

ULMUS americana. *American rough leaved Elm-Tree*, rises to the height of about thirty feet, . . . with a lightish coloured rough bark. The leaves are oblong, oval and sharp-pointed, somewhat unequally sawed at the edges, . . . very rough on their upper surface and hairy underneath. The flowers are produced thick upon the branches, upon short, collected footstalks; and are succeeded by oval, compressed, membranaceous seed-vessels, with entire margins.

That is certainly Slippery or Red Elm, *Ulmus fulva* Michx. Fl. Bor.-Am. i. 172 (1803) the species which was later and independently described as *U. rubra* Michx. f., Hist. Arb. Am. iii. 278, t. 6 (1813). The younger Michaux, although not accepting the name given by his father but preferring to give a new one, unwittingly used the earliest name for the species, for there seems no way to avoid taking up for *U. fulva* Michx. (1803) the much earlier *U. RUBRA* Muhl. (1793).

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AN INCOMPLETE FLORA OF ILLINOIS.—It is a subject for special note when one of our larger Universities produces what purports to be a "comprehensive treatment" of the flora of its state, and especially when another university in a neighboring state sponsors its publication. The state of Illinois has had in the past some very learned or scholarly students of its flora, for, although today, to the traveler who passes hastily across it, the state often looks botanically rather uninspiring, that was not always the case. Writing in 1882, the very keen and always helpful student of the flora of Illinois and neighboring states, the late M. S. Bebb<sup>1</sup>, in his discussion of *Recently Introduced Plants in and about Rockford, Ill.*, said "I remember well . . . how here in Rockford, Ill., say twenty years ago, the indigenous plants of the prairie and oak-opening sprang up on every side in close proximity to the beaten paths of busy men. The industrious young botanist, collecting for exchange, found his only limitations in the quantity of driers he possessed, and the amount of time, energy and discretion he could bring to the work of using them well. Now we must go miles out into the country for material and count ourselves fortunate, even then, if the little vestige of the native flora which last season afforded us a dozen desirable specimens has not since been swept away by the plow; while in the central portion of the city scarcely a single native species remains to dispute possession with street weeds, mostly of European descent and training." Now, more than 60 years later, the native flora is still further diminished and that of "European descent and training" greatly increased.

The first botanist to explore Illinois was the greatest of them all, André Michaux, who, descending the Ohio in 1795, camped on the lower Wabash and then proceeded westward to the Mississippi, making a center at Kaskaskia and botanizing up and down the Mississippi and along the lower Ohio from August to October. This great pioneer in American botanical exploration

<sup>1</sup> Bot. Gaz. vii. 68-90 (1882).



carried his material back to Paris, where the great collection has long been available for ready reference. Michaux's monumental *Flora Boreali-Americana* (1803) contained scores and scores of records from Illinois and more than 60 new species with their TYPES from the southern portion of that state—the greatest series of new species of vascular plants ever collected by one man in Illinois.

