Contributions to the Flora of Iowa.

By J. C. Arthur.

The following list comprises all the species of Iowa plants brought to my notice up to date, and not mentioned in my "Flora of Iowa." Specimens of each from which the names were determined, are either in my private herbarium, or in the herbarium of the Agricultural College, and were all furnished by Dr. Geo. E. Ehinger of Keokuk, J. G. Haupt of Davenport, Prof. C. E. Bessey of Ames, and R. Burgess of Ames.

76a Draba verna, L. Ames.
97a Hypericum prolificum, L. Keokuk.
110a Lychnis vespertina, Sibth. Decorah.
236a Agrimonia parviflora, Ait. Keokuk.
353a Eupatorium altissimum, L. Harrison County.
362a Aster Shortii, Boott. Keokuk.
365a Aster ericoides, L. Keokuk.
369a Aster tenuifolius, L. Plymouth County.
465a Senecio aureus, L. Var. obovatus, Gr. Ames.
422a Aphyllon uniflorum, T. & G. Keokuk.
427a Collinsia verna, Nutt. Keokuk.
532a Conoeba multifida, Benth. Keokuk.
539a Veronica Americana, Schw. Keokuk.
579a Monarda punctata, L. Cedar Rapids.
638a Apocynum cannabinum, L. Var. pubescens, DC. Blackhawk Co.
644a Asclepias quadrifolia, Jacq. Keokuk.
670a Froelichia Floridana, Moq. Cedar Rapids.
751a Salix sericea, Marshall. Plymouth County.
754a Salix lucida, Muhl. Plymouth County.
811a Trillium erectum, L. Decorah.
843a Cypurus inflexus, Muhl. Ames.
934a Glyceria fluitans, R. Br. Ames.

Lespedeza capitata, var. angustifolia of the "Flora of Iowa," (No. 209), should be changed to L. leptostachya, Engelm. The following description of this new species is from Proceedings American Academy of Arts and Sciences, Vol. XII (Dec. 1876): "Lespedeza leptostachya, Engelm. —Clothed with appressed, silky pubescence; leaves linear; pediole longer than the terminal petiolo; spikes paniculate, slender, somewhat loosely flowered, rather longer than the peduncle; legume equal to or slightly longer than the calyx. Minnesota, T. J. Hale; Illinois, Bebb.; Iowa, J. C. Arthur, Bessey. Has passed for L. angustifolia, from which its slender spikes and paniculate habit at once distinguish it."

Many names have been reported from different parts of the State, but not being accompanied by specimens, it is thought best not to include them in this list. Additions will be made as often as sufficient material accumulates.

Botanical Laboratory, Agricultural College, Ames, Iowa; March, 1877.
August 2d, 1878.—Biological Section.

Four members present.
The following paper was read:

Contributions to the Flora of Iowa—No. III.

BY J. C. ARTHUR.

The following accessions have been received since the publication in March, 1877, of my first list of additions.* They have been verified by the examination of specimens sent by those reporting the names. I am indebted for all but ten names to Geo. D. Butler, of Almont, Clinton County, Dr. Geo. E. Ehinger, of Keokuk, R. Burgess, of Ames, E. W. Holway, of Decorah, Dr. J. J. Davis, late of Vinton, and Prof. C. E. Bessey, of Ames. I desire to gratefully acknowledge their kind consideration in furnishing specimens, and the interest they have taken in extending the list of the State flora.

*Ante, p. 136.
CONTRIBUTIONS TO THE FLORA OF IOWA—ARTHUR.

