

SUPPLEMENTARY NOTES ON AMERICAN SPECIES OF FESTUCA.

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Since the publication of his monograph of the North American species of *Festuca*,¹ the author has availed himself of opportunities to study the type specimens of several species, which has resulted in clearing up various matters of synonymy. In the course of these studies, it also became apparent that the North American grass referred to *Festuca fratercula* Rupr. is not that plant at all, but an unnamed species.

Festuca sororia sp. nov.

Festuca fratercula Contr. U. S. Nat. Herb. 10: 39. 1906, as to description and specimens cited.

An examination of the type of *Festuca fratercula* Rupr. preserved in the herbarium of the Jardin Botanique de l'État at Brussels shows it to be a very different species, and one not represented in the National Herbarium. *Festuca sororia* is a rare plant occurring in Colorado, Arizona, and New Mexico in mountain ravines.

Type in the U. S. National Herbarium, no. 45866, collected in the Rincon Mountains, Arizona, altitude 225 meters, September, 1891, by G. C. Nealley (no. 177).

The species has been further collected, as follows:

COLORADO: Pagosa Peak, Baker 36, 75, 94, 177, 178; Durango, Tweedy 398a.

NEW MEXICO: Hillsboro Peak, Grant County, O. B. Metcalfe 1236.

Festuca fratercula Rupr.; Fourn. Mex. Pl. 2: 124. 1881.

"Culmo fere tripedali scabro; foliis 3'' latis, retrorsum scabris, longis, planis, apice longe convolutis; ligula brevissima; panicula libera effusa fere pedali folium summum longe superante, radiis geminis divaricatis inaequalibus parce divisis; spiculis 3-floris cum terminali quarto abortivo; glumis inaequalibus acutis, floribus teretibus remotis, palea inferiore acuta potissimum in floribus summis breviter mucronata, glabra; squamulis lanceolatis ovarium aequantibus.

"In humidis inter Pinos montis Orizabensis, 11-12000' (Gal. n. 5778); Cumbre de Estepa, agosto (Liebm.)."

To the above description the following notes may be added: Culm stout, smooth, bearing two leaves; lower leaf blade 20 cm. long, strongly nerved above, firm, scabrous on nerves and margins, attenuate-acute; ligule a fringe of short bristles; lower sheath 30 cm. long, smooth outside, scabrous within near the

¹ Contr. U. S. Nat. Herb. 10: 1-48. 1906.

top; panicle 25 cm. long; rays slender, in twos, the longest 12 cm. long, very scabrous, naked for half its length; spikelets 10 to 12 mm. long, 5-flowered; glumes firm, lanceolate, acute, minutely scabrid near the tip, obscurely veined, the lower 5 mm., the upper 6 mm. long; lemmas firm, thickish, very obscurely veined, acute, purplish near the tip, 7 mm. long; palea slightly exceeding the lemma.

There are no specimens in the National Herbarium that can be referred to this species.

Festuca toluensis H. B. K. Nov. Gen. & Sp. 1: 153. 1816.

In Contributions from the U. S. National Herbarium, volume 10¹, the treatment of this species and its supposedly near allies *F. multiculmis* Steud.² and *F. aequipaleata* Fourn.³, was admittedly unsatisfactory. The types of all three are in the herbarium of the Muséum d'Histoire Naturelle at Paris. *Festuca toluensis*, as shown by more abundant recently collected material, is rather variable, especially in the size of the spikelets and the development of the awns. *Festuca multiculmis* Steud. must be regarded as a synonym, as the type (Heller 306, Mount Toluca) is identical with the type of *F. toluensis* from the same mountain. *Festuca aequipaleata* Fourn. differs only in the tendency of the spikelets to be smaller and in the unawned or very short-awned lemmas. On some specimens both awned and awnless lemmas occur, and other specimens show complete intergradation to *F. toluensis*. It is therefore best considered a subspecies.⁴

Festuca texana Steud. Syn. Pl. Glum. 1: 310. 1854.

The type is preserved in Steudel's herbarium in the Muséum d'Histoire Naturelle, Paris. It was collected by Drummond (no. 387) in Texas, at San Felipe, as indicated by the specimen at Kew. The plant is *Leptochloa fascicularis* (Lam.) A. Gray.

Festuca pseudoduriuscula Steud. Syn. Pl. Glum. 1: 312. 1854.

The type of this, Drummond's no. 389 from Texas, is also in Paris. It is *Festuca obtusa* Spreng., as is also Drummond's no. 398, indicated by Steudel as a variety but not named in publication. According to the specimens at Kew, nos. 389 and 398 are both from San Felipe, Texas.

Festuca glabra Spreng. Syst. Veg. 1: 353. 1824.

The original specimen of this is in the Königliches Botanisches Museum, Dahlem, Berlin, and is labeled "Seacoast, Long Island, Nuttall." It is the ordinary Atlantic coast form of *Festuca rubra* L.

¹ Page 44.

² Syn. Pl. Glum. 1: 310. 1854.

³ Mex. Pl. 2: 125. 1881.

⁴ *FESTUCA TOLUCENSIS AEQUIPALEATA* (FOURN.)

Festuca aequipaleata Fourn. Mex. Pl. 2: 125. 1881.

The following specimens of *Festuca toluensis* have been examined:

MEXICO (STATE): Mount Toluca, Bonpland in 1833 (type); Heller 306 (type of *F. multiculmis*); Rose & Painter 7983; E. W. Nelson 14.

MORELOS: Mount Popocatepetl, Hitchcock 6001; Rose & Hay 5735, 6297, 5978a.

JALISCO: Mount Nevada, Hitchcock 7167, 7158, 7165½.

PUEBLA: Mount Orizaba, Seaton 193, 228; Liebmann 510, 511 in part.

Specimens of *Festuca toluensis aequipaleata* have been examined as follows:

PUEBLA: Mount Orizaba, Liebmann 510, 511 in part.

MORELOS: Mount Popocatepetl, Rose & Hay 5697.

SAN LUIS POTOSI: Specific locality not stated, Parry & Palmer 924.

Festuca delawarica Kunth, Rév. Gram. 1: 129. 1829.

Poa delawarica Link, Hort. Berol. 1: 174. 1827.

The type is in Berlin, labeled "Delaware (Bernhardi)". The specimen was apparently grown in the Botanic Garden at Berlin. It is the species American botanists call *Puccinella distans*.

Festuca villiflora Steud. Syn. Pl. Glum. 1: 313. 1854.

The type is in Steudel's Herbarium at Paris labeled "Labrador, Missionary Albrecht" and consists of one small plant. It is *Festuca rubra kitaibellana* (Schultes) Piper, as previously surmised from Steudel's description.

Festuca megalura Nutt. Journ. Acad. Phila. n. ser., 1: 188. 1847.

This has as synonyms *F. commutata* Steud.¹ and *F. chaetantha* Kunze, cited as a synonym under *F. sciuroides* by Desvaux.² Both types are in Paris.

Festuca eriolepis Desv. in Gay, Fl. Chil. 6: 428. 1853.

The type is in the herbarium of the Muséum d'Histoire Naturelle, Paris. It is not the plant described and figured in Contributions from the U. S. National Herbarium volume 10,³ but is the same as *Festuca octoflora hirtella* Piper.⁴ The Chilean specimens have usually but 5 florets to each spikelet, a condition that also occurs in dwarfed specimens from California and Oregon.

¹ Syn. Pl. Glum. 1: 304. 1854.

² In Gay, Fl. Chil. 6: 427. 1853.

³ Contr. U. S. Nat. Herb. 10: 13. 1906.

⁴ Op. cit. 12.