NEW TAXA OF FESTUCA (POACEAE) FROM ECUADOR

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Abstract: A revision of the genus Festuca (Poaceae) in Ecuador resulted in the description of nine new taxa presented here. All are endemic to the Ecuadorian páramos. The majority of taxa (F. carchiense, F. holubi, F. soukupii, F. oroua, F. imbaburensis, F. chimborazensis subsp. micacochensis, F. parciiflora subsp. loxana, F. vaginalis subsp. cayambae) belong to the section Festuca, the largest and cosmopolitan section of subgenus Festuca. Festuca laegaardii is a new taxon of the small South American section Cataphylophorae (subgen. Festuca). Comments on an interesting case of the vegetative proliferation in F. subultifolia are given.

Keywords: Cataphylophorae, Páramo, Taxonomy, Vivipary

INTRODUCTION

Although first reports and collections of the Ecuadorian species of the genus Festuca L. come from HUMBOLDT et al. (1815), Mutis (PINTO-ESCOBAR 1985, BLANCO et al. 1991), HITCHCOCK (1927), SAINT-YVES (1927) or KUNTH (1833) the knowledge of the taxonomy of the genus in Ecuador is still incomplete. The recently published works of ALEXEEV (1984, 1986), JORGENSEN & LILLOA ULLOA (1994), JORGENSEN & LEÓN YÁNEZ (1999) or LUTEYN (1999) have not given a satisfactory view of the species diversity of Festuca in Ecuador.

MATERIAL AND METHODS

Present paper is based on an extensive study of Ecuadorian herbarium material of the genus Festuca (about 700 specimens) provided from different herbaria (AAU, B, LOJA, MA, QCA, QCNE, QAP, QPLS, P, PRC, US, W) and my field collections. Comparative material of about 800 specimens from Venezuela, Colombia, Peru, Bolivia, Argentina and Chile was studied. In total 26 morphological and 5 anatomical characters were studied: height of plants, formation of innovations, number and position of the nodes, presence/absence of auricles, length and diameter of the leaf, shape and length of ligule, colour and structure of veins, surface of culms, length of panicle, length of spikelets (measured total length of spikelet) and number of florets, length, shape and surface of glumes, lemma and palea, length of anthers, length of hilum, number of vascular bundles, number of ribs, distribution of the sclerenchyma, relative density and length of trichomes.

Observations of micromorphological and anatomical characters were done using a microscope and magnifying glass with micrometer. Leaf sections were prepared from dry herbarium specimens after hydration in soap solution and observed in microscope under 100× magnification.
Based on a thorough study of the genus *Festuca* in Ecuador and neighbouring countries nine new taxa are described here. Each description of the new species or subspecies is based on about 15 specimens representing whole distribution range of a given taxon (*F. imbaburensis, F. soukupii, F. chimborazensis* subsp. *micacochensis, F. vaginalis* subsp. *cayambae*). In some cases, 5 specimens (*F. carchiense, F. parciflora* subsp. *loxana, F. laegaardii*) or only the type specimen (*F. holubii, F. oroana*) were available for descriptions. The data on quantitative characters in descriptions are based on 3–5 measurements per specimen.

**RESULTS**


No specimens of *F. casapaltensis* BALL and *F. ortophylla* PILG., previously published for the area of Ecuador (in herbarium collections or cited in literature) were found. Some previously cited specimens were found by the present author to be misidentified: a specimen published as *F. dichoclada* PILG. (RIMBACH 54 US) in fact belongs to *F. quadridentata*, specimens identified as *F. dolichophylla* J. PRESL represent *F. subulifolia* (HARTEMAN 67 (US), HITCHCOCK 21994 (NY, US), HITCHCOCK 22030 (NY, US), HITCHCOCK 21951 (US), SPRUCE 5509 (US)) and *F. asplundii* (HITCHCOCK 21978 (US)). A specimen cited as *F. peruviana* INFANTES (GRUBB 620 (NY, US)) belongs to *F. chimborazensis* and a specimen earlier determined as *F. rigescens* (J. PRESL) KUNTH (ACOSTA-SOLís 19199 (US)) is in fact *F. asplundii*. All specimens treated in the past as *F. ulochaeta* NEES ex STEUD. belong to *F. flacca*.

Nine new taxa (six species and three infraspecific taxa) are described here. The full data on the revision of the genus *Festuca* in Ecuador and the biogeographical analysis are in preparation and therefore only type material is cited here.

**FESTUCA L. SUBGEN. FESTUCA SECT. FESTUCA**

Within the heterogeneous group of specimens originally treated as *F. glumosa*, apart from *F. glumosa* itself, two new taxa are distinguished mainly on the morphological basis as described below. One of them, *F. carchiense*, is known only from the restricted area of grass-páramo of Northern Ecuador:

1. *Festuca carchiense* Stančík, sp. nov.

   **Type:** Ecuador, department Carchi, km 11 along road Las Juntas (Tulcan) – El Angel, 00°43′ N, 77°50′ W, 3330 m (11.III.1992 LAEGAARD 101716, holotype: AAU; isotypes: PRC, QCA, QCNE) (Fig. 1).