42a Brasenia peltata, Pursh. Ames.
52a Nasturtium sessiliflorum, Nutt. Clinton.
55a Nasturtium lacustre, Gray. Clinton.
62a Arabis hirsuta, Scop. Clinton.
66a Barbarea vulgaris, R. Br. Ames.
97b Hypericum sphærocarpum, Michx. Vinton and Clinton.
101a Hypericum Canadense, L., var. major, Gr. Vinton, Lyons and Ames.
112a Arenaria stricta, Michx. Clinton.
154a Vitis aestivalis, Michx. Clinton.
177a Trifolium reflexum, L. Vinton and Clinton county.
196a Astragalus Plattensis, Nutt. Harrison county.
206a Desmodium Illinoense, Gray. Ames.
235a Petasites flexuolis, Michx. Clinton.
237a Geum Virginianum, L. Vinton.
250a Rubus Canadensis, L. Clinton.
285b Ammannia humilis, Michx. Vinton.
285c Ammannia latifolia, L. Ames.
364a Aster sagittifolius, Willd. Plymouth county.
366a Aster dumosus, L. Vinton.
372a Aster puniceus, L., var. vimineus, Gr. Ames.
374a Aster amethystinus, Nutt. Charles City and Ames.
428a Helianthus occidentalis, Riddell. Vinton and Clinton.
435a Coreopsis lanceolata, L. Clinton.
438a Coreopsis aristosa, Michx., var. mutica, Gr. Vinton.
471a Cnicus lanceolatus, Hoffm. Clinton.
495a Sonchus oleraceus, L. Cedar Rapids.
512a Plantago Patagonica, Jacq., var. gnaphalioides, Gr. Humboldt.
590a Scutellaria parvula, Michx., var. mollis, Gr. Iowa City.
606a Myosotis verna, Nutt. Vinton.
677a Echinospermum deflexum, Lehm. Clinton.
615a Phlox divaricata, L. Lyons.
616a Phlox bifida, Beck. Vinton.
619a Cuscuta tenuiﬂora, Engelm. Vinton and Keokuk.
625a Physalis pubescens, L. Ames.
696a Ceratophyllum demersum, L. Keokuk.
697a Euphorbia Geyeri, Engelm. Vinton.
777a Potamogeton natans, L. Ft. Dodge.
781a Potamogeton compressus, L. Vinton.
787a Sagittaria heterophylla, Pursh. Clinton.
818a Uvularia sessilifolia, L. Vinton.
850a Hemicarphe subsquarrosa, Nees. Ames.
855a Scirpus fluviatilis, Gray. Ames and Clinton.
856a Scirpus lineatus, Michx. Ames.
862a Carex crus-cori, Shut. Clinton.
863a Carex conjuncta, Booth. Ames.
863b Carex alopecoidea, Tuckerm. Ames.
879a Carex straminea, Schk., var. tenera, Booth. Charles City, Keokuk, Ames.
885a Carex tenuiflora, Schk. Ames.
890a Carex oligocarpa, Schk. Ames and Keokuk.
891a Carex pedunculata, Muhl. Clinton.
893a Carex trichocarpa, Muhl., var. imberbis, Gr. Ames.
895a Carex Grayii, Carey. Ames.
897a Carex squarrosa, L. Keokuk.
901a Alopecurus geniculatus, L. Vinton, Ames and Lyons.
931a Etonia Pennsylvanica, Gray. Ames.
942a Eragrostis pectinacea, Gray. Vinton.
943a Festuca elatior, L. Ames.
950a Lolium perenne, L. Ames.
953a Hordeum pratense, Huds. Keokuk.
972a Panicum depauperatum, Muhl. Vinton.

The following descriptions are of plants named in this list, and not described in Gray's Manual. The range of the species, as given, is that hitherto known and published with the respective descriptions. It will be observed that in each instance it is considerably extended by the localities given above.

Desmodium Illinoense, Gray.—Resembling D. canescens in flowers and foliage, and D. rigidum in inflorescence and fruit; stem (erect, 3-5 feet) and leaves with short rough pubescence; leaflets (2-4 inches long) ovate-oblong or ovate-lanceolate, obtuse, sub-coriaceous, beneath cineraceous, veins and veinlets prominent, strongly reticulated, the lower leaflets nearly equaling the petiole; the persistent stipules and caducous bracts ovate-lanceolate, striate, taper-pointed; racemes simple; pods scarcely over an inch, very shortly stipitate, sinuate on both margins (deeper below); joints 3-5, oval, not exceeding three times.—Illinois, in dry ground. Proc. Amer. Acad., 1870.

Scutellaria parvula, Michx., var. mollis, Gray.—Rather more diffuse, softly pubescent throughout, pubescence somewhat viscid; leaves usually three-fourths of an inch long.—Oquawka, Illinois, on the sandy banks of the Mississippi. Proc. Amer. Acad., VIII, 1873. Dr Gray says: "So different in aspect is this plant from the ordinary S. parvula, that I at first took it for S. Drummondii, and then for a distinct species; but I cannot detect sufficient characters, and there are transitions to the ordinary S. parvula.

