

# ERAGROSTIS (POACEAE: CHLORIDOIDEAE: ERAGROSTIDEAE) IN COLOMBIA

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## ABSTRACT

A taxonomic summary is presented for the Colombian species of *Eragrostis*. The genus *Eragrostis* is represented in Colombia by 25 species and one nontypical subspecies. *Eragrostis mokensis* Pilg., *E. nigricans* (Kunth) Steud., and *E. rufescens* Schrad. ex Schult. are reported for the first time in Colombia. Keys for determining the species, descriptions, illustrations, geographical distributions, and morphological and ecological observations are provided for all native and adventive species of *Eragrostis* in Colombia. *Eragrostis patula* (Kunth) Steud. (= *Poa patula* Kunth) and *E. uniolooides* (Retz.) Nees ex Steud. (= *Poa uniolooides* Retz.) are excluded from the Colombian Flora since all specimens identified as *E. patula* are apparently misidentified and are usually referable to *Eragrostis tenuifolia* (A. Rich.) Hochst. ex Steud. A single specimen identified as *Eragrostis uniolooides* as cited in the Antioquia's Flora was misidentified and is referable to *Poidium juergensii* (Hack.) Matthei.

## RESUMEN

Se presenta un estudio taxonómico de las especies colombianas del género *Eragrostis*. Este género está representado en Colombia por 25 especies y una subespecie, de las cuales *Eragrostis mokensis* Pilg., *E. nigricans* (Kunth) Steud. y *E. rufescens* Schrad. ex Schult. se citan por primera vez para la flora de Colombia. Se presentan las claves para reconocer las especies nativas y adventicias presentes en Colombia, así como las descripciones de éstas, la iconografía, la distribución geográfica y se comentan algunas observaciones morfológicas y ecológicas. Las especies *E. patula* (Kunth) Steud. (= *Poa patula* Kunth) y *E. uniolooides* (Retz.) Nees ex Steud. (= *Poa uniolooides* Retz.) se excluyen de la flora colombiana. *Eragrostis patula* es frecuentemente considerada en floras locales de Colombia; sin embargo, los especímenes referidos a dicha especie pertenecen a *E. tenuifolia* (A. Rich.) Hochst. ex Steud. Por otra parte, *E. uniolooides* ha sido citada, en base a un único ejemplar, para la Flora de Antioquia, pero realmente el espécimen corresponde claramente a *Poidium juergensii* (Hack.) Matthei.

*Eragrostis* is a large genus of approximately 350 species occurring in tropical, subtropical and warm temperate regions throughout the world (Clayton & Renvoize 1986; Watson & Dallwitz 2008; Peterson et al. 1995, 1997; Lazarides 1997; Veldkamp 2002; Ingram & Doyle 2007; Peterson & Sánchez Vega 2007). There are 111 species of *Eragrostis* recorded in North, Central, and South America, and 67 native in South America (Peterson & Boechat 2001; Peterson 2003; Peterson et al. 2001, 2007). The genus is characterized by having many-flowered spikelets where the disarticulation of the lemma and palea occurs separately, lemmas that are usually 3-nerved and unawned, longitudinally bowed-out paleas with ciliate keels, paniculate inflorescences, and leaves with ciliate ligules (Peterson et al. 1997). Most species of *Eragrostis* occupy open habitats with poor soils, and many occur in ruderal sites (Clayton & Renvoize 1986; Van den Borre & Watson 1994), and their distribution exhibits wide altitudinal gradients and a high variation in humidity conditions, from the sea level to 3600(–4000) m, and from pluvial environments to xeric habitats, respectively.

Colombia is placed in the Neotropical Region and encompasses 1,141,748 km<sup>2</sup>. The geomorphological and environmental complexity of Colombia is tremendous where there is an altitudinal gradient from sea level to over 5800 m, and climates can vary from wet and humid to xeric and dry. The country can be divided into three major regions: the Andes with three Cordilleras (Occidental, Central, and Oriental), the Pacific Region, and the Caribbean territories. In Colombia there are a multitude of habitats for plants to occupy and this has led to its high biodiversity, second only to Brazil. The Poaceae are a diverse family that occupies a myriad of terrestrial habitats in Colombia. According to our inventories, the Poaceae is represented in Colombia by 811 species [a single genus (*Agrostopoa* Davidse, Soreng, and P.M. Peterson; Davidse et al. 2008) and 40 species are endemic to Colombia] that are currently placed in 157 genera. The grass family is the third largest family of vascular plants in Colombia behind the Orchidaceae and Asteraceae.

In Colombia the Panicoideae (350 species/63 genera), Pooideae (148 species/36 genera), and Chloridoideae (98 species/25 genera) are the richest grass subfamilies. The largest genera are *Paspalum* (83 species), *Panicum* (48), *Festuca* (33), *Chusquea* (25), *Eragrostis* (25), *Calamagrostis* (23), *Axonopus* (22), *Digitaria* (19), *Setaria* (15), *Aulonemia* (12, Judziewicz, per. comm.), *Lasiacis* (12), *Agrostis* (11), *Muhlenbergia* (10), and *Sporobolus* (10). The species within these subfamilies exhibit a specific distribution that is correlated with the altitude and/or with the rainfall patterns. Therefore, the Panicoideae are more diverse in the lowlands and wet areas where precipitation is high, the Pooideae are best represented in the high elevation páramos, and the Chloridoideae are best represented in dry areas at mid-levels of elevation.

Two centers of species diversity have been recognized in Colombia: the Llanos Orientales (Orinoco Region) and the páramos (Giraldo-Cañas 2007). The Orinoco Region is dominated with  $C_4$  grasses and neotropical elements, whereas the páramos are dominated with  $C_3$  grasses and holarctic and/or cosmopolitan genera. Despite different analyses, the results indicate there is no clear pattern in regards to endemism in these natural areas (Giraldo-Cañas 2007).

As a result of our studies, 11 new species and one new genus have been described, and 18 genera and 82 species have been recorded for the first time in Colombia (Giraldo-Cañas 2007). This serves to emphasize the tremendous variety and botanical interest present in Colombia, a floristically diverse neotropical country. The taxonomic knowledge of this family in Colombia is incomplete, and it is still possible to encounter novel species and many new records for this country. There have been very few taxonomic studies investigating Colombian grasses integrating the newest classifications based on molecular evidence. The data also indicate a need to increase field exploration, primarily in the Llanos Orientales, Sierra Nevada de Santa Marta, Nariño, and the Caribbean Region.

We report 25 species and one nontypical subspecies of *Eragrostis* for the Colombian Flora, three of the species are cited for the first time for Colombia: *Eragrostis mokensis* Pilg., *E. nigricans* (Kunth) Steud., and *E. rufescens* Schrad. ex Schult. Our taxonomic treatment contains a key for determining species, descriptions, distributions, specimens examined, illustrations, and synonymies. Only synonyms used frequently in Colombian literature and those of South American origin are given. For further synonymy see Peterson et al. (2001), Peterson & Boechat (2001), and Soreng et al. 2008. This study is based on the examination of herbarium specimens from COAH, CAUP, COL, HUA, MO, PSO, and US, including the type specimens of most species studied. The present study contributes knowledge of the Colombian grasses in collaboration with the Biodiversity Program and Colombian Flora Inventories.

#### TAXONOMIC TREATMENT

**Eragrostis** Wolf, Gen. Pl. 23. 1776. TYPE: *Eragrostis minor* Host, Icon. Descr. Gram. Austrac. 4:15. 1809 (LECTOTYPE, designated by R. Ross, Acta Bot. Neerl. 15:157. 1966).

Plants annual or perennial; usually synoecious, sometimes dioecious; caespitose, stoloniferous, or rhizomatous; flowering culms (2–)5–150 cm tall, not woody, erect, decumbent, or geniculate, sometimes rooting at the lower nodes, simple or branched; internodes solid or hollow; bud initiation intravaginal, rarely extravaginal. Leaf sheaths open, often with tufts of hairs at the apices, hairs 0.3–9 mm long; ligules usually membranous and ciliolate or ciliate, cilia sometimes longer than the membranous base, occasionally of hairs or membranous and non-ciliate; blades flat, folded, or involute. Inflorescences terminal, sometimes also axillary, simple panicles, open to contracted or spike-like, terminal panicles usually exceeding the upper leaves; pulvini in the axils of the primary branches glabrous or hairy; branches not spike-like, not disarticulating. Spikelets 1–20 mm long, 0.5–4.5 mm wide, laterally compressed, with 2 to 40 florets; disarticulation below the fertile florets, sometimes also below the glumes, acropetal with deciduous glumes and lemmas but persistent paleas, or basipetally with the glumes often persistent and the florets usually falling intact; glumes usually shorter than the adjacent lemmas, usually 1(3)-nerved, not lobed, apices obtuse to acute, unawned; calluses glabrous or sparsely pubescent; lemmas usually glabrous, obtuse to acute, 3(5)-nerved, usually keeled, unawned or mucronate; paleas shorter than the lemmas, longitudinally bowed-out by the caryopses, 2-keeled, keels usually

short or long ciliate, intercostal region membranous or hyaline; stamens 2 or 3; ovaries glabrous; styles free to the bases. Cleistogamous spikelets occasionally present, sometimes on the axillary panicles, sometimes on the terminal panicles. Caryopses variously shaped; hilum short; embryo with an epiblast, scutellar tail, and elongated mesocotyl internode (formula P+PF), endosperm hard. Chromosome base number of  $x = 10$ ,  $2n = 20, 40, 50, 60, 80, 100$ , and  $108$ ; 2, 4, 5, 6, 8, and 10 ploid (Watson & Dallwitz 2008).

**Anatomical and biochemical features.**—All species of *Eragrostis* that have been examined anatomically exhibit “Kranz” or  $C_4$  leaf anatomy [except *E. walteri* Pilg. from South Africa, which exhibits  $C_3$  leaf anatomy; see Ellis (1984)], and species have either chloridoid bicellular microhairs (with the broad, short terminal cell the same thickness as the basal cell) or panicoid bicellular microhairs (with a long, thin-walled terminal cell) [Amarasinghe & Watson 1990]. Apparently, three  $C_4$  biochemical types exist in *Eragrostis*: NAD-ME (nicotinamide adenine dinucleotide co-factor malic enzyme), PCK (phosphoenolpyruvate carboxykinase), and intermediates (Prendergast et al. 1986).

**Taxonomic position.**—The genus *Eragrostis* is placed in tribe Eragrostideae, which in the New World includes three small subtribes (Cotteneinae, Uniolinae, and Eragrostidinae) that diverge as a clade at the base of the chloridoids (Peterson et al. 2007). Character trends in the Eragrostideae include spikelets with many florets, lemmas with 3 to 13-nerves, and many species adapted to xeric habitats. In the New World the Eragrostidinae includes two native genera: *Eragrostis* with 111 species (86 native to New World); and *Steirachne* Ekman with two species (Peterson 2003; Peterson et al. 2007). The Eragrostidinae is characterized by hairy or glabrous culm nodes, hairy or glabrous rachillas, entire lemma apices that are awnless, mucronate, or short-awned (only in the latter two genera), glabrous or scabrous lemmas that are (1)3(5)-nerved, and short basal microhair cells (15–75  $\mu\text{m}$ ) on the abaxial epidermis of the leaf blade. Morphologically, the two species of *Steirachne* [*S. barbata* (Trin.) Renvoize and *S. diandra* Ekman] are hardly separable from *Eragrostis acutiflora*, as all have acuminate to attenuate or subaristate, 3-nerved lemmas (Peterson et al. 2007). However, the lemmas of the two species of *Steirachne* have more pronounced setulose lemmas and elongate caryopsis (Renvoize 1984).

**Monophyly of *Eragrostis*.**—Based on nuclear and plastid DNA sequences, Ingram and Doyle (2003, 2004, 2007) tested the monophyly of *Eragrostis* and found that, with the inclusion of *Acamptocladus* Nash (*E. sessilisipica* Buckley), *Diandrochloa* De Winter, *Neeragrostis* Bush, and *Pogonarthria* Stapf, the genus is indeed monophyletic. However, only 37 species of *Eragrostis* were included in their analysis, so any infrageneric interpretations were beyond the scope of their work.

**Infrageneric classification.**—Based on spikelet disarticulation, Clayton (1974) and Clayton and Renvoize (1986) have arrived at a first approximation to natural groups and have presented a key to sections *Psilantha* (K. Koch) Tzvelev, *Eragrostis*, *Lappula* Stapf, and *Platystachya* Benth. In most taxa native to the Western Hemisphere, disarticulation of the spikelet is acropetal (florets first maturing at the base) and the lemmas fall with the caryopses, leaving paleas attached to the rachilla. The common mode of disarticulation for introduced species from Africa and Asia is basipetally, where the florets near the apex mature first.

Van den Borre and Watson (1994) investigated 53 species of *Eragrostis* and found that anatomical characters, among others, support the recognition of two distinct groups: *Eragrostis* subgen. *Eragrostis* and *Eragrostis* subgen. *Caesia* Van den Borre & L. Watson. The most comprehensive attempt so far is Lazarides' (1997) treatment of the Australian *Eragrostis*, in which he recognized six groups primarily based on spikelet disarticulation. Lazarides (1997) correlates his classification with Van den Borre and Watson (1994), who recognized subgenus *Eragrostis* and subgenus *Psilantha*, and with Amarasinghe and Watson (1990), who investigated microhair morphology within the genus. Cope's (1998) informal treatment of *Eragrostis* for the Flora of Zambesiaca is also comprehensive since he delineates nine species groups based on panicle, lemma, and palea morphology in addition to spikelet disarticulation.

Based on caryopsis morphology, Boechat and Longhi-Wagner (2003) placed 49 of the 53 species of *Eragrostis* that occur in Brazil into the following six groups: smooth-walled (six species), medianly reticulate (14 species), roughly reticulate (10 species), finely reticulate (nine species), alveolate (six species), and striate

(four species). Overall morphological features led Peterson and Valdés Reyna (2005) to recognize the following four hypothesized lineages within 26 species of *Eragrostis* from northeastern Mexico: an Old World group, the *E. intermedia* Hitchc. complex, the *E. pectinacea* complex, and the *E. spectabilis* (Pursh) Steud.–*E. secundiflora* J. Presl group.

In addition, recent systematic treatments of *Eragrostis* from Argentina (Nicora 1998), Australia (Lazarides 1997), Bénin (Houinato et al. 2000), Bolivia (Renvoize 1998), Brazil (Boechat & Longhi-Wagner 2000, 2001), Congo (Kami 1993), Costa Rica (Pohl 1980), Côte-d'Ivoire (Poilecot 1995), Ecuador (Peterson 2001), France (Portal 2002), Guianas (Judziewicz 1991), Malesia (Veldkamp 2002), Mesoamerica (Davidse 1994), Mexico (Beetle et al. 1991; Peterson & Valdés Reyna 2005), Niger (Poilecot 1999), Peru (Tovar 1993; Peterson & Sánchez Vega 2007), the United States and Canada (Peterson 2003), Venezuela (Graterol et al. 1989), and Zambesiaca (Cope 1998) have given us a good understanding of the species limits and their distribution. However, there is no definitive treatment of the infrageneric classification of the entire genus.

**Etymology.**—The origin of the name is somewhat obscure. Nathaniel M. von Wolf (1776), who first named *Eragrostis*, made no statement concerning the origin of its name. Clifford (1996) provides three possible derivations: from “eros” (love), and “Agrostis” (the Greek name for an indeterminate herb); from the Greek “er” (early) and “agrostis” (wild), referring to the fact that some species of *Eragrostis* are early invaders of arable land; or the Greek “eri-” (a prefix meaning “very” or “much”), suggesting that the name means many-flowered “Agrostis.” Watson and Dallwitz (2008) indicate that the derivation of *Eragrostis* is “from the Greek ‘eros’ (love) or ‘era’ (earth) and ‘agrostis’ (a grass), probably alluding to the characteristic, earthy (human) female aroma of the inflorescences of many species.”

**Ecology and geographic distribution.**—The 25 species of *Eragrostis* in Colombia are widely distributed among the coast (mainly Caribbean coast), Andean mountains, llanos, forest regions, cultivated fields, and city sidewalks. The annual species are more conspicuous along the sandy plain of the coast, the interior valleys of the western slopes, and in the dry Andean valleys at lower elevations. Along the north coast, *E. tenella*, *E. ciliaris*, *E. cilianensis*, *E. hypnoides*, and *E. viscosa* form part of the xerophytic vegetation.

The mountains species of *Eragrostis* are an integral component of natural, mid to high elevation ecosystems. *Eragrostis nigricans* and *E. pilosa* are usually found growing along margins of cultivated fields while many other species inhabit the edges of roads and trails. *Eragrostis lurida*, and *E. pastoensis*, are principally found in the altiplano, and disappear in the páramos. In the mountainous region of central and southern Colombia there is a greater number of perennial, native species of *Eragrostis*. *Eragrostis hypnoides* is the only species commonly found along the coast and in the Amazonian forest in areas that are periodically flooded, i.e., margins of rivers.

**Caryopsis morphology.**—The caryopsis contains many morphological features that are important aids in the identification of species and this information can be used to infer hypothetical relationships among the grasses (Boechat & Longhi-Wagner 2003; Colbry 1957; Peterson et al. 2007; Terrell & Peterson 1993). In *Eragrostis*, grains can be terete, subterete, rectangular or trigonous in cross-section, and are sometimes compressed either dorsally (on a plane with the embryo) or laterally (Peterson & Sánchez Vega 2007). The shape of the grain can vary from spherical to much longer than broad (ellipsoid, obovoid, ovoid, rectangular-prismatic, etc.). The embryo is located on the dorsal (abaxial) surface of the grain and the hilum is the tiny scar left from the attachment of the funiculus found near the base on the ventral surface. The ventral (adaxial) surface can be rounded, flattened or sometimes have a sulcus or groove running longitudinally along the body. The surface of the grain can be smooth to variously sculptured and is often striate to reticulate. In the grasses the surface or pericarp of the grain is almost always adnate, i.e., a true caryopsis; however, a few species of *Eragrostis* (see *E. japonica*) can have loose pericarps that shed when the grain is moistened. Color of the grain can vary from light brownish or whitish to reddish brown, and the grains can be translucent to opaque.

The most common caryopsis type found in Colombian *Eragrostis* is the rectangular-prismatic to irregularly triangular, laterally-flattened, striate, reticulate-walled, and ventrally-grooved grain. This is found predominately in species that occupy the altiplano such as *E. lurida* and *E. pastoensis*, as well as in *E. lugens*,

*E. mexicana*, *E. nigricans*, and *E. tenuifolia* (of African origins). *Eragrostis pectinacea* and *E. pilosa* are similar to the last group, although these two species have grains that are striate only and are rectangular in cross-section, so they are at least flattened ventrally but do not have a groove. *Eragrostis maypurensis* is unique in possessing rhomboid reticulations without striations. *Eragrostis tenella*, *E. cilianensis*, *E. ciliaris*, *E. curvula*, *E. hypnoides*, *E. japonica*, and *E. maypurensis* are all circular or elliptical to ovate/obovate in cross-section. *Eragrostis tenella*, *E. ciliaris*, *E. curvula*, and *E. japonica* are striate or smooth with no evidence of reticulations. *Eragrostis ciliaris*, *E. japonica*, *E. pilosa*, and *E. curvula* all have somewhat dorsally flattened caryopses. *Eragrostis curvula* in addition to being strongly dorsally-flattened, can sometimes possess a shallow and broad ventral groove.

**Economic importance.**—The following Colombian species of *Eragrostis* are weedy around the World: *E. cilianensis*, *E. curvula*, *E. japonica*, *E. mexicana*, *E. pectinacea*, *E. pilosa*, *E. tenella*, *E. tenuifolia*, and *E. viscosa*. *Eragrostis tef* (Zucc.) Trotter and *E. curvula* are cultivated, and *E. superba* Peyr., a drought resistant species, is used primarily for reseeding denuded land (Watson & Dallwitz 2008). *Eragrostis tef* is a staple cereal in Ethiopia, which is potentially of wide interest (Watson & Dallwitz 2008). *Eragrostis cilianensis*, *E. ciliaris*, *E. curvula*, *E. pas-tensis*, *E. pilosa*, and *E. tenuifolia* are important pasture elements in Colombia (Watson & Dallwitz 2008; pers. obs.).

KEY TO THE SPECIES OF *ERAGROSTIS* IN COLOMBIA

1. Plants annual, caespitose or mat-forming, without innovations.
  2. Stamens 2; pedicels 0.1–1 mm long, mostly shorter than the spikelets.
    3. Palea keels prominently ciliate, the cilia 0.2–1 mm long; spikelets 1.8–3.3 mm long, 6–11-flowered; lower glumes 0.7–1.2 mm long; upper glume 1–1.6 mm long; lemmas 0.8–1.3 mm long \_\_\_\_\_ **5. *E. ciliaris* var. *ciliaris***
    3. Paleas keels smooth to scabrous, the scabridities less than 0.2 mm long; spikelets 6–15(–21) mm long, 10–43-flowered; lower glumes 1.4–2.5 mm long; upper glume 1.5–2.6 mm long; lemmas 1.6–2.3 mm long \_\_\_\_\_ **21. *E. rufescens***
  2. Stamens 3; pedicels usually 1–4(–7) mm long, as long or longer than the spikelets.
    4. Palea keels prominently ciliate, the cilia 0.2–1 mm long.
      5. Plants viscid with particles of soil adhering to the sticky areas along the sheaths, culms, and blades; spikelets (2–)2.5–5.5 mm long \_\_\_\_\_ **25. *E. viscosa***
      5. Plants not viscid and without particles of soil adhering to vegetative portions.
        6. Paleas orbicular, winged \_\_\_\_\_ **14. *E. mokensis***
        6. Paleas obtuse, acute to truncate, not winged.
          7. Spikelets (1–)1.5–2.2 mm long \_\_\_\_\_ **23. *E. tenella***
          7. Spikelets 5–20 mm long \_\_\_\_\_ **4. *E. cilianensis***
    4. Paleas smooth to scabrous, the scabridities less than 0.2 mm long.
      8. Plants mat-forming; panicles 1–3.5 cm long; erect portion of culms (2–)5–20 cm, tall, the basal portion prostrate and rooting at the nodes \_\_\_\_\_ **47. *E. hypnoides***
      8. Plants not forming mats; panicles 3–55 cm long; culms 15–130 cm tall, not prostrate or rooting at the lower nodes.
        9. Ligules membranous, glabrous \_\_\_\_\_ **9. *E. japonica***
        9. Ligules ciliate with a row of tiny white hairs.
          10. Lemmas with 1–3 crateriform glands on the keels; spikelets 2–4 mm wide; disarticulation of entire florets from persistent rachilla \_\_\_\_\_ **4. *E. cilianensis***
          10. Lemmas without crateriform glands; spikelets 0.6–2.5(–3) mm wide; disarticulation of the lemmas only, palea and rachilla usually persistent.
            11. Lemmas acuminate, the apices recurved, chartaceous; pulvini (axils of the primary branches) densely pilose, the hairs up to 4 mm long \_\_\_\_\_ **12. *E. maypurensis***
            11. Lemmas acute to obtuse, the apices never recurved, membranous; pulvini usually glabrous to sparsely ciliate, the hairs if present less than 1.5 mm long.
              12. Caryopses with a shallow or deep adaxial groove.
                13. Spikelets not arranged in glomerules, 5–11(–15)-flowered, (4–)5–10(–11) mm long; pedicels appressed to narrowly divergent, stiff \_\_\_\_\_ **13. *E. mexicana***
                13. Spikelets arranged in glomerules, 2–4(–5)-flowered, 2.6–3.8 mm long; pedicels spreading, divaricate and stout \_\_\_\_\_ **15. *E. nigricans***
              12. Caryopses without an adaxial groove.
                14. Lower glumes 0.5–1.5 mm long, at least 1/2 as long as the lowest lemmas; spikelets 1.2–2.5 mm wide; panicle branches solitary or paired at the lowest 2 nodes; lemmas with moderately conspicuous lateral veins \_\_\_\_\_ **17. *E. pectinacea* var. *pectinacea***

14. Lower glumes 0.3–0.6(–0.8) mm long, usually less than 1/2 as long as the lowest lemmas; spikelets 0.6–1.4 mm wide; panicle branches usually whorled at the lowest 2 nodes; lemmas with inconspicuous lateral veins \_\_\_\_\_ **18. E. pilosa** subsp. *pilosa*
1. Plants perennial, sometimes rhizomatous, forming innovations at the basal nodes.
15. Spikelets 1.3–2 mm long with 1 or 2, rarely 3 florets \_\_\_\_\_ **2. E. airoides**
15. Spikelets 2–23 mm long with 2 to many florets.
16. Stamens 3; caryopses usually with a shallow or deep adaxial groove.
17. Glumes not keeled, very unequal, the lower 0.2–0.6 mm long \_\_\_\_\_ **24. E. tenuifolia**
17. Glumes keeled, equal to subequal, the lower 0.6–2.6 mm long.
18. Lemmas with lateral veins conspicuous.
19. Caryopses 1–1.7 mm long; upper glumes 2–3 mm long \_\_\_\_\_ **6. E. curvula**
19. Caryopses 0.5–0.8 mm long; upper glumes 1.1–2 mm long.
20. Panicles with the primary branches not floriferous near base; secondary branches composed of loosely overlapping spikelets; pedicels 1.4–7 mm long \_\_\_\_\_ **10. E. lugens**
20. Panicles with the primary branches floriferous near base; secondary branches condensed into tightly glomerate lobes of spikelets; pedicels 0.1–1 mm long \_\_\_\_\_ **11. E. lurida** subsp. *lurida*
18. Lemmas with lateral veins inconspicuous.
21. Secondary panicle branches with spikelets appressed to the main axis; pedicels 0.5–3(–5) mm long \_\_\_\_\_ **16. E. pastoensis**
21. Secondary panicle branches with spikelets diverging 50–90° from the main axis; pedicels (2–)4–16 mm long.
22. Lemmas 1.2–1.8 mm long; blades densely hairy on adaxial surface; anthers 0.3–0.5 mm long \_\_\_\_\_ **19. E. polytricha**
22. Lemmas (1.6–)1.8–2.3 mm long; blades glabrous to sparsely hairy on adaxial surface; anthers 0.5–0.8 mm long \_\_\_\_\_ **8. E. intermedia**
16. Stamens 2; caryopses without an adaxial groove.
23. Lemma apices acuminate-attenuate to subaristate; pulvini with hairs.
24. Spikelets 2.4–5 mm wide; glumes 1.7–4 mm long; lemmas 2–6 mm long \_\_\_\_\_ **22. E. secundiflora** subsp. *secundiflora*
24. Spikelets 1–3 mm wide; glumes 1–2.8 mm long; lemmas 2–2.6 mm long.
25. Lemma apex recurved, yellowish-orange to greenish; spikelets 7–30 mm long; pedicels 0.3–1 mm long, appressed to the branches; upper glumes 1.5–2.8 mm long \_\_\_\_\_ **12. E. maypurensis**
25. Lemma apex straight, not recurved, greenish to purplish; spikelets 5–7(–10) mm long; pedicels 1–5 mm long, diverging 30–70° from the branch axis; upper glumes 1.4–2 mm long \_\_\_\_\_ **1. E. acutiflora**
23. Lemma apices acute, occasionally slightly narrowed but never acuminate-attenuate; pulvini glabrous, rarely with a few hairs.
26. Spikelets 2.4–5 mm wide; glumes 1.7–4 mm long; lemmas 2–6 mm long \_\_\_\_\_ **22. E. secundiflora** subsp. *secundiflora*
26. Spikelets 0.7–2(–2.2) mm wide; glumes 1–1.8(–2) mm long; lemmas 1.5–2.2 mm long.
27. Primary branches with spikelets congested or clustered near the base; spikelets 0.7–1.4 mm wide; anthers 0.2–0.3 mm long; caryopses flattened ventrally \_\_\_\_\_ **20. E. prolifera**
27. Primary branches naked near base, without a cluster of spikelets; spikelets 1.3–2(–2.2) mm wide; anthers 0.4–0.6 mm long; caryopses rounded, not flattened ventrally \_\_\_\_\_ **3. E. bahiensis**

**1. *Eragrostis acutiflora*** (Kunth) Nees, Fl. Bras. Enum. Pl. 2:501–502. 1829. (**Fig. 1, A–C**). *Poa acutiflora* Kunth, Nov. Gen. Sp. 1:161. 1815 (1816). TYPE: COLOMBIA: on the Río Magdalena, *F. Humboldt & A. Bonpland 1603* (HOLOTYPE: P!; ISOTYPES: B-W, P, US-2891479 fragm. ex P!).

