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ERAGROSTIS IN NORTH AND MIDDLE AMERICA

by

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Introduction

During the summer of 1938 while working on the Gramineae of the Douglas Lake Region of Michigan the author collected an annual species of Eragrostis which he was unable to determine by the keys in Hitchcock's "Manual." Subsequent work in the University of Michigan Herbarium and correspondence with Mrs. Agnes Chase of the Smithsonian Institution showed that this genus was in need of careful study. This was particularly true of the Mexican and Central American species. The writer's interest soon extended to the entire genus, but dearth of material from many regions restricted the present study to the area in this hemisphere north of South America.

It has been possible to devote only about five months to field work in the southwestern United States and Northern Mexico. It became very apparent that it would have been desirable to have spent at least two more seasons in the field, one in southern Mexico and Central America and another in the West Indies, but circumstances have prevented this.

In an attempt to make up partly for the lack of field work all of the larger herbaria in eastern and midwestern United States were visited, as well as some of the smaller ones. In addition several collections of the genus were borrowed. Most of this work was done at the United States National Herbarium. There the very extensive collections and the Hitchcock and Chase Agrostological Library were essential to its completion. The large number of types, isotypes, fragments and photographs of types, and notes on types in European herbaria in that institution form the basis of this work. A list of the herbaria visited, those from which material was borrowed and those where there are types are listed below

with the symbol used in citing each. The symbols of private herbaria and herbaria of prominent botanists which are segregated in institutional herbaria are in the form of abbreviations similar to those used for botanical authorities. The symbols of the other herbaria are those proposed by Dr. J. Lanjouw in Chronica Botanica 5: 142-150. 1939 with the exception that no period is used after the symbol.

B	Botanisches Museum, Berlin-Dahlem, Germany. The Willdenow Herbarium (Willd.) is segregated.
BM	Department of Botany, British Museum of Natural History, London, England.
C	Universitetets Botaniske Museum, Copenhagen, Denmark.
CAN	Herbarium of the National Museum of Canada, Ottawa, Ontario, Canada.
CHARL	Charleston Museum, Charleston, South Carolina. The herbarium of Stephen Elliott (Ell.) is here.
CN	Faculté des Sciences, Jardin Botanique, Caen, France.
Ell.	Herbarium of Stephen Elliott, author of "The Sketch of the Botany of South Carolina and Georgia." See CHARL.
F	The Chicago Natural History Museum (formerly Field Museum of Natural History), Chicago, Illinois.
Farw.	Herbarium of Dr. O. A. Farwell, Cranbrook Institute of Science, Bloomfield Hills, Michigan.
GH	Gray Herbarium of Harvard University, Cambridge, Massachusetts.
GOET	Botanische Anstalten der Universität, Göttingen,

	Germany. The herbarium of Heinrich R. A. Grisebach (Griseb.) is located here.
Griseb.	See GOET.
Hack.	The herbarium of Eduard Hackel. See W.
Harv.	The herbarium of the author.
K	The Herbarium of the Royal Botanical Gardens, Kew, England.
LA	Herbarium of the University of California at Los Angeles, Los Angeles, California.
Lam.	The herbarium of Jean B. A. P. M. Lamarck. See P.
LE	Botanitscheskij Institut Akademij Nauk, S. S. R., Leningrad, U. S. S. R. The Trinius herbarium (Trin.) is segregated.
LINN	The Linnaean Herbarium, The Linnean Society, London, England.
MA	Jardín Botánico, Madrid, Spain.
MICH	The University Herbarium, University of Michigan, Ann Arbor, Michigan .
Michx.	The herbarium of André Michaux. See P.
MO	Missouri Botanical Garden, St. Louis, Missouri.
MSC	The Herbarium of Michigan State College, East Lansing, Michigan.
Muhl.	Herbarium of G. H. E. Muhlenberg. See PH.
NY	New York Botanical Garden, New York.
OKLA	University of Oklahoma, Norman, Oklahoma.
P	Laboratoire de Phanérogamie du Muséum National d'Histoire Naturelle, Paris, France. This contains

	the segregated Lamarck (Lam.) and Michaux (Michx.) herbaria.
PH	Academy of Natural Science, Philadelphia, Pennsylvania. This contains the segregated Muhlenberg (Muhl.) herbarium.
PI	Museo Botanico e Erbario dell'Instituto Botanico della R. Università, Pisa, Italy.
POM	Pomona College, Claremont, California.
PR	Botanicke oddel. Narodního Musea, Praha (Prague), Czechia.
S	Naturhistoriska Riksmuseet, Stockholm, Sweden. This contains the segregated Swartz (Sw.) herbarium.
Sw.	The herbarium of West Indian plants of O. Swartz. See S.
TEX	Department of Botany, University of Texas, Austin, Texas.
Trin.	The herbarium of K. B. Trinius. See LE.
US	Division of Plants, United States National Museum, Washington, D. C. This is more commonly known as the United States National Herbarium.
W	Naturhistorisches Museum, Botanische Abteilung, Wien, Austria. This contains the segregated Hackel (Hack.) herbarium.
WIS	University of Wisconsin, Madison, Wisconsin.
WYO	Rocky Mountain Herbarium, University of Wyoming, Laramie, Wyoming.

Type Method

The type method, is, of course, used in this revision. If possible, species concepts are based on the type itself or a fragment of the type or an isotype. If this was not possible the basis of the species concept is given. The location of the type of each species and the nomenclatural type of each synonym is also indicated if possible.

Disposition of Subspecific Entities

Although all entities recognized in this paper are considered to be of specific rank, it is not to be inferred that recognition of those of subspecific ranks would not be valuable in this genus. In an area of the size covered it has not yet been possible to do enough field work to define the lesser entities that will eventually be recognized. In certain localities varieties such as E. hirsuta var. laevivaginata and E. ciliaris var. laxa are very conspicuous entities with few forms present which intergrade with the typical ones. When they are considered from a wider area and from a larger number of specimens it is discovered they are merely some among several coordinate forms that might be defined if enough observations and material were available.

Descriptions

The descriptions for the most part were drawn up with the use of a wide-field binocular microscope. Measurements of spikelets and their parts were made with a glass slide ruled in millimeter squares. These were later checked by using an ordinary millimeter rule and found not to differ materially. Sometimes the extremes as well as the more common measurements of parts are expressed as, e. g., panicle 3 to 9 (4 to 6) cm. long. The first two figures give the extremes, those in parenthesis the usual range.

Distribution of the Genus

The genus Eragrostis is of world-wide distribution in temperate and tropical regions. The species are generally not found to any extent in the northern part of the North Temperate Zone. Some tropical areas do not seem to have many. In the region covered in this paper most of the species occur between 15° and 45° north latitude. Within this area there are four regions of concentration. The first comprises the Atlantic Coastal Plain, the Coastal Plain of the Gulf of Mexico, the eastern part of the Yucatán Peninsula and the Greater Antilles and Bahamas. Within this area the greater part of the distribution of 20 species occurs. The second region consists of the Mexican Plateau and its extension northward into Arizona, New Mexico and Texas and southward into Central America. Within this region the greater part of the distribution of 19 species occurs. The third region consists roughly of the United States to the westward and northward of the Coastal Plain, including New England, the Great Lakes area and the Mississippi River drainage basin as far west as the 100th Meridian. Within this area the greater part of the distribution of seven species occurs. The fourth region consists roughly of the states of Kansas, Oklahoma and Texas with a tongue extending southward into San Luis Potosi, Mexico. Within this area the greater part of the distribution of 5 species occurs.

Of the 73 species of Eragrostis herein enumerated 15 are introduced species and two other (*E. purpurascens* and *E. perplexa*) may belong in the same category. Of these introductions five are from the Mediterranean Basin (*E. cilianensis*, *E. poaeoides*, *E. Barrelieri*, *E. pilosa* and *E. peregrina*) four are from India (*E. amabilis*, *E. viscosa*, *E. unioloides* and *E. stenophylla*) three from Africa (*E. Teff*, *E. curvula* and *E. cyperoides*), two from South America (*E. bahiensis* and *E. virescens*), and one from Asia (*E. chariels*).

Economic Species

With two exceptions the members of this genus in North America are not of any great economic value. E. obtusiflora forms the principal forage in some of the saline valleys of southeastern Arizona, southwestern New Mexico and northern Chihuahua. It is apparently palatable when young although it has a good deal of silica. E. diffusa is one of the dominants of some of the llanos of Chihuahua and adjacent areas and as such is of importance as a forage grass for at least a few weeks of the year. The fact that E. reptans and E. hypnoides form extensive mats would make them useful in erosion control along streams but they would not withstand the force of any great flow of water as they are quite delicate.

Arrangement of the Species

The species may be grouped under four main sections, the last of which has ten subsections. The species of the first three major divisions, four in number, show affinities with other genera. This has been indicated by the names given them with the exception of the first group which is given the name under which the first of its species was once set up as a monotypic genus. The subdivisions of the fourth major division are named after one of the species of each group. These names are the plurals of one of the specific epithets in each group, and have been used without considering questions of priority. An attempt has been made in the arrangement of the species to show the relationship of the groups to each other and, within the groups, of the species to each other, insofar as it is possible to do so within the limitations of a linear arrangement. An outline of the arrangement follows:

NORTH AND MIDDLE AMERICAN SPECIES OF ERAGROSTIS

Section Acamptocladus

1. sessilispica
2. obtusiflora

Section Pseudobrizopyrum

3. cyperoides

Section Sporoboloides

4. spicata

Section Eueragrostis

Amabiles

5. Urbaniana
6. glutinosa
7. viscosa
8. amabilis
9. ciliaris

Capillares

10. glomerata
11. capillaris
12. Frankii
13. Pringlei

Spectabiles

14. curtipedicellata
15. Silveana
16. spectabilis
17. refracta
18. Elliottii

Oxylepides

19. yucatana
20. oxylepis
21. Beyrichii
22. secundiflora
23. Ekmanii
24. Salzmannii
25. bahamensis
26. cubensis
27. simplex
28. acutiflora
29. maypurensis
30. simpliciflora

Excelsae

31. diversiflora
32. prolifera
33. excelsa

Hirsutae

34. trichodes
35. glandulosa
36. hirsuta
37. hirta
38. curvula
39. erosa
40. Palmeri

Hirsutae (Cont.)

41. longiramea
42. intermedia
43. oreophila
44. trichocolea
45. purpurascens
46. lugens
47. praetermissa
48. Tracyi
49. Swalleni

Reptantes

50. reptans
51. hypnoides

Cilianenses

52. lutescens
53. Berteroniana
54. poaeoides
55. Barrelieri
56. cilianensis

Pectinaceae

57. mexicana
58. neomexicana
59. arida
60. diffusa
61. tephrosanthes
62. pectinacea
63. Orcuttiana
64. Teff
65. virescens
66. peregrina
67. pilosa
68. perplexa

Bahienses

69. unioloides
70. plumbea
71. bahiensis
72. charieis
73. stenophylla

Citation of Localities

Citation of the distribution of the species was worked out in the following manner. In the area covered Rand & McNally's Commercial Atlas and numerous other maps were used to find localities. Provinces in Canada, states in the United States and Mexico, departments or provinces in the Central American countries and in some of the West Indian islands (in smaller islands no subdivisions were used) were made the unit for the citation and plotting of the distribution. In the citations five main headings were used: Canada, United States, Mexico, Central America and the West Indies. Within each of the main headings collections were listed by subdivisions which are either geographical or political. Within these subdivisions collections are cited from north to south and from west to east. The arrangement of the subdivisions differs under different species in an attempt to make the listings coincide as nearly as possible with phytogeographical areas.

The names of collectors are shortened as much as possible. Thus all collectors of numbered specimens are indicated only by their surnames except if there is more than one collector with the same surname. Then the best known collector or the one who has more collections cited is indicated by his surname. The others are distinguished by their initials. Collectors of unnumbered collections are indicated by the surname, initials and the date of collection if possible. The manner in which all collectors and exsiccatae are cited is indicated in the catalog of collectors. Thus (E. J.) Palmer indicates that collections are cited as "Palmer."

HISTORY OF THE GENUS

In prelinnaean literature the species of Eragrostis were usually designated as gramen tremulum....., gramen paniculis elegantissimis....., gramen amourettes..... or gramen amoris..... The latter when translated into Greek by Caspar Bauhin in 1623 in his Pinax Theatri Botanici became Eragrostis, the modern name of the genus. Bauhin characterizes Briza Eragrostis L. as Gramen paniculis elegantissimis, sive Eragrostis, majus. This latter name is that which Host used in 1809 when he introduced Eragrostis as a generic name to postlinnaean botany in his Icones et Descriptiones Graminum Austriacorum.

Host gives the description of one species (Eragrostis major) and the transfer and renaming of Poa Eragrostis (E. minor). These are accompanied by a plate of the first species. Thus it was not until 1812 that Beauvois in his Essai d'une nouvelle Agrostographie effected technically valid publication of the genus according to modern ideas. From Linnaeus down to 1809 the species had been included in Poa and Briza. Beauvois may have known of Host's use of Eragrostis as a generic name but because he does not cite in his "Agrostographie" any of the species described by Host it is impossible to tell. Beauvois' work is confusing because after his generic descriptions he merely cites a list of species without authorities. One has to turn to the index to ascertain the authorities, which are sometimes not given even there. In the same work Beauvois proposed the genus Megastachya citing several species which are now placed in Eragrostis and which do not conform

with his description of Megastachya. Since 1812 botanists have accepted the genus Eragrostis as valid with the exception of a few who returned its species to Poa, as Kunth did in his Révision des Graminées or have placed some of the species under Megastachya because of the misinterpretation of that genus, as Fournier did in his Mexicanas Plantas.

History of Eragrostis in North and Middle America

In 1753 Linnaeus in his "Species Plantarum" described one species, Poa capillaris (E. capillaris), from "Virginia." In 1759 he named another, Poa ciliaris (E. ciliaris), from Brown's collections in Jamaica. From this time until the present the increase in knowledge of the genus has been closely correlated with the major botanical explorations of this continent. In 1788 Swartz as a result of his West Indian explorations added Poa glutinosa (E. glutinosa) and Poa prolifera (E. prolifera) to the known species. In the same year Walter described as a result of his collections in South Carolina, Poa glomerata (E. glomerata). Poa hypnoides (E. hypnoides) was added to the growing list in 1791 by Lamarck, based upon material from the "Colonies" communicated by Richard. Michaux's explorations of the flora of the eastern United States added three new species in 1803; Poa hirsuta (E. hirsuta), Poa pectinacea (E. pectinacea) and Poa reptans (E. reptans). Pursh's flora of this same area added Poa spectabilis (E. spectabilis), merely a renaming of a plant which Walter had misidentified as P. amabilis L. Another species, Poa mexicana Hornem. (E. mexicana), resulted from the sending back to

Madrid of seeds by the botanical explorers (Moçino and Sessé) commissioned by Spain to explore Mexico. Humboldt and Bonpland's explorations resulted in two more species Poa maypurensis (E. maypurensis) and Poa acutiflora (E. acutiflora), described in 1816. Elliott in the same year published the results of his studies in South Carolina and Georgia which included two additions, Poa nitida (E. Elliottii) and Poa refracta (E. refracta). In 1824 Schultes included two additions, E. Berteroniana and E. tephrosanthos, in his "Mantissa". Nees added E. lugens in 1829 when his work on the grasses of Brazil was published. In 1830, as a result of the collecting of Thaddeus Haenke in the New World, Presl added E. secundiflora and E. simpliciflora. Nuttall, during his extensive botanical exploration of the West, discovered before 1837 Poa interrupta (E. oxylepis) and Poa trichodes (E. trichodes) from Arkansas.

In 1854 Steudel's "Synopsis" published as a result of the study of the accumulated collections of many European herbaria E. Salzmannii from Brazil and E. Frankii from Ohio. In 1862 Buckley published E. curti-pedicellata, E. sessilispica and E. diffusa among the results of his study of the Texas flora. Unfortunately Gray's violent and uncalled-for attack on his work resulted in the retirement from the field of this promising botanist. Grisebach's exploration of Cuba led to his publication of E. excelsa in 1866. The extensive Mexican collections of Dr. Edward Palmer yielded E. Palmeri published by Sereno Watson in 1883. Fournier's publication of the results of the botanical exploration of Mexico carried out under the French Empire included E. hirta and

Brizopyrum obtusiflorum (E. obtusiflora). The year 1891 marks the first addition by the famous line of agrostologists of the United States Department of Agriculture. Vasey described E. spicata from Brandegee's exploration of Baja California in this year. In 1893 he added E. diversiflora from Palmer's Colima collections and E. Orcuttiana from Orcutt's California collections. In this latter year Hitchcock (then at the Missouri Botanical Garden) published on his explorations of the Bahamas which included the description of E. bahamensis. Vasey in 1894 added E. neomexicana as a result of his own collecting in the Southwest. J. G. Smith (then of the Missouri Botanical Garden) added E. Beyrichii (a Beyrich collection from Arkansas) in 1895 as a result of study of the accumulation of material from the South in that institution. Pringle's many explorations of Mexico led to the finding of E. erosa, E. plumbea and E. pusilla (E. Pringlei) published by Beal in his "Grasses of North America." In this same year Arechavaleta's work on the grasses of Uruguay led to the discovery of E. trichocolea. In 1899 and 1900, respectively, Scribner of the Department of Agriculture added E. lutescens, as a result of Piper's collecting in Washington and E. simplex, as a result of Curtiss' Florida collecting. Hitchcock (by this time in the Department of Agriculture) added E. cubensis in 1909 from Curtiss' collections from Cuba and in 1912 E. Urbaniana based on part of Suringar's collections from the Dutch West Indies. In 1931 Swallen as a result of field work in the Sierra de San Carlos of Tamaulipas by Bartlett added E. longiramea. The intensive agrostological exploration of Texas by W. A. Silveus resulted in the discovery of E. Silveana Swallen by 1932. As a result of the extensive collecting and

research preliminary to the publication of the "Manual", Hitchcock in 1933 added E. Swalleni (a Texas collection by Swallen), and E. arida and E. intermedia based on Texas collections of his own. In 1934 he added E. Tracyi (based upon a Florida collection of S. M. Tracy). In 1936 the posthumous publication of his "Manual of the Grasses of the West Indies," credited Hitchcock with another addition, E. Ekmanii based on one of Ekman's collections from Cuba. The preparation of this revision has brought five new species to light, one from the Great Plains area of the United States and four others from Mexico and Central America.

ERAGROSTIS [Bauhin] Beauv.

Eragrostis Bauhin, Pinax 2. 1623; Host, Icon. et. Descr. Gram. Austr. 4: 14. f. 24. 1809, nom. nud.; Fl. Austr. 1: 135. 1827. TYPE SPECIES: Briza Eragrostis L. (Eragrostis cilianensis (All.) Link). In the first publication cited here Host has a description and a plate of his E. major based on Briza Eragrostis L.) and in addition he says the Poa Eragrostis, which he described in the second volume of this work, also belongs to this new genus and that he is calling it E. minor. According to Articles 41 and 42 of the International Rules this can not be accepted as valid publication of this genus. This is unfortunate as the interpretation of the genus is perfectly clear. The valid publication was not effected until 1812 by Beauvois in his Essai d'une Nouvelle Agrostographie.

Eragrostis Beauv., Ess. Agrost. 70. pl. XIV. f. XI. 1812. TYPE SPECIES: Poa Eragrostis L. (E. poaeoides Beauv.) Although Beauvois gave a generic description in this work it is not sufficiently detailed to differentiate this genus from other related ones. If it were not for the

species of Poa which he enumerates as belonging to the new genus one would be in considerable doubt as to just what the new genus was. It is interesting to note that although both Host and Beauvois each used the same name for his new genus they were based on different Linnaean species and that the new generic names were taken from the specific epithets of Linnaean species. Beauvois may not have known of Host's publication, for he does not cite it anywhere in the "Essai", nor does he cite any of the new species described by Host.

Erochloë Raf., Neogenyt. 4. 1825, nom. nud.; Bull. Bot. Seringe 1: 221. 1830. TYPE SPECIES: Poa spectabilis Pursh (Eragrostis spectabilis (Pursh) Steud.) Rafinesque cited no species in 1825 but in 1830 gave "Poa spectabilis seu amabilis." Although Hitchcock in his "Genera of Grasses of the United States" said that these were not the same species, as Rafinesque implies, they actually are. The Poa amabilis to which Rafinesque refers is the species to which Walter misapplied the Linnaean name and is equivalent to Poa spectabilis Pursh.

Macroblepharus Phil. in Linnaea 29: 100. 1854. TYPE SPECIES: M. contractus Phil. (E. ciliaris (L.) R. Br.).

Acamptocladus Nash in Small, Fl. Southeast. U. S. 139. 1903. TYPE SPECIES: E. sessilispica Buckl. This is the only species given.

Neeragrostis Bush in Trans. Acad. Sci. St. Louis 13: 178. 1903. TYPE SPECIES: N. Weigeltiana Reichenb. (E. reptans (Michx.) Nees).

Erosion Lunell in Amer. Midl. Nat. 4: 221. 1915. Proposed as a new name for Eragrostis Beauv. which is "to be avoided as built on another grass name."

Generic Description

Spikelets two- to many-flowered, articulate above the glumes, usually laterally compressed, sometimes oblate-spherical in cross-section, arranged in open or contracted panicles or rarely in racemes. Florets falling with the rachilla joints or the lemmas falling from the rachilla with or without the paleas. Glumes two, usually hyaline, one- to (rarely) three-nerved, usually laterally compressed, generally deciduous. Lemmas two to many, nearly always hyaline, sometimes chartaceous or indurate, three-nerved (rarely the lateral nerves double), sometimes with inconspicuous lateral nerves, laterally compressed or sometimes rounded on the back below and compressed only at the tip. Paleas commonly hyaline, two-keeled, usually ciliolate, rarely ciliate or only scabrous on the keel, the margins sharply folded back on the outside, transversely convex between the keels, longitudinally convex from the base to the tip or only below depending on the length of the grains. Grains lenticular, oblong, subspherical or subellipsoidal, smooth, striate or sometimes reticulate, commonly laterally compressed, sometimes grooved on the adaxial surface, typically reddish-brown, translucent. Anthers oblong to subspherical, yellowish-brown.

Annual or perennial herbaceous grasses, the perennials rarely rizomatous.

KEY TO THE NORTH AND MIDDLE AMERICAN SPECIES OF ERAGROSTIS

I. Perennial; panicle open to condensed, panicle branches long, flattened, flexuous, stiffly spreading or ascending, simple; spikelets distant, sessile or nearly so, appressed

1. Section Acamptocladus

A. Panicle branches stiffly spreading; spikelets appressed, obovate, one-fourth to one-third the length of the internodes. Plants of sandy prairies

1. E. sessilispica, p. 18.

A. Panicle branches ascending or slightly spreading; spikelets ascending or slightly spreading, one-half or more the length of the internodes. Plants of saline soil

2. E. obtusiflora, p. 20.

1. Eragrostis sessilispica Buckl.

Eragrostis sessilispica Buckl. in Proc. Acad. Nat. Sci. Phila. 1862: 97. 1862. TYPE: S. B. Buckley (PH), collected near Austin, Texas.

Diplachne rigida Vasey in U. S. Dept. Agric. Div. Bot. Bull. 12: 2: pl. 44. 1891, not Munro 1897. TYPE: J. Reverchon 30 (US 908,831), collected in 1879 in Texas.

Leptochloa rigida Munro ex Vasey in U. S. Dept. Agric. Div. Bot. Bull. 12: 2: pl. 44. 1891, (as synonym of Diplachne rigida Vasey).

Eragrostis rigida (Vasey) Scribn. in Proc. Acad. Nat. Sci. Phila. 1891: 304. 1891.

Acamptocladus sessilispicus (Buckl.) Nash in Small, Fl. Southeast. U. S. 140. 1903.

Perennial. Culms tufted, erect or ascending, then arching and decumbent, 30 to 90 (40 to 60) cm. tall. Sheaths overlapping below, about eight-tenths of the length of the internodes above, pilose at the apex of the margins. Ligule a dense row of white hairs about 0.25 mm. long. Blades involute, glabrous or sparsely pilose below, scabrous and sometimes with a row of long, white, supraligular hairs above, 10 to 30 cm. long, 1 to 3 mm. wide. Panicles ovoid, open, few-flowered, 25 to 65 cm. long, 10 to 25 cm. wide, the rachis scabrous, grossly flexuous, the branches few, flattened, distant, scabrous, stiffly spreading to ascending, floriferous nearly to the base, 3 to 30 cm. long, the axils pilose. Pedicels appressed, scabrous, pilose in the axils, as much as 0.1 mm. long. Spikelets obovate, distant, appressed, compressed, straw-colored to reddish-brown, 5 to 12.5 (8) mm. long, 2 to 3 (2.5) mm. wide, 5- to 12- (8-) flowered, the rachilla disarticulating. Glumes acuminate, indurate, both persistent, the first 2 to 6 mm. long, about 1 mm. wide, the second 3 to 6 mm. long, about 1.6 mm. wide. Lemmas acuminate, indurate, glabrous, loosely imbricate, 3 to 5 mm. long, 2 to 4 mm. wide, with conspicuous and sometimes scabrellous lateral nerves. Paleas as long as the lemmas and falling with them, indurate, ciliolate on the keels, conspicuously convex on the back. Grains sub-ellipsoidal, reddish-brown, translucent, smooth, about 1.25 mm. long and 0.5 mm. wide.

In sandy prairies from southwestern Kansas through Oklahoma and Texas to Tamaulipas. Map I, p. 22.

UNITED STATES: Kansas: Kiowa Co., Pl. Kan. 921 (GH, US). Oklahoma: Longdale, Stevens 827 (GH, MO, OKLA, US). New Mexico: Nara Visa, Fisher 200 (US). Texas: Abilene, Tracy 7925 (F, GH, MO, MSC, TEX, US); Big Spring, Hitchcock 13350 (US); Fort Worth, Tracy 8202 (MO, US); Mobeetie, Tharp 5841 (TEX); Hidalgo Co., Clover 926 (TEX); San Antonio, Swallen 1791 (US); Wellman, Reed 3789 (TEX); Riviera, Harvey 878 (MICH, US).

MEXICO: Tamaulipas: Buena Vista Hda., E. O. Wooton, June 21, 1919 (US); Chamal, Swallen 1739 (US).

2. Eragrostis obtusiflora (Fourn.) Scribn.

Brizopyrum obtusiflorum Fourn., Mex. Pl. 2: 120. 1886.

TYPE: Emy (P), collected at Orizaba, Vera Cruz, Mexico. In the National Herbarium there is a photograph of the type specimen.

Eragrostis obtusiflora (Fourn.) Scribn. in U. S. Dept. Agric. Div. Agrost. Bull. 8: 10. pl. 5. 1897.

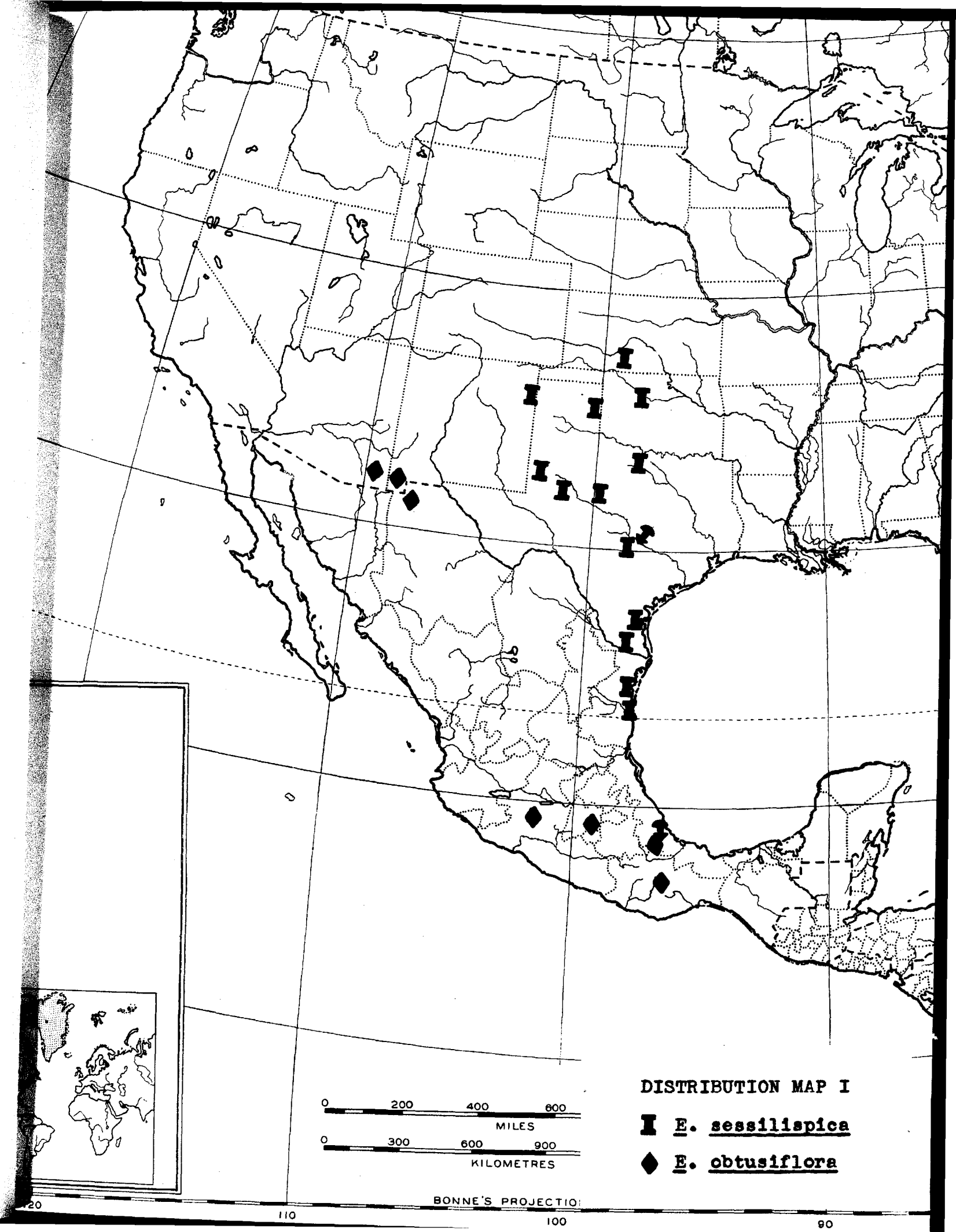
Perennial, strongly rhizomatous. Rhizomes vertical or horizontal, 4 to 5 mm. in diameter, somewhat flattened, internodes about 4 cm. long, scales ovate, acute, indurate, glaucous, straw-colored, forming a hard, sharp point on the end of the rhizome, grading into typical leaves above the ground. Culms hard, stiff, erect, mostly sterile, glaucous, one to three arising at a node, 30 to 50 cm. tall. Sheaths hard, stiff, overlapping, glaucous, usually light blue-green, usually pilose at the apex of the margins and occasionally down the margins. Ligule a dense row of white hairs about 0.25 mm. long. Blades hard, stiffly ascending,

glaucous, light blue-green, tightly involute on drying, glabrous below, scabrous and long pilose above, 6.5 to 15 (8 to 10) cm. long, about 4 mm. wide. Panicles oblong to ovoid, in most specimens very narrow and not much expanded, 12 to 20 cm. long, 7 to 20 cm. wide, the branches ascending to spreading, flattened, stiff, flexuous, scabrous, 3 to 15 cm. long, the axils sparsely pilose to glabrous. Pedicels appressed, scabrous, flattened, about 1 mm. long. Spikelets linear-oblong to lanceolate, usually tightly appressed, straw- to purplish-colored, 8 to 14 mm. long, 1.5 to 3 mm. wide, 6- to 10- flowered, the rachilla disarticulating. Glumes acuminate-lanceolate to acute-ovate, usually scabrous on the keel, persistent, the first 2.4 to 3.5 mm. long, about 1 mm. wide, the second 3 to 4.5 mm. long, about 1.5 mm. wide. Lemmas ovate, acute or obtuse and erose at the tip, tightly imbricate, more or less rounded on the back, compressed and keeled at the tip, 4 to 4.5 mm. long, about 1.6 mm. wide, the lateral nerves conspicuous. Paleas as long as the lemmas and falling with them, scabrous on the keels, convex on the back. Grains ellipsoidal, reddish-brown, translucent, striate, about 2 mm. long and 1 mm. wide.

In alkaline soil from southeastern Arizona and southwestern New Mexico to Vera Cruz and Oaxaca. Map I, p. 22.

UNITED STATES: New Mexico: Las Playas, E. O. Wooton, June 23, 1906. (US). Arizona: Pine Cañon, Chiricahui Mts., Toumey 27 (US); Wilcox, Silveus 3502 (US).

MEXICO: Chihuahua: Laguna Ascensión, Harvey 1750 (US); Laguna de Santa María, Nelson 6413 (GH, MICH, US). Michoacán: Cuitzeo (?), J. G. Oliva, Sept. 1913 (US). Distrito Federal: C. Reiche, Nov. 1913 (US). Vera Cruz: Orizaba, Emy (P). Oaxaca: C. Conzatti, March 1918 (US).


0 200 400 600
MILES
0 300 600 900
KILOMETRES
BONNE'S PROJECTIO
120
110
100
90
DISTRIBUTION MAP I
E. sessilispica
E. obtusiflora

II. Perennial; rachis of panicle stiff and pointed, branches very short, few, flat, distant, stiff, appressed; spikelets crowded

II. Section Pseudobrizopyrum

3. Eragrostis cyperoides (Thunb.) Beauv.

Poa cyperoides Thunb., Prod. Pl. Cap 22. 1794. TYPE: C. P. Thunberg, collected in 1772-73, Cape of Good Hope, Africa. Interpreted from the description and from African specimens of later collectors so named.

Eragrostis cyperoides (Thunb.) Beauv., Ess. Agrost. 71, 162, 174. 1812.

Brizopyrum cyperoides (Thunb.) Nees, Fl. Afr. Austr. 1: 374. 1841.

Perennial. Culms at first erect or ascending, then arching toward the ground, hard and somewhat angular, tapering to a hard pointed tip, glabrous, glaucous, continuing to grow after the maturation of the spikelets, as much as a meter long. Sheaths chartaceous, rounded on the back, tapering from the base to the summit, usually glabrous except for the sparsely very short lanate apex of the margins, sometimes in young plants sparsely appressed pilose. Ligule a dense row of white hairs about 0.6 mm. long. Blades convolute, indurate with a spine-like setaceous tip, short and attenuate, glabrous on both surfaces, glaucous below, 5 to 7.5 cm. long, about 4 mm. wide. Panicles distantly interrupted, subglomerate-spiciform, the rachis glabrous, glaucous, the tip spine-like and devoid of spikelets, the branches ascending, puberulent, abruptly originating from impressions in the much thicker rachis, 1 to 2 cm. long, the bases 4 to 10 cm. apart, the branchlets several, very short, the axils glabrous. Pedicels

puberulent, frequently curved, up to 1 mm. long. Spikelets densely congested on the branchlets, turgid, ovate-lanceolate, straw-colored, about 5 mm. long and 1.4 mm. wide, 2- to 4-flowered, the rachilla disarticulating. Glumes ovate, acute, hyaline, keeled, scabrous on most of the upper half, the first about 2.2 mm. long and 1.2 mm. wide, the second about 3 mm. long and 1.2 mm. wide. Lemmas ovate, acute, somewhat indurate, keeled, scabrous on the upper half, closely imbricate, 3 to 3.4 mm. long, about 1.6 mm. wide, the lateral nerves strong. Paleas eight-tenths the length of lemmas and falling with them, hyaline, ciliolate on the keels. Anthers cylindric, yellowish-brown, about 1 mm. long.

Introduced on railroad ballast at Linnton, Oregon.
J. C. Nelson 469 (GH, US). Map II, p. 26.

III. Perennial; panicle dense, long and spiciform, branches short, compound, appressed; spikelets small, hyaline, 2- to 4-flowered; grains falling as in Sporobolus

III. Section Sporoboloides

4. Eragrostis spicata Vasey

Eragrostis spicata Vasey in Bot. Gaz. 16: 146. 1891.

TYPE: T. S. Brandagee 10 (US 1,761,638), collected on Sept. 12, 1890 at San José del Cabo, Baja California, Mexico.

Sporobolus tenuispica Hack in Repert. Nov. Sp. 6: 344. 1909.

TYPE: Rojas 258 (Hack.), collected in 1906 along the Río Pilcomayo, Gran Chaco, Paraguay. In the National Herbarium there is a fragment of the type specimen.

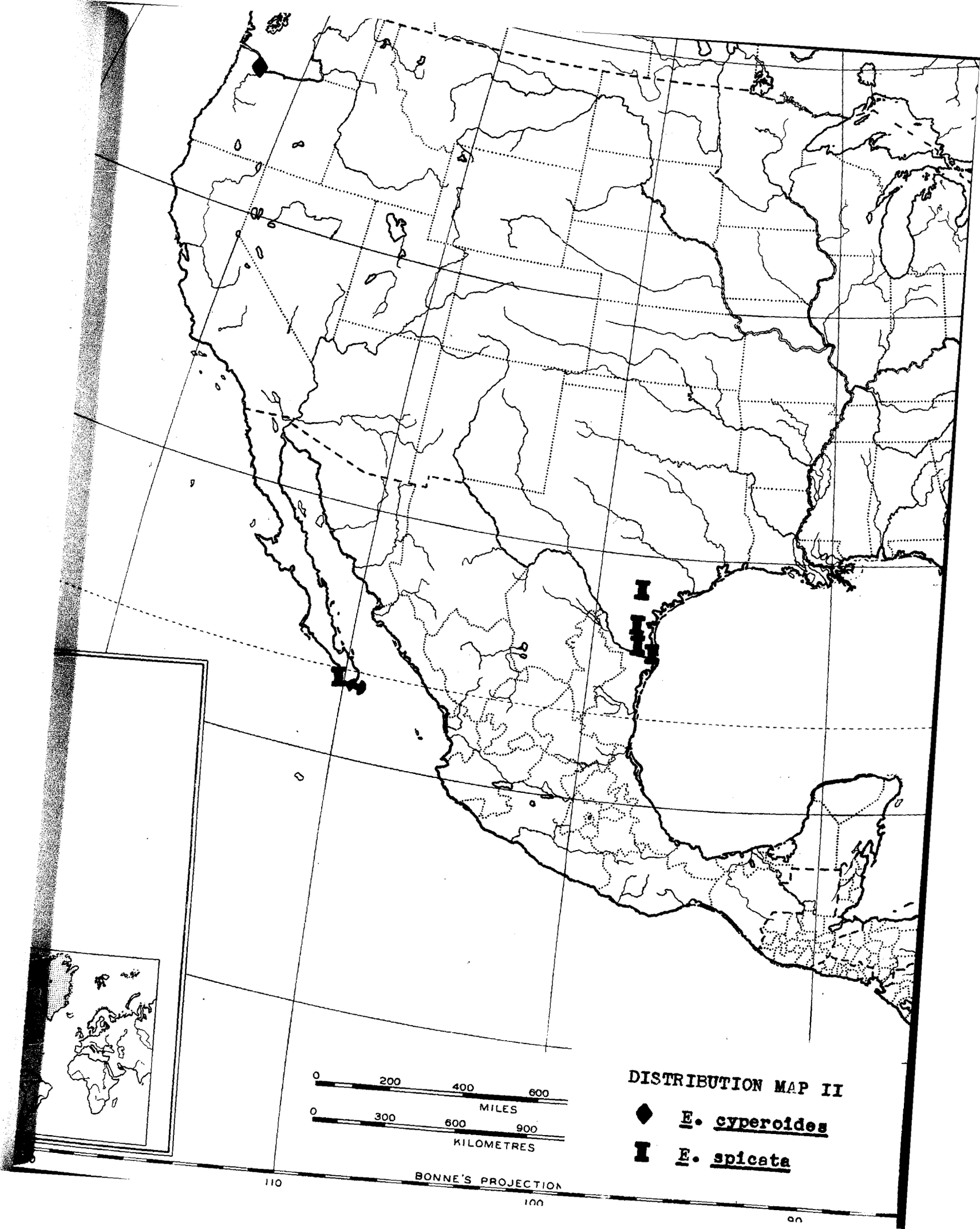
Perennial. Culms tufted, stiffly erect from a somewhat knotty base, 75 to 100 cm. tall. Sheaths overlapping, rounded on the back, glabrous. Ligule a dense row of white hairs about 0.25 mm. long. Blades flat to more or less involute when dry, attenuate, glabrous below, somewhat scabrous above, 20 to 35 cm. long, 4 to 8 mm. wide. Panicles dense, very narrow, long and spiciform, 30 to 35 cm. long, 4 to 5 mm. wide at the base and tapering to 2 or 3 mm. at the tip, sometimes interrupted at the base, the rachis pubescent, the branches appressed, densely flowered, about 5 mm. long. Pedicels appressed, pubescent, about 1 mm. long. Spikelets ovate, obtuse, strongly compressed, hyaline-greenish, 1.5 to 2 mm. long, about 1 mm. wide, 1- to 3-flowered, the rachilla disarticulating. Glumes ovate, obtuse, hyaline, scabrous

on the keel, persistent, the first about 1.25 mm. long and 0.4 mm. wide, the second about 1 mm. long and 0.5 mm. wide. Lemmas ovate, subacute to obtuse, hyaline on the margins, erose at the tip, scabrous on the keel, about 2 mm. long and 1 mm. wide, the lateral nerves conspicuous. Paleas eight-tenths to nearly as long as the lemmas and falling with them, hyaline, ciliolate on the keels, evenly convex on the back. Grains ovoid, translucent, reddish-brown, striate, about 1 mm. long and 0.3 mm. wide.

In sandy soil in scrub forest areas in southermost Texas and Baja California. Map II, p. 26.

UNITED STATES: Texas: Greene, D. Griffiths, Aug. 14, 1906 (US); Falfurrias, Silveus 391 (US); Rio Hondo, Clover 1577 (MICH, US); Edinburgh, Swallen 1086 (US).

MEXICO: Baja California: San José del Cabo, Brandegee 10 (US).


0 200 400 600
MILES
0 300 600 900
KILOMETRES
BONNE'S PROJECTION
110
100
90
DISTRIBUTION MAP II
E. cyperoides
E. spicata

IV. Perennials or annuals; panicles, panicles branches and spikelets various but not as in any of the preceding.

IV. Section Eueragrostis

A. Rachilla disarticulating; paleas deciduous with or falling before the rachilla joints

B. Keels of the paleas ciliate, cilia from one-half to as long or longer than the distance from the keel to the margin of the lemma

(1) Amabiles, p. 28.

B. Keels of the paleas not long ciliate

C. Annuals; panicles narrow, much branched, usually more than half the length of the culm or, if the culm is branched, more than half the length of its branch; panicle branches capillary; spikelets hyaline, few-flowered, small

(2) Capillares p. 44.

C. Annuals or perennials; panicles usually less than half the length of the culms; panicle branches and spikelets not as above except in perennials

D. Perennials; panicle branches stiffly spreading, wirey; spikelets coriaceous, flattened, usually distant, but if not so then clustered and appressed on the spreading branchlets so that the clusters appear distant

(3) Spectabiles p. 55.

D. Annuals or perennials; panicle branches not stiffly spreading nor wirey; spikelets various but not at once distant, coriaceous and flattened

E. Annuals or perennials; panicles densely flowered and

condensed (sometimes open) and the spikelets several times wider than thick, overlapping, or the panicles few-flowered and racemose; lateral nerves very conspicuous

(4) Oxylepides, p. 70.

E. Perennials; panicles commonly open and sparsely flowered; spikelets two or three times wider than thick

F. Culms one to two meters tall, stout; panicles long with the branches usually ascending; lateral nerves of the lemmas conspicuous, as much so or more so than the keel

(5) Excelsae, p. 95.

F. Culms usually not more than a meter tall, slender; panicles usually wide and the branches spreading; lateral nerves of the lemmas evident but less conspicuous than the keel

(6) Hirsutae, p. 101.

A. Rachilla not disarticulating; paleas persistent or deciduous

B. Annuals; paleas persistent or if deciduous not falling consecutively from the base to the tip of the spikelet

C. Plants creeping and forming mats

(7) Reptantes, p. 133.

C. Plants not creeping and forming mats

D. Spikelets broadly ovate or linear (if narrowly linear the lemmas acuminate and hyaline and the panicle branches appressed); panicle and panicle branches short; blades gradually attenuate from a broad base and short (3 to 15 cm.

long), if not sheaths with many glandular pits in the nerves; or if longer keels of the lemmas with glandular pits

(8) Cilianenses, p. 143.

D. Spikelets narrowly ovate or linear (if broadly ovate then the panicle diffuse and grain oblong-ovoid and deeply grooved on the adaxial surface); panicles large and diffuse; blades linear or if gradually attenuate from a broad base then long (15 to 30 cm.) and having a partial or complete ring of glandular tissue below the nodes

(9) Pectinaceae, p. 159.

B. Perennials, or, if annuals, the paleas falling consecutively from the base to the tip of the spikelets giving the spikelets a cuneate shape

(10) Bahienses, p. 197.

(1) Subsection Amabiles

A. Panicles compound, densely flowered, two to ten times as long as wide but not spiciform (see also lax forms of E. ciliaris and E. Urbaniana)

B. Panicle branches stiffly spreading; spikelets coriaceous; plants stiff and usually viscid

C. Panicle branches simple or nearly so with few spikelets; blades linear, involute; panicles open

6. E. glutinosa, p. 30.

C. Panicle branches compound with several to many spikelets; blades gradually attenuate from a broad base, flat; panicles dense

7. E. viscosa, p. 33.

B. Panicle branches usually lax and flexuous; spikelets hyaline; plants usually not stiff or if so the panicles delicate and never viscid

8. E. amabilis, p. 34.

A. Panicle compound, densely flowered, ten to thirty times as long as wide, spiciform or nearly so

B. Panicles densely spiciform; spikelets 6- to 12-flowered

9. E. ciliaris, p. 38.

B. Panicles merely with short closely ascending branches, not densely spiciform; spikelets 12- to 18-flowered

5. E. Urbaniana, p. 29.

5. Eragrostis Urbaniana Hitchc.

Eragrostis Urbaniana Hitchc. in Urban, Symb. Antill. 7: 167. 1912. TYPE: W.F.R. Suringar (US 690,359), collected Feb. 25, 1885, Island of Bonaire, Dutch West Indies.

Annual. Culms tufted, decumbent at the base, spreading to erect, glabrous, slender, 12 to 22 cm. tall. Sheaths overlapping to one-half the length of the internodes, glabrous on the rounded back, sometimes papillose-pilose on the margins and upper back, pilose at the apex of the margins. Ligule a dense row of white hairs about 0.2 mm. long. Blades flat to involute, ascending or spreading, glabrous below, scabrous with a row of supraligular hairs above, 1.5 to 6.5 cm. long, 1 to 2 mm. wode. Panicles contracted, oblong, sometimes interrupted, 1 to 6 cm. long, 0.8 to 1.2 cm. wide, the branches as much as 1 cm.

long. Pedicels appressed or ascending, glabrous, as much as 0.6 mm. long. Spikelets linear to linear-lanceolate, straw- to purpish-colored, flattened, 4 to 8 mm. long, 1 to 2 mm. wide, 12- to 18-flowered, the rachilla tardily disarticulating. Glumes ovate, acuminate to obtuse, compressed and keeled, scabrous near the tip of the keel, the first 0.8 to 1 mm. long, about 0.4 mm. wide, the second 1 to 1.2 mm. long, about 0.6 mm. wide. Lemmas ovate, obtuse, compressed at the tip, imbricate, glabrous, 1.2 to 1.8 mm. long, about 0.6 mm. wide, with conspicuous lateral nerves. Paleas hyaline, evenly convex on the back, as long as the lemmas, persistent, ciliate on the keels (cilia 0.2 to 0.4 mm. long). Grains ellipsoidal, translucent, shiny, smooth, reddish-brown, about 0.6 mm. long and 0.2 mm. wide.

In sandy and rocky ground from the Bahamas to the Virgin Islands. Map III, p. 33.

WEST INDIES: Bahamas: Great Ragged Island, Wilson 7828 (F, NY, US); Inagua, Nash & Taylor 1372 (NY, US); South Caicos, Wilson 7608 (F, NY, US); The Wells, Grand Turk, C. F. & C. M. Millspaugh 9341 (F, NY, US). Hispaniola: Haití: Jean Rabel, Ekman H4007 (US). Puerto Rico: Laguna de Tortuguero, Britton, Cowell & Brown 3854 p. p. (US). Virgin Islands: Anegada, Britton & Fishlock 957 (NY, US).

6. Eragrostis glutinosa (Swartz) Trin.

Poa glutinosa Swartz, Nov. Gen. & Sp. Pl. Prod. 26. 1788. TYPE: O. Swartz (S), collected in 1783-87 in Jamaica, West Indies. In the National Herbarium there is a fragment of a specimen of Poa glutinosa labeled "e Jamaica" sent by Swartz to the Caström Herbarium and now in Stockholm. There is also a fragment of another specimen which

Swartz sent to Trinius[1/] and which is now in the latter's herbarium.

Eragrostis glutinosa (Swartz) Trin. in Mém. Acad. St. Pétersb. Ser. VI. Sci. Math. Phys. Nat. I: 397. 1830.

Eragrostis sudans Griseb., Cat. Pl. Cuba. 227. 1866. TYPE: C. Wright 3422 (Griseb.), collected in 1860 in "Cuba orientalis." In the National Herbarium there is a fragment of the type specimen and a photograph of a specimen of the type collection in the Sauvalle Herbarium in Habana, Cuba.

Eragrostis Leonina Hitchc. & Chase in Contr. U. S. Nat. Herb. 18: 388. 1917. TYPE: Bro. León 885 (US 865,555), collected Aug. 25, 1909 in thickets near the railroad at Zaza de Tunas, Prov. Santa Clara, Cuba.

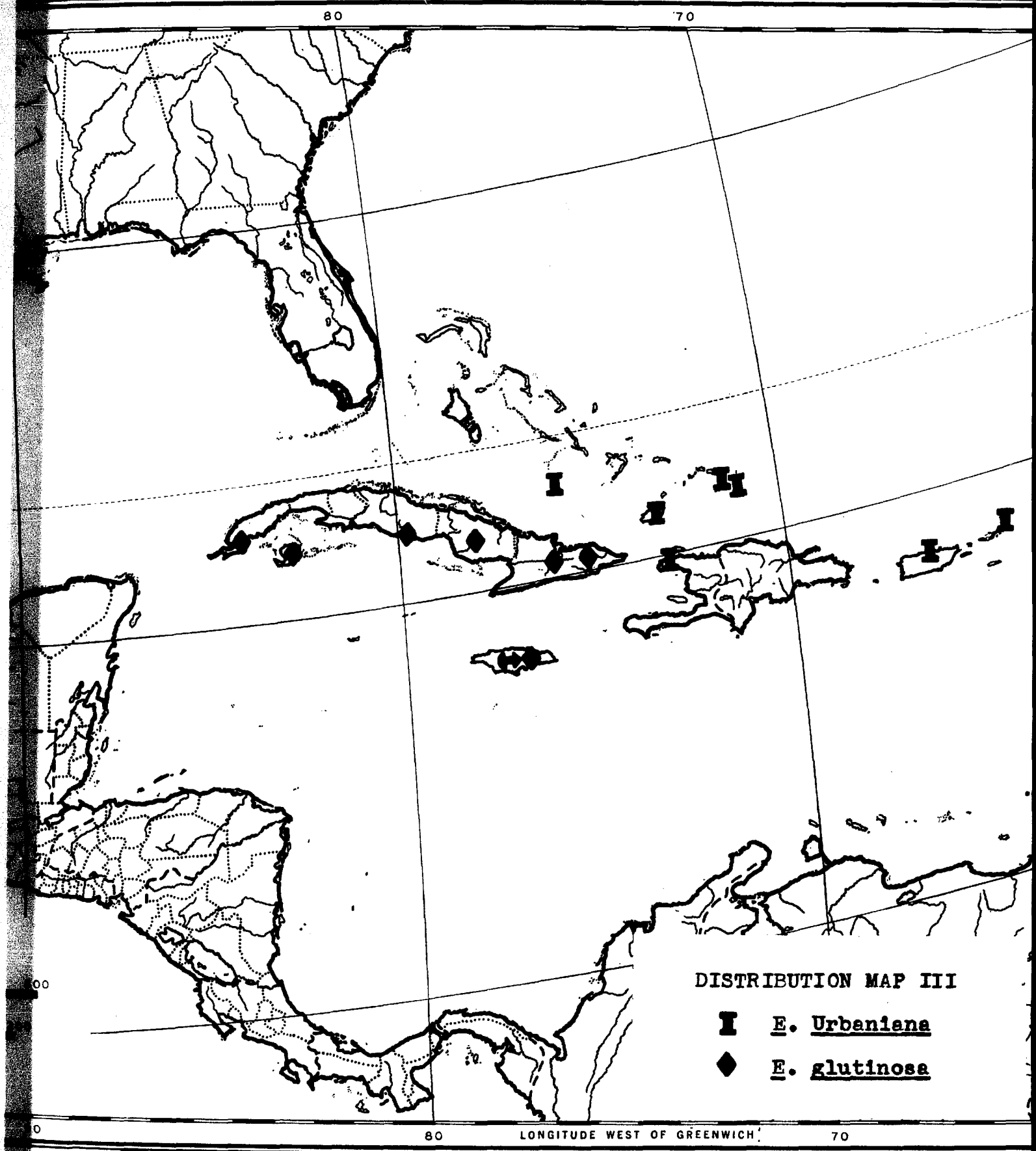
Perennial. Culms tufted, erect or ascending, branching, viscid, a glandular band below the nodes, 10 to 45 (15 to 35)cm. tall. Sheaths overlapping at the base to two-thirds the length of the internodes above, viscid, a woolly tuft of hairs at the somewhat auriculate a pex of the margins. Ligule a dense row of white hairs about 0.4 mm. long. Blades involute, viscid, glabrous or scattered pilose below, somewhat scabrous and with a few supraligular hairs and pilose on the margins above, 4.5 to 10 cm. long, about 1 mm. wide. Panicles narrowly oblong, open, usually loosely, sometimes somewhat densely flowered, 5.5 to 15 cm.

1/ Trinius made it a practice to obtain, if possible, specimens of grasses described as new by his contemporaries. This makes his herbarium in Leningrad invaluable in the interpretation of many of the grasses described in his day.

long, 1.5 to 5.5 cm. wide, the rachis viscid, sometimes scattered pilose, scabrous, the branches ascending to spreading, viscid, scabrous, sometimes scattered pilose, 0.5 to 3 cm. long, the axils pilose. Pedicels scabrous, viscid, spreading to appressed, 0.4 to 0.8 mm. long. Spikelets linear to oblong, spreading, viscid, straw-colored to purplish-tinged, compressed, 3 to 5 mm. long, about 1 mm. wide, 6- to 12-flowered, the rachilla tardily disarticulating. Glumes acuminate or the second sometimes acute, compressed and keeled, persistent, the first 1 to 1.2 mm. long, about 0.8 mm. wide, the second 1.2 to 1.4 mm. long, about 0.8 mm. wide. Lemmas acute, scabrous on the keel, imbricate, 1.4 to 1.6 mm. long, about 1.2 mm. wide, the lateral nerves and keel strong. Paleas as long as the lemmas, ciliate (cilia 0.3 to 0.6 mm. long), evenly convex on the back, hyaline, persistent. Grains oblong, reddish-brown, translucent, striate, 0.4 to 0.6 mm. long, about 0.2 mm. wide.

Sandy places, savannas, pinelands and thickets near the coast in Cuba and Jamaica, West Indies. Map III, p. 33.

WEST INDIES: Cuba: Sábalo, Prov. Pinar del Río, Ekman 11413 (US); Vivijagua, Isla de Pinos, Britton & Wilson 15612 (F, NY, US); Zaza de Tunas, Prov. Santa Clara, León 885 (US); Camagüey to Santayana, Prov. Camagüey, Britton 2374 (NY, US); Prov. Oriente, Wright 3422 (GH, US); Guantánamo, Prov. Oriente, Britton 2123 (F, NY, US). Jamaica: Swartz, 1783-87 (US).



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7. Eragrostis viscosa (Retz.) Trin.

Poa viscosa Retz., Obs. Bot. 4: 20. 1786. TYPE: König, collected in Malabar, India. Interpreted from the description and study of Indian specimens.

Eragrostis viscosa (Retz.) Trin. in Mém. Acad. St. Pétersb. Sér. VI. Sci. Math. Phys. Nat. 1: 397. 1830.

Eragrostis tenella var. viscosa (Retz.) Stapf in Hook. f., Fl. Brit. Ind. 7: 315. 1891.

Annual. Culms tufted, erect to ascending, geniculate at the lower nodes, branching at the base and above, usually viscid, 15 to 45 cm. tall. Sheaths overlapping at the base, four- to six-tenths the length of the internodes above, usually viscid, pilose at the apex of the margins. Ligule a dense row of white hairs about 0.3 mm. long. Blades gradually attenuate from a broad base, usually flat, sometimes irregularly involute, sometimes viscid on the keel, glabrous below, scabrous and sometimes with supraligular hairs above, 3 to 16 cm. long, 1 to 5 mm. wide. Panicles narrowly ovoid to oblong, open, usually densely flowered, 8 to 18 cm. long, 2.5 to 6 cm. wide, the branches slender, ascending to spreading, frequently viscid, 1.5 to 6.5 cm. long, with many short, slender, secondary branches, the axils sparsely pilose. Pedicels usually shorter than the spikelets, viscid, ascending to spreading, 0.4 to 1 mm. long. Spikelets ovate to oblong, compressed, straw- to purplish-colored, frequently viscid, 2 to 4 mm. long, 1 to 2 mm. wide, 5- to 8-flowered, the rachilla disarticulating. Glumes compressed and keeled, the first ovate, acute, 0.8 to 1 mm. long, about 0.6 mm. wide, the second ovate, obtuse, 1 to 1.2 mm. long, about

0.6 mm. wide. Lemmas ovate, obtuse to truncate, somewhat distant, spreading, somewhat compressed, 1.2 to 1.6 mm. long, about 1 mm. wide, the conspicuous lateral nerves and the keel tending to appear parallel. Paleas hyaline, as long as or nearly as long as the lemmas, persistent, somewhat convex on the back, ciliate on the keels (cilia 0.4 to 0.6 mm. long). Grains ellipsoidal, translucent, smooth, shiny, about 0.6 mm. long and 0.2 mm. wide.

Introduced in sandy and waste land along the coast, sometimes in the interior, in Lower Baja California, the west coast and lower east coast of Mexico and in Central America. Map IV, p. 38.

MEXICO: Baja California: Todos los Santos, Jones 24114 (F, LA, MICH, NY, POM); La Paz, Jones 22790 (POM); Santiago, Shreve 7290 (F, US). Durango: Sierra Tres Picos, Gentry 5276 (GH, MICH, MO, NY). Nayarit: Tepic, Jones 23439 (POM). Morelos: Cuernavaca, Lyonnet 2795 (US). Guerrero: San Marcos, E. W. Nelson 2270 (US). Tabasco: San Juan Bautista, Rovirosa 690 (US). CENTRAL AMERICA: Guatemala: Quiriguá, Weatherwax 71 (US); Sacapulas, Dept. Quiché, Standley 62544 (F); Guatemala City, Hitchcock 9100 (US); Dept. Escuintla, Standley 58229 (F, US). El Salvador: San Martín, Standley 22485 (GH, NY, US).

8. Eragrostis amabilis (L.) Wight & Arn.

Poa amabilis L., Sp. Pl. 68. 1754. Linnaeus stars his reference to Fl. Zeyl. 19. 1747. In this work his first citation is Pluk. Alm. 176. t. 300. f. 2. I take this figure to typify the species.

Poa plumosa Retz., Obs. Bot. 4: 20. 1786. TYPE: König, collected at Tranquebar, Madras, India. Interpreted from the description and study of Indian specimens.

Megastachya amabilis (L.) Beauv., Ess. Agrost. 74, 167, 173, 1812.

Cynodon amabilis (L.) Raspail in Ann Sci. Nat. Ser. I. 5: 302. 1825.

Eragrostis plumosa (Retz.) Link, Hort. Berol. 1: 192. 1827.

Eragrostis amabilis (L.) Wight & Arn. in Hook & Arn. Bot. Beechey Voy. 251. 1838. The description given (loc. cit.) under this name is of E. unioloides.

Eragrostis ciliaris var. patens Chapm. ex. Beal, Grasses N. Amer. 2: 479. 1896. TYPE: A. H. Curtiss 3493*1/, collected in September and October at Doctortown and Jessup, Georgia. In the National Herbarium there is a specimen of the type collection.

Eragrostis tenella var. plumosa (Retz.) Stapf in Hook. f., Fl. Brit. Ind. 7: 315. 1896.

Eragrostis amabilis var. plumosa (Retz.) E. G. & A. Camus in Le Comte, Fl. Gén. Indo-Chine 7: 557. 1923.

Annual. Culms tufted, slender, prostrate to erect, frequently geniculate at the lower nodes, 10 to 45 (20 to 30) cm. tall. Sheaths three- to five-tenths as long as the internodes, glabrous on the back, usually pilose at the apex of and down the margins. Ligule a dense row of white hairs about 0.25 mm. long. Blades flat to involute, glabrous below, scabrous with a few long

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1/ Curtiss used an asterik (*) after his collection numbers in the same manner that many collectors use "A", "a" or "1/2." Search in the Herbarium of Michigan State College has failed to locate a specimen of this collection. There is however a specimen of U. S. Dept. Agric. 575, the second collection cited.

supraligular hairs above, 3 to 10 (8) cm. long, 1 to 5 (3.5) mm. wide. Panicles narrowly oblong to ovoid, dense to open, 3 to 15 (5 to 10) cm. long, 1.5 to 6 (2 to 4) cm. wide, the rachis scabrous towards the tip, the branches ascending to spreading, slender and flexuous or stiff, much branched, sometimes with irregular glandular patches, scabrous, 1 to 3.5 cm. long, the axils pilose. Pedicels ascending to spreading, scabrous to glabrous, slender, sometimes flexuous, sometimes with irregular glandular patches, 0.6 to 2 mm. long. Spikelets short oblong to ovate, hyaline, slightly compressed, greenish- to reddish-tinged, 1 to 3 mm. long, about 1 mm. wide, 3- to 8- (6-to 7-) flowered, the rachilla disarticulating. Glumes hyaline, compressed, the first usually broadly ovate, acute, 0.4 to 0.6 mm. long, about 0.4 mm. wide, the second less ovate, acute to acuminate, 0.6 to 1 mm. long, 0.4 to 0.8 mm. wide. Lemmas ovate, obtuse to subacute, hyaline, loosely imbricate, rounded on the back, keeled above, usually glabrous, 1 to 1.2 mm. long, 0.4 to 0.8 mm. wide, the tip sometimes erose, the conspicuous lateral nerves and the sometimes slightly excurrent keel appearing to converge. Paleas as long as the lemmas and falling with them, hyaline, somewhat convex on the back, ciliate, (cilia 0.2 to 0.4 mm. long). Grains ovoid to subellipsoidal, reddish-brown, translucent, smooth, about 0.4 mm. long and 0.2 mm. wide.

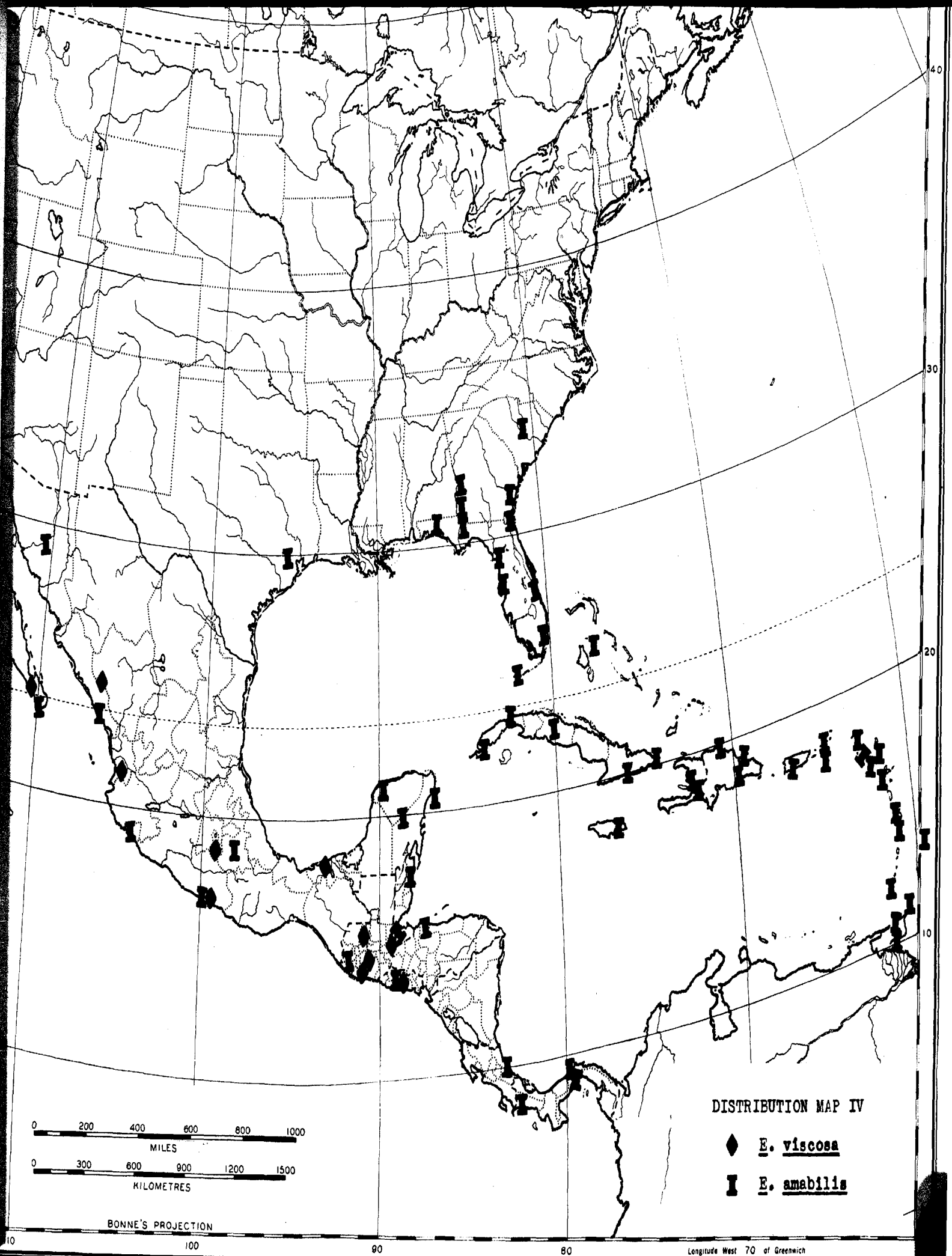
Introduced in sandy soil and waste places along the coasts (sometimes inland) in Georgia, Florida, Texas, the west coast of Mexico and in Central America and the West Indies. Map IV, p. 38.