Echinoppermum deflexum, Lehm.—Diffusely branched, a foot or so high; leaves from oblong to lanceolate; racemes lax, loosely paniculate, the slender pedicels recurved or deflexed in fruit; flowers soon sparse, 1-3 lines in diameter; nutlets with a triangular mostly naked back (a line long), the margins armed with a close row of flat prickles, their bases often confluent.—Saskatchewan and Winnipeg Valley, Drummond, Bourgeau; Brit. Columbia, Lyall. Siberia to Europe. The American specimens have occasionally some few prickles developed from the rough granulate dorsal face of the nutlets. Gray's Synop. Fl. N. Amer., 1878.

CORRECTIONS.

Amaranthus Blitum (No. 668), of "Flora of Iowa," is A. blitoides,
Watson. The following description is from *Proc. Amer. Acad., XII*, 1877.

**Amarantus (Pyxidium) blitoides, Watson.**—Prostrate or decumbent, the slender stems becoming a foot or two long, glabrous or nearly so; leaves broadly spatulate to narrowly oblanceolate, attenuate to a slender petiole, an inch long or usually less; flowers in small contracted axillary spikelets; bracts nearly a line broad.—Frequent in the valleys and plains of the interior, from Mexico to N. Nevada and Iowa, and becoming introduced in some of the Northern States eastward. It somewhat resembles the *A. Blitum, L.*, of the Old World, and has been mistaken for it.

**Aster Novi-Belgii (No. 371)** is to be omitted from the list. The specimens on which the determination was made, prove to belong to a much commoner species.

A few very interesting names are withheld for further verification. Collectors will confer a favor if they will forward information in regard to the State flora. It is proposed to publish additions as fast as consistent with accuracy.

*Botanical Laboratory, Agricultural College, Ames, Iowa; August, 1874.*
Contributions to the Flora of Iowa—No. IV.

BY J. C. ARTHUR.

The activity of resident collectors in extending the state flora has greatly increased since 1876. The quality of the specimens sent has also improved, as well as the liberality with which they are provided for determination or verification.

It will be seen by the following list, that the different portions of the state are quite fairly represented, except the three southern tiers of counties west of the immediate vicinity of the Mississippi. This large section when explored, will give a long list of additions. All the western border of the state may be expected to yield many very interesting species which do not extend further east; while no locality in the whole state yet seems to be exhausted.

The names of the present list are for the preceding two years. The specimens for them have been furnished by the following persons, to whom I am wholly indebted for the material for the present report: John Leiberg, Seney, Plymouth Co., M. E. Jones, Grinnell, Mrs. M. C. Carter, Hesper, Winneshiek Co., E. W. Holway, Decorah, Geo. D. Butler, late of Almont, Clinton Co., Fred. Reppert, Muscatine, Dr. Geo. E. Ehinger, Keokuk, R. Burgess, Ames, Dr. J. J. Davis, formerly of Vinton. A specimen of No. 544 is in the Harvard Herbarium at Cambridge, communicated by Dr. Vasey.