Caespitose perennials. Culms 20–65 cm tall, erect to geniculate spreading, glabrous and shiny below the nodes. Leaf sheaths 1/3 to about as long as the internodes, glabrous, ciliate at the summit; ligules 0.1–0.3 mm long, ciliolate-membranous; blades 10–20(–25) cm long, 1.5–4.2 mm wide, flat, occasionally involute, glabrous below, scaberulous above and sparingly ciliate near base. Panicles 8–32 cm long, 2–14 cm wide, open to somewhat contracted; the ascending primary branches 1–10 cm long, somewhat densely flowered, spreading 20–80° from the rachises; pulvini in axils of primary branches pilose; pedicels 1–5 mm long, erect, spreading 30–70° from the branch axis, scaberulous. Spikelets 5–7(–10) mm long, (1–)1.2–1.8(–2.2)

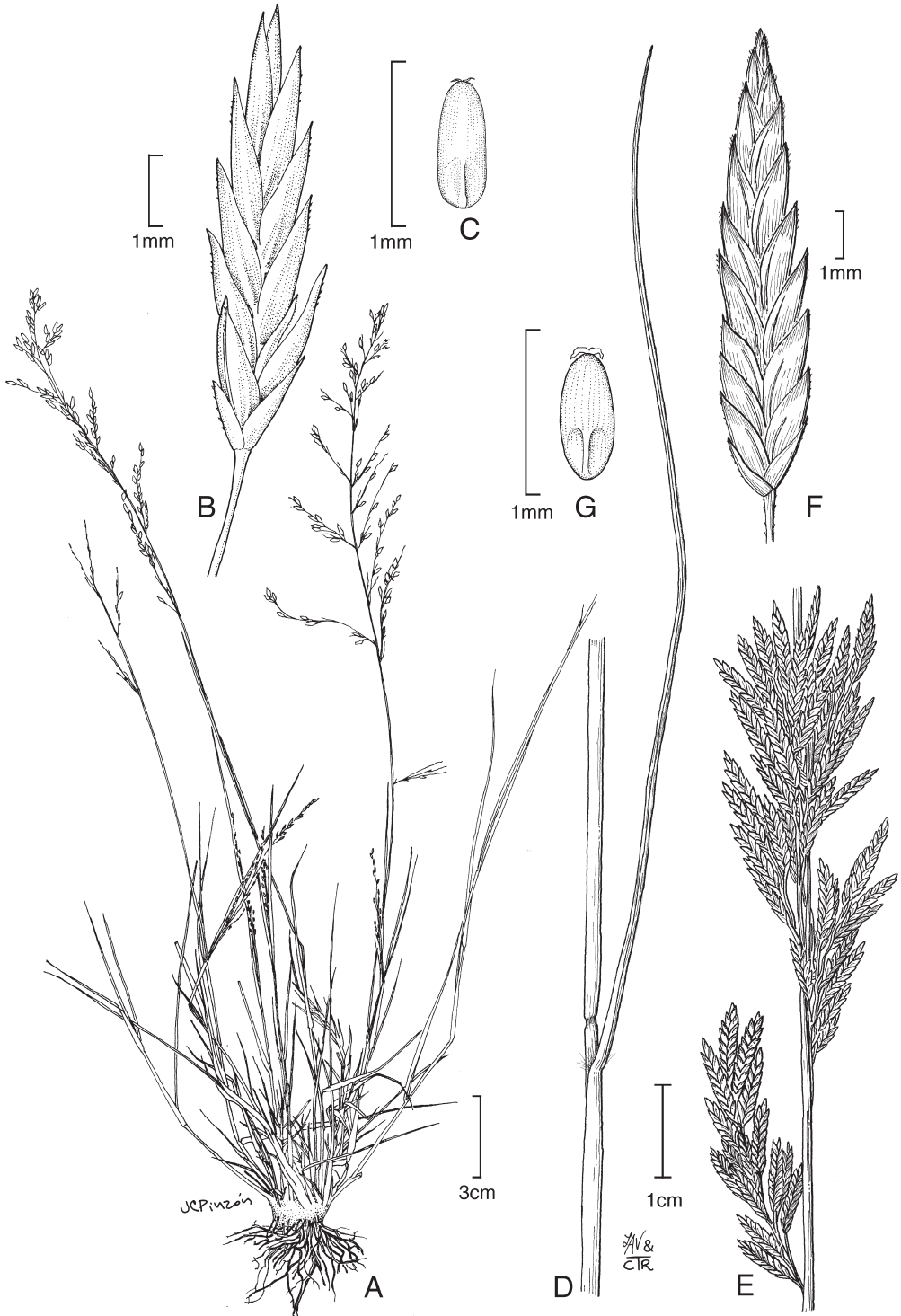


FIG. 1. *Eragrostis acutiflora* (N.C. Fassett 25306). A. Habit. B. Spikelet. C. Caryopsis, dorsal view. *Eragrostis bahiensis* (J.M. Idrobo & Galeano 4291, G). D. Culm. E. Inflorescence. F. Spikelet. G. Caryopsis, dorsal view.

mm wide, 7–14(–21)-flowered, narrowly elliptical, acute at both ends, strongly compressed, greenish straw-colored towards the center to reddish-purple tinged near the margins; disarticulation entire floret above the glumes or the lemmas falling individually leaving the paleas on the rachilla; glumes 1–2 mm long, narrowly lanceolate with scaberulous keels; lower glumes 1–1.4 mm long; upper glumes 1.4 mm long; upper glumes 1.4–2 mm long; lemmas 2–2.6 mm long, lanceolate to broadly ovate, chartaceous, keeled, scaberulous along keel, lateral nerves evident; apex acuminate to attenuate or subaristate, scaberulous, often reddish-purple; paleas 1.5–2.1 mm long, bowed out below, hyaline, scaberulous along keels; apex acute; stamens 2, anthers 0.2–0.3 mm long, reddish-brown. Caryopses 0.5–0.9 mm long, obovoid to ellipsoid, finely longitudinally striate, light brownish to reddish-brown.  $2n = 40$ .

*Distribution and habitat.*—*Eragrostis acutiflora* ranges from México and the Caribbean through Central America to South America where it has been reported from Bolivia, Brazil, Ecuador, French Guiana, Guyana, Surinam, and Venezuela. It can be found growing in moist savannas, open disturbed areas, and sandy to gravelly roadsides; 0–2000 m.

Specimens examined. **COLOMBIA. Amazonas:** Corregimiento departamental La Pedrera, río Caquetá, alrededores de la quebrada La Tonina, 200–300 m, 18 Jul 1997, *D. Giraldo-Cañas* 2703 (COAH, COL). **Antioquia:** Puerto Berrío, ca. 125 m, 11 Jan 1931, *W.A. Archer* 1392 (US); Mutatá, 11 km Mutatá-Dabeiba, 250 m, *J. Betancur et al.* 378 (COL, HUA, MO); Andes, aeropuerto, 1200 m, 17 Sep 1986, *R.W. Pohl & J. Betancur* 15521 (HUA, MO, US); Mun. San Carlos, río San Carlos, 920 m, 13 Oct 1981, *C.I. Orozco* 685 (COL). **Arauca:** Mun. Arauca, inmediaciones de las instalaciones de la Universidad Nacional de Colombia, hacienda El Cairo, carretera Arauca-Tame, km 9, 200–300 m, 13 Jun 2003, *D. Giraldo-Cañas* 3503, 3510 (COL). **Caquetá:** Mun. La Montañita, corregimiento El Santuario, vereda Las Iglesias, reserva natural privada de la hacienda El Ceilán, 280 m, 27–30 Jun 2005, *D. Giraldo-Cañas* 3936 (COAH, COL); Mun. Florencia, Barrio Villa Natalia, grietas de pavimentos y andenes, 280 m, 27–30 Jun 2005, *D. Giraldo-Cañas* 3953 (COL); Mun. Florencia, carretera Florencia-Neiva, río Hacha, a la altura del primer puente, 280 m, 27–30 Jun 2005, *D. Giraldo-Cañas* 3956, 3958 (COAH, COL). **Casanare:** Mun. El Yopal, sabanas alteradas no inundables, entre el nuevo hospital y la Brigada del Ejército Nacional, 400 m, 3 Nov 2007, *D. Giraldo-Cañas* 4148, 4155 (COL); Playones del río Upiá, carretera a Villanueva, 300 m, 18 Mar 1986, *J.L. Fernández Alonso* 5907 (COL). **Cauca:** Río Patía, 1000 m, 2 May 1935, *H. García-Barriga* 4507 (COL). **Chocó:** Hoya del río Atrato, Beté, 50–60 m, 5 Apr 1982, *E. Forero* 8901 (COL). **Córdoba:** San Benito, 5 km carretera a San Juan, 35 m, 17 Jul 1973, *J.M. Idrobo* 6664 (COL). **Cundinamarca:** Fusagasugá, 1680 m, 26 Mar 1961, *J.M. Idrobo* 4507 (COL); Entre Paratebueno y Maya, 19 Jun 1989, *F.O. Zuloaga* 4100 (COL, MO). **Guaviare:** Mun. San José del Guaviare, trocha Nuevo Tolima, en cercanías del Batallón José Joaquín París, 250 m, Mar 1996, *D. Giraldo-Cañas & R. López* 2574 (COAH, COL, MO). **Huila:** Mun. El Agrado, quebrada La Yaguilda, 700 m, Sep 1986, *J.L. Fernández Alonso* 6840 (COL). **La Guajira:** Clausura Nopoipa, en el área inundable, 4.5 km de Uribe rumbo a Maicao, 13 Feb 1963, *C. Saravia* 2229-A (COL, note: *Saravia* 2229-A at US is *E. ciliaris*), 19 Oct 1963, *C. Saravia* 2892 (COL). **Magdalena:** Valle del río Cesar, cerca de Los Venados, 60 m, 30 Sep 1961, *A. Dugand* 5810 (COL). **Meta:** Mun. Villavicencio, carretera Villavicencio-Aeropuerto, piedemonte de la Cordillera Oriental, sitio La Arenera, 2 km del puente sobre el río Guatiquía, 400 m, 10 Nov 2002, *D. Giraldo-Cañas* 3346 (COAH, COL); along Río Guatiquía, near Villavicencio, ca. 500 m, 18–19 Mar 1939, *E.P. Killip* 34410 (US); Carimagua, NW of the research station, ca. 350 m, 19 Sep 1992, *S. A. Renvoize* 5422 (COL, US). **Santander:** region about Landázuri, 70 km N of Vélez, ca. 700 m, 9 Jun 1944, *N. C. Fassett* 25306 (COL). **Tolima:** Ibagué, planta eléctrica de Miro lindo, 1200 m, 12 Mar 1965, *R. Echeverry* 1189 (COL). **Valle del Cauca:** between Uribe and Sevilla, 1100 m, 2 Nov 1983, *J.R.I. Wood* 4083 (COL).

**2. *Eragrostis airoides*** Nees, Fl. Bras. Enum. Pl. 2: 509–510. 1829. (**Fig. 2, A–C**). *Aira brasiliensis* Raddi, Agrostogr. Bras. 36. 1823. *Sporobolus brasiliensis* (Raddi) Hack., Bull. Herb. Boissier, sér. 2, 4(3):278. 1904. *Agrosticula brasiliensis* (Raddi) Herter, Revista Sudamer. Bot. 6(5–6):145. 1940. TYPE: BRAZIL. Rio de Janeiro, *G. Raddi* s.n. (HOLOTYPE: PI; ISOTYPE: LE).

*Airopsis millegrana* Griseb., Abh. Königl. Ges. Wiss. Göttingen 19:252. 1874. TYPE: ARGENTINA. TUCUMÁN: in monte Cuesta de Berico, *P.G. Lorentz & G. Hieronymus* 842 (HOLOTYPE: GOET; ISOTYPES: BA-38791!, US-76315 fragm.!).

*Eragrostis triflora* Ekman, Ark. Bot. 11(4):42, t. 4, f. 1. 1912. TYPE: ARGENTINA. MISIONES: Posadas, Bonpland Trans “Mitires Chico,” 20 Jan 1908, *E.L. Ekman* 714 (HOLOTYPE: S; ISOTYPES: BAA-1100 fragm.!, CORD!; SI!, US-602662!, US-77381 fragm.!).

Caespitose perennials with innovations, without rhizomes, not glandular. Culms 30–110 cm tall, erect, glabrous below the nodes. Leaf sheaths glabrous or pilose, hairs to 5 mm long; ligules 0.1–0.2 mm long; blades 8–22 mm long, (1–)2–4(–5) mm wide, flat to folded, glabrous abaxially, scabridulous adaxially. Panicles 18–70 cm long, 3–25 cm wide, diffuse, ovate; primary branches 4–20 cm, appressed or diverging 10–70° from the rachises, naked basally; pulvini glabrous; pedicels 2.4–11 mm long, divergent. Spikelets 1.3–2 mm long, 0.8–1.8 mm wide, ovate to lanceolate, plumbeous, with 1 or 2, rarely 3 florets; disarticulation acropetal, in the rachilla below the florets, glumes deciduous; rachilla prolonged above the terminal floret; glumes lanceolate to ovate, membranous; lower glumes 0.8–1 mm long; upper glumes 1.1–1.4 mm long;



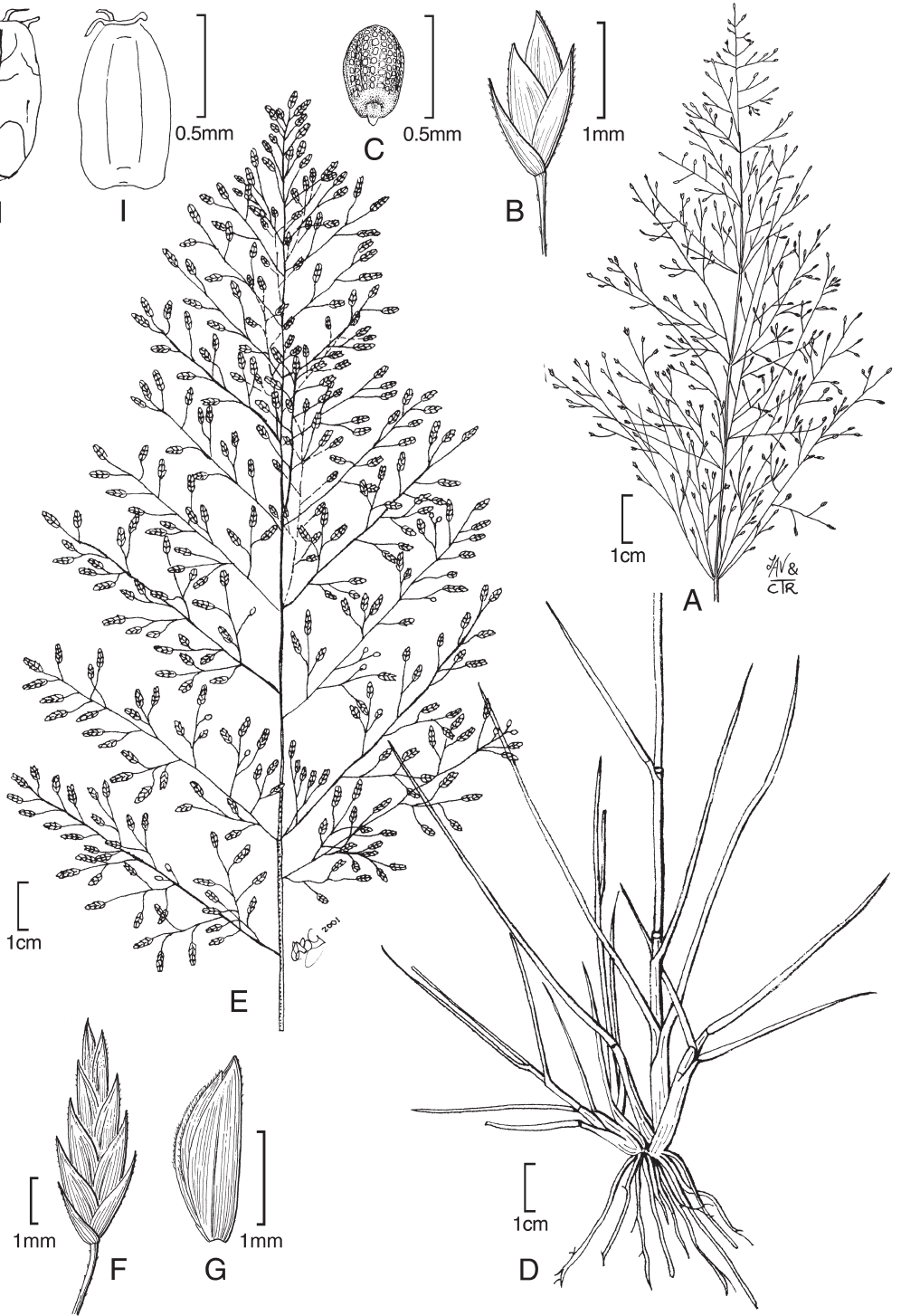


FIG. 2. *Eragrostis airoides* (J.D. García 10, C). A. Inflorescence. B. Spikelet. C. Caryopsis, ventral view. *Eragrostis intermedia* (Groenendijk & Rietman 1534, D, E, H, I). D. Habit. E. Inflorescence. F. Spikelet. G. Floret. H. Caryopsis, lateral view. I. Caryopsis, ventral view.

lemmas 0.8–1.2 mm long, ovate, membranous, plumbeous, keels and lateral veins inconspicuous, apices obtuse; paleas 0.8–1.2 mm long, membranous, bases not projecting beyond the lemmas, apices obtuse; stamens 3, anthers 0.3–0.5 mm long, purplish. Caryopses 0.4–0.5 mm long, ovoid, reticulate, reddish-brown.  $2n = 36$  (Davidse, pers. comm.).

*Distribution and habitat.*—*Eragrostis airoides* is a South American species known to occur in Argentina, Bolivia, Brazil, Paraguay, Uruguay, Venezuela, the Caribbean, and introduced Brazos Co., Texas; it is found in open grasslands, savannas, and cerrados (Boechat & Longhi-Wagner 2001).

*Comments.*—It is an enigmatic species, often treated as *Sporobolus brasiliensis* (Raddi) Hack, which it resembles in its chromosome base number of  $x = 9$  and caryopsis morphology, but its frequent possession of spikelets with more than one floret and its mode of spikelet disarticulation argue for its retention in *Eragrostis*.

Specimens examined. **COLOMBIA. Cauca:** Chisquio, ca. 1700 m, 4 Apr 1940, *E. Asplund 10776* (US); Río Sucio to Río Piedras, W of Popayán, 1500–1800 m, 3 Jul 1922, *F.W. Pennell & E.P. Killip 8190* (US); Loma de Bichiquí, near Toribío, Río Páez Basin, Tierradentro, 2000 m, Feb 1906, *H. Pittier 1473* (US). **Norte de Santander:** Abrego, 1300 m, 25 Feb 1943, *J.B. Garcia & Cabrales 10* (COL). **Valle del Cauca:** Pavas, Cordillera Occidental, 1500–1700 m, *E.P. Killip 11636* (US). Unknown department: *J.C. Mutis 5542* (US).

**3. *Eragrostis bahiensis*** Schrad. ex Schult., Mant. 2:318. 1824. (**Fig. 1, D–G**). *Eragrostis pilosa* var. *bahiensis* (Schrad. ex Schult.) Kuntze, Revis. Gen. Pl. 3(2,2):353. 1898. TYPE: BRAZIL: *Maximilian Neowidensis* s.n. (HOLOTYPE: LE).

*Eragrostis expansa* Link, Hort. Berol. 1:190. 1827. TYPE: URUGUAY: Montevideo, *F. Sellow* s.n. (ISOTYPE: US-2850751 fragm.!).

*Poa microstachya* Link, Hort. Berol. 1:185. 1827. *Eragrostis psammodes* var. *microstachya* (Link) Doll, Fl. Bras. 2(3):153. 1878. *Eragrostis microstachya* (Link) Link, Hort. Berol. 2:294. 1933. TYPE: URUGUAY: Montevideo, *F. Sellow* s.n. (HOLOTYPE: B; ISOTYPES: BAA-989 fragm. ex B!, US-2850751!).

*Eragrostis firma* Trin., Mém. Acad. Imp. Sci. Saint-Petersbourg, Sér. 6, Sci. Math., Seconde Pt. Sci. Nat. 4,2(1):74. 1836. TYPE: BRAZIL. SÃO PAULO: inter plantas a St. Paulo (HOLOTYPE: LE-TRIN-2342.01!; ISOTYPE: US-2891470 fragm.!).

*Eragrostis blepharophylla* Jedwabn., Bot. Arch. 5(3–4):197. 1924. BRAZIL: *F. Sellow 3688* (ISOTYPE: US-2891454 fragm.!).

*Eragrostis macra* Jedwabn., Bot. Arch. 5(3–4):200. 1924. TYPE: BRAZIL: Nov 1887, *A.E.M. Glaziou 16624* (LECTOTYPE: US-1280048! designated by Boechat & Longhi-Wagner, Iheringia, Bot. 55:147. 2001; ISOLECTOTYPES: C, US-289924!, US-1280048!).

*Eragrostis bahiensis* forma *riparia* Burkart, Fl. Il. Entre Rios 2:189. f.66. 1969. TYPE: ARGENTINA. ENTRE RIOS: Concepción del Uruguay, Isla Almirón Chico, *Burkhardt & Crespo 22874* (HOLOTYPE: SI; ISOTYPE: BAA-1010!).

Caespitose perennials with innovations, without rhizomes, not glandular. Culms 25–95(–110) cm tall, erect, glabrous. Leaf sheaths glabrous, summits hairy, hairs 1–3 mm; ligules 0.2–0.4 mm long; blades (8)12–40 cm long, 2–5 mm wide, flat to involute, abaxial surfaces glabrous, adaxial surfaces scabridulous and glabrous or long ciliate basally. Panicles 15–30(45) cm long, (4)8–17 cm wide, narrowly ovate, open to contracted; primary branches 5–15 cm long, diverging 20–90° from the rachises, often capillary, usually naked basally; pulvini glabrous; pedicels 0.3–6 mm long, mostly appressed, scabridulous, always shorter than the spikelets. Spikelets 6–15(18) mm long, 1.3–2(2.2) mm wide, narrowly lanceolate, plumbeous, occasionally with a reddish-purple tinge, with 8–30(40) florets; disarticulation usually in the rachilla below the florets, occasionally the lemmas falling separately, leaving the paleas on the rachilla; glumes lanceolate to ovate, membranous to subhyaline, keeled; lower glumes 1–1.4 mm long; upper glumes 1.4–1.7 mm long; lemmas 1.5–2.2 mm, broadly ovate, leathery, scabridulous, lateral veins evident, apices acute; paleas 1.4–2.1 mm long, hyaline, bases not projecting beyond the lemmas, keels scabridulous, apices acute to obtuse; stamens 2, anthers 0.4–0.6 mm long, reddish-purple. Caryopses 0.6–0.8 mm long, obovoid to ellipsoid, terete, somewhat striate, reddish-brown.  $2n =$  unknown.

*Distribution and habitat.*—*Eragrostis bahiensis* grows in sandy soils near river banks, lake shores, and roadsides, at 0–1500 (–1850) m. Its range extends south from the Gulf Coast of the United States through México to Peru, Bolivia, Paraguay, and Argentina.

Specimens examined. **COLOMBIA. Antioquia:** Mun. Cocorná, vereda La Piñuela, carretera Medellín-Bogotá, intersección con la carretera hacia San Francisco, 1000 m, 27 Feb 2005, *D. Giraldo-Cañas 3870* (COL). **Arauca:** Mun. Arauca, inmediaciones de las instalaciones de la Universidad Nacional de Colombia, hacienda El Cairo, carretera Arauca-Tame, km 9, 200–300 m, 13 Jun 2003, *D. Giraldo-Cañas 3498* (COL). **Cauca:** Mun. Popayán, sector norte de la ciudad, Villa del Viento, 1850 m, 20 May 2001, *B.R. Ramirez 14163* (CAUP, COL). **Chocó:** Mun. Quibdó, en un barranco del Barrio Medrano, en inmediaciones de la Universidad Tecnológica del Chocó, 90 m, 6 Nov 2005, *D. Giraldo-Cañas 3974* (COL, HUA); Mun. Quibdó, carretera Quibdó-Guayabal, 23 Feb 1985, *J. Espina 1474* (COL, MO); Hoya del

rio San Juan, río Tamañá, afluente del San Juan, debajo de Santa Rosa, ca. 150 m, 10 Apr 1979, E. Forero et al. 4974, 4977 (COL, MO); Quibdó Airport, 50 m, 24 Oct 1985, J.R.I. Wood 5117 (COL). **Meta:** Mun. Villavicencio, carretera Villavicencio-Aeropuerto, piedemonte de la cordillera Oriental, sitio La Arenera, ca. 2 km del puente sobre el río Guatiquía, ca. 400 m, 10–14 Nov 2002, D. Giraldo-Cañas 3344 (COAH, COL, HUA); along road to Hac. Rubiales, E of Puerto Gaitán, 90 m, 10 Jun 1995, S. Læggaard & C. Mayorga 17494 (COL); Margen izquierda del río Guayabero, raudal de La Macarena, Angostura Nro. 1, 350 m, 20 Jan 1959, P. Pinto & Bischler 327 (COL). **Putumayo:** Mun. Mocoa, alrededores de la población, 650 m, 20 Aug 1986, B.R. Ramirez 651 (COL, PSO). **Valle del Cauca:** Carretera Dagua-Buenaventura, km 32, 540 m, 6 Feb 1961, J.M. Idrobo 4291 & Galeano (COL, US).

