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Robert G. Brown
Iowa State College

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Notes on the Grasses of Southeastern Iowa

ROBERT G. BROWN

In 1933, Cratty (6) listed the grasses of Iowa, represented by specimens in the Iowa State College herbarium, in his paper "THE IOWA FLORA." Twenty-eight years earlier, Pammel, Ball and Lamson-Scribner (23) published "THE GRASSES OF IOWA, PART II," the only more or less complete treatment of Iowa grasses. Additional specimens of grasses have been collected in numerous localities since the appearance of these two papers; changes in the Rules of Botanical Nomenclature, together with detailed studies of certain genera, have made necessary some changes in the scientific names of Iowa grasses. For these two reasons, a recapitulation of present knowledge about Iowa grasses has seemed desirable.

As a point of beginning for such a recapitulation, an eleven-county area in the southeastern corner of the state was selected. This area includes the following counties: Davis, Des Moines, Henry, Jefferson, Keokuk, Lee, Louisa, Muscatine, Van Buren, Wapello and Washington. Grass specimens, from these counties, have been studied in the following herbaria: Iowa State College, Ames (ISC), Iowa Wesleyan College, Mt. Pleasant (IWC), Parsons College, Fairfield (PC) and State University of Iowa (SUI); the letters in parentheses are used in the annotated list of species to identify the herbaria in which particular specimens are deposited. In addition to these four herbaria, the grasses in the herbarium of Grinnell College, Grinnell, were examined but no specimens from the eleven-county area under consideration in this paper were found therein.

A total of 138 species and 4 additional varieties of grasses are now definitely known from southeastern Iowa. Six other species and one variety, although definitely known from other parts of Iowa, have been reported without confirmation from the southeastern area; these are indicated by an asterisk in the annotated list which follows. Three species—*Aegilops cylindrica* L., *Elymus interruptus* Buckl. and *Eragrostis spectabilis* (Pursh.) Steud.—are reported for the first time for Iowa; these are indicated by double asterisks in the annotated list.

Nomenclature used in this paper is almost entirely in accord with that of Hitchcock (16) in his "MANUAL OF THE GRASSES OF THE UNITED STATES," the two exceptions being *Diarrhena festucoides* Raf. and *Paspalum ciliatifolium* var. *stramineum* (Nash) Fernald. No attempt has been made here to give complete synonymy for the species included. When a name used by Cratty (6) or Pammel, Ball and Lamson-Scribner (23), or in the 7th edition of "GRAY'S NEW MANUAL OF BOTANY" differs from that used in the present paper, the appropriate synonym has been included. The source of these synonyms is identified by the bracketed names which follow each synonym; "[Pammel]"

is used as a convenient abbreviation for the tri-authored volume on Iowa grasses.

The more common and widespread species of grasses in southeastern Iowa are listed in this paper by name only. Known distribution within southeastern Iowa is given for each of the 40 species and 3 varieties which may be considered as rare in this section of the state. A tabulation indicating the number of species known, or re-