51a Nasturtium officinale, R. Br. Decorah.
65a Arabis perfoliata, Lam. Vinton.
84a Viola lanceolata, L. Muscatine.
90a Viola pedata, L., var. bicolor, Pursh. Muscatine.
124a Talinum teretifolium, Pursh. Lyons Co.
237b Geum macrophyllum, Willd. Clinton Co.
244b Potentilla tridentata, Ait. Hesper.
247a Rubus triflorus, Rich. Hesper.
299a Archemora rigida, DC., var. ambiguus, T. & G. Kellogg and Vinton.
302a Thaspium aureum, Nutt., var. apertum, Gr. Grinnell.
306a Berula angustifolia, Koch. Sioux Co.
338a Galium cirsiezans, Michx. Keokuk.
404a Silphium trifoliatum, L. Clinton Co.
457\(^a\) Artemisia serrata, Nutt. Mason City and Grinnell.
493\(^a\) Mulgedium pulchellum, Nutt. Ames and Grinnell.
511\(^a\) Plantago Rugelii, Dec. Ames and Grinnell.
519\(^a\) Anagallis arvensis, L. Keokuk.
520\(^a\) Utricularia biflora, Lam. Muscatine.
544\(^a\) Gerardia tenuifolia, Vahl., var. macrophylla, Benth. Council Bluffs.
545\(^a\) Gerardia flava, L. Clinton Co.
596\(^a\) Lamium amplexicaule, L. Keokuk.
619\(^b\) Cuscuta inflexa, Engelm. Grinnell.
620\(^a\) Cuscuta Gronovii, Willd., var. latiflora, Engelm. Hesper.
628\(^a\) Datura Tatula, L. Muscatine, Grinnell and Cedar Rapids.
650\(^a\) Aceraria lanuginosa, Dec. Plymouth Co.
662\(^a\) Chenopodium urbicum, L. Keokuk, Des Moines, Nevada, and Grinnell.
676\(^a\) Polygonum hydropiperoides, Mx. Grinnell, Plymouth Co.
678\(^a\) Polygonum Muhlenbergii, Watson. Plymouth County and Muscatine.
792\(^a\) Habenaria hyperborea, R. Br. Hesper.
792\(^b\) Habenaria Hookeri, Torr. Hesper.
796\(^a\) Microstylis ophioglossoides, Nutt. Decorah and Hesper.
817\(^a\) Veratrum Woodii, Robbins. Burlington.
826\(^a\) Erythronium Americanum, Smith. Hesper.
829\(^a\) Allium cernum, Roth. Plymouth Co. and Decorah.
835\(^a\) Juncus Vaseyi, Engelm. Clinton Co.
841\(^a\) Commelyna Virginica, L. Muscatine.
843\(^b\) Cyperus acuminatus, Torr. Plymouth Co.
850\(^a\) Eleocharis obtusa, Schultes. Keokuk, Kellogg, Clinton Co. and Plymouth Co.
858\(^a\) Simbrystis capillaris, Gr. Keokuk.
861\(^a\) Carex teretiuscula, Good. Grinnell.
885\(^b\) Carex granularis, Muhl. Clinton Co.
892\(^a\) Carex Richardsonii, R. Br. Grinnell and Plymouth Co.
893\(^b\) Carex trichocarpa, Mx. Grinnell.
893\(^c\) Carex riparia, Curtis. Grinnell.
903\(^a\) Viola aspera, Beauv. Ames.
924\(^a\) Aristida purpurea, Nutt. Plymouth Co.
925\(^a\) Boutelousa oligostachya, Torr. Plymouth Co.
927\(^a\) Eleusine Indica, Gaert. Keokuk.
The following descriptions are of plants in this list not described in Gray's Manual, 5th edition.

**Artemisia Serrata, Nutt.**—Stem tall and herbaceous; leaves lanceolate, acuminate at either extremity, margin serrate, upper side smooth, under tomentose and white; flowers paniculate, partly glomerate, erect; calyx small cylindric-ovate, and nearly smooth.—Near the Prairie du Chien, on the banks of the Mississippi, also on the banks of the Missouri, in open alluvial soils. Stem 5–6 feet high. *Nuttall's Genera, 11, 142.*

**Senecio Lugens, Richards.**—Perennial, white-tomentose, deciduously lanceolate or nearly smooth; stem 1½–2 feet high, often several from one root; leaves obscurely veined, 2–8 inches long, ½–2 inches wide, the radical obtuse, narrowed into a petiole, cauleine sessile and partly clasping; heads variable in size, usually rather large; involucre with a few bractlets at the base; scales linear-lanceolate, acute, with blackish-purple tips; rays 10–12, oblong-linear, twice as long as the involucre; achenia glabrous.

Var. *Hookeri, Eaton.*—Deciduously tomentose or smooth; stem simple; leaves entire or glandular-toothed, the radical oblong-spatulate, cauleine lanceolate, acute, clasping; corymb dense; scales of the involucre conspicuously spathulate. *Flor. Col., Port. & Cowl.*

**Plantago Rigeli, Decaisne.**—Leaves paler than in *P. major,* commonly thinner; spikes long and thin, attenuate at the apex; sepals oblong, all as well as the similar bracts acutely carinate; capsules erect in the spike, cylindraceous-oblong (somewhat over 2 lines long, one-sixteenth inch in diameter), about twice the length of the calyx, circumscissile much below the middle; ovules 6–10; seeds 4–9, oval-oblong (about a line long), opaque and dull brown, not reticulated.—*P. Kamtschatica, Hook.* Gray's Manual, ed. 5, not of Cham. Canada to Illinois and south to Georgia and Texas; probably truly indigenous, as no trace of it is found in the Old World. *Gray's Synop. Fl. N. Amer.*