After Michaux, the first three-fourths of the last century saw some remarkably strong botanists collecting assiduously or writing authoritatively upon the floral areas and the native and introduced plants of Illinois. Some, like the erratic Rafinesque or the learned and careful Louis C. Beck, who wrote as an introduction to his *Contributions toward the Botany of the States of Illinois and Missouri* (1826–28), “During my residence in Missouri in . . . 1820, 21, and 22, a portion of my time was occupied in the investigation of the vegetable productions of that and the adjoining state”, came from outside. Others, like Samuel B. Mead, were content to collect discriminatingly and to refer their problems to masters at the older centers, with the result that we have a noble series of species, such as *Carex Meadii*, *Asclepias Meadii* and others discovered and modestly communicated by him. One of the first extensive lists of Illinois plants as such (Engelmann's *Catalogue of a Collection of Plants made in Illinois and Missouri by Charles A. Geyer* not discriminating often between the two states) was the cautious and very reliable *Catalogue of the Plants of the State of Illinois* (1856–57) by Dr. Increase A. Lapham, an amateur scientist of such scholarship and precision that he was awarded what few amateurs ever have received, one of the most distinguished honors open to American scholars, election to the American Philosophical Society. Besides his *Catalogue* of more than 1125 vascular plants then known in the state, Lapham published one of the most critical and accurate series of descriptions up to his time of *Native, Naturalized and Cultivated Grasses of the State of Illinois*. Another great scholar, Frederick Brendel, published in the *Zeitschrift für die Gesammten Naturwissenschaften*, xv. (1860) his *Verzeichniss der in Illinois wildwachsenden phanerogamischen und cryptogamischen Gefösspflanzen*, a catalogue of nearly 1200 species. This was followed by the publication at Budapest in *Természetrájsi Füzetek*, v. (1882) of his remarkably helpful *Flora Peoriana, die Vegetation im Clima von Mittel-Illinois*. This contained more than 1360 species, with indication of the geographic areas of the state where it occurred: if not near Peoria, then along the Mississippi (“Am Mississippi”), in the region of the Ohio (“Im Ohiogebiet”), along Lake Michigan (“Am Michigan-See”), etc. Here were the first records for a great number of plants in Illinois, with a scholarly discussion of the natural floral areas, a model of scientific presentation. Then, in English, Brendel published (1887) his *Flora Peoriana, the Vegetation in the Climate of Middle Illinois*, “the result of thirty-five years observations”. To these add Patterson's *Catalogue* in 1876, Flagg's in 1878 and very many local floras and notes (a few of them cited in the bibliography of the new *Flora of Illinois* (1945)). George Vasey, Henry Eggert, E. J. Hill, M. S. Bebb, F. E. McDonald, Robert Ridgway and many others added materially to the published catalogues, and John Wolf, too modest to publish, enriched our knowledge very materially, sending to others the specimens upon which were based such very unusual species as *Poa Wolfii* and *Eleocharis Wolfii*.



With such a background of sound enumerations of the vascular plants of the state or of sections of it, the student in 1945, hearing that a professor at the University of Illinois has published through Notre Dame University a new and up-to-date *Flora of Illinois*, naturally looks forward to an accurate recension of all this assembled matter. If, however, he has known these scores of discriminating lists and as many technical studies of genera or sections of genera in our flora, most of which I had long since had to digest in revising the Manual and which, consequently, were largely right at hand, he is in for a great disappointment. Therefore, when the editor of the new *Flora of Illinois*, by George Neville Jones,<sup>1</sup> asked me to review the book in RHODORA, I was obliged to write him that he had assigned me an unwelcome and highly unpleasant task. Of course some reviewers would easily say "It is finely printed, neatly bound and has very simple keys. It is, therefore, a great book". But, in view of the great mass of accurate data which has been neglected but which I had already taken into account in my own work, I cannot stop there; and I am sure that the more experienced living botanists of Illinois must react in the same way.

The first part of the book is made up of speciously simple keys—specious because they are so likely to mislead. On p. 8, Section 1 is defined as "1. Plants grasses, sedges, or rushes; perianth green or absent". How in the world does the beginner know whether the plant is a grass, sedge or rush, merely because it has a green perianth, or none? Scouring Rush (not a grass, sedge or rush) has no flowers. Turning to the fuller detail of Section 1 we are given the following key:

**Section 1. Grasses (or Grass-like Plants), or Sedges, and Rushes**

- 1. Flowers enclosed by chaffy scales; perianth none, or of bristles;  
fruit a grain or an achene.
- 2. Stem usually cylindrical [etc.] . . . . . 22. GRAMINEAE
- 2. Stem cylindrical or triangular. . . . .; fruit an achene. . . 23. CYPERACEAE
- 1. Flowers not enclosed by chaffy scales; perianth 6-parted;  
stems terete; fruit a capsule.
- 3. Stem not glandular. . . . . 30. JUNCACEAE
- 3. Stem glandular. . . . . *Tofieldia* in 31. LILIACEAE