UNITED STATES: South Carolina: G. McCarthy, July 1885 (F). Georgia: Lumpkin, A. W. Latimer, Oct. 1 1885 (US); Doctortown & Jessup, Curtiss 3493* (F, GH, NY, US); Camilla, Tracy 3725 (US). Florida: De Funiak Springs, Combs 463 (US); Chattahoochee, Tracy 3727 (NY, US); Jacksonville, Curtiss 5247 (F, GH, MSC, NY, US); Dunnellon, Biltmore Herb. 8341b (NY); Tampa, F. S. Blanton 6831 (POM); Fellsmere, Tracy 9313 (US); Okeechobee Region, Fredholm 6201 (GH, US); Miami, Moldenke 5568 (NY); Boca Chica Key, J. K. Small (NY). Texas: Waller Co., Thurow 1 (US).

MEXICO: Baja California: San José del Cabo, Jones 24047 (F, MICH, NY). Sonora: Edw. Palmer in 1891 (US). Sinaloa: Mazatlan, Ortega 5761 (GH, POM). Colima: Manzanillo, Edw. Palmer 1266 of 1890 (NY, US). Puebla: Nicolás 20 (US). Guerrero: Acapulco, Edw. Palmer 40 of 1894-95 (F, GH, MICH, NY, US). Yucatán: Mérida, Schott 59a (F); Chichankanab, Gaumer 1567 (F); San Miguel, Cozumel Island, Swallen 2838 (MICH).

CENTRAL AMERICA: British Honduras: Belize, Kellerman 5758 (US). Guatemala: Quiriguá, Weatherwax 37 (US); Mulvá, Kellerman 4986 p. p. (US). Honduras: Tela, Standley 53410 (F, US). El Salvador: San Salvador, Standley 19363 (GH, US). Costa Rica: Port Limón, Hitchcock 8419 (US). Panamá: David, Prov. Chiriquí, Hitchcock 8374 (MICH, US); Panamá City, D. H. Popenoe 63 (NY); Colón, Rose 23993 (US).

WEST INDIES: Bahamas: New Providence, Nassau, Britton & Brace 788 (F, NY, US). Cuba: El Sábalo, Prov. Pinar del Río, León 15102 (US); Habana, Prov. Habana, Ekman 164 (US); Soledad, Prov. Santa Clara, Jack 7993 (GH, NY, US); Santiago City, Prov. Oriente, Edw. Palmer 374 of 1902 (F, GH, US); Barocoa, Prov. Oriente, Shafer 3905 (NY, US).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MILES
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KILOMETRES
BONNE'S PROJECTION
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100
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Longitude West 70 of Greenwich
DISTRIBUTION MAP IV
E. viscosa
E. amabilis

Jamaica: Hope Gardens, Hitchcock 9560 (US). Hispaniola: Haití: St. Marc, Leonard 3421 (GH, NY, US); Port-au-Prince, Ekman H9053 (US); Dominican Republic: Puerto Plata, Prov. Puerto Plata, Ekman H14153 (US); Samaná, Samaná Península, Abbott 1322 (GH, US); Santo Domingo, Prov. Santo Domingo, Ekman H11274 (US). Puerto Rico: San Germán, Vélez 1155 (NY); Ponce, Chase 6485 (US); Coamo Springs, Britton, Britton & Brown 5953 (NY, US). Virgin Islands: St. Jan, Britton & Shafer 501 (F, NY, US); Amiás Hope, St. Croix, J. B. Thompson 956 (NY). Leeward Islands: Gustavia, St. Barthélemy, Questel 717 (US); St. Kitts, Britton & Cowell 437 (NY); St. Johns, Antigua, Box 114 (US); Coconut Hill, Monserrat, Shafer 84 (F, NY, US); Basse Terre, Guadaloupe, Duss 3143C (NY, US); St. Pierre, Martinique, Duss 566 (NY, US). Windward Islands: Castries, St. Lucia, Kemp 35 (US); Barbados, L. H. & E. Z. Bailey 361 (MICH); St. George, Grenada, Broadway 4667 (US). Tobago: Scarborough, Hitchcock 10289 (US). Trinidad: Port of Spain, Hitchcock 9972 (US); San Fernando Palmiste, Broadway 8985 (US).

9. Eragrostis ciliaris (L.) R. Br.

Poa ciliaris L., Syst. Nat. Ed. X. 2: 875. 1759. TYPE: Brown (LINN), collected in Jamaica. Linnaeus gives no data under his description. In "Flora Jamaicensis" 5: 392. 1759 he cites "Briza I Brown jam. 135." In the Linnaean Herbarium there is a specimen of E. ciliaris collected by Brown in Jamaica. I take this to be the type. Interpreted from the description and Jamaican specimens.

Poa elegans Poir in Lam., Encyl. Méth. 5: 87 1804. TYPE: Ledru (Lam.) collected in Puerto Rico. In the National Herbarium there is a

fragment of the type specimen. There is also a fragment of a specimen in the Paris General Herbarium which is labeled "Poa elegans Poir." in Poiret's script.

Megastachya ciliaris (L.) Beauv., Ess. Agrost. 74, 167, 174. 1812.

Eragrostis ciliaris (L.) R. Br. in Tuckey, Narr. Exp. Congo 478. 1818.

Eragrostis villosa Trin., Fund. Agrost. 137. 1820. Based on Poa ciliaris L. Trinius gives no reason for changing the specific epithet.

Cynodon ciliaris (L.) Raspail in Ann. Sci. Nat. Ser. I. 5: 302. 1825.

Macroblepharus contractus Phil. in Linnaea 29: 101. 1858. TYPE: J. Gay 129 (Hack.)[1/], collected in 1837 in Valle de Limari, Prov. de Coquimbo, Chile. In the National Herbarium there is a photograph and a fragment of the type specimen.

Eragrostis ciliaris var. laxa Kuntze,[2/] Rev. Gen. Pl. 2: 774. 1891. TYPE: O. Kuntze (B), collected in 1874 at St. Thomas, Barbados and Trinidad. Interpreted from the description and from specimens named by Kuntze and now at the New York Botanical Garden.

1/ All the types of Phillippi are in the Hackel Herbarium.

2/ This is a fairly good variety on some of the islands but when the whole distribution is considered there are numerous intergrades between it and the typical form. Kuntze, March 1874 from St. Thomas (US); Duss without data from Dominica (US); and Duss 1307 from St. Pierre, Martinique (US) are good examples of this variety.

Annual. Culms erect, ascending, spreading or prostrate, decumbent at the base, 10 to 55 (20 to 30) cm. tall. Sheaths usually overlapping, glabrous on the back, pilose at the apex of and down the margins (sometimes sparsely so). Ligule a dense row of white hairs about 0.25 mm. long. Blades flat, glabrous below, scabrous with supraligular hairs above, 2 to 14 (4 to 10) cm. long, 1 to 4 (2) mm. wide. Panicles dense, spiciform, more or less interrupted or sometimes open and spreading, 3 to 13 (5) cm. long, 3 to 15 (4 to 6) mm. wide, the branches appressed or sometimes spreading, glabrous, 5 to 10 cm. long, the axils glabrous. Pedicels usually appressed, sometimes spreading, glabrous, about 0.25 mm. long. Spikelets broadly ovate to linear-oblong, compressed, hyaline, greenish- to reddish-tinged, 2 to 3 (2) mm. long, 1 to 1.2 mm. wide, 6- to 12- (8-) flowered, the rachilla disarticulating. Glumes narrowly acute to acuminate, persistent, scabrous on the slightly excurrent keel, the first 0.8 to 1 mm. long, about 0.4 mm. wide, the second 1.2 to 1.5 mm. long, about 0.4 mm. wide. Lemmas linear-oblong, obtuse to subtruncate, loosely imbricate, sometimes scabrous on the keel, 1 to 1.8 mm. long, about 0.8 mm. wide, the conspicuous lateral nerves and the usually excurrent keel tending to appear parallel. Paleas as long as the lemmas and falling with them, hyaline, evenly convex on the back, ciliate (cilia 0.4 to 0.8 mm. long). Grains ellipsoidal, translucent, smooth, reddish-brown, about 0.5 mm. long and 0.1 mm. wide.

On sandy and disturbed soil on the coastal plain of the Gulf States, Mexico, Central America and the West Indies; less common in the interior. Map V, p. 44.

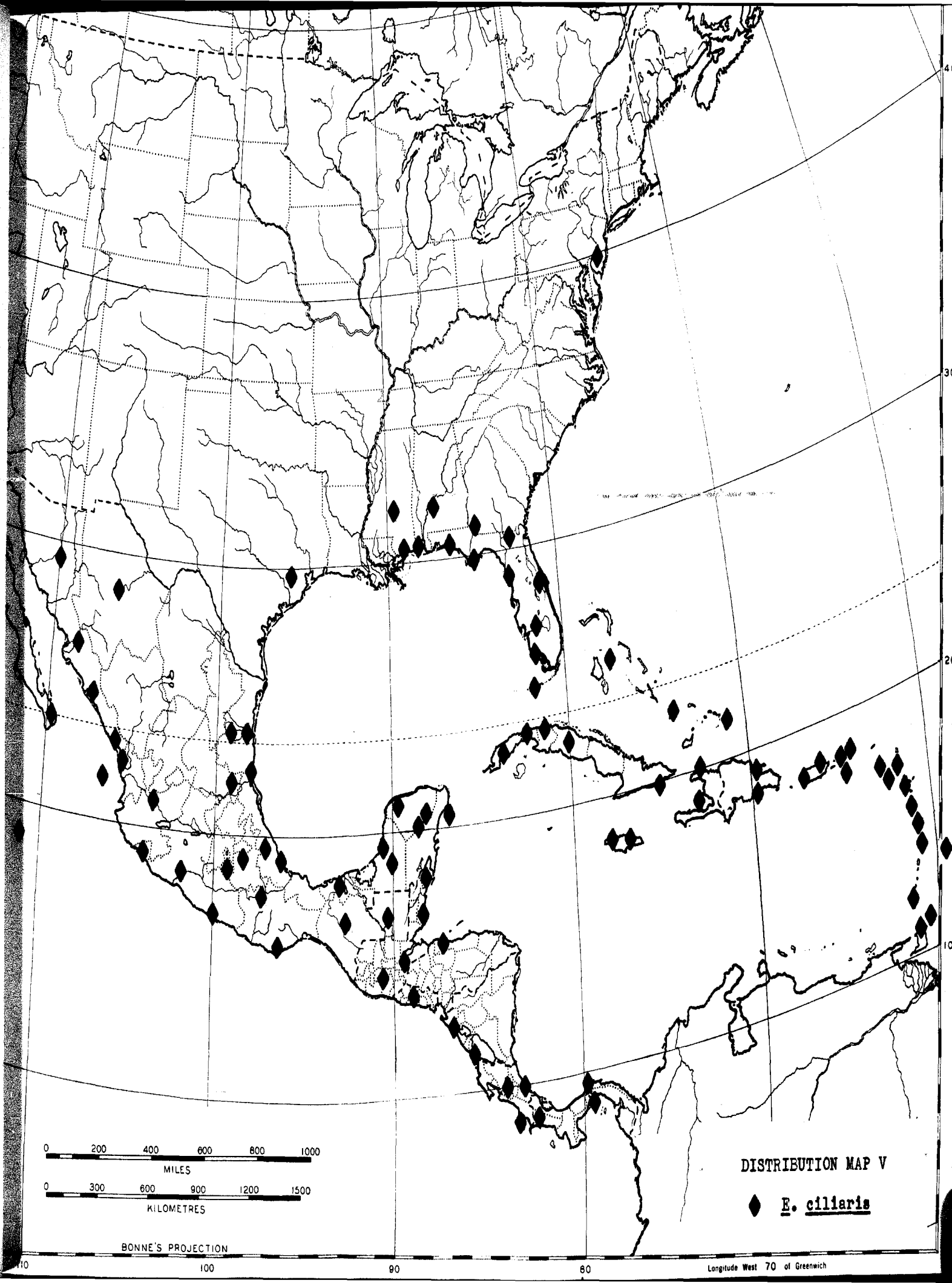
UNITED STATES: New Jersey: Ballast at Camden, C. L. Pollard, Sept. 22, 1897 (US). Georgia: Bainbridge, Curtiss 3493 [1/] (F, GH, NY, US). Florida: De Funiak Springs, Combs 462 (US); Quincy, Combs 431 (US); Lake City, Combs & Rolfs 170 (US); Apalachicola, Biltmore Herb. 3890a (GH, MO, US); Cedar Key, Combs 765 (US); Titusville, Swallen 143 (US); Bartow, Combs 1208 (US); Marco, Standley 12745 (US); Key West, Hitchcock Fl. Pl. 622 (US). Alabama: Selma, R. S. Cocks, October 1919 (US); Mobile Co. C. Mohr, 1888 (US). Mississippi: Taylorville, S. M. Tracy, Aug. 21, 1903 (US); Ocean Springs, Tracy 4680 (F, GH, MICH, MO, US). Texas: Waller Co., Throw 4 (US).

MEXICO: Baja California: Miraflores, Purpus 291 (US). Sonora: Alamos, Rose, Standley & Russell 12701 (NY, US). Sinaloa: Fuerte, Rose, Standley & Russell 13493 (US); Culiacan, Rose, Standley & Russell 14866 (US); Mazatlan, Rose, Standley & Russell 14056 (US). Nayarit: Acoponeta, Rose 3135 (US); María Madre Island, Ferris 5641 (US); Socorro Island, Howell 8381 (GH, US). Jalisco: Guadalajara, Pringle 1851 (F, GH, MSC, NY, US). Colima: Caldras, Hitchcock 7015 (US). Guerrero: Balsas, Hitchcock 6803 (US); Acapulco, Edw. Palmer 39 of 1894-95 (F, GH, NY, US). Oaxaca: Tomellin, Hitchcock 6230 (US); Pochutla, Liebmann 544 (US). Chiapas: Villa Flores, Archer 3936 (US). Yucatán: Chichen Itzá, Swallen 2390 (US); Mérida, Schott 20 (F, US);

1/ Some of the collections of Curtiss 3493 are from Pease Creek, Georgia and others are from Bainbridge, Georgia.

Peto, Swallen 2708 (MICH, US); Tancah, Swallen 2832 (MICH, US); San Miguel, Cozumel Island, Swallen 2865 (US). Campeche: Champoton, Steere 1721 (MICH, US); Tuxpeña, Lundell 844 (GH, MICH, NY, TEX, US). Tabasco: San Juan Bautista, Rovirosa 645 (US). Vera Cruz: Jalapa, Hitchcock 6635 (US); Vera Cruz, Müller 2171 (NY, US). Tamaulipas: Victoria, Edw. Palmer 481 of 1907 (F, GH, MICH, NY, US); Chamal, Swallen 1643 (US); Tampico, Hitchcock 5791 (US). Chihuahua: Edw. Palmer, 1886 (US). San Luis Potosí: Rascón, Purpus 5424 (F, GH, NY, US). Morelos: Yautepec, Pringle 11223 (F, GH, NY, US). Puebla: Puebla, Nicolás 21 (US). CENTRAL AMERICA: British Honduras: Stann Creek, Schipp 888 (MICH, NY); San Antonio, Corozal, Lundell 4954 (MICH, NY, US). Guatemala: La Libertad, Petén Dist., Lundell 2641 (GH, MICH, US); Zacapa, Pittier 1756 (US); San Felipe, Kellerman 5589 (US); Guatemala City, Hitchcock 9070 (US). Honduras: Tela, Standley 53027 (F, US). El Salvador: San Salvador, Calderón 496 (NY, US). Nicaragua: Corinto, Hitchcock 8623 (US); San Juan del Sur, Hitchcock 8588 (US). Costa Rica: San José, Hitchcock 8444 (US); Port Limón, Hitchcock 8420 (US); Santo Domingo de Golfo Dulce, Tonduz 10025 (US). Panamá: Colón, Rose 22068 (GH, US); Balboa, Standley 26112 (US); David, Hitchcock 8373 (US); Point Chamé, Hitchcock 8161 (US). WEST INDIES: Bahamas: New Providence, Nassau, Curtiss 76 (F, GH, NY, US); Spring Point, Acklin, Brace 4242 (F, NY, US); The Wells, Grand Turk, C. F. & C. M. Millspaugh 9339 p.p. (F, GH, US). Cuba: Cuatro Caminos, Mariel, Prov. Pinar del Río, Ekman 12923 (US); Puertas Grandes, Prov. Habana, León 281 (US); Matanzas, Prov. Matanzas, Palmer & Riley 13 (US);

Pitajones, Prov. Santa Clara, Shafer 12187 (F, NY, US); Conde Beach, Guantánamo Bay, Prov. Oriente, Britton 2139 (NY, US). Jamaica: Montego Bay, Maxon & Kilip 1695 (F, GH, US); Kingston, Orcutt 3959 (GH, MICH, POM). Hispaniola: Haiti: Jean Rabel, E. C. & G. M. Leonard 13798 (US); Anse Galette, Gonave Island, Leonard 3035 (US); Dominican Republic: Sánchez, Samaná Peninsula, Abbott 1115 (US); Santo Domingo, Ekman H11414 (US). Puerto Rico: Mayagüez, Chase 6285 (NY, US); San Juan, Bro. Hioram 355 (US). Virgin Islands: Virgin Gorda, Britton & Fishlock 1075 (NY, US); Tórtola, Britton & Shafer 700 (NY, US); St. Thomas, Hitchcock 16297 (US); St. Croix, Ricksecker 33 (F, GH, NY, US). Leeward Islands: St. Kitts, Hitchcock 16370 (US); Antigua, Box 30 (US); Plymouth, Monserrat, Shafer 19 (F, NY, US); Guadeloupe, Duss 2707 (NY, US); Dominica, J. Jones 18 (US); St. Pierre, Martinique, Duss 4024 (F, NY, US). Windward Islands: St. Lucia, Kemp 34 (US); Barbados, Hitchcock 16524 (US); St. Georges, Grenada, W. E. Broadway, Oct. 20, 1904 (US). Tobago: Scarboro, Hitchcock 10202 (US). Trinidad: Port au Spain, Hitchcock 9942 (US).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KILOMETRES
BONNE'S PROJECTION
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Longitude West 70 of Greenwich
DISTRIBUTION MAP V
E. ciliaris

(2) Subsection Capillares

A. Sheaths glabrous or only with a few hairs at the apex of or down the margins

B. Panicle narrowly oblong, usually interrupted; panicle branches closely ascending or appressed, densely flowered

10. E. glomerata, p. 44.

B. Panicle broadly oblong or narrow ovoid; panicle branches spreading

12. E. Frankii, p. 50.

A. Sheaths, at least the lower, papillose-hispid at least on the margins

B. Panicle large, narrowly ovoid; lemmas narrowly ovate-lanceolate; sheaths at the apex of and down the margins and on the collar only scattered papillose-hispid

11. E. capillaris p. 47.

B. Panicle small, oblong; lemmas broadly ovate and rather abruptly acuminate; sheaths and blades densely papillose-hispid

13. E. Pringlei, p. 53.

10. Eragrostis glomerata (Walt.) L. H. Dewey

Poa glomerata Walt., Fl. Carol. 80. 1788. TYPE: Walter (BM), collected in South Carolina. Interpretation based on the original description and that of Dewey in 1894.

Poa aturensis H. B. K., Nov. Gen. & Sp. 1: 161. 1816. TYPE: Humboldt & Bonpland in 1801 (P), collected in humid woods along the Orinoco River near the Cataract of Atures, Venezuela. In the National Herbarium there is a fragment of the type specimen.

Poa conferta Ell., Bot. S. C. & Ga. 1: 158. 1816. Based on Poa glomerata Walt. Elliott changes the specific epithet because he says that it is not the "Poa glomerata of Linnaeus." There is no such Linnaean species.

Megastachya aturensis (H. B. K.) Roem & Schult., Syst. Veg. 2: 587. 1817.

Megastachya glomerata (Walt.) Schult., Mant. 2: 327. 1824.

Poa Walteri Kunth, Rév. Gram. 1: 116. 1829. Based on Poa glomerata Walt. Kunth gives no reason for changing the specific epithet.

Eragrostis conferta (Ell.) Trin. in Mém. Acad. St. Pétersb. Sér. VI. Sci. Math. Phys. Nat. 1: 409. 1830.

Eragrostis aturensis (H. B. K.) Trin. ex. Steud., Nom. Bot. Ed. II. 1: 562. 1840.

Airopsis jubata Griseb. in Abh. Ges. Wiss. Göttingen 24: 292. 1879. TYPE: Lorentz & Hieronymus 966 (Griseb.), collected in Argentina. In the National Herbarium there is a fragment of the type specimen.

Eragrostis pallida Vasey in Contr. U. S. Nat. Herb. 1: 285. 1893. TYPE: Edw. Palmer 1268 (US 1,749,579), collected Jan. 9 to Feb. 6, 1891 at Colima, Colima, Mexico.

Eragrostis glomerata (Walt.) L. H. Dewey in Contr. U. S. Nat. Herb. 2: 543. 1894.

Annual. Culms erect to ascending, branching at the base and above, sometimes geniculate at the lower nodes, somewhat stout, 20 to 100 (40 to 70) cm. tall. Sheaths five- to seventenths the length of the internodes, usually rounded on the back, glabrous or rarely with a few hairs at the apex of

the margins. Ligule an erose membrane about 0.25 mm. long. Blades flat, attenuate, glabrous below, scabrous above, 15 to 25 cm. long, about 5 mm. wide. Panicles dense, contracted, sometimes interupted, oblong to narrowly ovoid, 15 to 55 (20 to 40) cm. long, 0.5 to 8 (2 to 4) cm. wide, the branches appressed to ascending, rarely spreading, slender, sometimes flexuous, much branched, densely floriferous to the base, 8 to 15 cm. long, the axils glabrous. Pedicels slender, sometimes flexuous, scabrous to glabrous, 1 to 2 mm. long. Spikelets ovate to linear, compressed, light green to straw-colored, 2 to 3 mm. long, 0.8 to 1.2 mm. wide, 4- to 8- (6-) flowered, the rachilla disarticulating. Glumes hyaline, ovate, acute, the first sometimes acuminate, glabrous, compressed and keeled, sometimes scabrous on the keel, the first about 0.8 mm. long and 0.6 mm. wide, the second about 1 mm. long and 0.4 mm. wide. Lemmas ovate, acute to obtuse, compressed and keeled, loosely imbricate, usually glabrous, sometimes scabrous on the keel, about 1.4 mm. long and 0.8 mm. wide, with conspicuous lateral nerves. Paleas hyaline, from eight-tenths to as long as the lemmas, somewhat persistent, convex on the back, the keels glabrous or scabrous. Grains ovoid to ellipsoidal, reddish-brown, translucent, smooth, about 0.8 mm. long and 0.2 mm. wide.

Sandy river bottoms and other low ground in the Gulf States, southern Mexico, northern Central America and in Trinidad. Map VI, p. 60.

UNITED STATES: Missouri: Frank in 1837 (NY). Arkansas: Arkansas River below Palarm Creek, Pulaski Co., Demaree 8711 (GH, MO); Fulton, Bush 929 (MO, US); Ozmont, Demaree 13700 (MO). Texas: Marshall, J. F. Riggs, Nov. 1884 (US). Louisiana: Alden Bridge, Trelease, June 30, 1898 (MO);

Mer Rouge, Bush 380 (MO); East Baton Rouge, J. F. Joor, July 14, 1885 (MO); Lake Charles, Mackenzie 449 (MO, WYO). Mississippi: Bakersville, Eggert 143 (US); Agricultural College, Oktibbeha Co., Pollard 1277 (F, GH, MO, POM, US); Westfield, Tracy 7452 (F, GH, MO, MSC, US). Alabama: Mobile, Curtiss 6510 (F, GH, MO, US); Selma, G. McCarthy, Aug. 1888 (US). Florida: Apalachicola River, Curtiss 3497 (F, GH, MO, US). MEXICO: Colima: Colima, Edw. Palmer 1268 of 1891 (GH, MSC, NY, US). Morelos: Cuernavaca, Pringle 6605 (CAN, F, GH, MSC, NY, US). Guerrero: Santo Tomás, Mexia 8919 (F, NY, US). Vera Cruz: Remulatero, Purpus 8696 (GH, NY, US); San Juan Evangelista, Archer 3943 (US). CENTRAL AMERICA: Guatemala: El Rancho, Dept. Progreso, Standley 68994 (F); Quiriguá, Weatherwax 49 (US). Honduras: Siguatepeque, Yunker, Dawson & Youse 5797 p. p. (NY). El Salvador: Finca Chilata, Dept. Sonsonante, Standley 19305 (GH, US); San Salvador, Standley 23289 (GH, NY, US). WEST INDIES: Trinidad: Port of Spain, Hitchcock 10319 (US); San Fernando, Hitchcock 10110 [1/] (GH, US).

11. Eragrostis capillaris (L.) Nees

Poa capillaris L., Sp. Pl. 68. 1753. TYPE: Kalm (LINN), collected in "Virginia and Canada." Interpreted from the description.

Aira capillacea Lam., Tabl. Encyl. 1: 177. 1791. TYPE: Fraser (Lam.), collected in Carolina. In the National Herbarium there is a fragment of the type specimen.

Poa tenuis Ell., Bot. S. C. & Ga. 1: 156. 1816. TYPE: Moulins (Ell.), collected at Greenville, South Carolina. Interpreted from the description and labeled specimens in the Torrey Herbarium.

1/ Amer. Gr. Nat. Herb. 680.

Poa rubra Willd. ex Spreng., Syst. Veg. 1: 340. 1825, (as synonym of Poa capillaris L.)

Eragrostis capillaris (L.) Nees, Agrost. Bras. 505. 1829.

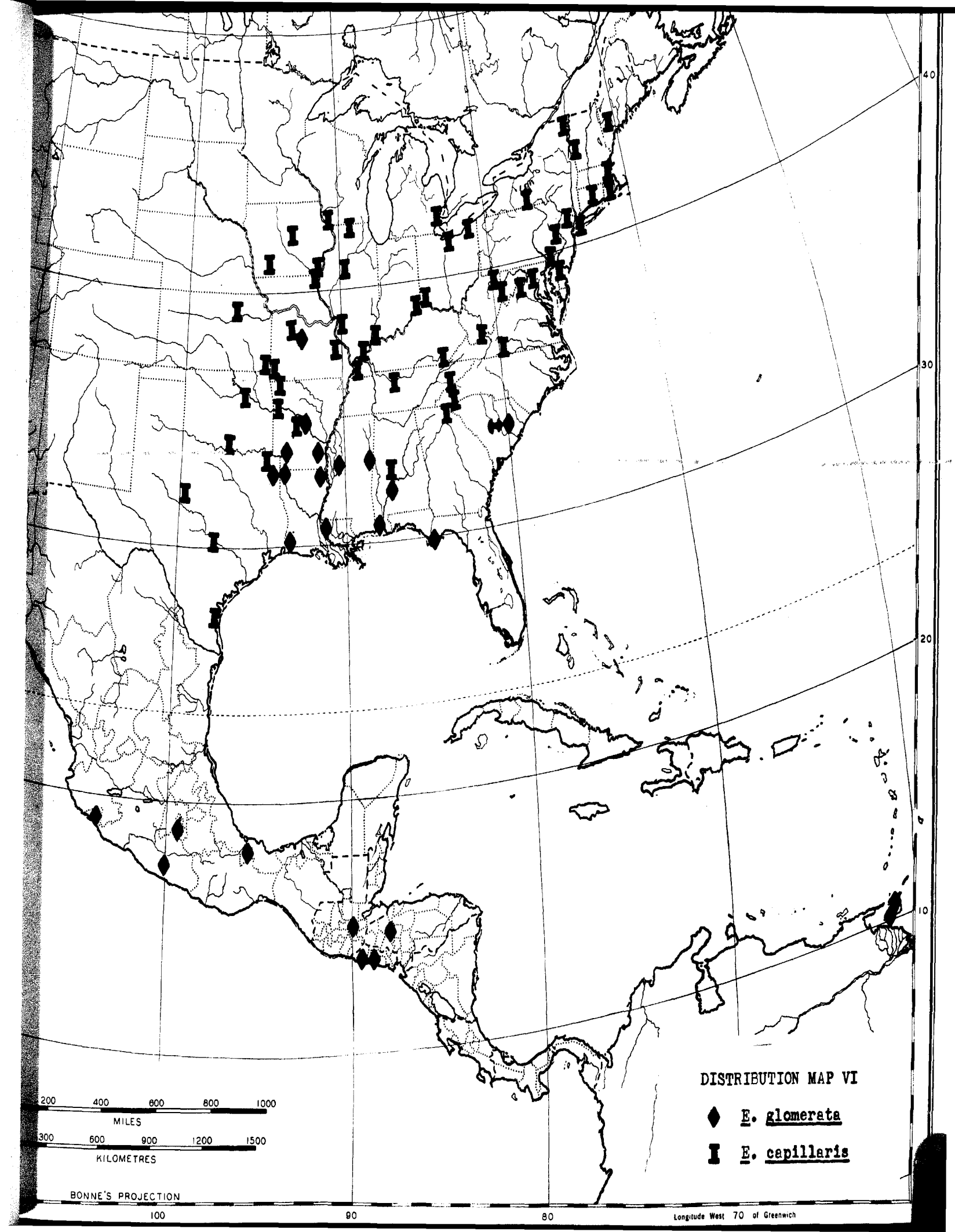
Eragrostis tenuis (Ell.) Steud., Syn. Pl. Glum. 1: 273. 1854.

Eragrostis pilosa var. capillaris (L.) Kuntze, Rev. Gen. Pl. 3: 2: 351. 1898.

Annual. Culms tufted, erect or ascending, branching at the base, 25 to 60 (40 to 50) cm. tall. Sheaths keeled, overlapping, hispid, commonly papillose-hispid at the apex of and down the margins and part way around the collar. Ligule a dense row of white hairs about 0.25 mm. long. Blades mostly flat, sometimes involute, particularly towards the tip, glabrous below, scabrous and scattered papillose-hispid above, 15 to 30 cm. long, 2 to 4 mm. wide. Panicles ovoid, open, 15 to 40 cm. long, 9 to 25 cm. wide, the rachis scabrous towards the tip, the branches capillary, ascending to spreading, scabrous, 5 to 15 cm. long, the axils glabrous. Pedicels capillary, ascending to spreading, scabrous, 5 to 16 mm. long. Spikelets lanceolate to ovate, compressed, dark to light green to plumbeous, about 2 mm. long and 1 mm. wide, 2- to 5-flowered, the rachilla not disarticulating. Glumes usually acuminate, hyaline, the first about 1.2 mm. long and 0.4 mm. wide, the second 1.25 to 1.4 mm. long, about 0.5 mm. wide. Lemmas acute, loosely imbricate, sometimes puberulent on the tip, scabrous on the keel, about 1.5 mm. long and 1 mm. wide, with inconspicuous lateral nerves. Paleas about one-half the length of the lemmas, persistent, ciliolate on the keels, hyaline, somewhat convex on the back. Grains short cylindric, striate, translucent, reddish-brown, about 0.6 mm. long and 0.4 mm. wide.

In dry ground in woods and fields from Maine to Iowa south to Tennessee and Texas. Map VI, p. 50.

UNITED STATES: Maine: Gilbertsville, Parlin 2037 (GH, US). Vermont: West Rutland, J. L. Kirk, Sept. 5, 1912 (MO). Massachusetts: Cambridge, Pl. Exsicc. Gray, 509 (CAN, F, GM, MICH, MO, OKLA, POM, US, WYO). Connecticut: South Glastonbury, F. Wilson 94 (US); East Haven, C. A. Weatherby 3588 (US). Rhode Island: J. F. Collins, Sept. 25, 1926 (US). New York: Bluff Point, Sartwell (MO); Montour, Wiegand 7554 (GH, MO); Garden City, Ferguson 671 (US). New Jersey: Newfoundland, Mackenzie 3754 (MO). Pennsylvania: Easton, T. C. Porter, Aug. 22, 1895 (US); Rohrerstown, Heller 4794 (GH, US). Ohio: Sanduskey, A. J. Pieters, Sept. 3, 1898 (MICH). Painesville, W. C. Werner, Sept. 2, 1885 (US); New Vienna, Ingold 6907 (US). Indiana: Bascom, W. L. Hahn, Aug. 1906 (US); Mt. Vernon, Deam 37704 (US). Illinois: Harlem, Chase 1667 (US); Peoria, McDonald 63 1/2 (US); St. Clair Co., Eggert 201 (US); Golconda, Bock & Chase 92 (US). Michigan: Detroit, Farwell (US). Wisconsin: Potosi, T. J. Hale, 1861 (US). Iowa: Steamboat Rock, Pammel, Hume & Fitz 1406 (MO); Mt. Pleasant, J. H. Mills, 1894 (US); Winterset, Carver 253 (GH, MO, WYO). Missouri: Medill, Bush 9172 (MO); Webb City, Palmer 3138 (MO); Morgan Co., Bush 13949 (MO); Fredrickstown, Steyermark 8598 (MO); Noel, Bush 5260 (MO, US). Kansas: Riley, Pl. Kan. 927 (GH, MO, US, WYO); Baxter Springs, A. S. Hitchcock, Aug. 1892 (MO). Delaware: Milford, Commons 167 (US). Maryland: Cabin John, Chase 2629 (US). Virginia: Luray, Chase 9955 (US); Bedford Co., Curtiss 9521 (MO). West Virginia: Seneca, Berkley 40 (US); Pendleton Co., Allard 3601 (GH, US); Spanishburg, Strausbaugh 325 (US). North Carolina: Waynesville, Standley 5415 (US). Kentucky: Clinton, MacFarland 180 (MO); Poor Fork Post Office, Kearney 263 (US). Tennessee: Nashville, A. Gattinger, 1882 (US); Wolf Creek, Cocke Co.,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Longitude West 70 of Greenwich
DISTRIBUTION MAP VI
E. glomerata
E. capillaris

Kearney 958 (US). Georgia: Yonah Mt., White Co., J. K. Small, Sept. 4, 1894 (F). Alabama: Marion Junction, C. Mohr, Sept. 1893 (US). Arkansas: Carroll Co., Bush 15832 (MO); Van Buren, Demaree 15296 (MO); Hot Springs, Demaree 15801 (MO, US). Texas: Clarksville, Plank 14 (US); Baird, G. W. Letterman, 1882 (TEX); Austin, Tharp 59 (TEX); Corpus Christi, Heller 1803 (MO). Oklahoma: Sapulpa, Bush 821 (MO); Lake Murray State Park, Harvey 1840 (Harv.).

12. Eragrostis Frankii C. A. Meyer

Poa parviflora Pursh err. applic. Nutt., Gen. N. Amer. Pl. 67. 1818, not R. Br. 1810. In the Herbarium of the Philadephia Academy of Natural Sciences there is a specimen of Eragrostis Frankii with a Nuttall label which reads in part "Poa parviflora Pursh not Poa striata Lam." Nuttall does not give any authority in his publication.

Poa micrantha Schult., Mant. 2: 305. 1824, not Eragrostis micrantha Hack. 1895. Based on Poa parviflora Pursh err. applic. Nutt.

Eragrostis Frankii C. A. Meyer ex Steud., Syn. Pl. Glum. 1: 273. 1854. TYPE: Frank (P), collected in 1935 at Miami, Ohio. In the National Herbarium there is a fragment of the type specimen. Frank distributed this as "Poa tenella L."

Eragrostis erythrogona Nees apud Steud., Syn. Pl. Glum. 1: 273. 1854. TYPE; Drummond, collected at St. Louis, Missouri. This was distributed as "Poa A" by Drummond. In the National Herbarium there is a fragment of a Drummond collection in the Trinius Herbarium. This was originally from the Nees Herbarium and is labeled "Eragrostis erythrogynea N. E." and is probably a specimen of the type collection.

Eragrostis capillaris var. Frankii (C. A. Mayer) Farw. in Rept. Mich. Acad. Sci. 17: 182. 1916.

Eragrostis Frankii var. brevipes Fassett in Rhodora 34: 95. 1932. TYPE: N. C. Fassett 12899 (WIS), collected on Sept. 9, 1930 on mud flats in the Mississippi River bottoms at Glenhaven, Grant Co., Wisconsin. In the National Herbarium there is a specimen of the type collection.

Annual. Culms tufted, erect or ascending, decumbent and branched at the base, 10 to 55 (15 to 25) cm. tall. Sheaths shorter than the internodes, heavily keeled, glabrous on the back, pilose at the apex of and sometimes down the margins. Ligule a dense row of white hairs about 0.6 mm. long. Blades flat, sometimes folded or loosely involute, glabrous below, scabrous with a row of supraligular hairs above, 5 to 10 cm. long, 1 to 2 mm. wide. Panicles narrowly to broadly oblong, 9 to 12 cm. long, 2.5 to 6 cm. wide, the rachis glabrous, the branches capillary, flexuous, ascending to spreading, scabrous, 3 to 7 cm. long, the axils glabrous. Pedicels ascending to spreading, capillary, flexuous, scabrous, 2 to 5 mm. long. Spikelets broadly ovate, green to grayish-green, 1.8 to 2.5 mm. long, 1 to 1.2 mm. wide, 4- to 6-flowered, the rachilla not disarticulating. Glumes acuminate-lanceolate to acute-ovate scabrous to glabrous on the keel, the first 1 to 1.2 mm. long, about 0.4 mm. wide, the second sometimes three-nerved, 1.2 to 1.6 mm. long, about 0.5 mm. wide. Lemmas ovate, acute, compressed and keeled, puberulent on the tip, very loosely imbricate, about 1.4 mm. long and 0.8 mm. wide, with conspicuous lateral nerves. Paleas about three-fourths the length of the lemmas, persistent, hyaline, ciliolate on the keels, convex on the back. Grains cylindric, striate, reddish-brown, translucent, about 0.8 mm. long and 0.4 mm. wide.

In low ground along streams from Vermont to southeastern Minnesota south to western North Carolina and eastern Oklahoma. Map VII, p. 55.

CANADA: **Ontario:** St. Catherine, Herb. Geol. Sur. Can 20236 (F).

UNITED STATES: **Vermont:** Westminster, R. J. Eaton & L. Griscom, Sept. 4, 1931 (US). **Connecticut:** Windsor, Pl. Exsicc. Gray. 120 (CAN, GH, MICH, MO, TEX, US, WYO). **New York:** Shushan, Dobbin 2 (US); Ithaca, Eames & Randolph 11338 (GH, MO); Clove, Standley & Bollman 12186 (US). **New Jersey:** Phillipsburg, T. C. Porter, Aug. 31, 1898 (MO). **Pennsylvania:** Lancaster, A. A. Heller, Sept. 11, 1892 (MO); Niles, R. H. Ingraham, Sept. 27, 1894 (US); Champaign Co., Werner 6813 (US); Hocking Co., W. A. & K. F. Kellerman 6786 (US); Cincinnati, C. G. LLoyd 3495 (US). **Indiana:** Flint, Deam 51028 (F, US); Mill Creek, Deam 34834 (US); Newcastle, Pl. Exsicc. Gray. 816 (CAN, F, GH, MICH, MO, US, WYO); Crawford Co., Friesner 8164 (POM, TEX, WYO). **Illinois:** Thatcher's Park, Desplaines Valley, Chase 1208 (MO, US); Wady Petra, W. H. Chase 188 (GH, MICH, MSC, US); Windsor, Gleason 1009 (US); Mount Carmel, Bock & Chase 49 (US); Cairo, Bock & Chase 156 (US). **Michigan:** Grand Rapids, E. J. Cole, Aug. 26, 1896 (MICH); Ann Arbor, Hermann 9329 (F, US); Texas Twp., Kalamazoo Co., Hanes 588 (US). **Wisconsin:** Oshkosh, G. Random, July 17, 1896 (US); LaCrosse, T. J. Hale, 1861 (US); Prairie du Chiew, Fassett 4162 (MICH). **Minnesota:** Fort Snelling, Mearns 792 (US). **Iowa:** Emmett Co., Pammel & Cratty 866 (MO, US); Allamakee Co., Hayden 7068 (US); Des Moines, Pammel 655 (MO, NY); Mount Pleasant, J. H. Mills, 1894 (US). **Missouri:** Livonia, Bush 7786 (MO); Warrensburg, Stigall 62 (MO); Hematite, H. Eggert, July 17, 1893 (MO); Mill Spring, Steyermark 21134 (MO, US); Noel, Palmer 4114 (MO). **Kansas:**

Atchison Co., Pl. Kan 977 (GH, MO, US, WYO). Maryland: Cabin John, Chase 2630 (F, US). Virginia: Luray, Chase 9958 (US); Portsmouth, Noyes 39 (US). West Virginia: Huttonsville, Greenman 83 (F, GH, US); White Sulphur Springs, Berkley 1246 (MO). North Carolina: Magnetic City, A. G. Weatherby 13 (US). Kentucky: Louisville, C. Mohr, Aug. 1854 (US); Poor Fork Post Office, Kearney 150 (F, GH, MO, US). Tennessee: Nashville, Gattinger 3495 (US); Mascot, J. K. Underwood 4554 (US); Orchard Knob, Canby 227 (MO). Alabama: Scottsboro, Chase 4500 (US). Mississippi: De Soto Co., F. A. Warren, Oct. 22, 1929 (US); Agricultural College, Oktibbeha Co., Pollard 1313 (F, GH, MO, POM, US). Arkansas: Benton Co., Plank 70 (US); Fulton, Bush 981 (MO, US). Texas: Arroll ?, Bauer 923 (F). New Mexico: Fendler 933 (GH, MO).

13. Eragrostis Pringlei Mattei

Eragrostis pusilla Scribn. ex Beal, Grasses N. Amer. 2: 481. Nov. 11, 1896, not Hack. Sept. 1896. TYPE: C. G. Pringle 2327 (MSC), collected on Oct. 28, 1889 on dry rocky hills near Guadalajara, Mexico.

Eragrostis Pringlei Mattei in Contr. Biol. veg. R. Ist. Bot. Palermo 4: 241. 1909. Based on E. pusilla Scribn.

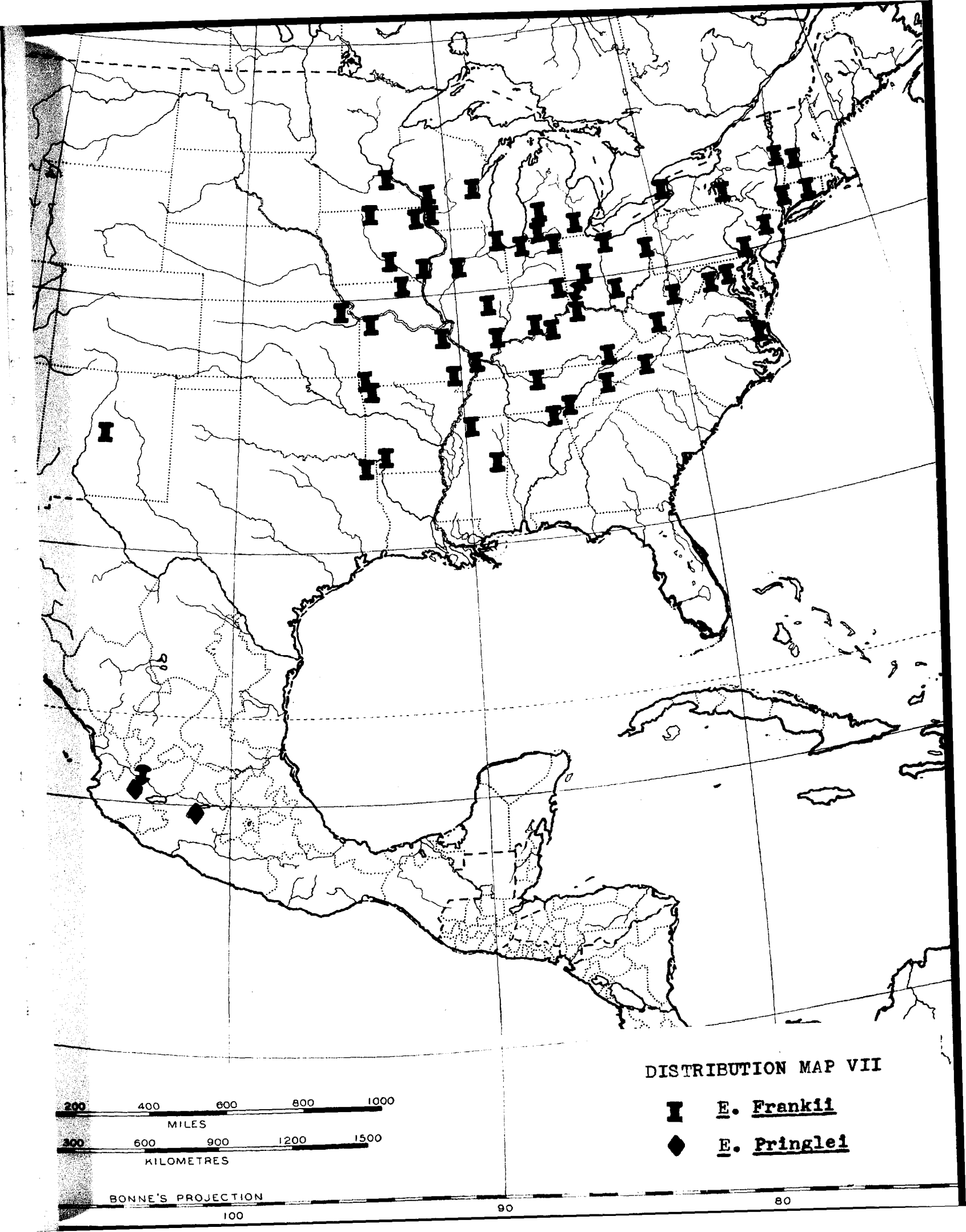
Eragrostis Scribneriana Hitchc. in Contr. U. S. Nat. Herb. 17: 361. 1913. Based on E. pusilla Scribn.

Annual. Culms in small tufts or solitary, branching at the base, erect to decumbent-ascending, 8 to 25 cm. tall. Sheaths densely hispid, sometimes papillose-hispid (particularly the lower), overlapping. Ligule a dense row of white hairs about 0.25 mm. long. Blades flat

or folded, hispid, sometimes papillose-hispid on both surfaces, more densely so on the margins, 1.5 to 5 cm. long, 1.5 to 3 mm. wide. Panicles narrowly oblong, somewhat densely flowered, 5 to 8 cm. long, 1 to 2.2 cm. wide, the rachis scabrous towards the tip, the branches capillary, spreading, flexuous, somewhat scabrous, 0.8 to 1.2 cm. long, the basal ones sometimes distant, the axils pilose. Pedicels somewhat scabrous, spreading, a glandular ring at the midpoint, capillary, flexuous, 1.5 to 2 mm. long. Spikelets broadly oblong, green to dark reddish-brown, 1.8 to 3.5 mm. long, 0.8 to 1 mm. wide, 2- to 8- (2- to 4-) flowered, the rachilla not disarticulating. Glumes hyaline, usually acuminate, scabrous on the keel, compressed, the first about 0.8 mm. long and 0.4 mm. wide, the second sometimes narrowly ovate, acute, about 1 mm. long and 0.5 mm. wide. Lemmas broadly ovate, abruptly acuminate, loosely imbricate, rounded on the back, scabrous on the keel, about 1.2 mm. long and 0.8 mm. wide, with inconspicuous lateral nerves. Paleas six-tenths the length of the lemmas, persistent, hyaline, ciliolate on the keels, slightly convex on the back. Grains subspherical, translucent, reddish-brown, striate, about 0.2 mm. long and wide.

On dry rocky hills in western central Mexico. Map VII, p. 55.

MEXICO: Jalisco: Guadalajara, Pringle 2327 (CAN, F, GH, MSC, NY, US). Michoacán: Morelia, Arsène 5786 (US).


DISTRIBUTION MAP VII
E. Frankii
E. Pringlei
200 400 600 800 1000
MILES
300 600 900 1200 1500
KILOMETRES
BONNE'S PROJECTION
100
90
80

(3) Subsection Spectabiles

A. Panicles rather densely flowered, decompound; spikelets somewhat approximate, usually appressed to the branchlets, a few times wider than thick.

B. Plants with long irregularly-rectangular areas of glandular tissue on the rachis and panicle branches; never or only sparingly pilose on the sheaths at the apex of the margins and with very few or no supraligular hairs

C. Branches stiffly spreading; spikelets crowded on the branchlets, usually also appressed to them or only the pedicels appressed

14. E. curtipedicellata, p. 56.

C. Branches not stiffly spreading, but flexuous; spikelets somewhat distant, not crowded on the branchlets, pedicels usually spreading 15. E. Silveana, p. 57.

B. Plants without glandular areas; usually densely pilose on the sheaths at the apex of the margins and with a dense tuft of supraligular hairs 16. E. spectabilis, p. 59.

A. Panicles sparsely flowered, simply compound; spikelets distant; pedicels spreading, or if not the spikelets sessile; spikelets many times wider than thick

B. Spikelets sessile or subsessile, appressed

17. E. refracta, p. 63.

B. Spikelets with pedicels 1½ to 4 times as long as they are, stiffly spreading 18. E. Elliottii, p. 66.

14. Eragrostis curtipedicellata Buckl.

Eragrostis curtipedicellata Buckl. in Proc. Acad. Nat. Sci. Phila. 1862: 97. 1862. TYPE: S. B. Buckley (PH), collected in June in Northern Texas.

Eragrostis brevipedicellata A. Gray in Proc. Acad. Nat. Sci. Phila. 1862: 336. 1863, (as synonym of E. curtipedicellata Buckl.)

Eragrostis viscosa Scribn. in U. S. Dept. Agric. Div. Bot. Bull. 11: 51. pl. 7. 1898, not Trin. 1830. TYPE: J. G. Smith (US 1,768,944), collected on Aug. 2, 1897 at Midland, Texas.

Perennial. Culms tufted, viscid, stiffly erect, sometimes branched, 20 to 60 (35 to 45) cm. tall. Sheaths overlapping, pilose at the apex of and sometimes down the margins, frequently viscid. Ligule a dense row of white hairs about 0.25 mm. long. Blades folded or involute, glabrous below, scabrous and sometimes with a few supraligular hairs above, 5 to 20 (10) cm. long, 3.5 to 4.5 (4) mm. wide. Panicles oblong to ovoid, open, 30 to 45 cm. long, 10 to 25 cm. wide, the rachis scabrous and viscid, the branches stiffly ascending to spreading, floriferous to within 1 or 2 cm. of the base, scabrous and viscid, 3 to 15 cm. long, the axils pilose (frequently glabrous in depauperate specimens). Pedicels stiffly ascending to spreading, scabrous and viscid, about 0.5 mm. long. Spikelets linear to oblong, compressed, appressed to spreading, greenish- to brownish-tinged, 4 to 5 mm. long, 1 to 1.5 mm. wide, 4- to 10-flowered, the rachilla disarticulating. Glumes ovate, subacuminate, frequently scabrous on the keel, the first 1.25 to 1.5 mm. long, about 0.5 mm. wide, the second 1.75 to 2 mm. long, about 0.8 mm. wide. Lemmas acute, compressed, keeled, imbricate, scabrous on the keel and sometimes scabrellous on the back near

the tip, about 2 mm. long and 1 mm. wide, with conspicuous and sometimes double lateral nerves. Paleas hyaline, ciliolate on the keels, nearly as long as the lemmas, convex on the back below. Grains ellipsoidal, smooth, translucent, reddish-brown, about 1 mm. long and 0.25 mm. wide.

In sandy prairies, rocky and gravelly soil from south central Kansas to southwestern Arkansas, southwest to eastern New Mexico and extreme northeastern Mexico. Map VIII, p. 59.

UNITED STATES: Kansas: Clark Co., Carleton 519 (NY). Oklahoma: Alva, Stevens 701 (GH, MO, OKLA, US); Sapulpa, Bush 812 (GH, MO); Norman, A. H. VerVleet, June 17, 1921 (OKLA); Craterville Park, Wichita Mts., Swallen 999 (US); Davis, Emig 655 (MO, US). Arkansas: Fulton, Bush 1056 (MO). New Mexico: Tucumcari, C. Blake 12 (US); Causey, E. O. Wooton, Aug. 17, 1909 (US). Texas: Amarillo, Hitchcock 16181 (US); Jack Co., Tharp 2994 (TEX); Terrell, C. W. Warburton, May 7, 1904 (US); Stanton, Tharp 5910 (TEX); Bryan, Palmer 11730a (MO); Del Rio, Hitchcock 13626 (US); San Antonio, Swallen 1797 (US); Rio Grande, Griffiths 6461 1/ (US); Encinal, Griffiths 6383 1/ (US); Edinburg, Swallen 1085 1/ (US).
MEXICO: Coahuila: Don Martín Dam, Harvey 932 (US).

15. Eragrostis Silveana Swallen

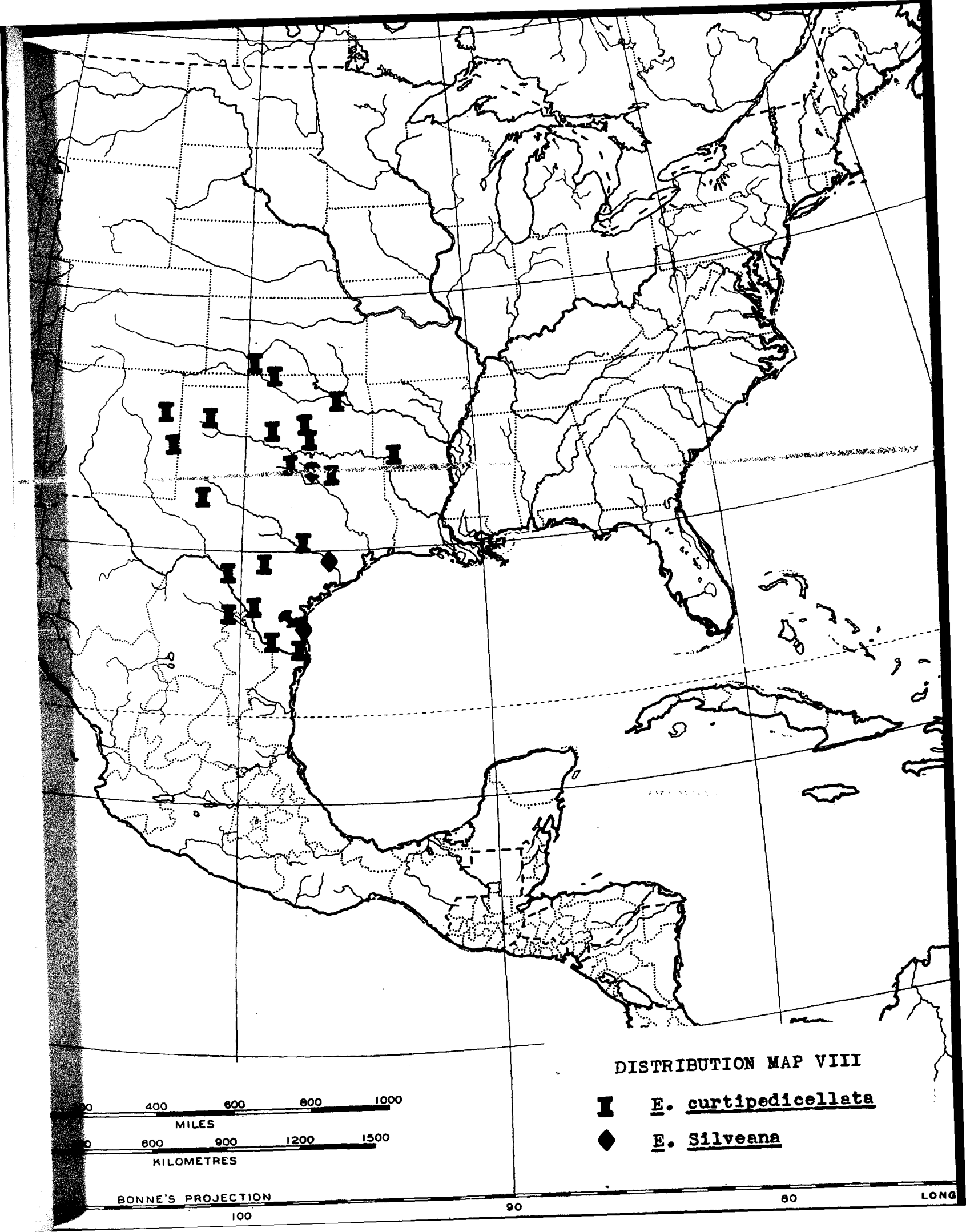
Eragrostis Silveana Swallen in Amer. Journ. Bot. 19: 438. f. 3. 1932. TYPE: W. A. Silveus 360 (US 1,501,596), collected on Oct. 1, 1931 along the railroad right of way near Taft, Texas.

1/ The small form which has glabrous axils and tends to be more viscid.

Perennial. Culms tufted, erect or ascending from a knotty rhizome, 45 to 60 cm. tall, viscid from long rectangular glandular areas. Sheaths overlapping, viscid, pilose at the apex of and down the margins, sometimes on the back. Ligule a dense row of white hairs about 0.25 mm. long. Blades flat to involute, glabrous, sometimes viscid below, scabrous above, 8 to 25 cm. long, 2 to 4 mm. wide. Panicles ovoid, open, 20 to 30 cm. long, about 15 cm. wide, the rachis scabrous and viscid, the branches ascending to spreading, slender, flexuous, viscid, 6 to 12 cm. long, the axils sparsely pilose to glabrous. Pedicels ascending to spreading, scabrous and viscid, 0.5 to 2 mm. long. Spikelets linear to ovate, compressed, more or less appressed to the branchlets, purplish-colored, 3.5 to 5 mm. long, about 1 mm. wide, 4- to 9-flowered, the rachilla not disarticulating. Glumes ovate, acute, scabrous on the keel, compressed, the first sometimes acuminate, about 1 mm. long and 0. 4 mm. wide, the second 1 to 1.2 mm. long, about 0.8 mm. wide. Lemmas ovate, acute to obtuse, glabrous to scabrous on the keel, compressed, imbricate, about 1.4 mm. long and 0.8 mm. wide, with conspicuous lateral nerves. Paleas as long as the lemmas and deciduous with them, hyaline, ciliolate on the keels, evenly convex on the back. Grains narrowly ovoid, smooth, light reddish-brown, translucent, about 0.6 mm. long and 0.35 mm. wide. Anthers about 0.25 mm. long.

On sandy prairies along the Gulf Coast of Texas. Map VIII, p. 59.

UNITED STATES: Texas: Colombus, San Antonio Herb. 1412 (US); Port Arthur, Silveus 452 (MICH, US); Taft, Silveus 360 (MICH, US).


DISTRIBUTION MAP VIII
E. curtipedicellata
E. Silveana
400
600
800
1000
MILES
600
900
1200
1500
KILOMETRES
BONNE'S PROJECTION
100
90
80
LONG

16. Eragrostis spectabilis (Pursh) Steud.

Poa amabilis L. err. applic. Walt., Fl. Carol. 80. 1788. From the description and Pursh's treatment.

Poa spectabilis Pursh, Fl. Amer. Sept. 1: 1914. Pursh cites Walter's treatment of Poa amabilis L. Interpreted from the description.

Megastachya spectabilis (Pursh) Roem. & Schult., Syst. Veg. 2: 589. 1817.

Poa hirsuta var. spectabilis (Pursh) Torr., Fl. North. & Mid. U. S. 1: 114. 1824.

? Eragrostis velutina Schrad. in Linnaea 12: 451. 1838. TYPE: Collected in Carolina. Interpreted from the description.

? Poa villosa Beyr. ex Schrad. in Linnaea 12: 451. 1838, (as a synonym of E. velutina Schrad.)

Eragrostis spectabilis (Pursh) Steud., Nom. Bot. Ed. II. 1: 564. 1840.

Erochloë amabilis (L. err. applic. Walt.) Raf. in Bull. Bot. Seringe 1: 221. 1830.

Erochloë spectabilis (Pursh) Raf. in Bull. Bot. Seringe 1: 221. 1830.

Eragrostis Geyeri Steud., Syn. Pl. Glum 1: 272. 1854. TYPE: Lenormand (P), collected in Illinois. In the National Herbarium there is a fragment of the type specimen. This was originally from the Geyer Herbarium and was distributed as Poa pectinacea.

Poa pectinacea Geyer ex Steud., Syn. Pl. Glum. 1: 272. 1854, (as synonym of E. Geyeri Steud.)

Eragrostis pectinacea var. spectabilis (Pursh) A. Gray, Man. Ed. II. 565. 1856.

Eragrostis spectabilis var. sparsihirsuta Farw. in Amer. Midl. Nat. 10: 306. 1927. LECTOTYPE: O. A. Farwell 5586 (Farw.), collected on Aug.

12, 1920 at Royal Oak, Michigan. Farwell cites no collection in the publication of this variety. In his herbarium he has marked as the type two of his own collections. These are numbers 5586 and 7156. Both agree with the description. I have chosen the former as the lectotype because it is a much better specimen.

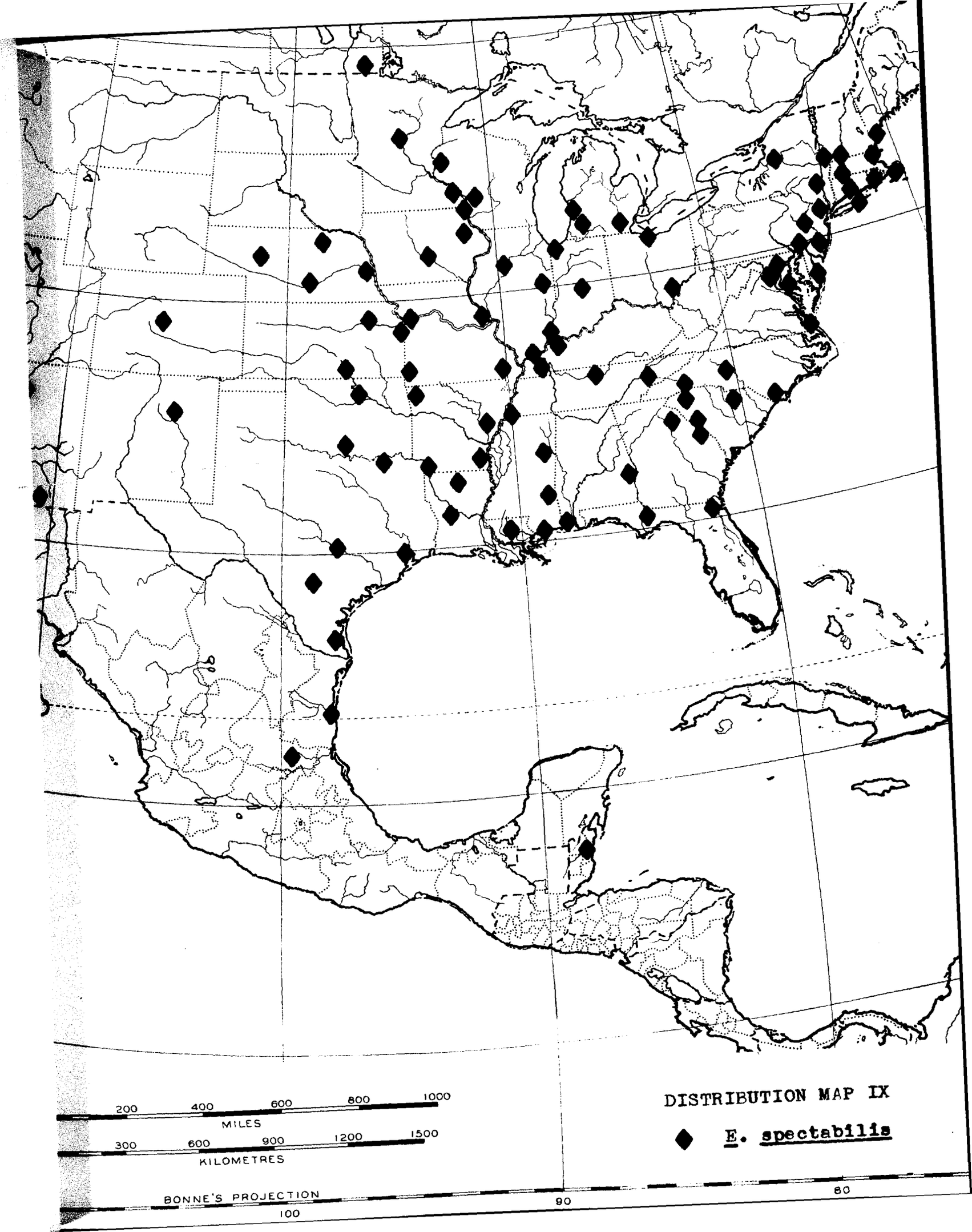
Perennial. Culms tufted, erect to widely spreading, 40 to 75 cm. tall, with a short and knotty rhizomatous base. Sheaths overlapping, usually keeled, usually densely papillose-hispid on the upper back, at the apex of and down the margins, sometimes appearing glabrous. Ligule a dense row of white hairs about 0.2 mm. long. Blades flat to involute on drying, attenuate, glabrous or sometimes scattered papillose-hispid below, scabrous and sometimes with a dense row of supraligular hairs above, 15 to 40 cm. long, 3 to 7 mm. wide. Panicles ovoid to oblong, open to somewhat dense, usually partly enclosed at the base, 25 to 45 cm. long, 15 to 30 cm. wide, the rachis scabrous, the branches stiffly ascending to reflexed, slender, very scabrous, 9 to 15 cm. long, sometimes with the branchlets twisted so that they all appear to come from one side, hispid in the axils. Pedicels ascending to spreading, capillary, very scabrous, usually shorter than the spikelets, 1 to 10 mm. long. Spikelets linear to linear-oblong, sometimes ovate, much compressed, purplish-colored, 5 to 7 mm. long, 1.5 to 2 mm. wide, 7- to 11-flowered, the rachilla disarticulating. Glumes ovate, acute, sometimes acuminate, scabrous on the keel, compressed, the first 1.4 to 2 mm. long, about 0.8 mm. wide, the second sometimes three-nerved, 1.6 to 2.2 mm. long, about 0.8 mm. wide. Lemmas ovate, acute, compressed, closely imbricate, scabrous on the tip of the keel, sometimes appressed puberulent on the back near the tip, 1.8 to 2.2 mm. long, about

1.2 mm. wide, with conspicuous lateral nerves. Paleas eight-tenths as long as to as long as the lemmas, conspicuously convex on the back, ciliolate on the keels, more or less indurate. Grains ellipsoidal, faintly if at all striate, reddish-brown, translucent, about 0.8 mm. long and 0.25 mm. wide.