**Gerardia Tenuifolia, Vahl., var. Macrophylla, Benth.**—Stouter; leaves larger, 1½–2 inches long and almost 2 lines wide, scabrous; pedicels ascending; calyx-teeth usually larger; corolla little over ½ inch long. Western Iowa to Colorado and W. Louisiana. *Gray's Synop. Fl. N. Am.*


**Polygonum Muhlenbergii, Watson.**—Perennial, in muddy or dry places, often 2–3 feet high, scabrous with short appressed or glandular hairs, especially upon the leaves and upper stems; leaves thin, rather broadly lanceolate, long-acuminate, usually rounded or cordate at base, 4–7 inches long, on short stout petioles (½–1 inch long) from near the base of the naked sheath; flowers and fruit nearly as in *P. amphibium,* but spikes more elongated (1–3 inches long), often in pairs.—New England to Texas and westward to Washington Territory and N. California. *P. amphibium, var. Muhlenbergii, Meisn.* in DC. Prodr., and including most of the var. *terrestre* of American botanists. *Proc. Amer. Acad., XIV, 1879.*

**Aristida Purpurea, Nutt.**—Perennial; culms 6–15 inches high, simple, erect, slender, mostly glabrous; sheaths narrow, scabrous, exceeding the internodes, pilose at the throat; leaves very narrow, convolute, ½–10 inches long; panicle slender, erect or flaccid, 3–6 inches long, loosely few-flowered; glumes purplish, the upper one 6–9 lines long, about twice exceeding the lower, and longer than the flower, bident and shortly awned; flower densely short-pilose at the base, scabrous above, 6 lines long, the awns equal or nearly so, separate to the base, not jointed, 1–2 lines long, scabrous.—From Western Texas and New Mexico to Arkansas and Colorado. *Watson in King's Rep.*
Corrections and Explanations.

Boutula angustifolia (No. 306a) is described in Gray’s Manual under the synonym of Sium angustifolium. See Watson’s Bib. Index N. Am. Bot.

For 422a and 427a of the “Contributions to the Flora of Iowa” for 1877 read 522a and 527a.

Gerardia setacea of “Flora of Iowa” (No. 545), and of Gray’s Manual (not of Walt.) is G. Skinneriana, Wood. The true G. setacea of Walter is a Southern species. See Syn. Fl. N. Am., II, 294.

Stachys palustris, L., var. cordata, Gr. (No. 596) should be changed to S. palustris, L., as the plant (common throughout the state) is the typical form, and not the variety. The var. cordata, is not likely to be found in Iowa: its range is much further south. See Syn. Fl. N. Am.

Lithospermum longiflorum, Spreng. (No. 605) is to be expunged from the “Flora of Iowa”. The plant to which this name has been applied is only an early flowering state of L. angustifolium, Michx. The discovery of the identity of the two forms was first made by M. S. Bebb of Illinois in 1873. See Amer. Nat., VII, 691. For the revised description of the species see Gray’s Syn. Fl. N. Am. II, 205.

Physalis Virginica (No. 626) should be written P. Virginiana, Mill. See Syn. Fl. N. Am., II, 235.

Some specimens remain over that have not been satisfactorily determined, for the most part because not complete enough. Among them are several interesting forms belonging to the genus Astragalus. It would be advantageous to have these reports made annually, and the only obstacle is the lack of material. Any information relating to the flora of Iowa will be gladly received; and every possible assistance will be rendered any person who desires to help in this work.

University of Wisconsin, Madison, Wis., December, 1880.
Contributions to the Flora of Iowa—No. V.*

By J. C. Arthur.

The following list comprises the well authenticated additions to the previously published lists of Iowa plants. The material for it has been contributed by R. I. Cratty of Estherville, Emmett Co.; E. W. Holway of Decorah; John Leiberg late of Seney, Plymouth Co.; Dr. Geo. E. Ehinger of Keokuk; Prof. C. E. Bessey of Ames; Mrs. M. C. Carter of Hesper, Winneshiek Co.; M. E. Jones of Salt Lake City, Utah; and the writer.