Now, if the uninitiated get hold of almost any species of *Fimbristylis* or of *Cladium*, for instance, he will find the flower *subtended by* but not "enclosed by" a scale (in most *Gramineae* the "enclosing" is complete, but not in most *Cyperaceae*, except *Carex*); if he gets *Fuirena* he will find, as Dr. Jones states, on p. 69, a "perianth of 3 stalked sepals". And how can he know, when he gets green-flowered *Stenanthium gramineum*, with flowers constructed like those of *Juncus*, or of *Zigadenus* or Yellow-eyed Grass, *Hypoxis*, with their green-backed perianths appressed to the fruit, that it is not a grass-like plant with "perianth 6-parted; . . . fruit a capsule"? Furthermore, when he gets hold of a *Juncus* of the *Prophyllate* series (with chaffy scales "enclosing" the bases of the flowers) how can he be sure that they don't? And as to the

<sup>1</sup> GEORGE NEVILLE JONES: *Flora of Illinois*, containing keys for identification of the flowering plants and ferns. The American Midland Naturalist, Monograph No. 2. University of Notre Dame, Notre Dame, Indiana (1945). 317 pp. \$4.00.



perianth of the *Juncaceae* being "green", only the green beginner will try to hold his Rushes to that definition. Just look at the brown or fulvous outer tepals (sepals) of many species of *Juncus* or of *Luzula*!

Having learned (we hope) that some plants with grass-like leaves and green perianths are not necessarily Rushes, the beginner tries another lot of specimens. He has come in from the dunes of Lake Michigan with a slightly frutescent little gray-pubescent plant with tiny scale-like leaves and bright yellow petals, surely an Angiosperm. Imagine his shock, if he has had even an elementary training in morphology, to find it placed with the Gymnosperms! The only excuse for here placing *Hudsonia* is that Gymnosperms are trees and shrubs with "Leaves needle-like (acicular), scale-like, or subulate, evergreen", though admittedly deciduous in *Larix* and *Taxodium* (in which some of the leaves are flat, as they are in *Tsuga*!). Certainly if the barely shrubby *Hudsonia* can be placed (with apologies, to be sure) with the Gymnosperms, then bushy-branched, though herbaceous *Asparagus* could be placed there; and why not *Belamcanda* with its naked seeds or *Reseda* with its seeds maturing in an open barrel-like capsule (*Reseda* is wild in Illinois, though not cited in the book). After struggling, to the point of inaccuracy or near-absurdity not to use technical terms, why give up and suddenly, in the keys, expect the ignorant beginner to understand "stamens hypogynous", "Corolla not papilionaceous", "corolla sympetalous"? If the student understands these terms he doesn't need the misleading pap.

Now to the Flora itself. Dr. Jones here carries out his oft-expressed admiration of Rydberg's inability to distinguish between species, varieties and forms. Consequently many plants which some pretty sound taxonomists rank as varieties or as mere forms (without different ranges) are here treated as species. In general, varieties and forms are not even mentioned but sometimes their names are bracketed as synonyms of the maintained specific one: under *Lathyrus*, for instance, "[*L. venosus* var. *intonsus* Butters & St. John] . . . *L. venosus* Muhl."; or under *Acalypha* "[*A. gracilens* var. *fraseri* (Muell. Arg.) Weatherby] . . . *A. gracilens* Gray". In at least three cases, however, the offending varieties or forms are not bracketed. These are under *Prunus virginiana* "The form with the lower surfaces of the leaves, young twigs, and rachis of inflorescence pubescent is f. *deamii* G. N. Jones"; under *Gleditsia triacanthos* "The spineless form is f. *inermis* (Pursh) Fassett"; and under *Psoralea psoralioides* "The plants of the Central States are less glandular and have been named *P. psoralioides* var. *eglandulosa* (Ell.) F. L. Freeman". When one notes that the combination under *Gleditsia* was used by Schneider in 1907, he has left as authors of an accepted form and an accepted variety G. N. Jones and F. L. Freeman (now Mrs. G. N. Jones). That is "keeping up with the Joneses" with a vengeance!

