

A RE-EVALUATION OF POTAMOGETON
FIBRILLOSUS FERN. (POTAMOGETONACEAE)¹

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In 1932, Fernald proposed *Potamogeton fibrillosus* based on specimens collected in Wyoming, Idaho, Oregon and Washington. He noted that the new species closely resembled *P. foliosus* Raf. in its foliage, peduncles and small dorsally keeled fruits. It was said to differ from *P. foliosus* by its stipules which disintegrate into "rope-like" fibers and are thus open or convolute, and by having fruits with a less developed keel and more nearly median beak. In his closing comment on the species, Fernald (1932; p. 52) stated his reservations in assigning specific rank to this new entity: "The plant will doubtless be found to have a broader range, when it may prove to be a marked geographic variety of the wide-spread *P. foliosus*."

Evidence from our field work (Haynes as part of his doctoral studies and Reveal as part of his review of *Potamogeton* for the *Intermountain Flora*), from examination of most of the cited specimens noted by Fernald (1932) and from a review of more recently gathered material from other localities substantiates his closing remarks. Several collections, especially from Yellowstone National Park of Wyoming and from southeastern Oregon, are distinct from *P. foliosus*. In general, these specimens differ from *P. foliosus* not only in having the stipules disintegrating into fibres and fruits with poorly developed keels, but also in having cylindric, interrupted inflorescences and leaves with basal glands — the last two characters not mentioned by Fernald, but present even on the holotype.

Other collections from the Yellowstone region are not so distinct. One such collection (Haynes 3849) has fruits, including the keel, which are identical with those of *Potamo-*

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geton foliosus, but the inflorescence is capitate and the stipules only rarely disintegrate into fibers. However, basal glands are present. Flowering specimens from Albany Co., Wyoming, made by C. L. Porter (3473) are similar to *P. fibrillosus* in having basal glands and short, clavate peduncles. However, in this collection, the stipules only rarely disintegrate into fibers. Flowering specimens obtained by Maguire (21578) in northern Utah commonly produce fibers when the stipules decay, but basal glands are rarely found. Unpublished data of Haynes indicate, for other species of *Potamogeton*, that the degree of connation of the stipules is not a reliable taxonomic character and can not be used successfully in distinguishing species.

Hitchcock (1969) regarded *Potamogeton fibrillosus* as a distinct species, but conceded its close relationship with *P. foliosus*. Porter (1963) reduced *P. fibrillosus* to synonymy, regarding it only as a local form of *P. foliosus* produced by the rather warm-water conditions of "geyser formations and hot springs" in the Yellowstone area. Porter stated (1963; p. 9) "The warm water hastens disintegration of the sheaths by bacterial action." This is not the case, however, in northern Utah or southeastern Oregon. Here the water is cool, usually fresh (although slow-moving or infrequently standing), and the stipules still break down. As we know of sites where both entities can be found in close proximity, and at the same degree of development, it seems unlikely that mere bacterial activity (or some other type of mechanical breakdown) could account for the fibrous stipules. Nevertheless, because this entity, in most situations, can be distinguished quite easily from *P. foliosus*, we think it should be taxonomically recognized. However, since many intermediate forms can be detected, we can not justify the specific rank and therefore propose: ***Potamogeton foliosus* Raf. var. *fibrillosus* (Fern.) Haynes & Reveal, stat. & comb. nov.**, based on *P. fibrillosus* Fern., Mem. Amer. Acad. Arts 17:51. 1932. — In warm spring, margin of Harney Valley, at "P" Ranch, Harney Co., Oregon, 22 Jun 1901, Cusick 2598. Holotype, GH! Isotypes, F, K, MO, ORE, US!

From var. *foliosus*, the var. *fibrillosus* may be distinguished by its poorly developed keel, cylindric and interrupted inflorescence, fibrous stipules and basal glands present at the base of most leaves.

Distribution. — In waters, often warm, of shallow lakes, springs, streams and rivers, from southwestern Washington southward through southeastern Oregon, hence eastward to southeastern Wyoming. Fruiting from mid-June to mid-September.

Representative Specimens. — **Oregon:** HARNEY CO.: warm springs near Burns, 17 May 1927, *Henderson* 8867 (GH); in irrigating ditch at Frenchglen, 15 Jul 1927, *Thompson* 12068 (NY, WTU). MALHEUR CO.: Otis Creek, 20 Jun 1896, *Leiberg* 2340 (GH, US). **Utah:** CACHE CO.: slow stream in meadow, 3 mi ne of Logan, 21 May 1939, *Maguire* 16685 (MO, NY, UTC); slow-moving stream in meadow, 2 mi nw of Logan, 23 Jun 1942, *Maguire* 21578 (F, GH, MO, NY, US, UTC). **Washington:** PIERCE CO.: In outlet to Lake Spanaway, near Tacoma, 4 Aug 1933, *Thompson* 9657 (GH, WTU). UNKNOWN LOCATION: Washington Territory, 1883, *Brandeggee* 1127 (GH). **Wyoming:** ALBANY CO.: N. Fork of Poole Creek, 5 Aug 1944, *C. L. Porter* 3474 (NY, RM, US). YELLOWSTONE NATIONAL PARK [or Park Co.]: Firehole River, 24 Jul 1906, *Jepson* 2540 (GH); Midway Geyser Basin, Firehole River, in warm, swift-flowing water, 30 Aug 1971, *Haynes* 3850 (GH, MICH, MO, NY, OS); Upper Geyser Basin, 1 Sep 1878, *Richardson* s.n. (GH); Upper Nez Perce Creek, in swift flowing water, 30 Aug 1971, *Haynes* 3849 (MICH, OS).

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