<table>
<thead>
<tr>
<th>No.</th>
<th>Species</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>244a</td>
<td><em>Potentilla palustris</em>, Scop.</td>
<td>Emmett Co.</td>
</tr>
<tr>
<td>305a</td>
<td><em>Cicuta bulbifera</em>, L.</td>
<td>Emmett Co.</td>
</tr>
<tr>
<td>430a</td>
<td><em>Helianthus Maximiliani</em>, Schr.</td>
<td>Emmett Co.</td>
</tr>
<tr>
<td>455a</td>
<td>Artemisia annua, L.</td>
<td>Keokuk</td>
</tr>
<tr>
<td>467a</td>
<td><em>Senecio palustris</em>, Hook.</td>
<td>Spirit Lake and Emmett Co.</td>
</tr>
<tr>
<td>520b</td>
<td><em>Utricularia intermedia</em>, Hay.</td>
<td>Emmett Co.</td>
</tr>
<tr>
<td>606b</td>
<td><em>Mertensia paniculata</em>, Don.</td>
<td>Decorah</td>
</tr>
<tr>
<td>607b</td>
<td><em>Echinospermum Redowskii</em>, Lehm., var. occidentale, Watson.</td>
<td>Decorah</td>
</tr>
<tr>
<td>691a</td>
<td><em>Rumex obtusifolius</em>, L.</td>
<td>Decorah</td>
</tr>
<tr>
<td>710a</td>
<td><em>Euphorbia commutata</em>, Engelm.</td>
<td>Decorah</td>
</tr>
<tr>
<td>715a</td>
<td><em>Ulmus racemosa</em>, Thomas.</td>
<td>Waverly and Charles City.</td>
</tr>
<tr>
<td>757a</td>
<td><em>Salix myrtilloides</em>, L.</td>
<td>Emmett Co.</td>
</tr>
<tr>
<td>784a</td>
<td><em>Triglochin maritimum</em>, L., var. elatum, Gr.</td>
<td>Emmett Co.</td>
</tr>
<tr>
<td>784b</td>
<td><em>Scheuchzeria palustris</em>, L.</td>
<td>Emmett Co.</td>
</tr>
<tr>
<td>787a</td>
<td><em>Sagittaria cristata</em>, Engelm. ined.</td>
<td>Emmett Co.</td>
</tr>
<tr>
<td>834a</td>
<td><em>Juncus Balticus</em>, Deth.</td>
<td>Emmett Co.</td>
</tr>
<tr>
<td>857a</td>
<td><em>Eriophorum gracile</em>, Koch, var. paucinervium, Engelm.</td>
<td>Emmett Co.</td>
</tr>
<tr>
<td>860a</td>
<td><em>Carex siccata</em>, Dew.</td>
<td>Emmett Co.</td>
</tr>
<tr>
<td>867a</td>
<td><em>Carex chordorrhiza</em>, Ehrh.</td>
<td>Emmett Co.</td>
</tr>
</tbody>
</table>

* Read at the June meeting of the Academy, 1882.
The following are descriptions of species not given in the 5th edition of Gray's Manual.

**Amorpha microphylla**, Pursh.—Nearly smooth, dwarf; leaves with very short petioles, obtuse at both ends; spikes short, solitary; calyx nearly naked, pedicellate, teeth all very acuminate; legumes 1-seeded. *(A. nana, Nutt.)*

—a—On the banks of the Missouri. From 1 to 2 feet high; flowers purple and fragrant. A very elegant little shrub. *Pursh's Fl. Amer. Sep., II, 466.*

This compact little shrub is abundant on the dry prairies of northwestern Iowa. It flowers in May, and not in July and August as stated by Pursh. The leaflets are oblong, conspicuously punctate, and in 10–20 pairs.

**Helianthus Maximilianii**, Schrad.—Stem strigose-scabrous, branched; leaves alternate (those of the branches sometimes opposite), lanceolate, entire or nearly so, tapering to each end, acuminate, very scabrous and often canescent-strigose on both sides, the lower petioled; scales of the involucre lanceolate-subulate, much attenuate, strigose-canescence; pappus of two lanceolate slightly fringed chaffy scales. ——Prairies. Missouri, Texas. *Torrey and Gray's Fl. N. Am., II, 325.*

In Meehan's "Native Flowers and Ferns of the United States," where this species is finely figured, the range is said to be "probably confined to the hot and dry regions extending west of the Mississippi," and it is stated that "Lawrence, Kansas, seems to be about its northern boundary." It is, however, plentiful in Emmett County of this state, fully 300 miles further northward.
**Artemisia annua, L.**—Leaves twice pinnatifid, glabrous; divisions of the lower leaves lanceolate, incised, of the upper linear, pectinately pinnatifid; flowers panicled, globose, nodding.—Northern Persia, Siberia, and China.