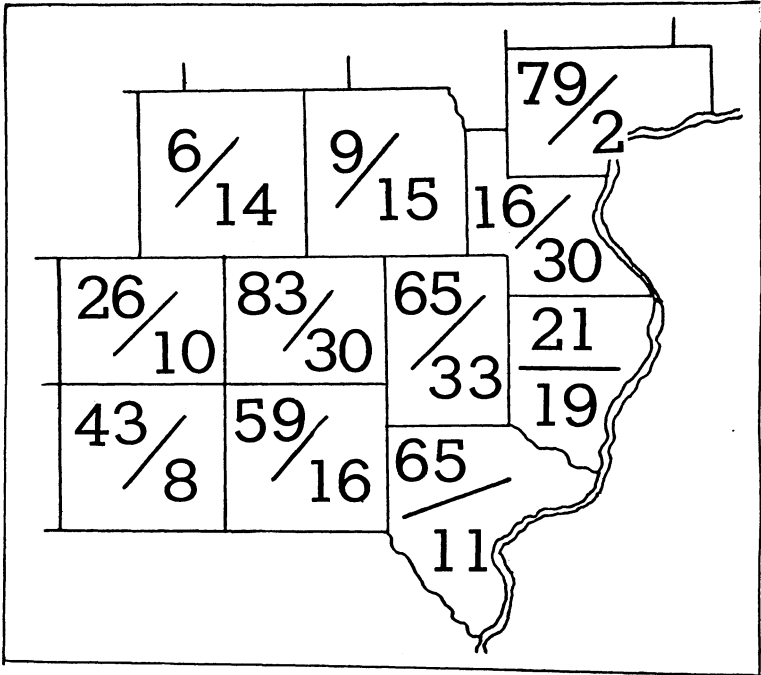


Fig. 1—Notes on the Grasses of Southeastern Iowa.

ported without confirmation from each of the eleven counties is presented in the form of a map (Figure 1). The number of species definitely known from each of the counties is given as the numerator of a fraction, and the number of unconfirmed species is given as the denominator of the fraction.

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Annotated List of Species and Varieties

- **1. *AEGILOPS CYLINDRICA* L. Has been observed growing $\frac{1}{4}$ mile west of depot along C. M. & St. P. railroad near Cranston, Muscatine Co.; no specimen obtained. This species apparently has not been previously reported for Iowa.
- *2. *AGROPYRON PAUCIFLORUM* (Schwein.) Hitchc.; *A. tenerum* Vasey [PAMMEL, GRAY]. Reported from Muscatine Co. (2).
3. *AGROPYRON REPENS* (L.) Beauv.
4. *AGROPYRON SMITHII* Rydb.; *A. occidentale* Scribn. [PAMMEL]; *A. occidentale* var. *molle* Scribn.
5. *AGROSTIS ALBA* L.
6. *AGROSTIS HYEMALIS* (Walt.) B. S. P.; *A. scabra* Willd. [PAMMEL].
7. *AGROSTIS PERENNANS* (Walt.) Tuckerm.
8. *AGROSTIS STOLONIFERA* L. Specimen examined: Muscatine Co. (ISC); perhaps introduced by owner of land on which collected.
9. *ALOPECURUS CAROLINIANUS* Walt. *A. geniculatus* of authors, not of L. [CRATTY].
10. *ANDROPOGON FURCATUS* Muhl.; *A. provincialis* Lam. [PAMMEL].
11. *ANDROPOGON HALLII* Hack. A rare species that has escaped cultivation in Muscatine Co. Specimens examined: two, collected by Barnes and Miller (1417) at Fairport along the C. R. I. & P. railroad (ISC).
12. *ANDROPOGON SCOPARIUS* Michx.
13. *ANDROPOGON VIRGINICUS* L. Specimen examined: Wapello, collected by Hayden (8446) near Floris (ISC).
14. *ARISTIDA BASIRAMEA* Engelm.
15. *ARISTIDA DICHOTOMA* Michx. A rare grass in Iowa. Specimens examined: Davis, Wapello (ISC). Unconfirmed reports: Des Moines, Henry, Jefferson, Louisa, Van Buren, Washington (22, 24), Muscatine (22, 23, 24). Note: these reports undoubtedly were based on misidentifications of specimens of *A. oligantha* Michx.
16. *ARISTIDA LONGESPICA* Poir.; *A. gracilis* Ell. [Pammel].
18. *ARISTIDA TUBERCULOSA* Nutt.
- *19. *AVENA FATUA* L. Unconfirmed report: Muscatine (23).
20. *AVENA SATIVA* L. Sometimes escaped.
21. *BOUTELOUA CURTIPENDULA* (Michx.) Torr.
22. *BOUTELOUA HIRSUTA* Lag.
23. *BRACHYELYTRUM ERECTRUM* (Schreb.) Beauv.
24. *BROMUS CILIATUS* L. Specimen examined: Des Moines Co., collected by Pammel, 1930, Burlington (ISC). Unconfirmed report: Muscatine (23).
25. *BROMUS INERMIS* Leyss.
26. *BROMUS JAPONICUS* Thunb.
27. *BROMUS LATIGLUMIS* (Shear.) Hitchc.
28. *BROMUS PURGENS* L.
29. *BROMUS SECALINUS* L.
30. *BROMUS TECTORUM* L. Note: this species is frequently misidentified and reported as *Avena fatua* L.

