern United States south to Alabama.

Pyloisia selwynii Kindb. On oak tree, *sine loco*, Clark Co., *Wharton* 31, 90.—Widespread in southeastern Canada and eastern United States south to Florida and also reported from Arizona. Surprising as such a disjunction may seem, many mosses of common occurrence in the eastern deciduous forests, including such species as *Anomodon attentuatus*, *A. minor*, and *A. rostratus* and *Thuidium delicatulum*, are also found in the mountains of Arizona and often in the Mexican highlands as well.

Atrichum crispum (James) Sull. Creek bank, 1.5 mi. S. E. of Jeffersonville, Montgomery Co., *Wharton* 351.—British Columbia and Oregon, Ontario, Vermont, New York and southward to Tennessee. The lamellae on the upper surface of the leaves are at best poorly developed in this species, and often, as in this collection, they are lacking.

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