In sandy and disturbed soil from Maine to Minnesota south to Texas and northern Florida and scattered in southwestern United States and in northeastern Mexico and British Honduras. Map IX, p. 63.

CANADA: Manitoba: Montagne, Herb. Geol. Surv. Can. 60303 (OKLA). UNITED STATES: Maine: Wells, Parlin & Fernald 947 (US). Vermont: Townshend, L. A. Wheeler 972 (US). Massachusetts: Winchester, Bartlett 702 (POM); Granville, F. C. Seymour 110 (GH, MO); Cape Cod, C. G. Pringle, Aug. 19, 1879 (US). Connecticut: Portland, F. Wilson 95 (US). Rhode Island: Wickford, C. F. Batchelder, Sept. 11, 1913 (NY). New York: Bernhard's Bay, House 20111 (NY); Thomson, House 24091 (NY); Stone Ridge, Whitney 4703 (NY); Southampton, St. John 2558 (GH, US); New Dorp, T. H. Kearney Jr., Aug. 27, 1894 (US). New Jersey: Morris Plains, Mackenzie 1613 (MO); South River, Mackenzie 3777 (MO); New Lisbon, Mac Elwee 940 (GH, MO, POM); Cape May, Grant 3195 (US). Pennsylvania: Easton, T. C. Porter, July 25, 1895 (US); West Chester, Redfield 9528 (MO). Ohio: Cedar Point, E. L. Moseley, Sept. 10, 1895 (US); Jackson Co., Drushel 10777 (NY). Indiana: Ross, Deam 32339 (US); Indianapolis, Friesner 8147 (POM, TEX, WYO); New Harmony, Deam 29145 (US). Illinois: Princeville, V. H. Chase 1262 (US); Urbana, Gates 2192 (US); Metropolis, Bock & Chase 109 (US). Michigan: Holten, C. D. McLouth, Aug. 15, 1899

(CAN); Kalamazoo, Harvey 583 (Harv.); Saline, Pl. Exsicc. Gray 817 (CAN, F, GH, MICH, MO, US, WYO). Wisconsin: St. Croix Falls, Fassett & Wilson 15485 (MO); Camp Douglas, Juneau Co., Mearns 742 (GH, US). Minnesota: Staples, Chandonet 5 (US); Kellogg, Fassett & Wilson 4183 (MO). Iowa: New Albin, Pammel 900 (F, GH, MO, US); Manchester, Ball 722 (GH, MO, US); Des Moines, Carver 309 (GH, MICH, MO, MSC, WYO). Nebraska: Chelsea, Clements 2828 (US); Thomas Co., Rydberg 1711 (GH, US); Weeping Water, Williams 3010 (US); Kearney, J. H. Holm, Aug. 1889 (US). Kansas: Manhatten, Hitchcock 3845 (US); Gardner, E. L. Johnson 907 (GH, MO, US); Wichita, Smyth 228 (US). Missouri: Winston, Steyermark 16096 (MO); Eolia, Davis 9041 (MO); Alba, Palmer 2852 (MO, US); Petis Co., Bush 13853 (MO); Williamsville, Steyermark 11189 (MO). Kentucky: Henderson, MacFarland & Anderson 328 (MO, US); Murray, Smith & Hodgdon 4054 (GH, US). Tennessee: Knoxville, Ruth 46 (MO, NY); LaVergne, Gattinger 3498 (F, MO, US); Normal, Moore 121 (US). Maryland: Perryville, MacElwee 1117 (GH, MO, WYO); Riverdale, Chase 2545 (F, US); Leonardtown, Hitchcock 7849 (US); Greenbackville, Shreve & Jones 1107 (US). Delaware: Wilmington, A. Commons, Aug. 25, 1897 (US); Bethany Beach, Leonard 16279 (US). Virginia: Centerville, Allard 47 (F, MO); Cape Henry, Chase 2944 (US). North Carolina: Biltmore, Biltmore Herb. 384b (F, GH, MICH, MO, US); Rowan Co., J. K. Small, Aug. 18-27, 1894 (US); Wilmington, A. S. Hitchcock, Aug. 1905 (US). South Carolina: Bethune, Godfrey 8015 (GH, NY); Troy to McCormick, Davis 2015 (MO, POM); Pickens Co., A. P. Anderson 1363 (US). Georgia: Athens, Weatherwax 15 (US); Thomson, Barlett 1072 (MICH, US). Florida: Jacksonville, Curtiss 5792 (F, GH, MO, MSC, POM, US, WYO); Aspalga, Biltmore Herb. 5725 (MO). Alabama:


200 400 600 800 1000
MILES
300 600 900 1200 1500
KILOMETRES
BONNE'S PROJECTION
100
90
80
DISTRIBUTION MAP IX
E. spectabilis

Auburn, Earle & Baker 1514 (F, US); Spring Hill, Langlois 66 (US). Mississippi: Starkville, Kearney 94 (GH, US); Waynesboro Kearney 189 (MO, US); Biloxi, Tracy 3770 (US). Louisiana: Calhoun, Ball 43 (US); Natchitoches, Palmer 8877 (MO); Covington, Arsène 11108 (US). Arkansas: Fayettesville, Hitchcock 16073 (US); Brinkley, Demaree 10878 (MO); Miller Co., Eggert 144 (US); Monticello, Demaree 16405 (MO). Oklahoma: Tonkawa, Stevens 1859 (GH, MO) Sapulpa, Bush 819 (MO); Davis, Hopkins 1140 (OKLA). Texas: Paris, Tharp 4779 (MO, TEX); Hornsby's Bend, Tharp 3079 (MO); Sheldon, Reverchon 4129 (MO); Leming, Silveus 322 (US); Sarita, Hitchcock 5466 (US). Colorado: Meadow Park, Rydberg 2365 (US). New Mexico: Las Vegas, Bro. Anect 62 (GH, US). Arizona: Coconimo Nat. Forest, Adams 216R (US); Santa Rita Forest Reserve, Griffiths 4403 (GH, US).

MEXICO: Tamaulipas: Chamal, Swallen 1704 (US). San Luis Potosí: Cárdenas, Pringle 3284 (CAN, F, GH, MICH, NY, US).

CENTRAL AMERICA: British Honduras: San Agustin, El Cayo Dist., Lundell 6738 (F, GH, MICH, NY, TEX, US).

17. Eragrostis refracta (Muhl.) Scribn.

? Poa virginica Zucc. ex. Roem., Coll. 1: 124. 1809. Interpreted from the description.

Poa refracta Muhl. ex Ell., Bot. S. C. & Ga. 1: 162. pl. 9. f. 4. 1816. TYPE: Muhlenberg (Muhl.), "Grows in damp soils, in pine barrens, and common along roads".

Eragrostis campestris Trin. in Mém. Acad. St. Pétersb. Sér. VI. Sci. Nat. 2: Bot.: 72. 1836. Trinius cites Poa nitida Ell. but says "brevissime pedicellatis l. subsessilibus" which definitely does not apply to Poa nitida

(E. Elliottii), which has very long pedicels.

Eragrostis longeradiata Steud., Syn. Pl. Glum. 1: 272. 1854. TYPE: M. A. Curtiss (P), collected in Carolina. In the National Herbarium there is a fragment of the type specimen.

? Eragrostis virginica (Zucc.) Steud., Syn. Pl. Glum. 1: 273. 1854.

Eragrostis pectinacea var. refracta (Muhl.) Chapm., Fl. South. U. S. 564. 1860. Chapman cites Poa refracta Ell.

Eragrostis refracta (Muhl.) Scribn. in Mem. Torr. Club 5: 49. 1894.

Eragrostis campestris var. refracta (Muhl.) Chapm. Fl. South. U. S. Ed. III. 617. 1897.

Poa reflexa Ell. ex. Scribn. & Merr. in U. S. Dept. Agric. Div. Agrost. Circ. 27: 5. 1900, (as synonym of E. refracta).

Perennial. Culms tufted, erect or ascending, sometimes geniculate, branching at the base, 35 to 80 cm. tall. Sheaths overlapping at the base, the upper ones about six-tenths the length of the internodes, compressed, glabrous except for the occasionally pilose apex of the margins. Ligule a dense row of white hairs about 0.2 mm. long. Blades flat, folded or sometimes involute toward the tip, glabrous below, scabrous with scattered supraligular hairs above, 10 to 25 cm. long, 2 to 5 mm. wide. Panicles ovoid, open, 30 to 60 cm. long, 25 to 40 cm. wide, the rachis scabrous, the branches stiffly ascending to reflexed, slender, scabrous, somewhat distant, 10 to 20 cm. long, with spreading, scabrous branchlets, the axils usually pilose. Pedicels usually tightly appressed, scabrous, 1 to 5 mm. long. Spikelets linear to ovate, very much compressed, appressed, dark straw-colored to dark greenish-brown, 5 to 16 mm. long, 1.5 to 2 mm.

wide, 10- to 28-flowered, the rachilla brittle and sometimes disarticulating. Glumes acuminate, scabrous on the keel, compressed, persistent, the first 0.8 to 1.8 mm. long, about 0.4 mm. wide, the second 1.4 to 1.8 mm. long, about 0.4 mm. wide. Lemmas ovate, acute to acuminate, compressed, closely imbricate, scabrous on the keel, 1.4 to 2.2 mm. long, 0.8 to 1.2 mm. wide, with conspicuous lateral nerves. Paleas eight-tenths the length of the lemmas, persistent, ciliolate on the keels, convex on the back below. Grains short ellipsoidal, a little flattened, faintly striate, reddish-brown, translucent, about 0.6 mm. long and 0.4 mm. wide.

In sandy pinelands, woods, and open ground on the Atlantic and Gulf Coastal Plains from Delaware to Florida and Texas. Map X, p. 70.

UNITED STATES: Delaware: Rehoboth, Commons 317 (US). Maryland: Salisbury, Commons 176 (US). Virginia: Lynn Haven, Chase 12199 (US); Munden, Mackenzie 1701 (GH, MO, NY). North Carolina: Weldon, E. B. Bartram, Oct. 1, 1908 (NY); Edenton, Kearney 1922 (US); Rowan Co., J. K. Small, Aug. 18-27, 1894 (NY); Beaufort, Lewis 23 (NY); Burgaw, Blomquist 147 (US); Southport, Fults 1803 (US). South Carolina: Aiken, Kearney 332 (US); Orangeburg, Hitchcock & Chase 119 (US); Georgetown, Godfrey 8103 (GH, NY); Graniteville, H. Eggert, Aug. 4, 1898 (MO). Georgia: Lumkin, A. W. Latimer, Oct. 1, 1885 (US); Stone Mt., A. S. Hitchcock, Aug. 1905 (US); Fargo, Harper 1580 (F, GH, MICH, MO, NY, US). Florida: Chattahoochee, Tracy 3726 (F, MICH, MO, NY, US); Jacksonville, Curtiss 5569 (GH, MO, MSC, POM, US); Eustis, Nash 1656 (GH, MICH, MSC, NY, US); Palma Sola, Tracy 7374 (F, GH, MO, MSC, POM, US); Myers, Hitchcock Fl. Pl. 457 (F, GH, MO, US). Alabama: Auburn, Earle & Baker, Aug. 8, 1897

(MO); Spring Hill, Bush 70 p. p. (MO). Mississippi: Waynesboro, Kearney 123 (MO, US); Biloxi, Tracy 6520 (GH, MO, NY). Louisiana: Covington, Arsène 11264 (US); Lake Charles, Chase 4394 (US). Texas: Texarkana, A. A. & E. G. Heller 4146 (MO, US); Sweetwater, Palmer 13746 (MO); Woodville, Tharp 2087 (TEX); Austin, E. N. Plank, June 1, 1893 (NY).

18. Eragrostis Elliottii S. Wats.

Poa nitida Ell., Bot. S. C. & Ga. 1: 162. 1816, not Lam. 1791, nor Eragrostis nitida Link 1827. TYPE: Elliott (Ell.), collected on Paris Island, Charleston, South Carolina. Interpreted from the description.

Eragrostis nitida (Ell.) Chapm., Fl. South. U. S. 564. 1860, not Link 1827.

Eragrostis Elliottii S. Wats in Proc. Amer. Acad. Arts & Sci. 25: 140. 1890. Based on Poa nitida Ell.

Eragrostis macropoda Pilger in Urban, Symb. Antill. 4: 106. 1903. TYPE: Sintenis 1233 (B), collected on March 27, 1885, on the seashore at Cataño, Puerto Rico. In the National Herbarium there is a fragment of the type specimen.

Eragrostis acuta Hitchc. in Proc. Biol. Soc. Wash. 41: 159. 1928. TYPE: A. S. Hitchcock Fl. Pl. 263 (US 731,236)[1/], collected in July 1900 at Punta Rassa, Lee County, Florida.

Perennial. Culms tufted, erect or ascending, stiff 25 to 70 cm. tall. Sheaths overlapping, glabrous except for the pilose apex of the margins. Ligule a dense row of white hairs about 0.2 mm. long. Blades

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1/ In the original publication this number is erroneously cited as 7,311,236.

flat, folded or involute (particularly at the tip), attenuate, glabrous below, scabrous at the tip and usually with supraligular hairs above, 6 to 30 cm. long, 2 to 4 mm. wide. Panicles ovoid, open, 30 to 60 cm. long, 15 to 40 cm. wide, the rachis usually scabrous, the branches capillary, scabrous, fragile, stiffly ascending to somewhat reflexed, somewhat flexuous, 8 to 15 cm. long, the axils sometimes pilose. Pedicels scabrous, capillary, stiffly spreading, fragile, 6 to 41 mm. long. Spikelets linear-oblong to ovate, compressed, grayish-green to straw-colored and reddish-tinged, 4.5 to 18 mm. long, 1.5 to 3 mm. wide, 6- to 30-flowered, the rachilla sometimes disarticulating. Glumes acuminate, usually scabrous on the keel, compressed, the first 1.25 to 2.4 mm. long, 0.5 to 0.8 mm. wide, the second 1.6 to 3.4 mm. long, 0.8 to 1.2 mm. wide. Lemmas ovate, acute to acuminate, strongly compressed, imbricate, scabrous on the tip of the keel, 1.8 to 4.4 mm. long, 1.2 to 1.6 mm. wide, withconspicuous lateral nerves. Paleas from eight-tenths as long to as long as the lemmas, hyaline, ciliolate on the keels, persistent, conspicuously convex on the back below. Grains subellipsoidal, smooth, translucent, reddish-brown, flattened, 0.8 to 1 mm. long, about 0.4 mm. wide.

In low sandy soil in pinelands and savannas on the coastal plain from North Carolina to Florida and Texas, scattered on the east coast of Mexico, the Yucatán Peninsula and in the Bahamas and Greater Antilles. Map X, p. 70.

UNITED STATES: North Carolina: Ocracoke Island, Kearney 2297 (US). South Carolina: Isle of Palms, Chase 4541 (US); Paris Island, Elliott (Ell.). Florida: Jacksonville, Curtiss 5567 (GH, MO, MSC, POM, US);

Gainsville, Swallen 5552 (US); Apalachicola, Biltmore Herb. 3886a (GH, NY, US); Titusville, Chase 4006 (MICH, US); Braidentown, Combs 1263 (US); Sanibel Island, Swallen 5327 (US); Homestead, Swallen 5228 (US); Big Pine Key, Small 3805 (NY). Alabama: Auburn, Tracy 3769 (MO). Mississippi: Waynesboro, Kearney 174 (US); Biloxi, Tracy 3766 (US); Cat Island, Tracy & Lloyd 446 (NY, US); Horn Island, Tracy 4687 (GH, MO, MSC, NY, US). Louisiana: Covington, Arsène 11115 (US); Oberlin, Ball 227 (US); Timbolier Island, Tharp 6772 (TEX, US). Texas: Jacksonville, E. N. Plank, Aug. 16, 1894 (NY); McDade, Silveus 1591 (US); Harris Co., Geib 8 (US). MEXICO: Tamaulipas: Tampico, Hitchcock 5799 (US). Vera Cruz: Vera Cruz, Pringle 5561 (GH, MICH, US). Chiapas: Aguacate, Palenque, Matuda 3799 (F, MICH, NY). Yucatán: Laguna Chan-kabnab, Swallen 2770 (MICH, US). CENTRAL AMERICA: British Honduras: Baker's Pine Ridge, Belize Dist., Lundell 6935 (F, GH, MICH, NY, TEX, US); Little Cocquericot, Belize River, Lundell 3880 (MICH, US); New Town, Schipp 907 (MICH, NY, US). WEST INDIES: Bahamas: Great Bahama, Britton & Millspaugh 2589 (F, NY); Abaco, Brace 1832 (F, NY); Andros, Brace 5169 (F, NY); Eleuthera, E. G. Britton 6517 (F, NY); Little San Salvador, Britton & Millspaugh 5697 (F, NY). Cuba: Pinar del Río, Prov. Pinar del Río, Hitchcock 23289 (US); Madruga, Prov. Habana, León 8951 (NY, US); Siguanea, Isla de Pinos, Britton, Britton & Wilson 14944 (F, GH, NY, US); Nueva Gerona, Isla de Pinos, Ekman 11657 (US); Manacas, Prov. Santa Clara, León 5884 (US); Baragua Central, Prov. Camagüey, Hitchcock 23386 (US); Cojimar, Prov. Oriente, Baker 5332 (US). Jamaica: Bluefields, Britton 1622 (NY); New Forest, Hitchcock 9854[1/] (F, GH, NY, US). Hispaniola: Haití: Acul-Samedi,

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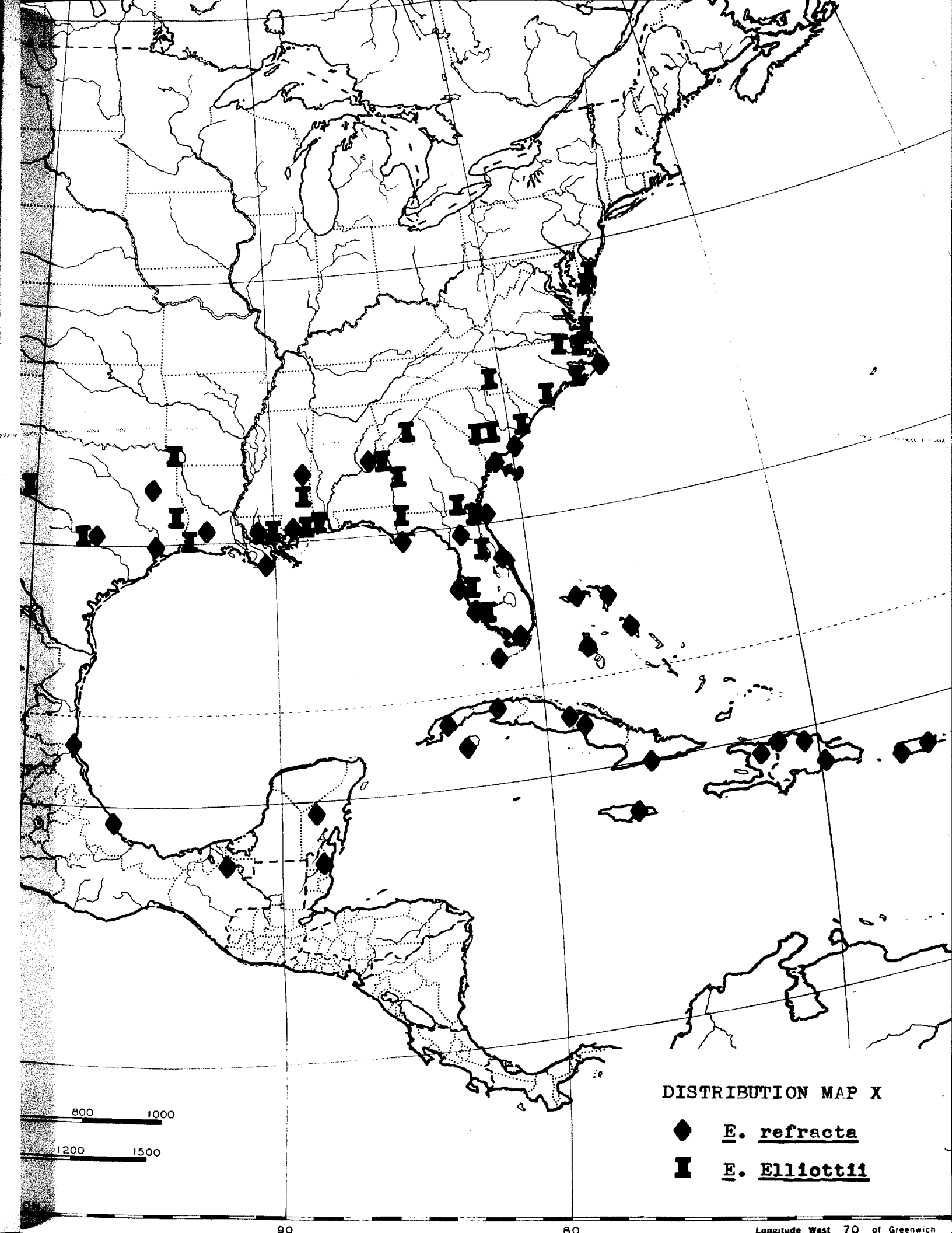
1/ Amer. Gr. Nat. Herb. 692.

Plaine du Nord, Ekman H9920 (US); Dominican Republic: Dist. Moncion, Prov. Monte Cristi, Valeur 145 (MICH, US); Cotuy, Prov. de la Vega, Abbott 795 (US); Llano Costero, Prov. Santo Domingo, Ekman H13298 (US). Puerto Rico: Carolina, Britton & Brown 5719 (F, NY, US); Laguna Tortuguero, Chase 6798 [1/] (F, GH, NY, US); Cabo Rojo to Joyuda, Britton, Stevens & Hess 2396 (F, NY, US).

1/ Amer. Gr. Nat. Herb. 693.



DISTRIBUTION MAP X

◆ E. refracta

I E. Elliottii

(4) Subsection Oxylepides

A. Perennials

B. Panicle compound, usually densely flowered or at least the branches densely flowered, never racemose or with as few as 2 to 4 spikelets on a branch

C. Spikelets strongly compressed, usually broadly linear

D. Lower panicle branch(es) distant, all branches stiffly and closely ascending or appressed

19. E. yucatana, p. 72.

D. Lower panicle branches not distant, spreading to ascending, but not stiffly so

E. Lemmas broadly ovate, acute or abruptly acuminate; spikelets dull reddish-purple or reddish-brown tinged or straw-colored alone

20. E. oxylepis, p. 73.

E. Lemmas acuminate; spikelets pinkish tinged

21. E. Beyrichii, p. 76.

C. Spikelets little if at all compressed, usually narrowly linear or ovate, acute or lanceolate

D. Panicle interrupted irregular spiciform, the lower branches distant or if the branches spreading then pilose in the axils and the lemmas ovate, acute

E. Panicle branches, at least the lower, 1.5 to 4.5 cm. long; the glumes ovate, acute

22. E. secundiflora, p. 77.

E. Panicle branches 1 cm. or less long; glumes acuminate

23. E. Ekmanii, p. 79.

D. Panicle ovoid or oblong, decompound; the branches ascending to spreading

E. Panicle dense; culms proliferating at the end of the very long first internode (it one-half to two-thirds the length of the culm); spikelets, at least a few, falcate; lemmas ovate, subacute

24. E. Selzmannii, p. 82.

E. Panicle open; culms not proliferating; spikelets never falcate; lemmas acuminate

28. E. acutiflora, p. 86.

B. Panicle racemose or the branches only simply compound and with only 2 to 4 spikelets

C. Panicle racemose; glumes acute

25. E. bahamensis, p. 82.

C. Panicle with very few branches and these with only 2 to 4 spikelets; glumes acuminate

26. E. cubensis, p. 83.

A. Annuals

B. Lemmas ovate, subacute; panicle branches few, spreading, never with a dense tuft of hairs in the axils

27. E. simplex, p. 85.

B. Lemmas ovate, acuminate or long acuminate; panicle branches ascending or if spreading with a dense tuft of hairs in the axils

C. Lemmas acuminate-ovate, a dense tuft of hairs in the axils of the panicle branches 29. E. maypurensis, p. 88.

C. Lemmas acuminate-lanceolate, the lateral nerves sometimes double; never with a dense tuft of hairs in the axils

30. E. simpliciflora, p. 92.

19. Eragrostis yucatana L. H. Harvey sp. nov.

Planta perennis. Culmi rigidi, erecti, 40 vel 75 cm. alti. Vaginae glabrae apicibus pilosis marginum exceptis. Laminae involutae, attenuatae, suprene dispérse pilosae ad basin, 10 vel 15 cm. longae, 1-1.5 mm. latae. Paniculae strictae, interruptae solum ad basin, 15 vel 25 cm. longae, 1.5-2 cm. latae, ramis e basi floriferis, rigide ascendentibus vel appressis, 2 vel 5 cm. longis, ad axillas glabris. Pedicelli non longiores quam 0.8 mm. Spiculae ovatae, acutae, valde compressae, 7 vel 9 mm. longae, 2.2-2.8 mm. latae, 12- vel 20-floriferae, rachilla disarticulante. Glumae inaequales, anguste ovatae, acutae. Lemmata ovata, acuta, 2.2-2.4 mm. longa, nervis lateralibus firmissimis. Paleae lemmata aequantes, breviter persistantes temperius caducae. Fructus oblongi, striati, 0.8 mm. longi, 0.4 mm. lati.

Specimen typicum legit J. R. Swallen n. 2933 (US 1,537,194), 11 - 15, Aug. 1933 in locis aridis secus viam prope "Progreso, Yucatán," in Republica Mexicana.

Species nova E. oxylepidi affinis etiamque E. Ekmanii et probabiliter E. eucamptae; differt a priore paniculis strictis, a E. Ekmanii et E. eucamptae panicula solum basi interrupta spiculisque haud fasciculatis.

Perennial. Culms tufted, stiffly erect or ascending, branching at the base, 40 to 75 cm. tall. Sheaths shorter than the internodes, those of the innovations overlapping, pilose at the apex of the margins, rounded

on the back. Ligule a dense row of white hairs about 0.3 mm. long. Blades involute, attenuate, glabrous below, scabrous with scattered supraligular hairs above, 10 to 15 cm. long, 1 to 1.5 mm. wide. Panicles strict, interrupted at the base, densely flowered, 15 to 25 cm. long, 1.5 to 2 cm. wide, the rachis scabrous, the branches appressed or closely ascending, floriferous to the base, scabrous, slender, stiff, the lower 2.5 to 5 cm. long, the upper about 2 cm. long, the axils glabrous. Pedicels much shorter than the spikelets, scabrous, appressed, 0.2 to 0.8 mm. long. Spikelets ovate, acute, strongly compressed, greenish-straw-colored, reddish-brown tinged, nearly sessile, appressed to the branches, 7 to 9 mm. long, 2.2 to 2.8 mm. wide, 12- to 20-flowered, the rachilla disarticulating. Glumes narrowly ovate, acute, compressed, keeled, scabrous on the keel, the first 1.8 to 2 mm. long, about 0.4 mm. wide, the second 2 to 2.2 mm. long, about 0.8 mm. wide. Lemmas ovate, acute, usually abruptly so, compressed, keeled, scabrous on the keel, strongly imbricate, 2.2 to 2.4 mm. long, about 1.2 mm. wide, the lateral nerves very strong. Paleas about as long as the lemmas and persistent for a short while after their fall, ciliolate on the strong keels, convex on the back below. Grains oblong, translucent, striate, reddish-brown, about 0.8 mm. long and 0.4 mm. wide.

In arid sandy soil in Yucatán. Map XI, p. 79.

MEXICO: Yucatán: Progreso, Swallen 2933 (MICH, US); San Anselmo, Gaumer 1207 (F, GH, NY); Chichankanab, Gaumer 2249 (F, GH, NY).

20. Eragrostis oxylepis (Torr.) Torr.

Poa interrupta Nutt. in Trans. Amer. Phil. Soc. n. s. 5: 146. 1837, not Lam. 1791. TYPE: Nuttall (PH), collected "in bushy prairies, near

the sandy banks of the Arkansas" River, Arkansas.

Poa oxylepis Torr. in Marcy, Expl. Red. Riv. 288. t. 19. 1853. Based on Poa interrupta Nutt.

Eragrostis oxylepis (Torr.) Torr. in Rept. Bot. Whipple Exped. 156. 1857.

Megastachya oxylepis (Torr.) Fourn., Mex. Pl. 2: 118. 1886.

Megastachya oxylepis var. capitata Fourn., Mex. Pl. 2: 118. 1886. TYPE: Galeotti 5705 (P), collected in 1840 on the dunes at Vera Cruz, Vera Cruz, Mexico. In the National Herbarium there is a fragment of the type specimen.

Eragrostis veraecrucis Rupr. in Bull. Acad. Brux. 9: 2: 235. 1842, nom. nud.; ex Fourn., Mex. Pl. 2: 118. 1886, (as synonym of Megastachya oxylepis var. capitata Fourn.)

Eragrostis interrupta (Nutt.) Trelease apud Banner & Coville in Ann. Rept. Geol. Surv. Arkansas 4: 237. 1891, not Beauv. 1812.

Perennial. Culms tufted, erect to ascending, 30 to 75 (40 to 50) cm. tall. Sheaths overlapping, glabrous on the back, usually pilose at the apex of and sometimes down the margins. Ligule a dense row of white hairs about 0.25 mm. long. Blades flat to involute on drying, flexuous, stiff, glabrous below, scabrous with long supraligular hairs and sometimes scattered pilose on the margins above, 8 to 30 (10 to 15) cm. long, 1.5 to 3 (2 to 2.5) mm. wide. Panicles contracted, somewhat irregularly spiciform to open, loose to dense, sometimes interrupted, 5 to 30 cm. long, 1 to 15 cm. wide, the branches spreading to appressed, densely flowered, 1 to 14 cm. long, scabrous on the angles, the axils glabrous to short pilose. Pedicels ascending or appressed, scabrous on the angles, 1 mm. or less long. Spikelets linear-oblong to ovate, usually clustered, strongly compressed, 6 to 20 (6 to 10) mm. long, 3 to 5 (4) mm. wide, 10- to 24- to 40- (12-) flowered, the rachilla

disarticulating. Glumes acuminate, scabrous on the keel, the first 2.5 to 3 mm. long, about 0.8 mm. wide, the second sometimes three-nerved, 3 to 4 mm. long, about 1.6 mm. wide. Lemmas ovate, acute, sometimes abruptly acuminate, closely imbricate, scabrous on the keel, 3 to 4 mm. long, 1.6 to 2.4 mm. wide, the tip sometimes reflexed, usually spreading, the lateral nerves conspicuous. Paleas from six-tenths as long to nearly as long as the lemmas, deciduous, ciliolate on the keels, conspicuously convex on the back below, Grains ellipsoidal, almost spindle-shaped, reddish-brown, translucent, smooth, about 1 mm. long and 0.2 mm. wide.

In sandy prairies and on dunes from Kansas and eastern New Mexico through Texas to Arkansas and the Gulf Coast of the United States and Mexico. Map XI, p. 79.

UNITED STATES: Kansas: Moonlight, C. H. Thompson 180 (MO, US); Garden City, Smyth 173 (US); Greensburg, Smyth 77 (US). Oklahoma: Alva, Stevens 1666 (GH, MO, OKLA, POM, US); Sapulpa, Bush 1379 (MO); Craterville Park, Wichita Mts., Swallen 1031 (US). Arkansas: Arkansas River, T. Nuttall, 1819-20 (NY, PH, US); Pine Bluff, Eggert 106 (MO, US). New Mexico: Clayton, E. O. Wooton, Aug. 20, 1910 (US); Nara Visa, Fisher 201 (US); Melrose, E. O. Wooton, Aug. 18, 1909 (US); Roswell, Griffiths 5705 (US). Texas: Texline, Griffiths 5658 (POM, US) Narcisco, Tharp 4100 (TEX); Burkburnett, Tharp 98 (TEX); Marshall, Bush 976 (GH, MO, US); Stanton, Tharp 5217 p. p. (TEX); Mason, Russell 114 (TEX); Huntsville, Dixon 384 (F, US); Galveston Island, Tracy 7741 (F, GH, MO, MSC, TEX, US); Eagle Pass, J. B. Davy 1901 (US); Laredo, Edw. Palmer 1370 of 1879 (GH, US); Brownsville, Swallen 1444 (US). Louisiana: Cameron Par., Swallen 1871 (MICH, US); Jefferson Par., Langlois 32 (MO); Breton Island, Tracy & Lloyd

461 (F, US); Timbalier Island, Tharp 6771 (TEX). Mississippi: Horn Island, Tracy 4683 (F, GH, MICH, MO, MSC, US); Ocean Springs, Tracy 136 (US); Ship Island, Pollard 1089 (GH, MO, US); Alabama: Cedar Point, C. Mohr, July 4, 1869 (US). Florida: Milton, Swallen 463 (US); Lake City, Combs 211 (GH, US). California: San Diego, C. R. Orcutt, 1884 (US); Colorado: Wray, E. E. Smith (US).
MEXICO: Tamaulipas: Tampico, Hitchcock 5794 (US). Vera Cruz: Vera Cruz, Pringle 8520 (CAN, F, GH, MSC, US).

21. Eragrostis Beyrichii J. G. Smith

Eragrostis Beyrichii J. G. Smith in Ann. Rept. Mo. Bot. Gard. 6: 117. pl. 56. 1895. TYPE: Beyrich (MO), collected in 1834 in Arkansas. Search in this Herbarium has failed to reveal this collection. It is evidently misplaced or lost. I am interpreting the species from the original of the plate which was found there and from Reverchon 499, the second specimen cited.

Perennial. Culms tufted, erect or ascending, branching at the base, 15 to 50 (25 to 30) cm. tall. Sheaths overlapping, glabrous except for the pilose apex of the margins, the lower ones 1 to 4 cm. long. Ligule a dense row of white hairs about 0.25 mm. long. Blades flat to involute, glabrous below, scabrous and with a few supraligular hairs above, 5 to 25 (10) cm. long, 1 to 2 (2) mm. wide. Panicles contracted, subglomerate or somewhat open and interrupted, somewhat lax, 5 to 20 (10) cm. long, 1.5 to 5 (2 to 3) cm. wide, the rachis scabrous towards the tip, the branches few, appressed to ascending, 1 to 5 cm. long, pilose in the axils. Pedicels scabrous on the angles, appressed to ascending, 0.5 to 1 mm. long. Spikelets linear-oblong, strongly compressed, straw-colored and usually pinkish-tinged, 8 to 15 (10) mm. long, 4 to 5 (4) mm. wide, 12- to 30- (18- to 24-) flowered,

the rachilla disarticulating. Glumes acuminate, scabrous on the keel, the first sometimes short, ovate, acute, 1.5 to 2 mm. long, 0.6 to 0.8 mm. wide, the second 2.5 to 3 mm. long, about 1 mm. wide. Lemmas acuminate, scabrous on the keel, closely imbricate, 3 to 4 mm. long, about 1.6 mm. wide, the tips spreading, the lateral nerves conspicuous. Paleas a little over half the length of the lemmas and falling with them, ciliolate on the keels, conspicuously convex on the back below. Grains narrowly ovoid, translucent, smooth, reddish-brown, about 1 mm. long and 0.4 mm. wide.

This species can usually be readily distinguished from E. oxylepis with which it has been confused by itsacuminate lemmas, the laxness of the plant and by the pinkish-tinged spikelets whereas in contrast E. oxylepis has ovate, acute or abruptly acuminate lemmas, is stiff in habit and has dull reddish-tinged spikelets.

In sandy prairies from Oklahoma through middle Texas into Tamaulipas. Map XI, p. 79.

UNITED STATES: Oklahoma: Craterville Park, Wichita Park, Swallen 1012 (US); O'Keene, Harvey 1831 (Harv.). Texas: Chillicothe, Ball 997 (US, WYO); Colorado, Tracy 7922 (US); Fort Worth, Ruth 210 (US); Llano, J. G. Smith, June 29, 1897 (US); Calvert, F. J. Taylor, May 13, 1904 (US); Hempstead, E. Hall 1860's (US); San Antonio, Hitchcock 5180 (US); Crystal City, Tharp 5212 (TEX, US); Sarita, Hitchcock 5461 (US); Laredo, Palmer 11272 (MO): Brownsville, R. Runyon 1904 (US).
MEXICO: Tamaulipas: Chamal, Swallen 1740 (MICH, US).

22. Eragrostis secundiflora Presl.

Eragrostis secundiflora Presl, Rel. Haenk. 1: 276. 1830. TYPE: Haenke (PR), collected in Mexico. In the National Herbarium there is a photograph

and a fragment of the type specimen.

Poa secundiflora (Presl) Kunth, Rév. Gram. 1: Suppl. xxviii. 1830.

Eragrostis compacta Steud., Syn. Pl. Glum. 1: 275. 1854. TYPE: Salzmann, collected "In subulosis maritimis subhumidis prope Bahia.", Brasil. In the National Herbarium there is a specimen of the type collection which was originally from the Herbarium Institute Botanique Montpellier.

Poa compacta Salzm. ex Steud., Syn. Pl. Glum. 1: 275. 1854, (as synonym of E. compacta Steud.)

Eragrostis Vahlii var. subfasciculata Doell in Mart., Fl. Bras. 2: 3: 155. 1878. Based on E. compacta Steud.

Perennial. Culms tufted, branching at the base, erect or ascending, sometimes geniculate at the lower nodes, 25 to 45 cm. tall. Sheaths rounded on the back, keeled, overlapping at the base, shorter than the internodes above, pilose at the apex of the margins, sparsely (densely so on the innovations) scattered papillose-pilose or nearly glabrous on the back. Ligule a dense row of white hairs about 0.3 mm. long. Blades flat or folded or involute, scattered papillose-pilose near the base (densely so the whole length on the innovations) or glabrous below, scattered papillose-pilose (somewhat densely so near the base) and scabrous towards the tip above, 10 to 20 cm. long, 2 to 4 mm. wide. Panicles narrowly oblong to ovoid, usually contracted, sometimes open, usually interrupted (particularly at the base), 9 to 12 cm. long, 2 to 4.5 cm. wide, the rachis glabrous, the branches usually appressed, sometimes ascending, with at least the lower one (sometimes two) somewhat distant, sometimes scabrous, densely

DISTRIBUTION MAP XI
0 200
0 300
E. yucatana
E. Beyrichii
E. oxylepis
E. secundiflora
80
110
100
90

flowered, the lower ones 1.5 to 4.5 cm. long, with very short branchlets, the upper 1 to 1.5 cm. long, the axils with a rather dense tuft of hairs, the base of the panicle branches sometimes surrounded by these hairs, secondary or pedicellary axils sometimes with several hairs. Pedicels ascending to spreading, shorter than the spikelets, sometimes scabrous, sometimes pilose, somewhat stout, 0.2 to 1 mm. long. Spikelets linear or lanceolate, fasciculate, acute at both ends or the tips obtuse, compressed, brownish-tinged straw-colored, 5 to 10 mm. long, 2 to 3 mm. wide, 10- to 16-flowered, the rachilla disarticulating. Glumes ovate, acute, compressed, keeled, scabrous on the keel, unequal or subequal, the first 1.4 to 2 mm. long, about 0.8 mm. wide, the second 1.4 to 2.2 mm. long, about 0.8 mm. wide. Lemmas broadly ovate, abruptly to gradually acute, compressed, tightly imbricate, scabrous on the keel, 1.8 to 2.6 mm. long, about 1.2 mm. wide, the lateral nerves conspicuous. Paleas hyaline, ciliolate on the keels, nearly as long as the lemmas, persistent, convex on the back below. Grains short, blunt ovoid, reddish-brown, translucent, striate, not flattened, about 0.6 mm. long and 0.4 mm. wide.

In sandy ground along the southern part of the west coast of Mexico. Map XI, p. 79.

MEXICO: Guerrero: Acapulco (?), Haenke (US). Oaxaca: Pochutla, Liebmann 12864 (US).

23. Eragrostis Ekmanii Hitchc.

Eragrostis Ekmanii Hitchc. in U. S. Dept. Agric. Misc. Publ. 243: 43. f. 22. 1936. TYPE: E. L. Ekman 12143 (US 1,387,320), collected on Nov. 8, 1920 in sandy pinelands at Los Indios, Isla de Pinos, Cuba.

Perennial. Culms tufted, erect or ascending, wirey, branching at the base or above, with erect branches, 15 to 70 cm. tall. Sheaths overlapping at the base, shorter than the internodes above, strongly nerved, rounded on the back, glabrous. Ligule a dense row of white hairs about 0.2 mm. long. Blades narrow, flat to involute, ascending or flexuous, glabrous below, scabrellous or sometimes with scattered, supraligular hairs above, 6 to 18 cm. long, 1 to 2 mm. wide. Panicles racemose, interrupted, 4 to 14 cm. long, 0.8 to 1.8 cm. wide, the rachis scabrous, the branches very short, densely flowered, ascending, distant, scabrous, 0.5 to 1 cm. long, the axils glabrous. Pedicels shorter than the spikelets, scabrous, ascending to spreading, as much as 0.8 mm. long. Spikelets ovate to ovate-lanceolate, flattened, dull purplish or light brown, 4 to 6 mm. long, 2 to 2.4 mm. wide, 8- to 14-flowered, the rachilla tardily disarticulating. Glumes acuminate, unequal, scabrous on the keel, the first about 1.4 mm. long and 0.4 mm. wide, the second 1.5 to 1.8 mm. long, about 0.8 mm. wide. Lemmas ovate, acute to subacute, rounded on the back at the base, keeled above, closely imbricate, glabrous, 1.8 to 2 mm. long, about 1.2 mm. wide, the lateral nerves conspicuous and strong. Paleas six- to eight-tenths the length of the lemmas, ciliolate on the keels, persistent for a while, convex on the back below. Grains sub-spherical, reddish-brown, translucent, faintly striate, about 0.6 mm. long and 0.4 mm. wide.

In sandy pinelands and open places in Costa Rica and Isla de Pinos, Cuba. Map XII, p. 82.

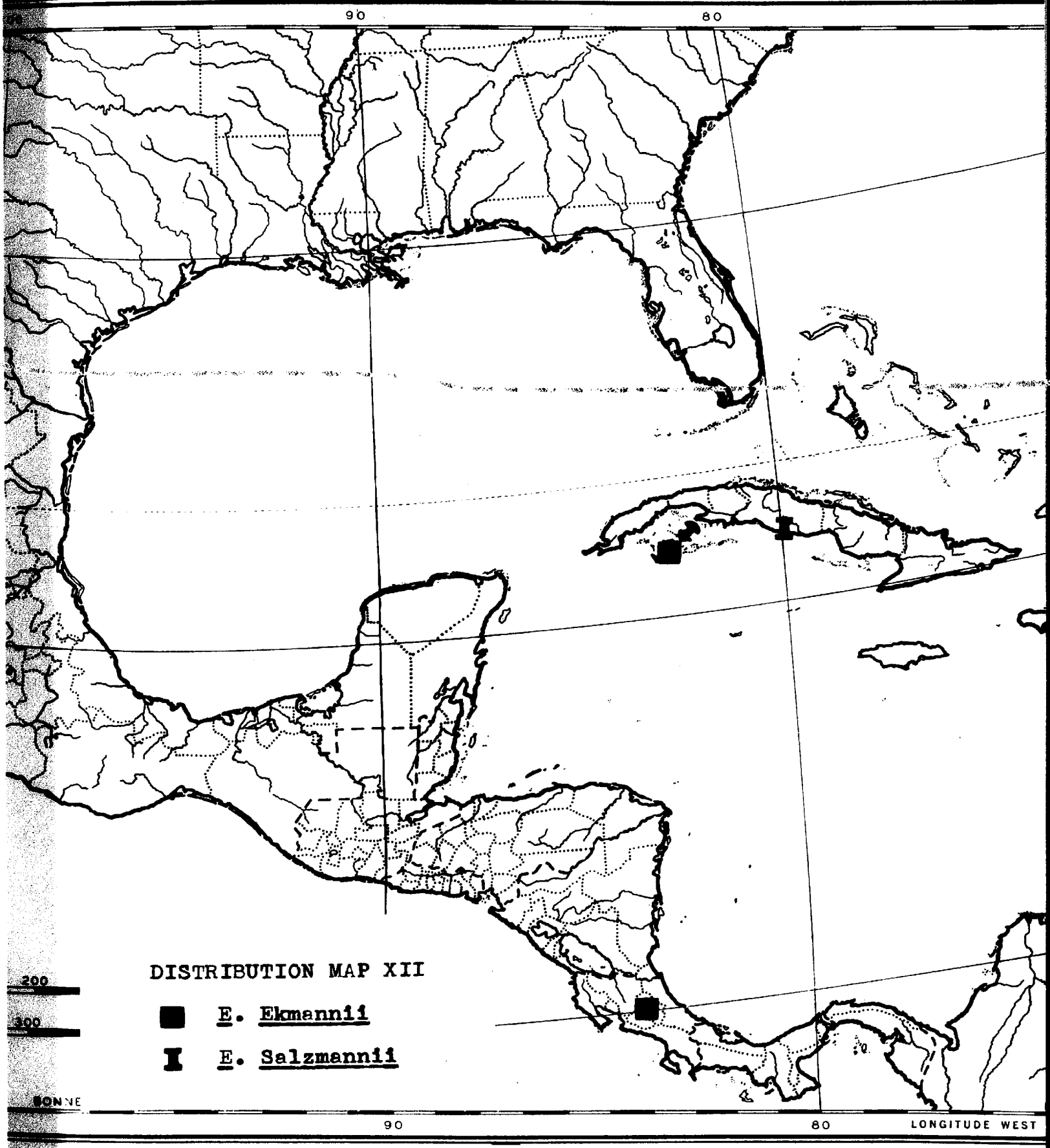
CENTRAL AMERICA: Costa Rica: San Francisco de Guadalupe, Jiménez 713 (US).

WEST INDIES: Cuba: Los Indios, Isla de Pinos, Ekman 12143 (US).

24. Eragrostis Salzmannii Steud.

Eragrostis Salzmannii Steud., Syn. Pl. Glum. 1: 277. 1854. TYPE: Salzmann, collected "In maritimus Bahia", Brazil. In the National Herbarium there is a specimen of the type collection which was originally from the Herbarium Institute Botanique Montpellier. This specimen was distributed as Poa prolifera.

Perennial. Culms tufted, somewhat stout, glabrous, erect, ascending, spreading or arching over, proliferating at the end of the long first node, 25 to 130 cm. tall. Sheaths overlapping on the innovations, elsewhere about three-tenths the length of the internodes, glabrous, rarely pilose at the apex of the margins, rounded on the back. Ligule a dense row of white hairs about 0.4 mm. long. Blades flat to involute, attenuate, glabrous below, scabrous above, 15 to 35 cm. long, 1.5 to 4 mm. wide. Panicles narrowly oblong to obovoid, sometimes interrupted, sometimes open, very densely to loosely flowered, 5 to 18 cm. long, 1.5 to 5 cm. wide, the rachis scabrous towards the tip, the branches ascending to spreading, very scabrous, flexuous, slender, 1.5 to 5.5 cm. long, with many capillary, short, secondary branches, the axils glabrous. Pedicels capillary, scabrous, spreading, 0.8 to 1.4 mm. long. Spikelets linear-oblong to ovate, acute, sometimes falcate, light gray-green to dark straw-colored, 3 to 15 mm. long, 1.4 to 2 mm. wide, 6- to 24-flowered, the rachilla joints falling with the paleas. Glumes ovate, obtuse to acute, hyaline, heavily keeled, very scabrous on the keel, the first 1 to 1.2 mm. long, about 0.4 mm. wide, the second 1.2 to 1.6 mm. long, about 0.8 mm. wide. Lemmas ovate, acute, glabrous, imbricate, 1.6 to 2 mm. long, about 1.2 mm. wide, the keel and the


90
80
DISTRIBUTION MAP XII
E. Ekmannii
E. Salzmannii
200
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BONNE
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80
LONGITUDE WEST

conspicuous lateral nerves heavy. Paleas hyaline, ciliolate on the keels, nearly as long as the lemmas, persistent, evenly convex on the back. Grains ellipsoidal, reddish-brown, translucent, smooth, about 0.8 mm. long and 0.4 mm. wide.

In salt marshes along the coast of Cuba. Map XII, p. 82.

WEST INDIES: Cuba: Río Gurabo, Trinidad, Prov. Santa Clara, Ekman 18913 (US); Casilda, Prov. Santa Clara, Britton, Britton & Wilson 5510 (NY, US).

25. Eragrostis bahamensis Hitchc.

Eragrostis bahamensis Hitchc. in Ann. Rept. Mo. Bot. Gard. 4: 149. pl. 14. 1893. TYPE: A. S. Hitchcock (MO), collected in 1890 on the Island of Inagua, Bahamas.

Perennial. Culms tufted, erect or ascending, wirey, 10 to 25 cm. tall. Sheaths overlapping at the base, sometimes auriculate, a woolly tuft of hairs at the apex of the margins. Ligule a dense row of white hairs about 0.4 mm. long. Blades ascending, involute and curved on drying, glabrous below, scabrous with woolly supraligular hairs above, 5 to 8 cm. long, about 1 mm. wide. Panicles raceme-like, the base exceeded by the tips of the blades, 5 to 8 cm. long, 7 to 10 mm. wide, the rachis glabrous. Pedicels as much as 2 mm. long, tightly appressed, glabrous. Spikelets linear-oblong to lanceolate, not flattened, dark straw-colored to yellowish-brown, 5 to 9 mm. long, 2 to 3 mm. wide, 8- to 20-flowered, the rachilla joints falling with the lemmas. Glumes acute, glabrous or slightly scabrous at the tips, the first about 1 mm. long and 0.8 mm. wide, the second about 1.2 mm. long and 0.8 mm. wide. Lemmas ovate, acute, shiny, imbricate, glabrous,

cartilaginous, about 1.8 mm. long and 1.6 mm. wide, the keels strong, the lateral nerves very strong. Paleas ciliolate on the keels, as long as the lemmas and falling with them, not convex on the back. Grains tapering towards one end, reddish-brown, translucent, striate, about 0.8 mm. long and 0.3 mm. wide.

On rocky soil in the Bahamas. **Map XIII, p. 85.**

WEST INDIES: Bahamas: **Rum** Cay, Brace 3993 (F, US); Waterloo, Grand Turk, C. F. & C. M. Millspaugh 9388 (F, GH, NY); Ambergris Cay, Caicos Group, C. F. & C. M. Millspaugh 9286 (F, NY); Monjean Harbor, Little **Inagua**, Nash & Taylor 1217 (F, US); Inagua, Nash & Taylor 1354 (NY); Acklin's Island, Brace 4264 (F, NY).

26. Eragrostis cubensis Hitch.

Eragrostis cubensis Hitchc. in Contr. U. S. Nat. Herb. 12: 243. 1909. TYPE: A. H. Curtiss 420 (US 522,037), collected on March 20, 1904 near Nueva Gerona, Isla de Pinos, Cuba.

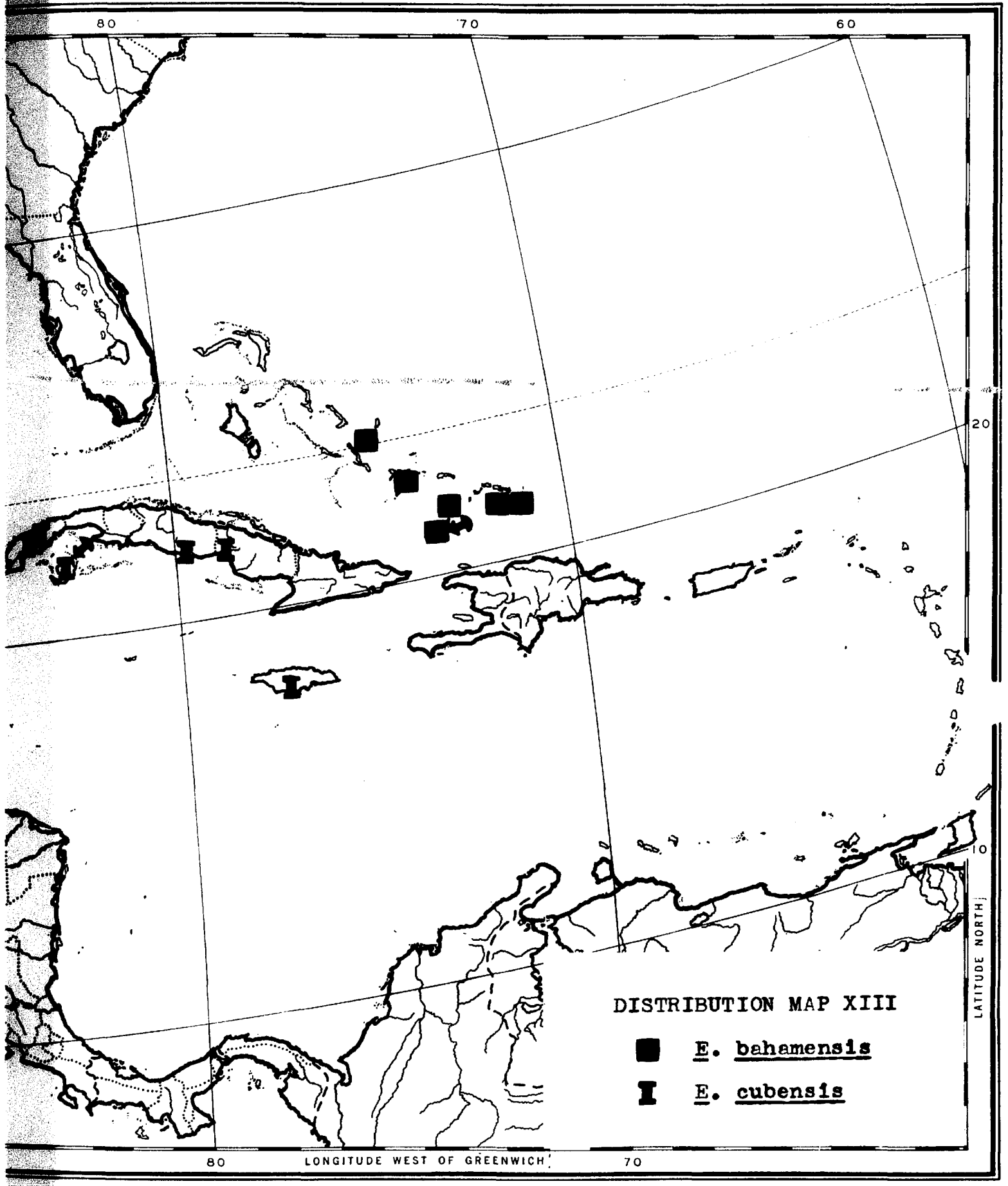
Perennial. Culms tufted, erect or ascending, wirey, 8 to 35 (15 to 20) cm. tall. Sheaths overlapping at the base, shorter than the internodes above, glabrous except for the pilose apex of the margins and the sometimes pilose collar. Ligule a dense row of white hairs about 0.2 mm. long. Blades linear, ascending, convolute, glabrous below, scabrous and with long supraligular hairs and sometimes short pilose over the whole surface above, 4 to 7 cm. long, 0.4 to 0.6 mm. wide. Panicle pseudo-racemose, few-flowered, open or somewhat dense, 2.5 to 7 cm. long, 1 to 3 cm. wide, the rachis scabrous, the branches ascending, scabrous, 0.5 to 3 cm. long, each usually with 1 to 4 spikelets, the axils pilose. Pedicels ascending to appressed,

scabrous, as much as 0.4 mm. long. Spikelets ovate to linear-lanceolate, subsessile, compressed, straw-colored to reddish-brown, 5 to 20 mm. long, 1.6 to 3 mm. wide, 12- to 50-flowered, the rachilla disarticulating. Glumes acuminate, compressed, keeled, scabrous on the keel, deciduous, the first 1.2 to 1.4 mm. long, 0.4 to 0.8 mm. wide, the second 1.2 to 1.6 mm. long, about 0.8 mm. wide. Lemmas ovate, acute, imbricate, 1.6 to 2 mm. long, 0.8 to 1.2 mm. wide, the lateral nerves conspicuous. Paleas ciliolate on the keels, about three-fourths the length of the lemmas, persistent, slightly convex on the back. Grains tapering towards one end, light reddish-brown, faintly striate, translucent, about 0.8 mm. long and 0.4 mm. wide.

In sandy savannas and thickets, and on rocks in Cuba and Jamaica. Map XIII, p. 85.

WEST INDIES: Cuba: Pinar del Río, Prov. Pinar del Río, Hitchcock 23285 (US); Herradura, Prov. Pinar del Río, Ekman 10696 (US); San Diego de los Baños, Prov. Pinar del Río, León 4559 (US); Los Indios, Isla de Pinos, Britton, Britton & Wilson 14149 (F, GH, NY, US); Nuevo Gerona, Isla de Pinos, Curtiss 420 (F, GH, NY, US): Siguanea, Isla de Pinos, Britton, Britton & Wilson 15328 (F, NY, US); Zaza de Tunas, Prov. Santa Clara, León 886 (US); Baragua, Prov. Camagüey, Hitchcock 23359 (US); Jamaica: Lititz, Manchester, Harris 12678 (F, GH, NY, US); New Forest, South Manchester, Hitchcock 9852 [1/] (F, GH, MICH, NY, POM, US).

1/ Amer. Gr. Nat. Herb. 691.



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27. Eragrostis simplex Scribn.

Eragrostis simplex Scribn. in U. S. Dept. Agric. Div. Agrost. Bull. 7. Ed. III. 250. f. 244. 1900. LECTOTYPE:[1/] A. H. Curtiss 6073 (US 314,438), collected on Aug. 26, 1897 in a dooryard at Istachatta, Florida.

Annual. Culms tufted, sometimes decumbent at the base, widely spreading to ascending, frequently geniculate at the lower nodes, 10 to 55 (20 to 40) cm. tall. Sheaths about half the length of the internodes, usually pilose at the apex of the margins. Ligule a dense row of white hairs about 0.2 mm. long. Blades flat to loosely involute, glabrous below, scabrous and scattered pilose (denser near the ligule) above, 4 to 10 cm. long, 1 to 3 mm. wide. Panicles oblong to lance-ovoid, 5 to 18 cm. long, 2 to 9 cm. wide, the rachis scabrous on the angles, the branches few, distant, spreading to ascending, scabrous on the angles, densely floriferous to the base or nearly so, 1 to 7 cm. long, the axils sparsely pilose to glabrous. Pedicels slender, ascending, sparsely scabrous, sometimes pubescent near the base of the spikelets, 0.4 to 1 mm. long. Spikelets narrowly ovate and acute to lanceolate, compressed, greenish- to brownish-tinged, the florets maturing from the base up, the tip continuing to grow, 6 to 18 mm. long, 1.5 to 2 mm. wide, 14- to 44-flowered, the rachilla not disarticulating. Glumes narrowly ovate, acute to acuminate, scabrous on the keel, early deciduous, the first 1 to 1.4 mm. long, about 0.4 mm. wide, the second

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1/ The type of this species was lost in a fire which destroyed part of the Scribner Herbarium. The lectotype is a specimen of the type collection.

1.4 to 1.8 mm. long, about 0.8 mm. wide. Lemmas ovate, acute to subacute, tightly imbricate (becoming loosely imbricate at maturity), compressed, 1.6 mm. wide, the lateral nerves conspicuous. Paleas from eight-tenths as long to as long as the lemmas, persistent, hyaline, convex on the back below, ciliolate. Grains ellipsoidal, flattened, truncate at one end, translucent, striate, reddish-brown, about 0.6 mm. long and 0.3 mm. wide.

In disturbed ground from extreme southern Alabama and Georgia through Florida. Map XIV, p. 88.

UNITED STATES: Alabama: Atmore, O. Blanton 145 (NY, US). Georgia: Moultrie, Harper 1656 (GH, MO, US); Ruskin, Ricker 903 (US). Florida: De Funiak Springs, Curtiss 5925 (F, GH, MO, US, WYO); Tallahassee, Kearney 82 (US); Lake City, Rolfs 855 (US); Dunnellon, Combs 907 (US); Brevard Co., Fredholm 5824 (GH, US); Sneed's Island, Tracy 6519 (GH, MO, MSC, US); Myers, Hitchcock Fl. Pl. 461 (F, GH, MO, US).

28. Eragrostis acutiflora (H. B. K.) Nees

Poa acutiflora H. B. K., Nov. Gen & Sp. Pl. 1: 161. 1816.

TYPE: Humboldt & Bonpland 1602 (P), collected in 1801 on the Río Magdalena near Mompos, Columbia. In the National Herbarium there are fragments of two specimens of this collection. One is a fragment of the type specimen and the other a fragment of a specimen in the general herbarium in Paris.

Megastachya acutiflora (H. B. K.) Roem. & Schult., Syst. Veg. 2: 588. 1817.

Eragrostis acutiflora (H. B. K.) Nees, Agrost. Bras. 501. 1829.

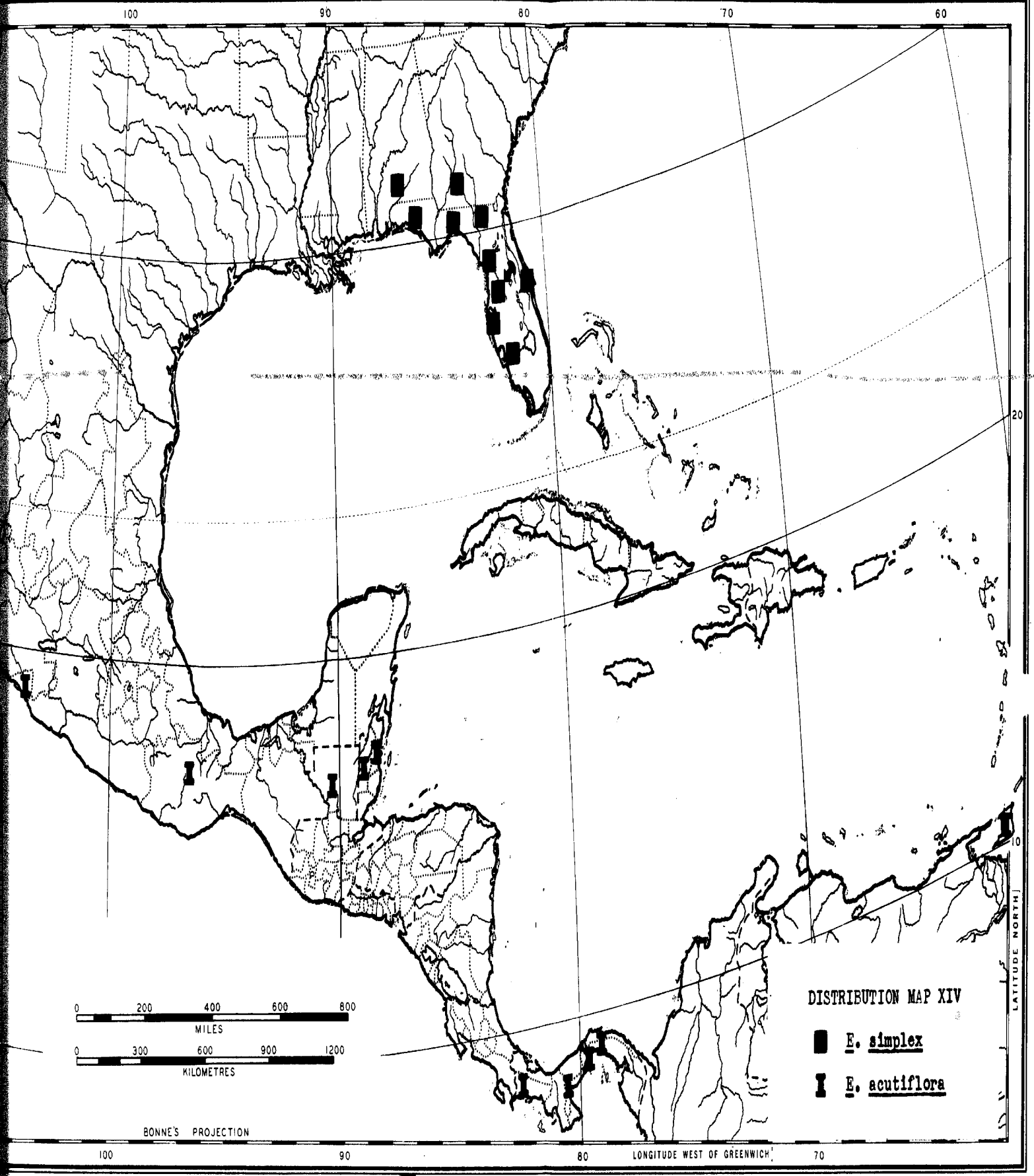
Eragrostis acutiflora var. humilior Presl, Rel. Haenk. 1: 277. 1830. TYPE: Haenke (PR), collected in Panama. Interpreted from the description.