31. *BUCHLOE DACTYLOIDES* (Nutt.) Engelm. Specimen examined: Wapello (ISC). Note: Introduced into Muscatine Co. from Nebraska in 1937 by Brown. Planted as a lawn grass on the farm of Robert Gregg, West Liberty, Iowa, and is still aggressively persistent.
32. *CALAMAGROSTIS CANADENSIS* (Michx.) Beauv.
- *32A. *CALAMAGROSTIS CANADENSIS* VAR. *MACOUNIANA* (Vasey) Stebbins. Unconfirmed Report: Lee (10).
33. *CALAMOVILFA LONGIFOLIA* (Hook.) Scribn. Specimen examined: Muscatine (ISC). Note: This grass is not common in southeastern Iowa, although in northwestern Iowa it is common in dry, sandy soil.
34. *CENCHRUS PAUCIFLORUS* (Benth); *C. carolinianus* Walt. [GRAY]; *C. tribuloides* L. [PAMMEL, GRAY].
35. *CHLORIS VERTICILLATA* Nutt. Specimen examined: Wapello (ISC). Note: A rare grass in Iowa. Collected in a yard in Ottumwa by Richard M. Hurd, 1938.
36. *CINNA ARUNDINACEA* L.
37. *DACTYLIS GLOMERATA* L.
38. *DANTHONIA SPICATA* (L.) Beauv.
39. *DIARRHENA FESTUCOIDES* Raf.; *D. americana* Beauv. [HITCHCOCK]; *D. diandra* (Michx.) Wood. [CRATTY, GRAY]; Specimen examined: Davis, Henry, Lee, Van Buren, Wapello (all ISC). Note: Fernald (7, 8) has discussed the proper name for this species.
40. *DIGITARIA FILIFORMIS* (L.) Koel.; *Panicum filiformis* L. [PAMMEL].
41. *DIGITARIA ISCHAEMUM* (Schreb.) Muhl.; *D. humifusa* Pers. [GRAY]; *Panicum glabrum* Gaud. [PAMMEL].
42. *DIGITARIA SANGUINALIS* (L.) Scop.; *Panicum sanguinale* L. [PAMMEL]; *Paspalum sanguinale* (L.) Lam.
43. *ECHINOCHLOA CRUSGALLI* (L.) Beauv.; *Panicum crusgalli* L. [PAMMEL].
- 43A. *ECHINOCHLOA PUNGENS* (Poir.) Rydb. Specimen examined: Jefferson (PC, escaped from cultivation).
- *44. *ECHINOCHLOA WALTERI* (Pursh.) Heller. Unconfirmed report: Louisa (10).
45. *ELEUSINE INDICA* (L.) Gaertn.
46. *ELYMUS CANADENSIS* L.; *E. canadensis* forma *glaucofolius* (Muhl.) Fern. [SONS].
- **47. *ELYMUS INTERRUPTUS* Buckl. Note: Reported from Des Moines and Henry counties by Sons (25, unpublished) on the basis of specimens in the D. L. Savage herbarium: Unconfirmed.
48. *ELYMUS VILLOSUS* Muhl.; *E. striatus* Willd. [CRATTY]; *E. striatus* var. *ballii* Pammel [PAMMEL]; *E. striatus* var. *villosus* (Muhl.) A. Gray [GRAY].
49. *ELYMUS VIRGINICUS* L.
Bush.; *E. glabroflorus* (Vasey) Scribn. and Ball [CRATTY].
- 49A. *ELYMUS VIRGINICUS* VAR. *INTERMEDIUS* (Vasey) Bush.; *E. hirsutiglumis* Scribn. [CRATTY, PAMMEL]; *E. virginicus* var. *hirsutiglumis* (Scribn.) Hitchc. [GRAY].
- 49B. *ELYMUS VIRGINICUS* VAR. *SUBMUTICUS* Hook.
50. *ERAGROSTIS CAPILLARIS* (L.) Nees.
51. *ERAGROSTIS CILIANENSIS* (All.) Link; *E. major* Host [CRATTY, PAMMEL]; *E. megastachya* (Koel.) Link [GRAY].