**4. *Eragrostis cilianensis* (All.) Vignolo ex Janch., Mitt. Naturwiss. Vereins Univ. Wien, n.s., 5:110. 1907. (Fig. 3, A–E).** *Poa cilianensis* All., Fl. Pedem. 2:246. 1785. *Eragrostis megastachya* var. *cilianensis* (All.) Asch. & Graebn., Syn. Mitteleur. Fl. 2:371. 1900. *Eragrostis cilianensis* (All.) F.T. Hubb., Philipp. J. Sci. 8(3):59–161. 1913. *Erosion cilianense* (All.) Lunell, Amer. Midl. Naturalist 4:221. 1937. *Eragrostis multiflora* var. *cilianensis* (All.) Maire, Bull. Soc. Hist. Nat. Afrique N. 30: 369. 1939. TYPE: ITALY. Ciliani, Bellardi s.n. (LECTOTYPE: TO-8242 designated by F. Vignolo, Malpighia 18:380. 1904; ISOTYPES: BRI, K photo neg. 19571!).

Caespitose annuals. Culms 15–45(–65) cm tall, erect or decumbent and prostrate, glabrous and shiny, sometimes with crateriform glands below the nodes. Leaf sheaths 2/3 the length of the internodes above, occasionally longer, glabrous, occasionally glandular, densely ciliate at the summit, the hairs often elongate up to 5 mm long; ligules 0.4–0.8 mm long, ciliate; blades (1–)5–20 cm × (1–)3–5(–10) mm, flat to loosely involute, mostly glabrous below, scaberulous above occasionally with widely spaced elongate hairs, sometimes glandular near margins. Panicles (3–)5–16(–20) × 2–8.5 cm, condensed to open, oblong to ovate, the primary branches 0.4–5 cm long, ascending, appressed or diverging 20–80° from the rachises; pulvini glabrous or ciliate; pedicels 0.2–3 mm long, erect, spreading to appressed. Spikelets 6–20 × 2–4 mm, 10–40-flowered, ovate-lanceolate, florets imbricate, plumbeous to greenish or hyaline; disarticulation acropetal, between the florets from the base upwards, usually the entire floret, rachillas persistent; glumes 1.2–2.6 mm long, subequal, broadly ovate to lanceolate, sub-hyaline, membranous, keeled, usually with crateriform glands along the keel, 1- or 3-nerved, scaberulous towards apex of keel; lower glumes 1.2–2 mm long, usually 1-nerved; upper glumes 1.2–2.6 mm long, often 3-nerved; lemmas 2–2.8 mm long, broadly ovate, membranous, lateral nerves evident, strongly keeled, keels with 1–3 crateriform glands; apex obtuse to acute; paleas 1.2–2.1 mm long, hyaline, keels scaberulous, sometimes ciliate, the cilia less than 0.3 mm long; apex obtuse to acute; stamens 3, anthers 0.2–0.5 mm long, yellow. Caryopses 0.5–0.7 mm long, globose to broadly-short ellipsoid, striate and reticulate, circular to elliptical in cross-section, reddish-brown.  $2n = 20, 40$  (Bir & Sahni 1988).

*Distribution and habitat.*—Native to Europe; introduced in southern Canada, U.S.A, México, Central America, Caribbean, Argentina, Bolivia, Brazil, Colombia, Ecuador, Paraguay, Peru, Uruguay, and Venezuela (Peterson 2001; Peterson & Boechat 2001); a weed near cultivated fields, pastures, roadsides, and disturbed habitats; 0–3000 m.

Specimens examined. **COLOMBIA. Bogotá D.C.:** Bogotá, La Picota, granja experimental, Tunjuelo, 2650 m, 6 Apr 1941, H. García-Barriga 10519 (COL); border between **Cesar, Norte de Santander, and Santander:** 20 kilómetros al sur de Abrego, Las Jurisdicciones, Cerro de Oroque, 3700–3960 m, 19–21 May 1969, H. García-Barriga & R. Jaramillo-Mejía 19723 (COL, US). **Cundinamarca:** Tocaima, 400 m, no date, C. Saravia 4719 (COL). **Huila:** Río Cabrera, 2 km below confluence of Río Ambicá, 3 km WSW of Colombia, 1000 m, 15 Dec 1942, F.R. Fosberg 19318 (US); Garzón-Neiva, 400 m, no date, F.C. Lehmann 8742 (US). **Nariño:** Mun. Pasto, Panamericana, puente del Juanambú, 1000 m, 7 Nov 1987, B.R. Ramirez 1037 (COL, PSO). **Valle del Cauca:** Río Calima, región del Chocó, margen derecha, lomas frente a Quebrada de la Brea, 30–50 m, 18 May 1946, J. Cuatrecasas 21067 (COL, US); Cartago, Santa Ana de los Caballeros, 950 m, 19 Nov 1946, J. Cuatrecasas 23024 (COL, US); Yumbo, finca Río Grande, bosque El Ramón, 1600 m, 13 Jun 1998, D. Stancik 783 (COL).

**5. *Eragrostis ciliaris* (L.) R. Br. Narr. Exped. Zaire 478. 1818. var. *ciliaris* (Fig. 3, F–J).** *Poa ciliaris* L., Syst. Nat. (ed. 10) 875. 1759. *Megastachya ciliaris* (L.) P. Beauv., Ess. Agrostogr. 74, 167, 174. 1812. *Cynodon ciliaris* (L.) Raspail, Ann. Sci. Nat., Bot. 5:302. 1825. *Eragrostis ciliaris* (L.) Nees, Fl. Bras. Enum. Pl. 2:512–514. 1829. TYPE: JAMAICA: Browne s.n. (LECTOTYPE: LINN 87.66! designated by Hitchcock, Contr. U.S. Natl. Herb. 12:121. 1908).

Caespitose annuals. Culms (3–)9–75 cm tall, erect or geniculate in the lower portion, not rooting at the lower nodes, glabrous. Leaf sheaths 1/2–3/4 as long as the internodes, hairy on the margins and at the apices, hairs to 4 mm long; ligules 0.2–0.5 mm long; blades 1.8–12(–15) cm × 2–5 mm, usually flat, occasionally involute, glabrous or ciliate basally. Panicles 1.7–17 × 0.2–1.5 cm, cylindrical, contracted, spike-like, branches forming

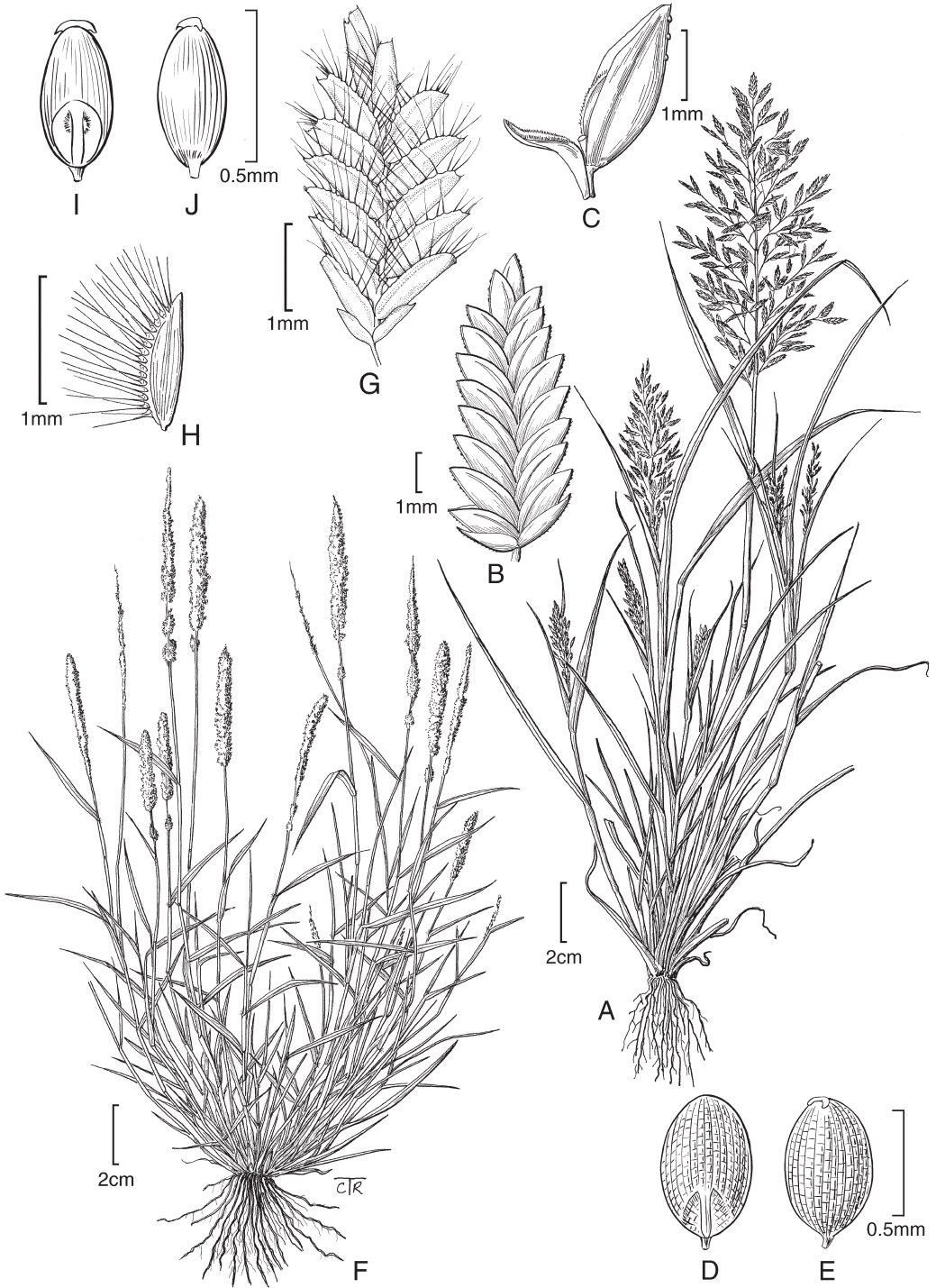


FIG. 3. *Eragrostis cilianensis* (R. Ferreyra 6017, D & E). A. Habit. B. Spikelet. C. Floret with palea attached below. D. Caryopsis, dorsal view. E. Caryopsis, lateral view. *Eragrostis ciliaris* (M. Schnetter & R. Schnetter 112, G; A. Sagástegui A. 10927, I & J). F. Habit. G. Spikelet. H. Floret. I. Caryopsis, dorsal view. J. Caryopsis, lateral view.

glomerate lobes or sometimes more open, often interrupted in the lower portion; primary branches 0.4–4 cm, ascending, tightly appressed; pulvini usually glabrous, occasionally sparsely pilose; pedicels 0.1–1 mm long, erect, shorter than the spikelets, glabrous. Spikelets 1.8–3.2 × 1–2 mm, 6–11-flowered, elliptical-ovate to ovate-lanceolate, yellowish-brown, sometimes with a purple tinge, densely packed next to one another forming glomerate lobes; disarticulation basipetal, glumes persistent; glumes 0.7–1.6 mm long, subequal, ovate to lanceolate, keels scabridulous, veins commonly green, apices acute; lower glumes 0.7–1.2 mm long; upper glumes 1–1.6 mm long; lemmas 0.8–1.3 mm long, elliptical-ovate to lanceolate, membranous, keels scabridulous, lateral veins evident; apex obtuse to acute; paleas 0.8–1.3 mm long, membranous, keels prominently ciliate, cilia 0.2–0.8 mm long, stiff and pectinate-thickened near base; apex obtuse to acute; stamens 2, anthers 0.1–0.3 mm long, purplish. Caryopses 0.4–0.5 mm long, ovoid, striate, slightly dorsally-flattened, elliptical in cross-section, reddish-brown.  $2n = 20, 40$  (Bir & Sahni 1988).

*Distribution and habitat*.—Apparently native to the paleotropics; introduced and naturalized in México, U.S.A., Central America, Caribbean, Argentina, Bolivia, Colombia, Ecuador, Guianas, Paraguay, Peru, and Venezuela (Nicora 1998; Peterson & Boechat 2001); growing along roadsides, on waste sites, in xerothermic vegetation, saline habitats, and city sidewalks; 0–1600 m.

Specimens examined. **COLOMBIA. Antioquia:** Mun. Medellín, predios de la Plaza de Botero, 1550 m, 4 Jan 2003, *D. Giraldo-Cañas* 3429 (COL); Medellín, Facultad de Agronomía, 1500 m, 10 Jul 1947, *W.H. Hodge* 6933 (US); Medellín, 1550 m, 22 Apr 1927, *R.A. Toro* 239 (US). **Arauca:** Mun. Arauca, inmediaciones de las instalaciones de la Universidad Nacional de Colombia, hacienda El Cairo, carretera Arauca-Tame, km 9, 200–300 m, 13 Jun 2003, *D. Giraldo-Cañas* 3505 (COL). **Atlántico:** Entre Baranoa y Galapa, 80–100 m, 26 Nov 1960, *A. Dugand* 5380 (COL, US). **Bolívar:** along Mompós–Juana Sánchez trail, Island of Mompós, Lands of Loba, Apr–May 1916, *H.M. Curran* 245 (US); Cartagena, 20 Nov 1912, *A.S. Hitchcock* 9898 (US); Tierrabomba Island, Cartagena Bay, 4 Nov 1926, *E.P. Killip* & *A.C. Smith* 14122 (MO, US); Cañabetal, río Magdalena, 90–100 m, 15 Jan 1918, *F.W. Pennell* 3882 (MO, US); Cartagena, Caribbean Coast, 0–1 m, 1–3 Oct 1922, *F.W. Pennell* 12007 (US). **Casanare:** Mun. El Yopal, en áreas urbanas del centro de la ciudad, 400 m, 31 Oct 2007, *D. Giraldo-Cañas* 4133 (COAH, COL); Yopal, 400 m, year 1983, *J.R.I. Wood* 3815 (COL). **Córdoba:** Mun. Momil, finca El Paraíso, en potreros, 39 m, 23 Feb 2005, *D. Giraldo-Cañas* 3853, 3855 (COL). **Cundinamarca:** Mun. Nilo, hacienda La Guaira, río Pagüey, 350 m, 16 Oct 2004, *D. Giraldo-Cañas* 3781 (COL); Mun. Girardot, via férrea entre Girardot y Flandes, ribera del río La Magdalena, 250 m, 17 Oct 2004, *D. Giraldo-Cañas* 3787 (COL); Mun. Nariño, 340 m, 1 Mar 1986, *J.L. Fernández Alonso* 5514 (COL). **Huila:** Mun. Villavieja, desierto La Tatacoa, 460 m, 28 May 2000, *B.R. Ramírez* 13193 (CAUP, COL). **La Guajira:** Mun. Uribia, corregimiento Nazareth, playa Nueva York, 0–5 m, 6 Jan 2005, *J. Betancur et al.* 11369 (COL); Maicao, 31 Mar 1962, *C. Saravia* 365 (COL, US); 2.6 km de Monevideo, rumbo a Nazareth, 5 Abr 1962, *C. Saravia* & *D. Johnson* 467 (COL, US); Clausura Nopoipa, rumbo a Maicao, 4.5 km de Uribia, 13 Feb 1963, *C. Saravia* 2229 (COL, US), 2229-A (US, note: *Saravia* 2229-A at COL is *E. acutiflora*); Serranía La Macuira, entre el arroyo y la duna Arehuara, 290 m, 4 Mar 1963, *C. Saravia* 2367 (COL, US); Serranía La Macuira, 12 Apr 1964, *C. Saravia* & *M. E. de Saravia* 3544 (COL, MO, US); Riohacha, 6 Feb 1914, *J.G. Sinclair* s.n. (US-865575). **Magdalena:** Río Frio, near sea level, 23 Jun 1906, *H. Pittier* 1583 (US); Isla de Salamanca, cerca de la finca Mahoma, 18 Nov 1966, *M. Schnetter* & *R. Schnetter* 112 (COL); Santa Marta, 1898–1901, *H.H. Smith* 110 (COL, MO, US). **Meta:** Mun. Villavicencio, carretera Villavicencio–Aeropuerto, piedemonte de la cordillera Oriental, sitio La Arenera, ca. 2 km del puente sobre el río Guatiquia, ca. 400 m, 14–15 Dec 2002, *D. Giraldo-Cañas* 3386 (COL); Reserva Nacional de La Macarena, margen izquierda del río Guayabero, al pie de las mesetas con el caño Losada, 300 m, 5 Mar 1959, *R. Jaramillo-Mejía* 2108 (COL, MO, US). **Nariño:** Candelillas, 45 m, 10 Aug 1977, *P. Pinto* 1923 (COL). **San Andrés, Providencia y Santa Catalina:** Isla de San Andrés, 22–27 Apr 1948, *G.R. Proctor* 3265 (US); Alrededores de la cueva de Morgan, 24 Dec 1988, *J.H. Torres* 3313-A (COL). **Santander:** Granja agropecuaria Piedecuesta, al sur de Bucaramanga, 1000 m, 6 Oct 1966, *A. Robinson* 3167 (US); Prope Billete Blanco, 4 May 1926, *G. Woronow* & *S. Juzepczuk* 4671 (US); Bajo Magdalena, Isla de Venado, inter Billete Blanco et El Presidio, 7 May 1926, *G. Woronow* & *S. Juzepczuk* 4748 (US). **Tolima:** Mun. Flandes, via férrea entre Flandes y Girardot, ribera del río La Magdalena, 250 m, 17 Oct 2004, *D. Giraldo-Cañas* 3792-A (COL); Piedras, 430 m, 29 Feb 1876, *E. André* 1868 (US). **Valle del Cauca:** Cisneros, río Dagua, 300–500 m, 5 May 1939, *E.P. Killip* 35597 (COL, US). **Vichada:** Región Guayanesa, Mun. Puerto Carreño, afloramientos rocosos del tipo lajas, entre Punta de Lajas y Cerro El Bitá, ribera del río Orinoco, 40–100 m, 4–5 Jan 2004, *D. Giraldo-Cañas* & *C. Parra* 3621 (COAH, COL). **Unknown department:** *J.C. Mutis* 5482 (US); *Moritz* s.n. (US-557611).

**6. *Eragrostis curvula* (Schrad.) Nees**, Fl. Afr. Austral. Ill. 397. 1841. (**Fig. 4, A–E**). *Poa curvula* Schrad., Gött. Gel. Anz. 3:2073. 1821. TYPE: SOUTH AFRICA: Cape Province, Cape of Good Hope, *Hess* s.n. (HOLOTYPE: LE; ISOTYPE: LE-TRIN 2327.01! lower middle specimen).

Caespitose perennials forming innovations at the base; culms (45–)60–150 cm tall, erect, glabrous or glandular. Leaf sheaths 1/3–2/3 the length of the internodes, with scattered hairs, hairs to 9 mm long; ligules 0.6–1.3 mm long, ciliate; blades 12–50(–65) cm × 1–3 mm, flat to involute, abaxial surfaces glabrous, sometimes scaberulous, adaxial surfaces with scattered hairs basally, hairs to 7 mm long. Panicles 16–35(–40) ×

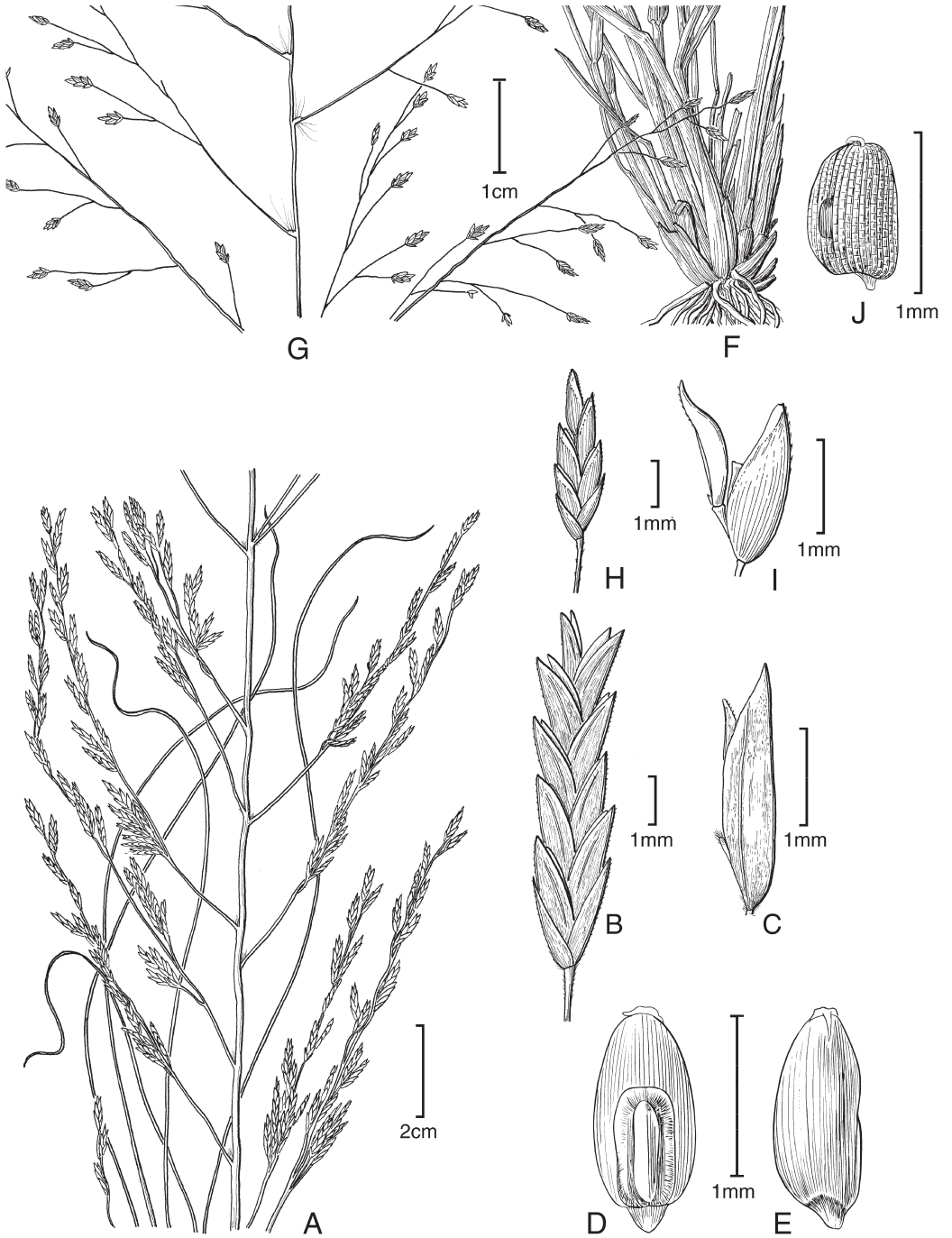


FIG. 4. *Eragrostis curvula* (J.R. Reeder & C.G. Reeder 7311, D & E). A. Inflorescence. B. Spikelet. C. Floret. D. Caryopsis, dorsal view. E. Caryopsis, lateral view. *Eragrostis lugens* (I. Sánchez-Vega 3218, J). F. Habit. G. Inflorescence. H. Spikelet. I. Floret with palea attached above. J. Caryopsis, lateral view.

(4–)8–24 cm, ovate to oblong, open; primary branches 3–14 cm long, diverging 10–80° from the rachises; pulvini glabrous or not, the hairs up to 3 mm long; pedicels 0.5–5 mm long, appressed, flexible. Spikelets 4–8.2(–10) × 1.2–2 mm, 3–10-flowered, linear-lanceolate, plumbeous to yellowish; disarticulation irregular to acropetal, proximal rachilla segments persistent; glumes 1.2–3 mm long, subequal, lanceolate, hyaline; lower glume 1.2–2.6 mm long; upper glumes 2–3 mm long; lemmas 2–3.2 mm long, ovate, membranous, lateral veins conspicuous; apex acute; paleas 2–3.2 mm long, hyaline to membranous; apex obtuse; stamens 3, anthers 0.8–1.3 mm long, reddish-brown. Caryopses 1–1.7 mm long, ellipsoid to obovoid, strongly dorsally-flattened, ventral surface with a shallow, broad groove or ungrooved, smooth to striate, mostly translucent, elliptical in cross-section, light brown, bases often greenish.  $2n = 40, 50, 60, 80$  (de Wit 1954; Spies & Jonker 1987; de Wit 1954).

*Distribution and habitat.*—Native to southern Africa; introduced in the U.S.A, México, Costa Rica, Argentina, Bolivia, Brazil, Chile, Colombia, Peru, Uruguay, and Venezuela (Nicora 1998; Peterson & Boechat 2001); rocky slopes, margins of woods, roadsides, waste ground, and often used in reclamation; 10–2900 m.

Specimens examined. **COLOMBIA. Valle del Cauca:** Palmira, cultivada (a partir de semillas de la Argentina) en la Granja Agrícola, 1000 m, 19 Jul 1963, *H. S. McKee 10489* (COL, US).

**7. *Eragrostis hypnoides* (Lam.) Britton, Sterns & Poggenb., Prelim. Cat. 69. 1888. (Fig. 5, A–E).** BASIONYM: *Poa hypnoides* Lam., Tabl. Encycl. 1:185. 1791. *Megastachya hypnoides* (Lam.) P. Beauv., Ess. Agrostogr. 74, 167, 175. 1812. *Neeragrostis hypnoides* (Lam.) Bush, Trans. Acad. Sci. St. Louis 13:180. 1903. *Erosion hypnoides* (Lam.) Lunell, Amer. Midl. Naturalist 4:221. 1915. TYPE: TROPICAL AMERICA: *D. Richard s.n.* (HOLOTYPE: P-LAM!; ISOTYPES: BAA-1041!, NY fragm.ex P!, US-2850742 fragm. ex P!).

Annuals, stoloniferous, mat-forming, without innovations. Culms decumbent and rooting at the lower nodes, erect portion (2–)5–12(–20) cm tall, often branched, glabrous or hairy on the lower internodes. Leaf sheaths 1/3–1/2 as long as the internodes above, pilose on the margins, collars, and at the apices, hairs 0.1–0.6 mm long; ligules 0.3–0.6 mm long, ciliate; blades 0.5–2.5 cm × 1–2 mm, flat to involute, abaxial surfaces glabrous, adaxial surfaces appressed pubescent, hairs ca. 0.2 mm long. Panicles 1–3.5 × 0.7–2.5 cm, terminal and axillary, ovate, open to somewhat congested; primary branches 0.1–0.5 cm long, appressed to strongly divergent, glabrous; pulvini sparsely pilose or glabrous; pedicels 0.2–1 mm long, ciliate. Spikelets 4–13 × 1–1.5 mm, 12–35-flowered, linear-oblong, often arcuate, loosely imbricate, greenish-yellow to purplish; disarticulation acropetal, paleas persistent; glumes 0.4–1.2 mm long, subequal, linear-lanceolate to lanceolate, hyaline; lower glume 0.4–0.7 mm long; upper glume 0.8–1.2 mm long; lemmas 1.4–2 mm long, ovate, strongly 3-nerved, the nerves greenish; apex acuminate; paleas 0.7–1.2 mm long, hyaline, keels scaberulous; apex acute to obtuse; stamens 2, anthers 0.2–0.3 mm long, brownish. Caryopses 0.3–0.5 mm long, ellipsoid, faintly striate and reticulate, laterally-flattened, somewhat translucent, elliptical in cross-section, light brown.  $2n = 20$  (Davidse 1981).