Eragrostis flavescens Presl, Rel. Haenk. 1: 278. 1830. TYPE: Haenke (PR), collected in Mexico. In the National Herbarium there is a photograph and a fragment of the type.

Poa flavescens (Presl) Kunth, Rév. Gram. 1: Suppl. xxviii. 1830, not Thom. 1818.

Perennial. Culms tufted, erect to decumbent-spreading, branching at the base, 30 to 70 cm. tall. Sheaths compressed and folded on the keel (particularly the lower), the lower overlapping, the upper as little as half the length of the internodes, pilose on the collar and at the apex of the margins (densely so on the innovations), otherwise glabrous. Ligule a dense row of white hairs about 0.2 mm. long. Blades flat to folded or involute (particularly those of the innovations), tapering to a long tip, glabrous below, scabrous and scattered pilose (the supraligular hairs in a dense row) above, 10 to 25 cm. long, 3 to 6 mm. wide. Panicles ovoid, open, usually sparsely flowered, 12 to 30 cm. long, 5 to 15 cm. wide, the branches few to several, usually somewhat distant, ascending to spreading (particularly after maturity), scabrous, 1 to 10 (3 to 6) cm. long, woolly-pilose in the primary and secondary axils, densely so in the lower. Pedicels scabrous, appressed to spreading, sometimes pilose at the summit, 0.2 to 3 mm. long. Spikelets linear-oblong to ovate, compressed, straw-colored to grayish-green, 5 to 15 mm. long, 1.5 to acuminate, compressed, keeled, somewhat scabrous on the keel, the first 1 to 2 mm. long, about

CARIBBEAN AMERICA—900 H



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0.5 mm. wide, the second 1.4 to 2 mm. long, about 0.5 mm. wide. Lemmas acuminate, loosely imbricate, scabrous on the keel, 2 to 2.5 mm. long, 0.8 to 1.2 mm. wide, in young spikelets the lower two lemmas are sometimes shorter and ovate. Paleas eight-tenths as long as the lemmas, hyaline, conspicuously convex on the back below, persistent, ciliolate on the keels. Grains subellipsoidal, translucent, striate, reddish-brown, about 0.8 mm. long and 0.4 mm. wide.

In pinelands and savannas in southern Mexico, Central America and Trinidad. **Map XIV, p. 88.**

MEXICO: Colima: Alzada, Hitchcock 7061 (US). Oaxaca: Tlacolula, G. Gándara, 1937 (US).

CENTRAL AMERICA: British Honduras: Vaca, El Cayo District, Gentle 2281 p. p. (US); Baker's Pine Ridge, Belize District, Lundell 3816 (MICH, US). Guatemala: La Libertad, Petén District, Lundell 3605 (MICH). Panamá: David, Prov. Chiriquí, Hitchcock 8353 (US); Panamá, C. Z., Hitchcock 8407 (US); Gatún, C. Z., Hitchcock 7975 (MICH, US); Aguadulce, Prov. Cocle, Pittier 4930 (NY, US); Chepo, Prov. Panamá, Pittier 4524 p. p. (F, US).

WEST INDIES: Trinidad: Dabadie, Britton & Hazen 721 (GH, US) Arouca, Hitchcock 10344 (US).

29. Eragrostis maypurensis (H. B. K.) Steud.

Poa racemosa Vahl, Eclog. Amer. 1: 7. 1796, not Thunb. 1794. TYPE: von Rohr, "Habitat in America meridionali." Fide Pilger in Bot. Jahrb.

70: 348. 1939. "Ich sahe zwei Exemplare des Herbar Kopenhagen, die nicht die Bestimmung von Vahl tragen, aber mit de Beschreibung völlig übereinstimmen."

Poa maypurensis H. B. K., Nov. Gen. & Spec. Pl. 1: 161. 1816. TYPE: Humboldt & Bonpland (P), collected in a dense wood on the Río Orinoco between Atures and the mouth of the Río Sipapo in Venezuela. In the National Herbarium there is a fragment of the type specimen.

Poa Vahlii Roem. & Schult., Syst. Veg. 2: 563. 1817. Based on Poa racemosa Vahl.

Megastachya maypurensis (H. B. K.) Roem & Schult., Syst. Veg. 2: 588. 1817.

Megastachya Swainsoni Raddi, Agrost. Bras. 52. 1823. TYPE: D. Swainson (PI), collected between Pernambuco and Río de Janeiro, Brazil. In the National Herbarium there is a photograph and a fragment of the specimen in the Pisa Herbarium. This is labeled Megastachya Swainsoni nob: presumably in Raddi's script.

Festuca pilosa Willd. ex Spreng., Syst. Veg. 1: 356. 1825, not Haller 1808. TYPE: Humboldt & Bonpland (Willd.), collected in Mexico. In the National Herbarium there is a fragment of the type specimen.

Festuca trichodes Schult., Mant. 2: 650. 1827. Based on Festuca pilosa Willd.

Eragrostis Vahlii (Roem. & Schult.) Nees, Agrost. Bras. 499. 1829.

Eragrostis amoena Presl, Rel. Haenk. 1: 275. 1830. TYPE: Haenke (PR), collected in Mexico. In the National Herbarium there is a photograph and a fragment of the type specimen.

Eragrostis panamensis Presl, Rel. Haenk. 1: 277. 1830. TYPE: Haenke (PR), collected in Panama. In the National Herbarium there is a photograph

and a fragment of the type specimen. Presl cites Festuca pilosa Willd. herb. as a synonym.

Poa amoena (Presl) Kunth, Rév. Gram. 1: Suppl. xxviii. 1830.

Poa alata Desv., Opusc. 102. 1831. TYPE: (P), collected in Carolina. In the National Herbarium there is a fragment of the type specimen. This specimen is labeled Poa alata Desv. in Desvaux' script. The locality is an error as this species does not occur in the United States.

Poa Meratiana Kunth, Rév. Gram. 2: 539. t. 184. 1832. TYPE: Merat, collected in 1827 in Brasil. In the National Herbarium there is a fragment of a specimen in the Trinius Herbarium which was determined by Kunth in 1836.

Poa squarrosa Salzm. ex Steud., Syn. Pl. Glum. 1: 274. 1854, not Licht. 1817, (as synonym of Eragrostis reptans (Michx.) Nees). In the National Herbarium there is a Salzmann collection from Bahía, Brazil which is labeled Poa Squarrosa Salzm. This is probably the basis of Steudel's disposition of the collection as it is from the Institut de Botanique de Montpellier whose collection Steudel saw.

Eragrostis maypurensis (H. B. K.) Steud., Syn. Pl. Glum. 1: 276. 1854.

Eragrostis Meratiana (Kunth) Steud., Syn. Pl. Glum. 1: 276. 1854.

Megastachya panamensis (Presl) Fourn., Mex. Pl. 2: 118. 1886.

Megastachya amoena (Presl) Fourn., Mex. Pl. 2: 118. 1886.

Eragrostis squarrosa Fourn., Mex. Pl. 2: 118. 1886, (as synonym of Megastachya oxylepis (Torr.) Fourn.).

Eragrostis maypurensis var Meratiana (Kunth) Pilger in Bot. Jahrb. 70: 348. 1939.

Eragrostis maypurensis var densiuscula Pilger in Bot. Jahrb. 70: 349. 1939. TYPE: Löfgren 576 (B), collected on June 5, 1888 along the Río

Claro, São Paulo, Brazil. In the National Herbarium there is a specimen of the type collection.

Annual. Culms tufted, decumbent to erect, branching at the base and above, geniculate at the lower nodes, 10 to 70 (20 to 30) cm. tall. Sheaths overlapping to two-thirds the length of the internodes, pilose at the apex of the margins, sometimes papillose-pilose at the apex of and down the margins and on the upper part of the back, sometimes entirely glabrous. Ligule a dense row of white hairs about 0.4 mm. long. Blades flat to involute, usually papillose-pilose above, densely so near the ligule, sometimes scattered papillose-pilose below, 5 to 15 cm. long, 2 to 3 mm. wide. Panicles broadly oblong and dense to pseudo-racemose or ovoid and open, 8 to 25 (15 to 20) cm. long, 2.5 to 6 cm. wide, the rachis scabrous towards the tip, the branches ascending to appressed, sometimes distant, 2 to 4.5 cm. long, the axils with a dense tuft of long tangled hairs. Pedicels usually appressed, pilose and sometimes scabrous, as much as 1 mm. long, with a tuft of long tangled hairs in the axils. Spikelets lanceolate to linear, very flat to turgid, light or dark straw-colored or pinkish-tinged, 6 to 25 mm. long, 1 to 4 mm. wide, 16- to 50-flowered, the rachilla not disarticulating. Glumes acuminate, compressed, keeled, scabrous on the keel, the first 1.4 to 3 mm. long, about 0.8 mm. wide, the second 1.6 to 3 mm. long, about 0.8 mm. wide. Lemmas ovate to acuminate, compressed, keeled, scabrous on the keel, 2.2 to 3 mm. long, 1.2 to 1.6 mm. wide, the tips spreading, the lateral nerves conspicuous. Paleas hyaline, persistent, two-thirds as long as the lemmas, convex on the back below, ciliolate. Grains oblong, reddish-brown, striate,

translucent, about 0.6 mm. long and 0.4 mm. wide.

Sandy ground and disturbed land in pinelands and savannas from central Mexico through Central America. Map XV, p. 94.

MEXICO: Baja California: C. R. Orcutt (US). Durango: Tamazula, Gentry 5250 (MICH). Nayarit: Tepic, Edw. Palmer 1926 of 1892 (NY, US). Jalisco: Guadalajara, Pringle 11742 (F, GH, MICH, US). Guanajuato: Barranquitas de Belén, Oliva 96 (US). Vera Cruz: Coatzacoalcos, Orcutt 3103 (US). Colima: Colima, Orcutt 6551 (US). Guerrero: Temisco, Mexia 8869 (NY, US); Acapulco, Edw. Palmer 596 of 1894-95 p. p. (US). Oaxaca: Villa Alta, Shultes 604 (US); Guatulco, Liebmann 885 (US). Chiapas: Arriaga, Archer 3928 (US); Escuintla, Matuda 2131 (F, MICH, NY, US).

CENTRAL AMERICA: British Honduras: Belize, Bartlett 11257 (MICH, NY, POM, US); betw. Gracie Rock & Freetown, Sibun River, Smart 72 (US); Vaca, El Cayo District, Gentle 2281 p. p. (F, MICH, US). Guatemala: betw. Los Amantes & Izabul, Dept. Izabul, Kellerman 6232 (F, US); Chimaltenango, Dept. Chimaltenango, Standley 57961 (F, NY); betw. San Andres & Maluá, Heatherwax 222 (US). Honduras: Seguatepeque, Dept. Seguatepeque, Standley 55870 (F, US). El Salvador: San Salvador, Velasco 8 (US); Nicaragua: Corinto, Hitchcock 8753 (US); Masaya, Hitchcock 8641 (MICH, US). Costa Rica: Puntarenas, Hitchcock 8539 (MICH, US); Boruca, Tonduz 3844 (US); San Ramón, Brenes 16856 (F). Panamá: San Felix, Prov. Chiriquí, Pittier 5184 (GH, NY, US); Aguadulce, Prov, Coclé, Pittier 4851 (US); betw. Panamá & Corozal, C. Z. Hitchcock 9191 (MICH, US); Mount Hope Cementery, C. Z., Standley 28799 (US); Pecora River, Killip 4226 (US); Chepo. Prov. Panamá, Pittier 4768 (US).

30. Eragrostis simpliciflora (Presl) Steud.

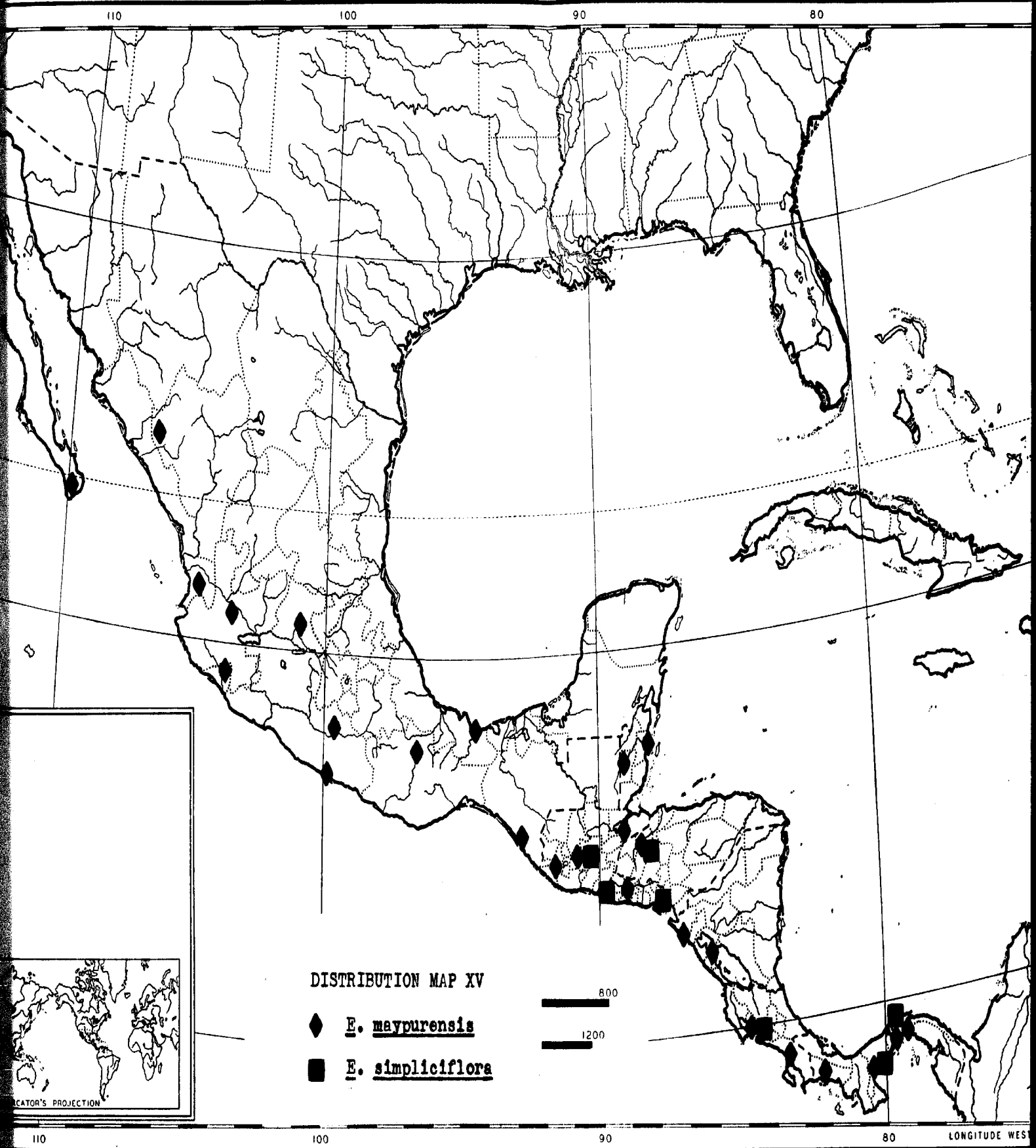
Megastachya simpliciflora Presl, Rel. Haenk. 1: 283. 1830. TYPE: Haenke

(PR), collected in Mexico. In the National Herbarium there is a fragment and a photograph of the type specimen.

Poa simpliciflora (Presl) Kunth, Rév. Gram. 1: Suppl. xxviii. 1830.

Eragrostis simpliciflora (Presl) Steud., Syn. Pl. Glum. 1: 278. 1854.

Perennial. Culms usually densely tufted, branching at several nodes, erect to spreading, 10 to 45 cm. tall. Sheaths overlapping, pilose at the apex of the margins. Ligule a dense row of white hairs about 0.25 mm. long. Blades flat to involute, stiffly ascending, glabrous below, scabrous and scattered pilose above, 3.5 to 15 cm. long, 2 to 4 mm. wide. Panicles short, broadly oblong to obovoid or ovoid, usually open, sometimes condensed, 4.2 to 12 cm. long, 2 to 8 cm. wide, the branches more or less simple, ascending to spreading, scabrous, 1.5 to 2.6 cm. long, the axils sparsely pilose to glabrous. Pedicels appressed, scabrous, 0.2 to 0.4 mm. long or lacking. Spikelets linear to linear-lanceolate, crowded on the branches, greenish- to purplish-tinged, compressed, 16 to 28 mm. long, 1.5 to 2.5 mm. wide, 14- to 24-flowered, the rachilla disarticulating. Glumes usually acuminate, occasionally ovate and acute, compressed, keeled, scabrous on the keel, the first 1 to 2.2 mm. long, about 0.8 mm. wide, the second 1.4 to 2.8 mm. long, about 1.2 mm. wide. Lemmas acuminate, compressed, keeled, scabrous on the keel, imbricate, 2.8 to 3.8 mm. long, about 0.8 mm. wide, the lateral nerves conspicuous and sometimes double. Paleas five- to sixtenths the length of the lemmas, hyaline, persistent, convex on the back below, ciliolate. Grains ellipsoidal, reddish-brown, translucent, faintly striate, about 1 mm. long and 0.4 mm. wide.


110
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DISTRIBUTION MAP XV
E. maypurensis
E. simpliciflora
800
1200
CATOR'S PROJECTION
110
100
90
80
LONGITUDE WES

In disturbed ground from southern Mexico throughout Central America. Map XV, p. 94.

MEXICO: Haenke (US).

CENTRAL AMERICA: Guatemala: Guatemala City, Hitchcock 9090 (US). Honduras: Jiguatepeque, Dept. Comayagua, Archer 3852 (US). El Salvador: La Unión, Hitchcock 8782 (US); Dept. Ahuachapán, Padilla 595 (US). Costa Rica: Alajuela, Jiménez 406 (US); San Francisco de Guadalupe, Tonduz 9851 (US). Panamá: Aguadulce, Dept. Coclé, Pittier 4900 p. p. (US); Aguarubia, Dept. Panamá, Killip 4273 (US).

(5) Subsection Excelsae

A. Panicles contracted, densely flowered, usually interrupted at the base, spiciform or if open the branches stiffly ascending and densely flowered; sheaths glabrous or pilose only at the apex of the margins

B. Panicles dense, spiciform; the branches usually less than 5 cm. long 31. E. diversiflora, p. 95.

B. Panicles dense and contracted or open and the branches stiffly ascending; the branches usually more than 6 cm. long 32. E. prolifera, p. 96.

A. Panicles open, loosely flowered; the branches flexuous, spreading but not stiffly so; sheaths pilose, commonly papillose-pilose at the apex of and down the margins, on the collar and sometimes over the back 33. E. excelsa, p. 99.

31. Eragrostis diversiflora Vasey

Eragrostis diversiflora Vasey in Contr. U. S. Nat. Herb. 1:285. 1893. TYPE: Edw. Palmer 1335 (US 1,749,577), collected on March 2 - 18, 1891 at Manzanillo, Colima, Mexico.

Perennial. Culms tufted, stiffly erect or ascending, 50 to 100 cm. tall. Sheaths overlapping, rounded on the back, glabrous. Ligule a dense row of white hairs about 0.4 mm. long. Blades stiff, usually tightly involute, attenuate, glabrous below, scabrous and sometimes with supraligular hairs above, 10 to 20 cm. long, 2 to 6 mm. wide. Panicles contracted, spiciform, sometimes interrupted, 8 to 30 cm. long, 1 to 2.5 cm. wide, the rachis glabrous, the branches densely flowered, appressed,

scabrous, 1 to 1.6 mm. long. Spikelets linear to lanceolate, compressed, brownish-green to purple, 5 to 6 mm. long, about 1 mm. wide, 10- to 14-flowered, the rachilla not disarticulating. Glumes ovate, acute, heavily keeled, sub-hyaline, sometimes scabrous on the keel, the first 1 to 1.2 mm. long, about 0.5 mm. wide, the second 1.4 to 1.6 mm. long, about 0.8 mm. wide. Lemmas ovate, acute to subacute, loosely imbricate, erose at the tip, 1.4 to 1.6 mm. long, 0.8 to 1.2 mm. wide, with conspicuous lateral nerves. Paleas as long as the lemmas, persistent, hyaline, ciliolate on the keels. Grains subellipsoidal and tapering toward one end, translucent, striate, reddish-brown, about 1 mm. long and 0.4 mm. wide.

In sandy and rocky ground in the Revillagigedo Islands and on the coast of western middle Mexico. Map XVI, p. 101.

MEXICO: Revillagigedo Islands: San Benedicto, Berkelew 172 (F, GH, NY, POM, US, WYO). Sinaloa: Headwaters of the Mazatlan River, W. G. Wright 1318 (CAN, F, US); Mazatlan, Rose, Standley & Russell 14130 (US). Nayarit: San Blas, Ferris 5301 (F, GH, US). Colima: Manzanillo, Edw. Palmer 1335 of 1891 (NY, US).

32. Eragrostis prolifera (Swartz) Steud.

Poa prolifera Swartz, Nov. Gen & Sp. Pl. Prod. 27. 1788. TYPE: O. Swartz (S), collected in 1783-87 at Sta. Lucia, Guadeloupe, W. I. Swartz gives only the general locality "Insulae Caribaeae" in his "Prodromus" but, in his "Flora Indiae occidentalis" 1: 216. 1797, he gives the more exact locality. Interpreted from the description and collections from Guadeloupe.

Poa domingensis Pers., Syn. Pl. 1: 88. 1805. TYPE: Poiteau (P), collected in "arenosis maritimis" near Santo Domingo, Dominican Republic. In the National Herbarium there is a fragment of a specimen in the Trinius Herbarium which was collected by Poiteau at Santo Domingo. This was originally from the Rudolph Herbarium in Paris.

Eragrostis gigantea Trin. in Mém. Acad. St. Pétersb. Sér. VI. Sci. Math. Phys. Nat. 1: 403. 1830. Trinius cites the Poiteau collection cited above and also Poa domingensis Pers.

Eragrostis prolifera (Swartz) Steud., Syn. Pl. Glum. 1: 278. 1854.

Eragrostis domingensis (Pers.) Steud., Syn. Pl. Glum. 1: 278. 1854.

Eragrostis maxima Fourn., Mex. Pl. 2: 114. 1886, not Baker 1885. TYPE: Gouin 91 (P), collected July 26, 1866 at Port San Jean d'Ulloa (probably near Vera Cruz), Vera Cruz, Mexico. In the National Herbarium there is a fragment and a photograph of the type. Among the other collections cited by Fournier is one of Poiteau's from Santo Domingo. This is probably the same one as mentioned above under Poa domingensis.

Perennial. Culms tufted, erect to ascending, branching at the lower nodes, frequently proliferating at the nodes, glabrous, 80 to 160 cm. tall. Sheaths somewhat cartilaginous at the base, overlapping, rounded on the back, about one-half the length of the internodes above, glabrous except for the sometimes pilose apex of the margins, sometimes auriculate. Ligule a dense row of white hairs 0.2 to 0.4 mm. long. Blades flat to involute, attenuate, glabrous below, scabrous and rarely with supraligular hairs above, 15 to 45 cm. long, 2 to 6 mm. wide. Panicles narrowly ovoid to obovoid, condensed to somewhat open, 25 to 50 cm. long, 3 to 10 cm. wide, the rachis scabrous, the branches appressed to ascending, scabrous, 5 to 15 cm. long, the lower branches sometimes distant, the axils glabrous to

sparsely pilose. Pedicels ascending to appressed, scabrous 1 to 4 mm. long. Spikelets ovate to lanceolate or linear, compressed, greenish-brown, 4 to 10 mm. long, 1.2 to 2 mm. wide, 4- to 16-flowered, the rachilla disarticulating. Glumes acute, the first sometimes acuminate, deciduous, compressed, keeled at the tip, scabrous on the keel at the tip, the first 1 to 1.8 mm. long, 0.4 to 0.8 mm. wide, the second 1.2 to 1.8 mm. long, about 0.8 mm. wide. Lemmas ovate, acute to subacuminate, hyaline, rounded on the back, keeled at the tip, loosely imbricate, glabrous or scabrous on the keel at the tip, 1.6 to 2 mm. long, 0.8 to 1.2 mm. wide, the lateral nerves conspicuous. Paleas hyaline, ciliolate on the keels, eight-tenths as long as the lemmas, persistent, slightly convex on the back. Grains oblong, reddish-brown, translucent, striate, about 0.8 mm. long and 0.4 mm. wide.

In open ground and thickets in sandy places near the coast in Southern Mexico and Central America and from Cuba to Martinique in the West Indies. Map XVI, p. 101.

MEXICO: Oaxaca: San Agustin, Liebmann 482 (US). Chiapas: Acapet, Matuda 2722 (F, MICH, NY, US). Yucatán: Progreso to Mérida, Swallen 2369 (MICH, US). Vera Cruz: Gouin 79 (US).
CENTRAL AMERICA: British Honduras: Belize, Lundell 4722 (MICH, US); Gracie Rock, Sibun River, Gentle, (MICH, US); Middlesex, Stann Creek, Smart 38 (US). Guatemala: San José, Dept. Escuintla, Standley 63965 (F, US). El Salvador: Acajutla, Hitchcock 8988 (MICH, US). Nicaragua: Corinto, Hitchcock 8611 (MICH, US). Costa Rica: Puntarenas, Hitchcock 8533 (MICH, US). Panamá: Panamá, Hitchcock 8100 (US); Bella Vista, Killip 4039 (NY, US).
WEST INDIES: Cuba: Punta Gobernadora, Prov. Pinar del Río, Ekman 12696

(US); Carabela Grande, Prov. Pinar del Río, Roig 3200 (NY, US); Habana, Prov. Habana, León 15868 (US). Grand Cayman: Georgetown, Millspaugh 1240 (F, US). Jamaica: St. Ann's Bay, Ridley 87 (US); Heathshire Hills, Harris 11618 (F, GH, NY, US). Hispaniola: Haiti: Basse Terre, Tortue Island, E. C. & G. H. Leonard 12486 (US); Port Margot, Ekman H2604 (US). Guadeloupe: Duss 3422 (NY, US). Martinique: Trois-Flets, Duss 565 (NY, US).

33. Eragrostis excelsa Griseb.

Eragrostis excelsa Griseb., Cat. Pl. Cuba. 227. 1866. TYPE: C. Wright 3425 (Griseb.), collected on Oct. 30, 1860-1864 on the sand beaches by the seaside at Toscano, Prov. Pinar del Río, Cuba. In the National Herbarium there is a photograph and fragment of the type as well as an isotype.

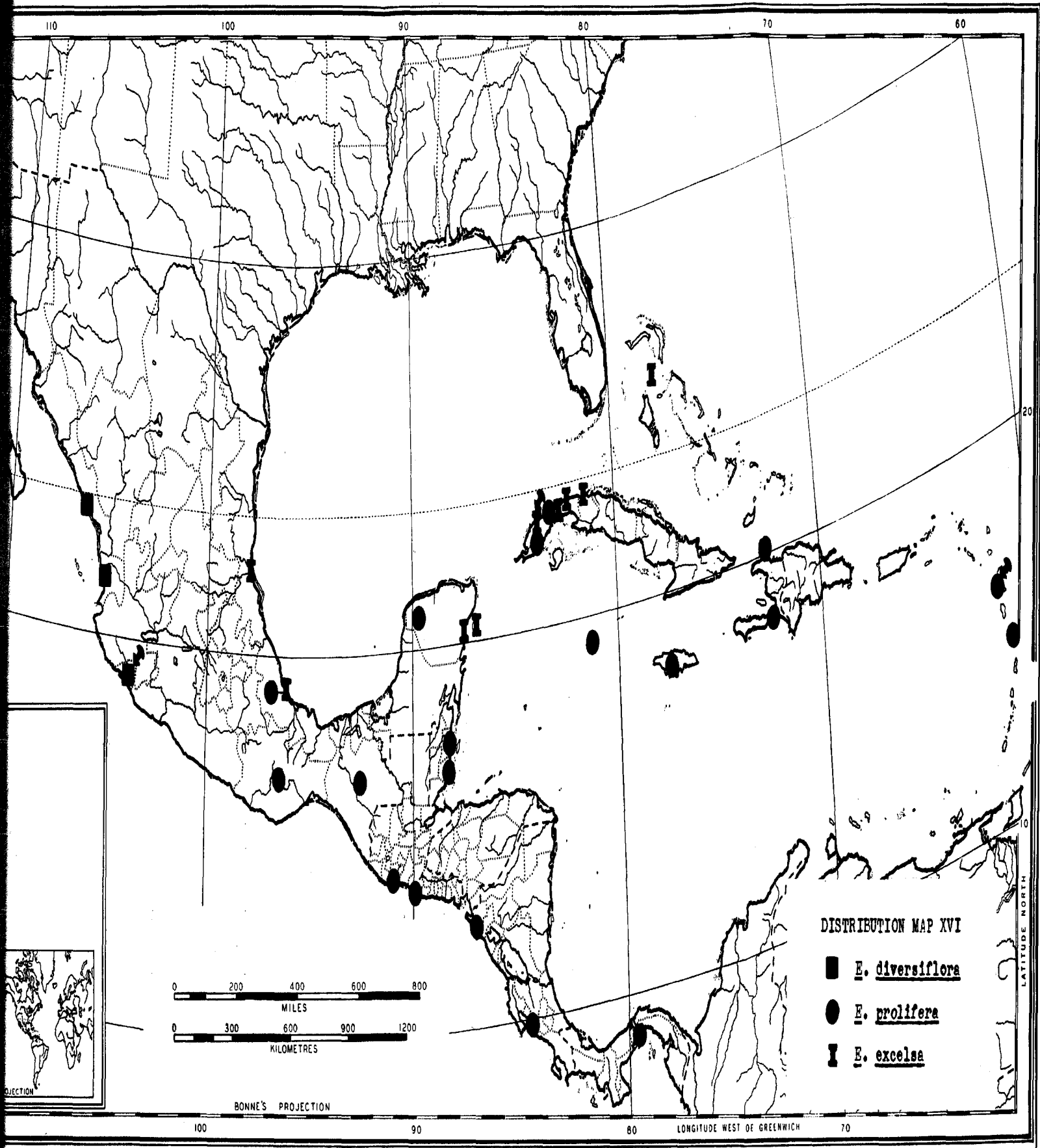
Eragrostis glumacea Fourn., Mex. Pl. 2: 117. 1886. TYPE: Gouin 78 (P), collected on Aug. 2, 1865 near Vera Cruz, Vera Cruz, Mexico. In the National Herbarium there is a photograph of the type specimen. There are also fragments of two specimens of Gouin 86, the second cited, at Paris.

Perennial. Culms tufted, stiffly erect or ascending, stout, 1 to 2 m. tall. Sheaths overlapping, rounded on the back, pilose (usually papillose-pilose) at the apex of and down the margins, on the collar and rarely on the back. Ligule a dense row of white hairs about 0.25 mm. long. Blades flat to involute, glabrous below, scabrous and with supra-ligular hairs above, about 60 cm. long, 6 to 8 mm. wide. Panicles ovoid, open, 45 to 50 cm. long, 20 to 30 cm. wide, the rachis glabrous, the branches slender, spreading, flexuous, scabrous, sparsely floriferous to

within 2 cm. of the base, 8 to 15 cm. long, glabrous in the axils. Pedicels ascending to appressed, slender, scabrous, 1 to 4 mm. long. Spikelets ovate to lanceolate, compressed, dull green, 4 to 6 mm. long, 1.5 to 2 mm. wide, 4- to 8-flowered, the rachilla disarticulating. Glumes ovate, acute to acuminate, hyaline, scabrous on the keel, compressed, the first 2 to 2.5 mm. long, about 1 mm. wide, the second 2 to 2.5 mm. long, about 0.8 mm. wide. Lemmas ovate, acute to acuminate, scabrous on the tip of the keel, loosely imbricate, 2.2 to 3.2 mm. long, about 0.8 mm. wide, with conspicuous lateral nerves. Paleas from eight-tenths as long to as long as the lemmas and falling with them, ciliolate on the keels, hyaline, evenly convex on the back. Grains ellipsoidal, reddish-brown, slightly flattened, translucent, striate, about 1 mm. long and 0.5 mm. wide.

In sandy and rocky open ground and in thickets along the Gulf coast of Mexico and the East coast of the Yucatán Peninsula and in the Bahamas and Cuba. **Map XVI, p. 101.**

MEXICO: Tamaulipas: Tampico, Hitchcock 5787 (US). Vera Cruz: Vera Cruz, Hitchcock 6580 (US). Yucatán: Tancah, Swallen 2803 (MICH, US); San Miguel, Cozumel Island, Swallen 2852 (MICH, US).
WEST INDIES: Bahamas: Whale Cay, Britton & Millspaugh 2186 (F, NY, US). Cuba: Toscano, Prov. Pinar del Río, Wright 3425 (GH, NY, US); Bay of Mariel, Prov. Pinar del Río, Britton & Gager 7561 (NY, US); Playa de Mariano, León (NY, US); Jaimanito, Prov. Habana, Ekman 1206 (US); Boca de Canasí, Prov. Matanzas, León 13690 (US).



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(6) Subsection Hirsutae

A. Sheaths pubescent only at the apex of the margins or glabrous

B. Pedicels of the lateral spikelets shorter than the spikelets

C. Spikelets linear, 6 to 16 mm. long, either reddish-purple without a glandular band on the pedicel or plumbeous with a glandular band

D. Spikelets reddish-purple; no glandular band on pedicel

48. E. Tracyi p. 130.

D. Spikelets plumbeous; with a glandular band on pedicel

49. E. Swalleni, p. 131.

C. Spikelets lanceolate, 4 to 9 mm. long, more or less plumbeous but never with a glandular band on the pedicels

D. Panicle broadly ovoid; the branches 8 to 18 cm. long; the lemmas 2.8 to 3 mm. long

39. E. erosa, p. 114.

D. Panicle oblong; the branches 4 to 9 cm. long; the lemmas 2 to 2.4 mm. long

40. E. Palmeri, p. 116.

B. Pedicels of the lateral spikelets longer than the spikelets

C. Panicle branches usually less than 10 cm. long; blades less than 3 mm. wide

D. Panicle simply compound; the branches few and appearing distant, rather stiffly spreading

45. E. purpurascens, p. 125.

D. Panicle decompound; the branches many, flexuous, almost capillary or at least slender

46. E. lugens, p. 126.

C. Panicle branches usually more than 10 cm. long; blades more than 3 mm. wide

D. Lemmas 2.4 to 3.4 mm. long, the lateral nerves conspicuous; spikelets more than 4 mm. long

34. E. trichodes, p. 104.

D. Lemmas 2 to 2.4 mm. long, the lateral nerves obscure; spikelets less than 4 mm. long

36. E. hirsuta, p. 109.

A. Sheaths pubescent or papillose-pubescent not only at the apex of the margins but also along the margins and on the collar and the back

B. Sheaths papillose-pubescent on the margins or collar or the back; blades usually also papillose-pubescent above

C. Pedicel of the lateral spikelets shorter than the spikelets

D. Blades involute, 2 to 4 mm. wide

37. E. hirta, p. 112.

D. Blades flat, 5 mm. wide 47. E. praetermissa, p. 128.

C. Pedicels of the lateral spikelets longer than the spikelets

D. Panicle broadly ovoid, nearly as wide as long, never over 25 cm. long; blades 1.5 to 3 mm. wide

44. E. trichocolea, p. 123.

D. Panicle narrowly ovoid, but only about half as wide as long, usually 30 cm. or more in length, blades at least 4 mm. wide

E. Spikelets 5 to 10 mm. long; lemmas 2.4 to 3.4 mm. long

34. E. trichodes, p. 104.

E. Spikelets 2 to 5 mm. long; lemmas 1.4 to 2.4 mm. long

F. Panicle 15 to 25 cm. wide; lemmas 2 to 2.4 cm. long

35. E. hirsuta, p. 109.

F. Panicle 25 to 35 cm. wide; lemmas 1.4 to 2 mm. long

G. Panicle branches 15 to 25 cm. long; sheaths lacking glandular pits in the nerves

41. E. longiramea, p. 118.

G. Panicle branches 10 to 15 cm. long; many small glandular pits in the nerves of the sheath

35. E. glandulosa, p. 106.

B. Sheaths variously pubescent but not papillose-pubescent

C. Panicle about one-third as wide as long, never over 12 cm. wide

D. Spikelets 6- to 12-flowered, 4 to 6 mm. long; panicle branches 4 to 9 cm. long, the axils sparsely pilose or glabrous

40. E. Palmeri, p. 116.

D. Spikelets 6- to 12-flowered, 6 to 10 mm. long; panicles branches 8 to 15 cm. long, the lower axils densely villous

38. E. curvula, p. 113.

C. Panicle one-half as wide as long or wider, usually over 15 cm. wide

D. Blades 4 to 8 mm. wide or if narrower the lemmas 2.4 to 3.4 mm. long

E. Spikelets 4 to 10 mm. long and usually with 6 or more flowers; lemmas 2.4 to 3.4 mm. long

34. E. trichodes, p. 104.

E. Spikelets 2 to 4 mm. long and usually 2- to 4-flowered; lemmas 2 to 2.4 mm. long

36. E. hirsuta, p. 109.

D. Blades 1 to 3 mm. wide; lemmas 1.8 to 2.2 mm. long

E. Blades 10 to 25 cm. long, 2 to 3 mm. wide

42. E. intermedia, p. 119.

E. Blades 4 to 10 cm. long, 1 to 2 mm. wide

43. E. oreophila, p. 121.

34. Eragrostis trichodes (Nutt.) Wood

Poa trichodes Nutt. in Trans. Amer. Phil. Soc. n. s. 5: 146. 1837. TYPE: Nuttall (PH), collected in "bushy prairies and open alluvial lands" in Arkansas.

Eragrostis pilifera Scheele in Linnaea 22: 344. 1849. TYPE: F. Lindheimer Fl. Tex. Exsicc. Fasc. IV. no. 736, collected in 1847 on a high, dry prairie near New Braunfels, Texas. In the National Herbarium there is a specimen of the type collection. This was distributed by Lindheimer as Eragrostis tenuis Gray.

Eragrostis tenuis (Ell.) Steud. err. applic. Gray, Man. Ed. II. 564. 1859. Interpreted from the description and specimens so named in the Gray Herbarium. This species is credited to Gray in the "Manual" Ed. VI. 661. 1890.

Eragrostis trichodes (Nutt.) Wood, Class Book 796. 1861.

Eragrostis tenuis var. texensis Vasey in Contr. U. S. Nat. Herb. 1: 59. 1890. TYPE: G. C. Nealley 848 (US 1761634), collected in 1884 in Texas.

Eragrostis grandiflora J. G. Smith & Bush in Ann. Rept. Mo. Bot. Gard. 6: 117. t. 55. 1895. TYPE: B. F. Bush 808 (MO 131553), collected on Oct. 7, 1894 at Sapulpa, Oklahoma.

Eragrostis capillacea Jedw. in Bot. Arkiv 5: 196. 1924. TYPE: P. A. Rydberg 1832 (B), collected on Aug. 23, 1893 on sand hills near Plummer

Ford, Dismal River, Thomas County, Nebraska. In the National Herbarium there is a specimen of the type collection as well as a fragment of the type specimen.

Eragrostis trichodes var. pilifera (Scheele) Fern. in Rhodora 40: 331. 1938.

Perennial. Culms tufted, erect or ascending, branching near the base, 60 to 160 cm. tall. Sheaths overlapping at the base, folded on the keel, usually glabrous but sometimes very villose on the back, and sometimes papillose-villose on the margins, pilose at the apex of the margins. Ligule a dense row of white hairs about 0.25 mm. long. Blades flat or folded, involute at the tip, glabrous below, scabrous with some supraligular hairs above, 15 to 40 cm. long, 1 to 8 mm. wide. Panicles oblong to ovoid, open, 35 to 55 cm. long, 7 to 30 cm. wide, the rachis scabrous towards the tip, the branches ascending to spreading, slender, sometimes flexuous, scabrous, 7 to 20 cm. long, the branchlets scabrous, ascending to spreading, somewhat flexuous and capillary, the axils pilose. Pedicels capillary, spreading, scabrous, somewhat flexuous, 4 to 20 cm. long. Spikelets ovate to lanceolate, compressed, brownish-purple to straw-colored, 4 to 10 mm. long, 1.5 to 3 mm. wide, 4- to 18-flowered, the rachilla not disarticulating. Glumes acuminate-lanceolate to acute-ovate, hyaline, scabrous on the keel, usually compressed at the tip, the first 1.8 to 4 mm. long, about 0.5 mm. wide, the second 1.8 to 3.4 mm. long, 1 to 1.2 mm. wide. Lemmas ovate, acute to subacute, hyaline, compressed, imbricate, 2.4 to 3.4 mm. long, about 1.6 mm. wide, the lateral nerves conspicuous. Paleas as long as the lemmas and falling with them, hyaline, evenly convex on the back, ciliolate on the keels.

Grains short, cylindric, reddish-brown, translucent, striate or somewhat reticulate, about 1 mm. long, 0.6 to 0.8 mm. wide. Anthers about 1.5 mm. long.

On sandy prairies and in open woods from Illinois westward to Nebraska, south to Texas through Missouri, Arkansas, Kansas and Oklahoma. Map XVII, p. 112.

UNITED STATES: Illinois: Oquawka, H. N. Patterson (US); Beardstown; C. A. Geyer, Aug.1842 (US); Madison Co., H. Eggert, Sept. 10, 1878 (US); Starved Rock, Lansing 3721 (US). Nebraska: Valentine, J. M. Bates, Aug. 1, 1889 (US); Box Butte Co., J. G. Smith, Aug. 7, 1889 (US); Dismal River, Thomas Co., Rydberg 1831 (F, MO, NY, US). Missouri: St. Louis, H. Eggert, Sept. 10, 1878 (US); Courtney, Bush 582 (MO, US). Kansas: Riley Co., Pl. Kan. 934 (GH, MO, NY, US, WYO); Hutchison, Smyth 27 (NY, US). Arkansas: Nuttall (PH). Oklahoma: Sapulpa, Bush 808 (US); Cleo, Stevens 1734 (GH, MICH US); Shattuck, Stevens 2919 (GH, MO, NY, OKLA, US); Oklahoma City, C. C. Smith 277 (US); Platt Nat. Park, Merrill & Hagan 1530 (US); Tonkawa, Stevens 1860 (GH, MO, US). Texas: Bellinger, Silveus 766 (US); Cuero, Silveus 438 (US); College Station, G. C. Nealley, 1882 (US); Weatherford, Tracy 8238 (F, GH, MO, NY, TEX, US); Gillespie Co., Palmer 10881 (US); Texarkana, Tharp 5261 (TEX, US); Chillicothe, Ball 900 (US).

35. Eragrostis glandulosa L. H. Harvey sp. no.

Planta annua. Culmi erecti vel ascendentes, 70 vel 200 cm. alti. Vaginae apice marginum hispidae, marginibus propiis papillosi-hispidis, carina nervisque lateralibus foveolatis, foveolis multiglandulosis.

Laminae planae vel plicatae, subtus scabrae, superne scabrae et sparse papillosi-hispidae, 35 vel 50 cm. longae, 6 vel 14 mm. latae. Paniculae late ovatae, apertae, decompositae, 35 vel 45 cm. longae, 20 vel 35 cm. latae, ramis gracilibus, ascendentibus vel divergentibus, multiramulosis, 10 vel 15 cm. longis, ad axillas glabris. Spiculae lineari-lanceolatae vel ovatae, viridiusculae hyalinae vel stramineae et purpureitinctae, 2.2 - 5 mm. longae, 1 vel 2 mm. latae, 2- vel 8-floriferae; rachilla non disarticulante. Glumae hyalinae, acuminate lanceolatae ovatae, 1.2 - 1.6 mm. longae. Lemmata ovata, acuta, 1.4 - 1.8 mm. longa, nervis lateralibus conspicuis. Paleae hyalinae, lemmata aequantes, persistentes. Fructus breves, cylindrici, striati, circa 0.8 mm. longi et 0.4 mm. lati.

Specimen typicum legit Ynes Mexia (n. 8774; US 1724746) ad altitudinem 312 m. in litore fluminis prope locum "Barranca de la Suriana, Sierra Madre del Sur, north of the Río Balsas, Temisco, Distrito Adama, Guerrero," in Republica Mexicana.

Species E. hirsutae et E. capillari affinis, sed differt foveolis glandulosis in vaginarum nervis.

Annual. Culms stout, branching at the base, erect or ascending, 70 to 200 cm. tall. Sheaths somewhat compressed, longer than the internodes, hispid at the apex of the margins, sometimes part way around the collar, usually papillose-hispid down the margins, the keel and other nerves with many small glandular pits. Ligule a dense row of white hairs about 1 mm. long. Blades flat, folded or subinvolute, midnerve heavy, scabrous on both surfaces, scattered papillose-hispid above the ligule, 35 to 50 cm.

long, 6 to 14 mm. wide. Panicles broadly ovoid, open, loosely flowered, 35 to 40 cm. long, 20 to 35 cm. wide, the rachis scabrous towards the tip, the branches slender, flexuous, ascending to spreading, fragile, decompound, 10 to 15 cm. long, the axils glabrous. Pedicels slender, flexuous, fragile, spreading, 3 to 10 mm. long. Spikelets linear-lanceolate to ovate, greenish- to purplish-tinged and straw-colored, 2.2 to 5 mm. long, 1 to 2 mm. wide, 2- to 8-flowered, the rachilla not disarticulating. Glumes hyaline, compressed, keeled, scabrous on the keel, the first acuminate, lanceolate, 1.2 to 1.6 mm. long, about 0.4 mm. wide, the second acute, ovate, 1.2 to 1.6 mm. long, about 0.8 mm. wide. Lemmas ovate, acute to subacute, scabrous on the keel, 1.4 to 1.8 mm. long, about 1.2 mm. wide, loosely imbricate, the lateral nerves conspicuous. Paleas hyaline, as long as the lemmas, persistent, slightly convex on the back, scabrous or glabrous on the keels. Grains short, cylindric, reddish-brown, somewhat flattened, translucent, striate, about 0.8 mm. long and 0.4 mm. wide. Anthers yellowish- or purplish-tinged, cylindric, 0.8 to 1 mm. long, about 0.3 mm. wide.

Sandy soil along streams, in ravines or thickets in partial shade from central Mexico to northern Central America. Map XVII, p. 112.

MEXICO: Jalisco: San Nicolás, Hitchcock 7234 (US). Morelos: Xochiltepec, Lyonnet 2620 (US). Guerrero: Temisco, Mexia 8774 (US); Achotla, Reko 5017 (US).

CENTRAL AMERICA: Guatemala: Pastores, Dept. Sacatepéquez, Standley 60796 (US); Heyde & Lux 6270 (US). El Salvador: San Salvador, Hitchcock 8954 (MICH, US).

36. Eragrostis hirsuta (Michx.) Nees

? Poa simplex Walt., Fl. Carol. 79. 1788. Interpreted from the description.

Poa hirsuta Michx., Fl. Bor. Amer. 1: 68. 1803. TYPE: Michaux (Michx.), collected in South Carolina. In the National Herbarium there is a fragment of the type specimen.

Eragrostis hirsuta (Michx.) Nees, Agrost. Bras. 508. 1829.

Eragrostis sporoboloides Smith & Bush in J. G. Smith in Ann. Rept. Mo. Gard. 6: 116. pl. 54. 1895. LECTOTYPE: B. F. Bush 765 (MO 131556), collected July 22, 1894 at Sapulpa, Oklahoma. J. G. Smith has labeled both Bush 765 and 766 as types in the Missouri Botanical Garden Herbarium 765 is chosen as the type because the other collection is not from the locality given with the description.

Eragrostis hirsuta var. laevivaginata Fern. in Rhodora 41: 500. 1939. TYPE: M. L. Fernald & B. Long 9273 (GH), collected in wooded alluvial bottomland of the Meherrin River, near Haley's Bridge, Southhampton Co., Virginia.

Perennial. Culms tufted, erect or ascending, stout, 45 to 100 cm. tall. Sheaths overlapping, hirsute or papillose-hirsute (sometimes densely) at the apex of and down the margins, sometimes on the collar, sparsely on the back (particularly on the innovations), sometimes glabrous or nearly so. Ligules a dense row of white hairs about 0.2 mm. long. Blades flat, folded, or involute, attenuate, usually glabrous below, usually hirsute or papillose-hirsute above the ligule and scabrous towards the tip above, 25 to 40 cm. long, 4 to 8 mm. wide. Panicles broadly ovoid, open, loosely flowered, 25 to 60 cm. long, 15 to 25 cm. wide, the rachis

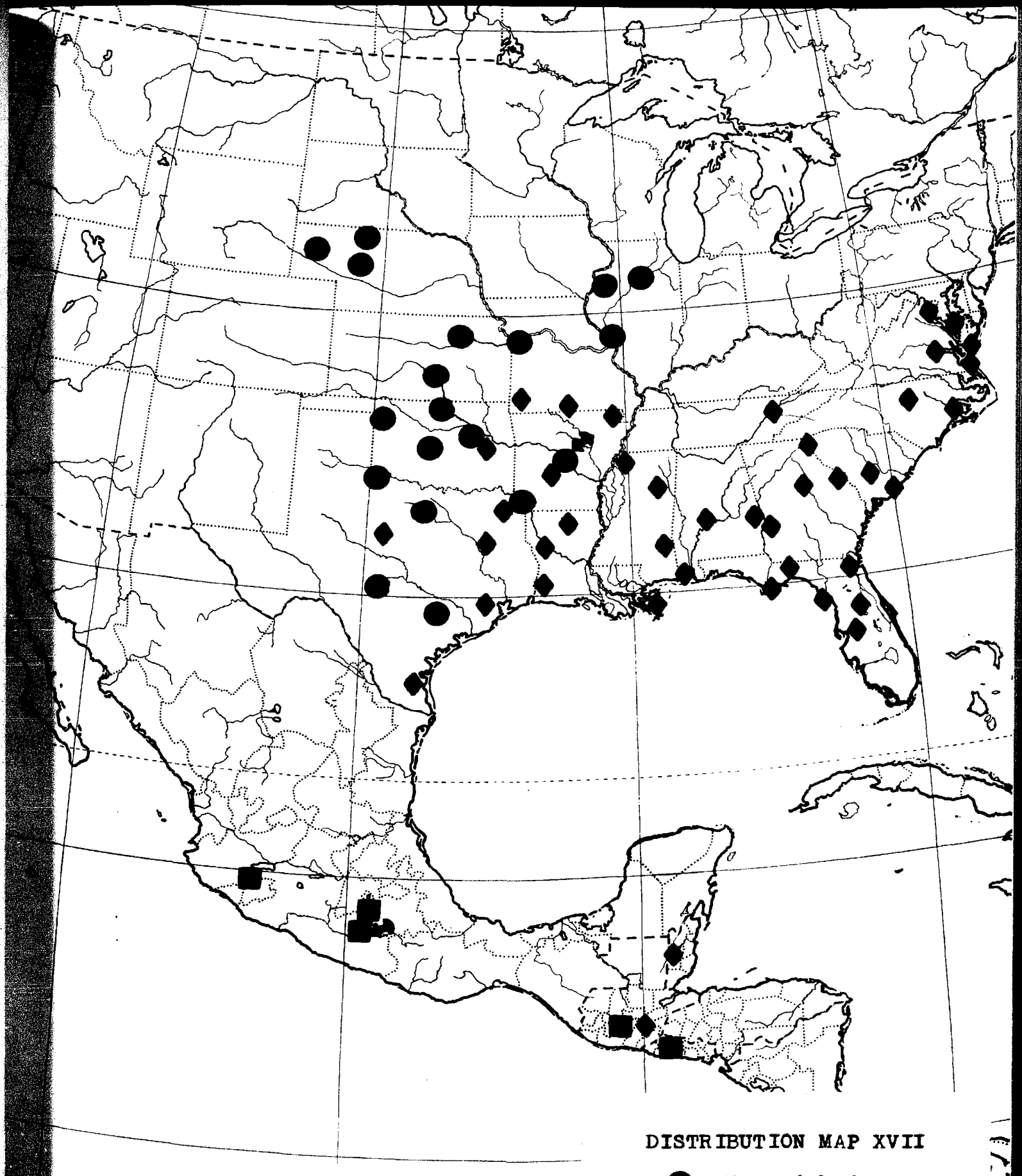
scabrous towards the tip, the branches ascending to spreading, scabrous, 10 to 25 cm. long, the axils usually sparsely pilose. Pedicels capillary, spreading to ascending, scabrous, 8 to 20 mm. long. Spikelets broadly ovate to lanceolate, greenish- to purplish-brown, compressed, 2 to 4 mm. long, 1 to 1.2 mm. wide, 2- to 6-flowered, the rachilla not disarticulating. Glumes acuminate, lanceolate, scabrous on the keel, compressed, deciduous, the first 1.4 to 2 mm. long, about 0.4 mm. wide, the second 1.6 to 2.2 mm. long, about 0.8 mm. wide. Lemmas ovate, acute, scabrous on the keel at the tip, 2 to 2.4 mm. long, about 1.2 mm. wide, loosely if at all imbricate, the lateral nerves usually inconspicuous. Paleas hyaline, from two-thirds as long to as long as the lemmas, persistent, ciliolate on the keels, somewhat convex on the back. Grains short, cylindric, reddish-brown, striate, translucent, about 0.8 mm. long and 0.4 mm. wide.

In woods and river bottoms and invading waste land; from Maryland to Florida to Texas, mostly on the coastal plain and in Missouri, Arkansas and Oklahoma and northern Central America. **Map XVII, p. 112.**

UNITED STATES: Maryland: Jones Wharf, St. Marys Co., Blake 11960 (GH, US); Chesapeake Beach, J. B. S. Norton 36 (US). Virginia: Glencarlyn, Blake 11675 (GH, US); Brooke, Hermann 10403 (GH, NY); Eastville, Fernald & Long 5219 (GH, US); Lightfoot, Grimes 4494 (NY, US); Petersburg, Fernald, Long & Smart 6780 (GH, NY); Norfolk, Kearney 295 (US); Factory Hill, Fernald & Long 6779 (GH, US). North Carolina: Durham, Bloomquist 154 (US); Newbern, Kearney 1968 (US). South Carolina: Oconee Co., A. S. Anderson 1468 (US); Aiken, Kearney 231 (US); Orangeburg, Hitchcock & Chase 131 (US); Charleston, Moldenke 5186 (NY). Georgia: Augusta, Kearney 214 (GH, US);

Eatonton, Weatherwax 26 (US); Lumpkin, A. W. Latimer, Oct. 10, 1885 (US). Florida: Aspalaga, Biltmore Herb. 381a (GH, NY, US); Tallahassee, Nash 2521 (F, GH, MO, NY, US); Jacksonville, Curtiss 5572 (GH, MO, US); Apalachicola, Biltmore Herb. 384c (US); Gainsville, Swallen 5429 (US); De Leon Springs, C. V. Piper, Nov. 19, 1921 (US); Sea Horse Island, Cedar Keys, Combs 801 (US); Bartow, Combs 1178 (US); Braidentown, Combs 1327 (US). Tennessee: Knoxville, H. M. Jennison, Sept. 17, 1934 (US). Alabama: Selma, Kearney 8 (US); Auburn, Tracy 3768 (US); Mobile, C. Mohr, Nov. 20, 1886 (US). Mississippi: Panola Co., Eggert 148 (US); Starkville, Chase 4446 (US); Waynesboro, Kearney 196 (US): Ocean Springs, Tracy 137 (US). Louisiana: Calhoun, Ball 42 (F, US); Natchitoches, Ball 140 (US); Alexandria, Ball 177 (US); Breton Island, Tracy & Lloyd 469 (F, GH, MO, NY, US); Lake Charles, Chase 4416 (US). Texas: Bachman Dam, C. L. & A. A. Lundell 7087 (MICH, NY, US); betw. Marshall & Longview, Silveus 818 (US); Ennis, J. G. Smith 5 (US); Baird, Letterman 20 (MO); Corsicana, Reverchon 3511 (GH, MO, NY, POM, US); Huntsville, Palmer 13390 (MO); Tyler, Silveus 689 (US); Harvester, Thurow 19 (US); Houston, J. F. Joor, June 3, 1884 (MO); Pierce, Tracy 7385 p. p. (F, MO, NY, US); Sarita, Hitchcock, 1904 (US). Missouri: Tecumseh, Palmer 33002 (MO); Joplin, Palmer 2853 (MO); Webb City, Bush 9052 (US). Arkansas: Rosebud, Nielsen 4555 (US); Clay Co., Eggert 147 (US); Magnet Cove, Demaree 16449 (NY). Oklahoma: Sapulpa, Bush 1354 (GH, MO, US).

CENTRAL AMERICA: British Honduras: San Agustin, El Cayo Dist., Lundell 6738 (F, GH, MICH, NY, TEX, US). Guatemala: Volcán Jumay, Dept. Jalapa, Steyermark 32286 (F).



DISTRIBUTION MAP XVII

● E. trichodes

■ E. glandulosa

◆ E. hirsuta

0 200 400 600 800 1000
MILES

0 300 600 900 1200 1500
KILOMETRES

BONNE'S PROJECTION

110 100 90 80

37. Eragrostis hirta Fourn.

Eragrostis hirta Fourn., Mex. Pl. 2: 115. 1886. TYPE: Virlet d'Aoust 1390 (P), collected in 1851 in the Prov. of San Luis Potosí, Mexico. In the National Herbarium there is a fragment and a photograph of the type specimen.

Perennial. Culms tufted, erect to ascending, 60 to 100 cm. tall. Sheaths overlapping, the lower densely papillose-villous on the back, at the apex of and down the margins, the upper ones usually villous only at the apex of the margins. Ligule a dense row of white hairs about 0.4 mm. long. Blades involute, attenuate, glabrous below, scabrous and scattered-villous, sometimes papillose-villous, at the base above, 26 to 32 cm. long, 2 to 4 mm. wide. Panicles narrowly oblong, open, densely flowered, 30 to 45 cm. long, 4 to 8 cm. wide, the branches slender, flexuous, much branched, appressed to spreading, scabrous, 4 to 8 cm. long, the axils pilose. Pedicels capillary, flexuous, spreading, scabrous, 1 to 3 mm. long. Spikelets ovate, lanceolate or oblong, purplish-green, compressed, 3 to 5 mm. long, 1.4 to 2 mm. wide, 4- to 8-flowered, the rachilla not disarticulating. Glumes acuminate-lanceolate, the second sometimes ovate, acute, hyaline, compressed, keeled, scabrous on the keel, deciduous, the first 1.6 to 1.8 mm. long, about 0.4 mm. wide, the second 2 to 2.2 mm. long, about 0.4 mm. wide. Lemmas ovate, acute to subacute, imbricate, rounded on the back, compressed and keeled at the hyaline tip, scabrous on the keel, 2 to 2.2 mm. long, about 0.8 mm. wide, the lateral nerves evident. Paleas hyaline, persistent, about eight-tenths the length of the lemmas, convex on the back, ciliolate on the keels.

Grains blunt ovoid, reticulate, flattened, translucent, reddish-brown, about 0.8 mm. long and 0.4 mm. wide.

In valleys and along streams in Baja California, Middle Mexico and Honduras. Map XVIII, p. 118.

MEXICO: Baja California: El Taste, T. S. Brandegee, Nov. 1902 (US). San Luis Potosi: Virlet d'Aoust 1390 (US). Hidalgo: Tula, Pringle 6634 (US). Mexico: Guadalupe, St. Pierre 75 (US).
CENTRAL AMERICA: Guatemala: Antigua, Dept. Sacatepéquez, Standley 64667 (F); Alamedo, Dept. Chimaltenango, J. R. Johnston 930 (F). Honduras: Siguatepeque, Dept. Comayagua, Yuncker, Dawson & Youse 5797 (US).

38. Eragrostis curvula (Schrad.) Nees

Poa curvula Schrad. in Goett. Gel. Anz. 3: 2073. 1821. TYPE: Hesse (B?), collected at Nienburg, Cape of Good Hope, Africa. Interpreted from the description and from African specimens so named.

Eragrostis curvula (Schrad.) Nees, Fl. Afr. Austr. 1: 397. 1841.

Perennial. Culms tufted, erect or ascending, 75 to 150 cm. tall. Sheaths shorter than the internodes, the basal ones numerous and spread out, densely villous on the back near the base and less so on the margins, the upper glabrous except for the pilose apex of the margins. Ligule a dense row of white hairs about 1.2 mm. long. Blades involute, setaceous, grossly flexuous, usually glabrous below and scabrous above, 20 to 30 cm. long, 1 to 1.4 mm. wide, those of the innovations sometimes pilose underneath and near the base above, much longer than the culm leaves.

Panicles oblong or ovoid, open, 25 to 40 cm. long, 8 to 12 cm. wide, the rachis scabrous, the branches ascending to spreading, slender, scabrous, flexuous, 8 to 15 cm. long, the lower axils densely pubescent, the upper much less so. Pedicels ascending to appressed, less than one-fourth the length of the spikelets, slender, scabrous, the lateral ones 0.6 to 1 mm. long. Spikelets linear-lanceolate, compressed, grayish-green, 6 to 10 mm. long, 1.4 to 1.6 mm. wide, 6- to 12-flowered, the rachilla disarticulating. Glumes acuminate, lanceolate, compressed, keeled, scabrous on the keel, the first 1.6 to 1.8 mm. long, about 0.4 mm. wide, the second 2.4 to 2.8 mm. long, about 0.8 mm. wide. Lemmas narrowly ovate, acute, somewhat compressed and keeled, 2.2 to 2.6 mm. long, about 1.2 mm. wide, the lateral nerves conspicuous. Paleas hyaline, nearly as long as the lemmas and falling with them, scabrous on the keels, evenly convex on the back. Grains ellipsoidal, the adaxial surface flattened and with a broad shallow groove, translucent, reddish-brown, striate, about 1.4 mm. long, and 0.6 mm. wide.

Introduced in scatttered localities in southeastern and southwestern United States. **Map XVIII, p. 118.**

UNITED STATES: South Carolina: Allendale (US 1,385,358). Florida: Chipley, West 2665 (US); Highlands Co., Mc Farlin 6359 (MICH). Texas: Killeen, Cory 23337 (GH, US). Arizona: Crooks Nat. Forest, Purchase 283 (US).

39. Eragrostis erosa Scribn.

Eragrostis erosa Scribn. ex Beal, Grasses N. Amer. 2: 483. 1896. TYPE: C. G. Pringle 415 (MSC), collected Oct. 1885 in Sierra de Santa Eulalia,

Chihuahua, Mexico.

Perennial. Culms tufted, erect or ascending, branched at the base, 70 to 110 cm. tall. Sheaths overlapping, shorter than the internodes, glabrous except the pilose apex of the margins and sometimes down the margins. Ligule a dense row of white hairs about 0.4 mm. long. Blades flat to involute, attenuate, glabrous below, scattered-pilose near the ligule above, 15 to 30 cm. long, about 2 mm. wide. Panicle ovoid, open, 30 to 45 cm. long, about 15 cm. wide, the rachis scabrous towards the tip, the branches slender, ascending to spreading, flexuous, 8 to 18 cm. long, scabrous with branchlets, glabrous to pilose in the axils. Pedicels capillary, flexuous, appressed to spreading, scabrous on the angles, 1 to 6 mm. long. Spikelets lanceolate to linear-lanceolate, compressed, grayish-green, 6 to 9 mm. long, 1 to 3 mm. wide, 6- to 12-flowered, the rachilla not disarticulating. Glumes acute, ovate to acuminate, lanceolate, hyaline, erose on the margin and at the keeled tip, rounded on the back below, somewhat scabrous on the keel, the first 2 to 2.4 mm. long, about 0.8 mm. wide, the second 2.4 to 2.6 mm. long, about 1.2 mm. wide. Lemmas ovate, acute to subacute, hyaline on the margin, erose at the sometimes bronzed tip, loosely imbricate, 2.8 to 3 mm. long, about 1.6 mm. wide, the lateral nerves usually inconspicuous. Paleas as long as the lemmas, hyaline, ciliolate on the keels, persistent, evenly convex on the back. Grains subellipsoidal, translucent, mostly yellowish-brown, striate, about 1.6 mm. long and 1.2 mm. wide.

On rocky slopes of mountains from 1650 to 2650 meters in Texas and New Mexico and northwestern Mexico. **Map XVIII, p. 118.**

UNITED STATES: Texas: El Paso, Whitehouse 8541 (US); Fort Stanton, Goodding 2496 (US); Davis Mts., Palmer 31842 (MO, TEX, US); Mt. Gomez, Berkman 7504 (TEX, US). New Mexico: Gray, Skehan 58 (GH, MO, POM, US, WYO); Filmore Canyon, Organ Mts., Hitchcock 3793 (US); Queen, Hitchcock 13510 (US).

MEXICO: Chihuahua: Rancho Carretas, Harvey 1749 (US); Sierra de Santa Eulalia, Pringle 415 (F, GH, MSC, NY, US).

40. Eragrostis Palmeri S. Wats.

Eragrostis Palmeri S. Wats. in Proc. Amer. Acad. Arts Sci. 18: 182. 1883. TYPE: Edward Palmer 1368 (GH), collected in February to October, 1880 on the Río Sabinas at Juárez, Coahuila, Mexico.