In carrying through his Rydbergian principle of species or nothing Dr. Jones treats the American variety of the circumboreal *Scheuchzeria palustris* as a species, *S. americana* (Fern.) Jones. Why stop there? Are not the American varieties of other circumboreal species quite as eligible? They are; but it is devoutly hoped that they will not be elevated to specific rank without sound morphological characters: our *Eleocharis pauciflora*, var. *Fernaldii* Svenson,



*Scirpus cespitosus*, var. *callosus* Bigelow, *Juncus effusus*, var. *solutus* Fern. & Wiegand, *Menyanthes trifoliata*, var. *minor* Michx. ex Raf., etc., etc. But, if the *Eleocharis* is so treated, I hope against hope that its specific name will be allowed to retain its capital initial. In the new *Flora of Illinois* all personal genitives and all old generic names used as specific ones are decapitalized, in violation of good usage and in spite of the recommendation of the International Rules. Essentially all botanists of scholarly background, from Linnaeus down, have shown their understanding by using the capital; it was regularly used, even by Rafinesque, and by Torrey, Engelmann, Gray, Britton, Small and Jones's usual model, Rydberg, while the very distinguished founder of the American Midland Naturalist, Nieuwland, was too great a scholar to decapitalize such names.

Incidentally, followers of the new *Flora* should be warned against untenable specific names there used. Such a name as *Agropyron pauciflorum* (Schwein.) Hitchc. (1933 or '34) should not be used. There was already an *A. pauciflorum* Schur (1859); a matter discussed in RHODORA, xxxvi. 417-419 (1934) and again noted in xxxvii. 372 (1935).

In this *Flora* 2124 species and pseudo-species are enumerated as occurring in Illinois but, if the compiler had taken into account the published Illinois records, the number would be nearer 2325. It is unfortunate that the old and pretty sacred principle of state's rights should have been transgressed in making up the deficient total. For instance, *Eriocaulon septangulare* is formally entered (and presumably counted), with the Illinois occurrence stated as "Borders of ponds and lakes. Pepon says ' . . . from East Chicago eastward'". That suggests Illinois to those who do not know local geography, but we learn over the radio, from the "Quiz Kids", that East Chicago is in Indiana, a fact corroborated by the Postal-Guide and the Atlas!; and Jones himself adds apologetically: "Locally abundant in northern Indiana, but no Illinois specimens seen". I have not taken the time to figure how many other species got entered without sustaining credentials. It is very certain, however, that fully 200 species or strongly defined geographic varieties with the best of credentials were not admitted to the official registration. Some of these, like *Scirpus Hallii* Gray, were christened from Illinois material and even named for Illinois botanists; others have merely been well known to grow there. Toward the end of the volume there is a brief bibliography in which a part, but scarcely half, of the papers or reports upon Illinois plants are cited. It is, then, to be regretted that the contents of even these, to say nothing of many other authoritative publications, were not more generally accepted or understood. Many of the names used in older reports are not now (since the principle of priority of specific names, instead of the first combination of generic and specific, came into vogue) known to the "younger generation"; but they should be quite identifiable by any one competent to rank as an authority on the flora. Even the great initial contribution of Michaux to our knowledge of the Illinois flora is quite ignored, for such an obvious grass as *Bouteloua curtipendula* (Michx.) Torr. is credited to "the n. half of Ill." only, although the TYPE of the basic *Chloris curtipendula* Michx. was from Wabash. In fact, as already noted, more than 60 of Michaux's species had their types from



Illinois. They were known to Lapham, Brendel and their really careful followers; but since, on the first page of the present *Flora* we are told that "no comprehensive treatment of the botany of this state has hitherto been published", it is just too bad that so much of the work of Michaux and so many records of his successors were not included and, by implication, not comprehended. *Agrostis* [*Muhlenbergia*] *racemosa* Michx. is the bushy-branched species found on the driest of habitats from bluffs of the Mississippi across the Plains (not the simple-culmed species of bogs and wet shores); and, although Jones thinks *Croton capitatus* Michx. "probably adv. from s. U. S.", Michaux, discovering it in 1795 and describing it as a new species, did not so consider it; and the unique (and by Hitchcock wholly misunderstood) *Erianthus brevibarbis*, with its TYPE from southern Illinois, should have had due recognition; so should the conspicuous *Cardiospermum Halicacabum* which Michaux got near Kaskaskia. Furthermore, *Heteranthera limosa* (not in the new *Flora*) was beautifully illustrated and described as a new species, *Leptanthus ovalis*, by Michaux from "paludosis Illinoensibus".