*Distribution and habitat.*—Native to the Americas found in North, Central, and South America (excluding Chile), and the Caribbean (Nicora 1998; Peterson & Boechat 2001); found along muddy or sandy shores of lakes and rivers and moist disturbed sites; 0–1000 m.

Specimens examined. **COLOMBIA. Amazonas:** Loretoyacu, 1 Oct 1943, *C.O. Grassl 10091* (US); Trapecio amazónico, Amazon River, Leticia, 100 m, Sep 1946, *R.E. Schultes 8196* (COL, US); Trapecio Amazónico, Loretoyacu River, 100 m, Oct 1946, *R.E. Schultes & G.A. Black 8497-A* (COL, US). **Amazonas-Caquetá:** Río Caquetá, Araracuara, sabana de la Angostura, 400 m, 21 Dec 1951, *H. García-Barriga & R.E. Schultes 14155* (COL, US). **Amazonas-Vaupés:** Río Apaporis, Soratama, 14 Feb 1952, *R.E. Schultes & I. Cabrera 16103* (COL, US). **Antioquia:** Puerto Berrío, 125 m, 11 Jan 1931, *W.A. Archer 1384* (US). **Atlántico:** Al sur de Barranquilla, río Magdalena, en la isla en frente de Puerto Giraldo, 5–10 m, 29 Apr 1960, *L.E. Mora 1465* (COL). **Arauca:** Mun. Arauquita, vereda La Osa, bloque Caño Limón, plataforma petrolera Chipirón, 150 m, 31 Mar 2008, *G.A. Silva 745* (COL). **Bolívar:** Soplaviento, and vicinity, 5–10 m, 16 Nov 1926, *E.P. Killip & A.C. Smith 14604* (COL, MO, US). **Boyacá-Arauca:** Los Llanos, Río Casanare about 15 km above Rondón, 200 m, 15 Mar 1939, *O. Haught 2677* (US). **Caquetá:** Río Pepeya, Puerto Tokio, 250 m, 1 Mar 1976, *J.M. Idrobo 8597* (COL). **Casanare:** Los Llanos, along Meta, near Orocué, 140 m, 30 Mar 1939, *O. Haught 2721* (COL, MO, US). **Cauca:** Cerca de Puerto Tejada, 1000 m, 14 Aug 1968, *S. Espinal 2380* (COL). **Córdoba:** Mun. Loricca riberas de los estanques de la Estación Piscícola de la CVS (Corporación autónoma regional del valle de los ríos Sinú y San Jorge), ca. 50 m, 22 Feb 2005, *D. Giraldo-Cañas et al. 3847-A* (COL, HUA, US). **Guaviare:** Angostura Nro. 2, margen derecha del río Guayabero, 200 m, 23 Feb 1969, *P. Pinto 1010* (COL). **Meta:** Margen izquierdo del río Guayabero, 10 km abajo del caño Lozada, 350 m, 30 Jan 1959, *P. Pinto 365* (COL, US). **Santander:** Río Magdalena, boca del río Sogamoso, 110–120 m, 15 Jan

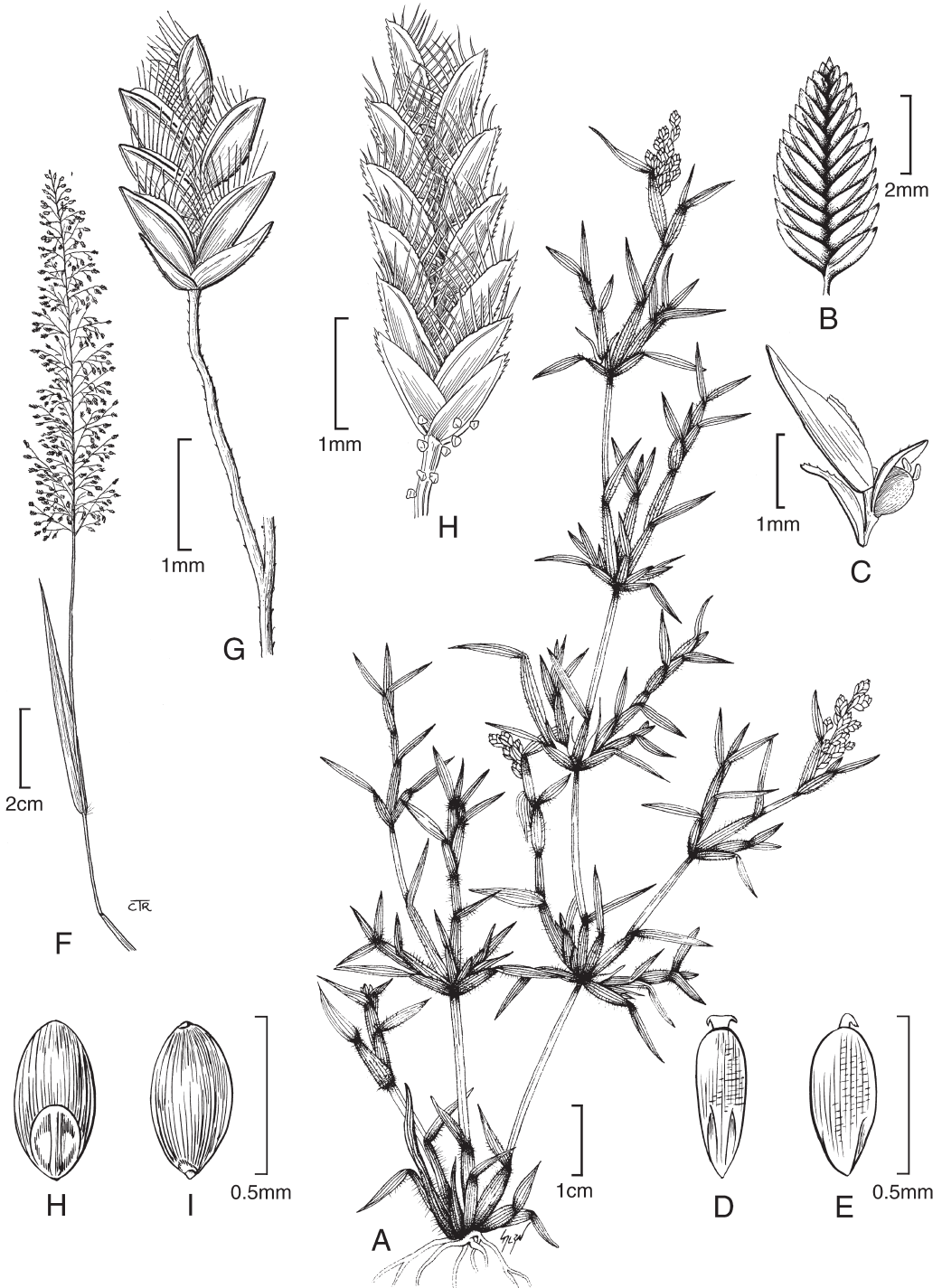


FIG. 5. *Eragrostis hypnoides* (A. López M. & A. Sagástegui A. 4023, D & E). A. Habit. B. Spikelet. C. Floret with two paleas attached below, one with a caryopsis. D. Caryopsis, dorsal view. E. Caryopsis, lateral view. *Eragrostis tenella* (S. Llatas Q. 1180, H & I). F. Culm with Inflorescence. G. Spikelet. H. Caryopsis, dorsal view. I. Caryopsis, lateral view. *Eragrostis viscosa* (O. Haught 4464). H. Spikelet with sand grains attached to pedicel and lower glumes.



1918, F.W. Pennell 3842 (US). **Valle del Cauca:** Buga, no date, M. A. Bonpland s.n. (COL-253787); NE of Cali, near Río Cauca, 1000 m, 3 Mar 1939, E.P. Killip & G. Varela 34701 (COL, US).

**8. *Eragrostis intermedia*** Hitchc., J. Wash. Acad. Sci. 23(10):450. 1933. (**Fig. 2, D–I**). TYPE: U.S.A. TEXAS: Bexar Co.: San Antonio, 3 Jul 1910, A.S. Hitchcock 5491 (HOLOTYPE: US-15357491; ISOTYPES: US-9089931, US-15357501).

Caespitose perennials with innovations, not glandular. Culms (30–)40–90(–110) cm tall, erect, glabrous below the nodes. Leaf sheaths overlapping,  $\frac{1}{2}$  to about as long as the internodes below, sparsely pilose on the margins, apices hairy, hairs to 8 mm long, not papillose-based; ligules 0.2–0.4 mm long; blades (4–)10–20(–30) cm long, 1–3 mm wide, flat or involute, abaxial surfaces glabrous, adaxial surfaces densely hairy behind the ligules, elsewhere usually glabrous, occasionally sparsely hairy. Panicles 15–40 cm long, (8.5–)15–30 cm wide, ovate, open; primary branches 4–25 cm long, diverging 20–90° from the rachises, capillary; pulvini hairy or glabrous; pedicels 2–14 mm long, divergent. Spikelets 3–7 mm long, 1–1.8 mm wide, narrowly lanceolate, olivaceous to purplish, with (3–)5–11 florets; disarticulation acropetal, paleas persistent; glumes lanceolate to ovate, hyaline to membranous; lower glumes 1.1–1.7 mm long, narrower than the upper glumes; upper glumes 1.3–2 mm long, apices acuminate to acute; lemmas 1.6–2.2 mm long, ovate, membranous, hyaline near the margins, lateral veins inconspicuous, apices acute; paleas 1.4–2.1 mm long, hyaline, narrower than the lemmas, apices obtuse to acute; stamens 3; anthers 0.5–0.8 mm long, purplish. Caryopses 0.5–1.0 mm long, rectangular-prismatic, somewhat laterally compressed, with a well-developed adaxial groove, striate, opaque, reddish-brown.  $2n =$  ca. 54, 60, 72, ca. 74, 80, 100, 120.

*Distribution and habitat.*—*Eragrostis intermedia* is an American native species, and grows in clay, sandy, and rocky soils, often in disturbed sites; 0–2800 m. Its range extends from the United States through México and Central America to South America.

*Comments.*—*Eragrostis intermedia* is similar to the more widespread *E. lugens*, but differs from that species in having wider spikelets, longer lemmas, and caryopses with a prominent adaxial groove. A numerical taxonomic study of the *Eragrostis intermedia* complex was completed by Witherspoon (1975) where he found much phenotypic overlap of individuals in his principal component and UPGMA cluster analyses of *E. intermedia* with *E. palmeri* S. Watson, *E. erosa* Scribn. ex Beal, and *E. hirta* E. Fourn. Determination of these species is often problematic and examination of this group, which additionally includes *E. lugens* and *E. hirsuta* (Michx.) Nees, is needed to clarify species boundaries.

Specimens examined. **COLOMBIA. Cundinamarca:** Suesca-Nemocón, vereda Río Checua, hacienda Susatá, en cultivos de Acacia, áreas secas, 2600–2800 m, 7 Jul 2000, J.L. Fernández et al. 18921-B (COL), 23 Aug 2000, J.L. Fernández et al. 19163 (COL); Mun. Suesca, hacienda Susatá, en matorral seco, 2650 m, 8 Sep 1999, Groenendijk & Rietman 1229 (COL), 26 Nov 1999, Groenendijk & Rietman 1277 (COL), 15 Nov 1999, Groenendijk & Rietman 1325 (COL), 2 Aug 2000, Groenendijk & Rietman 1534 (COL).

**9. *Eragrostis japonica*** (Thunb.) Trin., Mém. Acad. Imp. Sci. St.-Pétersbourg, Sér. 6, Sci. Math. 1(4):405. 1830. (**Fig. 6, A–D**). *Poa japonica* Thunb., Fl. Jap. 51. 1784. *Eragrostis tenella* var. *japonica* (Thunb.) Roem. & Schult., Syst. Veg. 2:576. 1817. *Diandrochloa japonica* (Thunb.) A.N. Henry, Bull. Bot. Surv. India 9:290. 1968. *Roshevitzia japonica* (Thunb.) Tzelev, Novosti Sist. Vysš. Rast. 7:50. 1970(1971). TYPE: JAPAN: *Herb. Thunberg* 2252 (HOLOTYPE: UPS, microfiche IDC 10361, K photo!; ISOTYPE: BRI fragm.).

*Poa glomerata* Walter, Fl. Carol. 80. 1788. *Eragrostis glomerata* (Walter) L.H. Dewey, Contr. U.S. Natl. Herb. 2(3):543. 1894. *Megastachya glomerata* (Walter) Schult., Mant. 2:327. 1824. *Diandrochloa glomerata* (Walter) Burkart, Bol. Soc. Argent. Bot. 12:287. 1968. TYPE: U.S.A. SOUTH CAROLINA: *Walter* s.n. (HOLOTYPE: BM!).

Caespitose annuals. Culms 25–100(–115) cm tall, erect, sometimes geniculate below, branching from the lower and middle nodes, glabrous and somewhat shiny below the nodes. Leaf sheaths  $\frac{3}{4}$  to  $\frac{7}{8}$  as long as the internodes above, glabrous at the summit and along the upper margins; ligules 0.4–0.6 mm long, a delicate membrane, glabrous; blades (4–)15–20(–25) cm  $\times$  1.5–6 mm, flat, glabrous below and scaberulous above, sometimes auriculate near the base. Panicles 15–40  $\times$  0.8–5 cm, lanceoloid, contracted, interrupted below, the ascending, often appressed primary branches 2–10 cm long, spreading up to 30° from the rachises, the branches scaberulous and shiny, floriferous near base; pulvini glabrous; pedicels 0.5–1.5 mm long, erect and sinuous. Spikelets 2.2–3.8  $\times$  0.8–1.3 mm, 4–12-flowered, oblong to narrowly lanceolate, yellowish-



FIG. 6. *Eragrostis japonica* (E. Asplund 14802, D). A. Inflorescence with flag leaf. B. Ligule. C. Spikelet. D. Caryopsis, dorsal view. *Eragrostis nigricans* (P.M. Peterson & N.F. Refulio-Rodriguez 13855, E–G; M.O. Dillon, M. Molau & P. Matekaitis 3258, H). E. Habit. F. Panicle branch. G. Spikelet. H. Caryopsis, lateral view. *Eragrostis secundiflora* (W.R. Anderson, M. Stieber & J.H. Kirkbride, Jr. 37109, K). I. Inflorescence. J. Spikelet. K. Floret.

brown to whitish and hyaline; disarticulation basipetal, the rachillas and glumes persistent; glumes 0.6–1 mm long, subequal, ovate to ovate-lanceolate, hyaline, faintly keeled, scaberulous along the keel; upper glumes without a midnerve; lemmas 0.9–1.2 mm long, ovate, hyaline, the lateral nerves conspicuous below, greenish, keeled, glabrous along the keel; apex acute; paleas 0.6–0.8 mm long, hyaline, scaberulous along the keel near the apex; apex acute, often bifid; stamens 2, anthers 0.1–0.2 mm long, whitish to light brown. Caryopses 0.3–0.4 mm long, obovoid, smooth or minutely irregularly striate, slightly dorsally-flattened, pericarp often loose, elliptical in cross-section, reddish-brown.  $2n = 20, 60$  (Christopher & Abraham 1974; Pohl & Davidse 1971 reported for *E. glomerata*).

*Distribution and habitat*.—Native in tropical regions of Asia; introduced in U.S.A., México, Central America, Caribbean, Argentina, Bolivia, Brazil, Colombia, Ecuador, Guyana, Paraguay, Peru, Uruguay, and Venezuela (Nicora 1998; Peterson & Boechat 2001); occurs in moist areas along rivers and streams usually in sandy soils; 0–400 m.

Specimens examined. **COLOMBIA. Amazonas:** Río Caquetá, La Pedrera, 240 m, 1–4 Oct 1952, *H. García-Barriga 14586* (COL). **Atlántico:** En la margen derecha del río Magdalena, en frente de Barranquilla, 6 m, 13 May 1960, *L.E. Mora 1498* (COL). **Casanare:** Yopal, hacienda La Milagrosa, 300 m, 10 Nov 1974, *P. Carranza 11* (COL). **Cundinamarca:** No data, 23 Sep 2000, *C. Romero 108* (COL). **Magdalena:** Santa Marta, 1898–1899, *H.H. Smith 111* (COL, MO, US). **Meta:** Llanos, 190 m, 3 Jan 1974, *G. Davidse & F. Llanos 5504* (COL, MO); Llano de San Martín, 250 m, no date, *H. Karsten s.n.* (US-1126597); Llano de San Martín, 250 m, Jan 1856, *J.J. Triana 352* (COL, US). **Tolima:** Saldaña, vereda Baudá, via Saldaña-Baudá, 360 m, 10 Jul 2002, *A. Osorio 255* (COL). **Viçhada:** Entrada del raudal San Borja, Ventanas, 100 m, 17 Mar 1971, *P. Pinto & C. Sastre 1317* (COL, US).

**10. *Eragrostis lugens*** Nees, Fl. Bras. Enum. Pl. 2:505–506. 1829. (**Fig. 4, F–J**). *Eragrostis pilosa* var. *lugens* (Nees) Griseb., Abh. Königl. Ges. Wiss. Göttingen 24:290. 1879. TYPE: BRAZIL: *F. Sellow s.n.* (LECTOTYPE: US-732957! designated by Davidse, Fl. Mesoamericana 6:271. 1994; ISOLECTOTYPES: B, BAA-2932!).

Caespitose perennials forming innovations at base. Culms 30–70 cm tall, erect, sometimes geniculate below, glabrous and somewhat shiny below the nodes. Leaf sheaths 1/2–2/3 as long as the internodes above, ciliate at the summit and along the upper margins; ligules 0.2–0.3 mm long, ciliate; blades (5–)8–22 cm × 1–2(–2.2) mm, involute, rarely flat, mostly glabrous above and below, scaberulous towards the apex and along margins, sometimes with scattered hairs along the margins, the hairs up to 7 mm long. Panicles 16–28 × 10–21 cm, open, ovate, the ascending primary branches 0.6–15 cm long, spreading up to 100° from the rachises, the branches scaberulous, not floriferous near base; secondary branches composed of loosely overlapping spikelets; pulvini ciliate, the hairs up to 7 mm long; pedicels 1.4–5(–7) mm long, erect, wiry, spreading. Spikelets 2–4.5(–5) × 0.5–1.1 mm, 2–7-flowered, narrow lanceolate, light plumbeous to reddish-purple; disarticulation acropetal, paleas and rachilla persistent; glumes 0.6–1.4 mm long, subequal, broadly ovate to narrowly lanceolate, hyaline, keeled, scaberulous along the keel, sometimes reddish-purple; lower glume 0.6–1 mm long; upper glume 1.1–1.4 mm long, usually broader than the lower; lemmas 1.2–1.8 mm long, broadly ovate, membranous, the distal margins hyaline, lateral nerves obscure to barely evident, keeled, scaberulous along the keel near apex; apex acute; paleas 1.1–1.7 mm long, membranous to partially hyaline, scaberulous along keels; apex obtuse; stamens 3, anthers 0.2–0.7 mm long, reddish-purple. Caryopses 0.5–0.6 mm long, obovoid to somewhat prism-shaped, terete to somewhat laterally flattened, with a weak ventral groove, striate and reticulate, usually opaque, irregularly obovate to triangular in cross-section, faintly reddish-brown to whitish.  $2n = 40, 80$  (Gould 1958).

*Distribution and habitat*.—Native to the Americas with a broad distribution from U.S.A., Mexico, Central America, Argentina, Bolivia, Brazil, Colombia, Ecuador, Peru, Uruguay, and Venezuela (Nicora 1998; Peterson & Boechat 2001); sandy dunes, river banks, near cultivated fields, and open slopes; 0–2800 m.

Specimens examined. **COLOMBIA. Boyacá:** along Río Soapaga, 12 km of Belén, 2460 m, 7 Nov 1944, *F.R. Fosberg 22190* (US). **Cauca:** Chisquio, finca Los Derrumbos, 1700 m, 3 Feb 1940, *E. Asplund 10510* (US). El Ramal to Río Sucio, W of Popayán, 1600–1900 m, 3 Jul 1922, *F.W. Pennell & E.P. Killip 8135* (US). **Cundinamarca:** Sabana de Bogotá, entre Sibaté y San Miguel, 2750 m, 15 Aug 1939, *J. Cuatrecasas 6631* (COL, US). **Huila:** Cordillera Oriental, E of Neiva, 1500 m, 1–8 Aug 1917, *H.H. Rusby & F.W. Pennell 1023* (US). **Valle del Cauca:** Mozambique, N of La Cumbre, 16 Sep 1922, *E.P. Killip 11277* (US). Carretera al mar, W of Cali, Cordillera Occidental, 1300 m, 13 Nov 1948, *E.P. Killip & F.C. Lehmann 39795* (US). Pavas, Cordillera Occidental, 1500–1800 m, 12 May 1922, *F.W. Pennell 5529* (US). **Unknown department:** *J.C. Mutis 5399* (US), *5401* (US).

**11. *Eragrostis lurida*** J. Presl, Reliq. Haenk. 1(4-5):276. 1830. subsp. ***lurida*** (**Fig. 7, A-J**). *Poa lurida* (J. Presl) Kunth, Enum. Pl. 1:342. 1833. TYPE: PERU: *T. Haenke* s.n. (HOLOTYPE: PR; ISOTYPES: MO-2111146!, PR, US-2941523 fragm. ex PR!).

*Eragrostis contristata* Nees & Meyen, Gramineae 31-32. 1841. TYPE: PERU: Laguna de Titicaca, Apr. 1831, *Meyen* s.n. (HOLOTYPE: B; ISOTYPES: BAA-1021 fragm. ex B!, LE- TRIN-2326.011, Pl, US-2891461 fragm!).

*Eragrostis bahiensis* var. *boliviensis* Henrard, Meded. Rijks-Herb. 40:68. 1921. TYPE: BOLIVIA: LA PAZ: Larecaja, Sorata, 2900 m, Feb 1858, *G. Mandon* 1332 (HOLOTYPE: L 908,88-303; ISOTYPES: KI, L 908,88-342, Pl, US-3161127!, US-256470!, US-911775 fragm. ex L!).

Caespitose perennials with innovations at base; culms (5-)15-75 cm tall, erect, sometimes slightly geniculate below, glabrous or occasionally with a tuft of hairs below the nodes, the hairs less than 1 mm long, sometimes with an occasional elliptical orange gland. Leaf sheaths  $\frac{3}{4}$  to about as long as the internodes above, densely white ciliate at the summit and along the margins, sometimes with scattered hairs on the abaxial surface; ligules 0.5-0.9 mm long, ciliate; blades 1.5-16.5 cm  $\times$  1.5-3.5(-5) mm, flat to involute, glabrous and sometimes shiny below and scaberulous above. Panicles 3-35  $\times$  2-5(-7) cm, narrowly ovate, contracted and condensed into tightly glomerate lobes, interrupted near base, spicate to narrowly ovate, rachis glabrous, the ascending primary branches 0.6-5 cm long, densely-flowered, spreading 20-80° from the rachises, floriferous near base; secondary branches condensed into tightly glomerate lobes of spikelets; pulvini ciliate or glabrous; pedicels 0.1-1 mm long, ascending and appressed, wiry, scabrous. Spikelets 2.5-6  $\times$  1-2.1 mm, 3-10-flowered, narrowly lanceolate to ovate, inflated to slightly compressed, dark to light plumbeous, sometimes purple-tinged, rachilla often ciliate; disarticulation acropetal with glumes first, then lemmas falling individually, paleas persistent on rachilla; glumes 1-2 mm long, subequal, broadly ovate to lanceolate, membranous, margins hyaline, keeled, scaberulous along keel, sometimes 3-nerved; lower glumes 1-1.5 mm long; upper glumes 1.2-2 mm long; lemmas 1.6-2.4 mm long, broadly ovate, membranous, lateral nerves conspicuous, evident, keeled; apex acute, scaberulous, the minute prickle hairs appearing as whitish dots under 10-20X; paleas 1.5-2.3 mm long, membranous to partially hyaline, scaberulous along the keels; apex truncate to obtuse; stamens 3, anthers 0.4-0.6 mm long, reddish-purple. Caryopses 0.6-0.8 mm long, obovoid to ellipsoid, striate and reticulate, sometimes with a weak ventral groove, rectangular with the lateral sides angled in cross-section, light reddish-brown.  $2n$  = unknown.

*Distribution and habitat*.—Native to the central Andes from Bolivia, Colombia, Ecuador, and Peru (Nicora 1998; Laegaard & Peterson 2001); dry rocky hillsides, slopes, sandy roadsides, and rocky alluvial fans; 2000-3800 m.

Specimens examined. **COLOMBIA. Cauca:** Popayán, no date, *F.C. Lehmann* 6997 (US). **Nariño:** Cumbal, *André* 3524 (US). **Unknown department:** *J.C. Mutis* 5517 (US).

**12. *Eragrostis maypurensis*** (Kunth) Steud., Syn. Pl. Glumac. 1:276. 1854. (**Fig. 8, A-E**). *Poa maypurensis* Kunth, Nov. Gen. Sp. 1: 161, 162. 1815 (1816). *Megastachya maypurensis* (Kunth) Roem. & Schult., Syst. Veg. 2: 588. 1817. TYPE: VENEZUELA. AMAZONAS: Río Orinoco, Apr, *F. Humboldt* & *A. Bonpland* s.n. (HOLOTYPE: Pl; ISOTYPES: COL!, BAA-1053 fragm!, Pl, US-2850758 fragm. ex P-BONPL! & fragm. ex B-WILLD!).