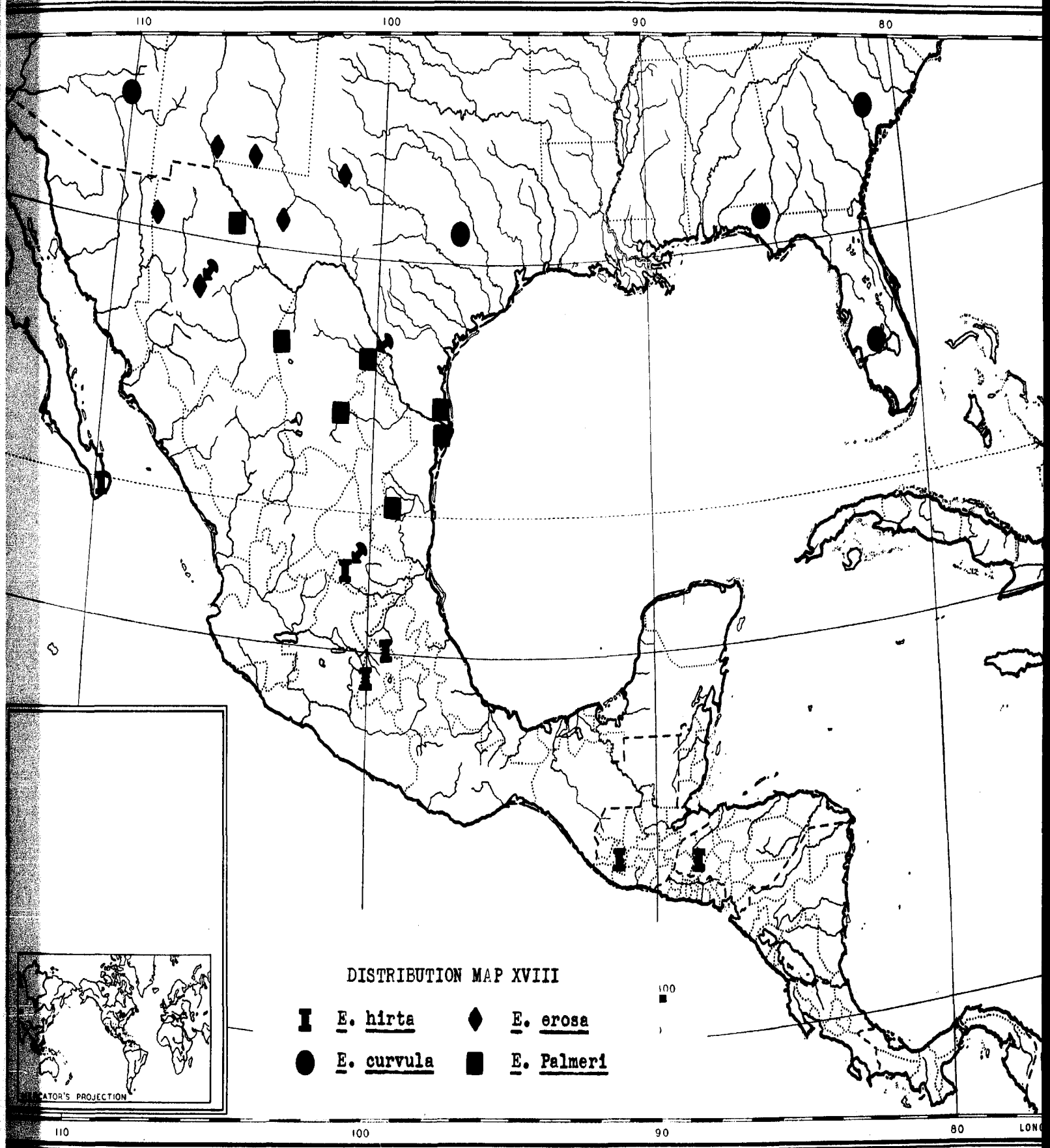
Eragrostis caudata Fourn., Mex. Pl. 2: 115, 1886, not Nees 1854. TYPE: Berlandier 2345 (P), collected in September 1851 near Matamoras, Tamaulipas, Mexico. In the National Herbarium there is a fragment of the type specimen. Both the Gray Herbarium and the herbarium of the New York Botanical Garden have specimens of the type collection.

Perennial. Culms tufted, erect to ascending from a knotty base, glabrous, 70 to 80 cm. tall. Sheaths overlapping, eight-tenths the length of the internodes above, rounded on the back, usually pilose at the apex of the margins and on the front part of the collar, sometimes all over the back, sometimes glabrous. Ligule a dense row of white hairs about 0.4 mm. long. Blades involute, attenuate, glabrous below, scabrous above, 20 to 35 cm. long, 1 to 2 mm. wide. Panicles oblong, usually open, 15 to 30 cm. long, 5 to 7 cm. wide, the rachis glabrous, the branches

ascending to spreading, scabrous, flexuous, the lower sometimes distant, 4 to 9 cm. long, the axils sparsely pilose to glabrous. Pedicels capillary, appressed to spreading, scabrous, 1 to 3 mm. long. Spikelets narrowly ovate to linear-lanceolate, grayish-green to straw-colored, flattened, 4 to 6 mm. long, 1 to 2 mm. wide, 6- to 12-flowered, the rachilla tardily disarticulating. Glumes hyaline, ovate, acute to acuminate, compressed, keeled, somewhat scabrous on the tip of the keel, the first 1.2 to 1.8 mm. long, about 0.4 mm. wide, the second 1.8 to 2.2 mm. long, about 0.8 mm. wide. Lemmas ovate, acute, hyaline at the keeled tip, rounded on the back, imbricate, glabrous, 2 to 2.4 mm. long, about 0.8 mm. wide, the lateral nerves usually evident. Paleas hyaline, about eight-tenths of the lemmas, persistent, glabrous on the keels, evenly convex on the back. Grains subovoid, translucent, reddish-brown, turgid, striate, 0.6 to 0.8 mm. long, about 0.4 mm. wide.

Along the banks of streams and in low ground from Texas into northern Mexico. **Map XVIII, p. 118.**

UNITED STATES: Texas: Harlingen, Silveus 851 (MICH, US).
MEXICO: Tamaulipas: Buena Vista Hacienda, E. O. Wooton, June 14, 1919 (US); Matamoras, Berlandier 2345 (GH, NY, US). Coahuila: Juárez, Edw. Palmer 1368 of 1880 (GH, US); Castaños, Wynd & Mueller 200 (NY, US); Sierra de las Cruces, Santa Elena, Johnston & Mueller 1378 (GH). Chihuahua: Sierra de los Pinos, Le Sueur Mex-0219 (TEX, US).


110
100
90
80
DISTRIBUTION MAP XVIII
E. hirta
E. erosa
E. curvula
E. Palmeri
EQUATOR'S PROJECTION
110
100
90
80

41. Eragrostis longiramea Swallen

Eragrostis longiramea Swallen in Journ. Wash. Acad. Sci. 21: 437. TYPE: H. H. Bartlett 10910 (US 1501524), collected Aug. 12, 1930 on Pico del Diablo, Sierra de San Carlos, vicinity of Marmolejo, Tamaulipas, Mexico.

Perennial. Culms tufted, erect to ascending, stout, 125 to 180 cm. tall. Sheaths overlapping to eight-tenths the length of the internodes above, the lower compressed and keeled, densely papillose-villose. Ligule a dense row of white hairs about 0.2 mm. long. Blades flat, folded, or involute, attenuate, glabrous or sparsely papillose-villose at the base below, very scabrous above, 25 to 60 cm. long, 5 to 9 mm. wide. Panicles ovoid, very open, comparatively few flowered, 50 to 70 cm. long, 25 to 35 cm. wide, the rachis scabrous towards the tip, the branches ascending to reflexed, the tips sometimes dropping, 15 to 25 cm. long, the axils pilose. Pedicels capillary, very scabrous, ascending to spreading, 2.5 to 10 mm. long. Spikelets ovate, lanceolate or oblong, compressed, grayish-green, 2 to 5 mm. long, 1.6 to 1.8 mm. wide, 5- to 7-flowered, the rachilla not disarticulating. Glumes acuminate, lanceolate, the second sometimes acute, ovate, hyaline, compressed, keeled, scabrous on the keel, the first 1.2 to 1.6 mm. long, about 0.4 mm. wide, the second 1.4 to 2 mm. long, about 0.8 mm. wide. Lemmas ovate, acute, rounded on the back below, hyaline and erose at the keeled tip, scabrous on the keel at the tip, imbricate, 1.8 to 2 mm. long, about 1.2 mm. wide, the lateral nerves evident. Paleas hyaline, from eight-tenths as long to as long as the lemmas, persistent, convex on the back below, ciliolate on the keels. Grains blunt ovoid,

flattened, translucent, reddish-brown, reticulate, about 0.8 mm. long and 0.4 mm. wide.

In the mountains at about 1200 meters on Sierra de San Carlos, Tamaulipas. **Map XIX, p. 125.**

MEXICO: Tamaulipas: Pico del Diablo, Sierra de San Carlos, Bartlett 10910 (MICH, US); San José, Bartlett 10433 (MICH, US).

42. Eragrostis intermedia Hitchc.

Eragrostis intermedia Hitchc. in Journ. Wash. Acad. Sci. 23: 450. 1931. TYPE: A. S. Hitchcock 5491 (US 1535749), collected on July 3, 1910 in a moist place in a gravel pit near San Antonio, Texas.

? Eragrostis lugens var. major Vasey ex L. H. Dewey in Contr. U. S. Nat. Herb. 2: 542. 1894. No specimens so labeled were found at the National Herbarium. E. lugens as used by Vasey and others at that time included E. intermedia. The description given by Dewey would indicate this species.

Perennial. Culms tufted, erect or ascending, 55 to 90 cm. tall. Sheaths rounded on the back, keeled, the lower sometimes compressed, glabrous except for a tuft of hairs at the apex of the margins and the commonly pilose margins. Ligule a dense row of white hairs about 0.4 mm. long. Blades usually involute, sometimes flat, attenuate, glabrous below, scabrous and with dense supraligular hairs above, 10 to 25 cm. long, 2 to 3 mm. wide. Panicles broadly pyramidal, open, decompound, 20 to 40 cm. long, 15 to 30 cm. wide, the branches ascending to spreading, the lower sometimes reflexed, slender, flexuous, solitary or sub-opposite, the lower usually verticillate, scabrous above, the lower eighth or fourth unbranched,

10 to 25 cm. long, the axils pilose. Pedicels ascending, capillary, flexuous, scabrous, longer than the spikelets, 4 to 9 mm. long. Spikelets oblong to narrowly lanceolate, compressed, grayish-green to purple-tinged, 4 to 7 mm. long, 1.6 to 1.8 mm. wide, 5- to 11-flowered, the rachilla usually disarticulating. Glumes hyaline, compressed, keeled, scabrous on the keel, the first acuminate, lanceolate, 1.2 to 1.8 mm. long, about 0.4 mm. wide, the second usually acute, ovate, 1.4 to 2 mm. long, about 0.8 mm. wide. Lemmas ovate, acute, rounded on the back below, loosely imbricate, 1.8 to 2.2 mm. long, about 1.2 mm. wide, the lateral nerves inconspicuous. Paleas hyaline, nearly as long as the lemmas, deciduous, evenly convex on the back, ciliolate on the keels. Grains oblong, striate, flattened, translucent, reddish-brown, about 0.8 mm. long and 0.4 mm. wide.

Sandy or rocky soil in waste places and in the mountains from Georgia to Oklahoma to southeastern Arizona south to scattered localities in Central America. **Map XIX, p. 125.**

UNITED STATES: Georgia: Athens, Harper 32 (F, GH, MO, NY, US); Camilla, Tracy 3729 (NY, US). Louisiana: Lake Charles, Chase 6113 (US). Arkansas: Fayettesville, Hitchcock 16076 (US). Oklahoma: Sapulpa, Bush 810 (GH, NY, US); Craterville, Park, Wichita Mts., Swallen 1025 (US). Texas: Weatherford, Tracy 7918 (US); Holland, Wolff 758 (US); Alpine, Hitchcock 13611 (US); Boot Spring, Brewster Co., Moore & Steyermark 3176 (GH, MICH, MO, NY, US); Del Rio, Hitchcock 13645 (US); San Antonio, Hitchcock 5491 (US); Benevides, Harvey 893 (US). New Mexico: Mangas, O. B. Metcalfe, Sept. 15, 1897 (US); Fort Bayard Watershed, Grant Co., Blumer 184 (GH, NY,

US); Filmore Canyon, Organ Mts., Hitchcock 3800 (US); Queen, Hitchcock 13535 (US). Arizona: Superstition Mt., Gillespie 8593 (US); Bowie, Jones 4226 (MICH, NY, POM, US, WYO); Tucson, Toumey 42 (US); Baboquivari Mts., Gilman A40 (NY, US).

MEXICO: Baja California: Sierra de San Francisquito, Brandegee 20 (US); El Taste, Brandegee 50 (US). Sonora: Aribabi, Harvey 1645 (US). Chihuahua: Rancho Carretas, Harvey 1626 (US); Chihuahua, Le Sueur Mex-0144 (TEX, US). Coahuila: Saltillo, Edw. Palmer 408 of 1898 (F, GH, US). Durango: Durango, Edw. Palmer 727 of 1896 (GH, US). Zacatecas: Zacatecas, Hitchcock 7515 (US). San Luis Potosí: Charcas, Whiting 981 (MICH, US); Cárdenas, Hitchcock 5731 (US). Jalisco: Guadalajara, Edw. Palmer 203 of 1886 (US). Querétaro: Querétaro, Arsène 10352 (US). Hidalgo: Pachuca, Hitchcock 6743 (US). Vera Cruz: Jalapa, Hitchcock 6677 (US). Michoacán: Uruapam, Hitchcock 6968. México: Hacienda de la Encarnación, Rose, Painter & Rose 8453 (GH, US). Distrito Federal: San Angel, Orcutt 3694 (US). Puebla: San Marcos, Hitchcock 6523 (US); Esperanza, Hitchcock 6491 (US).

CENTRAL AMERICA: Guatemala: Quiriguá, Weatherwax 108 (US); Guatemala City, Hitchcock 9068 (MICH, US). Costa Rica: Santa María de Dota, Prov. San José, Standley & Valerio 43427 (US).

43. Eragrostis oreophila L. H. Harvey sp. nov.

Planta perennis. Culmi caespitosi, erecti ex basi nodosa, altitudine 30 - 75 cm. Vaginae mediam internodiorum altingentes, glabrae apicibus marginum exceptis. Laminae attenuatae, convolutae, subtus glabrae, superne dense pilis supra ligulam vestitae, 4 vel 10 cm. longae, 1 vel 2 mm. latae. Paniculae pyramidales, apertae, 10 vel 30 cm. longae, 10 vel 18 cm. latae,

ramis ascendentibus vel divergentibus, inter se distantibus, solitariis vel binis, 5 vel 15 cm. longis; axillis raro pilosis. Spiculae lanceolatae, 4 vel 6 mm. longae, 2 - 2.2 mm. latae, 7- vel 9-floriferae. Glumae acuminatae, 1.6 - 2 mm. longae. Lemmata ovata, acuta, 2 - 2.2 mm. longa, nervis lateralibus inconspicuis. Paleae quam lemmata paulum breviores. Fructus breves, cylindrici, striati, circa 0.8 mm. longi et 0.4 mm. lati.

Specimen typicum: V. H. Chase n. 7223 1/2 (US 1763115), Jun. 29, 1939, in declivitate saxosa ad altitudinem 1500 m. prope "Jacala, Hidalgo," in Republica Mexicana.

Species E. intermediae et E. trichocoleae affinis, sed differt a prima paniculis simplicibus, latitudine spicularum et axillis raro pilosis. A secunda differt vaginis glabris et flosculis numerosis.

Perennial. Culms tufted, erect or ascending from a knotty base, sometimes geniculate at the lower nodes, glabrous, 30 to 75 cm. tall. Sheaths overlapping at the base, less than half the length of the internodes above, glabrous on the rounded back, pilose on the margins near the apex. Ligule a dense row of white hairs about 0.4 mm. long. Blades short, attenuate, convolute, usually ascending, glabrous below, with dense supra-ligular hairs above (at least on the lower blades and on those of the innovations) 4 to 10 cm. long, 1 to 2 cm. wide. Panicles pyramidal, open, usually simple, 10 to 30 cm. long, 10 to 18 cm. wide, the rachis sometimes flexuous, scabrous on the upper half, the branches ascending to spreading, usually simple, distant, solitary or in pairs, slender, flexuous, scabrous, 5 to 15 cm. long, the lowest commonly much shorter

than those just above, the axils rarely sparsely pilose. Pedicels ascending or appressed, scabrous, slender, longer than the spikelets, 5 to 7 mm. long. Spikelets lanceolate, compressed, grayish-green, 4 to 6 mm. long, 2 to 2.2 mm. wide, 7- to 9-flowered, the rachilla not disarticulating. Glumes hyaline, scabrous on the keeled and compressed tip, the first acuminate, lanceolate, 1.6 to 1.8 mm. long, about 0.4 mm. wide, the second acuminate, ovate, 1.6 to 2 mm. long, about 0.8 mm. wide. Lemmas acute, ovate, loosely imbricate, hyaline at the tip and part way down the margins, 2 to 2.2 mm. long, about 1.2 mm. wide, the lateral nerves inconspicuous. Paleas hyaline, from eight-tenths to nearly as long as the lemmas, persistent, ciliolate on the keels, evenly convex on the back. Grains short, cylindric, flattened, reticulate, translucent, reddish-brown, about 0.8 mm. long and 0.4 mm. wide.

On mountain sides from 1000 to 2000 meters in Mexico. **Map XIX, p. 125.**

MEXICO: Baja California: Sierra de la Laguna, Brandegee 28 (US). Nuevo León: Galena, Mary Taylor 77 (MICH). Hidalgo: Jacala, V. H. Chase 7223 1/2 (GH, US); Jacala, Mrs. M. T. Edwards 1742 (TEX, US).

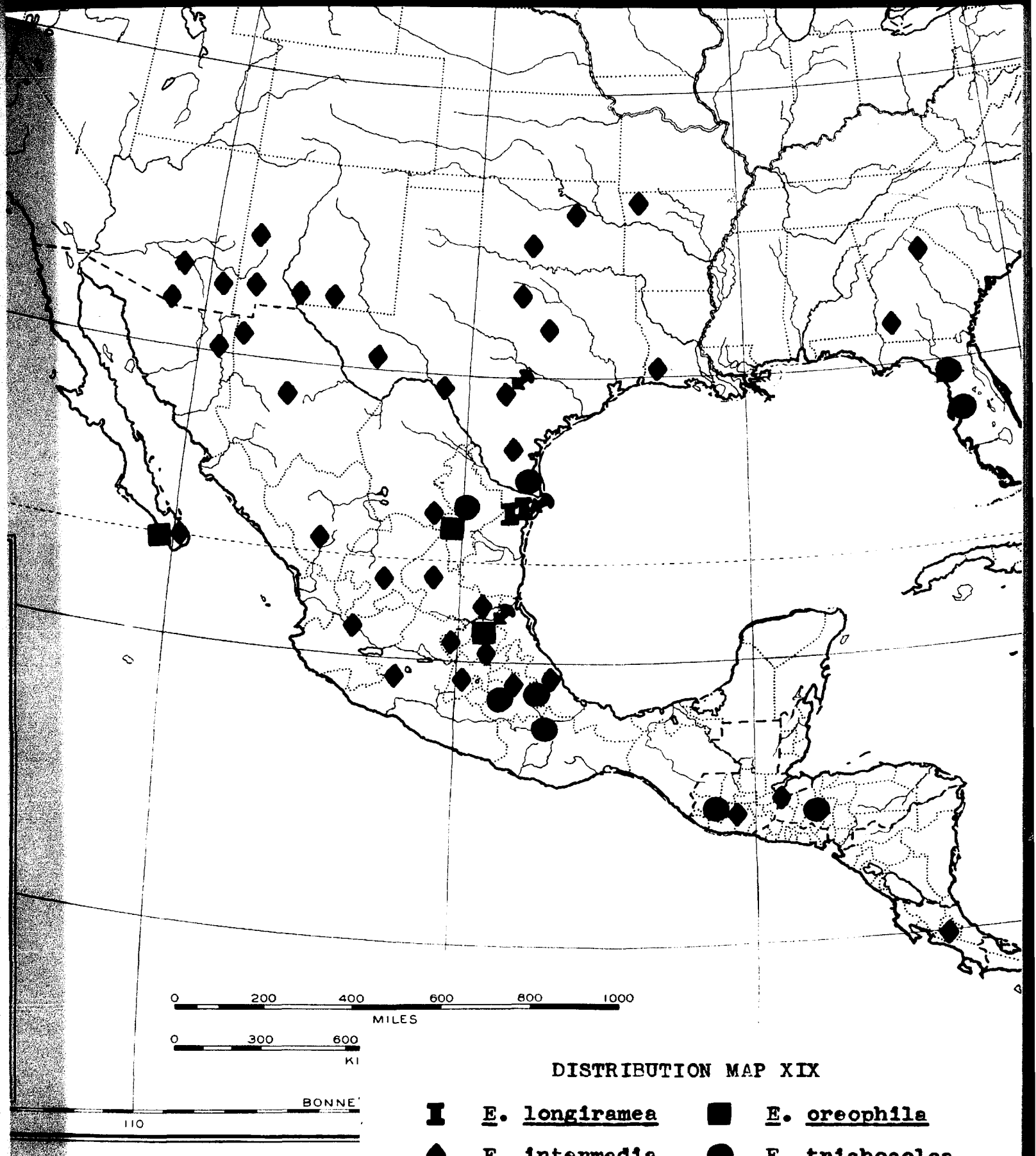
44. Eragrostis trichocolea Hack. & Arech.

Eragrostis trichocolea Hack. & Arech. in An. Mus. Nac. Montevideo 1: 444. 1896. TYPE: Arechavaleta (Hack.), collected in Feb. 1886 on "campos arenosos," Uruguay. In the National Herbarium there is a fragment of the type specimen.

Eragrostis floridana Hitchc. in Amer. Journ. Bot. 2: 308. 1915. TYPE: A. H. Curtiss 3494* (US 726520), collected in March in dry pine woods near Tampa, Hillsborough County, Florida.

Perennial. Culms tufted, erect to ascending, geniculate, branching at the base, 30 to 60 cm. tall. Sheaths overlapping, shorter than the internodes, sparsely papillose-pilose on the back, densely so at the apex of and down the margins, sometimes glabrous except at the apex of the margins. Ligule a dense row of white hairs about 0.4 mm. long. Blades flat to involute, papillose-pilose on both surfaces, densely so above the ligule, sometimes glabrous, 5 to 25 (8 to 15) cm. long, 1.5 to 3 mm. wide. Panicles broadly ovoid, open, 12 to 25 cm. long, 10 to 23 cm. wide, the rachis scabrous at the tip, the branches ascending to horizontally spreading, slender, flexuous, sparsely if at all scabrous, 7 to 14 cm. long; pilose about (as well as in) the axils. Pedicels capillary, spreading to ascending, flexuous, usually scabrous, 3 to 12 mm. long. Spikelets ovate to oblong, compressed, grayish-green, 3 to 5 mm. long, 1.5 to 2 mm. wide, 3- to 7-flowered, the rachilla not disarticulating. Glumes ovate, acute, hyaline, scabrous on the keel and sometimes on the margins, the first sometimes acuminate, lanceolate, 1.2 to 1.4 mm. long, about 0.6 mm. wide, the second 1.4 to 1.8 mm. long, about 0.8 mm. wide. Lemmas ovate, acute to subacute, imbricate, keeled, 1.6 to 1.8 mm. long, about 1.6 mm. wide, the lateral nerves inconspicuous. Paleas nearly as long as the lemmas, hyaline, ciliolate on the keels, persistent, evenly convex on the back. Grains ellipsoidal, flattened, faintly striate, translucent, light reddish-brown, nearly 1 mm. long and 0.6 mm. wide.

Sandy open ground and pinelands from Florida and Texas through Mexico to Central America. **Map XIX, p. 125.**



DISTRIBUTION MAP XIX

E. longiramea **E. oreophila**

E. intermedia **E. trichocolea**

UNITED STATES: Florida: Gainsville, Swallen 5443 (US); Lakeland, Hitchcock Fl. Pl. 841 (US); Tampa, Curtiss 3494* (MO, US). Texas: Armstrong, Swallen 1540 (US).

MEXICO: Nuevo León: Monterrey, Mueller 372 (US). Vera Cruz: Orizaba, Bourgeau 2643 (GH, NY, US). Puebla: Puebla, Arsène 48a (US). Oaxaca: Tomellin Cañon, Pringle 7538 (US).

CENTRAL AMERICA: Guatemala: Guatemala City, Hitchcock 9016 (US). Honduras: Siguatepeque, Dept. Comayagua, Standley 56074 (US).

45. Eragrostis purpurascens (Spreng.) Schult.

Poa purpurascens Spreng., Nov. Prov. Hort. Hal. et Berol. 33. 1819. Interpreted from the original description and that of Schultes in 1824.

Eragrostis purpurascens (Spreng.) Schult., Mant. 2: 317. 1824.

Perennial. Culms tufted, erect or geniculate at the lower nodes and ascending, branching at the lower nodes, sometimes proliferous, 35 to 60 cm. tall. Sheaths rounded on the back, overlapping at the base, six- to eight-tenths the length of the internodes above, glabrous except for a tuft of apparently deciduous hairs at the apex of the margins. Ligule a dense row of white hairs about 0.4 mm. long. Blades usually atiffly ascending, involute, attenuate, glabrous below, glabrous or with a few supraligular hairs above, 15 to 30 cm. long, about 1 mm. wide. Panicles lanceolate-ovoid, open, simple, few-flowered, 15 to 25 cm. long, 10 to 15 cm. wide, the branches spreading, solitary or subopposite, distant, slender, stiffly flexuous, sparingly branched, 8 to 12 cm. long, the axils sparsely if at all pilose. Pedicels ascending, capillary, flexuous, scabrous, shorter than the spikelets,

2 to 4 mm. long. Spikelets linear, flattened, dull green, 4 to 7 mm. long, 1 to 1.2 mm. wide, 4- to 9-flowered, the rachilla continuous. Glumes hyaline, somewhat keeled, the first acuminate, lanceolate,1 to 1.2 mm. long, about 0.4 mm. wide, the second acute, ovate, about 1.4 mm. long and 0.8 mm. wide. Lemmas acute, ovate, rounded on the back, loosely imbricate, 1.6 to 2 mm. long, about 1.2 mm. wide, the lateral nerves inconspicuous. Paleas as long as the lemmas, persistent, hyaline, scabrous on the keels, evenly convex on the back. Grains subellipsoidal, flattened, faintly striate, translucent, reddish-brown, about 1 mm. long and 0.4 mm. wide.

In savannas and woods in the Leeward Islands. **Map XX, p. 133.**

WEST INDIES: Leeward Islands: Columbia, St. Barthélemy, Questel 790 (US); Antigua, Box 20 (US).

46. Eragrostis lugens Nees

Eragrostis lugens Nees, Agrost. Bras. 505. 1829. TYPE: Sellow (B), collected near Montevideo, Uruguay. In the National Herbarium there is a fragment of the type specimen.

Poa lugens (Nees) Kunth, Rév. Gram. 1: Suppl. xxviii. 1830.

Eragrostis pilosa var. lugens (Nees) Kuntze, Rev. Gen. Pl. 3: 2: 352. 1898.

Eragrostis Purpusii Jedw. in Bot. Arkiv 5: 201. 1924. TYPE: Purpus 4084 (B), Cerro de Gavilán, (Durango?), Mexico. In the National Herbarium there is a fragment of the type specimen.

Perennial. Culms tufted, erect or ascending, sometimes branching at the nodes, the branches ascending to appressed, 35 to 70 cm. tall. Sheaths strongly keeled, the lower also compressed, usually overlapping, glabrous except for a tuft of hairs at the apex of the margins. Ligule a dense row of white hairs about 0.2 mm. long. Blades involute, sometimes flat, attenuate, glabrous below, scabrous above, 6.5 to 20 cm. long, 1 to 2.5 mm. wide. Panicles pyramidal, open, delicate, 15 to 30 cm. long, 8 to 15 cm. wide, the branches slender, flexuous, spreading, the lowest sometimes reflexed, some opposite, most verticillate, without branchlets on the lower part, 5 to 12 cm. long, the axils pilose. Pedicels capillary, scabrous, flexuous, spreading, longer than the spikelets, 3 to 4 mm. long. Spikelets linear-lanceolate, compressed, light green tinged with purple, 3.4 to 4.4 mm. long, about 1 mm. wide, 5- to 7-flowered, the rachilla continuous. Glumes ovate, acute or subacuminate, hyaline, the first 0.8 to 1 mm. long, about 0.4 mm. wide, the second 1.2 to 1.4 mm. long, about 0.8 mm. wide. Lemmas ovate, acute, rounded on the back, keeled at the tip, imbricate, 1.6 to 1.8 mm. long, about 1.2 mm. wide, the lateral nerves inconspicuous. Paleas as long as or nearly as long as the lemmas, hyaline, evenly convex on the back, persistent. Grains subellipsoidal, flattened, reticulate, translucent, reddish-brown, about 0.6 mm. long and 0.2 mm. wide.

Sandy soil from Georgia to Texas and in Mexico and Central America. Map XX, p. 133.

UNITED STATES: Georgia: Athena, Weatherwax 11 (US). Alabama: Mobile, C. Mohr, Sept. 30, 1891 (US)..Louisiana: Natchitoches, Ball 152 (GH, US); Avery Island, Hitchcock 19863 (US). Missouri: Redings Mill,

Bush 5064 (US); Sheffield, Bush 9222 (US). Oklahoma: Craterville Park, Wichita Mts., Swallen 1004 (US); Lake Murray State Park, Harvey 1844 (MICH). Texas: Dallas, Reverchon 11254 (MO, POM, US); Pecan Springs, C. L. & A. A. Lundell 8937 (MICH); Houston, Fisher 2059 (US); Corpus Christi, Heller 1803 (GH, NY, US); Goliad, Silveus 628 (MICH, US); Sarita, Swallen 1527 (US); Harlingen, Silveus 850 (US).
MEXICO: San Luis Potosí: San Luis Potosí, Parry & Palmer 938 (GH, US). Vera Cruz: Mt. Orizaba, Seaton 318 (F, GH). Mexico: Santa Fé, Bourgeau 673 (GH, US).
CENTRAL AMERICA: Guatemala: Guatemala, Tonduz 681 (F, NY, US).

47. Eragrostis praetermissa L. H. Harvey sp. nov.

Planta perennis. Culmi caespitosi, rigidi, erecti vel ascendentes ex basi nodosa, circa 70 cm. alti. Vaginae papillosi-hispidae. Laminae planae, subtus papillosi-hispidae, superne glabrae, 20 vel 25 cm. longae, circa 5 mm. latae. Paniculae lanceolatae, apertae, strictae, 35 vel 40 cm. longae, 10 vel 15 cm. latae, ramis ascendentibus vel divergentibus, solitariis vel oppositis, 6 vel 12 cm. longis, ad axillas sparse pilosis. Spiculae ovate lanceolatae, plumbeae, 4 vel 6 mm. longae, 1.8 - 2.4 mm. latae, 5- vel 9-floriferae, rachilla disarticulante., Glumae axuminate lanceolatae, subaequales. Lemmata ovata, acuta, 2 - 2.2 mm. longa, nervis lateralibus inconspicuis. Paleae lemmata aequantes. Fructus breves, cylindrici, applanati, reticulati, circa 0.8 mm. longi et 0.4 mm. lati.

Specimen typicum legit von Türckheim n. 1292 (US 821939), Jul. 1887, in rupibus prope "Santa Rosa, Dept. Baja Verapaz, Guatemala." Species

E. Tracyi, E. tricholeae et E. oreophilae affinis, sed differt a prima et tertia vaginis papillosi-hispidis etiamque paniculis multo longioribus; a secunda differt paniculis longioribus, apertioribus, et laminis longioribus latioribusque.

Perennial. Culms tufted, stiffly erect or ascending from a knotty base, glabrous, about 70 cm. tall. Sheaths overlapping, rounded on the back, papillose-hispid, more densely so towards the summit. Ligule a dense row of white hairs about 0.2 mm. long. Blades flat, short-attenuate at the tip, glabrous below, papillose-hispid above, sometimes sparsely so, 20 to 25 cm. long, about 5 mm. wide. Panicles lance-ovoid, open, stiff, 35 to 40 cm. long, 10 to 15 cm. wide, the branches ascending to spreading, flexuous, slender, scabrous, solitary or opposite, occasionally verticillate, usually somewhat distant, 6 to 12 cm. long, the axils pilose. Pedicels slender, ascending to spreading, shorter than the spikelets, 2 to 4 mm. long. Spikelets ovate-lanceolate, plumbeous, compressed, 4 to 6 mm. long, 1.8 to 2.4 mm. wide, 5- to 9-flowered, the rachilla disarticulating. Glumes acuminate, compressed and keeled, scabrous on the keel, the first 1.4 to 1.6 mm. long, about 0.4 mm. wide, the second 1.6 to 1.8 mm. long, about 0.8 mm. wide. Lemmas ovate, acute, loosely imbricate, 2 to 2.2 mm. long, about 1.2 mm. wide, the lateral nerves conspicuous. Paleas as long as the lemmas, hyaline, evenly convex on the back, ciliolate on the keels. Grains short, cylindric, flattened, reticulate, translucent, reddish-brown, about 0.8 mm. long and 0.4 mm. wide.

In the mountains of Mexico and Central America. Map XX, p. 133.

MEXICO: Michoacán: Jacuaro, Hitchcock 6956 (US).

CENTRAL AMERICA: Guatemala: Santa Rosa, Dept. Baja Verapaz, von Türckheim 1292 (US).

48. Eragrostis Tracyi Hitchc.

Eragrostis Tracyi Hitchc. in Amer. Journ. Bot. 21: 130. f. 1. 1934. TYPE: S. M. Tracy 7168 (US 441983), collected May 19, 1901 on Sanibel Island, Lee County, Florida.

Perennial. Culms tufted, erect to ascending, branching at the lower nodes, 15 to 60 (40 to 60) cm. tall. Sheaths overlapping at the base, nearly as long as the internodes above, keeled, sometimes pilose at the apex of the margins. Ligule a dense row of white hairs about 0.4 mm. long. Blades flat to involute, attenuate, glabrous below, scabrous and sometimes with supraligular hairs above, 15 to 30 cm. long, 1 to 3 mm. wide. Panicles ovoid, open, 6.5 to 20 cm. long, 2 to 10 cm. wide, the rachis scabrous, the branches ascending, slender, scabrous, 5 to 8 cm. long, the lower primary axils sometimes with one or two hairs. Pedicels ascending, capillary, scabrous, 2 to 4 mm. long. Spikelets linear to lanceolate, purplish-tinged, 6 to 10 mm. long, 1 to 2 mm. wide, 8- to 14-flowered, the rachilla not disarticulating. Glumes hyaline, scabrous on the keel, the first usually acuminate, about 1.2 mm. long and 0.5 mm. wide, the second ovate, acute, about 1.6 mm. long and 0.8 mm. wide. Lemmas ovate, acute, scabrellous on the keel, compressed, imbricate, about 2 mm. long and 1.6 mm. wide. Paleas as long as the lemmas, persistent, hyaline, somewhat convex on the back below, ciliolate

on the keels. Grains subellipsoidal, faintly striate, translucent, reddish-brown, about 0.8 mm. long and 0.4 mm. wide.

In sandy soil. Known only from Sanibel Island, Florida. Tracy 7168 (GH, NY, US). Map XX, p. 133.

49. Eragrostis Swalleni Hitchc.

Eragrostis Swalleni Hitchc. in Journ. Wash. Acad. Sci. 23: 451. 1933. TYPE: J. R. Swallen 1847 (US 1535332), collected June 8, 1931 on sandy prairie in park area at Riviera, Texas.

Perennial. Culms in hard tufts erect to ascending, branching at the base, geniculate at the lower nodes, 40 to 70 cm. tall. Sheaths overlapping, usually glabrous, sometimes pubescent at the apex of the margins. Ligule a dense row of white hairs 0.25 to 0.4 mm. long. Blades flat to involute, attenuate, glabrous below, scabrous and rarely with a few supraligular hairs above, 10 to 20 cm. long, 2 to 4 mm. wide, those of the innovations as much as 40 cm. long. Panicles ovoid, open, 10 to 20 cm. long, 5 to 15 cm. wide, the rachis glabrous, the branches ascending, wirey, flexuous, glabrous, 3 to 12 cm. long, the axils glabrous. Pedicels somewhat scabrous, with a ring of glandular tissue at the midpoint, slender, flexuous, ascending to spreading, 2.5 to 7 mm. long. Spikelets linear to lanceolate, compressed, grayish-green to dull green, 6 to 16 mm. long, 1.5 to 2.5 mm. wide, 8- to 25-flowered, the rachilla not disarticulating. Glumes ovate, acute, hyaline, scabrous on the keel, the first about 1.4 mm. long and 0.5 mm. wide, the second about 1.8 mm. long and 0.8 mm. wide. Lemmas ovate, acute to obtuse, rounded on the back, closely imbricate, puberulent on the back

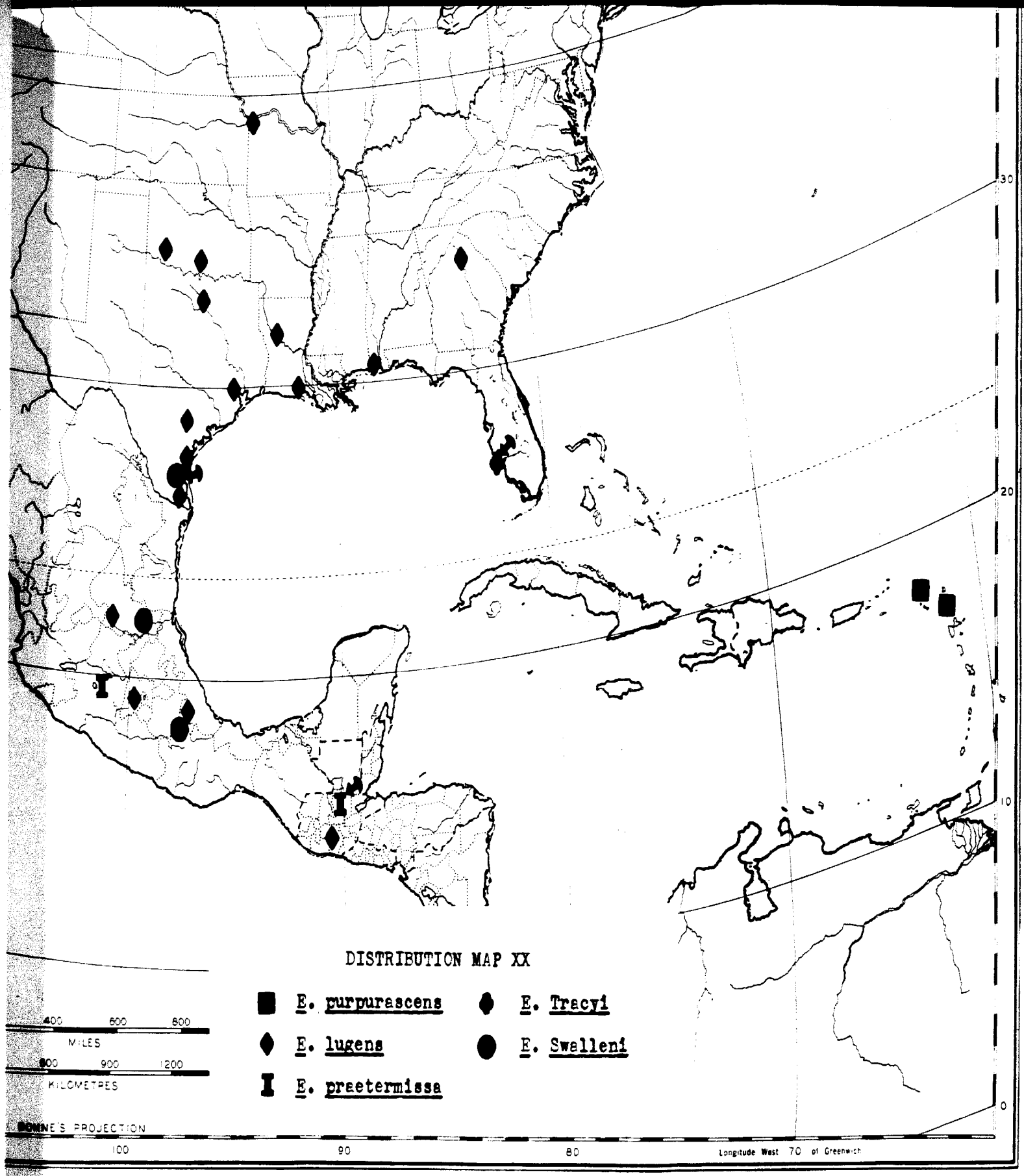
near the tip, somewhat hyaline and erose on the margin particularly near the tip, about 2 mm. long and 1.2 mm. wide. Paleas nearly as long as the lemmas, persistent, hyaline, ciliolate on the keels, evenly convex on the back. Grains subellipsoidal, flattened, faintly striate, translucent, reddish-brown, about 1 mm. long and 0.4 mm. wide.

Prairies from southeastern Texas into central Mexico. **Map XX, p. 133.**

UNITED STATES: Texas: Falfurrias, H. H. Reed, June 26, 1936 (US); Riviera, Swallen 1847 (MICH, US).

MEXICO: San Luis Potosí: Cárdenas, Fisher 37130 (NY, US).

Puebla: Tehuacán, Hitchcock 6058 (US).



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(7) Subsection Reptantes

A. Dioecious; anthers 1.5 to 2 mm. long; pedicels much less than 1 mm. long — 50. E. reptans, p. 133.

A. Monoecious; anthers about 0.4 mm. long; pedicels more than 1 mm. long — 51. E. hypnoides, p. 137.

50. Eragrostis reptans (Michx.) Nees

Poa reptans Michx., Fl. Bor. Amer. 1: 11. 1803. TYPE: Michaux (Michx.), "Hab. in limosis ripariis amnium regionis Illinoensis." Along the Kaskaskia River in Illinois. In the National Herbarium there is a photograph and a fragment of the type specimen.

Poa dioica Michx. ex Poir. in Lam., Encycl. Méth. 5: 87. 1804, (as synonym of Poa hypnoides Mam.)

Megastachya reptans (Michx.) Beauv., Ess. Agrost. 74, 167, 175. 1812.

Eragrostis reptans (Michx.) Nees, Agrost. Bras. 514. 1829.

Poa Weigeltiana Reichenb. ex Trin. in Mém. Acad. St. Pétersb. Sér. VI. Sci. Math. Phys. Nat. 1: 410. 1830, (as synonym of E. reptans (Michx.) Nees). Bush in Ann. Rept. Mo. Bot. Gard. 13: 1. 1903 gives Weigelt, collected in 1827 in Surinam as the type when he takes up the specific epithet Weigeltiana in place of reptans. In the National Herbarium there is a fragment of a specimen of this collection from the Trinius Herbarium which was originally from Reichenbach. This collection is the only one known from south of the region covered by this paper.

Poa dioica Vent. ex Kunth, Enum. Pl. 1: 336. 1833, (as synonym of Poa reptans Michx.)

Poa capitata Nutt. in Trans. Amer. Phil. Soc. n. s. 5: 146. 1837. TYPE: Nuttall (PH), collected on the "sand-beaches" of the Arkansas River, Arkansas.

Megastachya corymbifera Fourn., Mex. Pl. 2: 119. 1886. TYPE: Berlandier 1949 (P), collected at Laguna de San Nicholas, Chihuahua, Mexico. In the National Herbarium there is a fragment of the type specimen.

Megastachya brevifolia Fourn., Mex. Pl. 2: 119. 1886. TYPE: Gouin 84 p. p. (P), collected in the Provincia Vera Cruz, Mexico. In the National Herbarium there is a fragment of the type specimen.

Megastachya fasciculata Fourn., Mex. Pl. 2: 120. 1886. TYPE: Berlandier 2325 (P), collected at Matamoras, Tamaulipas, Mexico. In the National Herbarium there is a fragment of the type specimen.

Eragrostis capitata (Nutt.) Nash in Britton, Man. Fl. North. States & Can. 1042. 1901.

Neeragrostis Weigeltiana Bush in Trans. Acad. Sci. St. Louis 13: 178. pl. viii. 1903. Bush cites Poa Weigeltiana Reichenb. which was published as a synonym.

Eragrostis Weigeltiana Bush in Trans. Acad. Sci. St. Louis 13: 180. 1903.

Annual, dioecious. Culms erect to decumbent and spreading, creeping, rooting at the nodes, forming dense, thick mats, pistillate plant usually appressed-pubescent, staminate plant glabrous or sparsely pubescent. Sheaths at the rooted nodes overlapping, others three-tenths or less of the length of the internodes, usually a ring of hairs at the base, in

pistillate plants usually densely short appressed-pubescent on the back, at the apex of and down the margins, in staminate plants usually less so. Ligule a dense row of white hairs about 0.25 mm. long. Blades flat or loosely involute, usually pubescent on both surfaces, 8 to 20 mm. long, 1 to 2 mm. wide. Panicles contracted, capitate or short and quasi-racemose, 1 to 3.5 cm. long and wide, all the spikelets attached on about 1 cm. of rachis, rachis and branches appressed pubescent, sometimes sparsely so. Pedicels appressed-pubescent, sometimes sparsely so, 0.2 to 0.4 mm. long. Staminate spikelets lanceolate, compressed, straw-colored, 6 to 16 mm. long, 2 to 4 mm. wide, 10- to 30-flowered, the rachilla not disarticulating. Pistillate spikelets linear, usually curved, compressed, light green to straw-colored, appressed-pubescent, 6 to 30 mm. long, 1 to 2 mm. wide, 10- to 60-flowered, the apex continuing to grow, the rachilla not disarticulating. Glumes hyaline, scabrous on the keel, compressed, usually scattered puberulent on the back, in staminate plants acuminate-lanceolate to acute-ovate, the first 1.4 to 1.6 mm. long, about 0.4 mm. wide, the second 1.8 to 2.2 mm. long, about 0.8 mm. wide, in pistillate plants acuminate-lanceolate, the first about 1.6 mm. long and 0.4 mm. wide, the second about 2 mm. long and 0.8 mm. wide. Lemmas hyaline, scabrous on the keel, with conspicuous lateral nerves, usually scattered puberulent on the back, in staminate plants acuminate-lanceolate to acute-ovate, 2.4 to 3.6 mm. long, about 1.6 mm. wide, in pistillate plants acuminate-lanceolate, 2 to 3 mm. long, about 1.2 mm. wide. Paleas hyaline, convex on the back, ciliolate on the keels, persistent in staminate plants from eight-tenths as long to as long as the lemmas, in pistillate plants about

six-tenths the length of the lemmas. Grains discoid, striate, translucent, dull reddish-brown, about 0.8 mm. long and 0.4 mm. wide. Stamens cylindrical, 1.5 to 2 mm. long.

On wet sand and mud particularly along the margins of rivers and lakes from South Dakota and southern Illinois south to eastern Texas and in scattered localities in Mexico. Map XXI, p. 143.

UNITED STATES: South Dakota: Aberdeen, Griffiths 140 (F, US): Aurora Co., Wilcox 46 (US); White River, E. N. Wilcox, Aug. 1891 (US). Iowa: Des Moines, Pammel 630 (MO, US). Missouri: Courtney, Bush 11969 (MO, US). Illinois: Belleville, Engelmann 108 (MO). Kentucky: Louisville, C. Mohr, Aug. 18, 1855 (US). Tennessee: Tiptonville, Uher 1362 (US). Kansas: Falun, Hancin 1484 (US); Chautauqua Co., Hitchcock 1498 (US). Oklahoma: Lamont, Stevens 1789 (GH, OKLA, US); Miami, Stevens 2315 (GH, POM); Fort Sill, Clemens 11480 (MO, OKLA, US, WYO). Arkansas: Fulton, Bush 997, (GH, MO, US); Lake Village, Demaree 14073 (MO, US). Louisiana: Shreveport, Ball 107 (US); Alexander, Ball 554 (MO, US). Texas: Alamo, Clover 1111 (MICH, TEX); Graham, Reverchon 3500 (MO); Menard, Cory 24646 (US); Spofford, Griffiths 6318 (US); Richmond, Palmer 6653 (F, MO, POM, US); Corpus Christi, Orcutt 5921 (MO, US); Rio Grande City, Swallen 1567 (US). MEXICO: Baja California: Purísima, T. S. Brandegee, Feb. 12, 1889 (NY). Chihuahua: Laguna de San Nicolás, Berlandier 1949 (GH, PH, US). Coahuila: Don Martín Dam, Harvey 927 & 928 (US). Tamaulipas: Matamoras, Berlandier 2325 (NY, MO, US). Vera Cruz: Gouin 84 p. p. (US).

51. Eragrostis hypnoides (Lam.) B. S. P.

Poa hypnoides Lam., Tabl. Encyl. 1: 185. 1791. TYPE: D. Richard (Lam.), collected in "America merid.". In the National Herbarium there is a fragment of the type specimen.

Poa carinata Poir. in Lam., Encyl. Méth. 5: 86. 1804. TYPE: Ledru (Lam.), collected in Puerto Rico. In the National Herbarium there is a fragment of the type specimen.

Megastachya hypnoides (Lam.) Beauv., Ess. Agrost. 74, 167, 175. 1812.

Poa reptans var. caespitosa Torr., Fl. North. & Mid. U. S. 1: 115. 1823. TYPE: "Hab. On the banks of the Passaic river, New Jersey." Interpreted from the description.

Megastachya Gouini Fourn., Mex. Pl. 2: 119. 1886. TYPE: Gouin 85 (P), collected in 1865 near Vera Cruz, Vera Cruz, Mexico. In the United States National Herbarium there is a fragment of the type specimen.

Eragrostis hypnoides (Lam.) B. S. P., Presl. Cat. N. Y. City 69. 1888.

Neeragrostis hypnoides (Lam.) Bush in Trans. Acad. Sci. St. Louis 13: 180. 1903.

Erosion hypnoides (Lam.) Lunell in Amer. Midl. Nat. 4: 221. 1915.

Annual. Culms creeping, rooting at the nodes, forming mats, the fertile ones erect to decumbent, 10 to 25 cm. tall. Sheaths much shorter than the internodes, usually with a ring of hairs at the base, pubescent at the apex of and usually down the margins and sometimes on the back. Ligule a dense row of white hairs about 0.25 mm. long. Blades flat to loosely involute, usually sparsely appressed-pubescent below, more so and scabrous above,

0.5 to 2.5 cm. long, 0.5 to 1.5 mm. wide. Panicles ovoid to oblong, few-flowered, 2 to 5 cm. long, 1 to 3.5 cm. wide, the rachis glabrous, the branches spreading to ascending, glabrous to pubescent, 0.5 to 2.5 cm. long, the axils usually pilose. Pedicels ascending, pubescent to glabrous, about 1.2 mm. long. Spikelets lanceolate to narrowly ovate, sometimes continuing to grow at the tip, compressed, greenish-hyaline to brownish-green, 5 to 12 mm. long, 1.5 to 2.5 mm. wide, 8- to 22-flowered, the rachilla not disarticulating. Glumes hyaline, acuminate to subacuminate, compressed, scabrous on the tip of the keel, sometimes pubescent at the base, the first about 0.8 mm. long and 0.2 mm. wide, the second 1.2 to 1.8 mm. long, about 0.4 mm. wide. Lemmas ovate, acute or acuminate, hyaline, compressed and keeled, imbricate, scabrous on the tip of the keel, 1.8 to 2 mm. long, about 1 mm. wide, with conspicuous lateral nerves. Paleas hyaline, five- to seven-tenths the length of the lemmas, persistent, ciliolate on the keels, convex on the back. Grains discoid, faintly striate, translucent, light reddish-brown, about 0.6 mm. long and 0.2 mm. wide. Anthers discoid, about 0.4 mm. long and 0.2 mm. wide.

On wet mud and sand particularly along streams and lakes from Vermont to South Dakota south to Florida and eastern Texas, scattered in the far West and in Mexico, Central America and the West Indies. Map XXI, p. 143.

CANADA: Quebec: Rapide-des-Chats, sur la rivière Ottawa, Fr. Rolland 1124 (US). Ontario: Moira River, Macoun & Mrs. Roy in 1872 (US); Sarnia, Herb. Geol. Surv. Can. 26102 (CAN, GH, NY, US).

UNITED STATES: Vermont: Ferrisburgh, F. H. Horsford, Sept. 6, 1876 (F). New York: Lake Champlain, D. S. Carpenter, July 7 (MO); Lakeport, House

Aug. 1885 (NY); Ithaca, Wiegand 127 (MO); Clove, Standley & Bollman (US). Massachusetts: Lanesboro, J. R. Churchill, Sept. 16, 1918 (US, MO). Connecticut: Cornwall, A. W. Driggs, Aug. 19, 1901 (US); S. Glastonbury, F. Wilson 89 (US). Pennsylvania: Erie, G. Guttenburg, 1829 (NY); Easton, T. C. Porter, Aug. 24, 1895 (US); Harrisburg, J. K. Small, Aug. 11, 1888 (US, MO). Ohio: Cleveland, Claassen 6812 (US); Milan, E. L. Moseley, Aug. 27, 1894 (MO); St. Mary's Reservoir, A. Kneucker Gram. Exsicc. Lief. IV, 118 (GH, US); Cincinnati, C. G. Lloyd 587 (MO). Indiana: Dune Park, Chase 2109 (F, US); Blackford Co., Deam 39 (MO); Russellville, Grimes 830 (US); Princetown, Deam 32996 (US). Illinois: McHenry, Benke 4123 (US); Wady Petra, V. H. Chase 83 (US); Shepard, Davis 8856 (MO); Rosiclare, Bock & Chase 82 (MICH, US). Michigan: Algonac, Dodge 212 (NY); Kalamazoo, Hanes 396 (NY). Wisconsin: North LaCrosse, Fassett 4165 (MICH, MO); New London, Fassett & Rhodes 13177 (MO); Burlington, T. J. Hale (POM). Minnesota: Swenoda, Mover 18 (US); Fort Snelling, Mearns 741 (F, GH, US). North Dakota: Walhalla, Waldron 1713 (US, WYO); Jamestown, O. A. Stevens, Sept. 15, 1937 (US). South Dakota: Huron, Griffiths 775 (US); Vermillion River, Over 5100 (US). Nebraska: Fullerton, B. Osborn 1166R (MO); Talmage, Elmore 82 (US). Iowa: Wallingford, Fults 2926 (US); Fayette Co., Fink 547 (US); Turin, Pammel 1032 (MO); Lyons, Pammel 239 (GH, MO); Beacon, E. L. Johnson 914 (MO, US). Kansas: Topeka, Bodin 301 (US). Missouri: Livonia, Palmer & Steyermark 41057 (MO); Bigelow, Steyermark 15118 (MO); Glasgow, Steyermark 9381 (MO); Creve Cour Lake, Kellogg 646 (MO); Neck City, Palmer 1378 (MO, US); Campbell, Bush 810 (MO). Kentucky: Stamping Ground, Singer 415 (US); Harlan Co., Kearney 55 (F, GH, MO, US); Columbus,

MacFarland & Anderson 337 (MO, US). West Virginia: Jug, Berkley 668 (MO); Tygart's Valley, J. D. Smith, Sept. 8, 1879 (US); Roland Park, Gilbert 619 (F, GH, MO, NY); Sweet Springs, Mr. & Mrs. E. S. Steele 290 (GH, MO, US). Maryland: Havre de Grace, Hermann 9786 (F, NY). Delaware: St. Georges, Commons 177 (US). Virginia: Capron, Fernald & Long 7206 (GH, MO, US). North Carolina: Wilmington, Chase 7226 (US). Georgia: Sumter Co., Harper 464 (GH, MO, US). Florida: Manavista, Tracy 7765 (F, GH, MO, NY, US). Alabama: Montgomery, E. A. Smith 61 (US); Alavin, C. Mohr, Sept. 1, 1879 (US). Mississippi: Batesville, H. Eggert, Sept. 17, 1896 (MO); Starkville, Chase 4465 (US); Biloxi, Tracy & Lloyd 447 (F, GH, MO, US). Arkansas: Fayetteville, Hitchcock 16095 (US); Cash, Demaree 4296 (MO, US); Little Rock, Demaree 8357 (GH, MICH, US); McNab, Greenman 4388 (MO); Monticello, Demaree 13810 (MO). Oklahoma: Miami, Stevens 2240 (MO, OKLA, US); Sapulpa, Bush 825 (MO). Louisiana: Alden Bridge, Trelease, Oct. 30, 1898 (MO); Rayville, Ball 21 (US); Covington, Arsène 11050 (US); Cameron, S. M. Tracy, July 7, 1903 (NY, US). Texas: Atlanta, McClung 6686 (TEX); Whites Ranch, Chambers Co., Tharp 3124 (TEX); Uvalde, Palmer 11300 (MO); Brownsville, Hitchcock 5421 (US). New Mexico: Albuquerque to Alameda, Sister M. Marcelline 2628 (US). Colorado: Grand Canyon of Colorado, A. Gray, 1885 (US). Utah: Utah Lake, Utah Co., B. H. Harrison 5873 (US). Idaho: Falk's Store, Macbride 336 (F, GH, MO, US, WYO). Washington: Toppenish, Cotton 794 (US); Almota, C. V. Piper, Sept. 9, 1896 (US). Oregon: Forest Grove, F. E. Lloyd, Sept. 10, 1893 (NY); John Dry Ferry, Leiberg 874 (GH, NY, US); Beulah, Griffiths & Morris 865 (US). California: Klamath River, Humboldt Co., J. P. Tracy 5367 (POM, US); Lathrop, Biolette 144 (US); Stockton, Abrams

6731 (NY); Los Angeles, J. C. Nevin, 1904 (US).

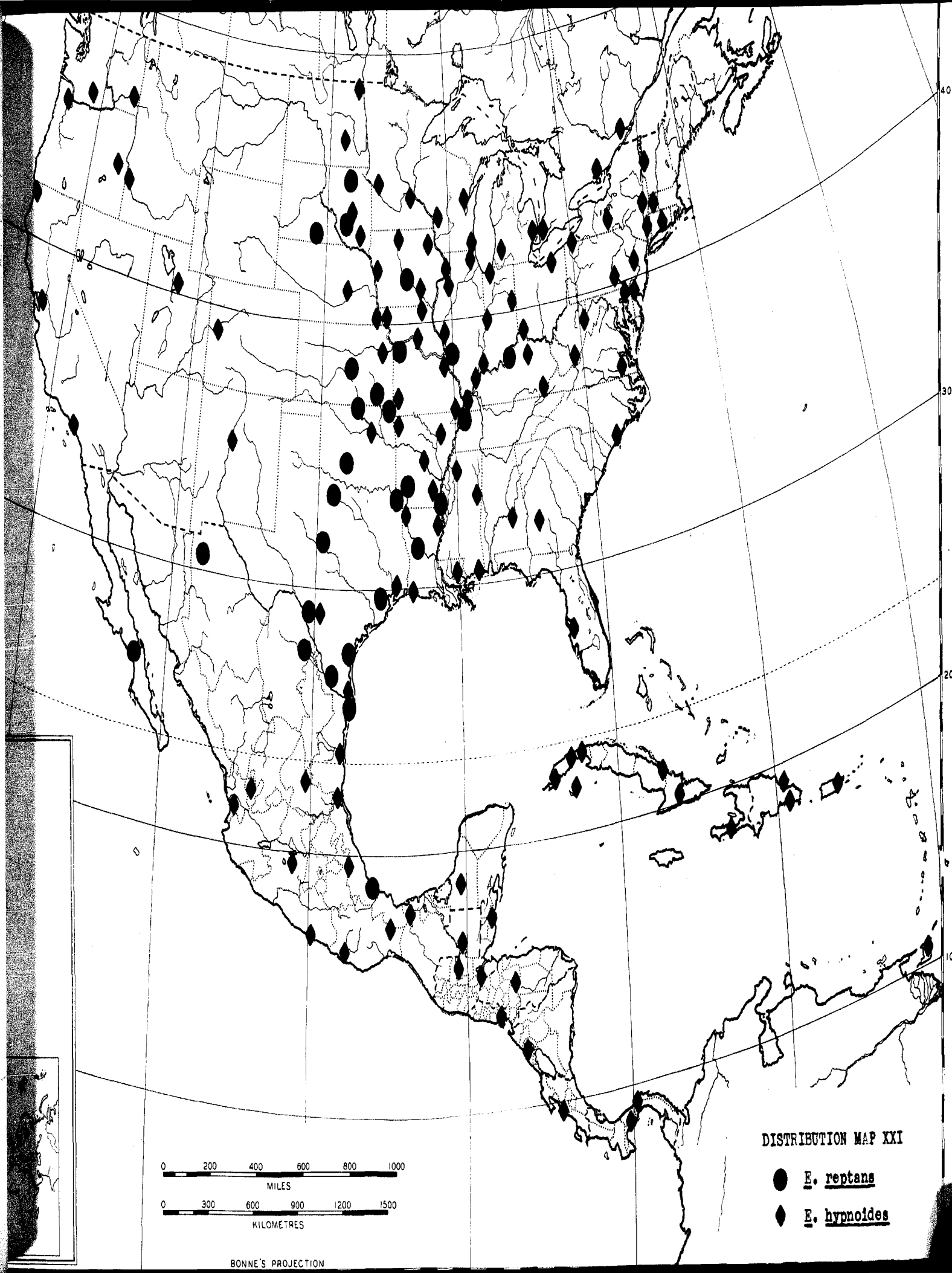
MEXICO: Tamaulipas: Chamal, Swallen 1723 (MICH, US). San Luis Potosí: Las Canoas, Pringle 3699 (MICH, US). Vera Cruz: Panuco, Edw. Palmer 347 of 1910 (F, NY); Papantla, Liebmann 537 (US); Orizaba, Bourgeau 2638 (GH, NY, US). Tabasco: Huimanquillo, Archer 3966 (US); Reforma, Matuda 3158 (F, MICH). Campeche: Palizada, Matuda 3864 (MICH). Nayarit: Tepic, Jones 23433 (POM). Jalisco: Ocotan, D. R. Furness (F 46,789). Michoacán: Morelia, Bro. G. Arsène, April 1912 (US). Guerrero: Acapulco, Edw. Palmer 596 of 1894-95 p. p. (F, GH, MICH, NY, US). Oaxaca: Jamiltepec to Río Verde, E. W. Nelson 2364 (US); Ubero, L. Williams 9210 (F).

CENTRAL AMERICA: British Honduras: Gracie Rock, Sibun River, Gentle 1592 1592 (MICH, NY, US). Guatemala: La Libertad, Petén Dist., Lundell 2522 (MICH, GH, US); Coban, Dept. Alta Verapaz, von Tuckheim II 1201 (GH, NY, US); Quiriguá, Dept. Izabel, Standley 23864 (GH, US). El Salvador: Dept. de San Miguel, Standley 20985 (GH, US). Honduras: Thieme, J. D. Smith 5577 (US). Nicaragua: Managua, Maxon, Harvey & Valentine 7296 (GH, US). Costa Rica: San José, Pittier 2677 (US). Panamá: Fató, Prov. Colon, Pittier 4146 (NY, US); Gatun, C. Z., Cowell 319 (NY); El Valle de Antón, Prov. Coclé, Hunter & Allen 378 (GH, US).

WEST INDIES: Cuba: Cabañas, Prov. Pinar del Río, Ekman 10934 (US); Galafre, Prov. Pinar del Río, Britton & Cowell 9830 (NY, US); San Juan, Isla de Pinos, Britton, Britton & Wilson 15523 (NY, US); Laguna de Castellano, Prov. Habana, Wilson 1356 (POM); Santa Lucia, Prov. Camagüey, Shafer 96la (F, GH, NY, US); Paso Estancia, Prov. Oriente, Shafer 1666 (F, NY, US). Hispaniola: Haití: Miragoane, Masif de la Hotte, Ekman H7912 (US); Dominican Republic: Samaná, Samaná Peninsula, Abbott 1327 (F, US); San Pedro de Macoris, Rose, Fitch &

Russell 4228 (NY, US). Puerto Rico: El Yunque, Río Grande, Chase 6711[1/] (F, GH, POM, US); San Juan, Chase 6398 (US). Trinidad: Crueger (US).

1/ Amer. Gr. Nat. Herb. 689.


40
30
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10
0 200 400 600 800 1000
MILES
0 300 600 900 1200 1500
KILOMETRES
BONNE'S PROJECTION
DISTRIBUTION MAP XXI
E. reptans
E. hypnoides

(8) Subsection Cilianenses

A. Spikelets linear or linear-lanceolate or narrowly ovate; never with glandular pits in the keel of the lemmas

B. Panicles narrow, condensed; the branches appressed or closely ascending, if spreading the branchlets and pedicels appressed or closely ascending or only the pedicels thus

C. Sheaths with many small glandular pits in the nerves, glabrous or pilose only at the apex of the margins

52. E. lutescens, p. 144

C. Sheaths without glandular pits in their nerves, papillose-hispid at least on the margins

53. E. Berteroniana, p. 145

B. Panicles one-third to one-fourth as wide as long, open; the branches spreading or widely ascending, the branchlets and pedicels spreading

C. Culms without a glandular ring below at least one of the nodes (the lower); spikelets narrowly ovate, acute; glumes ovate, acute

54. E. poaeoides, p. 147

C. Culms with a glandular ring below at least one of the nodes,(the lower); spikelets linear-lanceolate; glumes lanceolate-acuminate

55. E. Barrelieri, p. 149

A. Spikelets broadly ovate, acute; lemmas with glandular pits in the keel

56. E. cilianensis, p. 151

52. Eragrostis lutescens Scribn.

Eragrostis lutescens Scribn. in U. S. Dept. Agric. Div. Agrost. Circ. 9: 7. 1899. TYPE: C. V. Piper 2624 (US 1761632), collected July 7, 1897, sandy banks of the Snake River, Almota, Washington.

