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ON THE IDENTITY OF LESQUERELLA ANGUSTIFOLIA

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FERNALD'S revision of Gray's Manual,¹ Gleason's revision of Britton and Brown's Illustrated Flora² and Palmer and Steyermark's Catalogue of the Plants of Missouri³ include *Lesquerella angustifolia* on the basis of its presumed occurrence in the state of Missouri. In this, these authors undoubtedly followed Payson who, unfortunately, misapplied the name in his monograph of *Lesquerella*.⁴ He applied the name to a species occurring in southwestern Missouri and previously regarded as *L. gracilis*, but which is actually distinct from both *L. gracilis* and *L. angustifolia*. As a result of this confusion, Cory⁵ was led to re-describe *L. angustifolia* as a new species under the name *L. longifolia*.

The original description of *L. angustifolia* in Torrey and Gray⁶ and that of Watson⁷ are definite enough and were obviously based on the original collection of Nuttall and a subsequent collection by Leavenworth, both obtained along the Red River more than a century ago. Evidently, the fact that *L. angustifolia* was not recollected in the interim between these early collections and the time Payson studied the group had something to do with his misinterpretation of the earlier work.

¹ Gray's Man. Bot. (ed. 8) p. 700. 1950.

² Ill. Fl. N. E. U. S. adj. Can. 2: 226. 1952.

³ Ann. Mo. Bot. Gard. 22: 547. 1935.

⁴ Ann. Mo. Bot. Gard. 8: 182. 1922.

⁵ Field & Lab. 18: 96. 1950.

⁶ Fl. N. Am. 1: 101. 1838.

⁷ Proc. Am. Acad. 23: 253. 1888.

In order to be sure about the proper application of the name *L. angustifolia*, I have studied the type at the British Museum of Natural History. The type consists of two plants. The lowermost leaves are missing on both plants which are in the ripe fruiting stage. The cauline leaves are linear, thickish, and are covered with minute lepidote trichomes. The pedicels are rigid and divaricately ascending. There are two ovules per locule in the siliques. The type was compared in detail with a specimen of one of my collections (*Rollins 5583*) from the Red River Valley in Choctaw County, Oklahoma. The type and this specimen were found to be closely similar in every respect and unquestionably represent the same species. The type of *L. longifolia* Cory at the Herbarium of Southern Methodist University is also the same, and this name becomes a synonym of *L. angustifolia*.

L. angustifolia is not uncommon, usually on thin soil overlaying horizontally bedded limestone, in Choctaw County, Oklahoma. I saw and collected the species in a number of localities and it was frequently in the same location with *L. gracilis*, although the latter species was usually to be found on deeper soils. These two species are somewhat alike in habit, but they can be readily distinguished by the pubescence type and by the ovule number. The trichomes of *L. angustifolia* are disc-like from the fusion of the rays basally and appear as if they were a lepidote covering of peltate scales. At their densest, they make the leaves and stems silvery. The stems and leaves of *L. gracilis* are greener and have a sparser covering of small stellate trichomes with discrete branches. There are two ovules per locule in the ovary of *L. angustifolia*, whereas, in *L. gracilis*, there are from eight to twelve ovules per locule. Evidence of hybridization was not seen where these species were growing together even though I looked for it at several locations.

In addition to the Nuttall type and the Leavenworth collection, both from the Red River, but without any further specific locality data, the following collections of *L. angustifolia* have been studied; **Oklahoma**, CHOCTAW COUNTY: 6 mi. east of Hugo, April 13, 1955, *Rollins 5581* (GH); 6 mi. west of Fort Towson, *Rollins 5583* (GH); 5 mi. west of Fort Towson, *Rollins 5585* (GH); 2-3 mi. west of Fort Towson, May 24, 1953, *Moore & Iltis 405* (GH); 5 mi. east of Hugo, April 15, 1950, *Waterfall 9289* (GH); 9 mi. east of Hugo, *Waterfall 9290* (GH). MCCURTAIN COUNTY: 2 mi.

northwest of Idabel, April 19, 1954, *Waterfall 11820* (GH); near Idabel, May 20, 1916, *Houghton 3680* (GH). **Texas:** 1.5 mi. southeast of Clarksville, Red River County, May 12, 1949, *V. L. Cory 56031* (SMU, type of *L. longifolia*).