52. *ERAGROSTIS FRANKII* C. A. Meyer.
53. *ERAGROSTIS HYPNOIDES* (Lam.) B.S.P.; *E. reptans* (Michx.) Nees [CRATTY].
54. *ERAGROSTIS PECTINACEA* (Michx.) Nees.
55. *ERAGROSTIS PILOSA* (L.) Beauv.; *E. purshii* Schrad. [PAMMEL].
- **56. *ERAGROSTIS SPECTABILIS* (Pursh.) Steud.; *E. pectinacea* of some authors, not of (Michx.) Nees. Specimens examined: Davis (ISC), Jefferson (PC), Lee (ISC), Muscatine (ISC), Van Buren (PC). Note: Except for the map in Hitchcock's "Manual", this is apparently the first report of this species for the state, other Iowa authors having included the specimens under *E. pectinacea*, which is an annual. *E. spectabilis* is a perennial and has other characters which distinguish it from *E. pectinacea*.
57. *ERAGROSTIS TRICHODES* (Nutt.) Nash. Specimen examined: Muscatine (ISC). Note: Specimen 23,059, Mackenzie, 1894; specimen 23,066, Reppert 1895; specimen 7728, Pammel.
58. *FESTUCA ELATIOR* L.; *F. elatior* var. *pratensis* (Huds.) A. Gray [GRAY]; *F. pratensis* Huds. [PAMMEL].
59. *FESTUCA OBTUSA* Biehler; *F. nutans* Willd. [GRAY]; *F. shortii* of author, not of Kunth. [PAMMEL].
60. *FESTUCA OCTOFLORA* Walt.; Specimen examined: Lee (ISC); Unconfirmed reports: Henry (24), Louisa, Muscatine (3, 23).
61. *FESTUCA RUBRA* L.; Specimen examined: Jefferson (PC); Unconfirmed report: Muscatine (23).
62. *GLYCERIA BOREALIS* (Nash.) Batchelder.
- *63. *GLYCERIA FLUITANS* (L.) R. Br.; Unconfirmed reports: Henry, Muscatine (23).
64. *GLYCERIA SEPTENTRIONALIS* Hitchc.; Specimen examined: Jefferson (PC); Note: Apparently the only previous report of this species for Iowa is by Hitchcock (16).
65. *GLYCERIA STRIATA* (Lam.) Hitch.; *G. nervata* (Willd.) Trin. [CRATTY].
66. *HOLCUS LANATUS* L.; Specimen examined: Louisa (ISC, escape).
67. *HORDEUM JUBATUM* L.
68. *HORDEUM PUSILLUM* Nutt.
69. *HYSTRIX PATULA* Moench.; *Asprella hystrix* (L.) Willd. [PAMMEL].
70. *KOELERIA CRISTATA* (L.) Pers.
71. *LEERSIA LENTICULARIS* Michx.; Specimen examined: Muscatine (ICS, SUI). Note: Reppert collected this species along the Mississippi river among the willows near Fairport.
72. *LEERSIA ORYZOIDES* (L.) Swartz.
73. *LEERSIA VIRGINICA* Willd.
74. *LEPTOLOMA COGNATUM* (Schult.) Chase; *Panicum cognatum* Schult. [PAMMEL].
75. *LOLIUM MULTIFLORUM* Lam.
76. *LOLIUM PERENNE* L.
- *77. *LOLIUM TEMULENTUM* L. Unconfirmed Report: Louisa, Muscatine (22, 24).
- *78. *MELICA MUTICA* Walt.; *M. diffusa* Pursh. [PAMMEL]. Unconfirmed report: Henry, Muscatine (23), Jefferson (11).