Annual. Culms tufted, erect or ascending, branching at the base, geniculate at the lower nodes, 6 to 25 cm. tall. Sheaths overlapping, the nerves with few to many glandular pits, glabrous to pilose at the apex of the margins. Ligule a dense row of white hairs about 0.25 mm. long. Blades flat, folded or involute, glabrous and with few to many glandular pits in the nerves below, scabrous above, 3 to 9 cm. long, 1 to 3 mm. wide. Panicles narrowly ovoid to oblong, 4 to 17 cm. long, 0.8 to 2 cm. wide, the rachis with few to many scattered glandular pits, the branches appressed, scabrous, 1 to 3.5 cm. long, with few to many scattered glandular pits, the axils glabrous. Pedicels appressed, scabrous, 1 to 3 mm. long, with few to many scattered glandular pits. Spikelets narrowly ovate-lanceolate to oblong, compressed, hyaline-green, 5 to 7.5 mm. long, 1 to 1.5 mm. wide, 6- to 13-flowered, the rachilla not disarticulating. Glumes lanceolate, acuminate to ovate, acute, hyaline, scabrous on the compressed keel, the first 1 to 1.4 mm. long, about 0.4 mm. wide, the second 1.4 to 1.8 mm. long, about 0.8 mm. wide. Lemmas ovate, acute to subacuminate, hyaline, imbricate, compressed, glabrous to somewhat scabrous on the keel, 2 to 2.2 mm. long, 1 to 1.6 mm. wide, the lateral nerves conspicuous.

Paleas hyaline, as long as the lemmas, persistent, evenly convex on the back, ciliolate on the keels. Grains ellipsoidal, striate, reddish-brown, translucent, about 0.7 mm. long and 0.4 mm. wide.

Sandy margins of streams and lakes from Washington to Arizona. Map XXI, p. 151.

UNITED STATES: Washington: Bingen, Suksdorf 2333 (GH, MO); Almota, Piper 2624 (US). Oregon: Hayden Island, J. C. Nelson 4813 (US). Idaho: Payette, Henderson 4629 (US). Nevada: Humboldt Co., Torrey 590 (NY); Truckee River Bottom, Watson 1321 (US). Arizona: J. S. Lemmon, 1882 (US)

Eragrostis Berteroniana (Schult.) Steud.

Megastachya Berteroniana Schult., Mant. 2: 330. 1824. TYPE: Bertero 917 (B), collected in 1817 to 1819 in Dominican Republic. In the National Herbarium there is a fragment and a photograph of a specimen of Bertero 917 from the Krug & Urban Herbarium at Berlin, orginally from the Sprengel Herbarium.

Poa Berteroniana (Schult.) Kunth, Rév. Gram. 1: 112. 1829

Poa polymorpha Balb. ex. Kunth, Rév. Gram. 1: 112. 1829, not Wibel 1799, (as synonym of Poa Berteroniana).

Eragrostis Berteroniana (Schult.) Steud., Nom. Bot. Ed. II. 1: 562. 1840.

Annual. Culms tufted, branching at the base, erect to geniculate and spreading or prostrate, 10 to 35 cm. tall. Sheaths overlapping at the base, six- to eight-tenths the length of the internodes above, papillose-hispid on the sides, more so on the

margins, hispid at the apex of the margins. Ligule a dense row of white hairs about 0.6 mm. long. Blades involute on drying, scattered papillose-hispid near the base or glabrous below, scabrous and scattered-hispid with a row of supraligular hairs above, 3 to 12 cm. long, 1 to 2.5 mm. wide. Panicles narrowly ovoid, open, simple, 4 to 12 cm. long, 1.5 to 3.5 cm. wide, the rachis scabrous towards the tip, the branches few, ascending to appressed, scabrous, 1.5 to 2.5 cm. long, pilose in the axils. Pedicels ascending, scabrous, 1 to 2.5 mm. long. Spikelets ovate to linear-oblong, straw- to lead-colored, 4 to 14 mm. long, 1 to 2 mm. wide, 8- to 30-flowered, the rachilla tardily disarticulating. Glumes hyaline, ovate, acute, compressed, scabrous on the keel, the first sometimes acuminate, lanceolate, 1.2 to 1.4 mm. long, about 0.8 mm. wide, the second sometimes three-nerved, 1.4 to 1.8 mm. long, about 1.2 mm. wide. Lemmas ovate, acute, hyaline, scabrous on the keel, loosely imbricate, 1.4 to 1.6 mm. long, about 1.6 mm. wide, the lateral nerves conspicuous. Paleas as long as the lemmas, ciliolate on the keels, hyaline, persistent, convex on the back below. Grains ellipsoidal, faintly striate, translucent, reddish-brown, about 0.6 mm. long and 0.4 mm. wide.

On rocks and waste ground along the coast of Hispaniola. Map XXII, p. 151.

WEST INDIES: Hispaniola: Haiti: Jean Rabel, E. C. & G. M. Leonard 12972 (US); Etang, Etang Saumatre, Leonard 3560 (GH, US); Dominican Republic: Valle del Cibao, Prov. Monte Cristi, Ekman H13129 (US); Bertero 917 (US).

54. Eragrostis poaeoides Beauv.

Poa Eragrostis L. Sp. Pl. 68. 1753. TYPE: D. Baecker (LINN), "Habitat in Italia supra muros." Interpreted from the description and from Beauvois' treatment and figure.

Eragrostis Eragrostis (L.) Beauv. Ess. Agrost. 71, 174, pl. 14. f. 11. 1812.

Eragrostis poaeoides Beauv., Ess. Agrost. 162. 1812, nom. nud., ex Roem. & Schult., Syst. Veg. 2: 574. 1817. Based on Poa Eragrostis L. although "Schrad." is given as the authority.

Eragrostis minor Host, Icon. Gram. Austr. 4: 15. 1809, nom. nud., Fl. Austr. 1: 135. 1827. Based on Poa Eragrostis L. The name is not tenable as of 1809 because Host's publication of the genus (loc. cit.) is not valid.

Eragrostis poaeformis Link, Hort. Berol. 1: 188. 1827. Based on Poa Eragrostis L.

Eragrostis vulgaris var. microstachya Coss. & Germ., Fl. Env. Paris 2: 641. 1845. Based on Poa Eragrostis L.

Eragrostis pilosa var. minor (Host) Kuntze, Rev. Gen. Pl. 3: 2: 351. 1898.

Eragrostis Eragrostis var. microstachya (Coss. & Germ.) Farw., in Amer. Midl. Nat. 10: 306. 1927.

Eragrostis vulgaris ssp. poaeoides (Beauv.) Douin apud Bonn, Fl. Compl. 12: 32. 1932 (?).

Annual. Culms tufted, erect to prostrate, 6 to 5o (15 to 30) cm. tall. Sheaths overlapping at the base, one-half as long as to longer than the internodes above, usually with glandular pits in the nerves (particularly the keel), sometimes papillose-

pilose on the back, usually pilose at the apex of and down the margins. Ligule a dense row of white hairs about 0.5 mm. long. Blades lanceolate, flat or loosely involute, glabrous with glandular pits at least in the keel below, scabrous and sparsely scattered pilose above, 3.5 to 7 cm. long, 1.5 to 3 mm. wide. Panicles ovoid to ellipsoidal, open, 3.5 to 15 cm. long, 2.5 to 6 cm. wide, the rachis scabrous, frequently with glandular spots below the branches, the branches ascending to spreading, frequently with scattered glandular spots, scabrous, 1 to 4 cm. long, the axils glabrous. Pedicels spreading, scabrous, frequently with a glandular spot near the midpoint, 0.8 to 3 mm. long. Spikelets ovate to linear-oblong, greyish-green, 6 to 8 mm. long, about 2 mm. wide, 8- to 12-flowered, the rachilla not disarticulating. Glumes ovate, acute, scabrous on the compressed keel, the first sometimes acuminate, lanceolate, 1.2 to 1.6 mm. long, about 0.5 mm. wide, the second 1.4 to 1.8 mm. long, about 0.8 mm. wide, rarely with glandular pits in the keel. Lemmas ovate, acute to obtuse, compressed at the tip, rounded on the back below, scabrous on the tip of the keel, 1.6 to 2 mm. long, about 1.6 mm. wide, rarely with glandular pits in the keel, the lateral nerves conspicuous. Paleas hyaline, persistent, eight-tenths as long as to as long as the lemmas, ciliolate on the keels, convex on the back below. Grains subspherical to short ellipsoidal, reddish-brown, striate, translucent, 0.4 to 0.6 mm. long, about 0.4 mm. wide.

Introduced on railroad balast and in waste places from Vermont to Wisconsin, south to Alabama and Texas and in California. Map XXII, p. 151.

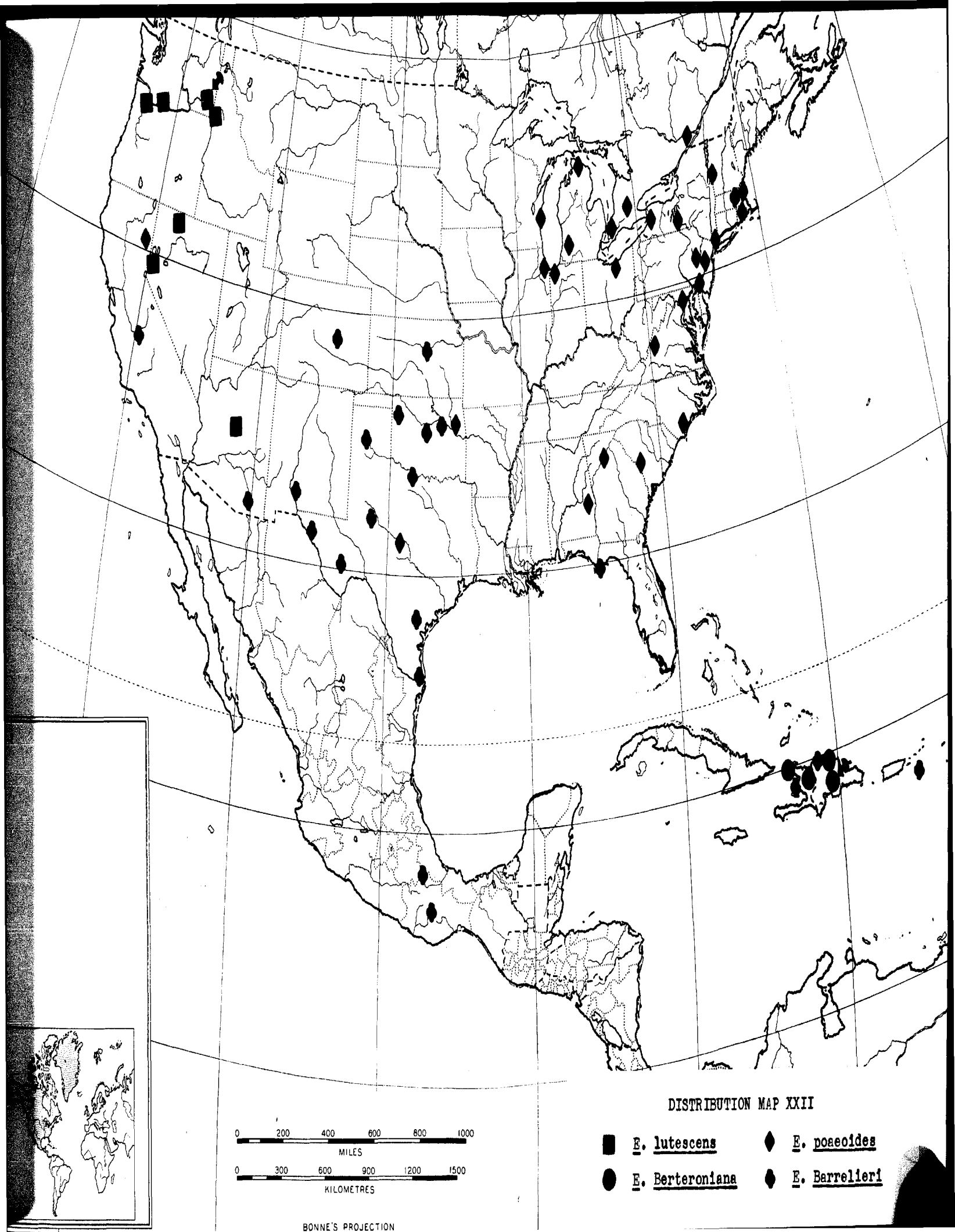
CANADA: Ontario: Carleton Co., Minshall 2004 (NY); Galt, W. Herriot, Sept. 10, 1910 (US); Point Edward, Dodge 12 (US). UNITED STATES: Vermont: Brandon, Dutton 2235 (US) Massachusetts: Boston, G. W. Swann, Sept. 1886 (MO). Rhode Island: Providence, Collins 5 (US). New York: Renwick, Wiegand 9219 (MO, NY); Hamburg, F. W. Johnson, 1924 (NY); Yonkers, G. V. Nash, Sept. 18, 1898 (NY) New Jersey: Lambertville, H. L. Fisher, Aug. 20, 1913 (MO). Pennsylvania: Allentown, Pretz 9775 (Farw.). Ohio: Elyria, S. D. Gray, Aug. 14, 1919 (US). Indiana: Valparaiso, Benke 5557 (US, F) Illinois: Congress Park, Hitchcock 25188 (US). Michigan: Cheboygan, Harvey 527 (Harv.); Kalamazoo, Harvey 1810 (Harv.) Wisconsin: Sheboygan, Opp el W-106 (US). Delaware: Centerville, Commons 171 (US). Maryland: Ammendale, W. Trelease, Aug. 1880 (MO). Virginia: Lexington, C. H. Churchill, Aug. 18, 1924 (MO). North Carolina: Wilmington, McCarthy 209 (US). South Carolina: Aiken, H. W. Ravenel, July 1869 (US). Georgia: Stone Mt., Hitchcock & Chase 190 (US). Alabama: Chehaw, A. S. Hitchcock, 1904 (US). Oklahoma: Tahlequah, Little 309 (OKLA). Texas: Tatra, G. Jermy (US). California: Clinton, Hansen 2082 (US).

55. Eragrostis Barrelieri Daveau

Eragrostis Barrelieri Daveau in Journ. Bot. Paris 8: 289. Sep t. 1894. TYPE: "Barrelier, Plantae per Galliam, Hispaniam et Italiam observatae. tab. 44. fig. 2." Interpreted from this figure, from a fragment of a specimen from the Montpellier Herbarium which was named by Daveau and from the description.

Eragrostis vulgaris ssp. Barrelieri (Daveau) Douin apud Bonn., Fl. Compl. 12: 32. 1932 (?).

Annual. Culms tufted, decumbent at the base, erect to p rostrate, branching at or near the base, usually with a complete or partial ring of glandular tissue below the nodes, 20 to 55 cm. tall. Sheaths usually one-half the length of the internodes, glabrous except for the pilose apex of the margins. Ligule a dense row of white hairs about 0.4 mm. long. Blades flat to involute (particulary at the tip), glabrous below, scabrous and scattered pilose above, 3 to 10.5 cm. long, 1 to 5 mm. wide. Panicles ovoid, open, 5 to 16 cm. long, 2 to 7.5 cm. wide, the rachis scabrous towards the tip, the branches ascending to spreading, glabrous, 1.5 to 5.5 cm. long, the axils glabrous, frequently with glandular spots or rings below the axils or sometimes with spots in the axils. Pedicels spreading, scabrous, sometimes with glandular spots, 1 to 3 mm. long. Spikelets linear to oblong, straw- to lead-colored, flattened, 5 to 11 mm. long, 1 to 1.5 mm. wide, 6- to 15-flowered, the rachilla not disarticulating. Glumes ovate, acute to acuminate, hyaline, scabrous on the keel, the first 1 to 1.4 mm. long, about 0.4 mm. wide, the second 1.4 to 1.8 mm. long, about 0.8 mm. wide. Lemmas ovate, obtuse, hyaline, imbricate, scabrous on the upper part of the keel, p uberulent at the tip, 1.8 to 2 mm. long, about 1.2 mm. wide, the lateral nerves conspicuous. Paleas hyaline, persistent, nine-tenths the length of the lemmas, ciliolate on the upper half of the keels, somewhat convex on the back. Grains cylindric, oblique at one end, pointed at the other, faintly striate, reddish-brown


DISTRIBUTION MAP XXII
E. lutescens
E. poaeoides
E. Berteroniana
E. Barrelieri
0 200 400 600 800 1000
MILES
0 300 600 900 1200 1500
KILOMETRES
BONNE'S PROJECTION

translucent, about 1 mm. long and 0.5 mm. wide.

Introduced on ballast and in waste places in southwestern United States, southern Mexico and in Hispaniola and the Virgin Islands. Map XXII, p. 151.

UNITED STATES: Massachusetts: Boston, C. W. Swann, July 17, 1885 (MO). Florida: Apalachicola, Chapman (NY, US). Kansas: Salina, Hancin 1592 (US). Oklahoma: Woodward, Runyon 1006 (US); Sapulpa, Harvey 1821 (Harv.); Yukon, Harvey 1827 (Harv.). Texas: Amarillo, Hitchcock 16181 (US); Ringgold, Swallen 1032 (US); Big Springs, Hitchcock 13384 (US); Sierra Blanco, Berkman 7505 (TEX, US); Marathon, H. R. Reed 65 (US); Kenedy, Hitchcock 5341 (US); Brownsville, Hitchcock 5428 (US). Colorado: Colorado Springs, W. A. Silveus, Aug. 25, 1935 (MICH, US). New Mexico: Las Cruces, Tharp 4838 (TEX). Arizona: Tombstone, Harrison & Kearney 6081 (US). California: Pioneer, Hansen 2082 (MO); Fresno, Springer 527 (US).
MEXICO: Puebla: Tehuacan, Pringle 9604 (GH, US). Oaxaca: Sanchez, Hitchcock 7705 (US).
WEST INDIES: Hispaniola: Haiti: Point Marc, Ekman H6639 (US); Dominican Republic: Guayubin, Prov. Monte Cristi, Abbott 877 (US). Virgin Islands: Amias Hope, St. Croix, J. B. Thompson 996 (NY, US).

56. Eragrostis cilianensis (All.) Link

Briza Eragrostis L., Sp. Pl. 70. 1753. TYPE: Woodcut on page 500 of Clus., Stirp. Hisp. Hist. 1576. Linnaeus cites

four names under his description. The reference for the first of these is Guett. stamp. 1. p. 163. I have been unable to find this work. The second is to Gron. virg. 136. This can be disregarded as Linnaeus gives the origin of the plantas ex Europa australi. The third name has Bauh. pin. 2. as the first authority. Bauhin gives a name of Clusius (loc. cit.) as his first citation. This accompanies the figure which is cited above as the type. Bauhin is the earliest user of Eragrostis as the name of this genus that I have come upon. In the Pinax his name for this plant is "Gram. paniculis elegantissimis, sive Eragrostis, majus."

Poa cilianensis All., Fl. Pedem. 2: 246. 1785. TYPE: "In agro patrio Ciliani legit Cl. Bellardi." Italy. Interpreted from the description.

Poa megastachya Koel., Descr. Gram. 181. 1802. Based on "Briza Eragrostis L. ed. Reich. 1: 195 excl. syn. Hall."

?Briza purpurascens Muhl., Descr. Gram. 154. 1817. TYPE: Muhlenberg (Muhl.), collected in "Carolina." Specimens in the Muhlenberg Herbarium labeled with this name are E. cilianensis but the description does not agree with E. cilianensis.

Megastachya Eragrostis (L.) Beauv. ex Roem. & Schult., Syst. Veg. 2: 584. 1817.

Poa obtusa Nutt., Gen. N. Amer. Pl. 1: 67. 1818, not Muhl. 1817. TYPE: W. Barton (PH), collected near Philadelphia, Pennsylvania.

Poa pennsylvanica Nutt., Gen. N. A mer. Pl. 2 Erratum 1818 Based on Poa obtusa Nutt.

Poa philadelphica Barton, Compend. Fl. Phila. 1: 62. 1818. Based on Poa obtusa Nutt.

?Megastachya purpurascens (Muhl.) Schult., Mant. 2: 326. 1824.

Megastachya obtusa (Nutt.) Schult., Mant. 2: 326. 1824.

Poa Nuttallii Spreng., Syst. Veg. 1:344. 1825. Based on Poa obtusa Nutt.

?Calotheca purpurascens (Muhl.) Spreng., Syst. Veg. 1: 348. 1825.

Eragrostis major Host, Icon. Gram. A ustr. 4: 14. pl. 24. 1809, nom. nud., Fl. Austr. 1: 135. 1827. Based on Briza Eragrostis L.

Eragrostis megastachya (Koel.) Link, Hort. Berol. 1: 187. 1827.

Briza megastachya (Koel.) Steud., Nom. Bot. Ed. II. 1: 225. 1840.

Eragrostis vulgaris var. megastachya (Koel.) Coss. & Germ., Fl. Env. Paris 2: 641. 1845.

Eragrostis poaeoides var. megastachya (Koel.) A. Gray, Man. Ed. II. 563. 1856.

Eragrostis Virletii Fourn., Mex. Pl. 2: 116. 1886. TYPE: Virlet d'Aoust 1391 (P), collected in 1851 in the state of San Luis Potosí, Mexico. In the National Herbarium there are fragments of two specimens of the type collection in Paris.

Eragrostis Eragrostis (L.) MacM., Metasp. Minn. Vall. 75. 1892, not Beauv. 1812.

Eragrostis megastachya var. cilianensis (All.) Aschers. & Graebn., Syn. Mitteleur. Fl. 2: 371. 1900.

Eragrostis minor var. megastachya (Koel.) Davy in Jepson, Fl. West. Mid. Calif. 60. 1901.

Eragrostis cilianensis (All.) Link ex Vign. Lut. in Malpighia 18: 386. 1904.

Erosion ciliare (All.) Lunell in Amer. Midl. Nat. 4: 221. 1915. The specific epithet is an error for cilianensis as Lunell cites Eragrostis ciliaris (All.) Link.

Eragrostis Eragrostis var. megastachya (Koel.) Farw., in Rept. Mich. Acad. Sci. 17: 182. 1916.

Eragrostis argentina Jedw. in Bot. Arkiv 5: 193. 1924. TYPE: Lorentz & Niederlein (B), collected in the Río Colorado Valley in Argentina. In the National Herbarium there is a fragment of a collection (Lorentz, 1879, Río Negro, Patagonia) from Berlin. This collection is cited (loc. cit.) and bears (fide Chase) the specific name in Jedwabnick's script.

Eragrostis Eragrostis var. megastachya subv. leersioides (Presl) Farw. in Amer. Midl. Nat. 10: 204. 1927. Based on Megastachya leersioides Presl a form of this species which does not occur in this country.

Eragrostis Eragrostis subv. leersioides (Presl) Farw. in Amer. Midl. Nat. 10: 306. 1927. See explanation next synonym above.

Annual. Culms tufted, erect to prostrate, branching at the base and above, frequently geniculate, usually with a ring of glands below the nodes, 10 to 60 cm. tall. Sheaths overlapping, five-tenths as long as to longer than the internodes,

more or less folded on the keels, usually with glandular pits in the keel and sometimes in the lateral nerves, glabrous except for the pilose apex of the margins. Ligule a dense row of white hairs about 0.4 mm. long. Blades linear to linear-lanceolate, flat, sometimes folded and involute at the tip, glabrous with glandular pits in the midrib below, scabrous above, 10 to 20 cm. long, 2.5 to 7 mm. wide. Panicles ovoid to oblong, open, usually densely flowered, 5.5 to 16 cm. long, 2 to 8.5 cm. wide, the rachis scabrous, the branches usually stiffly ascending to spreading, sometimes flexuous and slender, scabrous, with or without glandular pits, 2.5 to 5 cm. long, the axils glabrous or pilose. Pedicels stiffly ascending to spreading, slender, scabrous, with or without glandular pits, 0.4 to 4 mm. long. Spikelets ovate, lanceolate or linear-oblong, dull light- to dark gray-green, not compressed, 6 to 20 mm. long, 2 to 4 mm. wide, 12- to 40-flowered, the rachilla not disarticulating. Glumes broadly to narrowly ovate, acute to subacute, both sometimes three-nerved, compressed, keeled, scabrous on the glandular pitted keel, the first sometimes lanceolate-acuminate, 1.2 to 2.2 mm. long, 0.4 to 1.2 mm. wide, the second 1.2 to 2.6 mm. long, 0.8 to 1.2 mm. wide. Lemmas ovate, acute to obtuse, scabrous and usually glandular pitted on the keels, closely imbricate, 2.2 to 2.8 mm. long, about 1.2 mm. wide, the lateral nerves conspicuous. Paleas hyaline, persistent, the keels indurate and ciliolate, six-tenths the length of the lemmas, convex on

the back below. Grains ellipsoidal to subspherical, striate, reddish-brown, translucent, 0.5 to 0.8 mm. long, about 0.4 mm. wide.

Introduced in southern Canada, throughout the United States and Mexico, in Central America and rarely in Bermuda and Cuba. Map XXIII, p. 159.

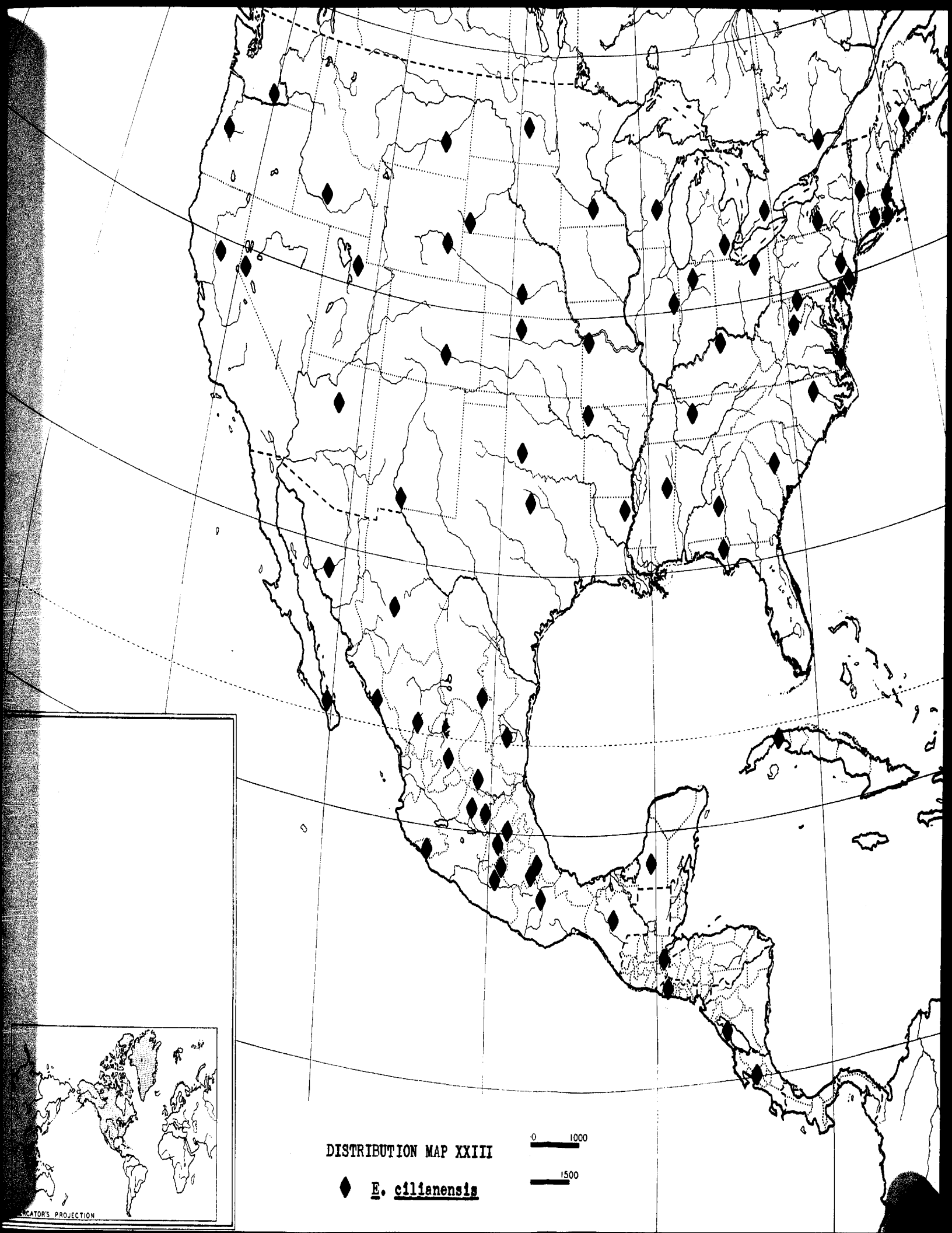
CANADA: Ontario: Ottawa, Geol. Surv. Can. Herb. 72964 (US); Galt, Geol. Surv. Can. Herb. 74047 (US).
UNITED STATES: Maine: Bangor, Knight 5 (US). Vermont: Bennington, Eggleston 1748 (US). Massachusetts: Belmont, Knowlton 915 (US). Connecticut: Somers, Weatherby 5233 (OKLA). Rhode Island: Providence, J. E. Collins, July 30, 1919 (US). New York: Ithaca, O. E. Pearce, Oct. 6, 1883 (US). New Jersey: Camden, Scribner 582 (US). Pennsylvania: Allentown, Dowell 931 (US). Ohio: Cleveland, Libbey 34b (MO, US). Indiana: Leiter's Ford, Deam 34701 (US). Illinois: Urbana, H. J. Miller, July 24, 1934 (OKLA). Michigan: Ann Arbor, L. R. Jones, 39 (US). Wisconsin: Oshkosh, G. Random, July 1892 (US). Minnesota: Nicollet, C. A. Ballard, July 1892 (US, WYO). North Dakota: Foster Co., Mabbott 386 (F). South Dakota: Hot Springs, Hayward 538 (F). Nebraska: Kearney, J. H. Holmes, Aug. 1889 (US). Missouri: Jackson Co., Bush 397 (GH, US). Kansas: Osborne, Shear 711 (GH, US). Delaware: Wilmington, Commons 170 (US). Maryland: Cumberland, J. D. Smith 186 (US). Virginia:

Norfolk, Kearney 303 (US). West Virginia: Pendleton Co., E. L. Core, July 22, 1931 (US). North Carolina: Raleigh, Blomquist 40 (US). South Carolina: Aiken, H. W. Ravenel, July 1869 (US). Florida: Marianna, Swallen 518a (US). Alabama: Portersville, C. Mohr, Sept. 1892 (US). Tuskegee, Carver 81 (US). Tennessee: Nashville, A. Gattinger, Sept. 1880 (US). Kentucky: Stamping Ground, Singer 349 (US). Mississippi: Oktibbeha Co., Pollard 1294 (GH, MO, POM, US). Arkansas: Benton Co., Plan, 32 (US). Louisiana: Rayville, Ball 4 (POM, US). Texas: Weatherford, Tracy 7916 (MO, US). Oklahoma: Wichita Mts., Swallen 1016 (US). Montana: Miles City, J. W. Blankenship, Aug. 16, 1903 (POM, US). Wyoming: Badger, E. Nelson 492 (US). Idaho: Macon, Henderson 4630 (US). Oregon: Eugene, J. C. Nelson 3371 (GH, US). Washington: Sunnyside, A. B. Leckenby, Sept. 2, 1897 (US). Colorado: Colorado Springs, Williams 2166 (US). Utah: Salt Lake Valley, Watson 1320 (GH, US). Nevada: Reno, Tracy 240 (US); Fallon, Tidestrom 10783 (US). New Mexico: Las Cruces, Wooton 1050 (US). Arizona: San Francisco Mts., Leiberg 5900 (US). California: Oroville, Heller 11478 (MO, US). MEXICO: Baja California: La Paz, Jones 24072 (LA, POM). Sonora: Hermansillo, Hitchcock 3617 (US). Chihuahua: Chihuahua, LeSueur Mex-083 (TEX, US). Coahuila: Saltillo, Hitchcock 5633 (US). Tamaulipas: Victoria, Edw. Palmer 473 of 1907 (GH, US). Durango: Durango, Hitchcock 7579 (US). Zacatecas, Hitchcock 7534 (US). San Luis Potosí: San Luis Potosí, Hitchcock 5696 (US). Guanjuato: Irapuato, Hitchcock 7417 (US). Queretaro: Queretaro, Hitchcock 5840 (US). Hidalgo: Pachuca, Hitchcock 6770 (US). Sinaloa: Culiacan, T. S. Brandegee, Sept. 2, 1904 (POM). Vera Cruz: Orizaba, Schaffner 189 (US). Colima: Jala,

Hitchcock 7012 (US). Mexico: Valle Mexico, Schaffner 73 (US). Morelos: Yautepec, Rose, Painter & Rose 8570 (US). Puebla: Tehuacán, Hitchcock 6069 (US). Guerrero: Temisco, Mexia 8869a (US). Oaxaca: Dist. Cuicatlán, Conzatti 4590 (US). Chiapas: Monserrate, Purpus 428 (US). Campeche: Tuxpeña, Lundell 844 (MICH, TEX).

CENTRAL AMERICA: Guatemala: Zacapa, Dept Zacapa, Pittier 1755 (US). El Salvador: San Salvador, Hitchcock 8855 (US). Nicaragua: Masaya, Hitchcock 8627 (US). Costa Rica: Puntarenas, Hitchcock 8562 (US).

WEST INDIES: Cuba: Vedado, Prov. Habana, León 8826 (US).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DISTRIBUTION MAP XXIII
E. cilianensis
ERCATOR'S PROJECTION

(9) Subsection Pectinaceae

A. Blades usually attenuate from a broad base, flat, usually at least 4 mm. (sometimes 3 mm.) wide at the base.

B. Spikelets linear or linear-lanceolate, usually less than 1.5 mm. wide

C. Axils of the panicle glabrous

D. Spikelets usually more than 8-flowered; glumes acuminate-lanceolate

63. E. Orcuttiana, p. 181.

D. Spikelets usually less than 8-flowered; glumes ovate, acute 65. E. virescens, p. 185.

C. Axils of the panicle pilose

60. E. diffusa, p. 170.

B. Spikelets ovate, usually more than 1.5 mm. wide

C. Panicle branches floriferous nearly to the base, they and the branchlets spreading; culms usually lacking glandular tissue under the nodes; panicle not stiff 57. E. mexicana, p. 161.

C. Panicle branches without spikelets on the lower 2 to 2.5 cm., the branchlets usually not spreading; a partial or complete circle of glandular spots below the nodes; panicle stiff 58. E. neomexicana, p. 165.

A. Blades linear, usually involute, 3 mm. (rarely 4 mm.) or less wide.

B. Pedicels of the lateral spikelets shorter than the spikelets

C. Axils of the panicle branches pilose; sheaths usually pilose at the apex of the margins; spikelets 6- to 12-flowered, 4 to 7 mm. long

D. Plant loosely tufted; panicle appearing densely flowered, the rachis and branches flexuous; the branches not stiffly spreading or ascending; the lemmas hardly if at all imbricate 61. E. tephrosanthos, p. 172.

D. Plant usually densely tufted; panicle open, the rachis flexuous; the branches usually stiffly spreading or ascending; the lemmas definitely imbricate

62. E. pectinacea, p. 176.

C. Axils of the panicle branches glabrous; sheaths glabrous, spikelets 6- to 8-flowered, 2 to 4 mm. long 66. E. peregrina, p. 187.

B. Pedicels of the lateral spikelets longer than the spikelets

C. Panicle branches capillary, usually distinctly arcuate if not so the sheaths with glandular pits in the nerves

D. Nerves (at least the keel) of the sheath and usually the culms below the nodes, the panicle branches and rachis with scattered, small glandular pits; lemmas 2 to 2.2 mm. long; spikelets 7- to 11-flowered

68. E. perplexa, p. 194.

D. No glandular tissue or rarely a few glandular pits present; lemmas 1.2 to 1.6 mm. long; spikelets 4- to 8-flowered

67. E. pilosa, p. 189.

C. Panicle branches not capillary, not distinctly arcuate but flexuous; no glands on the sheath

D. Glumes acuminate-lanceolate; panicle branches and usually the branchlets and pedicels ascending or appressed 64. E. Teff, p. 183.

D. Glumes ovate, acute; panicle branches, branchlets and pedicels stiffly spreading

59. E. arida, p. 168.

57. Eragrostis mexicana (Hornem.) Link

Poa mexicana Hornem., Hort. Hafn. 2: 953. 1815. Interpreted from the description and from a fragment and photograph of a specimen in the Herbarium of the Jardín Botánico, Madrid. This specimen was grown from seed sent from Mexico by D. Sessé in 1804. It is probable that Hornemann described this species from specimens grown from the same seed lot or derived from it.

Eragrostis mexicana (Hornem.) Link, Hort. Berol. 1: 190. 1827.

Eragrostis Botterii Fourn., Mex. Pl. 2: 115. 1886, (as synonym of E. poaeoides var. β Fourn.).

Eragrostis limbata Fourn., Mex. Pl. 2: 116. 1886. TYPE: Bonpland 4573 (P), collected in 1833 in Mexico. In the

National Herbarium there is a fragment of the type specimen.

Eragrostis limbata var. genuina Fourn. 2: 116. 1886. TYPE: same as the preceeding.

Eragrostis limbata var. major Fourn., Mex. Pl. 2: 116. 1886. TYPE: Berlandier 935 (P), collected in September 1827 near Mexico City, Mexico. In the National Herbarium there is a fragment of the type specimen.

Eragrostis pauciflora Trin. ex Fourn., Mex. Pl. 2. 117. 1886. TYPE: W. Schaffner pl. mex. 151 (P), collected on the Hacienda del Señor Posado near Vera Cruz, Vera Cruz, Mexico. In the National Herbarium there are fragments of the three collections cited by Fournier. These fragments are from specimens in the Paris Herbarium each of which is labeled with the specific name in Fournier's script (fide Chase). All three specimens cited, namely, Schaffner pl. ed. Hohen. 51, Virlet d'Aoust 1383 and Berlandier 843 are E. mexicana. Trinius' concept of this species is different as shown by fragments of two collections of Berlandier so named by him. One without number is in the Trinius Herbarium and one, number 2345, is in the general herbarium in Leningrad. The latter is the type collection of E. caudata Fourn. and the former belongs to the same species.

Eragrostis limbata forma densiuscula Hack in Allg. Bot. Zeitsch. 15: 157. 1909. TYPE: A. Kneucker Gram. Exsicc. 759 (Hack.), cultivated in Karlsruhe, Germany in August and September 1908. In the National Herbarium there is a fragment of the type specimen.

Annual. Culms tufted, erect to spreading, geniculate or decumbent at the base, branching at the base, sometimes with a partial or complete ring of glands below the nodes, 15 to 50 cm. tall. Sheaths overlapping at the base, less than half the length of the internodes above, pilose at the apex of and usually down the margins, sometimes papillose-pilose on the margins, sometimes with scattered glandular pits in the keel and nerves. Ligule a dense row of white hairs about 0.6 mm. long. Blades flat to involute, glabrous or sometimes papillose-pilose, sometimes with scattered glandular pits at the base below, scabrous above, 5 to 10 cm. long, 3 to 6 mm. wide. Panicles oblong, open, somewhat dense, usually lax, 10 to 18 cm. long, 4 to 8 cm. wide, the rachis scabrous towards the tip, the branches ascending, somewhat densely flowered, floriferous to within 1 to 3 mm. of the base, 4 to 6 cm. long, scabrous or sometimes pilose in the lower axils. Pedicels appressed to spreading, sometimes with a glandular pit below the spikelets, scabrous, 2 to 4 mm. long. Spikelets ovate-lanceolate, grayish-green to green mottled with red or purple, 6 to 9 mm. long, 1.8 to 2 mm. wide, 8- to 13-flowered, the rachilla not disarticulating. Glumes ovate, acute, scabrous on the keel, compressed, the first 1.6 to 1.8 mm. long, about 0.8 mm. wide, the second 1.8 to 2 mm. long, about 0.8 mm. wide. Lemmas ovate, acute, rounded on the back below, keeled at the tip, sometimes appressed puberulent at the tip and between the lateral nerves and margins, 2 to 2.2 mm. long, about 1.2 mm. wide, the lateral nerves conspicuous. Paleas from eight-tenths as long to as long as the lemmas,

persistent, ciliolate on the keels, hyaline, evenly convex on the back. Grains short, cylindric, striate, reddish-brown, translucent, flattened, 0.8 to 1 mm. long, 0.4 to 0.6 mm. wide.

Sandy soil and disturbed ground on the Mexican Plateau from Arizona and New Mexico, into Central America. Map XXIV, p. 168.

UNITED STATES: Arizona: Peach Springs, Kearney & Peebles 12763 (US); Mayer, Griffiths 4894 (GH, US); Santa Rita Mts., Kearney & Peebles 10553 (MICH, US). New Mexico: Burro Mts., Eggleton 16465 (US); Queen, Hitchcock 13557 (US). Texas: Davis Mts., Palmer 32067 (TEX); El Paso, E. N. Plank, July 1895 (NY).
MEXICO: Baja California: El Taste, T. S. Brandegee, Nov. 1902 (US). Sonora: Aribabi, Harvey 1672 (US). Chihuahua: Rancho Carretas, Harvey 1591 (US); Jiménez, Harvey 1325 (US). Coahuila: Parras, Archer 3997 (US); Nuevo León: Galeana, V. H. Chase 7732 (GH, NY, US). Tamaulipas: San José, Bartlett 10276 (MICH, US). Durango: Durango, Hitchcock 7640 (US). Zacatecas: Canitas, Archer 3981a (US). San Luis Potosí: Charcas, Lundell 5550 (MICH, TEX, US). Nayarit: Tepic, Edw. Palmer 1928 of 1892 pp. (US). Jalisco: Guadalajara, Edw. Palmer 234 of 1886 (GH, NY, US). Guanajuato: Acámbaro, Hitchcock 6925 (US). Hidalgo: Pachuca, Hitchcock 6725 (US). Vera Cruz: Orizaba, Hitchcock 6333 (US). Colima: Colima, Edw. Palmer 1262 of 1891 (NY). Mexico: Toluca, Hitchcock 6904 (US). Puebla: Tehuacán, Hitchcock 6031 (US). Oaxaca: Cuicatlan, E. W. Nelson 1705 (GH, US). Chiapas: Escuintla, Matuda 346 (MICH).

CENTRAL AMERICA: Guatemala: Cobán, Dept. Alta Verapaz, H. Johnson 571 (US, LA); Zunil, Dept. Quezaltenango, Steyermark 34489 (F); Guatemala City, Hitchcock 9091 (US). Honduras: Siguatepeque, Dept. Comayagua, Standley 56524 (US). El Salvador: Ahuachapán, Dept. Ahuachapán, Standley 20263 (F, GH, US); San Vicente, Dept. San Vicente, Standley 21184 (F, GH, US). Costa Rica: San José, Hitchcock 8512 (US).

56. Eragrostis neomexicana Vasey

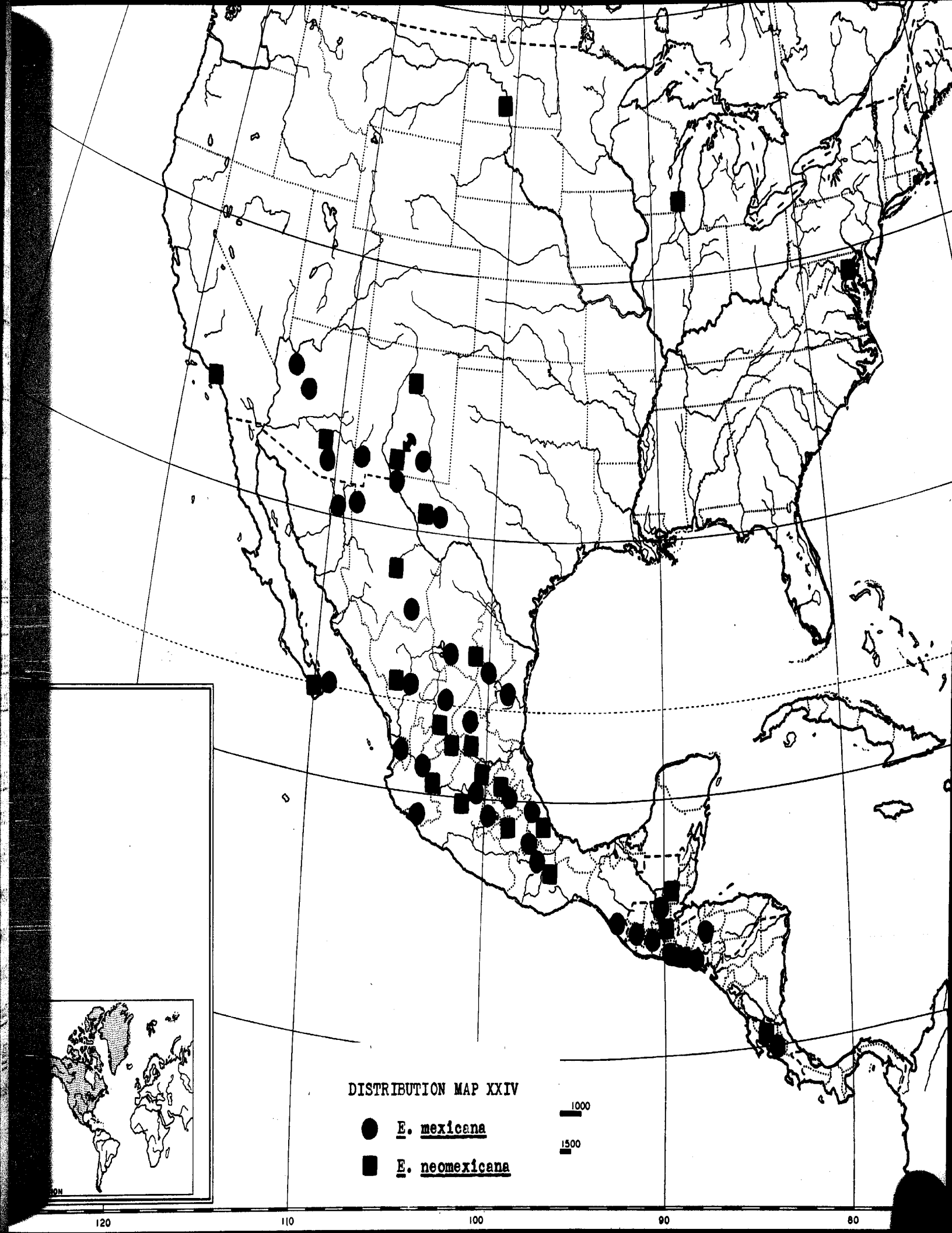
Eragrostis neomexicana Vasey in Contr. U. S. Nat. Herb. 2: 542. 1894. LECTOTYPE: G. R. Vasey (US 1,761,631), collected in 1881 in the Organ Mountains of New Mexico. This specimen was selected as the type specimen because it is from the type locality, agrees with the type description and "is the only one (in US) on which Vasey wrote the name following the generic name" (fide Chase note on type sheet).

Annual. Culms erect or ascending, sometimes somewhat decumbent, branching at the base and above, usually with a complete or partial ring of glands below some of the nodes, 75 to 120 cm. tall. Sheaths overlapping below, six- to eight-tenths the length of the internodes above, usually with glandular pits in the keel and lateral nerves, glabrous on the back usually pilose at the apex of, occassionally down, the margins, sometimes papillose-pilose on the margins. Ligule

a dense row of white hairs about 0.6 mm. long. Blades flat, involute towards the tip, attenuate from a broad base, glabrous or sometimes with a few glandular pits in the nerves at the base below, scabrous above, 12 to 25 cm. long, 5 to 12 mm. wide. Panicles broadly to narrowly ovoid, sometimes open, usually dense, 18 to 40 cm. long, 8 to 15 cm. wide, the branches ascending to appressed, sometimes with scattered glandular pits, glabrous, bare at the base for 2 to 2.5 cm., 5 to 10 cm. long, with several slender secondary branches, the spikelets usually appressed to them, the axils glabrous. Pedicels appressed to spreading, scabrous, sometimes with glandular pits, 2.5 to 4.5 mm. long. Spikelets usually ovate-lanceolate, sometimes oblong, grayish-green, 5 to 7 mm. long, 1.5 to 2.5 mm. wide, 7- to 15-flowered, the rachilla not disarticulating. Glumes ovate, acute to subacuminate, compressed and keeled at the tip, rounded on the back below, scabrous on the keel, the first 1.4 to 2 mm. long, 0.5 to 0.8 mm. wide, the second 1.8 to 2.2 mm. long, 1.2 to 1.6 mm. wide. Lemmas ovate, acute, more or less rounded on the back, scabrous on the keel, loosely imbricate, about 2.8 mm. long and 1.6 mm. wide, the lateral nerves conspicuous. Paleas eight-tenths the length of the lemmas, persistent, hyaline, ciliolate on the keels, evenly convex on the back. Grains short, cylindric, flattened, striate, translucent, reddish-brown, about 0.8 mm. long and 0.4 mm. wide.

Rocky and sandy soil in the mountains from California to western Texas, southward on the Mexican Plateau into Central America. Map XXIV, p. 168.

UNITED STATES: Wisconsin: Milwaukee, Oppel W-67 (US). North Dakota: Mandan, Swallen 5846 (US). Maryland: College Park, J. B. S. Norton, Nov. 1, 1926 (US). California: Los Angeles, Grant 413 (US). Arizona: Santa Catalina Mts., Griffiths 7166 (US). New Mexico: Las Vegas, Bro. Anect 94 (US); Organ Mts., Vasey, Aug. 1881 (US). Texas: Fort Davis, Silveus 291 (US). MEXICO: Baja California: Sierra de la Laguna, Brandegee 30 (US). Chihuahua: Chihuahua, LeSueur Mex-047 (TEX, US). Coahuila: Saltillo, Hitchcock 5642 (US). Durango: Durango, Edw. Palmer 869 of 1896 (F, NY, US). Zacatecas: Zacatecas, Hitchcock 7531 (US). San Luis Potosí: San Luis Potosí, Hitchcock 5662 (US). Jalisco: Guadalajara, Pringle 3839 (CAN, F, GH, NY, US). Aguascalientes: Aguascalientes, Hitchcock, 7443 (US). Querétaro: Querétaro, Hitchcock 5803 (US). Hidalgo: Pachuca, Hitchcock 6760 (US). Vera Cruz: Córdoba, Hitchcock 6402 (US). Michoacán: Morelia, Arsene 3288 (US). Puebla: Atlixco, E. W. Nelson, July 25 to Aug. 1, 1893 (US). Oaxaca: Tomellin, Hitchcock 6213 (US). CENTRAL AMERICA: Guatemala: Cobán, Dept. Alta Verapaz, von Turckheim 925 (NY, US); Guatemala City, Hitchcock 9163 (US). El Salvador: Lake Ilopango, Hitchcock 8923 (US). Costa Rica: San José, Prov. San José, Tonduz 770 (NY, US).


DISTRIBUTION MAP XXIV
E. mexicana
E. neomexicana
1000
1500
120
110
100
90
80

59. Eragrostis arida Hitchc.

Eragrostis arida Hitchc. in Journ. Wash. Acad. Sci. 23: 449. 1933. TYPE: A. S. Hitchcock 13650 (US 905,937), collected Sept. 14, 1915 on the prairie at Del Rio, Texas.

Annual. Culms tufted, erect or ascending, branching at or near the base, geniculate, sometimes with a few glands below the nodes, 15 to 60 cm. tall. Sheaths six-tenths the length of the internodes, overlapping at the base, glabrous except for the pilose apex of the margins. Ligule a dense row of white hairs about 0.6 mm. long. Blades flat, folded or involute (particularly at the tip), glabrous below, scabrous above, 4 to 25 cm. long, 1 to 3 mm. wide. Panicles ovoid to ovoid oblong, open, 7.5 to 30 cm. long, 4 to 16 cm. wide, the rachis scabrous near the tip, the branches ascending to spreading, somewhat scabrous, 2 to 12 cm. long, the axils pilose. Pedicels ascending to spreading, scabrous, usually longer than the spikelets, 1 to 8 mm. long. Spikelets usually linear-oblong, grayish-green, 4 to 11 mm. long, 1 to 2 mm. wide, 5- to 22-flowered, the rachilla not disarticulating. Glumes ovate, acute, hyaline, scabrous on the upper part of the keel, the first sometimes acuminate-lanceolate 0.8 to 1 mm. long, 0.4 to 0.6 mm. wide, the second 1.4 to 1.6 long, 0.8 to 1 mm. wide. Lemmas ovate, acute, loosely imbricate, somewhat hyaline on the edges and tip, glabrous or scabrous on the upper part of the keel, 1.6 to 2 mm. long, 1.2 to 1.6 mm. wide. Paleas as long as the lemmas, hyaline, ciliolate on the keels, persistent, slightly convex on the back. Grains subellipsoidal, tapering towards one end, striate,

translucent, reddish-brown, about 0.8 mm. long and 0.4 mm. wide.

Sandy prairies and rocky ground, scattered from Missouri to Texas and California, and in Mexico and northern Central America. Map XXV, p. 172.

UNITED STATES: Missouri: Courtney, B. F. Bush, July 22, 1935 (US). Arkansas: Little Rock, F. V. Coville, July 12, 1887 (US). Louisiana: Baton Rouge, Joor 13 (US). Texas: Amarillo, Hitchcock 16205 (US); Fort Davis to Alpine, Silveus 781 (US); Del Rio, Hitchcock 13650 (US); New Braunfels, Hitchcock 5196 (US); Edinburg, Swallen 1081 (US). New Mexico: Carlsbad, Hitchcock 13487 (US). Arizona: Prescott, Peebles, Harrison & Kearney 4296 (US); Tucson, Hitchcock 3486 (US). California: Turlock, M. A. Fosberg, Nov. 1, 1937 (US). Colorado: El Paso Co., G. Welch, Aug. 21, 1936 (US).

MEXICO: Sonora: Hermosillo, Hitchcock 3593 (MICH, US). Chihuahua: Casas Grandes to Sabinal, E. W. Nelson 6353 (US); Moctezuma, F. W. Johnson, Sept. 12, 1906 (US). Sinaloa: Rosario, Rose, Standley & Russell 14584 (US). Durango: Vermejillo, Johnston 7786 (F, GH, NY, US). Navarit: Acaponeta, Rose, Standley & Russell 14321 (US). Michoacán: Huétamo, Gándara 5 (US).

CENTRAL AMERICA: Guatemala: Guatemala City, W. Popenoe 664 (MICH, US). Honduras: Siguatepeque, Dept. Comayagua, Yuncker, Dawson & Youse 5684 (US).

60. Eragrostis diffusa Buckl.

Eragrostis diffusa Buckl. in Proc. Acad. Nat. Sci. Phila. 1862: 97. 1862. TYPE: S. B. Buckley (PH), collected in May in northern Texas.

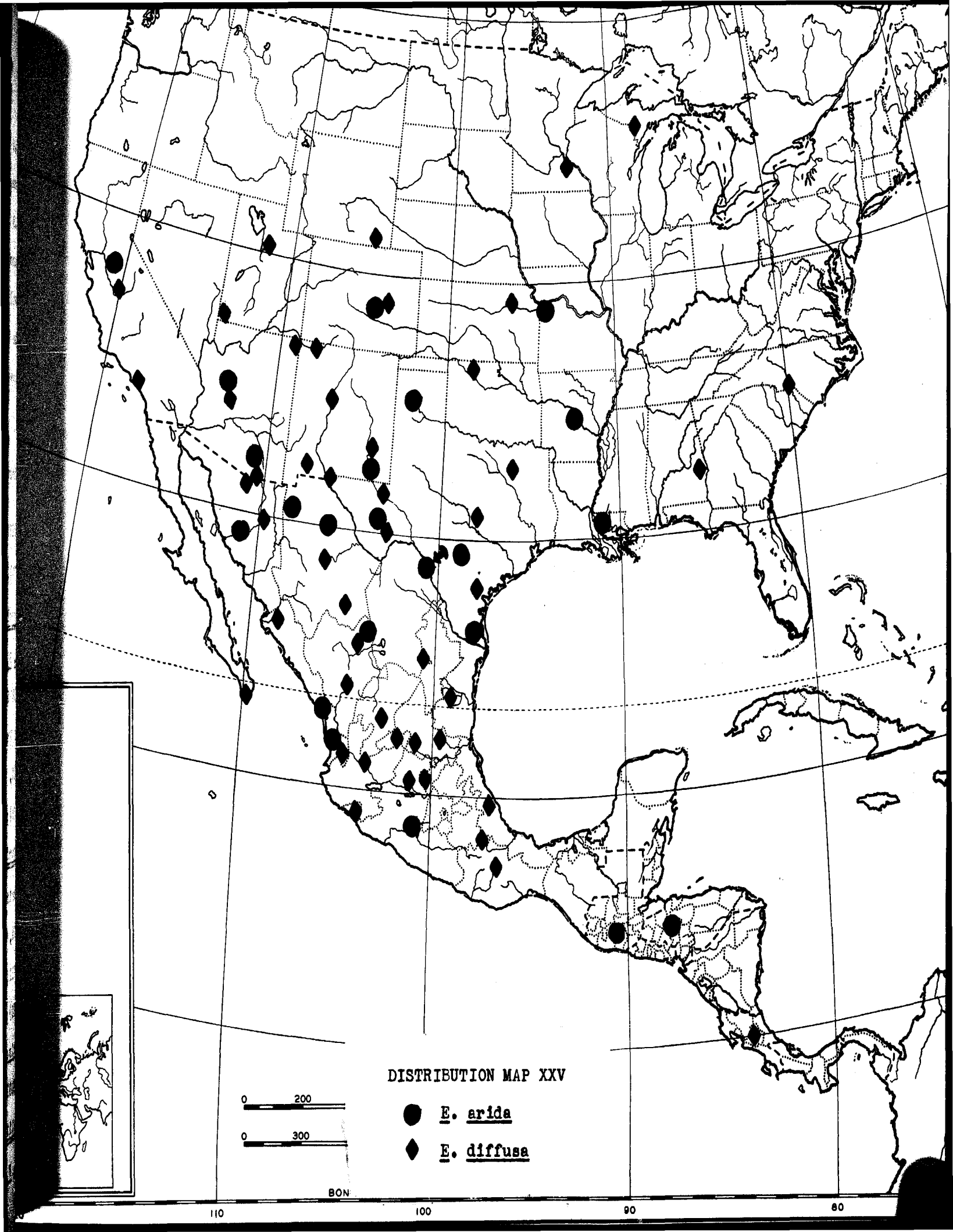
Eragrostis Purshii var. diffusa (Buckl.) Vasey in Contr. U. S. Nat. Herb. 1: 59. 1890.

Annual. Culms tufted, erect or ascending, sometimes geniculate at the lower nodes and somewhat decumbent, branching at the base, 30 to 55 cm. tall. Sheaths eight-tenths the length of the internodes, glabrous except for the pilose apex of the margins. Ligule a dense row of white hairs about 0.6 mm. long. Blades attenuate from a broad base, flat to involute (particularly at the tip), glabrous below, scabrous towards the tip above, 7.5 to 18 cm. long, 3 to 7 mm. wide. Panicles oblong to ovoid, open, 12 to 30 cm. long, 6 to 20 cm. wide, the rachis scabrous towards the tip, the branches ascending to spreading or appressed, slender, sometimes flexuous, glabrous to scabrous, much branched, 4 to 9 cm. long, the axils usually pilose, the branchlets scabrous, appressed or sometimes ascending. Pedicels appressed or sometimes ascending or spreading, slender, sometimes flexuous, scabrous, 2 to 5 mm. long. Spikelets usually narrowly lanceolate, somewhat compressed, straw-colored and greenish-tinged to grayish-green, 5 to 8 mm. long, 1 to 2 mm. wide, 8- to 14-flowered, the rachilla not disarticulating. Glumes ovate, acute to acuminate, hyaline, compressed, keeled, scabrous on the keel, the first 1 to 1.2 mm. long, about 0.4 mm. wide, the second

1.4 to 1.6 mm. long, about 0.8 mm. wide. Lemmas ovate, acute, somewhat compressed, somewhat scabrous on the tip of the keel, 1.8 to 2.2 mm. long, about 1.2 mm. wide, the lateral nerves conspicuous. Paleas eight-tenths as long as the lemmas, hyaline, persistent, ciliolate on the keels, evenly convex on the back. Grains ellipsoidal, striate, translucent, reddish-brown, about 1 mm. long and 0.4 mm. wide.

Sandy ground and prairies from southern United States throughout Mexico and into Central America. Map XXV, p. 172.

UNITED STATES: Minnesota: Zumbrota, A. L. Ballard, Aug. 1882 (US). Michigan: Norway, C. F. Wheeler, Aug. 30, 1892 (US). North Carolina: McFarlan, Silveus 5614 (US). Alabama: Tuskegee, A. S. Hitchcock, 1904 (US). Kansas: Manhatten, C. H. Thompson (US 242,388). Oklahoma: Alva, Stevens 3302 (MO, NY, US). Texas: El Paso. Hitchcock 13323 (US); Barstow, Tracy 8192 (F, GH, MO, TEX, US); Little River, Wolff 2265 (US); Victoria, Plank 76 (US); Quinlan, Wolff 3343 (US); Marathon, Swallen 1140 (US). Wyoming: Laramie, E. Nelson 720 (WYO). Colorado: Colorado Springs, Silveus 258 (US). Utah: Springdale, Jones 6080 (MO, POM, US); St. George, D. Hall 8477 (US). New Mexico: Cedar Hill, Standley 7935 (US); Albuquerque, Jones 4117 (POM, US, WYO); Deming, Hitchcock 3753 (US); Carlsbad, Tracy 8177 (US). Arizona: Carizo Mts., Standley 7495 (US); Prescott, Hitchcock 5181 (US); Patagonia Mts., Kearney & Peebles 10181 (US) California: Fresno, Springer 528 (US); Santa Ana, S. B. & F. F. Parrish 1601 (F, MO, US).


DISTRIBUTION MAP XXV
0 200
0 300
E. arida
E. diffusa
BON
110
100
90
80

MEXICO: Baja California: San José del Cabo, C. A. Purpus, Jan. to March 1901 (US). Sonora: Nogales, Hitchcock 3634 (US); Moctezuma, Wiggins 7448 (US). Chihuahua: Chihuahua, Pringle 416 (F, GH, NY, US); Camargo, Harvey 1414 (US). Coahuila: Saltillo, Hitchcock 5630 (US). Tamaulipas: Victoria, Edw. Palmer 474 of 1907 (GH, NY, US). Sinaloa: San Blas, Rose, Standley & Russell 13393 (NY, US). Durango: Torreon, Hitchcock 7554 (US); Durango, Edw. Palmer 723 of 1896 (F, GH, NY, US). Zacatecas: Zacatecas, Hitchcock 7532 (US). San Luis Potosí: San Luis Potosí, Hitchcock 5659 (US); Cárdenas, Hitchcock 5725 (US). Navarit: Aguacate, Rose 2016 (GH, US). Jalisco: Guadalajara, Edw. Palmer, July 12, 1890's (US). Aguascalientes: Aguascalientes, Shreve 9280 (US). Guanajuato: Irapuato, Hitchcock 7418 (US). Querétaro: Querétaro, Arsène 10367 (US). Vera Cruz: Jalapa, Hitchcock 6600 (US). Colima: Alzada, Hitchcock 7062 (US). Puebla: Tehuacán, Hitchcock 6086 (US). Oaxaca: Oaxaca, Hitchcock 6113 (US).

CENTRAL AMERICA: Costa Rica: Las Concaves, Lankester 206 (US).

61. Eragrostis tephrosanthes Schult.

Eragrostis tephrosanthos (sic!) Schult., Mant. 2: 316. 1824. TYPE: Herb. Sieber nr. 33 Martinique. Interpreted from the description and specimens from Martinique.

Poa polymorpha Sieber ex Schult., Mant. 2: 316. 1824, (as synonym of E. tephrosanthos).

Poa tephrosanthos Spreng. ex Schult., Mant. 2: 316. 1824, (as synonym of E. Tephrosanthos).

Eragrostis delicatula Trin. in Mém. Acad. St. Pétersb. Sér.

VI. Sci. Nat. 2: Bot. 73. 1836. TYPE: Reidel (Trin.), collected at Rio de Janeiro, Brasil. In the National Herbarium there is a fragment of the type specimen.

Poa havanensis Trin. ex Steud., Nom. Bot. Ed. II. 2: 360. 1841, nom nud. Steudal cites "ex Trinius mpt. Willd. Herb." In the National Herbarium there is a fragment of a collection in the Willdenow Herbarium (B) which is labeled with this specific name, Humboldt 5298, from Habana, Cuba.

Eragrostis parvula Steud., Syn. Pl. Glum. 1: 277. 1854. TYPE: Parreys 172 (CN), collected in 1845 in Mexico. In the National Herbarium there is a fragment of the type specimen.

Eragrostis Purshii var. miserrima Fourn., Mex. Pl. 2: 116. 1886. Based on E. parvula Steud.

Eragrostis Purshii var pauciflora Fourn., Mex. Pl. 2: 116. 1886, nom. nud. TYPE: Berlandier 43 (P), collected in Mexico. In National Herbarium there is a specimen of the type collection.

Eragrostis Purshii var genuina Fourn., Mex. Pl. 2: 116. 1886. Fournier cites E. tephrosanthos Steud. pro parte.