Caespitose annuals. Culms 25-45 cm tall, erect to ascending, often decumbent, many branched from the base forming a rosette, mostly with 2-3(-6) nodes. Leaf sheaths  $\frac{1}{2}$ - $\frac{2}{3}$  as long as the internodes above, mostly glabrous, pilose at the summit and along upper margins; ligules ca. 0.5 mm long, ciliate; blades 6-12 cm  $\times$  2-4 mm, flat to loosely involute tow. the apex, scattered pilose near base and long margins to pilose abaxially and adaxially, the hairs 1.5-5 mm long, papillose-based. Panicles 6-14  $\times$  (1.5-) $\frac{3}{4}$ -7.5 cm, open, narrowly ovate to oblong, more or less densely-flowered, primary branches 1.5-5 cm long, spreading, solitary at a node, floriferous to base, branches diverging 0-70° from the rachises; pulvini pilose, the hairs up to 4 mm long; pedicels 0-1.5 mm long, shorter than the spikelets, appressed, with a few scattered hairs. Spikelets 8-15(-30)  $\times$  1.8-2.5(-3) mm, 12-35-flowered, narrowly lanceolate to ovate lanceolate, florets imbricate often appearing to be borne in fascicles, reddish-purple to yellowish; disarticulation acropetal with the paleas and glumes persistent; glumes (1.5-) $\frac{2}{3}$ -2.6 mm long, subequal, lanceolate-acuminate, strongly to weakly keeled, scaberulous along the keel; lower glumes 2-2.6 mm long, usually longer than the upper; upper glumes (1.5-) $\frac{2}{3}$ -2.6 mm long; lemmas 1.8-3 mm long, ovate-acuminate, chartaceous, lateral nerves

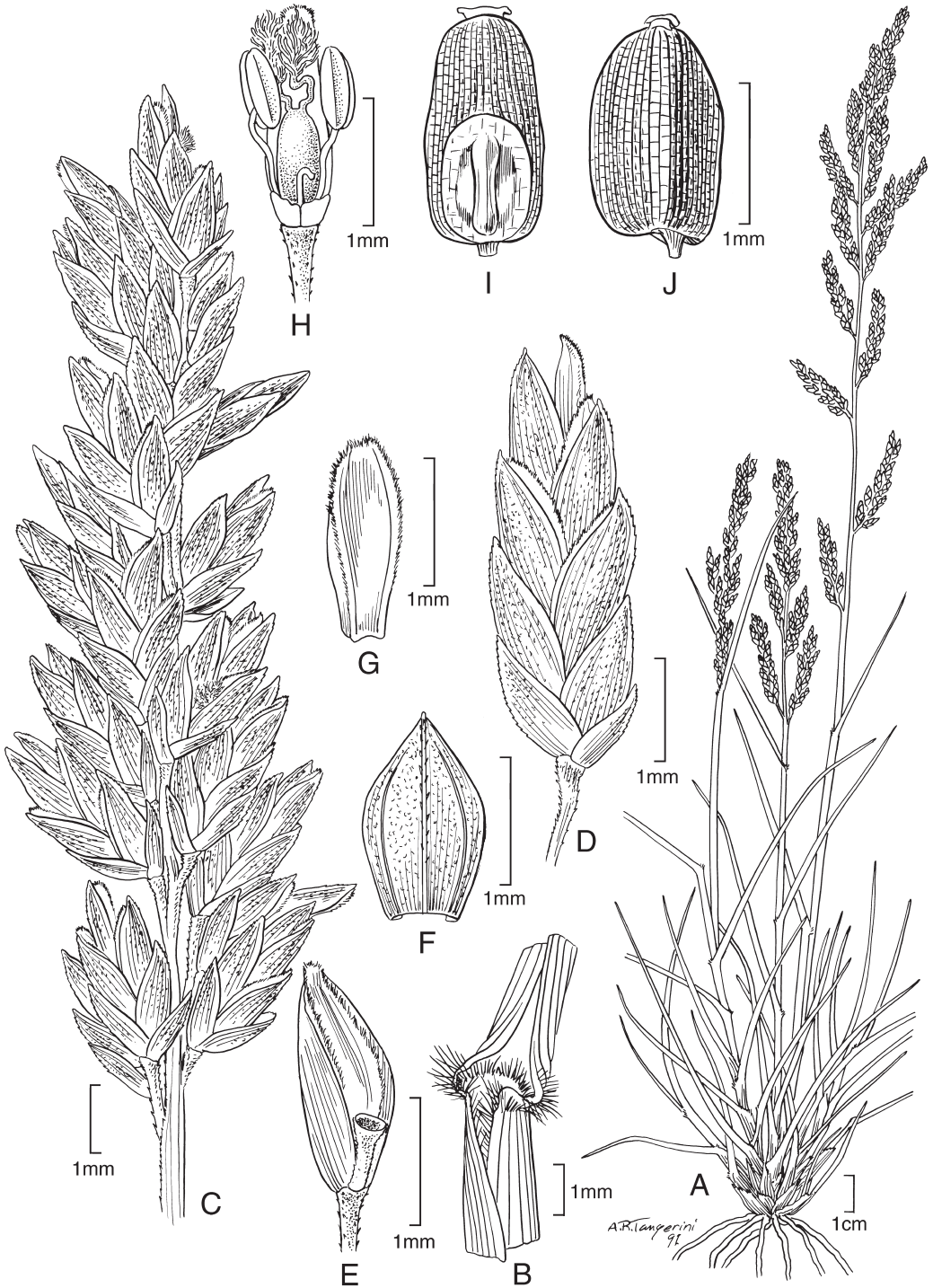


FIG. 7. *Eragrostis lurida* (P.M. Peterson, E.J. Judziwicz & R.M. King 9103 & P.M. Peterson & E.J. Judziwicz 9327, A–H; P.M. Peterson & N.F. Refulio-Rodriguez 13993, I & J). A. Habit. B. Ligule. C. Inflorescence. D. Spikelet. E. Floret. F. Lemma, dorsal view. G. Palea, dorsal view. H. Palea enclosing the stamens, pistil, and lodicules, ventral view. I. Caryopsis, dorsal view. J. Caryopsis, lateral view.



FIG. 8. *Eragrostis maypurensis* (J.R. Swallen 3306, A–C; C.M. Belshaw 3359, D & E). A. Habit. B. Spikelet. C. Floret. D. Caryopsis, dorsal view. E. Caryopsis, lateral view. *Eragrostis polytricha*. F. Inflorescence. G. Spikelet. H. Floret.

and midnerve evident usually green; apex acuminate and recurved; paleas 1.5–2.2 mm long, shorter than the lemma, hyaline; stamens 2, anthers 0.2–0.3 mm long, purplish. Caryopses 0.4–0.7 mm long, ovoid, translucent, rhomboid reticulate without striations, obovate to circular in cross-section, reddish-brown.  $2n = 20$  (Pohl & Davidse 1971).

*Distribution and habitat*.—Native to the Americas from México, Central America to South America in Bolivia, Brazil, Colombia, Peru, and Venezuela (Nicora 1998; Laegaard & Peterson 2001); a fairly common grass in the Amazonian region where it is found growing in savannas, sandy sites, along roadsides, and disturbed areas; 100–1500 m.

*Vernacular name*.—"Colchón de pobre" (Casanare, *J.M. Idrobo 5100*).

Specimens examined. **COLOMBIA**. **Amazonas**: Araracuara, camino entre el Hospital y el Aeropuerto, ca. 200 m, 12 Sep 1977, *L.E. Aguirre-Galvis 1061* (COL); Río Caquetá, cerca del aeropuerto, 200–250 m, 18 Jul 1977, *A. Fernández-Pérez 20061* (COL). **Antioquia**: Bello, 1500 m, 29 Jun 1930, *W.A. Archer 346* (US). **Casanare**: Esmeralda, 130 m, 19–20 Oct 1938, *J. Cuatrecasas 3863* (COL, US); Mun. El Yopal, sabanas alteradas no inundables, entre el nuevo hospital y la Brigada del Ejército Nacional, 400 m, 3 Nov 2007, *D. Giraldo-Cañas 4149, 4150, 4153* (COAH, COL); El Yopal, ható Mate Pantano, 10 Oct 1962, *J.M. Idrobo 5100* (COL); Mun. Paz de Ariporo, corregimiento La Hermosa, finca Nicaragua, caño Pica Pico, 112 m, 25 Oct 2004, *J.G. Ramírez 8705* (COAH, COL); Tauramena, quebrada Tauramena, 550 m, 30 Nov 1960, *L. Uribe Uribe 3588* (COL). **Cauca**: along Río Palo at El Palo, 15 Dec 1943, *E.L. Core 171* (US); Río Patía, 11 May 1935, *H. García-Barriga 4497* (COL, US). **Guainía**: Bassin de L'Amazone, Río Negro a San Felipe, 200 m, 13–25 Nov 1952, *H. Humbert 27487* (US); Puerto Colombia, opposite Venezuelan town of Maroa, and vicinity, ca. 280 m, 31 Oct 1952, *R.E. Schultes 17927* (COL, US). **Guaviare**: Mun. San José del Guaviare, trocha Nuevo Tolima, 11 Nov 1996, *R. López & O. Rodríguez 1859* (COAH, COL). **Huila**: Five km N of Villavieja, upper basin of Río Magdalena, 400 m, 23 Jul 1950, *S.G. Smith 1256* (COL, US). **Magdalena**: Cerca de Gamarra (Santander), valle del río Magdalena, 100 m, 23 Dec 1948, *J. Araque-Molina & F.A. Barkley 18-Mg-072* (US); Santa Marta, 1898–1901, *H.H. Smith 132* (COL, MO, US). **Meta**: Mun. Villavicencio, carretera Villavicencio-Aeropuerto, piedemonte de la cordillera Oriental, sitio La Arenera, ca. 2 km del puente sobre el río Guatiquía, ca. 400 m, 14–15 Dec 2002, *D. Giraldo-Cañas 3384* (COAH, COL, HUA); Río Meta, Cabuyaro, 235 m, 14 Oct 1938, *J. Cuatrecasas 3612* (COL, US); Río Meta, La Ochovera, 28 Oct 1938, *J. Cuatrecasas 4182* (COL, US); Villavicencio, Apiai, 500 m, 12 Nov 1938, *J. Cuatrecasas 4730* (COL, US); Llanos Orientales, Puerto López, al SE de Cabuyaro, alrededores de la laguna de Yurimena, 175–200 m, 16 Sep 1958, *R. Jaramillo-Mejía 1247* (COL, US); Carimagua, 200 m, 18 Sep 1992, *S.A. Renvoize 5399* (COL, US); San Juan de Arama, caño Curia, 440 m, 31 Dec 1986, *D. Rivera 1265* (COL); Loma Linda, al sureste de San Martín, 300 m, 15 Sep 1966, *A. Robinson 3079* (US); Villavicencio, 450 m, Jan 1856, *J.J. Triana 70* (US), 297 (US). **Nariño**: Carretera Pasto-Túquerres, alrededores del río Juanambú, 1380 m, 1–5 Dec 1962, *C. Saravia 1950* (COL). **Santander**: "Kilómetro 16," between Puerto Wilches and Puerto Santos, 110–115 m, 29 Nov 1926, *E.P. Killip & A.C. Smith 14825* (MO, US); Carretera Puerto Wilches-Sabana de Torres, km 46, 250 m, 16 Nov 1985, *J.H. Torres 2816, 2817* (COL). **Tolima**: no data, *André 1924* (US); Melgar, 500–600 m, 4–5 Dec 1917, *F.W. Pennell 2903* (US). **Valle del Cauca**: Around Cali, western side of Cauca Valley, 1000–1200 m, Dec 1905, *H. Pittier 639* (US), 660 (US). **Victoria**: Región Guayana, Mun. Puerto Carreño, afloramientos rocosos del tipo lajas, entre Punta de Lajas y Cerro El Bitá, ribera del río Orinoco, 40–100 m, 4–5 Jan 2004, *D. Giraldo-Cañas & C. Parra 3648, 3655* (COAH, COL); Río Orinoco, Puerto Carreño, 23–24 Oct 1938, *J. Cuatrecasas 4072* (COL, US); ca. 10 km W of Las Gaviotas along road to Puerto Gaitán, 180 m, 30 Dec 1973, *G. Davidse & F. Llanos 5367-A* (COL, MO, US); Gualandayás, ca. 100 km E of Gaviotas, 100 m, 31 Dec 1983, *J.R.I. Wood 4213* (COL). **Unknown department**: *F.C. Lehmann 778* (US), *I. Linden 1554* (US), *Moritz s.n.* (US), *J.C. Mutis 6094* (US), *J.J. Triana 298* (US).

**13. *Eragrostis mexicana*** (Hornem.) Link, Hort. Berol. 1:190. 1827. (**Fig. 9**). *Poa mexicana* Hornem., Hort. Bot. Hafn. 2:953. 1815. TYPE: MÉXICO: cultivated from seed collected in México, *Sessé s.n.* (LECTOTYPE: MA! designated by Peterson & Sánchez Vega, Ann. Missouri Bot. Gard. 94:773. 2007).

Caespitose annuals. Culms 10–130 cm tall, erect, sometimes geniculate, glabrous, sometimes with a ring of glandular depressions below the nodes. Leaf sheaths  $\frac{1}{2}$ – $\frac{2}{3}$  as long as the internodes, sometimes with glandular pits, pilose near the apices and on the collars, hairs to 4 mm long, papillose-based; ligules 0.2–0.5 mm long, ciliate; blades 5–25 cm  $\times$  2–7(–9) mm, flat, abaxial surfaces glabrous, adaxial surfaces scabridulous, occasionally pubescent near the base. Panicles (5–)10–40  $\times$  (2–)4–18 cm, less than  $\frac{1}{2}$  the height of the plant, ovate, rachises angled and channeled; primary branches 3–12(–15) cm long, solitary to whorled, appressed or diverging to 80° from the rachises; secondary branches somewhat appressed; pulvini glabrous; pedicels 1–6(–7) mm long, almost appressed to narrowly divergent, stiff. Spikelets (4–)5–10(–11)  $\times$  0.7–2.4 mm, 5–11(–15)-flowered, linear to linear-lanceolate or ovate to oblong, gray-green to purplish; disarticulation acropetal; glumes 0.7–2.3 mm long, subequal, ovate to lanceolate, membranous; lemmas 1.2–2.4 mm long, ovate, membranous, glabrous or with a few hairs, gray-green, lateral veins evident, often greenish; apex acute; paleas 1–2.2 mm long, hyaline, keels scabrous; apex obtuse to truncate; stamens 3; anthers 0.2–0.5

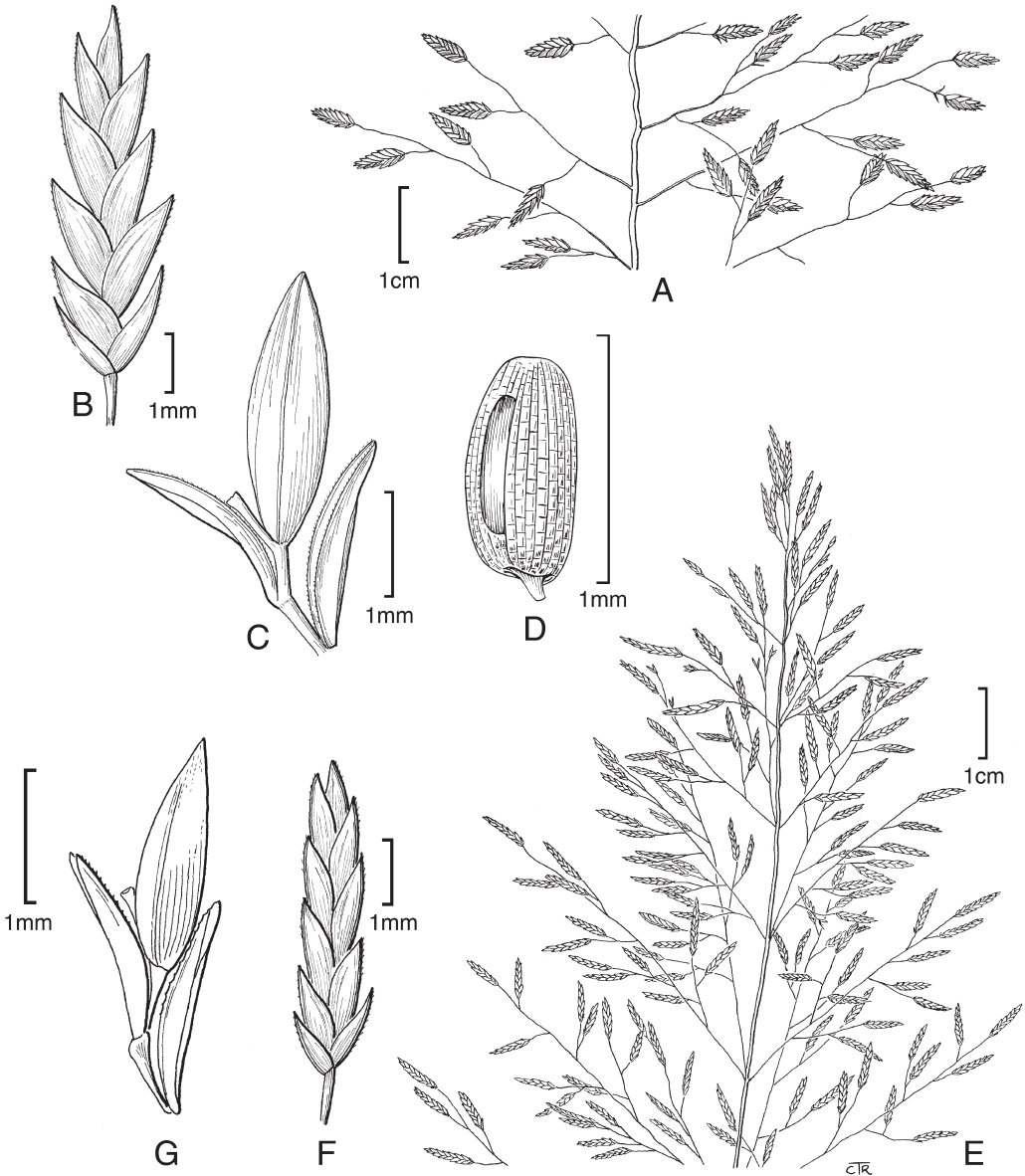


FIG. 9. *Eragrostis mexicana* var. *mexicana* (J. Sánchez-Vega 4020, D). A. Inflorescence. B. Spikelet. C. Floret with two paleas attached below. D. Caryopsis, lateral view. *Eragrostis mexicana* var. *virescens*. E. Inflorescence. F. Spikelet. G. Floret with two paleas attached below.

mm long, purplish. Caryopses 0.5–0.8(–1) mm long, ovoid to rectangular-prismatic, laterally flattened, shallowly to deeply grooved on the ventral surface, striate and reticulate, irregularly triangular in cross-section, reddish-brown, distal 2/3 opaque.  $2n = 60$  (Pohl & Davidse 1971).

*Distribution and habitat.*—*Eragrostis mexicana* is native to the Americas and grows along roadsides, near cultivated fields, city sidewalks, and in disturbed open areas, in lomas vegetation and slopes of the inter-Andes of Colombia; 1000–2400 m. The species has been treated as two distinct subspecies by Koch and Sánchez Vega (1985) and Peterson and Sánchez Vega (2007), both of which occur in Colombia.



KEY TO THE SUBSPECIES OF *ERAGROSTIS MEXICANA*

1. Spikelets ovate to oblong in outline, 1.5–2.4 mm wide; lower glumes 1.2–2.3 mm long; sum of the spikelet width and lower glume length 2.7–4.7 mm; culms and sheaths sometimes with glandular depressions \_\_\_\_\_ **13a. *E. mexicana*** subsp. ***mexicana***
1. Spikelets linear to linear-lanceolate, 0.7–1.4 mm wide; lower glumes 0.7–1.7 mm long; sum of the spikelet width and lower glume length 1.5–3.1 mm; culms and sheaths without glandular depressions \_\_\_\_\_ **13b. *E. mexicana*** subsp. ***virescens***

**13a. *Eragrostis mexicana*** (Hornem.) Link subsp. ***mexicana*** (Fig. 9, A–D).

*Eragrostis limbata* E. Fourn., Mexic. Pl. 2:116. 1886. TYPE: MÉXICO: 1833, A.J.A. Bonpland 4573 (LECTOTYPE: P! designated by R. McVaugh, Fl. Novo-Galic. 14:168. 1983 but specific herbarium not indicated, Bonplands collections are housed at P; ISOTYPE: US-2941517 fragm!).

*Eragrostis neomexicana* Vasey ex L.H. Dewey, Contr. U.S. Natl. Herb. 2(3):542. 1894. TYPE: U.S.A. NEW MEXICO: Organ Mountains, 1881, G. Vasey 474 (LECTOTYPE: US-176631! designated by S.D. Koch and I. Sánchez Vega, Phytologia 58:379. 1985; ISOTYPES: K!, US-822049!, US-909912!).

*Eragrostis alba* J. Presl, Reliq. Haenk. 1(4–5):279. 1830. *Poa alba* (J. Presl) Kunth, Enum. Pl. 1:343. 1833. TYPE: PERÚ: T. Haenke s.n. (HOLOTYPE: PR; ISOTYPES: MO-2111118!, US-2942409 fragm. ex P!).

Culms and sheaths sometimes with glandular depressions. Spikelets 1.5–2.4 mm wide, ovate to oblong; lower glumes 1.2–2.3 mm long; sum of spikelet width and lower glume length 2.7–4.7 mm.

Specimens examined. **COLOMBIA. Boyacá:** Mun. Ráquira, cerca de los hornos de los artesanos, en inmediaciones del camino que conduce al desierto de La Candelaria, 2300 m, 19 Jul 2003, D. Giraldo-Cañas 3555, 3555-B (COL); Mun. Villa de Leyva, saliendo por el camino que conduce a Iguaque, en las afueras del casco urbano de Villa de Leyva, 2200 m, 18 Dec 2004, D. Giraldo-Cañas 3825, 3835, 3836 (COL); between Boavita and the Río Chicamocha, 1500 m, 25 Jun 1984, J.R.I. Wood 4468 (COL). **Cauca:** Popayán, 1600–1800 m, Feb 1887, F.C. Lehmann 4401 (US). **Cundinamarca:** Mun. Choachi, carretera Choachi-Termale de Choachi, km 2, 1600 m, 12 Nov 2001, D. Giraldo-Cañas 3284 (COL). **Nariño:** Carretera Pasto-Túquerres, alrededores del río Juanambú, 1380 m, 1–5 Dec 1962, C. Saravia 1954 (COL). **Santander:** 2 km al sur de Suratá, 1900 m, 4 Aug 1966, A. Robinson 3054 (US). **Valle del Cauca:** between Uribe and Sevilla, 1100 m, 2 Mar 1983, J.R.I. Wood 4082 (COL).

**13b. *Eragrostis mexicana*** subsp. ***virescens*** (J. Presl) S.D. Koch & Sánchez Vega, Phytologia 58(6):380. 1985. (Fig. 9, E–G). *Eragrostis virescens* J. Presl, Reliq. Haenk. 1(4–5):276. 1830. *Poa virescens* (J. Presl) Kunth, Enum. Pl. 1:329. 1833. TYPE: CHILE: T. Haenke s.n. (HOLOTYPE: PR; ISOTYPES: B!, BAA-1107 fragm. ex B!, LE-TRIN-2413.01!, US-2942410 fragm!).

*Eragrostis leptantha* Trin., Mém. Acad. Imp. Sci. St.-Petersbourg, Sér. 6, Sci. Math. 1(4):405. 1830. *Poa leptantha* (Trin.) Kunth, Enum. Pl. 1:339. 1833. TYPE: BRAZIL: in siccis arenosum pr. Moji [Sao Paulo], 23 Apr, [Riedel s.n.], G.H. von Langsdorff s.n. (HOLOTYPE: LE-TRIN-2361.01!; ISOTYPES: BAA-1043 fragm.!, K, LE, MO-2111141!, NY!, P!, US-2941514 fragm.!).

*Eragrostis delicatula* Trin., Mém. Acad. Imp. Sci. Saint-Petersbourg, Sér. 6, Sci. Math., Seconde Pt. Sci. Nat. 2(1):73. 1836. *Eragrostis pilosa* var. *delicatula* (Trin.) Hack., Anales Mus. Nac. Buenos Aires 11:133. 1904. TYPE: BRAZIL: In cultis prope Rio de Janeiro, May–Jun 1823, L. Riedel s.n. (HOLOTYPE: LE-TRIN-2330.01!; ISOLECTOTYPES: LE, US-2891464 fragm.!).

*Eragrostis rahmeri* Phil., Verz. Antofagasta Pfl. 88. 1891. TYPE: CHILE. TARAPACA: Quebrada de Guaviña, 13 Mar 1885, R.A. Philippi 359 (HOLOTYPE: SGO-PHI-359; BAA-1080 fragm.!, CORD!, SGO-37293; SGO-63537, SGO-62670, US-556538 fragm. ex SGO-PHIL-359!).

*Eragrostis cordobensis* Jedwabn., Bot. Arch. 5(3–4):208. 1924. TYPE: ARGENTINA. CÓRDOBA: prope urbem, 21 Apr 1881, Galander 54b (LECTOTYPE: BAA! designated by Boechat & Longhi-Wagner, Iheringia, Bot. 55:164. 2001; ISOLECTOTYPE: US-2767407!).

Culms and sheaths without glandular depressions. Spikelets 0.7–1.4 mm wide, linear to linear-lanceolate; lower glumes 0.7–1.7 mm long; sum of spikelet width and lower glume length 1.5–3.1 mm.

*Distribution and habitat.*—This subspecies is native to South America in Argentina, Bolivia, Brasil, Chile, Colombia, Paraguay, Peru, and Uruguay; introduced in Canada, México, and U.S.A. (Nicora 1998; Peterson & Boechat 2001; Peterson & Sánchez Vega 2007).

Specimens examined. **COLOMBIA. Antioquia:** Mun. Sabaneta, parque central de la municipalidad, 1550 m, 3 Jan 2003, D. Giraldo-Cañas 3428 (COL, HUA). **Cauca:** Mun. Popayán, sector norte de la ciudad, Villa del Viento, 1800 m, 7 Jan 2001, B.R. Ramirez 13911 (CAUP, COL). **Quindío:** Mun. Calarcá, entrada del jardín botánico del Quindío, 1500 m, 20–25 May 2005, D. Giraldo-Cañas 3893 (COL, HUA). **Santander:** Entre el cañón del Chicamocha y el valle de Rupala, 1000 m, 14 Jun 1962, C. Saravia 772 (COL). **Tolima:** Cordillera Central andina, Mun. Ibagué, jardineras y andenes de la Plaza de Bolívar, 1200 m, 11–12 Jun 2005, D. Giraldo-Cañas 3903 (CAUP, COL, HUA).

**14. *Eragrostis mokensis*** Pilg., Bot. Jahrb. Syst. 51(3–4):419. 1914. (**Fig. 10, A–D**). TYPE: EQUATORIAL GUINEA.

FERNANDO PO: Grasland (Bergweiden) von Moka im Südosten der Insel, 1200–1800 m, Nov 1911, *J. Mildbraed 7102* (HOLOTYPE: B; ISOTYPE: US-2941533!).

*Eragrostis moritzii* Jedwabn., Bot. Arch. 4:328. 1923. TYPE: VENEZUELA. MERIDA: in der Alpenen Region, *J.W.K. Moritz 1570* (ISOTYPE: US-2941535 fragm.!).