This was probably first brought to Keokuk as a cultivated plant, but has become a common weed.

**Echinospermum redowskii, Lehm., var. occidentale, Watson.**—The American plant is less strict, at length diffuse, and the tubercles or scabrosities of the nutlet are sharp instead of blunt or roundish as in the Asiatic plant.—Plains, Saskatchewan and Minnesota to Texas, and west to Arizona and Alaska. *Gray's Synop. Fl. N. Amer., 190.*

The typical form of this species is a native of Northern Asia.

**Potamogeton Illinoensis, Morong.**—Floating leaves opposite, thick, coriaceous, oval or ovate, 2–3 inches long by 1½ broad, 19–23 nerved, on short petioles, submerged leaves comparatively few, oblong-elliptical, acute at each end, usually ample (the largest nearly 8 inches long and 1½ wide), nearly or quite sessile, the uppermost opposite; stipules free, obtuse, strongly bicarinate, about 2 inches long; peduncles often clustered at the summit of the stem; spikes about 2 inches long, densely flowered; fruit roundish oblate, 3–keeled on the back, the middle keel prominent, and sometimes shouldered at the top, flattened and slightly impressed on the sides, obtuse or occasionally pointed at the base, the style short and nearly facial.—Allied to *P. lucens*, L. in habit, but with larger fruit, and in foliage quite distinct. Mississippi River bottoms near Oquawka, Ill., Englewood, Ill. *Bot. Gazette, V*, 50, 1880.

**Sagittaria cristata, Engelm. ined.**—Flowers only of the lowest whorl fertile; fruit-heads much larger than in *S. graminea*; achenia broad, with a conspicuous horizontal style, and crested back and sides.—Dr. Engelmann adds that this is near *S. graminea*, Michx., and is perhaps only a variety of it, although the only other Sagittaria with such crests to the achenia is *S. natans*, Michx. Further observations are needed to eventually place it correctly. *Letter dated March 15th, 1882.*

**Beckmannia, Host.**—Panicle racemose, contracted; spikelets compressed, 2-flowered, the upper floret an abortive rudiment; glumes obovate, compressed boat-shaped, equal, a little shorter than the flower, pointless; palts membranous, the lower ovate, mucronate, 3–nerved, the upper 2–nerved, bifid; grain free.

**B. eruciformis, Host.**—Culms stout, 1–3½ feet high, with the sheaths glabrous; ligules elongated; leaves linear, 4–8 inches long, flat, scabrous; panicle 4–12 inches long, erect, strict, secund, the short crowded branches densely flowered from the base, glabrous; spikelets sessile, imbricately arranged in two rows, nearly orbicular; rudiment correct stipitate. *Flor. Col., Port. and Coul.*
Heretofore these *Contributions* have embraced only the phanerogamic flora, but it is now proposed to extend them and include the lower plants as well as the higher. It seemed necessary at the start to concentrate attention upon the more easily observed and readily determined classes, in order that the results of the rather desultory herborizing of so few widely separated collectors might have some measure of completeness. No localities are yet exhausted; but several have been so well searched that resident collectors can now profitably turn their chief attention to the lower plants, as some of them have already begun to do. The interests of the phanerogamic flora are not likely to suffer by this expansion; and while waiting for portions of the state less frequented by botanists to be reported upon, and for the detection of obscure species at home, it will be profitable to record the observations on lower plants, both as a matter of record, and as a stimulus to increased activity. The next *Contribution* will accordingly contain a list of the pteridophytes (which include the ferns, horsetails, and club-mosses, although none of the latter have yet been reported from the state), and will be followed in subsequent numbers by a list of mosses, various classes of fungi, etc., as the accumulation of material will warrant. It is hoped the first published list of each class can be made quite full in both the number of species and their distribution. The same rule will be observed regarding the lower plants that has been adhered to for the higher—that every name reported shall be accompanied when possible by a specimen, in order to insure uniform accuracy, and to make it possible to revise the list at any future time by an examination of the plants themselves.

*Charles City, Iowa; May, 1882.*