Annual. Culms tufted, erect or ascending, occassionally decumbent at the base, branching at the base and above, geniculate at the lower nodes, 10 to 35 cm. tall. Sheaths four- to eight-tenths the length of the internodes, overlapping at the base, pilose at the apex of the margins, glabrous on the back. Ligule a dense row of white hairs about 0.4 mm. long. Blades flat to involute at the tip, glabrous below, scabrous above, 3.5 to 15 cm. long, 1.5 to 3 mm. wide. Panicles ovoid

to ovoid-oblong, open, 4 to 15 cm. long, 3 to 7 cm. wide, the branches slender, flexuous, ascending to spreading, 1 to 5 cm. long, the basal 0.5 to 1 cm. without spikelets. Pedicels scabrous, somewhat appressed to spreading, slender, 1 to 2 mm. long. Spikelets ovate to oblong, grayish-green, 4 to 7 mm. long, 1 to 1.5 mm. wide, 8- to 12-flowered, the rachilla not disarticulating. Glumes acute, ovate, hyaline, scabrous to glabrous on the keel, the first sometimes acuminate-lanceolate, 1 to 1.2 mm. long, about 0.4 mm. wide, the second 1.2 to 1.4 mm. long, about 0.8 mm. wide. Lemmas ovate, acute, scabrous on the keel, imbricate, 1.6 to 1.8 mm. long, about 1.6 mm. wide, the lateral nerves conspicuous. Paleas six- to eight-tenths the length of the lemmas, persistent, hyaline, evenly convex on the back, ciliolate on the keels. Grains subellipsoidal, faintly striate, translucent, reddish-brown, about 1 mm. long and 0.4 mm. wide.

Disturbed ground from Florida to Texas and throughout Mexico, Central America and the West Indies. Map XXVI, p. 181.

UNITED STATES: Florida; Milton, Curtiss 5930 (F, GH, NY, US); Quincy, Combs 432 p. p. (US); Alachua Co., Hitchcock Fl. Pl. 8325 (US); Eustis, Nash 1409 (NY, US). Alabama: Mobile, C. Mohr, July 1892 (US). Mississippi: Taylorville, Tracy 8386 (US). Louisiana: St. Marys Par., A. B. Langlois, July 17, 1893 (US). Texas: Brownsville, Hitchcock 5416 (US).

Arizona: Prescott, Peebles, Harrison & Kearney 4295 (MICH). MEXICO: Sonora: Villa de Seris, Drouet, Richards & Alvarado 3417 (F). Sinaloa: Cofradia, Gentry 5036 (MICH). Durango: Tepehuanes, Edw. Palmer 266 of 1906 (NY, US). Zacatecas: Cañitas, Archer 3981 (MICH, US). San Luis Potosí: San Luis Potosí, Virlet d'Aoust 1383 (US). Guanajuato: San Francisco de Rincón, Archer 3980 (MICH, US). Hidalgo: Huejutla, Seler 627 (US). Vera Cruz: Orizaba, Hitchcock 6311 (US). Morelos: Cuernavaca, Hitchcock 6825 (US). Oaxaca: Oaxaca, Hitchcock 6121 (US). Yucatán: Peto, Swallen, July 26 - 27, 1932 (US); Cozumel Island, Swallen 2846 (MICH, US).

CENTRAL AMERICA: Guatemala: Puerto Barrios, Dept. Izabel, Standley 24714 (GH, US); Coban, Dept. Alta Verapaz, Türckheim 656 (MICH, US); San Felipe, Dept. Retalhuleu, Kellerman 6072 (US). Honduras: Tela, Dept. Atlántida, Standley 52957 (F, US). El Salvador: San Salvador, Standley 19369 (GH, US). Nicaragua: Corinto, Hitchcock 8624 (US); Masaya, Hitchcock 8626 (US). Costa Rica: Port Limon, Hitchcock 8422 (US); Puntarenas, Hitchcock 8561 (US); Santo Domingo de Golfo Dulce, Tonduz 7196 (US). Panamá: Bocas del Toro, Carleton 29 (GH, NY, US); El Boquete, Prov. Chiriquí, Hitchcock 8279 (MICH, US); Colón C. Z., Rose 23994 (US); Balboa, C. Z., Standley 25620 (US).

WEST INDIES: Cuba: Herradura, Prov. Pinar del Rio, Tracy 8057 (GH, US); Habana, Prov. Habana, A. S. Hitchcock, March 26, 1906 (US); Cardenas, Prov. Matanzas, Britton & Wilson 156a (NY, US); Cienfuegos, Prov. Santa Clara, Jack 6311 (US); La Gloria, Prov. Camaguey, Shafer 153 (F, NY, US); Santiago de

Cuba, Prov. Oriente, León878 (US). Jamaica: Kingston, Hitchcock 9889 (US). Hispaniola: Haití: Port-à-Piment, Ekman H391 (US); Port-au-Prince, Ekman H9052 (US); Dominican Republic: Monción Prov. Monte Cristi, Valeur 776 (MICH; US); Santo Domingo, Ekman H11275 (US); Enriquillo, Prov. Barahona, Abbott 1732 (GH, US). Puerto Rico: Mayagüez, Britton 2347 (NY, US); Ponce, Chase 6482 (US); Vieques Island, Shafer 2423 (NY, US). Virgin Islands: St. Thomas, Hitchcock 16310 (US). St. Croix, Ricksecker b (F). Leeward Islands: St. Kitts, Hitchcock 16368 (US); Basse-Terre, Guadeloupe, Stehlê 691 (US); Dominica. J. Jones, Aug. 16, 1913 (US); St. Pierre, Martinique, Duss 793 (F, NY, US). Windward Islands: Barbados, Hitchcock 16517 (US); St. George, Grenada, Broadway 724 p. p. (US). Trinidad: Port of Spain, Hitchcock 9974 (US).

62. Eragrostis pectinacea (Michx.) Steud.

Poa pectinacea Michx., Fl. Bor. Amer. 1: 69. 1803. TYPE: Michaux (P), collected in fields in Illinois. In the National Herbarium there is a fragment of the type collection.

Poa caroliniana Spreng., Mant. prima Fl. Hal. 33. 1807. Interpreted from the description and from specimens from the locality (Carolina boreali) given with the description.

Poa Eragrostis L. err. applic. Ell., Bot. S. C. & Ga. 1: 161. 1816. Interpreted from the description.

Poa tenella L. err. applic. Nutt., Gen. N. Amer. Pl. 1: 67, 1818. Interpreted from the description.

Poa capillaris L. err. applic. Link, Enum. Pl. Hort. Berol.

1: 88. 1821. Interpreted from the description and from the synonyms cited.

Eragrostis brizoides Schultz., Mant. 2: 319. 1824. Based on Poa tenella L. err. applic. Nutt.

Poa Nuttallii Kunth, Rév. Gram. 1: 116. 1829, not Spreng. 1825. Based on Poa Tenella L. err. applic. Nutt.

Eragrostis Nuttalliana Steud., Nom. Bot. Ed. II. 1: 563. 1840. Based on Poa tenella L. err. applic. Nutt.

Eragrostis pennsylvanica Scheele in Flora 27: 58. 1844. TYPE: Gardiner, collected in Pennsylvania. Interpreted from the description.

Eragrostis pectinacea (Michx.) Steud., Syn. Pl. Glum. 1: 272. 1854.

Eragrostis Unionis Steud., Pl. Glum. 1: 273. 1854. TYPE: Frank (P), collected in 1835 at Miami, Ohio. In the National Herbarium there is a fragment of the type specimen.

Eragrostis cognata Steud., Syn. Pl. Glum. 1: 273. 1854. TYPE: Frank (P), collected in 1837 in Ohio. In the National Herbarium there is a fragment of the type specimen.

Eragrostis Purshii Schrad. in Linnaea 12: 451. 1838, nom. nud., ex A. Gray, Man. Ed. II. 564. 1856. Gray cites Poa tenella ? Pursh, Poa pectinacea Auct., non Pursh. Gray misapplied E. pectinacea at this time to specimens of E. spectabilis.

Poa diandra Schrad. in Linnaea 12: 451. 1838, nom. nud., ex Jacks., Ind. Kew. 3: 572. 1894, (as synonym of E. Purshii

Schrad.)

Eragrostis caroliniana (SPreng.) Scribn. in Mem Torr. Bot. Club 5: 49. 1894.

Eragrostis pilosa var. caroliniana (Spreng.) Farw. in Rept. Mich. Acad. Sci. 17: 182. 1916.

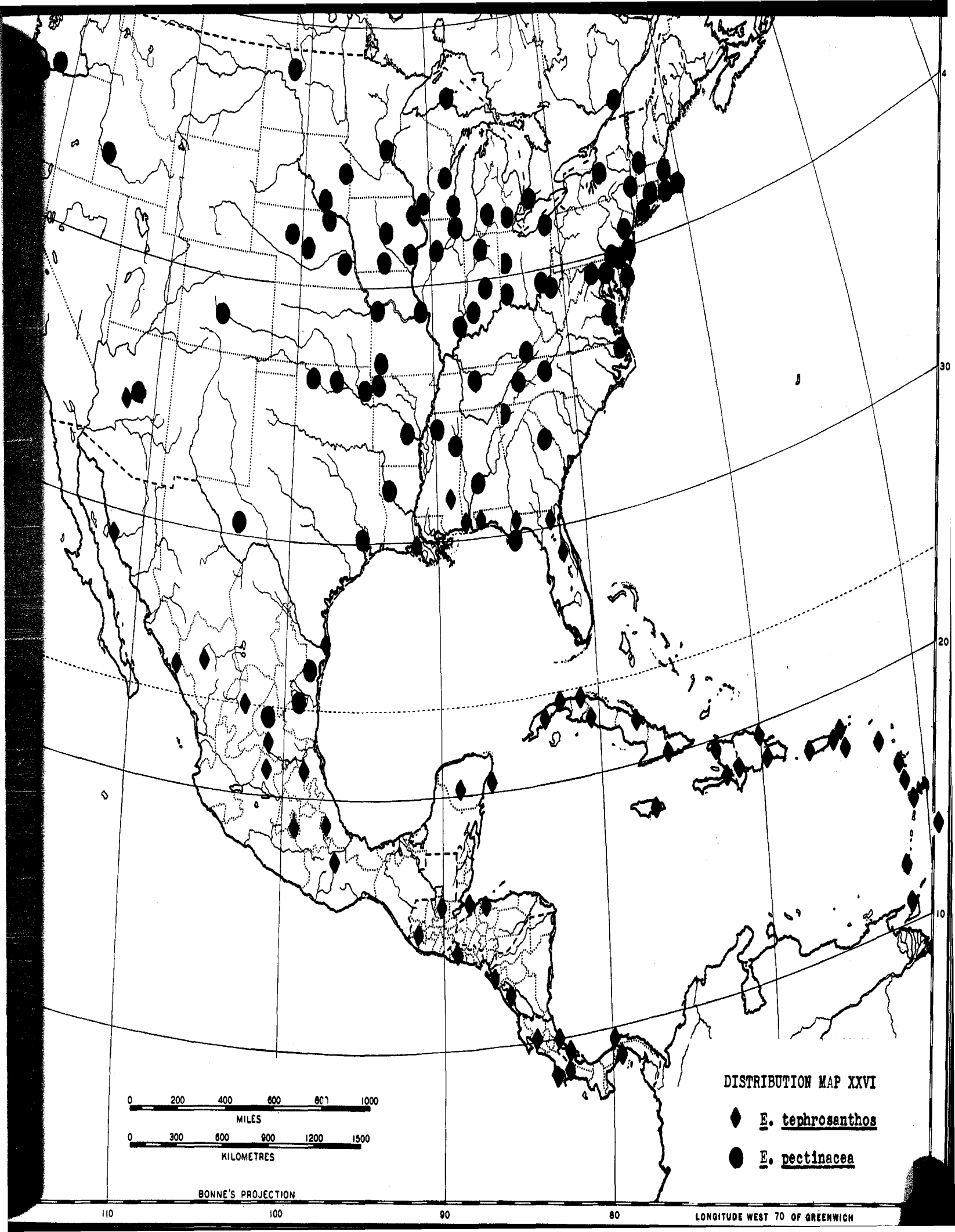
Annual. Culms tufted, geniculate and branching at the base and above, erect to spreading, slender, 15 to 40 cm. long. Sheaths overlapping at the base or as much as two-thirds the length of the internodes above, pilose at the apex of the margins, the keel and some lateral nerves strong. Ligule a dense row of white hairs about 0.2 mm. long. Blades linear, usually ascending, glabrous below, scabrous above, 5 to 10 cm. long, 1 to 3 mm. wide. Panicles ovoid, open, 5 to 20 cm. long, 3 to 10 cm. wide, the rachis scabrous towards the tip, the branches slender, ascending to spreading, sometimes reflexed, the lower usually paired or verticillate, sometimes solitary, the upper usually solitary and somewhat distant, 2 to 6 cm. long, with few if any secondary branches, usually with only 3 to 10 spikelets, axils usually glabrous, sometimes with two or three hairs. Pedicels usually appressed, slender, scabrous, usually shorter than the spikelets, 1.4 to 6 mm. long. Spikelets usually lanceolate, sometimes oblong, compressed, grayish-green, 4 to 7 mm. long, 0.8 to 1.2 mm. wide, 6- to 12-flowered, the rachilla not disarticulating. Glumes acute to acuminate, compressed, keeled, scabrous on the tip of the keel, the first 0.8 to 1.2 mm. long, about 0.4 mm. wide, the second 1 to 1.4 mm. long, about 0.6 mm. wide.

Lemmas ovate, acute, scabrous on the keel, somewhat compressed, somewhat erose at the tip, loosely imbricate, 1.4 to 1.8 mm. long, about 0.8 mm. wide, the lateral nerves conspicuous. Paleas hyaline, about eight-tenths the length of the lemmas, persistent, evenly convex on the back, ciliolate on the keels. Grains oblong, striate, translucent, reddish-brown, 0.8 to 1 mm. long, about 0.4 mm. wide.

Disturbed ground from Maine to North Dakota south to Florida and eastern Texas and scattered in western United States, Tamaulipas and San Luis Potosí. Map XXVI, p. 181.

CANADA: Quebec: Oka, Marie-Victorin 18230 (GH, NY, US). Ontario: Sarnia, Herb. Geol. Surv. Can. 26101 (GH, NY, US). UNITED STATES: Vermont: Bennington, L. R. Jones 1750 (US) Massachusetts: Cambridge, Weatherby & Fernald 6055 (US); Harwich, Pl. Exsicc. Gray. 414 (CAN, F, GH, MICH, NY, POM, US, WYO). Connecticut: Hartford, F. Wilson 93 (US); Bridgeport, E. A. Eames, July 31, 1895 (US). Rhode Island: Elmwood, J. F. Collins, Sept. 26, 1892 (US). New York: Onondaga Lake, Van Eseltine 3274 (US); Albany, H. D. House, Aug. 17, 1921 (US). New Jersey: Phillipsburg, J. K. Small, Aug. 15, 1890 (US); Camden, C. L. Pollard, Sept. 22, 1897 (US). Pennsylvania: Peach Bottom to Tucquan, J. K. Small, Sept. 21, 1889 (US). Ohio: Painesville, Werner 6796 (US); St. Marys, A. Kneucker Gram. Exsicc. IV. 116 (GH, MO, US); Oxford, G. M. K. 283 (US); Belpre, Kellerman 6821 (US). Indiana: Leiter's Ford, Deam 34704 (US); Indianapolis, Deam

6954 (US); Washington, Deam 25580 (US). Illinois: Elgin, Sherff 1791 (MO); Wady Petra, V. H. Chase 124 (MICH, NY, US, WYO); Mount Carmel, Bock & Chase 48 (US). Michigan: Houghton, Hitchcock 5129 (US); Ann Arbor, Hermann 6980 (F, MICH, MO, US); Kalamazoo, Harvey 1811 (Harv.). Wisconsin: Oshkosh, G. Random, July 17, 1896 (US); Muscoda, Pammel 668 (US); Milwaukee, Oppel W-105 (US). Minnesota: St. Cloud, Campbell 37 (US). North Dakota: Minot, Bolley 917 (US). South Dakota: Brookings, T. A. Williams, Sept 10, 1892 (US); Plankinton, Wilcox 9 (US). Iowa: Manchester, Ball 723 (MO, US); Ames, Ball 47 (US); Murray, Morris A253 (NY, US); Mount Pleasant, J. H. Mills, 1894 (US). Nebraska: Dukeville, Clements 2731 (NY, US); Mullen, Rydberg 1774 (GH, NY, US); Broken Bow, Plank 62 (US); Lincoln, Bates 2440 (US). Missouri: Courtney, Bush 598 (MO, US); Whiteside, Davis 136 (MO, US); Springfield, Standley 8439 (US). Delaware: Wilmington, Commons 82 (US); Lewes, Commons 318 (US). Maryland: Ammendale, Bro. F. Hyacinth 1650 (MO). Virginia: Williamburg, Grimes 4071 (NY, US). West Virginia: Harper's Ferry, E. L. Core, Aug. 20, 1931 (US); Goose Creek, Ritchie Co., J. D. Smith, Sept. 12, 1879 (US). North Carolina: South Mills, Blomquist & Williams 201 (US); Magnetic City, A. G. Weatherby 17 (US). Georgia: Dalton, Harper 381 (NY, US); Thomson, Bartlett 1020 (MICH, POM, US). Florida: Apalachicola, Biltmore Herb. 3889a P.P. (US). Kentucky: Harlan Co., Kearney 158 p. p. (F, GH, MO, NY, US). Tennessee: Nashville, Gattinger 3496 (US); Knoxville, Ruth 43 (US). Alabama: Selma, Kearney 12 (US). Mississippi: Panola Co.,


0 200 400 600 800 1000
MILES
0 300 600 900 1200 1500
KILOMETRES
BONNE'S PROJECTION
110
100
90
80
LONGITUDE WEST 70 OF GREENWICH
30
20
10
DISTRIBUTION MAP XXVI
E. tephrosanthos
E. pectinacea

Eggert 146 (US); Starkville, Kearney 92 p. p. (GH, US). Arkansas: Benton Co., Plank 118 (US); Pine Bluff, Hitchcock 16108 (US). Louisiana: Coushatta, Ball 130 (US). Texas: Davis Mts., Hinckley 892 (TEX, US); Hempstead, E. Hall 785 p. p. (US). Oklahoma: Cleo, Stevens 1731 (GH, MO, NY, US); Stillwater, Hitchcock 16152 (US); Tahlequeh, Prier 3 (US). Idaho: Boise, Clark 283 (CAN, F, GH, MO, NY, POM, US, WYO). Washington: Bingen, Sukadorf 10134 (GH, MO, NY, US). Oregon: Hayden Island, J. W. Thompson 3849 (MO). Colorado: Salida, Lister 14 (US). Arizona: Edw. Palmer 1869 (US). MEXICO: Tamaulipas: Victoria, Swallen 1625 (US); San José, Bartlett 10276 1/2 (US). San Luis Potosí: Charcas, Whiting 1048 p. p. (US).

63. Eragrostis Orcuttiana Vasey

Eragrostis Orcuttiana Vasey in Contr. U. S. Nat. Herb. 1: 269. 1893. TYPE: C. R. Orcutt 1313 (US, 1,761,633), collected August 1885 in the Chollus Valley, San Diego, California.

Annual. Culms tufted, erect or ascending, the base usually decumbent, br nching at the first node, usually rather stout, geniculate at the lower nodes, sometimes with glandular spots below the nodes, 40 to 90 cm. tall. Sheaths about two-thirds the length of the internodes, somewhat compressed and keeled, pilose at the apex of the margins (the upper sparsely so), the lower sometimes papillose-pilose down the margins. Ligule

a dense row of white hairs about 0.4 mm. long. Blades attenuate from a broad base, usually flat, glabrous below, scabrous above, 10 to 25 cm. long, 3 to 5 mm. wide. Panicles ovoid, open, usually somewhat densely flowered, 15 to 40 cm. long, 10 to 20 cm. wide, the rachis scabrous towards the tip, the branches ascending to spreading, delicate, flexuous, commonly solitary, the bases 1 to 5 (2) cm. apart, floriferous to within 5 mm. of the base, 5 to 15 cm. long, the axils glabrous. Pedicels ascending to spreading, capillary, flexuous, scabrous, 1 to 5 mm. long. Spikelets linear to linear-lanceolate, not compressed, dull green, 5 to 8 mm. long, 0.8 to 1 mm. wide, 8- to 12-flowered, the rachilla not disarticulating. Glumes acuminate-lanceolate, scabrous on the keel, compressed at the tip, the first 1 to 1.2 mm. long, about 0.4 mm. wide, the second sometimes ovate, acute, 1.4 to 1.8 mm. long, about 0.8 mm. wide. Lemmas narrowly ovate, acute, rounded on the back below, keeled and compressed at the tip, scabrous on the tip of the keel, imbricate, bronzed at the tip, 1.8 to 2.2 mm. long, 0.8 to 1 mm. wide, the lateral nerves strong and somewhat scabrous. Paleas hyaline, as long as the lemmas, persistent, evenly convex on the back, glabrous on the keels. Grains oblong, striate, translucent, reddish-brown, about 0.8 mm. long and 0.4 mm. wide.

Waste ground and fields from Oregon to Arizona and in Colorado. Map XXVII, p. 189.

UNITED STATES: Oregon: Linnton, J. C. Nelson 501 (GH, US); Hood River City, Henderson 459 of 1924 (MO). California: Yreka, Butler 869 (POM, US); Hamilton, Heller 11757 (MO, US); Ione,

Braunton 1209 (MO, NY, US); San Bernardino Co., Parrish 2484 (F, US); San Diego, Orcutt 1313 (US). Nevada: Smoke Creek, Griffiths & Hunter 508 (US); Battle Mt., Hitchcock 10601 (US); Wadsworth, Griffiths & Hunter 546 (US); Hawthorne, Archer 7156 (US). Arizona: Tucson, Griffiths 1542 (US). Utah: Provo, B. F. Harrison 369H (US). Colorado: Clyde, W. A. Silveus, Aug. 28, 1935 (US).

64. Eragrostis Teff (Zucc.) Trotter

Poa Teff Zuccagni, Dissertazione concernente l'Istoria di una pianta panizzabile dell' Abissinia. Firenze. 1775. I have been unable to find this publication. Interpreted from the treatment given this species by Hubbard.

Poa abyssinica Jacq., Misc. 2: 364. 1781. Interpreted from the description and Hubbard's treatment of this species.

Eragrostis abyssinica (Jacq.) Link, Hort. Berol. 1: 192. 1827. This combination was published as E. Abessinica.

Eragrostis Teff (Zucc.) Trotter in Bull. Bot. Ital. 1918 62. 1918.

Annual. Culms tufted, geniculate and branching at the lower nodes, erect or ascending, 45 to 60 cm. tall. Sheaths usually shorter than the internodes, compressed at least near the summit, glabrous except for a tuft of hairs on the apex of the margins. Ligule a dense row of white hairs about 0.4 mm. long. Blades flat to loosely involute, glabrous below, scabrous above, 10 to 20 cm. long, 2 to 4 mm. wide.

Panicles narrowly oblong or lance-ovoid, contracted, decompound, appearing densely flowered, 15 to 35 cm. long, 4 to 10 cm. wide, the rachis scabrous towards the tip, the branches usually ascending or appressed, sometimes spreading, delicate, flexuous, scabrous, somewhat flattened, the first 2 to 5 cm. without spikelets, the lower in verticels, solitary or in pairs above, 10 to 15 cm. long, the lower axils usually sparsely pilose. Pedicels appressed or ascending, slender, flexuous, scabrous, 4 to 8 mm. long, from one to one and one-half times as long as the spikelets. Spikelets narrowly lanceolate, compressed, hyaline, purple-tinged or plumbeous, 6 to 10 mm. long, 1.8 to 2.4 mm. wide, 6- to 10-flowered, the rachilla not disarticulating. Glumes acuminate-lanceolate, scabrous on the keel, compressed at the tip, the first 1.6 to 2.2 mm. long, about 0.4 mm. wide, the second 2 to 2.6 mm. long, about 0.6 mm. wide. Lemmas ovate, acute, compressed, keeled, sparsely scabrous on the tip of the keel, sometimes between the lateral nerves at the tip, 2.2 to 2.6 mm. long, 0.8 to 1.6 mm. wide, the lateral nerves conspicuous. Paleas hyaline, about two-thirds the length of the lemmas, evenly convex on the back, ciliolate on the keels. Grains oblong, striate, translucent, reddish-brown or yellowish, about 1.2 mm. long and 0.6 mm. wide.

Cultivated at various experimental stations. This grass is cultivated as a grain in some parts of Africa. It will probably be found sooner or later as an escape in the Southern United States.

65. Eragrostis virescens Presl

Eragrostis virescens Presl, Rel. Haenk. 1: 276. 1830. TYPE: Haenke (PR), collected in the mountains of Chile. In the National Herbarium there is a fragment of the type specimen.

Eragrostis Haenkei Presl, Rel. Haenk. 1: 279. 1830. TYPE: Haenke (PR), collected in Mexico. In the National Herbarium there is a fragment and a photograph of the type specimen.

Eragrostis alba Presl, Rel. Haenk. 1: 279. 1830. TYPE: Haenke (PR), collected at Monterrey, California. The locality is probably an error as this species is not known as a native from the United States. In the National Herbarium there is a fragment and a photograph of the type specimen.

Poa virescens (Presl) Kunth, Rév. Gram. 1: Suppl. xxviii. 1830.

Poa Haenkei (Presl) Kunth, Rév. Gram. 1: Suppl. xxviii. 1830.

Poa alba (Presl) Kunth, Rév. Gram 1: Suppl. xxviii. 1830.

Poa chilensis Moris in Ann. Stor. Nat. Bologna 4: 60. 1830. TYPE: "Nata est in hort. bot. Taurinensi ex seminibus e Chili missis a Bertero." In the National Herbarium there is a fragment of a collection in the Trinius Herbarium which is labelled Poa chilensis Moris, "E semina Chili de Taurio."

Eragrostis chilensis (Moris) Nees in Nov. Act. Acad. Caes. Leop. Carol. 10: Suppl. 1:32. 1841.

Eragrostis Rahmeri Phill. in An Mus. Nac. Chile Bot. 8: 88. 1891. TYPE: R. A. Phillip 359 (Hack.), collected in Quebrada de Guaviña, Provincia Tarapacá, Chile. In the National Herbarium there is a plant from the type specimen.

Eragrostis virescens var. trachyphylla Hack in Stuck. in An. Mus. Nac. Buenos Aires Ser. III. 6: 505. 1906. TYPE: Stuckert herb. arg. no. 4886 ex Lillo herb. arg. no. 3192 (Hack.), collected Dec. 12, 1903 in cultivated fields at Tucuman, Argentina. In the National Herbarium there is a fragment of the type specimen.

Eragrostis cordobensis Jedw. in Bot. Arkiv 5: 208. 1924. TYPE: Galander 54 (B), collected in 1881 in Provincia Cordoba, Argentina. In the National Herbarium there is a fragment of the type specimen.

Annual. Culms erect or ascending, somewhat geniculate or decumbent at the base, branching at the base, 40 to 75 cm. tall. Sheaths overlapping at the base, the upper about six-tenths the length of the internodes, sometimes pilose at the apex of the margins. Ligule a dense row of white hairs about 0.4 mm. long. Blades attenuate from a broad base, flat, the tip sometimes involute, glabrous below, scabrous with scattered supraligular hairs above, 8.5 to 15 cm. long, 4 to 5 mm. wide. Panicles ovoid, open, 20 to 35 cm. long, about 10 cm. wide, the rachis scabrous towards the tip, the branches ascending to spreading, slender, flexuous, scabrous, 5 to 10 cm. long, the axils glabrous. Pedicels ascending to spreading, capillary,

flexuous, somewhat scabrous, 1 to 2 mm. wide, 6- to 9-flowered, the rachilla not disarticulating. Glumes ovate, acute, hyaline, scabrous on the keel, the first 0.8 to 1 mm. long, about 0.4 mm. wide, the second 1 to 1.2 mm. long, about 0.8 mm. wide. Lemmas ovate, acute, hyaline, imbricate, rounded on the back, compressed at the tip, scabrous on the keel at the tip, about 1.6 mm. long and 1.2 mm. wide, the lateral nerves conspicuous. Paleas as long as the lemmas, hyaline, persistent, evenly convex on the back, ciliolate on the keels. Grains ellipsoidal, striate, translucent, reddish-brown, 0.6 to 0.7 mm. long, about 0.4 mm. wide.

Introduced on ballast and in disturbed ground in scattered localities on the east coast of United States and in Mexico. Map XXVII, p. 189.

UNITED STATES: Massachusetts: Salem, J. H. Sears (US 909,686). Maryland: Whitemarsh, J. B. S. Norton, Aug. 24, 1932 (US). Florida: Apalachicola, Biltmore Herb. 3889a p. p. (GH, NY, US).
MEXICO: Tamaulipas: Victoria, Edw. Palmer 555 of 1907 (US). Durango: Durango, Edw. Palmer 726 of 1896 (MICH).

66. Eragrostis peregrina Wieg.

Eragrostis pilosa var. condensata Hack. apud Kneucker in Bot. Zeitsch. 7: 13. 1901. TYPE: A. Kneucker Gram. Exsicc. 115 (Hack.), grown in "Grossherzoglichen Hofgarten in Karls-

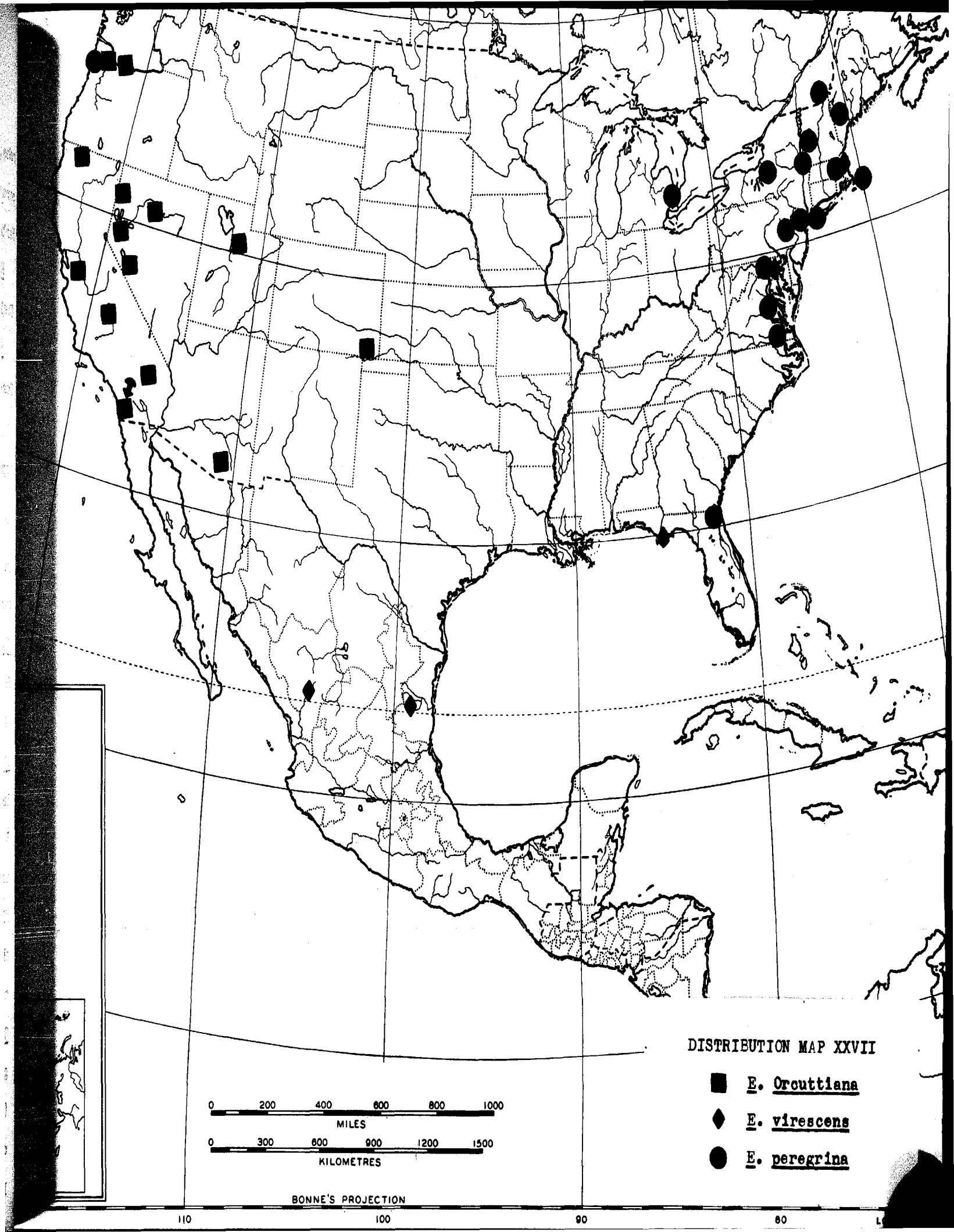
ruhe," Germany. Collected July 17, 1900. There is a paratype as well as a fragment of the type in the National Herbarium.

Eragrostis pilosa ssp. Damiensiana var. condensata (Hack.) Thell. in Viert. Naturf. Gesch. Zurich 52: 439. 1908.

Eragrostis peregrina Wieg. in Rhodora 19: 95. 1917. Based on Eragrostis pilosa var. condensata Hack.

Eragrostis Damiensiana var. condensata (Hack.) Thell. in Repert. Nov. Sp. 24: 328. 1928.

Annual. Culms tufted, erect to spreading, sometimes decumbent and geniculate at the lower nodes, branching at the base and above, glabrous, 10 to 35 (10 to 20) cm. tall. Sheaths overlapping at the base, two-thirds the length of the internodes above, glabrous, compressed, keeled, strongly nerved. Ligule a dense row of white hairs about 0.2 mm. long. Blades involute, glabrous below, scabrous above, 4 to 7 cm. long, 1 to 2 mm. wide. Panicles ovoid, open, densely flowered, 5 to 15 cm. long, 1.5 to 6.5 cm. wide, the rachis scabrous towards the tip, the branches ascending to spreading, slender, flexuous, scabrous, densely-flowered to within 2 to 5 mm. of the base, 1 to 4 cm. long, the axils glabrous. Pedicels ascending, slender, scabrous, flexuous, 0.8 to 2 mm. long. Spikelets narrowly to broadly ovate or oblong, not compressed, grayish-green, 2 to 4 mm. long, about 1 mm. wide, 4- to 10- (6- to 8-) flowered, the rachilla not disarticulating. Glumes ovate, acute, hyaline, glabrous, the first 0.4 to 0.6 mm. long, about 0.2 mm. wide, the second 0.8 to 1 mm. long, about 0.4 mm. wide. Lemmas ovate, acute, compressed and


DISTRIBUTION MAP XXVII
E. Orcuttiana
E. virescens
E. peregrina
0 200 400 600 800 1000
MILES
0 300 600 900 1200 1500
KILOMETRES
BONNE'S PROJECTION
110
100
90
80

keeled at the hyaline tip, usually loosely imbricate, 1.4 to 1.6 mm. long, about 0.8 mm. wide, the lateral nerves conspicuous. Paleas hyaline, about two-thirds the length of the lemmas, somewhat persistent, evenly convex on the back, ciliolate on the keels. Grains oblong, faintly striate, translucent, reddish-brown, 0.6 to 0.8 mm. long, about 0.4 mm. wide.

Introduced on railroad ballast and in disturbed ground at scattered localities mostly in eastern United States. Map XXVII, p. 189

CANADA: Quebec: La Trappe, Herb. Inst. Agric. Oka 24396 (CAN). UNITED STATES: Maine: Quickfield, Parlin 13693 (US). Vermont: Rutland, Kirk 1028 (US). Massachusetts: Cambridge, Pl. Exsicc. Gray 510 (CAN, F, GH, MICH, MO, PH, POM, US, WYO); Brewster, Fernald & Long 17963 (PH). New York: College Point, Pennell 7533 (PH); Shushan, Dobbin 192 (US); Syracuse, Hotchkiss 1708 (US). New Jersey: Cranberry Lake, Mackenzie 7824G (PH). Pennsylvania: Slatington, Pretz 10445a (Farw.) Maryland: Glundon. J. B. S. Norton, July 13, 1908 (US). Virginia: Penola, Fernald & Long 7207 (GH, US); Courtland, Fernald & Long 6778 (GH, US). Florida: Baldwin, Hitchcock Fl. PL. 996 (US). Michigan: Port Huron, C. K. Dodge, Oct. 5, 1912 (US). Oregon: Portland, Suksdorf 2882 (US).

67. Eragrostis pilosa (L.) Beauv.

Poa pilosa L., Sp. Pl. 68. 1753. TYPE: Plate IV, fig. 3 in

Scheuch., Agrost. 1719. Scheuchzer says (loc. cit.) that the plant was collected at Bologna, Italy which agrees with the locality given by Linnaeus.

Eragrostis pilosa (L.) Beauv., Ess. Agrost. 71, 162, 175. 1812.

Poa tenella L. err. applic. Pursh, Fl. Amer. Sept. 1:80. 1814. Interpreted from the description.

Eragrostis filiformis Link, Hort. Berol. 1: 191. 1827. Based on Poa tenella L. err. applic. Pursh.

Poa Linkii Kunth, Rév. Gram. 1: 113. 1829. Based on Eragrostis filiformis Link.

Eragrostis Linkii (Kunth) Steud., Syn. Pl. Glum. 1: 273. 1854.

Annual. Culms tufted, erect or ascending, branching at the base and above, glabrous, 15 to 45 cm. tall. Sheaths overlapping at the base, the upper about half the length of the internodes, pilose at the apex of the margins. Ligule a dense row of white hairs about 0.2 mm. long. Blades flat to involute, glabrous below, scabrous above, 5 to 15 cm. long, 2 to 3 mm. wide. Panicles ovoid, open, 5 to 20 cm. long, 2.5 to 10 cm. wide, the rachis flexuous, scabrous towards the tip, the branches ascending to spreading, slender, flexuous, the lower in verticels of 4 to 6, others usually in verticels or opposite, sometimes solitary, 2 to 10 cm. long, the axils pilose. Pedicels spreading, capillary, flexuous, scabrous, usually longer than the spikelets, 2.4 to 9 mm. long. Spike-

lets lanceolate to linear-oblong, not compressed, grayish-green, 2 to 6 mm. long, 0.6 to 1.2 mm. wide, 4- to 10-flowered, the rachilla not disarticulating. Glumes hyaline, scabrous on the keel, the first acuminate, 0.8 to 1 mm. long, about 0.4 mm. wide, the second ovate, acute, 1.2 to 1.6 mm. long, about 0.8 mm. wide. Lemmas ovate, acute, the tip hyaline and somewhat compressed and keeled, scabrous on the keel at the tip, rounded on the back below, loosely imbricate, 1.2 to 1.6 mm. long, about 0.8 mm. wide, the lateral nerves conspicuous. Paleas hyaline, from eight-tenths to as long as the lemmas, persistent, ciliolate on the keels, evenly convex on the back. Grains oblong, striate, translucent, reddish-brown, 0.6 to 0.8 mm. long, about 0.4 mm. wide.

Introduced in disturbed ground from Maine to Colorado south to Florida and Texas, scattered in Mexico and throughout the West Indies. Map XXVIII, p. 197.

UNITED STATES: Vermont: Woodstock, E. M. Kittridge, Sept. 2, 1935 (NY). Massachusetts: Andover, L. T. Chamberlain, July (NY); Granville, F. C. Seymour 93 (GH, NY). Connecticut: Bridgeport, E. H.Eames, July 30, 1895 (US). New York: Apalachin, Fenno 573 (NY). New Jersey: Atlantic City, G. W. Letterman, Aug. 1883 (TEX). Pennsylvania: Lancaster Co., Galen 3496 (CAN). Indiana: Porter, Lansing 1629 (F); Hanover, Young 397 (F). Illinois: North Cahokia, H. Eggert,

July 4, 1874 (MO). Michigan: Ann Arbor, Hermann 9222 (F, MICH, NY). Wisconsin: Madison, J. R. Churchill, Aug. 22, 1893 (F). Missouri: Hannibal, Davis 3427 (MO); Courtney, Bush 9017 (MO); McDonald Co., Bush 94 (US). Kansas: Hays, E. Runyon 177 (WYO). Delaware: Mount Pleasant, Holmes 282 (MO). Maryland: Cabin John, Chase 2732 1/2 (US). Virginia: Luray, Chase 9957 (US); Bedford Co., Curtiss 9530 (MO); Norfolk, Kearney 297 (US). West Virginia: Aurora, Mr. & Mrs. E. E. Steele, Sept. 5, 1898 (NY, US). North Carolina: King's Mt., J. K. Small, July 1896 (NY); Wilmington, A. S. Hitchcock, Aug. 1905 (US). South Carolina: Anderson, Davis 3004 (MO, WYO); Columbia, Godfrey & Tryon, 1226 (GH, MICH, NY). Georgia: Stone Mt., J. K. Small, July 1-6, 1895 (NY); Camilla, Tracy 3728 (US). Florida: De Funiak Springs, Combs 460 (US); Lake City, Nash 2199 (F, GH, MICH, MO, NY, US); Melbourne, Curtiss 5585 (US); Royal Palm Hammock, Small, Mosier & Small 6681 (NY, US). Kentucky: Harlan Co., Kearney 158 p. p. (F). (NY, US). Tennessee: Knoxville, Ruth 42 (US); Chattanoga, L. F. Ward, Sept. 5, 1877 (US). Alabama: Tuskegee, Carver 42 (US); Mobile, Kearney 65 (US). Mississippi: Batesville, H. Eggert (MO); Starkville, Kearney 92 p. p. (NY). Arkansas: Benton Co. Plank 126 (US). Louisiana: Rayville, Ball 5 (US). Texas: Canyon City, H. Eggert, Aug. 14, 1900 (MO); Dallas, Reverchon 2816 (GH, MO, NY); Marble Falls, Reverchon 1614 p. p. (GH, MO, POM, US); Navasota, E. N. Plank, June 3, 1892 (NY). Oklahoma: Garfield Co., White 155 (MO); Sapulpa, Bush 820 (MO). Colorado: Denver, Tracy & Evans, Sept. 18, 1887

(US). New Mexico: Las Vegas, Arsène 17580 (F). California: Humboldt Co., J. P. Tracy 5361 (US); Oroville, Heller 11688 (MO, US).

MEXICO: Tamaulipas: Chamal, Swallen 1695 (US). Jalisco: Guadalajara, Pringle 4492 (F, MICH, NY, PH, US). Oaxaca: Ixtepec, Fisher 35318 (F, MICH, NY, US).

WEST INDIES: Cuba: San Miguel de los Baños, Prov. Matanzas, León 8877 (NY, US); Sabano de San Marcos, Prov. Santa Clara, León 9178 (US); Camagüey, Prov. Camagüey, León 3965 (US); Santiago de Cuba, Prov. Oriente, León 3726 (US). Jamaica: Kingston, Hitchcock 9887 (US). Hispaniola: Haiti: La Vallée, Tortue Island, E. C. & G. M. Leonard 11401 (GH, US); St. Michel de l'Atalaye, Dépt. du Nord, Leonard 7356 (NY, US); Dominican Republic: Monción, Prov. Monte Cristi, Ekman H13035 (US); Sánchez, Prov. Samaná, Ekman H14793 (US). Puerto Rico: San Juan, Chase 6394 (US); St. Germán, Vélez 1148 (NY). Virgin Islands: St. Thomas, Hitchcock 16302 (US); Catherine's Rest, St. Croix, Ricksecker 222 (F, NY, US). Leeward Islands: Basseterre, St. Kitts, Box 133 (US); Antigua, Hitchcock 16396 (US); Basse-Terre, Guadeloupe, Duss 3143 p. p. (US); Ceolihaut, Dominica, F. E. Lloyd 858 (NY); Fort de France, Martinique, Duss 4712 (F, GH, NY, US). Windward Islands: Vieux-Fort, St. Lucia, Box 200 (US); Kingston, St. Vicente, H. H. & G. W. Smith 834 (GH, NY); Hampton, St. Philip, Barbados, Barbados Bot. Sta. Herb. 343 (F, US); St. George, Grenada, Broadway 1682 (US). Tobago: Scarsboro, Hitchcock 10203 (US).

68. Eragrostis perplexa L. H. Harvey sp. nov.

Planta annua. Culmi caespitosi, erecti vel ascendentes, plerumque foveolis glandulosis dispersis infra internodia inferiora, 15 vel 45 cm. alti. Vaginae multiglandulosae in carina et nervis lateralibus, ad apicem marginum pilosae. Laminae planae vel involutae, subtus glabrae, superne scabrae. Paniculae oblongae vel ovatae, plerumque in vagina summa inclusae, apertae, gracillimae, 15 vel 25 cm. longae, 5 vel 10 cm. latae, ramis ascendentibus vel divergentibus, tenuissimis sed vix capillariis, plerumque multiglandulosis, 5 vel 8 cm. longis, axillis inferioribus pilosis. Spiculae lineares vel lineari-lanceolatae, 5 - 7.5 mm. longae, 0.8 - 1 mm. latae, 7- vel 11-floriferae, rachilla non disarticulante. Glumae valde inaequales. Lemmata ovata, acuta, 2 - 2.2 mm. longa, nervis lateralibus conspicuis. Paleae lemmatibus breviores. Fructus ellipsoidei, circa 0.8 mm. longi et 0.3 mm. lati.

Specimen typicum legit W. L. Tolstead sine numero (US 1,645,627), 30 Aug. 1935, e loco alkalino in "Mellette Co., South Dakota."

Species E. pilosae affinis, sed differt praecipue foveolis glandulosis numerosis in vagina, rhachi ramisque paniculae.

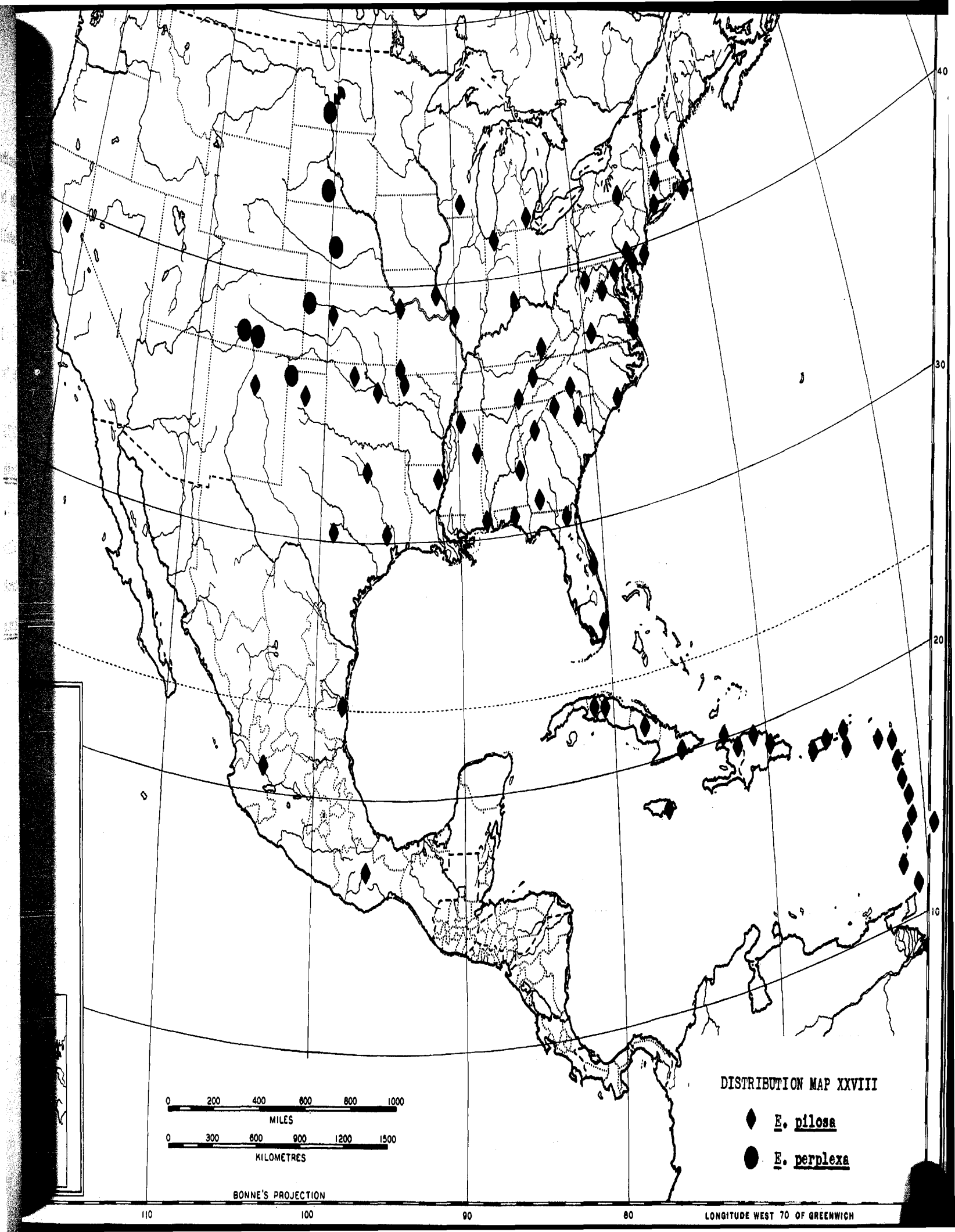
Annual. Culms tufted, slender, erect or ascending, sometimes decumbent at the base and geniculate at the lower nodes, branching at the base and sometimes above, usually with scattered glandular pits below at least the lower nodes,

15 to 45 cm. tall. Sheaths shorter than the internodes, overlapping at the base, usually compressed and keeled, usually with many scattered glandular pits on the keel and commonly on the other nerves, pilose at the apex of the margins, the lower ones sometimes tinged with reddish-purple. Ligule a dense row of white hairs about 0.2 mm. long. Blades flat to involute, attenuate, sometimes with scattered glandular pits on the midrib otherwise glabrous below, scabrous above, 10 to 15 cm. long, 1.5 to 2.5 mm. wide. Panicles oblong to ovoid, usually somewhat enclosed in the upper sheath, occasionally long exerted, 15 to 25 cm. long, 5 to 10 cm. wide, the rachis usually with scattered glandular pits and scabrous, the branches ascending to spreading, very slender, flexuous, scabrous, usually with scattered glandular pits, verticillate or opposite, the verticils somewhat distant, 5 to 8 cm. long, the lower axils pilose. Pedicels appressed to ascending capillary, usually longer than the spikelets, sometimes with glandular pits, scabrous, 2.5 to 8 mm. long. Spikelets linear to linear-lanceolate, somewhat compressed, dull light green or purplish-tinged, 5 to 7.5 mm. long, 0.8 to 1 mm. wide, 7- to 11-flowered, the rachilla not disarticulating. Glumes acuminate, hyaline, unequal, the first 0.2 to 0.4 mm. long, about 0.2 mm. wide, the second 1 to 1.2 mm. long, about 0.4 mm. wide. Lemmas ovate, acute, scabrous on the upper part of the keel, rounded on the back below, somewhat keeled towards the tip, very loosely imbricate, sometimes scabrellous on the upper part of the back, 2 to 2.2 mm. long, about 0.8 mm. wide, the lateral nerves conspicuous. Paleas six to eight-

tenths as long as the lemmas, hyaline, evenly convex on the back, ciliolate on the keels, deciduous. Grains subellipsoidal, smooth, translucent, reddish-brown, about 0.8 mm. long and 0.3 mm. wide.

Low alkaline areas and bufflo wallows from North Dakota to Texas. Map XXVIII, p. 197.

UNITED STATES: North Dakota: Mandan, Swallen 5850 (US). South Dakota: Mellett Co., W. L. Tolstead, Aug. 30, 1935 (US). Nebraska: Callaway, Bates 2414 (GH, US). Kansas: Wallace Co., Pl. Kan. 931 (MO, US, WYO). Colorado: Saguache Creek, J. Wolf 1146 (US); Alamosa, Shear 867 (GH, NY, US). Texas: Texline, Griffiths 5637 (US).


40
30
20
10
0 200 400 600 800 1000
MILES
0 300 600 900 1200 1500
KILOMETRES
BONNE'S PROJECTION
110
100
90
80
LONGITUDE WEST 70 OF GREENWICH
DISTRIBUTION MAP XXVIII
E. pilosa
E. perplexa

(10) Subsection Bahienses

A. Annual; spikelets ovate-deltoid, even after the basal florets have fallen 69. E. unioloides, p. 197

A. Perennial; spikelets never ovate-deltoid

B. Spikelets lanceolate or ovate-lanceolate, 2.5 to 5 mm. wide; glumes over 2 mm. long 70. E. plumbea, p.198

B. Spikelets linear or linear-lanceolate, 0.8 to 2.4 mm. wide; glumes under 2 mm. long

C. Lemmas 1.8 to 2.2 mm. long; spikelets over 1.5 mm. wide

D. Spikelets 6 to 10 mm. long; lemmas 2 to 2.2 mm. long 71. E. bahiensis, p. 200

D. Spikelets 10 to 14 mm. long; lemmas 1.8 to 2 mm. long 72. E. charieis, p. 201

C. Lemmas 1.4 to 1.6 mm. long; spikelets 1 mm. or less wide 73. E. stenophylla, p. 203

69. Eragrostis unioloides (Retz.) Nees

Poa unioloides Retz., Obs. Bot. 5: 19. 1789. TYPE: König, collected at Tranquebar, India. Interpreted from the description and Indian specimens.

Eragrostis unioloides (Retz.) Nees ex Steud., Syn. Pl. Gl. 1: 264. 1854.

Annual. Culms erect to ascending, occasionally geniculate or prostrate and rooting at the nodes, 10 to 60 (30 to 45) cm. tall. Sheaths overlapping at the base, shorter than the internodes, glabrous on the back, sometimes pilose at the apex of the margins. Ligule an erose membrane about 0.2 mm. long. Blades flat, loosely involute on drying, glabrous below, scabrous

and scattered-pilose above, 7 to 12 cm. long, 3 to 8 (4 to 5) mm. wide. Panicles ovoid, open, 8 to 20 (10 to 15) cm. long, 2 to 10(5 to 6) cm. wide, the rachis scabrous, the branches few, ascending to spreading, scabrous, 1.5 to 5 cm. long, the axils glabrous. Pedicels capillary, scabrous, ascending to spreading, 2 to 8 mm. long. Spikelets ovate-deltoid, obtuse, turgid but compressed, straw- to purplish-colored, 5 to 10 mm. long, 2 to 4 mm. wide, 10- to 40- or more flowered (10 to 26 florets on the rachilla at one time), the florets maturing from the base up and falling as soon as mature, the tip continuing to grow, the rachilla not disarticulating. Glumes ovate, acute to acuminate, hyaline, scabrous on the compressed keel, the first about 1.6 mm. long and 0.6 mm. wide, the second about 2.2 mm. long and 1 mm. wide. Lemmas broadly ovate, usually apiculate, about 1.8 mm. long, 1.6 to 2 mm. wide, the margins more or less hyaline, with conspicuous lateral nerves. Paleas hyaline, as long as the lemmas, ciliolate on the keels, evenly convex on the back, deciduous. Grains ellipsoidal, flattened, translucent, smooth, reddish-brown, about 0.6 mm. long and 0.4 mm. wide. Anthers about 0.2 mm. long.

Introduced in disturbed ground in southern Georgia and northwestern Florida. Map XXIX, p. 200.

UNITED STATES: Georgia: Thomasville, Benedict 1682 (US); Quitman, Harper 1616 (F, GH, MO, US). Florida: Live Oak, Curtiss 6898 (GH, MO, US).

70. Eragrostis plumbea Scribn.

Eragrostis plumbea Scribn. ex. Beal, Grasses N. Amer. 2: 484. 1896.

LECTOTYPE: Edward Palmer 240 (MSC), collected July to October, 1886 at

Guadalajara, Jalisco, Mexico. Pringle 2311 is indicated as the type in the type herbarium at Washington because, (fide Chase), "Pringle 2311 was chosen as the type instead of Palmer 240 (the first cited) because Beal is known to have had the Pringle plants." He also had Palmer 240 and as this is the specimen first cited I am designating it as the lectotype.

Perennial: Culms tufted, 45 to 90 cm. tall, erect to ascending from short knotty rhizomes. Sheaths overlapping at the base, four- to eight-tenths the length of the internodes above, usually pilose at the apex of and sometimes down the margins. Ligule a dense row of white hairs about 0.2 mm. long. Blades stiffly spreading, flat to folded or involute on drying, stiff, glabrous and heavily nerved below, scabrous and sometimes with scattered supraligular hairs above, 10 to 18 cm. long, 2 to 4 mm. wide. Panicles broadly ovoid, open, 10 to 20 cm. long, 6.5 to 14 cm. wide, the rachis glabrous, the branches somewhat distant, ascending to spreading, scabrous on the angles, 4 to 8 cm. long, glabrous or sparsely pilose in the axils. Pedicels appressed, scabrous, 1 to 4 mm. long. Spikelets ovate and acute to oblong, compressed, appressed along the branchlets, grayish-green, 7 to 13 mm. long, 2.5 to 4 mm. wide, 13- to 22-flowered, the rachilla not disarticulating. Glumes acuminate-lanceolate, compressed, keeled, scabrous on the keels, the first 2.2 to 3.6 mm. long, about 0.8 mm. wide, the second 2.6 to 3.8 mm. long, about 1.2 mm. wide. Lemmas ovate, acute, keeled at the tip, somewhat erose on the margins, compressed, closely imbricate, 2.8 to 3.2 mm. long, about 1.6 mm. wide, with conspicuous lateral nerves. Paleas from eight-tenths as long to nearly as long as the lemmas, ciliolate on the keels, deciduous, hyaline, slightly convex on the back. Grains oblong, reddish-brown, translucent,



DISTRIBUTION MAP XXIX

● E. unioloides

■ E. plumbea

striate, about 0.8 mm. long and 0.4 mm. wide.

In wet ground on plains and in barrancas in western central Mexico. Map XXIX, p. 200.

MEXICO: Jalisco: Guadalajara, Palmer 240 of 1886 (GH, MSC, US). Michoacán: Morelia, Arsène 2639 p. p. (NY, US).

71. Eragrostis bahiensis Schrad.

Eragrostis bahiensis Schrad. in Schult., Mant. 2: 318. 1824. TYPE: Prince Maximilian of Neuwied (B), collected in Brazil. Interpreted from the description and from Brazilian collections so named.

Poa bahiensis Schrad. in Schult., Mant. 2: 318. 1924, (as synonym of Eragrostis bahiensis Schrad.).

Eragrostis pilosa var. bahiensis (Schrad.) Kuntze, Rev. Gen. Pl. 3: 2: 351. 1898.

Perennial. Culms tufted, erect or ascending, sometimes geniculate at the nodes, glabrous, 30 to 120 cm. tall. Sheaths three- to five-tenths the length of the internodes, rounded on the back, glabrous except for the sparsely pilose apex of the margins. Ligule a dense row of white hairs about 1 mm. long. Blades usually involute, sometimes flat, setaceous at tip, glabrous except for a few long, scattered hairs above the ligule, 5 to 25 cm. long, 1 to 2.5 mm. wide. Panicles oblong and dense to ovoid and open, 5 to 30 cm. long, 2.5 to 18 cm. wide, the branches slender to capillary, appressed to spreading, flexuous, scabrous, 3.5 to 12 cm. long, the secondary branchlets and spikelets appressed, the axils usually glabrous. Pedicels appressed, scabrous, 1.2 to 1.4 mm. long.

Spikelets linear-lanceolate to lanceolate, greenish-plumbeous to straw-colored, compressed, 6 to 10 mm. long, 2 to 2.2 mm. wide, 10- to 20-flowered, the rachilla not disarticulating. Glumes compressed, keeled on the upper half, scabrous near the tip on the keel, the first acuminate-lanceolate, 1 to 1.4 mm. long, about 0.4 mm. wide, the second acute-ovate, 1.4 to 1.6 mm. long, about 0.8 mm. wide. Lemmas ovate, acute, compressed and keeled near the tip, closely imbricate, deciduous from the base to the tip, 2 to 2.2 mm. long, about 1.2 mm. wide, with conspicuous lateral nerves. Paleas hyaline, from eight-tenths as long to as long as the lemmas, usually somewhat persistent, ciliolate on the keels, evenly convex on the back. Grains ellipsoidal, striate, translucent, reddish-brown, around 0.8 mm. long and 0.4 mm. wide.

Introduced on ballast, thence spread to disturbed ground from southern Florida to coastal Louisiana and in New Jersey. Map XXX, p. 205.

UNITED STATES: New Jersey: Raigen(?) Point, I. Burk (F 311,003). Florida: Okeechobee to Sebring, Swallen 5331 (US); Everglades to Naples, Swallen 5268 (US); Milton, Swallen 412 (US). Alabama: Mobile, Kearney 64 (GH, PH, US). Louisiana: Avery Island, Hitchcock 19862 (US).

72. Eragrostis charieis[1/] (Schult.) Hitchc.

Poa elegans Roxb., Fl. Ind. 1: 339. 1820, not Poir. 1804, nor DC. 1805,

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1/ The specific epithet was published as chariis. This is an error for the Greek charieis which is the equivalent of the Latin elegans.

nor R. Br. 1810. TYPE: Roxburgh, collected in India. Interpreted from the description and Hitchcock's treatment of the species.

Poa chariis Schult., Mant. 2: 314. 1824. Based on Poa elegans Roxb.

Poa elegantula Kunth, Rév. Gram. 1: 114. 1829. Based on Poa elegans Roxb.

Eragrostis elegantula (Kunth) Nees ex Steud., Syn. Pl. Glum. 1: 266. 1854.

Eragrostis chariis (Schult.) Hitchc. in Lingnan Sci. Journ. 7: 193. 1931. Although this number of this publication bears the printed date of June 1929 it was not issued (fide Hitchcock) until March 4, 1931.

Perennial. Culms tufted, erect or ascending, glabrous, sometimes geniculate at the nodes, 50 to 100 cm. tall. Sheaths somewhat keeled, the upper less than half the length of the internodes, the lower nearly equal to the internodes, glabrous except for the sparsely pilose apex of the margins. Ligule a dense row of white hairs about 0.4 mm. long. Blades attenuate, involute, glabrous except for a few supraligular hairs, 6 to 15 cm. long, 2 to 4 mm. wide. Panicles ovoid to oblong, somewhat open, 8 to 15 cm. long, 2.5 to 5 cm. wide, the branches ascending, sometimes spreading, slender, flexuous, 4 to 9 cm. long, the spikelets usually appressed along the branches, the axils sometimes pilose. Pedicels appressed, scabrous, shorter

than the spikelets, 0.6 to 1.8 mm. long. Spikelets linear to linear-lanceolate, flattened, light grayish-green, 10 to 14 mm. long, 1.6 to 2.4 mm. wide, 10- to 30-flowered, the tip continuing to grow after the maturation of the basal florets, the rachilla not disarticulating. Glumes acuminate-lanceolate, keeled, scabrous on the upper part of the keel, deciduous, the first 1 to 1.2 mm. long, about 0.4 mm. wide, the second 1.4 to 1.6 mm. long, about 0.8 mm. wide. Lemmas ovate, acute or abruptly acuminate, closely imbricate, deciduous from the base to the tip, 1.8 to 2 mm. long, about 1.2 mm. wide, the lateral nerves conspicuous to strong. Paleas nearly as long as the lemmas and falling with them, hyaline, ciliolate on the keels, evenly convex on the back. Grains ellipsoidal, striate, translucent, reddish-brown, around 0.8 mm. long and 0.3 mm. wide.

Introduced in waste places in western central Florida. Map XXX, p. 205.

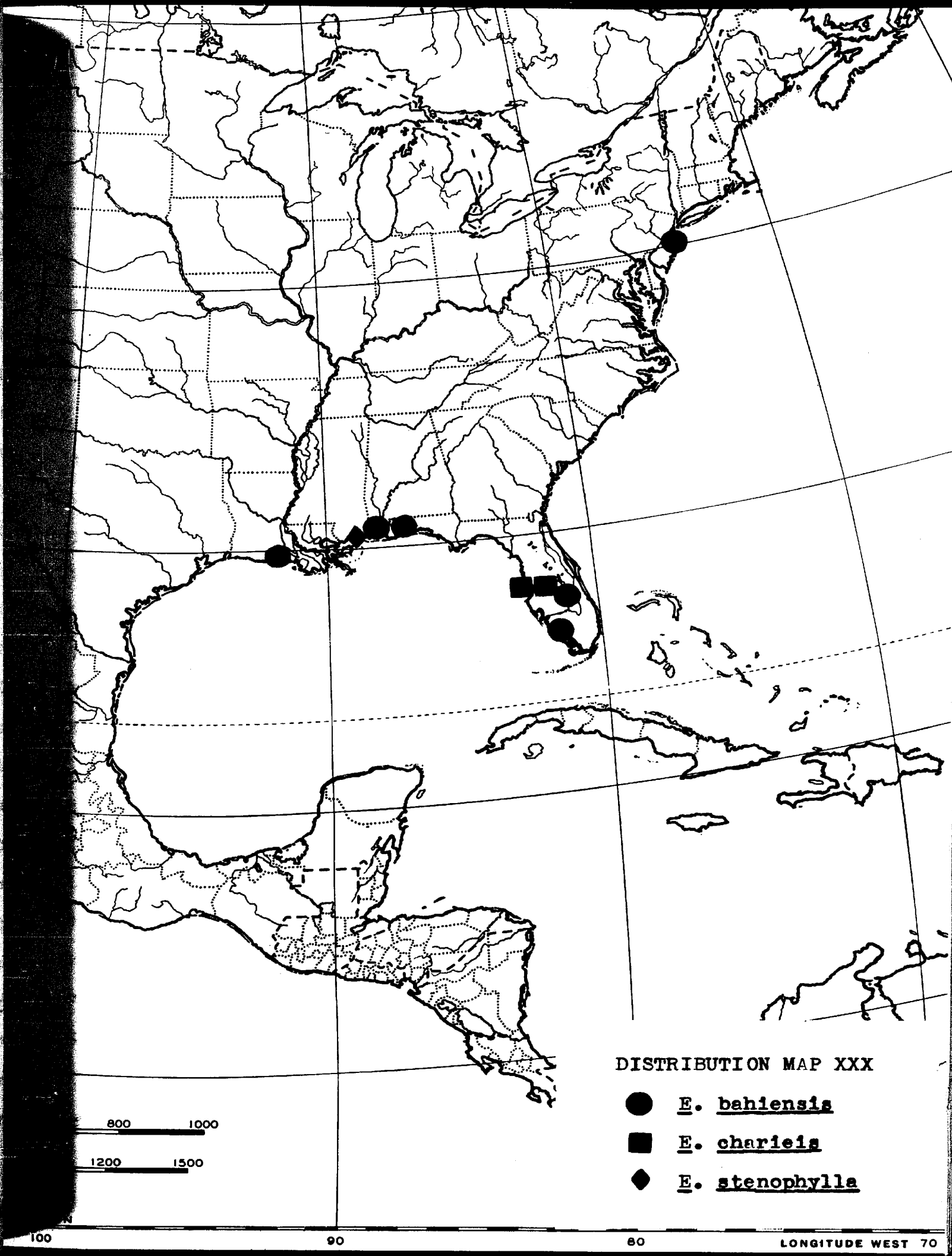
UNITED STATES: Florida: Polk City, McFarlin 5806 (MICH, US); St. Petersburg, Weatherwax 822 (US).