Even though the author of a "comprehensive" state-flora may not have known the early history of botanical exploration of his region, he certainly knew of some catalogues and lists; at least he cites in the bibliography some of those of Brendel, Gleason, Higley & Raddin, E. J. Hill, Lapham, Mosher, E. J. Palmer and Patterson, as well as numerous others. Practically every one of the reports or papers of the above-mentioned students of the flora contains from 1 to 50 or more species not accounted for by the compiler of the "comprehensive" *Flora*. Even one of the very latest papers cited by him, E. J. Palmer's *Botanical Reconnaissance of southern Illinois* (1921), which, although cited, was apparently not carefully digested, would have yielded 28 additions to the *Flora*: *Justicia humilis* (*Dianthera ovata*), *Spilanthes americana*, *Corallorrhiza Wisteriana*, *Eupatorium incarnatum*, *Talinum calycinum*, *Vaccinium tenellum*, *Carya Pecan*, *Tilia floridana*, etc., etc. Since Palmer's report was primarily upon the trees, with herbs and shrubs only incidentally mentioned, one can only imagine the many other species new to Illinois in his extensive and discriminating collections. And when, as in *Strophostyles umbellata* (see p. 216) the author himself collected, correctly identified and distributed species but did not admit them to his *Flora*, it is evident that something slipped.

All this is very sad; one is sadder that it seems necessary to point it out. When the *Flora of Illinois* first came to my desk I expected a worthy book. Soon discouraged, as its inadequacy became more and more apparent, I jotted down a few (toward 100) members of the *Monocotyledoneae* and the *Archichlamydeae* (not attempting *Carex*, *Crataegus* and *Rubus*) which, although I had never been in Illinois except to lecture in Chicago, I knew to occur in that state. These memoranda, sometimes with some (but not all) supporting citations, were written out; then I balked. I had made no contract to prepare a new flora of the state. However, having made the partial enumeration, I here present it. It is obviously very incomplete and were the *Metachlamydeae* added one would have to start right out with such obvious omissions as *Lysimachia hybrida* Michx., *Fraxinus biltmoreana* Beadle, *Sabatia campestris* Nutt.,



and so on to *Sonchus uliginosus* Bieb. It is altogether too evident that here is another case of "boom-town" construction, the big-fronted upper story constructed without serious consideration given the necessary foundations.

A PARTIAL SUPPLEMENT TO THE "FLORA OF ILLINOIS", MADE FROM A  
DESK-TOP IN MASSACHUSETTS

SPARGANIUM ANGUSTIFOLIUM Michx. "McHenry county, Vasey"—Patterson Cat.

NAJAS GRACILLIMA (A. Br.) Morong. "Wabash county, Schneck"—Patterson Cat.; "Im Ohiogebiet", Brendel, Fl. Peoriana (1882).

ECHINODORUS TENELLUS (Mart.) Buchenau. *E. parvulus* Engelm. in Gray, Man. ed. 2: 438 (1856); Robinson in RHODORA, v. 85-89, pl. 45, figs. 1-10 (1903). *Helianthium tenellum* (Mart.) Britton, Man. ed. 2: 54 (1904). *H. parvulum* (Engelm.) Small in N. Am. Fl. xvii<sup>1</sup>. 45 (1909). "Margin of shallow ponds, Michigan to Illinois and westward"—Engelm., l. c.; "found . . . on the Illinois side of the Mississippi by Dr. Engelmann and by Mr. Henry Eggert"—Robinson, l. c. 89. Clearly cited also by Lapham, Patterson, Brendel and several others.

GLYCERIA STRIATA (Lam.) Hitchc., var. STRICTA (Scribn.) Fern. (*Panicularia rigida* (Nash) Rydb.). Skokie Marsh, Glencoe, June 12, 1911, Sherff.

Having been called a species by Rydberg this plant is certainly eligible under Jones's rules, even though only a northern variety.

G. ARKANSANA Fern. Mt. Carmel, 1874, *J. Schneck*; marsh northwest of Glencoe, June 12, 1911, Sherff. See RHODORA, xl. 386 (1938).

VULPIA OCTOFLORA (Walt.) Rydb., var. TENELLA (Willd.) Fern. (*Festuca oct.* Walt., var. *tenella* (Willd.) Fern.). Frequent in Illinois: Oakwood, Pease, no. 14,713A; between Oakwood and Collison, G. N. Jones, no. 13,872; Peoria, McDonald; Crawford, Clokey, no. 2445; Starved Rock, Greenman, Lansing & Dixon, no. 78; Hillery, Gleason; etc.

