

NOTES ON SOME PACIFIC COAST GRASSES.

By GEORGE VASEY.

The grasses of California as described by Dr. Thurber in the Botany of California, second volume, are mostly models of accurate description. In some cases, however, and especially in the genera *Poa* and *Festuca*, Dr. Thurber in his conservative desire to make as few new species as possible made mistakes in trying to fit many really good new species to old names. I have been well satisfied of this for several years, but having recently had an opportunity of studying some of these grasses in the herbarium at Kew and in that of the British Museum, I am compelled to make several important changes. It appears to me that Dr. Thurber gave too broad definition to the genus *Atropis* (*Puccinellia* Parl.). The first and second species of his list probably belong in that genus, but *A. californica*, *tenuifolia*, *pauciflora*, and probably *scabrella* are, in my opinion, forms of *Poa*.

Poa abbreviata R. Br. Chloris Melv. 287 (1823), is a truly arctic grass, as noted hereafter, on page 270 under *Poa confinis*.

Poa stenantha Trin. Mem. Acad. St. Pet. ser. 6. i. 376 (1831) is an Alaskan species which has not, so far as I can find, been collected in California or in Washington, and the plant described by Dr. Thurber under that name is a very different species. It is probably *Festuca nervosa* Hook., which, however, is not a *Festuca*, but a *Poa*. I saw Hooker's type in the Royal Herbarium at Kew, and am satisfied that it should be *Poa nervosa* (Hook.) Vasey. See description on page 274.

Poa glumaris Trin. Mem. Acad. St. Pet. ser. 6. i. 379 (1831). It is evident that Dr. Thurber, in Bot. Cal. ii. 313, has confused this grass with *Poa kingii* Wats. Bot. King Surv., which is *Festuca confinis* Vasey, Bull. Torr. Club, xi. 126, and which would have been named *Festuca kingii* if its identity had been known at the time of its second publication. The two grasses are entirely distinct. *Festuca confinis* occurs throughout the Rocky Mountains, where *Poa glumaris* has not been found. *P. glumaris*, however, appears to be confined to the coast, and has not been collected so far south as Washington on the west side, but it occurs about Hudson Bay, in Labrador, in the islands of the St. Lawrence, and in Newfoundland:

Eragrostis alba Presl, Rel. Haenk. i. 279 (1828). None of the Californian specimens which I have seen under this name answer the description of Presl, but appear to be forms of the very variable *E. purshii*.

Festuca L. There are several good species of this genus in California which must have new names. The *F. gracillima* of Hooker, to which Dr. Thurber referred

one of them, is a South American grass of which I have seen authentic specimens in the Kew Herbarium and elsewhere, and is very different from the Californian plant, which I have named *F. viridula*. See description on page 279.

Festuca scabrella Torr. Bot. Cal. ii. 318 (1880). Dr. Thurber has here included at least two species. Neither of them appears to be the true *scabrella* as described and figured in Hooker's *Flora Boreali-Americana*, which is rather sparingly represented in our herbarium by specimens from British America, Montana, Colorado, and the mountains of the Gaspé, Lower Canada. What is probably a large variety of this species occurs in eastern Oregon and Washington, variety *major*. (See page 278.) Another species described under this name is a stout, tall grass of California and Oregon, which I have called *F. californica*. See description on page 277.

Festuca pauciflora Thunb. Fl. Jap. 52 (1784). The grass which Dr. Thurber described under this name is not that plant, as I ascertained by examination of the true *F. pauciflora* in the herbarium at Kew. The Californian plant described includes *Festuca occidentalis* Hook., and perhaps one or two other species.

It is difficult at the present time to decide as to the Hookerian species. The original description says: "Leaves principally radical, one-fourth the length of the culms, 3 or 4 on the culm, distant, but the culm is almost wholly concealed by their remarkably long, sheathing bases. Panicle 5-6 inches long; branches slender, again divided, more or less long, and more or less patent. Spikelets small in proportion to the size of the panicle, green, glossy, smooth. Awns about equal in length to the perianth [floral glume]. Glumes short and obtuse, especially the upper or inner one, which is about twice as long as the outer one, yet not half so long as the floral valves. Inner valves [palea] of the floret as long as the outer, acute, flat at the back, but the margins closely inflexed." The description also says: "Leaves, very narrowly linear-filiform;" also: "Glumes small, very unequal, obtuse and ciliate at the apex." Dr. Thurber, in Bot. Cal. ii. 318, has considerably modified the description, comments on the "obtuse" glumes, and refers to specimens communicated to the Torrey herbarium by Sir William Hooker, in which the glumes "would hardly be called obtuse." I have examined the specimens referred to, as also others in the Kew herbarium, and think they are some of the forms of *Festuca ovina* or *rubra*. One of the species which was probably included in Dr. Thurber's description of *F. pauciflora* Thunb. is what I have elsewhere described as *Festuca jonesii*. Another, which may also have been included under that name, is *Festuca ambigua*, described on page 277.

Elymus sibiricus L. Sp. Pl. i. 83 (1753). The species described by Dr. Thurber under this name is not the Linnæan plant, and is hereafter described as *E. glaucus* variety *tenuis*. (See page 280.)