From the above data, it would appear that *L. angustifolia* is rather restricted in its range. It may be confined to a limited limestone area in southeastern Oklahoma and adjacent Texas. Such a restricted area of distribution would account, in part at least, for the long gap between the early collections and the recent ones. This species occurs in the same locality as *Leavenworthia aurea* which appears to be equally restricted in its distribution in southeastern Oklahoma and has had a similar history so far as paucity and infrequency of collections are concerned.

The Missouri species of *Lesquerella* mistakenly identified as *L. angustifolia* by Payson is unquestionably a distinct species. The next question is by what name should it be known? I have searched the literature and find no available name. Therefore, the species has to be described as new.

***Lesquerella filiformis* Rollins, sp. nov.**

Annual; stems numerous from the base, slender, branched, erect or the outer somewhat decumbent, densely covered with stellate trichomes, 1–2 dm. high, branches often filiform; basal rosette of leaves not formed; basal leaves few, entire, broadly spatulate to orbicular, rounded at apex, abruptly narrowed to a slender petiole, 1–2 cm. long including petiole, 5–8 mm. wide, stellate trichomes on both surfaces numerous but not overlapping; cauline leaves entire, densely pubescent, 1–3 cm. long, 1–6 mm. wide, lower cauline leaves petiolate, often with a broad blade, gradually becoming narrower and sessile upward; inflorescence not crowded; pedicels filiform, divaricately ascending, nearly straight, 7–10 mm. long, densely pubescent; sepals narrowly oblong, densely pubescent, 3–4 mm. long, ca. 1 mm. wide, outer pair slightly saccate; petals light yellow, spatulate, 7–9 mm. long, 2.5–3 mm. wide; filaments slender, dilated at base; anthers ca. 1 mm. long; siliques globose, glabrous both on the exterior and interior, nearly sessile, erect, 2.5–3 mm. in diameter; styles slender, 3–4 mm. long; stigma unexpanded; ovules 2 in each loculus; funiculi attached to thin septum toward base only; seeds brown, somewhat flattened, not margined.

Herba annua; caulibus erectis ramosis tenuibus pubescentibus 1–2 dm. altis; foliis stellato-pubescentibus; foliis radicalibus petiolatis integris late spathulatis vel orbicularibus 1–2 cm. longis, 5–8 mm. latis; foliis caulinis inferne petiolatis superne sessilibus anguste spathulatis vel linearibus 1–3 cm. longis, 1–6 mm. latis; pedicellis filiformibus rectis divaricatis pubescentibus 7–10 mm. longis; sepalis anguste oblongis pubescentibus 3–4 mm.

longis, ca. 1 mm. latis; petalis flavis spathulatis 7–9 mm. longis, 2.5–3 mm. latis; siliquis glabris globosis subsessilibus erectis 2.5–3 mm. diametro; stylis glabris 3–4 mm. longis; loculis 2-ovulatis; seminibus immarginatis.

Type in the Gray Herbarium collected on thin soil, limestone barrens, Turnback, Dade County, Missouri, May 5, 1929, *E. J. Palmer 35604*. An additional collection in the Gray Herbarium is *J. W. Blankenship s. n.* made at Willard, Greene County, Missouri, May 7, 1887.

The illustration and description in Payson's monograph (l.c.), so far as I can interpret them, apply completely to this species. The illustration shows the numerous stems, the branching habit and the lack of a basal rosette of leaves. As pointed out by Payson, the species is amply distinct from *L. gracilis* because of the sessile siliques with 2-ovuled loculi and the filaments with dilated bases. Actually, *L. filiformis* is more closely related to *L. angustifolia* than it is to *L. gracilis*. However, it has stellae with distinct rays instead of stellae of disc-like peltate scales with basally fused rays as found in *L. angustifolia*. Otherwise, the plants of *L. filiformis* are much smaller in every respect than those of *L. angustifolia*. With respect to height, the upper limit of 2 dm. in *L. filiformis* is about the lower limit for *L. angustifolia*. The lower leaves of the latter are dentate to lyrate-pinnatifid, whereas, they are entire in *L. filiformis*. The two species are sufficiently distinctive in aspect to prevent confusion of identity.—GRAY HERBARIUM OF HARVARD UNIVERSITY.