79. *MELICA NITENS* (Scribn.) Nutt.; Specimens examined: Henry, Van Buren (ISC, collected by Hitchcock).
80. *MUHLENBERGIA BRACHYPHYLLA* Bush.; Specimen examined: Davis (ISC, collected by Hayden near Floris, 9285). Note: Previously reported in Iowa only from Clay Co. (15).
81. *MUHLENBERGIA FOLIOSA* (R. & S.) Trin.; Specimen examined: Wapello (ISC, collected by Hayden).
82. *MUHLENBERGIA FRONDOSA* (Poir.) Fern.; *M. mexicana* of authors, not of (L.) Trin. [GRAY].
83. *MUHLENBERGIA RACEMOSA* (Michx.) B. S. P.; *M. glomerata* Trin. [PAMMEL].
84. *MUHLENBERGIA SCHREBERI* Gmel.; *M. diffusa* Schreb. [PAMMEL].
85. *MUHLENBERGIA SOBOLIFERA* (Muhl.) Trin.
86. *MUHLENBERGIA SYLVATICA* Torr.; *M. torreyi* of authors, not of Hitchc. [CRATTY]; Specimen examined: Davis (ISC). Unconfirmed report: Muscatine (23).
87. *MUHLENBERGIA TENUIFLORA* (Willd.) B. S. P.; *M. willdenovii* (Trin.) [PAMMEL]. Specimen examined: Muscatine (ISC).
88. *ORYZOPSIS RACEMOSA* (J. E. Smith) Ricker; *O. melanocarpa* Muhl. [PAMMEL].
- *89. *PANICUM AGROSTOIDES* Spreng.; Unconfirmed report: Lee (10).
90. *PANICUM CAPILLARE* L.
91. *PANICUM CLANDESTINUM* L. Specimens examined: Muscatine, Van Buren (SUI), Jefferson (PC), Davis (ISC).
92. *PANICUM DEPAUPERATUM* Muhl.
93. *PANICUM DICHOTOMIFLORUM* Michx.; *P. proliferum* of authors, not of Lam. [PAMMEL].
94. *PANICUM HUACHUCAE* Ashe.
95. *PANICUM IMPLICATUM* Scribn. Specimens examined: Jefferson (PC), Lee, Van Buren (ISC).
96. *PANICUM LATIFOLIUM* L. *P. macrocarpon* Le Conte [PAMMEL].
97. *PANICUM LEIBERGII* (Vasey) Scribn.
98. *PANICUM MILIACEUM* L. Specimen examined: Muscatine (ISC).
99. *PANICUM PERLONGUM* Nash. Specimen examined: Davis (ISC); previously reported only from northwestern Iowa (6).
100. *PANICUM PRAECOCIUS* Hitchc. & Chase.
101. *PANICUM SCHRIBNERIANUM* Nash.
102. *PANICUM TENNESSEENSE* Ashe.; *P. lanuginosum* of authors, not of Ell. [PAMMEL]. Specimen examined: Muscatine (SUI). Note: The report of this species from Jefferson Co. (11) was based on a misidentification of a specimen of *P. praecocius* Hitchc.
103. *PANICUM VIRGATUM* L.
104. *PASPALUM CILIATIFOLIUM* Michx., VAR. *STRAMINEUM* (Nash) Fern.; *P. ciliatifolium* Michx. [PAMMEL]. *P. stramineum* Nash [CRATTY]; *P. pubescens* Muhl. [CRATTY].
105. *PHALARIS ARUNDINACEA* L.
106. *PHALARIS CANARIENSIS* L. Specimen examined: Jefferson (PC). Note: Rare in southeastern Iowa. A large planting was made on the E. M. Rex farm, Lake Township, Muscatine

County in 1937. Only an occasional plant was observed in 1945.