Caespitose annuals. Culms 10–30(–45) cm tall, erect or ascending, sometimes geniculate, branched at the base and lower nodes, often with a small glandular ring below the glabrous nodes. Leaf sheaths overlapping below to ½ the length of the internodes above, sparsely pilose at the summit and along margins below, the hairs up to 3 mm long and papillose-based; ligules 0.1–0.3 mm long; blades 3–8(–10) cm long, 2–4 mm wide, flat, sparsely pilose with papillose-based hairs. Panicles 4–13 cm long, 2.5–7(–10) cm wide, narrowly, ovate, open, the rachis angled; primary branches 2–7 cm long, ascending, stiff, spreading up to 90° from the rachises; secondary branches widely spreading; pulvini glabrous, smooth; pedicels 0.5–2.5 mm long, shorter than the spikelets. Spikelets 3–6.5(–7) mm long, 2–2.5 (–3) mm wide, (4–)10–20-flowered, broadly ovate-lanceolate, the florets strongly imbricate, plumbeous to reddish-purple; disarticulation acropetal, with the glumes first, then the lemmas and paleas falling as a unit; glumes 1–1.5 mm long, subequal, ovate, membranous, keeled, scaberulous along the keel, apex acute; lemmas 1.2–1.6 mm long, 0.6–1.1 mm wide, orbicular, chartaceous, lateral nerves absent or obscure, apex keeled and obtuse; paleas 1.1–1.4 mm long, 0.6–0.8 mm wide, orbicular, deciduous, winged, scaberulous, apex truncate; stamens 3; anthers 0.3–0.5 mm long, purplish. Caryopses 0.6–0.7 mm long, ovoid, striate and reticulate, flattened on the adaxial surface, reddish-brown.  $2n$  = unknown.

*Distribution and habitat.*—Native to western Africa (Clayton 1972), *E. mokensis* has been reported from Brazil and Venezuela (Boechat & Longhi-Wagner 2001). Herein, we report it for the first time in Colombia. This species occurs in rocky areas, along roadsides, and near cultivated fields and in waste areas often associated with *Melinis multiflora* P. Beauv. and other ruderal plants; 1700–2000 m.

*Comments.*—*Eragrostis mokensis* is very similar in habit, panicle characteristics, and overall spikelet shape and color to *E. uniolooides* (Retz.) Nees ex Steud. However, *E. mokensis* can be separated from the latter by having orbicular lemmas with obtuse apices (verses ovate lemmas with acute apices in *E. uniolooides*), shorter pedicels (0.5–2.5 mm long versus 2–10 mm long in *E. uniolooides*), somewhat narrower spikelets [2–2.5(–3) mm wide verses 2–3.4 mm wide], and florets with three stamens (two stamens reported in *E. uniolooides*) [Clayton 1972].

Specimen examined. **COLOMBIA. Cauca:** Highlands of Popayán, 1700–2000 m, 1889, *F.C. Lehmann BT-635* (US).

**15. *Eragrostis nigricans*** (Kunth) Steud., Nom. Bot. ed. 2, 1:563. 1840. (**Fig. 6, E–H**). *Poa nigricans* Kunth, Nov.

Gen. Sp. 1:159. 1816. *Megastachya nigricans* (Kunth) Roem. & Schult., Syst. Veg. 2:586. 1817. TYPE: ECUADOR: Chillo & Sangolqui, Apr–May, *F. Humboldt & A. Bonpland 2291* (HOLOTYPE: P-Bonpl!; ISOTYPES: BAA-1062 fragm.!, K photo!, LE-TRIN-2371.01!, P!, US-2891495 fragm. ex LE-TRIN! &!, fragm. ex P!).

*Eragrostis scabra* Phil., Fl. Atacam. 55. 1860. TYPE: CHILE. ATACAMA: prope Paposo, Dec 1851, *R.A. Philippi 1051* (HOLOTYPE: SGO-PHIL 357; ISOTYPES: B!, BAA-1089 fragm. ex B!, US 556539 fragm. ex SGO-PHIL 357! & photo!).

*Eragrostis rahmeri* Phil., Verz. Antofagasta Pfl. 88. 1891. TYPE: CHILE. TARAPACA: Quebrada de Guaviña, 13 Mar 1885, *R.A. Philippi s.n. 359* (HOLOTYPE: SGO-PHIL 359; ISOTYPES: BAA-1080 fragm!, CORD!, SGO-37293, SGO-63537, SGO-62670, US-556538 fragm. ex SGO-PHIL 359!).

*Eragrostis tristis* Jedwabn., Bot. Arch. 5(3–4):205. 1924. *Eragrostis nigricans* var. *tristis* (Jedwabn.) Pilg., Notizbl. Bot. Gart. Berlin-Dahlem 11:778. 1933. TYPE: BOLIVIA: ad Huancapamba, 15 Feb 1910, *Pflanz 359* (LECTOTYPE: BAA-1101 fragm. ex B!, designated by Peterson & Sánchez Vega, Ann. Missouri Bot. Gard. 94:775. 2007).

*Eragrostis subatra* Jedwabn., Bot. Arch. 5(3–4):202. 1924. TYPE: BOLIVIA: Prope La Paz, 1889, *M. Bang 80* [collector erroneously cited as Rusby in protologue] (HOLOTYPE: B; ISOTYPES: K!, US-822065!).

Caespitose annuals. Culms (10–)20–50(–80) cm tall, erect, sometimes geniculate below, mostly glabrous and somewhat shiny below the nodes. Leaf sheaths 1/3–2/3 as long as the internodes, sparsely pilose at the summit and along the upper margins, the hairs up to 2.5 mm long, sometimes the margins glabrous; ligules 0.4–0.6 mm long, ciliate; blades 6.5–10 cm × 2–5 mm, flat, occasionally loosely involute near apex, glabrous

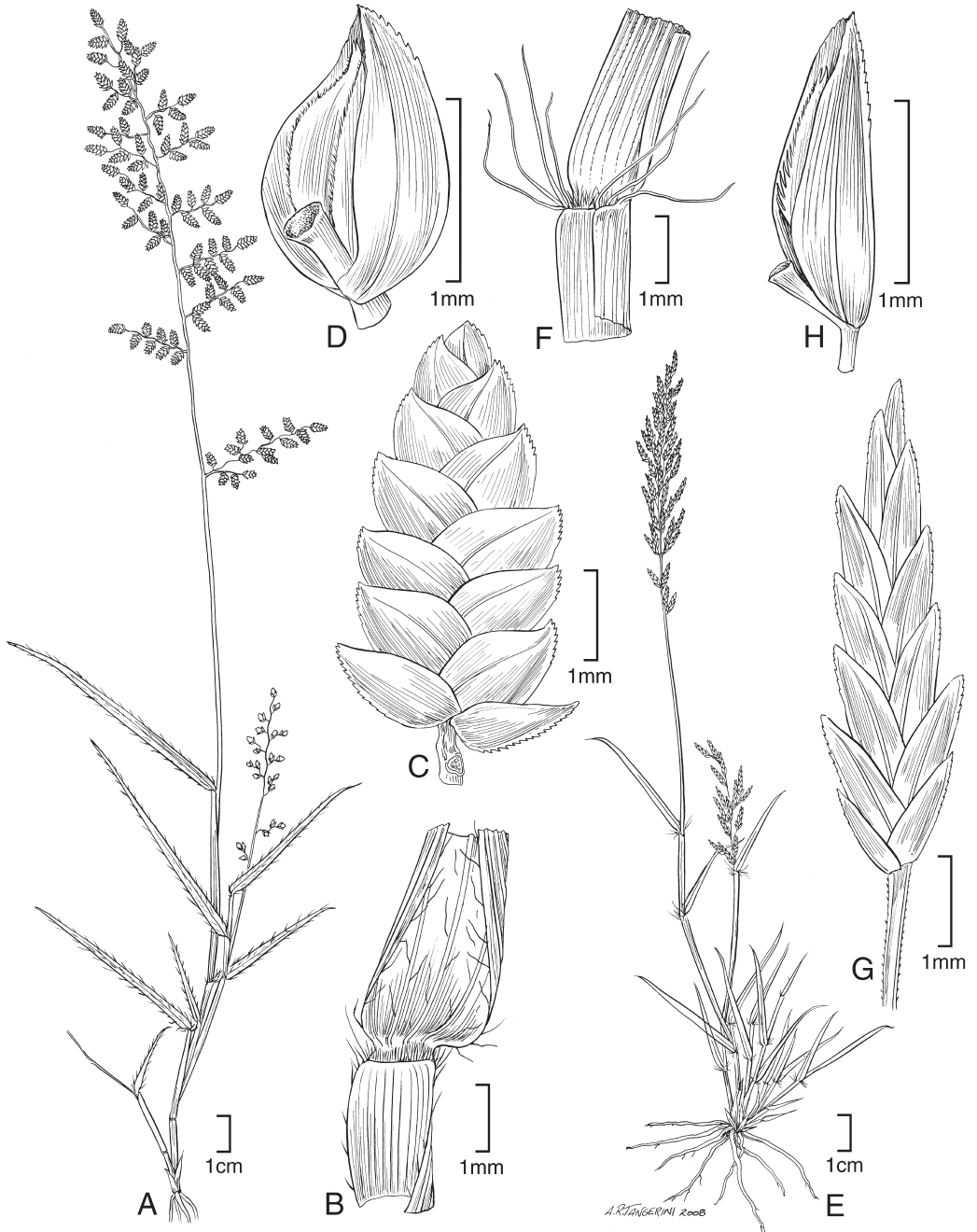


FIG. 10. *Eragrostis mokensis* (B.T. Lehmann 635). A. Habit. B. Ligule. C. Spikelet. D. Floret. *Eragrostis rufescens* (F.R. Fosberg 22208). E. Habit. F. Ligule. G. Spikelet. H. Floret.

above and below, somewhat scaberulous near apex. Panicles (5–)7–24 × 2–7(–15) cm, oblong, somewhat condensed, the spikelets arranged in glomerules that are widely spaced along the channeled rachis, primary branches mostly 1–10 cm long, sinuous, ascending and spreading 20–90° from the rachises, solitary to whorled below, scaberulous, secondary branches sinuous; pulvini glabrous to sparsely pilose, the hairs up to 1.5 mm long; pedicels 0.4–2(–3) mm long, stiffly spreading, divaricate and stout, scaberulous. Spikelets 2.6–3.8(–4.8) × 1–1.2 mm, 2 mm, 2–4(–5)-flowered, linear to narrowly lanceolate, grayish-green to purplish-green; disarticulation acropetal, with the glumes first, then the lemmas falling, paleas persistent; glumes 1.0–1.4 mm long, subequal, ovate to lanceolate, membranous, keeled, scaberulous along the keel; lemmas 1.6–2.0 mm long, ovate, membranous; grayish-green, glabrous or with a few scattered hairs, lateral nerves sometimes distinct; apex acute, sometimes scaberulous; paleas 0.9–1.4 mm long, hyaline, scaberulous along the keels; apex truncate; stamens 3, anthers 0.3–0.5 mm long, purplish. Caryopses (0.6–)0.7–1.1 mm long, ovoid, striate and reticulate, shallowly to deeply grooved on the ventral surface, translucent, irregularly rectangular in cross-section, reddish-brown.

*Distribution and habitat.*—Native to the Andean mountains in Argentina, Bolivia, Chile, Ecuador, and Peru (Nicora 1998; Peterson & Boechat 2001); occurs on rocky slopes, near cultivated fields, and disturbed roadsides; 1000–4000 m. We report this species for the first time in Colombia.

Specimens examined. **COLOMBIA. Santander:** Minas San Juan, 5 km arriba de California, 2733 m, 4 Aug 1966, A. Robinson 3032 (US); Carretera Bucaramanga–Cúcuta, 1700 m, 29 Sep 1966, A. Robinson 3125 (US).

**16. *Eragrostis pastoensis*** (Kunth) Trin., Mém. Acad. Imp. Sci. Saint-Petersbourg, Sér. 6, Sci. Math., Seconde Pt. Sci. Nat. 4(2):71. 1836. (**Fig. 11, A–J**). *Poa pastoensis* Kunth, Nov. Gen. Sp. 1:160. 1815 (1816). *Megastachya pastoensis* (Kunth) Roem. & Schult., Syst. Veg. 2: 587. 1817. TYPE: COLOMBIA: Pasto, Mt. Arand, F. Humboldt & A. Bonpland 2149 (HOLOTYPE: P-Bonpl!; ISOTYPES: Pl, P photo at K!, US-2767397 fragm. ex P-Bonpl!).

*Poa montufari* Kunth, Nov. Gen. Sp. 1:159. 1815 (1816). *Eragrostis montufari* (Kunth) Steud., Nom. Bot. (ed. 2) 1:563. 1840. *Megastachya montufari* (Kunth) Roem. & Schult., Syst. Veg. 2:586. 1817. TYPE: ECUADOR. PICHINCHA: betw. Puenbo & San Antonio de Lulumbamba, Apr–May, F. Humboldt & A. Bonpland s.n. (HOLOTYPE: P-Bonpl!; ISOTYPES: BAA-1056!, Pl, US-2891497! [fragm.] ex P-Bonpl!).

*Poa olmedoi* Kunth, Nov. Gen. Sp. 1:159–160. 1815 (1816). *Megastachya olmedoi* (Kunth) Roem. & Schult., Syst. Veg. 2:586. 1817. *Eragrostis olmedoi* (Kunth) Steud., Nom. Bot. (ed. 2) 1:564. 1840. TYPE: PERU: Jul, F. Humboldt & A. Bonpland s.n. (HOLOTYPE: Pl).

*Poa tenax* Kunth, Nov. Gen. Sp. 1:160. 1815 (1816). *Eragrostis tenax* (Kunth) Steud., Nom. Bot. (ed. 2) 1:564. 1840. *Megastachya tenax* (Kunth) Roem. & Schult., Syst. Veg. 2:587. 1817. TYPE: ECUADOR: Apr–May, F. Humboldt & A. Bonpland s.n. (HOLOTYPE: Pl; ISOTYPE: US-2891490 fragm. ex P-Bonpl!).

*Poa setifolia* Benth., Pl. Hartw. 262. 1846. *Eragrostis setifolia* (Benth.) Steud., Syn. Pl. Glumac. 1:274. 1854, *nom. illeg. hom.* TYPE: ECUADOR: Quito, Hartweg 1452 (HOLOTYPE: K!; ISOTYPES: US-2826937 fragm. ex K!, US-2850739 fragm. ex CG! & fragm. ex Pl, fragm. ex P-STEUD!).

*Eragrostis lehmannii* Pilg., Bot. Jahrb. Syst. 27(1–2):32. 1899. TYPE: ECUADOR: Ca. Baños ad flumen Tunguragua, 1800–2500 m, F.C. Lehmann 5283 [error for 5823] (ISOTYPE: US-2767406 fragm!).

*Eragrostis virescens* var. *trachyphylla* Hack., Anales Mus. Nac. Buenos Aires 13:505. 1906. TYPE: ARGENTINA. TUCUMÁN: *Stuckert herb. arg.* 14866 ex Lillo *Herb. arg.* 3192 (HOLOTYPE: W; ISOTYPE: US-2942411 fragm!).

*Eragrostis buchtienii* Hack., Repert. Spec. Nov. Regni Veg. 6:157. 1908. TYPE: BOLIVIA. SUD-YUNGAS: Simpayas bei Yanacachi, O. Buchtien 428 (HOLOTYPE: W; ISOTYPE: US-77388!).

Caespitose perennials with innovations. Culms 30–90 cm tall, erect, sometimes geniculate below, glabrous and somewhat shiny below the nodes. Leaf sheaths overlapping below, 3/4 as long as the internodes above, ciliate at the summit and along the upper margins; ligules 0.2–0.5 mm long, ciliate; blades 5–40(–45) cm × 1–4(–7) mm, involute or flat, glabrous to scaberulous below and scaberulous above, sometimes with scattered hairs, the hairs up to 4 mm long. Panicles 8–45 × 1–27 cm, ovate, lanceolate to narrowly oblong, contracted or open, rachis glabrous, the ascending primary branches 1–20 cm long, appressed to widely spreading up to 80° from the rachises, the branches glabrous to scaberulous, not floriferous near base; secondary branches composed of loosely overlapping spikelets; pulvini ciliate or glabrous; pedicels 0.5–5 mm long, erect, mostly appressed, sometimes with hairs. Spikelets 2–6 × 1–1.8 mm, 2–8-flowered, lanceolate to oblong-ovate, inflated to slightly compressed, plumbeous, sometimes purple-tinged, rachilla sometimes sparingly ciliate; disarticulation acropetal, with the glumes first then the lemmas falling individually, paleas persistent; glumes 1–1.9 mm long, subequal, broadly ovate to lanceolate, membranous, sub-hyaline, keeled,

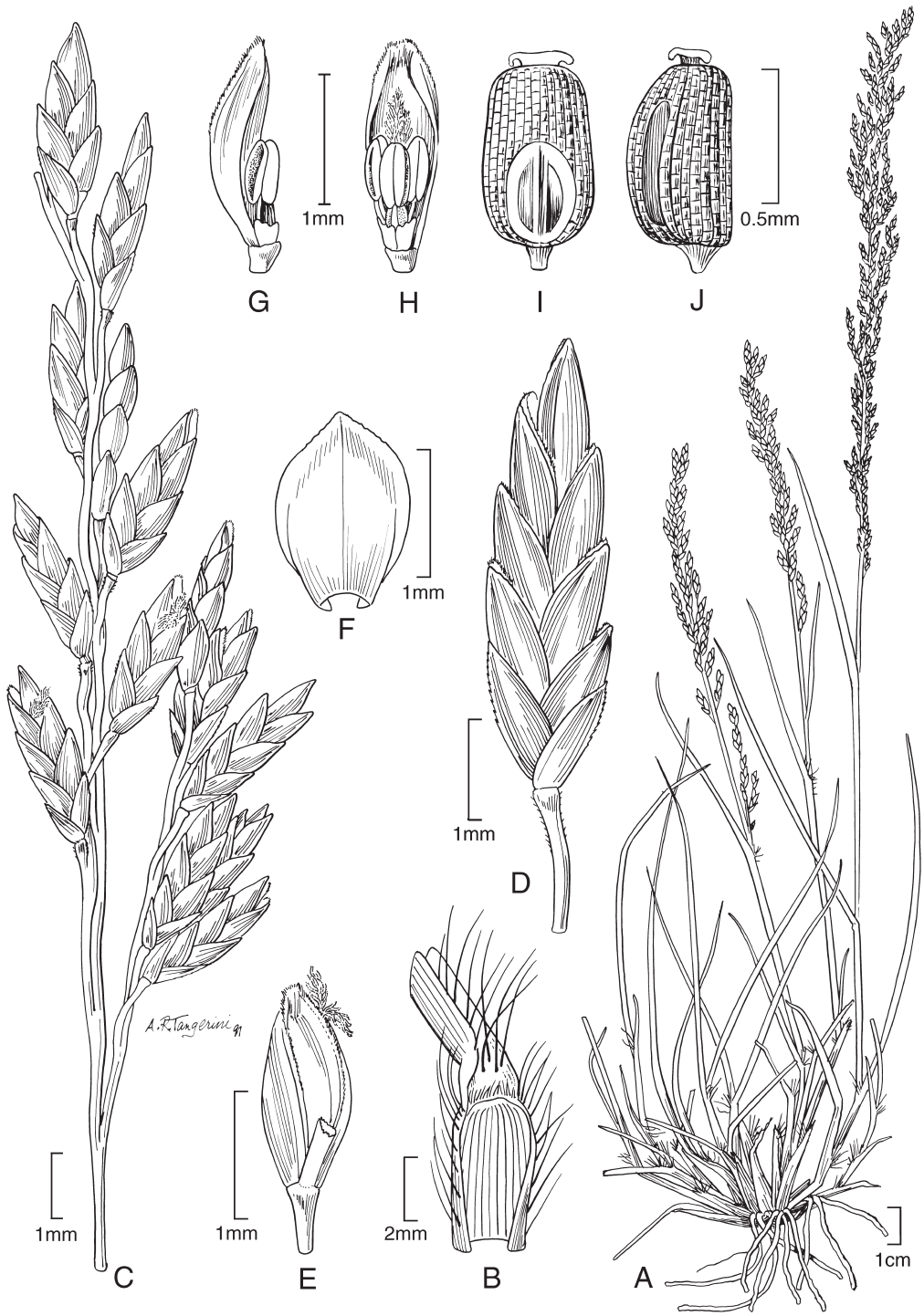


FIG. 11. *Eragrostis pastoensis* (P.M. Peterson, C.R. Annable & M.E. Poston 8910 & P.M. Peterson & E.J. Judzewicz 9268, A–H; P.M. Peterson & N.F. Refulio-Rodriguez 13982, I & J). A. Habit. B. Ligule. C. Inflorescence. D. Spikelet. E. Floret. F. Lemma, dorsal view. G. Palea, stamen, and lodicule, lateral view. H. Palea enclosing the stamens, pistil, and lodicules, ventral view. I. Caryopsis, dorsal view. J. Caryopsis, lateral view.

scaberulous along the keel; lower glume 1–1.4 mm long, narrow lanceolate; upper glume 1.2–1.9 mm long, usually broader than the lower; lemmas 1.2–2.0(–2.1) mm long, ovate to broadly ovate, membranous, lateral nerves obscure, keeled, especially towards the apex, scaberulous along the keel; apex acute; paleas 1–2 mm long, membranous to partially hyaline, scaberulous along the keels; apex obtuse to truncate; stamens 3, anthers 0.3–0.6 mm long, reddish-purple. Caryopses 0.4–0.9 mm long, obovoid to prism-shaped, striate and reticulate, usually with a ventral groove, irregularly rectangular in cross-section, light reddish-brown to translucent.  $2n = 70$  (Bowden & Senn 1962, as *Eragrostis montufari*).

*Distribution and habitat.*—Native to South America in Argentina, Bolivia, Brazil, Colombia, Ecuador, Paraguay, Peru, Uruguay, and Venezuela (Nicora 1998; Peterson & Boechat 2001); occurs on dry rocky hillsides, slopes, pastures, roadsides, barrancas and city sidewalks from 1400–3600 m.

Specimens examined. **COLOMBIA. Bogotá D.C.:** Bogotá, localidad de Usme, alrededores y riberas del río Tunjuelito, en inmediaciones del casco urbano de Usme, 2800 m, 16 Sep 2001, *D. Giraldo-Cañas* 3235 (COL); Bogotá, en las grietas del estacionamiento del Instituto de Ciencias Naturales, Campus de la Universidad Nacional de Colombia, 2600 m, 11 Dec 2003, *D. Giraldo-Cañas* 3616 (COL). **Boyacá:** Mun. Villa de Leyva, camino entre la hacienda “Torcoroma de Arriba” y el cañón de Las Clusias, 2500 m, 18 Jul 2003, *D. Giraldo-Cañas* 3535, 3539 (COL); Mun. Tunja, campus de la Universidad Pedagógica y Tecnológica de Colombia, 2700 m, 12 Nov 2003, *D. Giraldo-Cañas* 3608 (COL). **Cundinamarca:** Mun. Nemocón, carretera principal entre la vereda Susatá y Nemocón, 2700 m, 4 Nov 2002, *D. Giraldo-Cañas* 3320 (COL); Guasca, 1 Aug 1919, *B. Ariste-Joseph* A-368 (US); region of Bogotá, no date, *B. Ariste-Joseph* s.n. (US-1040145); Sabana de Bogotá, entre Sibaté y San Miguel, 2750 m, 15 Aug 1939, *J. Cuatrecasas* 6640 (COL, US); Salto del Tequendama, 2500 m, 8 Mar 1939, *E.P. Killip* 34006 (US), 34016 (US); Hoya del río Checua Loma, 250 m SE de San José, arenas del Cacho, 2640 m, 8 Dec 1966, *Schrimppf* 117 (COL); Andes de Bogotá, 2700 m, Oct 1856, *J.J. Triana* s.n. (US-1865282). **Nariño:** Mun. Sapuyes, El Espino, 3200 m, 15 May 1964, *L.E. Mora* 2984-B (COL, PSO); Mun. Piedrancha, arriba de El Guabo, 2300 m, 15 May 1964, *L.E. Mora* 3005 (COL, PSO); Mun. Pasto, corregimiento Chachagüí, 2000 m, 1 Jun 1989, *B.R. Ramirez* 1579 (COL, PSO). **Norte de Santander:** Pamplona, 23 Mar 1935, *W.A. Archer* 3232 (US); highway between Pamplona and Málaga, 24 Mar 1935, *W.A. Archer* 3241 (US); vicinity of Pamplona, 2300–2400 m, 27 Feb 1927, *E.P. Killip* & *A.C. Smith* 19782 (US). **Santander:** vicinity of California, 2000 m, 11–27 Jan 1927, *E.P. Killip* & *A.C. Smith* 16846 (US). **Unknown department:** *J.C. Mutis* 5518 (US), *J.J. Triana* 292 (US).

## 17. *Eragrostis pectinacea* (Michx.) Nees, Fl. Afr. Austral. Ill. 406. 1841. var. *pectinacea* (Fig. 12, A–E).

*Poa pectinacea* Michx., Fl. Bor.-Amer. 1:69. 1803. TYPE: U.S.A. ILLINOIS: *Michaux* s.n. (HOLOTYPE: P-MICH!; ISOTYPE: US-2851264 fragm. ex P!).

*Eragrostis diffusa* Buckley, Proc. Acad. Nat. Sci. Philadelphia 14:97. 1862. *Eragrostis purshii* var. *diffusa* (Buckley) Vasey, Contr. U.S. Natl. Herb. 1(2):59. 1890. TYPE: U.S.A. TEXAS: *S.B. Buckley* (LECTOTYPE: PH designated by Hitchcock, Man. Grasses U.S. 849. 1935, without citing a specific sheet or a specific herbarium; ISOLECTOTYPE: US-91621!).

Caespitose annuals without glandular pits. Culms 10–80 cm tall, erect geniculate or decumbent below, glabrous. Leaf sheaths overlapping below,  $\frac{1}{2}$ – $\frac{3}{4}$  as long as the internodes above, hirsute at the apices, hairs to 4 mm long; ligules 0.2–0.5 mm long; blades 2–20 cm  $\times$  1–4.5 mm, flat to involute, abaxial surfaces glabrous and smooth, adaxial surfaces scabridulous. Panicles 5–25  $\times$  3–12(–15) cm, ovoid to pyramidal, usually open, sometimes contracted, primary branches 0.6–8.5 cm long, appressed or slightly diverging to 20° from the rachises, solitary or paired at the lowest 2 nodes; pulvini glabrous or sparsely hairy; pedicels 1–7 mm long, flexible, appressed to widely divergent, sometimes capillary. Spikelets 3.5–11  $\times$  1.2–2.5 mm, 6–22-flowered, linear-oblong to narrowly lanceolate, plumbeous, yellowish brown, or dark reddish purple; disarticulation acropetal, paleas persistent; glumes 0.5–1.7 mm long, subequal, subulate to ovate-lanceolate, hyaline; lower glumes 0.5–1.5 mm long, at least  $\frac{1}{2}$  as long as the adjacent lemmas; upper glumes 1–1.7 mm long, usually broader than the lower glumes; lemmas 1–2.2 mm long, ovate-lanceolate, hyaline to membranous, grayish green proximally, reddish purple distally, lateral veins moderately conspicuous; apex acute; paleas 1–2 mm long, hyaline to membranous, keels scabridulous; apex obtuse; stamens 3; anthers 0.2–0.4 mm long, purplish. Caryopses 0.5–1.1 mm long, rectangular-prismatic, slightly laterally flattened, striate and reticulate, rectangular with nearly equal sides in cross-section, brownish.  $2n = 60$  (Koch 1974; Davidse 1981).