73. Eragrostis stenophylla Hochst.

Eragrostis stenophylla Hochst. apud Miquel in Verh. Nederl. Inst. le. Kl. 3: 4: 39. 1851. TYPE: Metz 664, collected at Mangalor, India. Interpreted from the description and Indian specimens.

Perennial: Culms tufted, erect to ascending, sometimes geniculate, 30 to 45 cm. tall. Sheaths overlapping below, about half the length of the internodes above, rounded on the back, glabrous except for the partially pilose apex of the margins. Ligule an erose membrane about 1 mm. long. Blades involute, attenuate, glabrous below, pilose on the lower part of the margins and scattered pilose on the lower half above, 5 to 12 cm. long, 1.4 to 1.8 mm. wide. Panicles oblong, dense, sometimes open, 10 to 15 cm. long, 1 to 2 (rarely 4) cm. wide, the branches appressed or closely ascending, sometimes spreading, scabrous, slender, flexuous, 4 to 6 cm. long, the axils glabrous. Pedicels capillary, flexuous, scabrous, usually appressed, 2 to 4 mm. long. Spikelets linear or oblong, turgid but compressed, green tinged with reddish-brown, 4 to 14 mm. long, 0.8 to 1 mm. wide, 10- to 40-flowered, the rachilla not disarticulating. Glumes keeled, deciduous, the first acuminate-lanceolate, 0.8 to 1 mm. long, about 0.2 mm. wide, the second ovate, sub-acuminate, scabrous on the keel near the tip, 1 to 1.2 mm. long, about 0.4 mm. wide. Lemmas ovate, acute, somewhat tightly imbricate, keeled on the back, glabrous, falling from the base to the tip, 1.4 to 1.6 mm. long, about 0.8 mm. wide, with conspicuous lateral nerves. Paleas about eight-tenths the length of the lemmas and somewhat persistent, glabrous on the keels, hyaline, evenly convex on the back. Grains long ovoid, translucent, smooth, reddish-brown, about 0.4 mm. long and 0.2 mm. wide.

Introduced on ballast at Biloxi, Mississippi, Tracy 8357 (F, GH, MO, NY, US). Map XXX, p. 205.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E. bahiensis
E. charleis
E. stenophylla
800
1000
1200
1500
100
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80
LONGITUDE WEST 70

DOUBTFUL SPECIES

Eragrostis condensata (Presl) Steud., Syn. Pl. Glum. 1: 278. 1854.

Megastachya condensata Presl, Rel. Haenk. 1: 284. 1830. TYPE: Haenke (PR), collected in Mexico. In the National Herbarium there is a photograph and a fragment of the type.

This may be synonymous with E. diversiflora but the material on hand is not enough to be sure of this. If it is synonymous it will replace that name.

Eragrostis glumacea var. pauciflora Fourn., Mex. Pl. 1: 117. 1886. TYPE: Gouin 83, collected at Vera Cruz, V. C., Mexico. The material on hand is insufficient to delineate this entity.

Eragrostis Purshii var. major Fourn., Mex. Pl. 1: 116. 1886. TYPE: Bourgeau 445 (P), collected at San Angel, Santa Fé near Mexico City, Mexico. The material on hand is insufficient to delineate this species.

Eragrostis suaveolens Becker apud Claus in Beitr. Pflanz. Russ. Reich. 8: 266. 1851. TYPE: Becker, collected at Sarepta, Russia. In the National Herbarium there are some Becker collections from the type locality. The collections which were the basis of this species being included in Hitchcock's "Manual" are doubtfully referable to this species. It is quite possible that specimens of this species will be found as introductions in the wheat growing regions of this country.

EXCLUDED SPECIES

Eragrostis arundinacea Jedw. in Bot. Arkiv 5: 192. 1924. TYPE: Coll. ignot. (B), collected in Texas. In the National Herbarium there is a fragment of the type specimen.

= Triodia flava (L.) Smith

Eragrostis Fendleriana Steud. Syn. Pl. Glum. 1: 278. 1854. TYPE: Fendler 932, collected in New Mexico. In the National Herbarium there is an isotype.

= Poa Fendleriana (Steud.) Vasey

Eragrostis panicoides (Presl) Steud., Syn. Pl. Glum. 1: 278. 1854.

Megastachya panicoides Presl, Rel. Haenk. 1: 283. 1830. TYPE: Haenke (PR), collected in Mexico. In the National Herbarium there is a photograph and a fragment of the specimen.

= Leptochloa panicoides (Presl) Hitchc.

Eragrostis uninervia (Presl) Steud., Syn. Pl. Glum. 1: 278. 1854.

Megastachya uninervia Presl, Rel. Haenk 1: 283. 1830. TYPE: Haenke (PR), collected in Mexico. In the National Herbarium there is a photograph and a fragment of the type specimen.

= Leptochloa uninervia (Presl) Hitchc. and Chase

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SUMMARY AND CONCLUSIONS

This revision of the North and Middle American species of Eragrostis is based on morphological and geographical criteria. It was felt that an experimental cytogenetical approach would be essential for elucidating the relationships and origin of intergrading forms between and species as recognized and the minor definable entities within the species. The treatment therefore goes only to species, which in the writer's conception are groups of biotypes which are for the present, pending experimental study, arbitrarily placed in the larger "species" without adequate proof that they are correctly placed. It must be realized that specimens of dubious affiliation are only a very small proportion of the whole, and that they occur mostly in areas where several species are present which have presumably given rise to perplexing forms by hybridization.

It is believed that the revision as presented goes as far into the classification of the genus as it is possible to go on the basis of the material at hand. In view of the fact that only special students of the grasses are likely to do really critical collecting, or take close discriminations in the field, further progress short of actual experimentation can only be made by intensive field study in critical areas

(those called by the writer "areas of concentration") by botanists already intimately acquainted with the genus, or by mass collections large enough to be representative of a population made more or less blindly by general collectors for study by a specialist.

In the course of mapping the geographic distribution of the species it has been found that all do not fall reasonably within the limits of recognized named phytogeographic areas. The nearest that can be done to indicate actual floristic areas for large groups of species indicates that there are four regions of concentration. These are: (1) The Atlantic and Gulf Coastal Plain of the United States, with the Yucatan Peninsula, the Greater Antilles, and the Bahamas (20 species); (2) the Mexican Plateau and its extension northward into Arizona, New Mexico and Texas and southward into Central America (19 species); (3) the United States to the westward and northward of the Atlantic and Gulf Coastal Plain, including New England, the Great Lakes area and the Mississippi River drainage basin as far west as the 100th Meridian (7 species); and (4) Kansas, Oklahoma and Texas with a tongue extending southward into San Luis Potosí, Mexico (5 species).

The more detailed distribution of species follows: In the United States east of the 100th Meridian omitting the Coastal Plain, E. capillaris, E. Frankii, E. pectinacea and in the western Mississippi Basin E. reptans and E. trichodes; the same area plus the Coastal Plain, E. spectabilis and E. hypnoides

the latter also with Mexican, Central American and West Indian distribution; the Coastal Plain only sometimes with additional distribution in Mexico, Central America and the West Indies, E. glomerata, E. refracta, E. Elliottii and E. hirsuta; south-central Kansas through Oklahoma and middle Texas to northern Tamaulipas, E. sessilispica, E. spicata, E. curtipedicellata, E. oxylepis, E. Beyrichii, and E. Swalleni; Florida, E. simplex; the Great Plains of the United States, E. perplexa; Mexican Plateau, E. erosa, E. hirta, E. Palmeri, E. intermedia, E. oreophila, E. mexicana, E. neomexicana, E. diffusa, E. arida, E. praetermissa, E. glandulosa and E. trichocolea with distribution also in Florida and South America; southern Mexico and Central America and South America, E. maypurensis and E. prolifera; Central America, E. ecutiflora and E. simpliciflora; Cuba and Jamaica, E. Selzmanii, E. glutinosa and E. cubensis; Hispaniola, Bahamas and Puerto Rico E. bahamensis, E. Berteroniana; Cuba and the Yucatan Peninsula and Costa Rica, E. Ekmanii and E. excelsa. Species highly restricted are E. Silveana (the coast of Texas from the Colorado River to Corpus Christi), E. Pringlei and E. plumbea (vicinity of Guadalajara, Mexico), E. diversiflora (Sinaloa and Revillagigedo Islands) E. yucatana (eastern Yucatan Peninsula) E. Tracyi (Sanibel Island, Florida), E. longiramea (Sierra de San Carlos, Tamaulipas, Mexico), E. lutescens (Rocky Mountains) and E. Greuttiana (mostly Californian.)

There are various introduced species of weedy propensities whose distribution does not conform to any recognized floristic boundaries. These are in general the same species which are most likely to offer taxonomic difficulties, probably because variant types initiated by hybridization have not had time to become stabilized and areally delimited through the operation of natural selection. Such species are: E. ciliatensis, E. poaeoides, E. pilosa, E. Barrelieri, E. lurens, E. viscosa, E. amabilis and E. ciliaris.

A new grouping of species results in the recognition of four sections and ten subsections which differ considerably from the subgeneric groups of other authors. The groupings are based upon morphological criteria and probably represent in the main true phylogenetic relationships. From an ecological standpoint the groups do not seem to be characteristic of easily defined habitats, which is true of the genus as a whole, but certain species have habitat restrictions or preferences, as, for instance, E. obtusiflora, and E. prolifera, which are halophytes or confined to the general vicinity of the sea coast, E. obtusiflora, which is characteristic of alkali flats, and E. reptans and E. hypnoides which are plants of muddy flats, banks, and drained ditches.

Acquaintance with the species in field and herbarium leads one to recognize them individually in a vegetative condition, but there are no constant features of the genus that will enable one to recognize it unerringly in a vegetative condition.

In the grass family, as in many others, the distinctive features of genera are confined to reproductive organs.

Especial care has been taken in the construction of the keys, which are believed to be more workable than any others that have been published. It is hoped that this feature will be especially useful to general botanists and specialists in grazing plants. The keys are based upon more features of the species than is usual, and more provision is made (by double insertions) for reaching the right species even if (on account of variation) the anticipated choice is not made at one of the dichotomies.

The logical disposition of all available material has required the description of five apparently new species, namely, E. perplexa from the Great Plains of the United States; E. oreophila from the mountains of Mexico; E. glandulosa from the mountains of Guerrero, Mexico; E. yucatana from the Yucatan Peninsula; and E. praetermissa from the mountains of Guatemala.

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veraecrucis Rupr. ---------- 74

villosa Trin. ---------- 39

virescens Presl ---------- 6, 9, 159, 185, (189)

var. trachyphylla Hack. ---------- 186

virginica Steud. (?) ---------- 64

Virletii Fourn. ---------- 153

viscosa Scribn. ---------- 56

viscosa Trin. ---------- 6, 8, 29, 33, (38)

vulgaris ssp. Barrelieri Domin ------ 150

ssp. poaeoides Domin ---------- 147

var. megastachya Coss. & Germ. --- 153

var. microstachya Coss. & Germ. -- 147

Weigeltiana Bush ---------- 134

YUCATANA L. H. Harvey sp. nov. ------ 8, 70, 72, 207, (79)

Erochloe Raf. ---------- 16

amabilis Raf. ---------- 59

spectabilis Raf. ---------- 59

Erosion Lunell ---------- 16

ciliare Lunell ---------- 154

hypnoides Lunell ---------- 137

Eueragrostis (section) ---------- 8, 26

Excelsae (subsection) ---------- 8, 27, 95

Festuca pilosa Haller ---------- 89

pilosa Willd. ---------- 89, 90

trichodes Schult. ---------- 89

Hirsutae (subsection) ---------- 8, 27, 101

Leptochloa panicoides Hitchc. ---------- 206

rigida Munro ---------- 18

uninervia Hitchc. & Chase ---------- 206

Macroblepharus Phil. ---------- 16

contractus Phil. ---------- 16, 39

Megastachya Beauv. ---------- 11, 12

acutiflora Roem & Schult. ---------- 87

amabilis Beauv. ---------- 35

amoena Fourn. ---------- 90

aturensis Roem & Schult. ---------- 45

Berteroniana Schult. ---------- 145

brevifolia Fourn. ---------- 134

ciliaris Beauv. ---------- 39

condensata Presl (?) ---------- 205

corymbifera Four. ---------- 134

Megastachya -- continued.

Eragrostis Beauv. ---------- 152

fasciculata Fourn. ---------- 134

glomerata Schult. ---------- 45

Gouini Fourn. ---------- 137

hypnoides Beauv. ---------- 137

leersioides Presl ---------- 154

maypurensis Roem & Schult. ---------- 89

obtusa Schult. ---------- 153

oxylepis Fourn. ---------- 74

var. capitata Fourn. ---------- 74

panicoides Pressl ---------- 206

panamensis Fourn. ---------- 90

purpurascens Schult. (?) ---------- 153

reptans Beauv. ---------- 133

simpliciflora Presl. ---------- 92

spectabilis Roem & Schult. ---------- 59

Swainsoni Raddi ---------- 89

uninervia Presl ---------- 206

Neeragrostis Bush ---------- 16

hypnoides Bush ---------- 137

Weigeltiana Bush ---------- 16, 134

Oxylepides (subsection) ---------- 8, 27, 70

Pectinaceae (subsection) ---------- 9, 28, 159

Poa ---------- 11, 12

Poa abyssinica Jacq. ---------- 183

Poa -- continued.

acutiflora H. B. K. ---------- 13, 86

alata Desv. ---------- 90

alba Kunth ---------- 185

amabilis L. ---------- 34

amabilis L. err. applic. Walt. ---------- 12, 16, 59

amoena Kunth ---------- 90

aturensis H. B. K. ---------- 44

bahiensis Schrad. ---------- 200

Berteroniana Kunth ---------- 145

capillaris L. ---------- 12, 47

capillaris L. err. applic. Link ---------- 176

capitata Nutt. ---------- 134

carinata Poir. ---------- 137

caroliniana Spreng. ---------- 176

chariis Schult. ---------- 202

chilensis Moris ---------- 185

cilianensis All. ---------- 152

ciliaris L. ---------- 12, 38

compacta Salzm. ---------- 78

conferta Ell. ---------- 45

curvula Schrad. ---------- 113

cyperoides Thunb. ---------- 22

diandra Schrad. ---------- 177

dioica Michx. ---------- 133

dioica Vent. ---------- 133

Poa -- continued.

domingensis Pers. ---------- 97

elegans Poir. ---------- 38

elegans Roxb. ---------- 201, 202

elegantula Kunth ---------- 202

Eragrostis L. ---------- 11, 15, 147

Eragrostis L. err. applic. Ell. -------- 176

Fendleriana (Steud.) Vasey ---------- 206

flavescens Kunth ---------- 87

glomerata Walt. ---------- 12, 44

glutinosa Swartz ---------- 12, 30

Haenkei Kunth ---------- 185

havanensis Trin. ---------- 173

hirsuta Michx. ---------- 12, 109

var. spectabilis Torr. ---------- 59

hypnoides Lam. ---------- 12, 137

interrupta Nutt. ---------- 13, 73, 74

Linkii Kunth ---------- 190

lugens Kunth ---------- 126

maypurensis H. B. K. ---------- 13, 89

megastachya Koel. ---------- 152

Meratiana Kunth ---------- 90

mexicana Hornem. ---------- 12, 161

micrantha Schult. ---------- 50

nitida Ell. ---------- 13, 66

nitida Lam. ---------- 66

Nuttallii Kunth ---------- 177

Nuttallii Spreng. ---------- 153

Poa -- continued.

obtusa Nutt. ---------- 153
oxylepis Torr. ---------- 74
parviflora Pursh err. applic. Nutt. ---------- 50
pectinacea Auct. ---------- 177
pectinacea Geyer ---------- 59
pectinacea Michx. ---------- 12, 176
pennsylvanica Nutt. ---------- 152
philadelphica Barton ---------- 153
pilosa L. ---------- 189
plumosa Retz. ---------- 35
polymorpha Balb. ---------- 145
polymorpha Sieber ---------- 172
prolifera Swartz ---------- 12, 96
purpurascens Spreng. ---------- 125
racemosa Thunb. ---------- 88
racemosa Vahl ---------- 88
reflexa Ell. ---------- 64
refracta Muhl. ---------- 13, 63
reptans Michx. ---------- 12, 133
reptans var. caespitosa Torr. ---------- 137
rubra Willd. ---------- 48
secundiflora Kunth ---------- 78
simplex Walt. (?) ---------- 109
simpliciflora Kunth ---------- 93
spectabilis Pursh ---------- 12, 16, 59
squarrosa Licht ---------- 90

Poa -- continued.

squarrosa Salzm. ---------- 90

striata Lam. ---------- 50

Teff. Zucc. ---------- 183

tenella L. ---------- 50

tenella L. err. applic. Nutt. ---------- 176, 177

tenella L. err. applic. Pursh ---------- 190

tenuis Ell. ---------- 47

tephrosanthos Spreng. ---------- 172

trichodes Nutt. ---------- 13, 104

unioloides Retz. ---------- 197

Vahlii Roem & Schult. ---------- 89

villosa Beyr. (?) ---------- 59

virescens Kunth ---------- 185

virginica Zucc. (?) ---------- 63

viscosa Retz. ---------- 33

Walteri Kunth ---------- 45

Weigeltiana Reichenb. ---------- 133

Pseudobrizopyrum (section) ---------- 8, 22

Reptantes (subsection) ---------- 9, 27, 138

Spectabiles (subsection) ---------- 8, 26, 55

Sporoboloides (section) ---------- 8, 24

Sporobolus tenuispica Hack. ---------- 24

Triodia flava (L.) Smith ---------- 206

CATALOGUE OF SPECIMENS CITED

(W. L.) Abbott

795 Elliottii

877 Barrelieri

1113 tephrosanthes

1115 ciliaris

1322 amabilis

1327 hypnoides

1732 tephrosanthes

(T. R.) Abrams

4102 Orcuttiana.

6731 hypnoides

(T. A.) Adams

2168 spectabilis

(T. A.) Allard

47 spectabilis

3601 capillaris

A. P. Anderson

1363 spectabilis

A. P. Anderson

1468 hirsuta

Bro. Anect

42 spectabilis

Bro. Anect - continued.

94 neomexicana

(W. A.) Archer

3852 simpliciflora

3928 maypurensis

3936 ciliaris

3943 glomerata

3966 hypnoides

3980 tephrosanthes

3981 tephrosanthes

3981a mexicana

3997 mexicana

7156 Orcuttiana

(Bro. G.) Arsène

48a trichocolea

2639 p. p. plumbea

3288 neomexicana

5786 Pringlei

10352 intermedia

10367 diffusa

11050 hypnoides

11108 spectabilis

11115 Elliottii

11264 refracta

17580 pilosa

L. H. & E. Z. Bailey

361 amabilis

(C. F.) Baker

5332 Elliottii

(C. R.) Ball

4 cilianensis

5 pilosa

21 hypnoides

27 pectinacea

42 hirsuta

43 spectabilis

47 pectinacea

107 reptans

130 pectinacea

140 hirsuta

152 lugens

177 hirsuta

227 Elliottii

554 reptans

722 spectabilis

723 pectinacea

900 trichodes

968 cilianensis

997 Beyrichii

H. H. Bartlett

702 spectabilis

1020 pectinacea

1072 spectabilis

10276 mexicana

10276½ pectinacea

10433 longiramea

10910 longiramea

11257 maypurensis

(J. M.) Bates

2414 perplexa

2440 pectinacea

(B.) Bauer

923 Frankii

(J. E.) Benedict (Jr.)

1682 unioloides

(H. C.) Benke

4123 hypnoides

5557 poaeoides

6047 poaeoides

(H. F.) Bergman

2389b cilianensis

(F. E.) Berkelew

172 diversiflora

(E. E.) Berkley

40 capillaris

668 hypnoides

1246 Frankii

(A. H.) Berkman

7504 erosa

7505 Barrelieri

(J. L.) Berlandier

1949 reptans

2325 reptans

2345 Palmeri

Biolette

144 hypnoides

C. Blake

12 curtipedicellata

S. F. Blake

10657 pectinacea

11675 hirsuta

11960 hirsuta

F. S. Blanton

6831 amabilis

O. Blanton

145 p. p. simplex

(H. L.) Blomquist

40 cilianensis

147 refracta

154 hirsuta

(H. L.) Blomquist & Williams

201 pectinacea

(J. C.) Blumer

184 intermedia

1714 mexicana

(F. A.) Bock & (V. H.) Chase

48 pectinacea

49 Frankii

82 hypnoides

92 capillaris

109 spectabilis

156 Frankii

200 cilianensis

214 pectinacea

(J. E.) Bodin

301 hypnoides

(H. L.) Bolley

863 cilianensis

917 pectinacea

(E.) Bourgeau

673 lugens

2638 hypnoides

2643 trichocolea

(H. E.) Box

20 purpurascens

30 ciliaris

114 amabilis

133 pilosa

200 pilosa

(L. J. K.) Brace

1832 Elliottii

3993 bahamensis

4242 ciliaris

4264 bahamensis

5169 Elliottii

(T. S.) Brandegee

10 spicata

20 intermedia

28 oreophila

30 neomexicana

50 intermedia

(E.) Braunton

1209 Orcuttiana

(A. M.) Brenes

16856 maypurensis

(E. G.) Britton

6517 Elliottii

(N. L.) Britton

1622 Elliottii

2123 glutinosa

2139 ciliaris

2347 tephrosanthes

2374 glutinosa

(N. L.) Britton & (L. J. K.)Brace

788 amabilis

N. L. & E. G. Britton & (M. S.) Brown

5953 amabilis

N. L. & E. G. Britton & (P.) Wilson

5510 Salzmannii

14194 cubensis

14944 Elliottii

15328 cubensis

15523 hypnoides

(N. L.) Britton & (S.) Brown

5719 Elliottii

(N. L.) Britton & (J. F.) Cowell

437 amabilis

9830 hypnoides

(N. L.) Britton, (J. F.) Cowell & (S.) Brown

3854 p. p. Urbaniana

(N. L.) Britton & (W. C.) Fishlock

957 Urbaniana

1075 ciliaris

(N. L.) Britton & (C. S.) Gager

7561 excelsa

(N. L.) Britton & (T. E.) Hazen

721 acutiflora

(N. L.) Britton & (C. F.) Millspaugh

2186 excelsa

2589 Elliottii

5697 Elliottii

(N. L.) Britton & (J. A.) Shafer

501 amabilis

700 ciliaris

(N. L.) Britton, (F. L.) Stevens & (W. E.) Hess

2396 Elliottii

(N. L.) Britton & (P.) Wilson

156a tephrosanthes

15612 glutinosa

(W. E.) Broadway

724 p. p. tephrosanthes

1682 pilosa

4667 amabilis

8985 amabilis

(L. A.) Bruce

13 cilianensis

(B. F.) Bush

70 refracta

94 pilosa

380 glomerata

397 cilianensis

582 trichodes

598 pectinacea

765 hirsuta

766 hirsuta

808 trichodes

810 hypnoides

810 intermedia

812 curtipedicellata

819 spectabilis

(B. F.) Bush - continued.

820 pilosa

821 capillaris

822 cilianensis

825 hypnoides

929 glomerata

976 oxylepis

981 Frankii

997 reptans

1056 curtipedicellata

1354 hirsuta

1379 oxylepis

1543 refracta

5064 lugens

5260 capillaris

7786 Frankii

9017 pilosa

9052 hirsuta

9172 capillaris

9222 lugens

11969 reptans

13853 spectabilis

13949 capillaris

15832 capillaris

(G. D.) Butler

869 Orcuttiana

(S.) Calderón

496 ciliaris

(E. V.) Campbell

37 pectinacea

(W. M.) Canby

227 Frankii

(M. A.) Carleton

29 tephrosanthes

519 curtipedicellata

(G. W.) Carver

42 pilosa

81 cilianensis

253 capillaris

309 spectabilis

(Z. L.) Chandonet

5 spectabilis

(A.) Chase

1182 cilianensis

1208 Frankii

1667 capillaris

(A.) Chase - continued

2109 hypnoides

2545 spectabilis

2629 capillaris

2630 Frankii

2732½ pilosa

2944 spectabilis

3828 cilianensis

4006 Elliottii

4394 refracta

4416 hirsuta

4446 hirsuta

4465 hypnoides

4500 Frankii

4541 Elliottii

6113 intermedia

6285 ciliaris

6394 pilosa

6398 hypnoides

6482 tephrosanthes

6485 amabilis

6711 hypnoides

6798 Elliottii

7226 hypnoides

7615 capillaris

(A.) Chase - continued

9955 capillaris

9957 pilosa

9958 Frankii

12199 refracta

V. H. Chase

83 hypnoides

124 pectinacea

125 cilianensis

188 Frankii

1262 spectabilis

7223½ oreophila

7239 mexicana

7732 mexicana

(E.) Claassen

6812 hypnoides

(J. A.) Clark

283 pectinacea

(Mrs. J.) Clemens

11480 reptans

(E.) Clements

2731 pectinacea

2828 spectabilis

(E. U.) Clover

926 sessilispica

1111 reptans

1577 spicata

F. S. Collins

149 cilianensis

J. F. Collins

5 poaeoides

(R.) Combs

211 oxylepis

431 ciliaris

432 p. p. tephrosanthes

432 p. p. pectinacea

460 pilosa

462 ciliaris

463 amabilis

765 ciliaris

801 hirsuta

907 simplex

1178 hirsuta

1208 ciliaris

1263 Elliottii

1327 hirsuta

(R.) Combs & (P. H.) Rolfs

170 ciliaris

(A.) Commons

82 pectinacea

167 capillaris

170 cilianensis

171 poaeoides

176 refracta

177 hypnoides

317 refracta

318 pectinacea

(C.) Conzatti

4590 cilianensis

(O. F.) Cook, (C. S.) Scofield & (C. B.) Doyle

139 tephrosanthes

(V. L.) Cory

23337 curvula

24646 reptans

(J. S.) Cotton

794 hypnoides

(F. V.) Coville & (F.) Funston

244 diffusa

(J. F.) Cowell

319 hypnoides

(C. S.) Crandall

536 cilianensis

(A. H.)Curtiss

76 ciliaris

420 cubensis

3493* amabilis

3493 ciliaris

3494* trichocolea

3497 glomerata

5247 amabilis

5567 Elliottii

5569 refracta

5572 hirsuta

5585 pilosa

5792 spectabilis

5925 simplex

5930 tephrosanthes

6073 simplex

6510 glomerata

6898 unioloides

9521 capillaris

9530 pilosa

(J.) Davis

136 pectinacea

1104 cilianensis

2015 spectabilis

3004 pilosa

3427 pilosa

8856 hypnoides

9041 spectabilis

(M. A.) Day

35 pectinacea

(C. C.) Deam

39 hypnoides

6954 pectinacea

25508 cilianensis

25580 pectinacea

29145 spectabilis

32339 spectabilis

32750 pectinacea

32996 hypnoides

34701 cilianensis

34704 pectinacea

34834 Frankii

37704 capillaris

51028 Frankii

(D.) Demaree

4296 hypnoides

8357 hypnoides

8711 glomerata

10878 spectabilis

13296 cilianensis

13700 glomerata

13810 hypnoides

14073 reptans

15296 capillaris

15801 capillaris

16405 spectabilis

16499 hirsuta

(R. A.) Dixon

384 oxylepis

(F.) Dobbin

2 Frankii

192 peregrina

193 poaeoides

(C. K.) Dodge

12 poaeoides

212 hypnoides

257 poaeoides

(P.) Dowell

931 cilianensis

6722 hypnoides

(F.) Drouet, (D.) Richards & (L. D.) Alvardo

3417 tephrosanthes

(J. H.) Drushell

10777 spectabilis

(Pére) Duss

565 prolifera

566 amabilis

793 tephrosanthes

2707 ciliaris

3143 p. p. pilosa

3143c amabilis

3422 prolifera

4024 ciliaris

4712 pilosa

(D. L.) Dutton

2235 poaeoides

(A . J.) Eames & (L. F.) Randolph

11338 Frankii

(F. S.) Earle & (C. F.) Baker

1514 spectabilis

(F. S.) Earle &(E. S.) Earle

250 cilianensis

Mrs. M. T. Edwards

1742 oreophila

(H.) Eggert

88 pilosa

106 oxylepis

143 glomerata

144 spectabilis

146 pectinacea

147 hirsuta

148 hirsuta

201 capillaris

(W. W.) Eggleston

1748 cilianensis

16465 mexicana

17294 cilianensis

(E. L.) Ekman

164 amabilis

1206 excelsa

10696 cubensis

10934 hypnoides

(E. L.) Ekman - continued.

11413 glutinosa

11657 Elliottii

12143 Ekmanii

12696 prolifera

12923 ciliaris

18913 Salzmanii

H391 tephrosanthes

H2604 prolifera

H4007 Urbaniana

H6639 Barrelieri

H6696 Barrelieri

H7912 hypnoides

H9052 tephrosanthes

H9053 amabilis

H9920 Elliottii

H11274 amabilis

H11275 tephrosanthes

H11414 ciliaris

H13035 pilosa

H13129 Berteroniana

H13298 Elliottii

H14153 amabilis

H14793 pilosa

(C. J.) Elmore

82 hypnoides

(W. H.) Emig

655 curtipedicellata

(G.) Engelmann

108 reptans

(O. A.) Farwell

5586 spectabilis

6387 capillaris

(N. C.) Fassett

4162 Frankii

4165 hypnoides

12899 Frankii

(N. C.) Fassett &(J. W.)Rhodes

13177 hypnoides

(N. C.) Fassett &(L. R.)Wilson

4183 spectabilis

15485 spectabilis

(A.) Fendler

933 Frankii

(F. E.) Fenno

573 pilosa

(W. C.) Ferguson

671 capillaris

(M. L.) Fernald & (B.) Long

5219 hirsuta

6778 peregrina

6779 hirsuta

7206 hypnoides

7207 peregrina

9273 hirsuta

12666 pilosa

17963 peregrina

(M. L.) Fernald, (B.) Long & (R. F.) Smart

6780 hirsuta

(R. S.) Ferris

5301 diversiflora

5641 ciliaris

(B.) Fink

322 cilianensis

547 hypnoides

(G. L.) Fisher

200 sessilispica

201 oxylepis

(G. L.) Fisher - continued.

2059 lugens

35318 pilosa

37130 Swalleni

(A.) Fishman

230 cilianensis

(A.) Fredholm

5824 simplex

6201 amabilis

(R. C.) Friesner

8147 spectabilis

8164 Frankii

(J.) Fults

1803 refracta

2926 hypnoides

(J.) Galen

3496 pilosa

Galeotti

5705 oxylepis

(G.) Gándara

5 arida

(F. F.) Gander

4744 neomexicana

(F. C.) Gates

2192 spectabilis

(A.) Gattinger

3495 Frankii

3496 pectinacea

3498 spectabilis

(G. F.) Gaumer

1207 yucatana

1567 amabilis

2249 yucatana

J. Gay

129 ciliaris

(H. V.) Geib

8 Elliottii

(Percy H.) Gentle

1592 hypnoides

1614 prolifera

2281 p. p. maypurensis

2281 p. p. acutiflora

(H. S.) Gentry

5036 tephrosanthes

5250 maypurensis

5276 viscosa

(F. A.) Gilbert

619 hypnoides

(J. W.) Gillespie

8593 intermedia

(M. G.) Gilman

A20 arida

A40 intermedia

(H. A.) Gleason

1009 Frankii

(R. K.) Godfrey

8015 spectabilis

8103 refracta

(R. K.) Godfrey & (B. M.) Tryon (Jr.)

1226 pilosa

(L. N.) Goodding

2496 erosa

Gouin

78 excelsa

79 prolifera

84 p. p. reptans

89 prolifera

91 prolifera

(G. B.) Grant

413 neomexicana

3195 spectabilis

(J. M.) Greenman

83 Frankii

4388 hypnoides

(D.) Griffiths

117 cilianensis

140 reptans

689 cilianensis

775 hypnoides

1542 Orcuttiana

4311 cilianensis

4403 spectabilis

4894 mexicana

5637 perplexa

5658 oxylepis

5705 oxylepis

(D.) Griffiths - continued

6318 reptans

6383 curtipedicellata

6793 arida

7166 neomexicana

(D.) Griffiths & (B.) Hunter

508 Orcuttiana

546 Orcuttiana

(D.) Griffiths & (E. L.) Morris

865 hypnoides

(E. J.) Grimes

830 hypnoides

4071 pectinacea

4494 hirsuta

D. Hall

8477 diffusa

E. Hall

785 p. p. pectinacea

H. M. Hall

2635 Orcuttiana

(J.) Hancin

1484 reptans

1592 Barrelieri

(C. R.) Hanes

396 hypnoides

588 Frankii

(G.) Hansen

2082 poaeoides

2082 Barrelieri

(R. M.) Harper

32 intermedia

381 pectinacea

464 hypnoides

1580 refracta

1616 unioloides

1656 simplex

(W.) Harris

11618 prolifera

12678 cubensis

A. K. & W. H. Harrison

45 cilianensis

B. F. Harrison

369H Orcuttiana

B. H. Harrison

5873 hypnoides

(G. J.) Harrison & (T. H.) Kearney (Jr.)

6081 Barrelieri

(L. H.) Harvey

527 poaeoides

583 spectabilis

878 sessilispica

893 intermedia

927 reptans

928 reptans

932 curtipedicellata

948 cilianensis

1324 cilianensis

1325 mexicana

1414 diffusa

1591 mexicana

1626 intermedia

1645 intermedia

1672 mexicana

1681 cilianensis

1749 erosa

1750 obtusiflora

1810 poaeoides

1811 pectinacea

1821 Barrelieri

1827 Barrelieri

(L. H.) Harvey - continued

1831 Beyrichii

1840 capillaris

1844 lugens

(V.) Havard

75e cilianensis

(A.) Hayden

7068 Frankii

(H. E.) Hayward

538 cilianensis

(A. A.) Heller

1803 p. p. lugens

1803 p. p. capillaris

4794 capillaris

11478 cilianensis

11688 pilosa

11757 Orcuttiana

A. A. & E. G. Heller

4146 refracta

(L. F.) Henderson

4629 lutescens

4630 cilianensis

(L. F.) Henderson - continued.

1924

459 Orcuttiana

(F. J.) Hermann

6980 pectinacea

9222 pilosa

9329 Frankii

9786 hypnoides

10403 hirsuta

(E. T.) Heyde & (R.) Lux

6270 glandulosa

(L. C.) Hinckley

892 pectinacea

Bro. Hioram

355 ciliaris

(A. S.) Hitchcock Fl(orida) Pl(ants)

263 Elliottii

457 refracta

461 simplex

622 ciliaris

841 trichocolea

996 peregrina

2325 tephrosanthes

(A. S.) Hitchcock

1498 reptans

3063 Orcuttiana

3477 cilianensis

3486 arida

3576 diffusa

3593 arida

3617 cilianensis

3634 diffusa

3670 neomexicana

3753 diffusa

3793 erosa

3800 intermedia

3845 spectabilis

5073 cilianensis

5129 pectinacea

5180 Beyrichii

5196 arida

5224 diffusa

5341 Barrelieri

5416 tephrosanthes

5421 hypnoides

5428 Barrelieri

5461 Beyrichii

5466 spectabilis

(A. S.) Hitchcock - continued.

5491 intermedia
5630 diffusa
5633 cilianensis
5642 neomexicana
5659 diffusa
5662 neomexicana
5695 cilianensis
5725 diffusa
5731 intermedia
5787 excelsa
5791 ciliaris
5794 oxylepis
5799 Elliottii
5803 neomexicana
5840 cilianensis
5897 neomexicana
6031 mexicana
6058 Swalleni
6069 cilianensis
6086 diffusa
6113 diffusa
6121 tephrosanthes
6123 cilianensis
6196 diffusa
6213 neomexicana

(A. S.) Hitchcock - continued

6230 ciliaris
6296 neomexicana
6311 tephrosanthes
6333 mexicana
6402 neomexicana
6491 intermedia
6523 intermedia
6580 excelsa
6600 diffusa
6635 ciliaris
6677 intermedia
6725 mexicana
6743 intermedia
6760 neomexicana
6770 cilianensis
6803 ciliaris
6825 tephrosanthes
6866 neomexicana
6904 mexicana
6925 mexicana
6956 praetermissa
6968 intermedia
7012 cilianensis
7015 ciliaris
7061 acutiflora

(A. S.) Hitchcock - continued.

7062 diffusa
7234 glandulosa
7417 cilianensis
7418 diffusa
7443 neomexicana
7515 intermedia
7531 neomexicana
7532 diffusa
7534 cilianensis
7554 diffusa
7597 cilianensis
7640 mexicana
7705 Barrelieri
7849 spectabilis
7975 acutiflora
8100 prolifera
8161 ciliaris
8279 tephrosanthes
8353 acutiflora
8373 ciliaris
8374 amabilis
8407 acutiflora
8419 amabilis
8420 ciliaris
8422 tephrosanthes

(A. S.) Hitchcock - continued.

8444 ciliaris
8512 mexicana
8533 prolifera
8539 maypurensis
8561 tephrosanthes
8562 cilianensis
8588 ciliaris
8611 prolifera
8623 ciliaris
8624 tephrosanthes
8626 tephrosanthes
8627 cilianensis
8641 maypurensis
8753 maypurensis
8782 simpliciflora
8855 cilianensis
8923 neomexicana
8954 glandulosa
8988 prolifera
9010 tephrosanthes
9016 trichocolea
9068 intermedia
9070 ciliaris
9090 simpliciflora
9091 mexicana

(A. S.) Hitchcock - continued.

9100 viscosa
9103 mexicana
9163 neomexicana
9191 mayburensis
9560 amabilis
9665 pilosa
9852 cubensis
9854 Elliottii
9887 pilosa
9889 tephrosanthes
9942 ciliaris
9972 amabilis
9974 tephrosanthes
10110 glomerata
10202 ciliaris
10203 pilosa
10289 amabilis
10319 glomerata
10344 acutiflora
10601 Orcuttiana
13181 diffusa
13323 diffusa
13350 sessilispica
13384 Barrelieri

(A. S.) Hitchcock - continued.

13487 arida
13510 erosa
13535 intermedia
13557 mexicana
13586 diffusa
13611 intermedia
13626 curtipedicellata
13627 diffusa
13645 intermedia
13650 arida
15786 poaeoides
16073 spectabilis
16076 intermedia
16095 hypnoides
16108 pectinacea
16152 pectinacea
16154 spectabilis
16181 Barrelieri
16191 curtipedicellata
16204 diffusa
16205 arida
16297 ciliaris
16302 pilosa
16310 tephrosanthes
16368 tephrosanthes

(A. S.) Hitchcock - continued.

16370 ciliaris

16396 pilosa

16517 tephrosanthes

16524 ciliaris

19862 bahiensis

19863 lugens

23285 cubensis

23289 Elliottii

23359 cubensis

23386 Elliottii

25186 poaeoides

(A. S.) Hitchcock & (A.) Chase

116 spectabilis

119 refracta

131 hirsuta

190 poaeoides

(J. H.) Homes

282 pilosa

(T. W. D.) Holway

3595 diffusa

(M.) Hopkins

1140 spectabilis

(N.) Hotchkiss

1708 peregrina

(H. D.) House

9589 peregrina

20111 spectabilis

22094 hypnoides

24091 spectabilis

(J. T.) Howell

8381 ciliaris

(A.) Humboldt & (A.) Bonpland

1602 acutiflora

(A. A.) Hunter & (P. H.) Allen

378 hypnoides

Bro. F. Hyacinth

1650 pectinacea

(C. P.) Ingold

6907 capillaris

(J. G.) Jack

5204 tephrosanthes

6311 tephrosanthes

7993 amabilis

(O.) Jiménez

406 simpliciflora

713 Ekmanii

E. L. Johnson

907 spectabilis

914 hyonoides

H. Johnson

571 mexicana

(I. M.) Johnston

7786 arida

1378 Palmeri

J. R. Johnston

930 hirta

J. Jones

18 ciliaris

L. R. Jones

39 cilianensis

1750 pectinacea

(M. E.) Jones

4117 diffusa

4226 intermedia

6080 diffusa

(M. E.) Jones - continued.

6095 cilianensis

22790 viscosa

23439 viscosa

24047 amabilis

24072 cilianensis

24114 viscosa

(J. F.) Joor

13 arida

G. M. K.

283 pectinacea

(T. H.) Kearney (Jr.)

8 hirsuta

12 pectinacea

55 hyonoides

64 bahiensis

65 pilosa

82 simplex

83 pilosa

92 p. p. pectinacea

92 p. p. pilosa

94 spectabilis

123 refracta

150 Frankii

(T. H.) Kearney (Jr.) - continued.

158 p. p. pectinacea

158 p. p. pilosa

174 Elliottii

189 spectabilis

196 hirsuta

211 pilosa

214 hirsuta

230 pilosa

231 hirsuta

263 capillaris

295 hirsuta

297 pilosa

303 cilianensis

332 refracta

958 capillaris

1922 refracta

1968 hirsuta

2297 Elliottii

(T. H.) Kearney (Jr.) & (R. H.) Peebles

10181 diffusa

10553 mexicana

12763 mexicana

(D. D.) Keck

4725 cilianensis

(W. A.) Kellerman

4986 p. p. amabilis

5589 ciliaris

5758 amabilis

6072 tephrosanthes

6232 maypurensis

6276 cilianensis

6821 pectinacea

W. A. & K. F. Kellerman

6786 Frankii

(J. H.) Kellogg

646 hypnoides

(J. S.) Kemp

34 ciliaris

35 amabilis

(E. P.) Killip

4039 prolifera

4226 maypurensis

4273 simpliciflora

12466 cilianensis

(G. L.) Kirk

1028 peregrina

(O. W.) Knight

5 cilianensis

(C. H.) Knowlton

915 cilianensis

(A. B.) Langlois

32 oxylepis

66 spectabilis

(C. H.) Lankester

206 diffusa

(O. E.) Lansing (Jr.)

1629 pilosa

3721 trichodes

(R.) Lantham

3519 cilianensis

(J. B.) Leiberg

874 hypnoides

5900 cilianensis

(Bro.) León

281 ciliaris

878 tephrosanthes

885 glutinosa

886 cubensis

3678 excelsa

3726 pilosa

3965 pilosa

4559 cubensis

5884 Elliottii

8826 cilianensis

8877 pilosa

8951 Elliottii

9178 pilosa

13690 excelsa

14993 pilosa

15102 amabilis

15868 prolifera

(E. C.) Leonard

3035 ciliaris

3421 amabilis

3560 Berteroniana

7356 pilosa

16279 spectabilis

E. C. & G. M. Leonard

11401 pilosa

11867 Berteroniana

12486 prolifera

12972 Berteroniana

13798 ciliaris

(H.) Le Sueur

Mex-

047 neomexicana

047 diffusa

083 cilianensis

0144 intermedia

0219 Palmeri

(G. W.) Letterman

20 hirsuta

(I. F.) Lewis

23 refracta

(V. J.) Libbey

34b cilianensis

(F. M.) Liebmann

482 prolifera

537 hypnoides

544 ciliaris

885 maypurensis

(F. M.) Liebmann - continued.

12864 secundiflora

(P. B.) Lister

14 pectinacea

(E. L.) Little

309 poaeoides

C. G. Lloyd

587 hypnoides

3495 Frankii

F. E. Lloyd

858 pilosa

Löfgren

576 maypurensis

Lorentz & Hieronymus

966 glomerata

(E. U.) Lowe

13 cilianensis

(C. L.) Lundell

844 ciliaris

2522 hypnoides

2641 ciliaris

3605 acutiflora

(C. L.) Lundell - continued.

3880 Elliottii

3816 acutiflora

4722 prolifera

4954 ciliaris

5550 mexicana

6738 p. p. spectabilis

6738 p. p. hirsuta

6935 Elliottii

C. L. & A. A. Lundell

7087 hirsuta

8937 lugens

(E.) Lyonnet

2620 glandulosa

2795 viscosa

(E.) Lyonnet & (J.) Elcoro

1867 tephrosanthes

(D. C.) Mabbott

386 cilianensis

(J. F.) Macbride

336 hypnoides

(G.) McCarthy

209 poaeoides

(E.) McClung

6686 hypnoides

(F. E.) McDonald

63½ capillaris

(A.) MacElwee

940 spectabilis

1117 spectabilis

(F. T.) McFarland

180 capillaris

(F. T.) McFarland &(W. A.) Anderson (Jr.)

328 spectabilis

337 hypnoides

(J. B.) McFarlin

5806 charieis

6359 curvula

(K. K.) Mackenzie

449 glomerata

1613 spectabilis

1701 refracta

3754 capillaris

3777 spectabilis

7824G peregrina

Sister M. Marcelline

2628 hypnoides

(E.) Matuda

346 mexicana

2131 maypurensis

2722 prolifera

3158 hypnoides

3799 Elliottii

3864 hypnoides

(W. R.) Maxon & (A. D.) Harvey & (A. T.) Valentine

7296 hypnoides

(W. R.) Maxon & (E. P.) Killip

1695 ciliaris

(E. A.) Mearns

66 cilianensis

741 hypnoides

742 spectabilis

792 Frankii

1028 arida

2341 arida

(G. M.) Merrill & (W. A.) Hagan

1530 trichodes

F. P. Metcalf

1668 poaeoides

O. B. Metcalfe

676 cilianensis

(Y.) Mexía

1850 mexicana

8774 glandulosa

8869 maypurensis

8869a cilianensis

8919 glomerata

(C. F.) Millspaugh

148 tephrosanthes

1240 prolifera

C. F. & C. M. Millspaugh

9286 bahamensis

9339 p. p. ciliaris

9341 Urbaniana

9388 bahamensis

(W. H.) Minshall

2004 poaeoides

(H. N.) Moldenke

5186 hirsuta

5568 amabilis

(C. E.) Moore

X6 hypnoides

121 spectabilis

(J. A.) Moore & (J. A.) Steyermark

3176 intermedia

(E. L.) Morris

A108 cilianensis

A253 pectinacea

A286 cilianensis

(L. R.) Moyer

18 hypnoides

(J. B.) Moyle

787 cilianensis

372 trichocolea

(C. H.) Mueller

372 trichocolea

(W. C.) Muenscher & (A. R.) Bechtel

617 pectinacea

(F.) Müller

2171 ciliaris

(G. V.) Nash

1409 tephrosanthes

1656 refracta

2199 pilosa

2521 hirsuta

(G. V.) Nash & (N.) Taylor

1217 bahamensis

1354 bahamensis

1372 Urbaniana

G. C. Nealley

848 trichodes

1882 trichodes

E. Nelson

492 cilianensis

720 diffusa

E. W. Nelson

1705 mexicana

2270 viscosa

2364 hypnoides

6353 arida

6413 obtusiflora

J. C. Nelson

469 cyperoides

501 Orcuttiana

J. C. Nelson - continued.

3371 cilianensis

4813 lutescens

(Bro.) Nicolás

20 amabilis

21 ciliaris

(E. L.) Nielsen

4093 intermedia

4189 intermedia

4555 hirsuta

(J. B. S.) Norton

36 hirsuta

(E. B.) Noyes

30 Frankii

(J. C.) Oliva

96 maypurensis

(W. W.) Oppel

W-67 neomexicana

W-105 pectinacea

W-106 poaeoides

(C. R.) Orcutt

1313 Orcuttiana

3103 maypurensis

(C. R.) Orcutt - continued.

3694 intermedia

3959 ciliaris

5921 reptans

6551 maypurensis

(J. G.) Ortega

5761 amabilis

(B.) Osborn

1166R hypnoides

765 cilianensis

(W. H.) Over

5100 hypnoides

(S. A.) Padilla

595 simpliciflora

Edw(ard) Palmer

1868

416 pilosa

1878-9

1370 oxylepis

1880

1367 neomexicana

1368 Palmeri

Edw(ard) Palmer - continued.

1886

203 intermedia

234 mexicana

240 plumbea

1887

167 neomexicana

1890

215 cilianensis

1266 amabilis

1891

1262 mexicana

1268 glomerata

1335 diversiflora

1892

1926 maypurensis

1928 p. p. mexicana

1894-95

39 ciliaris

40 amabilis

596 p. p. maypurensis

596 p. p. hypnoides

1896

723 diffusa

726 virescens

Edw(ard) Palmer - continued.

1896

727 intermedia

869 neomexicana

1898

408 intermedia

1902

374 amabilis

1904

335 mexicana

1906

266 tephrosanthes

1907

555 virescens

473 cilianensis

474 diffusa

481 ciliaris

1910

347 hypnoides

(E. J.) Palmer

1378 hypnoides

2852 spectabilis

2853 hirsuta

3138 capillaris

4114 Frankii

(E. J.) Palmer - continued.

6653 reptans

8877 spectabilis

10881 trichodes

11272 Beyrichii

11300 hypnoides

11730a curtipedicellata

13390 hirsuta

13746 refracta

31842 erosa

32067 mexicana

33002 hirsuta

(E. J.) Palmer & (J. A.) Steyermark

41057 hypnoides

(W.) Palmer & (J. H.) Riley

13 ciliaris

(L. H.) Pammel

239 hypnoides

630 reptans

655 Frankii

668 pectinacea

900 spectabilis

1032 hypnoides

(L. H.) Pammel & (R. I.) Cratty

866 Frankii

(L. H.) Pammel, (H. H.) Hume & (S. R.) Fitz

1406 capillaris

(J. C.) Parlin

2037 capillaris

13693 peregrina

(J. C.) Parlin & (M. L.) Fernald

947 spectabilis

(S. B.) Parrish

2484 Orcuttiana

S. B. & W. F. Parrish

1601 diffusa

(C. C.) Parry & (Edward) Palmer

938 lugens

(R. H.) Peebles, (G. J.) Harrison & (T. H.) Kearney

4295 tephrosanthes

4296 arida

(F. E.) Pennell

7533 peregrina

(Charles V.) Piper

2624 lutescens

(H.) Pittier

475 cilianensis

1755 cilianensis

1756 ciliaris

2677 hypnoides

4146 hypnoides

4524 p. p. acutiflora

4768 maypurensis

4851 maypurensis

4900 p. p. simpliciflora

4930 acutiflora

5158 maypurensis

5184 maypurensis

(E. N.) Plank

14 capillaris

32 cilianensis

34 cilianensis

37 diffusa

62 pectinacea

70 Frankii

76 diffusa

118 pectinacea

126 pilosa

(C. L.) Pollard

737 Frankii

(C. L.) Pollard - continued.

1089 oxylepis

1277 glomerata

1294 cilianensis

1313 Frankii

W. Popenoe

664 arida

D. H. Popenoe

63 amabilis

(E. G.) Pfeston

958 cilianensis

(H. W.) Pretz

9775 poaeoides

10445a peregrina

(C. W.) Prier

3 pectinacea

(C. G.) Pringle

415 erosa

416 diffusa

1851 ciliaris

2327 Pringlei

3284 spectabilis

3699 hypnoides

(C. G.) Pringle - continued.

3839 neomexicana

4492 pilosa

5561 Elliottii

6605 glomerata

6634 hirta

7538 trichocolea

8520 oxylepis

9602 trichocolea

9604 Barrelieri

11223 ciliaris

11742 maypurensis

(A. R.) Purchase

283 curvula

(C. A.) Purpus

291 ciliaris

428 cilianensis

4084 lugens

5424 ciliaris

8696 glomerata

(A.) Questel

717 amabilis

790 purpurascens

(J. H.) Redfield

9528 spectabilis

E. L. Reed

3789 sessilispica

H. R. Reed

65 Barrelieri

241 arida

(B. P.) Reko

5017 glandulosa

(J.) Reverchon

30 sessilispica

1125A lugens

1614 p. p. pilosa

1614 p. p. diffusa

2816 pilosa

3500 reptans

3511 hirsuta

4129 spectabilis

(P. L.) Ricker

903 simplex

(A. E.) Ricksecker

33 ciliaris

181 cilianensis

222 pilosa

(H. N.) Ridley

87 prolifera

(J. T.) Roig

3200 prolifera

Rojas

258 spicata

(P. H.) Rolfs

855 simplex

Fr. Rolland

1124 hypnoides

(J. N.) Rose

2016 diffusa

3135 ciliaris

3699 mexicana

22068 ciliaris

23993 amabilis

23994 tephrosanthes

(J. N.) Rose, (W. R.) Fitch & (P. G.) Russell

4228 hypnoides

(J. N.) Rose, (J. H.) Painter & (J. S.) Rose

8453 intermedia

8570 cilianensis

(J. N.) Rose, (P. C.) Standley & (P. G.) Russell

12701 ciliaris

(J. N.) Rose, (P. C.) Standley & (P. G.) Russell - continued.

13393 diffusa

13493 ciliaris

14056 ciliaris

14130 diversiflora

14321 arida

14584 arida

14866 ciliaris

(J. N.) Rovirosa

645 ciliaris

690 viscosa

E. Runyon

177 pilosa

H. E. Runyon

1006 Barrelieri

R. Runyon

1904 Beyrichii

(E. E.) Russell

114 oxylepis

(A.) Ruth

40 cilianensis

42 pilosa

43 pectinacea

44 hypnoides

(A.) Ruth - continued.

46 spectabilis

210 Beyrichii

(P. A.) Rydberg

1588 cilianensis

1711 spectabilis

1774 pectinacea

1831 trichodes

1832 trichodes

2365 spectabilis

(H.) St. John

2558 spectabilis

St. Pierre

75 hirta

134 lugens

(J. G.) Schaffner

73 cilianensis

189 cilianensis

323 cilianensis

(W. A.) Schipp

888 ciliaris

907 Elliottii

(A.) Schott

20 ciliaris

59a amabilis

(F. L.) Scribner

582 cilianensis

(R. E.) Schultes

604 maypurensis

(H. E.) Seaton

318 lugens

(C. & E.) Seler

627 tephrosanthes

A. B. Seymour

36 pectinacea

F. C. Seymour

93 pilosa

110 spectabilis

1408 cilianensis

1443 pilosa

(J. A.) Shafer

19 ciliaris

84 amabilis

(J. A.) Shafer - continued.

153 tephrosanthes

961a hypnoides

1666 hypnoides

2423 tephrosanthes

3905 amabilis

12187 ciliaris

(C. L.) Shear

711 cilianensis

867 perplexa

(E. E.) Sherff

1791 pectinacea

(F.) Shreve

7290 viscosa

9280 diffusa

(F.) Shreve & (W. R.) Jones

1107 spectabilis

1332 pilosa

(W. A.) Silveus

258 diffusa

291 neomexicana

322 spectabilis

360 Silveana

391 spicata

(W. A.) Silveus - continued.

438 trichodes

452 Silveana

628 lugens

689 hirsuta

766 trichodes

781 arida

818 hirsuta

850 lugens

851 Palmeri

1591 Elliottii

3502 obtusiflora

3539 mexicana

5614 diffusa

(J. W.) Singer

349 cilianensis

415 hypnoides

Sintensis

1233 Elliottii

(J.) Skehan

58 erosa

(J. K.) Small

3805 Elliottii

(J. K.) Small, (C. A.) Mosier & (G. K.) Small

6681 pilosa

(H. P.) Smart

38 prolifera

72 maypurensis

C. E. Smith

13 pilosa

C. C. Smith

277 trichodes

E. A. Smith

61 hypnoides

H. H. & G. W. Smith

834 pilosa

J. D. Smith

186 cilianensis

5577 hypnoides

J. G. Smith

5 hirsuta

(L. P.) Smith & (A. R.) Hodgdon

4054 spectabilis

(B. B.) Smyth

27 trichodes

77 oxylepis

173 oxylepis

228 spectabilis

(O. E.) Sperry

T479 mexicana

(J.) Springer

527 Barrelieri

528 diffusa

(P. C.) Standley

5414 capillaris

5592 cilianensis

7495 diffusa

7935 diffusa

8023 cilianensis

8341 cilianensis

8439 pectinacea

12745 ciliaris

19305 glomerata

19363 amabilis

19369 tephrosanthes

20263 mexicana

(P. C.) Standley - continued.

20985 hypnoides

21184 mexicana

22485 viscosa

23289 glomerata

23864 hypnoides

24714 tephrosanthes

25620 tephrosanthes

26112 ciliaris

28779 maypurensis

40553 intermedia

52957 tephrosanthes

53027 ciliaris

53410 amabilis

55870 maypurensis

56074 trichocolea

56524 mexicana

57961 maypurensis

58229 viscosa

60796 glandulosa

62544 viscosa

63965 prolifera

64667 hirta

68994 glomerata

(P. C.) Standley & (H. C.) Bollman

12186 Frankii

12322 hypnoides

(P. C.) Standley & (J.) Valerio

43427 intermedia

Mr. & Mrs. E. E. Steele

209 ciliaris

290 hypnoides

(W. C.) Steere

1721 ciliaris

(H.) Stehle

691 tephrosanthes

(G. W.) Stevens

701 curtipedicellata

827 sessilispica

1664 cilianensis

1666 oxylepis

1731 pectinacea

1734 trichodes

1789 reptans

1859 spectabilis

(G. W.) Stevens - continued.

1860 trichodes

2240 hypnoides

2315 reptans

2919 trichodes

3302 diffusa

(J. A.) Steyermark

8598 capillaris

9381 hypnoides

11189 spectabilis

15118 hypnoides

16096 spectabilis

21134 Frankii

32286 hirsuta

34489 mexicana

(B. M.) Stigall

62 Frankii

(P. D.) Strausbaugh

325 capillaris

(R. A.) Studhalter

1272 diffusa

(W. N.) Suksdorf

2333 lutescens

2882 peregrina

(W. N.) Suksdorf - continued.

10134 pectinacea

(J. R.) Swallen

143 ciliaris

412 bahiensis

463 oxylepis

518a cilianensis

999 curtipedicellata

1004 lugens

1012 Beyrichii

1016 cilianensis

1025 intermedia

1031 oxylepis

1032 Barrelieri

1081 arida

1085 curtipedicellata

1086 spicata

1140 diffusa

1444 oxylepis

1527 lugens

1540 trichocolea

1567 reptans

1625 pectinacea

1643 ciliaris

1695 pilosa

1704 spectabilis

(J. R.) Swallen - continued.

1723 hypnoides

1739 sessilispica

1740 Beyrichii

1791 sessilispica

1797 curtipedicellata

1847 Swalleni

1871 oxylepis

2369 prolifera

2390 ciliaris

2708 ciliaris

2770 Elliottii

2803 excelsa

2832 ciliaris

2838 amabilis

2846 tephrosanthes

2852 excelsa

2865 ciliaris

2933 yucatana

5228 Elliottii

5268 bahiensis

5327 Elliottii

5331 bahiensis

5365 bahiensis

5429 hirsuta

5443 trichocolea

(J. R.) Swallen - continued.

5552 Elliottii

5846 neomexicana

5850 perplexa

Mary Taylor

77 oreophila

(B. C.) Tharp

59 curtipedicellata

59 capillaris

98 oxylepis

2087 refracta

2994 curtipedicellata

3079 spectabilis

3124 hyphoides

4100 oxylepis

4779 spectabilis

4838 Barrelieri

5212 Beyrichii

5217 p. p. oxylepis

5261 trichodes

5841 sessilispica

5910 curtipedicellata

6771 oxylepis

6772 Elliottii

7517 cilianensis

C. H. Thompson

138 cilianensis

180 oxylepis

J. B. Thompson

956 amabilis

996 Barrelieri

J. W. Thompson

3849 pectinacea

(J. J.) Thornber

292 pectinacea

(F. W.) Thurow

1 amabilis

4 ciliaris

9 intermedia

19 hirsuta

(I.) Tidestrom

10783 cilianensis

(A.) Tonduz

681 lugens

770 neomexicana

3844 maypurensis

7196 tephrosanthes

9851 simpliciflora

10025 ciliaris

(J.) Torrey

590 lutescens

(J.) Toumey

27 obtusiflora

42 intermedia

J. P. Tracy

5216 Orcuttiana

5361 pilosa

5367 hypnoides

(S. M.) Tracy

136 oxylepis

137 hirsuta

240 cilianensis

3725 amabilis

3726 refracta

3727 amabilis

3728 pilosa

3729 intermedia

3766 Elliottii

3768 hirsuta

3769 Elliottii

3770 spectabilis

4680 ciliaris

4683 oxylepis

4687 Elliottii

6519 simplex

6520 refracta

(S. M.) Tracy - continued.

7168 Tracyi

7374 refracta

7385 p. p. hirsuta

7452 glomerata

7741 oxylepis

7765 hypnoides

7916 cilianensis

7918 intermedia

7922 Beyrichii

7925 sessilispica

8177 diffusa

8192 diffusa

8202 sessilispica

8238 trichodes

8357 stenophylla

8386 tephrosanthes

9057 tephrosanthes

9313 amabilis

(S. M.) Tracy & Lloyd

446 Elliottii

461 oxylepis

469 hirsuta

J. K. Underwood

4554 Frankii

(E. J.) Veleur

145 Elliottii

776 tephrosanthes

(G. P.) Van Eseltine

3274 pectinacea

(L. V.) Velasco

8 maypurensis

(I.) Vélez

1148 pilosa

1155 amabilis

(Fre.) Marie-Victorin

18230 pectinacea

Virlet d'Aoust

1383 tephrosanthes

1390 hirta

(H. von) Türckheim

656 tephrosanthes

925 neomexicana

1292 praetermissa

II

1201 hypnoides

(L. R.) Waldron

1713 hypnoides

(E. J.) Wallace

22 cilianensis

(S.) Watson

1320 cilianensis

1321 lutescens

A. G. Weatherby

13 Frankii

17 pectinacea

C. A. Weatherby

3588 capillaris

5233 cilianensis

(C. A.) Weatherby & (M. L.) Fernald

6055 pectinacea

(P.) Weatherwax

11 lugens

15 spectabilis

26 hirsuta

37 amabilis

49 glomerata

51 tephrosanthes

71 viscosa

108 intermedia

222 maypurensis

822 charieis

(W. C.) Werner

6796 pectinacea

6813 Frankii

(E.) West

26675 curvula

(A.) Wetzstein

6820 cilianensis

L. A. Wheeler

972 spectabilis

L. C. Wheeler

3346 cilianensis

White

155 pilosa

(E.) Whitehouse

8541 erosa

8543 cilianensis

(A. F.) Whiting

582 neomexicana

857 cilianensis

981 intermedia

1048 pectinacea

(E. G.) Whitney

4703 spectabilis

(K. M.) Wiegand

127 hypnoides

1669 peregrina

7554 capillaris

9219 poaeoides

(I. L.) Wiggins

7448 diffusa

(E. N.) Wilcox

9 pectinacea

46 reptans

L. Williams

9210 hypnoides

(T. A.) Williams

2166 cilianensis

3010 spectabilis

C. M. Wilson

1098 cilianensis

F. Wilson

89 hypnoides

93 pectinacea

94 capillaris

95 spectabilis

(P.) Wilson

1356 hypnoides

(P.) Wilson - continued.

7608 Urbaniana

7828 Urbaniana

(J.) Wolfe

1146 perplexa

(S. E.) Wolff

758 intermedia

2265 diffusa

3343 diffusa

(E. O.) Wooton

239 neomexicana

1050 cilianensis

(C.) Wright

3422 glutinosa

3425 excelsa

W. G. Wright

1318 diversiflora

(F. L.) Wynd & (C. H.) Mueller

200 Palmeri

(A. H.) Young

397 pilosa

(T. G.) Yuncker, (R. F.) Dawson & (H.R.) Youse

5684 arida

5797 hirta

5797 glomerata

EXSICCATAE

Amer(ican) Gra(asses) Nat(ional) Herb(arium)

689 hypnoides

690 glomerata

691 cubensis

693 Elliottii

Biltmore Herb(arium)

381a hirsuta

384b spectabilis

384c hirsuta

3886a Elliottii

3889a p. p. pectinacea

3889a p. p. virescens

3890a ciliaris

5725 spectabilis

8341b amabilis

(A.) Kneuck(er) Gram(ineae) Exsicc(atae)

(Lieferung) IV

116 pectinacea

118 hypnoides

F. Lindheimer Fl(ora) Tex(ana) Exsicc(atae)

Fasc(icle) IV

736 trichodes

Pl(antae) Exsicc(atae) Gray(ae)

120 Frankii

414 pectinacea

Herb(arium) Inst(itute) Agric(ulture) Oka

24396 peregrina

San Antonio Herb(arium)

1412 Silveana