107. *PHLEUM PRATENSE* L.
108. *PHRAGMITES COMMUNIS* Trin.
109. *POA ANNUA* L.
110. *POA CHAPMANIANA* Scribn. Specimens examined: Louisa (Carver, 10,412), Wapello (L. H. Pammel, 1347) (both ISC), Wapello (SUI). Unconfirmed reports: Henry, Van Buren, Washington (23).
111. *POA COMPRESSA* L.
112. *POA LANGUIDA* Hitchc.; *P. debilis* Torr. [CRATTY]. Specimen examined: Muscatine (ISC).
113. *POA PALUSTRIS* L.; *P. triflora* Gilib. [GRAY]; *P. flava* of authors, not of L. [PAMMEL].
114. *POA PRATENSIS* L.
115. *POA SYLVESTRIS* A. Gray. Specimen examined: Davis (ISC).
116. *POA TRIVIALIS* L. Specimens examined: Davis, Wapello (ISC); Unconfirmed reports: Davis (23).
117. *SECALE CEREALE* L.
118. *SETARIA ITALICA* (L.) Beauv.
119. *SETARIA LUTESCENS* (Weigel) F. T. Hubb.; *S. glauca* (L.) Beauv. [CRATTY, PAMMEL, GRAY].
120. *SETARIA VERTICILLATA* (L.) Beauv.
121. *SETARIA VIRIDIS* (L.) Beauv.
122. *SORGHASTRUM NUTANS* (L.) Nash; *Andropogon nutans* L. [PAMMEL].
123. *SORGHUM HALEPENSE* (L.) Pers.; *Andropogon halepensis* (L.) Brot. [PAMMEL]. Specimen examined: Lee, Muscatine (ISC).
124. *SORGHUM VULGARE* Pers.
125. *SPARTINA PECTINATA* Link; *S. michauxiana* Hitchc. [CRATTY, GRAY]; *S. cynosuroides* of authors, not of Roth [PAMMEL].
126. *SPHENOPHOLIS OBTUSATA* (Michx.) Scribn.; *Eatonia obtusata* (Michx.) A. Gray. [PAMMEL].
127. *SPHENOPHOLIS INTERMEDIA* (Rydb.) Rydb.; *S. pallens* (Spreng.) Scribn. [CRATTY]; *Eatonia pennsylvanica* of authors, not of A. Gray. [PAMMEL].
128. *SPOROBOLUS ASPER* (Michx.) Kunth.; *S. longifolius* (Torr.) Wood. [PAMMEL].
129. *SPOROBOLUS CLANDESTINUS* (Spreng.) Hitchc.; *S. canovirens* Nash. Specimens examined: Jefferson, Henry (PC).
130. *SPOROBOLUS CRYPTANDRUS* (Torr.) A. Gray.
131. *SPOROBOLUS NEGLECTUS* Nash.
132. *SPOROBOLUS VAGINAEFLORUS* (Torr.) Wood.
133. *STIPA SPARTEA* Trin.
134. *TRIODIA FLAVA* (L.) Smyth; *Tridens flava* (L.) Hitchc. [GRAY]; *Triodia cuprea* Jacq. [PAMMEL].
135. *TRIPLASIS PURPUREA* (Walt.) Chapm.; *Trioda purpurea* (Walt.) Smyth [PAMMEL].
136. *TRIPSACUM DACTYLOIDES* (L.) L.; Specimens examined: Jefferson, Lee, Muscatine (ISC).
137. *ZIZANIA AQUATICA* L.; Specimens examined: Muscatine

(ISC). Note: This grass was introduced into Muscatine County as a wild-fowl food plant and has maintained itself in a few localities.

DEPARTMENT OF BOTANY,
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