*Distribution and habitat.*—Native to the Americas; found in North America, Central America, the Caribbean, and most of South America (not known from Chile); it grows in disturbed sites such as roadsides, railroad embankments, city sidewalks, gardens, and cultivated fields; 50–2600 m (Peterson & Boechat 2001).

*Vernacular name.*—“Hierba canto” (Huila, Giraldo-Cañas 3921).

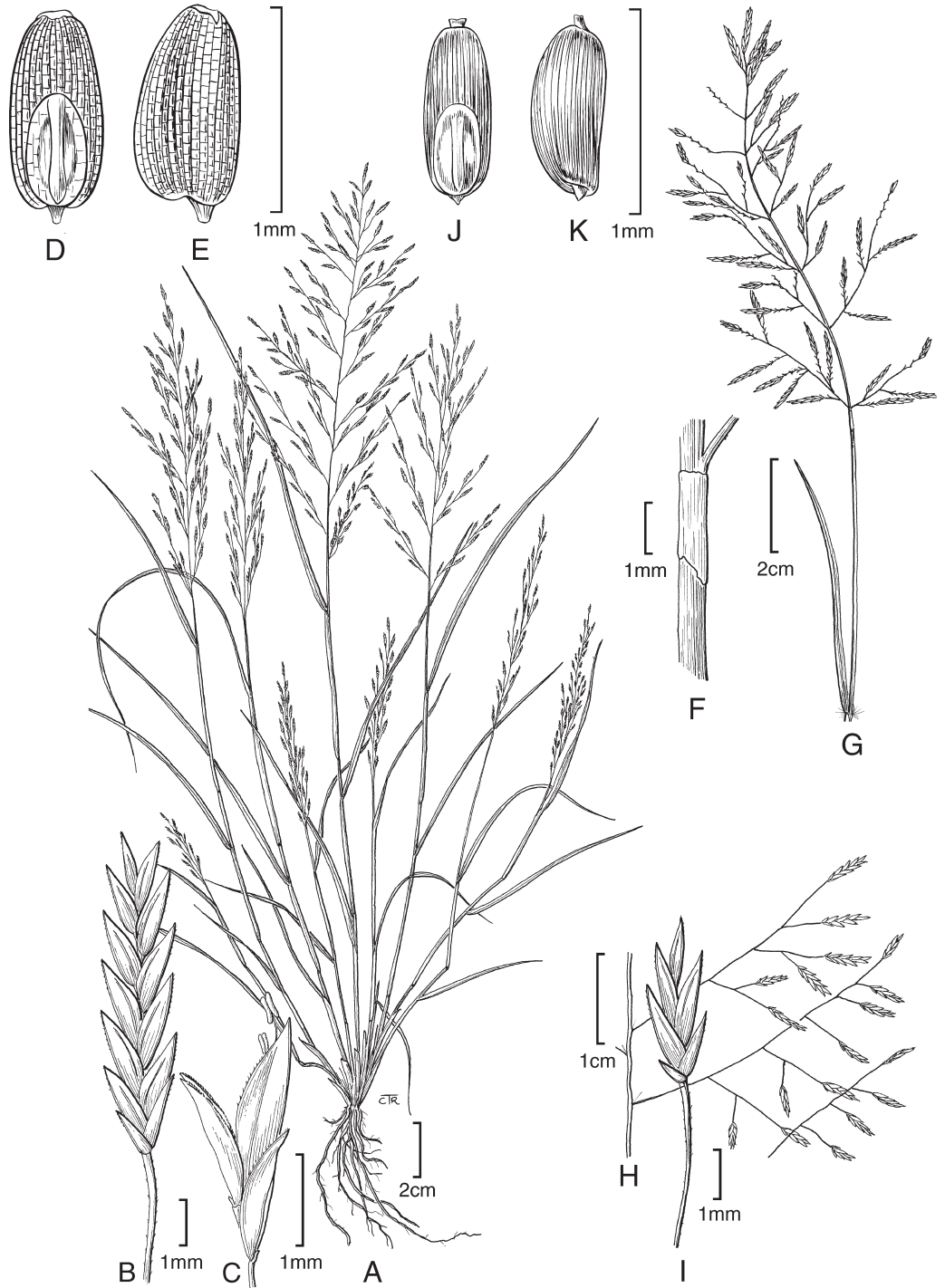


FIG. 12. *Eragrostis pectinacea* (P.M. Peterson & N.F. Refulio-Rodriguez 13981, D & E). A. Habit. B. Spikelet. C. Floret with two paleas attached below. D. Caryopsis, dorsal view. E. Caryopsis, lateral view. *Eragrostis pilosa* (S. Llatos 1107, J & K). F. Portion of culm with glandular area. G. Culm. H. Inflorescence. I. Spikelet. J. Caryopsis, dorsal view. K. Caryopsis, lateral view.

Specimens examined. **COLOMBIA. Antioquia:** Mun. Sabaneta, parque central de la municipalidad, 1550 m, 3 Jan 2003, *D. Giraldo-Cañas* 3427 (COL); Valle de Aburrá, Mun. Itagüí, parque principal del Barrio Simón Bolívar, 1550 m, 4 Dec 2004, *D. Giraldo-Cañas* 3819 (COL); Valle de Aburrá, Mun. Envigado, en grietas de andenes y pavimentos del estacionamiento del supermercado "Almacenes Éxito," 1550 m, 4 Dec 2004, *D. Giraldo-Cañas* 3820, 3822, 3823 (COL, US); Medellín, 1500 m, 11 Jun 1930, *W.A. Archer* 102 (US); Mun. Medellín, predios de la Universidad de Antioquia, 1450 m, 25 Sep 1986, *R.W. Pohl* 15601 (HUA, MO, US). **Bogotá D. C.:** Bogotá, unidad deportiva El Salitre, área peatonal, Calle 63 con Avenida 68, 2600 m, 26 Jul 2005, *D. Giraldo-Cañas* 3964 (COL, HUA, US); Bogotá, La Picota, 2600 m, Feb 1934, *E. Pérez-Arbeláez* 4755 (COL, US). **Boyacá:** Mun. Santa María, en un área del casco urbano principal, 900 m, 27 Sep 2007, *D. Giraldo-Cañas* 4121 (COL); Soatá, dry eastern slopes, 1800 m, 17 Sep 1938, *J. Cuatrecasas* 1957 (COL, US); 2 km from Soatá towards Tipacoque, 1800 m, 3 Nov 1985, *J.R.I. Wood* 5132 (COL). **Caquetá:** Mun. Florencia, grietas de las aceras del centro de la ciudad, 280 m, 27–30 Jun 2005, *D. Giraldo-Cañas* 3962 (COAH, COL, US). **Casanare:** Mun. El Yopal, en áreas urbanas del centro de la ciudad, 400 m, 31 Oct 2007, *D. Giraldo-Cañas* 4132, 4135 (COL). **Cauca:** Mun. Popayán, predios internos y jardineras abandonadas de la Facultad de Educación de la Universidad del Cauca, 1750 m, 7–11 Nov 2004, *D. Giraldo-Cañas* 3802 (COL). **Chocó:** Mun. Quibdó, en inmediaciones de la penitenciaría municipal, calle 26 con carrera 10, 90 m, 6 Nov 2005, *D. Giraldo-Cañas* 3969, 3970 (COL, HUA). **Cundinamarca:** Entre Girardot y Tocaima, 326 m, Oct 1934, *H. García-Barriga* 2417 (COL, US); Provincia de Río Negro, Mun. Pacho, carretera Pacho-La Capilla, alrededores del estadio municipal de fútbol, 1600 m, 13 Jan 2004, *D. Giraldo-Cañas* 3724, 3727, 3732 (COL); Mun. Nilo, hacienda La Guaira, río Pagüey, 350 m, 16 Oct 2004, *D. Giraldo-Cañas* 3775, 3780 (COL); Tocaima, Dec 1932, *E. Pérez-Arbeláez* 2418 (COL, US). **Huila:** Mun. San Agustín, parque arqueológico San Agustín, márgenes del camino principal del parque arqueológico, 1700 m, 1–5 Jul 2005, *D. Giraldo-Cañas* 3919-A (COL); Mun. San Agustín, parque arqueológico San Agustín, andenes del Centro Administrativo del parque arqueológico, 1700 m, 1–5 Jul 2005, *D. Giraldo-Cañas* 3921 (COL); Mun. Timaná, en grietas de los andenes del casco urbano, 1500 m, 1–5 Jul 2005, *D. Giraldo-Cañas* 3926 (COL). **Meta:** Mun. Villavicencio, en un área urbana, calles del parque Los Centauros, 400 m, 10 Nov 2002, *D. Giraldo-Cañas* 3341 (COL, US). **Quindío:** Mun. Quimbaya, parque principal, aceras y pavimentos, 1500 m, 20–25 May 2005, *D. Giraldo-Cañas* 3889 (COL, HUA). **Santander:** Mun. Barbosa, en grietas de pavimentos y aceras, cerca de la Plaza Principal, 1700 m, 20 Jul 2003, *D. Giraldo-Cañas* 3563 (COL). **Tolima:** Cordillera Central andina, Mun. Ibagué, jardineras y andenes de la Plaza de Bolívar, 1200 m, 11–12 Jun 2005, *D. Giraldo-Cañas* 3910 (COL, HUA, US). **Valle del Cauca:** Estación Piedras, entre Obando y Cartago, 980 m, 5 Feb 1961, *J.M. Idrobo* 4249 (COL).

**18. *Eragrostis pilosa* (L.) P. Beauv. Ess. Agrostogr. 71:162, 175. 1812. subsp. *pilosa* (Fig. 12, F–K).** *Poa pilosa* L., Sp. Pl. 1:68. 1753. TYPE: "*Gramin paniculis elegantissimis, majus, locustis, purpureo-spadicis, minoribus*" in Scheuchzer, *Agrostographia*: 193, t. 4, f. 3. 1719 (LECTOTYPE, designated by Du Puy et al., *Fl. Australia*: 472. 1993). [EPI TYPE: ITALY, 9–10 Aug 1902, *A. Kneucker*, *Gram. Exsicc. XII, 344*, (EPI TYPE: B! designated by H. Scholz in *Caffery et al.*, *Taxon* 49:256. 2000; US-557051!)]

Caespitose annuals. Culms 8–45(–70) cm tall, erect or geniculate spreading below, glabrous or occasionally with a few glandular pits. Leaf sheaths overlapping below, about 1/2 to as long as the internodes above, ciliate at the summit and collar or glabrous, the hairs up to 3 mm long; ligules 0.1–0.5 mm long, ciliate; blades 2–15(–20) cm × 1–2.5(–4) mm, flat, scaberulous above and glabrous below with a few hairs near the base. Panicles 4–20(–28) × 2–15(–18) cm, ellipsoid to ovoid, open, diffuse, the ascending, capillary often drooping, primary branches 1–10 cm long, spreading 10–80°(–110°) from the rachises, usually whorled on the lowest two nodes, glabrous to scaberulous; pulvini glabrous to occasionally sparsely ciliate; pedicels 0.8–10 cm long, erect to flexuous, appressed to spreading, scaberulous. Spikelets (2–)3.5–6(–10) × 0.6–1.3(–1.8) mm, (3–) 5- to 17-flowered, linear-oblong to narrowly ovate, plumbeous; disarticulation acropetal with the glumes first then the lemmas and paleas falling individually, paleas easily deciduous; glumes 0.3–1.2 mm long, narrowly ovate to lanceolate, hyaline, keeled, scaberulous along the keel; lower glume 0.3–0.6(–0.8) mm long; upper glume 0.7–1.2(–1.4) mm long, usually broader than the lower; lemmas 1.2–1.8 mm long, ovate-lanceolate, hyaline to membranous, grayish green below and reddish purple near the apex, keeled, scaberulous along the keel near apex, lateral nerves inconspicuous; apex acute; paleas 1–1.6 mm long, hyaline to membranous, scaberulous along the keels; apex obtuse; stamens 3, anthers 0.2–0.3 mm long, purplish. Caryopses 0.5–1 mm long, obovoid to prism-shaped, dorsally flattened, smooth to striate, rectangular in cross-section, light brown.  $2n = 20, 36, 40$  (Bir & Sahni 1988).

*Distribution and habitat.*—Native in Europe, naturalized in North, Central, and South America (excluding Surinam); occurs in disturbed habitats and along forest margins in sandy or gravelly sites and city sidewalks; 0–1700 m (Peterson & Boechat 2001).

*Vernacular name.*—"Maleza del arroz" (Tolima, F.A. Montealegre 11).

Specimens examined. **COLOMBIA. Antioquia:** Medellín, 1500 m, 2 Jul 1930, *W.A. Archer* 317 (US); Mun. Urrao, carretera a La Encarnación, 10 km al noroeste de Urrao, 1650 m, 10 Sep 1986, *R.W. Pohl & J. Betancur* 15478 (HUA, MO, US); vicinity of Medellín, 5 Jul



1927, R.A. Toro 264 (US). **Arauca:** Mun. Arauca, inmediaciones de las instalaciones de la Universidad Nacional de Colombia, hacienda El Cairo, carretera Arauca-Tame, km 9, 200–300 m, 13 Jun 2003, D. Giraldo-Cañas 3493 (COL). **Bolívar:** along the Mompós-Juana Sánchez trail, Island of Mompós, lands of Loba, Apr-May 1916, H.M. Curran 244 (US), 246 (US). **Casanare:** Mun. El Yopal, en áreas urbanas del centro de la ciudad, 400 m, 31 Oct 2007, D. Giraldo-Cañas 4131, 4138 (COAH, COL). **Cundinamarca:** Mun. Nilo, hacienda La Guaira, río Pagüey, 350 m, 16 Oct 2004, D. Giraldo-Cañas 3772 (COL); between Anolaima and Cachipay, 17 Apr 1935, W.A. Archer 3328 (US). **La Guajira:** Pájaro, 10 m, 28 Nov 1959, J. Cuatrecasas & R. Romero-Castañeda 25474 (COL, US); Clausura Napaipa, rumbo a Maicao, 4.5 km de Uribia, 13 Feb 1963, C. Saravia 2224 (COL, US). **Magdalena:** Santa Marta, 1898–1899, H.H. Smith 2150 (COL, MO, US). **Meta:** Mun. Villavicencio, carretera Villavicencio-Aeropuerto, piedemonte de la cordillera Oriental, sitio La Arenera, ca. 2 km del puente sobre el río Guatiquía, ca. 400 m, 10 Nov 2002, D. Giraldo-Cañas 3342-A (COL), 14–15 Dec 2002, D. Giraldo-Cañas 3388 (COAH, COL, HUA). **Nariño:** Mun. Pasto, Panamericana, puente del Juanambú, 1000 m, 20 May 1989, B.R. Ramirez 1489 (COL, PSO). **Quindío:** Mun. Armenia, Avenida Bolívar, Parque de La Vida, 1500 m, 29 Jul 2007, D. Giraldo-Cañas & J.C. Ospina 4095 (COL, HUA). **Santander:** Granja Aprovechadora Piedecuesta, al sur de Bucaramanga, 1000 m, 6 Oct 1966, A. Robinson 3165 (US); Mesa de los Santos, al sur de Bucaramanga, 1700 m, 30 Dec 1966, A. Robinson 3207 (US). **Tolima:** Ibagué, vereda Chucuni, finca Reinoso, 1100 m, 2 Jul 2006, F.A. Montealegre 11 (COL). **Valle del Cauca:** Cartago, Santa Ana de los Caballeros, 950 m, 19 Nov 1946, J. Cuatrecasas 23023 (US), 23037 (COL, US); between Uribe and Sevilla, 1100 m, 2 Nov 1983, J.R.I. Wood 4084 (COL).

**19. *Eragrostis polytricha*** Nees, Fl. Bras. Enum. Pl. 2:507–508. 1829. (**Fig. 8, F–H**). *Poa polytricha* (Nees) Kunth, Enum. Pl. 1:331. 1833. TYPE: BRAZIL: Sellow s.n. (HOLOTYPE: B; ISOTYPES: BAA-2668 fragm. ex B!, US-77386 fragm.!).

*Eragrostis lugens* var. *villosa* Doll, Fl. Bras. 2(3):140. 1878. TYPE: BRAZIL. MINAS GERAIS: Caldas, 28 Mar 1868, Exp. Regnell III 1405 (LECTOTYPE: S designated by Boechat & Longhi-Wagner, Iheringia, Bot. 55:117. 2001; ISOLECTOTYPE: US!).

*Eragrostis floridana* Hitchc., Amer. J. Bot. 2:308. 1915. *Eragrostis trichocolea* var. *floridana* (Hitchc.) Witherspoon, Ann. Missouri Bot. Gard. 64:328. 1977. TYPE: U.S.A. FLORIDA: Hillsborough Co., near Tampa, Mar, Curtiss 3494 (HOLOTYPE: US-726520!; ISOTYPES: BR, F, ISC, LE, M, MO!, NY!, PH, TAES, TENN, US-748356!, US-823092!).

*Eragrostis fragilis* Swallen, Fieldiana, Bot. 28(1):18. 1951. TYPE: VENEZUELA. BOLIVAR: Gran Sabana, between Kun and Uadua-parú, in valley of Río Kukenán, S of Mount Roraima, 1065–1220 m, 1 Oct 1944, J.A. Steyermark 59062 (HOLOTYPE: US-1911657!; ISOTYPES: F, VEN).

Caespitose perennials with innovations, without rhizomes, not glandular. Culms 30–62 cm tall, erect, glabrous and shiny below the nodes. Leaf sheaths sometimes densely pilose dorsally and on the collars, margins and apices hairy, hairs to 5 mm; ligules 0.2–0.4 mm long; blades 5–20(–33) cm long, 1–3.5 mm wide, involute to flat, both surfaces with scattered hairs, adaxial surfaces densely hairy behind the ligules, hairs to 7 mm long. Panicles 15–25 cm long, 5–27 cm wide, ovate, open; primary branches 0.6–15 cm long, diverging up to 90° from the rachises, capillary, naked basally; pulvini hairy, hairs to 8 mm long; pedicels 1.4–10(–16) mm long, divergent. Spikelets (2.5–)3–5 mm long, 1.1–1.6 mm wide, 4–9-flowered, narrowly lanceolate to linear-oblong, plumbeous; disarticulation acropetal, paleas persistent; glumes broadly ovate to narrowly lanceolate, hyaline to membranous; lower glumes 1.1–1.6 mm long; upper glumes 1.2–1.8 mm long; lemmas 1.2–1.8 mm long, broadly ovate, membranous throughout, lateral veins inconspicuous, apices acute; paleas 1.1–1.7 mm long, membranous to hyaline, narrower than the lemmas, apices obtuse; stamens 3, anthers 0.3–0.5 mm long, reddish-purple. Caryopses 0.5–0.8 mm long, obovoid to somewhat prism-shaped, laterally compressed, with a well-developed adaxial groove, finely striate, opaque to translucent, reddish-brown.  $2n = 60, 80$ .

*Distribution and habitat.*—*Eragrostis polytricha* grows in sandy and rocky areas, usually in open savannas; 0–2650 m. *Eragrostis polytricha* ranges from México through Central America to Argentina, Bolivia, Brazil, Chile, Colombia, Guyana, Paraguay, Uruguay, and Venezuela (Boechat & Longhi-Wagner 2001).

Specimens examined. **COLOMBIA. Cundinamarca:** Hoya del río Checua Loma, 250 m SE de San José, arenas del Cacho, 2640 m, 8 Dec 1966, Schrimpf 122 (COL).

**20. *Eragrostis prolifera*** (Sw.) Steud., Syn. Pl. Glumac. 1:278. 1854. (**Fig. 13, A–D**). *Poa prolifera* Sw., Prodr. 27. 1788. TYPE: GUADELOUPE: Swartz s.n. (HOLOTYPE: S; ISOTYPE: K!).

*Eragrostis salzmännii* Steud., Syn. Pl. Glumac. 1:277. 1854. TYPE: BRAZIL. BAHIA: P. Salzmann s.n. (ISOTYPES: K-photo!, US-911901!, US-2767414!).

Caespitose perennials with innovations, without rhizomes, not glandular. Culms 85–130(150) cm tall, stiffly erect, glabrous below the nodes. Leaf sheaths glabrous or hairy at the apices, hairs to 4 mm long; ligules



FIG. 13. *Eragrostis prolifera*. A. Habit. B. Culm. C. Spikelet. D. Floret. *Eragrostis tenuifolia* (P.M. Peterson & O. Tovar 14049, E–G; P. Nuñez & V.&E. Bengoa 8731, H–J). E. Habit. F. Spikelet. G. Floret. H. Caryopsis, dorsal view. I. Caryopsis, ventral view. J. Caryopsis, lateral view.

0.1–0.2 mm long; blades 25–50 cm long, 1.5–6 mm wide, flat to involute, glabrous abaxially, scabridulous adaxially, sometimes also with a few scattered hairs near the base. Panicles (10)20–50(60) cm long, 2–8(10) cm wide, narrowly ovate, contracted to open; primary branches mostly 2–14 cm long, appressed or diverging up to 50°(–90°) from the rachises, spikelets congested near the base of the branches; pulvini glabrous; pedicels 0.3–2.4 mm long, appressed, always shorter than the spikelets. Spikelets 3.2–10(12) mm long, 0.7–1.4 mm wide, (5)8–25-flowered, linear-lanceolate, stramineous to plumbeous, sometimes with a reddish tinge; disarticulation acropetal, glumes first, then the lemmas, paleas persistent; glumes subequal, ovate to lanceolate, hyaline; lower glumes 1–1.5 mm long; upper glumes 1.1–1.6 mm long; lemmas 1.1–1.8(2) mm long, ovate, membranous, apices acute; paleas 0.8–1.7 mm long, hyaline, narrower than the lemmas, apices obtuse to truncate; stamens 2, anthers 0.2–0.3 mm long, purplish. Caryopses 0.6–0.9 mm long, ovoid, flattened ventrally, finely striate, reddish-brown.  $2n = 40$ .

*Distribution and habitat*.—*Eragrostis prolifera* grows on beaches, in brackish water, and along roadsides, at elevations below 20 m. Its range extends southward from U.S.A. through México and Central America to Brazil, Colombia, and Venezuela (Boechat & Longhi-Wagner 2001). Boechat and Longhi-Wagner (2001) reported *E. prolifera* as occurring in Peru but no specimens were seen by PMP in a treatment of *Eragrostis* in Peru (Peterson & Sánchez Vega 2007).

Specimens examined. **COLOMBIA. Atlántico:** Puerto Colombia, Sabanilla, 21 Nov 1912, A.S. Hitchcock 9931 (US). **Bolívar:** Cartagena and vicinity, Dec 1928, B. Elias 649 (COL, US); Cartagena, Mamonal, lechos de sedimentación, 0–20 m, 16 Nov 1990, R. Alvarez 12 (COL); Boca Grande, near Cartagena, 0–5 m, 3 Nov 1926, E.P. Killip & A.C. Smith 14097 (COL, US), 14103 (MO, US); Cartagena, sand beach, 20 Nov 1912, A.S. Hitchcock 9900 (US), 9902 (US); Cartagena, 0–2 m, 1–3 Oct 1922, F.W. Pennell 12013 (US); Costa Caribe, Alrededores de Cartagena, 5 m, year 1942, H. Apolinar 392 (COL); Islas del Rosario, 2 m, 14–17 Oct 1963, P. Pinto 685, 687, 701 (COL); Cartagena, playas de Marbella, 0–5 m, 3 Feb 1962, C. Saravia & D. Johnson 31, 66 (COL). **San Andrés, Providencia y Santa Catalina:** Santa Catalina Island, near the village, 0–5 m, 5 Feb 1985, J.R.I. Wood 4729 (COL). **Sucre:** Mun. Tolú, arroyo Amansaguapós, glofo de Morrosquillo, Manglares, 0–5 m, 18 Sep 1990, J. Betancur & M. Berrio 1970 (COL, HUA, MO).

**21. *Eragrostis rufescens* Schrad. ex Schult. var. *rufescens*, Mant. 2:319. 1824. (Fig. 10, E–H).** *Eragrostis inconstans* var. *rufescens* (Schrad. ex Schult.) Nees, Fl. Bras. Enum. Pl. 2(1):495. 1829. TYPE: BRAZIL: Maximilian Neowidens s.n. (HOLOTYPE: LE; ISOTYPE: BAA-10871).

*Eragrostis polyneura* Jedwabn., Bot. Arch. 5(3–4):205. 1924. TYPE: BRAZIL: A.F.M. Glaziou 18559 (ISOTYPE: US-79710 fragm.!).

*Eragrostis acicularis* Trin., Mém. Acad. Imp. Sci. St.-Petersbourg, Sér. 6, Sci. Math. 1(4):406. 1830. TYPE: BRAZIL. PARANÁ: in arenosis ad ripas fluv., Rio Jacaré, Dec, Riedel 1140 (HOLOTYPE: LE-TRIN-2299.01!; ISOTYPES: K, LE, P, SI, US-2891442!, US-2765424 fragm.!).

*Eragrostis affinis* Salzm. ex Steud., Syn. Pl. Glumac. 1:277. 1854. TYPE: BRAZIL. BAHIA: in maritimis, 1838, T. Salzmann s.n. (HOLOTYPE: LE-TRIN-2572.01!; ISOTYPES: K, LE-TRIN-2572.02!, MO, US-2767409!, US-911819!, US-1614948!).

*Eragrostis multipes* S. Moore, Trans. Linn. Soc. London, Bot. 4:511. 1895. TYPE: BRAZIL. BRASÍLIA: Hab. in cacumine montium Serra de Chapada prope Santa Anna de Chapada, Matto Grosso Exped. Spencer Le M. Moore, Botanist 131 (HOLOTYPE: BM!).

Caespitose annuals with innovations, not glandular. Culms 5–45(–70)–35 cm tall, erect or decumbent, often geniculate near base, glabrous below the nodes. Leaf sheaths shorter than the internodes, hairy at the apices, hairs to 4 mm long; ligules 0.1–0.3 mm long; blades 6–20 cm long, (1–)2–3.5(–4) mm wide, flat to involute, glabrous abaxially, scabridulous adaxially and with scattered hairs, the hairs 2–4 mm long and more numerous near base. Panicles (3–)5–19 cm long, 1–6.5(–8.5) cm wide, ovate to narrowly oblong, contracted to open; primary branches mostly 2–8 cm long, appressed or diverging up to 50° from the rachises; pulvini hairy to glabrous; pedicels 1–2 mm long, appressed, always shorter than the spikelets. Spikelets (5–)6–15(–21) mm long, 1.5–2.2(–3) mm wide, 10–43-flowered, linear-lanceolate, imbricate, stramineous to plumbeous to reddish-purple tinged; disarticulation acropetal, glumes first, then the lemmas, paleas persistent; glumes 1.4–2.6 mm long, subequal, narrowly lanceolate, membranous, 1-keeled, 1-nerved; lower glumes 1.4–2.5 mm long; upper glumes 1.5–2.6 mm long; lemmas 1.6–2.3 mm long, ovate-acuminate, chartaceous to coriaceous, lateral nerves evident, apices acuminate; paleas (0.8–)1.2–1.5 mm long, hyaline, narrower than the lemmas, apices obtuse to truncate; stamens 2, anthers 0.2–0.3 mm long, reddish-brown to dark-purplish. Caryopses 0.4–0.6 mm long, ovoid, smooth to finely striate, light reddish-brown with a dark mark near base of the embryo.  $2n = 60$  (Davidse 1994).

*Distribution and habitat*.—*Eragrostis rufescens* var. *rufescens* is an American species and is distributed

from Mesoamerica to Bolivia, Brazil, Paraguay, and Venezuela (Boechat & Longhi-Wagner 2001). This species grows in savanna grasslands in open, sandy areas along rivers and in flats that are periodically flooded by water, along roadsides, city sidewalks, and cultivated fields; 1500–2500 m. This is the first report of *E. rufescens* for the Colombian flora.

*Comments.*—Morphologically, *E. rufescens* is very similar to *E. pectinacea*. Nevertheless, *E. rufescens* has longer glumes (1.4–2.6 mm long versus 0.5–1.7 mm long in *E. pectinacea*), only two stamens (versus three in *E. pectinacea*), and ovoid caryopses (versus rectangular-prismatic in *E. pectinacea*).

Specimens examined. **COLOMBIA. Antioquia:** Medellín, 27 Apr 1927, R.A. Toro 243 (US). **Boyacá:** Cordillera Oriental, along Río Soapaga, 12 km E of Belén, 2460 m, 7 Nov 1944, F.R. Fosberg 22208 (US).

**22. *Eragrostis secundiflora*** J. Presl, Reliq. Haenk. 1 (4–5):276. 1830. subsp. **secundiflora** (Fig. 6, I–K).

*Poa secundiflora* (J. Presl) Kunth, Enum. Pl. 1:342. 1833. TYPE: MÉXICO: *T. Haenke* s.n. (HOLOTYPE: PR; ISOTYPES: photo K1, LE, MO-123764!, US-79720 fragm. ex PR!).

*Eragrostis compacta* Salzm. ex Steud., Syn. Pl. Glumac. 1:275. 1854. TYPE: BRAZIL. BAHIA: *P. Salzmann* s.n. (HOLOTYPE: P!; ISOTYPES: K1, MO!, US-911749!, US-911748!).

*Eragrostis yucatanica* L.H. Harv., Bull. Torrey Bot. Club 81(5):406. 1954. TYPE: MÉXICO. YUCATAN: near Progreso, 11–15 Aug 1932, J.R. Swallen 2933 (HOLOTYPE: US-1537194!).

Caespitose perennials with innovations, not glandular. Culms 30–75 cm tall, erect, glabrous below. Leaf sheaths overlapping below, ½ as long as the internodes above, mostly glabrous, hairy at the apices, hairs to 4 mm long; ligules 0.2–0.3 mm long; blades 10–25(–40) cm long, 1–5 mm wide, involute, glabrous abaxially, scabridulous adaxially, sometimes also sparsely pilose. Panicles (3–)5–30 cm long, 1–15 cm wide, from narrowly oblong, glomerate, and interrupted below to ovate and open; primary branches 0.5–12(–16) cm, appressed or diverging up to 40° from the rachises, stiff; pulvini glabrous or sparsely hairy; pedicels 0–1(–3) mm, appressed, flattened. Spikelets 6–16(–23) cm long, 2.4–5 mm wide, ovate to linear-elliptic, flattened, stramineous, with reddish-purple margins or completely reddish-purple, with 10–45 florets; disarticulation basipetal, florets falling intact and before the glumes; glumes ovate-lanceolate to lanceolate, membranous; lower glumes 1.7–3 mm long; upper glumes 2.2–4 mm long, apices acuminate; lemmas 2–6 mm long, ovate, membranous to leathery, apices usually acuminate or attenuate, sometimes acute; paleas 1.5–3 mm long, membranous to leathery, narrower than the lemmas, apices obtuse, sometimes bifid; stamens 2, anthers 0.2–0.5 mm long, brownish. Caryopses 0.8–1.3 mm long, ellipsoid, somewhat laterally flattened, smooth, reddish-brown.  $2n = 40$ .

*Distribution and habitat.*—*Eragrostis secundiflora* subsp. *secundiflora* occurs throughout México, and in South America it is found in Bolivia, Brazil, Guyana, Peru, and Venezuela. This species grows in sandy soils, dunes, grasslands, beaches, and roadsides; 0–1700 m.

Specimens examined. **COLOMBIA. Casanare:** Al sur de El Yopal, piedemonte andino, en abánico fluvial, sabana de *Trachypogon ligularis*, ca. 200 m, 12 Jul 1963, J. Blydenstein & C. Saravia 1365 (COL). **Meta:** Al sur del río Guacavía, hacienda Gibraltar, en terraza aluvial, ca. 200 m, 9 Sep., J. Blydenstein 1590 (COL). **Santander:** Mesa de los Santos, 1500 m, 11–15 Dec 1926, E.P. Killip & A.C. Smith 15241 (US); Mesa de los Santos, al sur de Bucaramanga, 1700 m, 30 Dec 1966, A. Robinson 3188 (US).

**23. *Eragrostis tenella*** (L.) P. Beauv. ex Roem. & Schult., Syst. Veg. 2:576. 1817. (Fig. 5, F–I). *Poa tenella* L., Sp. Pl. 1: 69. 1753. *Megastachya tenella* (L.) Bojer, Hortus Maurit. 369. 1837. TYPE: INDIA: *Anonymous* (LECTOTYPE: Herb. Linn. 87.33-LINN! designated by Veldkamp, Blumea 47:164. 2002, IDC microfiche US!).

*Poa amabilis* L., Sp. Pl. 68. 1753. *Eragrostis amabilis* (L.) Wight & Arn., Bot. Beechey Voy. 251. 1838, *hom. illeg. Megastachya amabilis* (L.) P. Beauv., Ess. Agrostogr. 74, 167, 173. 1812. *Cynodon amabilis* (L.) Raspail, Ann. Sci. Nat., Bot. 5:302. 1825. TYPE: SRI LANKA: *Herb. Hermann* 2: 59, no. 46 [LECTOTYPE: BM! designated by Veldkamp in Cafferty et al., Taxon 49:254. 2000, IDC microfiche US!].

*Poa plumosa* Retz., Observ. Bot. 4:20. 1786. *Eragrostis plumosa* (Retz.) Link, Hort. Berol. 1:192. 1827. *Eragrostis tenella* var. *plumosa* (Retz.) Stapf, Fl. Brit. India 7(22):315. 1897 (1896). *Eragrostis amabilis* var. *plumosa* (Retz.) E.G. Camus & A. Camus, Fl. Indo-Chine 7: 557. 1923. TYPE: INDIA: E. Tranquebaria, König s.n. (HOLOTYPE: LD; ISOTYPE: K fragm.!).

*Eragrostis ciliaris* var. *patens* Chapm. ex Beal, Grasses N. Amer. 2:479. 1896. TYPE: U.S.A. GEORGIA. Wayne Co.: Doctortown and Jesup, Sep–Oct 1880, A.H. Curtiss 3493 (HOLOTYPE: MSC; ISOTYPES: NY!, US-748296!, US-821866!, US-909340!).

Caespitose annuals. Culms 5–40(–50) cm tall, erect to spreading, mostly glabrous and occasionally with

oblong glandular areas below the nodes. Leaf sheaths 1/2 as long as the internodes, ciliate at the summit, collar, and along margins of the upper portion, the hairs to 4 mm long, stiff; ligules 0.2–0.3 mm long, ciliate; blades 2–8 cm × 2–4 mm, flat to involute, glabrous below and scaberulous above, occasionally with a few scattered papillose-based hairs below. Panicles 4–15 × 1–7 cm, open, narrowly ovate, primary branches 0.5–4 cm long, sometimes with irregular glandular areas below the branch bases, branches diverging 20–100° from the rachises; pulvini ciliate or glabrous; pedicels 0.8–4(–7) mm long, mostly pendant, drooping to erect. Spikelets (1–)1.5–2.2 × 0.9–1.2 mm, 4–8-flowered, ovate to oblong, reddish-purple to greenish; disarticulation between the florets with a portion of the rachilla; glumes 0.4–1.1 mm long, unequal, ovate, hyaline, keeled, the nerve commonly green, scaberulous along the keel; lower glumes 0.4–0.7 mm long; upper glumes 0.7–1.1 mm long; lemmas 0.7–1.1 mm long, ovate to broadly oblong, membranous, lateral nerves evident, usually greenish, strongly keeled, scaberulous along keel; apex truncate to obtuse; paleas 0.6–1.1 mm long, hyaline, keels ciliate, the cilia 0.3–0.5 mm long; apex obtuse to truncate; stamens 3, anthers ca. 0.2 mm long, purplish. Caryopses 0.3–0.5 mm long, ellipsoid, faintly striate, elliptical to circular in cross-section, translucent, light brown.  $2n = 20$  (Baquar & Saeed 1969).

*Distribution and habitat*.—Native in India; introduced in U.S.A., Mexico, Central America, Caribbean, Brazil, Bolivia, Ecuador, Guianas, Paraguay, Peru, and Venezuela (Nicora 1998; Peterson & Boechat 2001); occurs in open areas near cultivated fields, dry forests, city sidewalks, and along roadsides; 0–1600(–2700) m.

*Vernacular names*.—“Gramma ilusión” (Atlántico, *Dugand* 5866), “Paja ilusión” (Norte de Santander, *Carvajalino* & *Díaz* 43).

*Comments*.—Based on unpublished research by Otto Stapf, Bor (1960) pointed out that *Eragrostis amabilis* (L.) Wight & Arn. is the same species as *E. tenella*. Since Hooker (1896:315, cited by Koch 1978) was the first to unite the two, and he used the latter name, *E. tenella* is the correct name for this species (Koch 1978).

Specimens examined. **COLOMBIA**. **Antioquia**: Mun. Medellín, predios internos del Jardín Botánico Joaquín Antonio Uribe, 1550 m, 2 Jan 2002, *D. Giraldo-Cañas* 3293 (COL, HUA); Valle de Aburrá, Mun. Envigado, creciendo en las grietas de andenes y pavimentos del estacionamiento del supermercado “Almacenes Éxito,” 1550 m, 4 Dec 2004, *D. Giraldo-Cañas* 3821 (COL); Medellín, 1500 m, 11 Jun 1930, *W.A. Archer* 101 (US), Oct 1945, *A. Fernández* s.n. (US-2765421). **Arauca**: Mun. Arauca, inmediaciones de las instalaciones de la Universidad Nacional de Colombia, hacienda El Cairo, carretera Arauca-Tame, km 9, 200–300 m, 13 Jun 2003, *D. Giraldo-Cañas* 3500, 3507 (COL). **Atlántico**: Barranquilla, campus de la Universidad del Norte, carretera Barranquilla-Puerto Colombia, km 5, 5–10 m, 11 Oct 2007, *D. Giraldo-Cañas* 4123, 4127 (COL); Puerto Colombia, 15 Mar 1949, *A. Dugand* 4308 (COL, US), 21 Nov 1912, *A.S. Hitchcock* 9935 (US); Barranquilla, barrio Altos del Prado, 50–70 m, 1 Nov 1961, *A. Dugand* 5866 (COL). **Bolívar**: Cartagena, near shore, 20 Nov 1912, *A.S. Hitchcock* 9897 (US). **Caquetá**: Mun. Florencia, Barrio Villa Natalia, grietas de pavimentos y andenes, ca. 280 m, 27–30 Jun 2005, *D. Giraldo-Cañas et al.* 3952 (COL). **Casanare**: Mun. El Yopal, en áreas urbanas del centro de la ciudad, 400 m, 31 Oct 2007, *D. Giraldo-Cañas* 4129, 4134 (COL). **Córdoba**: Mun. Santa Cruz de Lorica, centro de Lorica, 150 m, 24 Feb 2005, *D. Giraldo-Cañas* 3857 (COL); Mun. San Pelayo, carretera San Pelayo-Lorica, en huerta casera de frijol, 150 m, 26 Feb 2005, *D. Giraldo-Cañas* 3868 (COL). **Cundinamarca**: Mun. Nilo, hacienda La Guaira, río Pagüey, 300 m, 16 Oct 2004, *D. Giraldo-Cañas* 3769 (COL); Mun. Girardot, vía férrea entre Girardot y Flandes, cerca de la ribera del río La Magdalena, 250 m, 17 Oct 2004, *D. Giraldo-Cañas* 3785 (COL). **Magdalena**: Santa Marta, sea level, 1898–1901, *H.H. Smith* 2746 (COL, MO, US). **Meta**: Mun. Villavicencio, en área urbana, calles del parque Los Centauros, 400 m, 10 Nov 2002, *D. Giraldo-Cañas* 3340 (COAH, COL). **Nariño**: Mun. Ipiales, Las Lajas, 2700 m, 7 Aug 1939, *H. García-Barriga* 7841-A (COL). **Norte de Santander**: Cúcuta y El Rosario, Feb 1941, *Carvajalino* & *Díaz* 43 (COL). **Quindío**: Mun. Quimbaya, parque principal, en jardineras, 1500 m, 20–25 May 2005, *D. Giraldo-Cañas* 3891 (CAUP, COL, HUA). **Santander**: Bucaramanga, 1100 m, 4 Aug 1944, *N. C. Fasset* 25585 (US); San Gil, 1250 m, year 1983, *J.R.I. Wood* 3884 (COL). **Tolima**: Mun. Flandes, vía férrea entre Flandes y Girardot, cerca de la ribera del río La Magdalena, 250 m, 17 Oct 2004, *D. Giraldo-Cañas* 3791 (COL); Cordillera Central andina, Mun. Ibagüé, jardineras y andenes de la Plaza de Bolívar, ca. 1200 m, 11–12 Jun 2005, *D. Giraldo-Cañas et al.* 3914 (COL). **Valle del Cauca**: Plana del Valle, extremo N, Cartago, malezas en San Jerónimo, 980 m, 15 Nov 1946, *J. Cuatrecasas* 22832 (COL, US). **Vichada**: Región Guayanés, Mun. Puerto Carreño, afloramientos rocosos entre Punta de Lajas y el Cerro El Bitá, ribera del río Orinoco, 40–100 m, 4–5 Jan 2004, *D. Giraldo-Cañas* & *C. Parra* 3625 (COL).

**24. *Eragrostis tenuifolia*** (A. Rich.) Hochst. ex Steud., Syn. Pl. Glumac. 1:268. 1854. (**Fig. 13, E–J**). *Poa tenuifolia* A. Rich., Tent. Fl. Abyss. 2:425. 1850 (1851). TYPE: ETHIOPIA: in locis incultis Vallium prope Adoam, 18 Sep 1837, *G.H.W. Schimper* 92 (LECTOTYPE: P! designated by S. Phillips, Fl. Ethiopia 7:122. 1995; ISOTYPES: GOET-5814, K!, L, W!, WAG, US-1127147 fragm.).

Caespitose perennials. Culms 25–75 cm tall, erect to geniculate spreading below, glabrous, 2–3 nodes per culm. Leaf sheaths overlapping below, 3/4 to as long as the internodes above, glabrous, pilose along the

margins and at the summit, the hairs up to 2 mm long; ligules 0.2–0.3 mm long, ciliate; blades 3.5–20(–30) cm × 1–3 mm, flat to folded or loosely involute, glabrous to scaberulous above and glabrous below. Panicles 5–20 × 3–10(–12) cm, open, ovate to narrowly pyramidal, with a well developed peduncle up to 18 cm long, the relatively few-flowered primary branches 0.5–6 cm long, spreading 40–90° from the rachises, solitary, scaberulous; pulvini ciliate, often reddish, the hairs up to 2 mm long; pedicels 2–15 mm long, erect, capillary and stiff, scaberulous. Spikelets 6–12(–14) × 1.5–2.2 mm, 6- to 14-flowered, linear, plumbeous; disarticulation acropetal with the glumes first then the lemmas falling, paleas mostly persistent; glumes 0.3–1 mm long, very unequal, hyaline, not keeled, glabrous; lower glumes 0.3–0.6 mm long, subulate to linear-lanceolate; upper glumes 0.5–1 mm long, lanceolate, usually broader than the lower; lemmas 1.5–2.0 mm long, ovate, membranous, plumbeous, obscurely keeled, lateral nerves obscure, scaberulous near the apex; apex acute to obtuse; paleas 1.3–1.8 mm long, membranous, plumbeous, scaberulous along the keels; apex obtuse; stamens 3, anthers 0.2–0.4 mm long, red to white in age. Caryopses 0.6–1.1 mm long, ovoid, strongly laterally flattened, and curved on the adaxial side, striate and reticulate, with a deep ventral groove, narrowly triangular in cross-section, brownish.  $2n = 40$  (Pohl & Davidse 1971; Morton 1993).

*Distribution and habitat.*—Native in North Africa and Asia, naturalized and rapidly spreading in the New World tropics from México, Guatemala, El Salvador, Honduras, Costa Rica to Argentina, Bolivia, Chile, Ecuador, Peru, and Venezuela; along roadsides, city sidewalks, soccer fields, and disturbed open areas; 100–3400 m.

*Comments.*—A population of *Eragrostis tenuifolia* in the Cordillera Oriental (Choachí, Cundinamarca: *Giraldo-Cañas* 3288) has stolons and no other individuals of this species are known to have these structures.

Specimens examined. **COLOMBIA. Antioquia:** Mun. Itagüí, barrio Simón Bolívar, carrera 50 con calle 64, 1550 m, 2 Jan 2003, *D. Giraldo-Cañas* 3424, 3426 (COL); Mun. Jardín, sitio La Trucheria, carretera Jardín-Riosucio, km 5, 1900 m, 5 Jan 2003, *D. Giraldo-Cañas* 3432 (COL); Mun. Envigado, loma de El Escobero, 2 km antes de la intersección con la carretera Las Palmas, 1850 m, 26 Dec 2003, *D. Giraldo-Cañas* 3619 (COL); Mun. Andes, aeropuerto, 1200 m, 17 Sep 1986, *R.W. Pohl & J. Betancur* 15523 (COL, HUA, MO, US); Mun. Jardín, vereda Las Manguitas, 18 km oeste de Jardín, 1600 m, 19 Sep 1986, *R.W. Pohl & J. Betancur* 15550 (COL, HUA, MO, US). **Boyacá:** Mun. Iza, en inmediaciones de Los Termales, 2500 m, 22 Jun 2003, *D. Giraldo-Cañas* 3526 (COL); Mun. Villa de Leyva, camino entre la hacienda "Torcoroma de Arriba" y el cañón de Las Clusias, 2500 m, 18 Jul 2003, *D. Giraldo-Cañas* 3553 (COL); Mun. Tunja, campus de la Universidad Pedagógica y Tecnológica de Colombia, 2700 m, 12 Nov 2003, *D. Giraldo-Cañas* 3609 (COL). **Cauca:** Mun. Popayán, predios internos y jardinerías abandonadas de la Facultad de Educación de la Universidad del Cauca, 1750 m, 7–11 Nov 2004, *D. Giraldo-Cañas* 3810 (CAUP, COL); Popayán, airport, 1750 m, 2 Nov 1955, *A. Semple* 59 (US); Mun. Coconuco, 2500 m, Jun 1948, *S. Yepes-Agredo* 351 (COL, US). **Cundinamarca:** Mun. Choachí, carretera Choachí-Termales de Choachí, km 2, ca. 1600 m, 12 Nov 2001, *D. Giraldo-Cañas* 3288 (COL); Mun. Soacha, autopista sur hacia Sibate, km 17, en frente de la empresa Pisos Alfa, 2700 m, 3 Nov 2002, *D. Giraldo-Cañas* 3312 (CAUP, COL); Mun. Nemocón, carretera entre la vereda Susatá y Nemocón, hacienda Susatá, 2700 m, 4 Nov 2002, *D. Giraldo-Cañas* 3317 (COL, HUA); Provincia de Río Negro, Mun. Pacho, carretera Pacho-La Capilla, alrededores del estadio municipal de fútbol, 1600 m, 13 Jan 2004, *D. Giraldo-Cañas* 3733 (COL); Mun. Suesca, hacienda Susatá, 2650 m, 10 Jul 2004, *J. Groenendijk* 1813 (COL). **Huila:** Mun. Pitalito, en grietas de andenes del casco urbano, 1550 m, 1–5 Jul 2005, *D. Giraldo-Cañas et al.* 3930 (COL, HUA). **Nariño:** Empatí, 1500–2000 m, 30 Apr 1939, *A.H.G. Alston* 8297 (US); 5 km S of Tangua, 14 Jan 1963, *H.B. Cunningham* 25 (US); Carretera Pasto-Túquerres, 2600 m, 30 Nov 1962, *C. Saravia* 1812 (COL). **Quindío:** Mun. Calarcá, entrada del jardín botánico del Quindío, 1500 m, 20–25 May 2005, *D. Giraldo-Cañas* 3894 (COL). **Santander:** Mun. Vélez, inmediaciones de la Feria de Ganado, 1700 m, 21 Jul 2003, *D. Giraldo-Cañas* 3566 (COL). **Tolima:** Cordillera Central andina, Mun. Ibagué, jardinerías y andenes de la Plaza de Bolívar, ca. 1200 m, 11–12 Jun 2005, *D. Giraldo-Cañas et al.* 3904, 3908 (COL). **Valle del Cauca:** Calima Valley, NW of Restrepo, 1500 m, 6 Jul 1962, *A.R. Bridgeman* 50 (US); Palmira, Plana del Valle, predios de la Facultad de Agronomía de Palmira, 1000 m, 15 Jan 1964, *López Filgueiras* 8498 (US); Mun. Yumbo, finca Río Grande, 1180 m, 12 Jun 1998, *D. Stancik* 797 (COL). **Vichada:** Caño Urimica, 250 m, 19 Dec 1971, *I. Cabrera* 1681 (COL).

**25. *Eragrostis viscosa*** (Retz.) Trin., Mem. Acad. Imp. Sci. St. Petersburg Hist. Acad. 1:397 1830. (**Fig. 5, H**). *Poa viscosa* Retz., Obs. Bot. 4:20 (1786). TYPE: INDIA: Malabar, König s.n. (HOLOTYPE: LD; ISOTYPE: BM!).

Tufted annuals. Culms 13–50 cm tall, erect, sometimes spreading or geniculate at the lower nodes, viscid below the nodes with a complete or partial ring of yellow glandular areas below the nodes. Leaf sheaths 1/2 the length of the internodes to overlapping, viscid, ciliate at the summit, collar, and along margins of the upper portion, the hairs up to 4 mm long, stiff; ligules 0.2–0.5 mm long; blades 4–15 cm long, 2–4 mm wide,

flat, mostly glabrous with scattered papillose-based hairs, the hairs up to 4 mm long, the upper surface often viscid and covered with adherent soil particles. Panicle 6–22 cm long, 2–9 cm wide, open, cylindrical to ovate-lanceolate; ascending branches 0.5–6.5 cm long, spreading 20–90° from the rachises, viscid; pulvini in the axils of the primary branches sparsely ciliate or glabrous; pedicels 0.5–5 mm long, erect. Spikelets (2–)2.5–5.5 mm long, 1.2–2.2 mm wide, 5–9-flowered, ovate, compressed, reddish-purple to greenish-yellow, rachilla viscid; disarticulation between the florets with a portion of the rachilla; glumes 0.8–1.5 mm long, ovate to broadly ovate, hyaline to sub-hyaline, keeled, the nerve commonly green, scaberulous along the keel; lower glumes 0.8–1.3 mm long; upper glumes 1–1.5 mm long; lemmas 1.1–1.8 mm long, ovate to broadly oblong, membranous, lateral nerves evident, sometimes greenish, keeled, scaberulous along the keel; apex truncate to obtuse; paleas 1.1–1.8 mm long, bowed out, hyaline, pectinate-ciliate along the keels, the hairs 0.3–0.6 mm long; apex obtuse to truncate; stamens 3, anthers 0.2–0.4 mm long, purplish. Caryopses 0.4–0.5 mm long, ellipsoid, translucent, light brown. Chromosome number  $2n = 40, 60$ .

*Distribution and habitat.*—This species is distributed from México to Northern South America (Ecuador, and Venezuela); and is found in disturbed areas near cultivated fields, roadsides, and along river banks; 0–2000 m.

Specimens examined. **COLOMBIA. La Guajira:** Near Riohacha, 30 m, 30 Nov 1944, *O. Haught 4464* (COL, US); 4 km de Uribia rumbo a Maicao, 29 Mar 1962, *C. Saravia & D. Johnson 328* (COL, US). **Magdalena:** Hoya del río Cesar, hoyo del río Azucarbuena, región El Callao, hacienda Santa Marta, 200 m, 29–30 Oct 1959, *J. Cuatrecasas & R. Romero-Castañeda 24962* (COL, US); Valle del río Cesar, entre Vallito y Mata de Indio, 60 m, 12 Feb 1961, *A. Dugand 5595* (COL). **Norte de Santander:** Los Estoraques, La Playa, 14 Jan 1974, *M.J. Balick 132* (COL); Carretera Cúcuta-Pamplona, La Esperanza, 1400 m, 19 Nov 1949, *H. García-Barriga 13259* (COL). **Valle del Cauca:** Cordillera Occidental, Yanacónas al Silencio, montaña La Victoria, 1700–2000 m, 5–10 Dec 1962, *H. García-Barriga 17610* (COL).

#### EXCLUDED SPECIES

*Eragrostis patula* (Kunth) Steud. (= *Poa patula* Kunth). This species is commonly referred to the Colombian Flora in local treatments, but the Colombian specimens belong to *Eragrostis tenuifolia* (pers. obs.). The recent use of this name in Bolivia (Renvoize 1998), and Ecuador (Jørgensen & León-Yáñez 1999), places this as a synonym of *E. tenuifolia*. However, after studying the type at P and fragment at US, we are sure that this taxon is not a synonym of *E. tenuifolia*. Therefore, we are not including this name in this treatment.

*Eragrostis unioides* (Retz.) Nees ex Steud. (= *Poa unioides* Retz.). This species has been cited for the Antioquia's Flora (www.mobot.org/tropicos) on based specimen *R. Callejas & A. Echeverri 11494* (MO!), but this collection belongs to *Poidium juergensii* (Hack.) Matthei.

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