Differing at once from true *V. octoflora* in its lower glumes only 2.3-4 mm. long; awns 1-3 mm. long. This variety (why not, then, a species?) occurs across the continent, from Maine and southern Quebec to southern British Columbia, southward through much of the United States. True *V. octoflora*, described from South Carolina, is decidedly southern, from Florida to Texas, northward to southern New Jersey, southern Illinois (Makanda, Gleason), central Missouri and Oklahoma. Its lower glumes are 3.5-4.5 mm. long, the longer awns of the lemmas 3.5-7 mm. long.

Upon much diluter characters than these the author of the *Flora of Illinois* maintains as species in *Panicum* and *Paspalum* plants which pretty accurate and long-experienced students (like Wiegand, Witmer Stone, Deam, Weatherby and others) balk at so dignifying.

AGROSTIS HYEMALIS (Walt.) BSP. (*A. antecedens* Bicknell). See RHODORA, xxxv. 207, 208, pl. 246, figs. 3-5 (fig. 5 from Illinois): "extending north in the interior to . . . Illinois and Indiana."

The numerous sheets of *A. hyemalis*, in flower or fruit, in the Gray Herbarium from Illinois (northern limit of species) were collected in May and early June: Decatur, Peoria, Starved Rock, Glencoe, Marion Co., Hillery, Wady Petra and St. Clair Co. The coarser, later and generally more northern *A. scabra* is not represented from Illinois in the Gray Herbarium. The flowering material from Ohio was collected from July 17 to August 12; from Michigan



July 16 to August 22; from Wisconsin August 31 to September 13. Kneucker's Gram. exsicc. no. 569 from Wady Petra is a good example of *A. hyemalis*.

Higley and Raddin, in their Flora of Cook County, cite *A. scabra* as common there on prairies in July. That may well be the northern species.

MUHLenbergia CURTisetosa (Scribn.) Bush. "Illinois (Clinton)"—Hitchcock, Man. 375.

*M. setosa* (Spreng.) Trin., var. *CINNOIDES* (Link) Fernald in RHODORA, xlv. 238, pl. 757 (1943). Formerly confused with the stiffly branching *M. racemosa* (Michx.) BSP. of dry bluffs and prairies from Wisconsin and Illinois westward, *M. setosa* (*M. glomerata*) is a much simpler plant of meadows, bogs and wet shores. Its var. *cinnoides* is common in Michigan, Wisconsin and Minnesota. Lapham (like most earlier authors) included them both under his *M. glomerata*, but the plant of "very wet meadows and swamps" was clearly *M. setosa*, var. *cinnoides*. So was Patterson's plant of "Bogs . . . northward".

SPOROBOLUS CANOVIRENS Nash. Much material in Gray Herbarium from Illinois.

*Sporobolus canovirens* is very distinct from *S. clandestinus* (Biehler) Hitchcock. The type of the latter was from eastern Pennsylvania, the species with terminal panicle 4–10 cm. long, spikelets 6–8 mm. long, palea much prolonged beyond the lemma into a subaristate beak, found on the Atlantic slope from Connecticut to Florida, thence to Mississippi. I have seen none of it from Illinois. The plant of the latter region, *S. canovirens*—(type from Kansas) has the terminal panicle stouter and 0.5–2 dm. long, spikelets 5.5–6 mm. long, with merely acute lemma and palea subequal. It occurs from Indiana and Wisconsin to Kansas and south to Mississippi and Texas. The mere fact that Hitchcock could not see the differences should not forbid its recognition. Miss Edna Mosher, in her discriminating Grasses of Illinois, clearly recognizes *S. canovirens*; and her figures well show the contrasts between it and *S. clandestinus*.

STIPA AVENACEA L. Lapham, in his very accurate study of the Grasses of the State of Illinois, clearly described this species as growing in the state. Both his description and illustration are conclusive. Miss Mosher expresses the same view.

LEPTOCHLOA ATTENUATA Nutt. Metropolis, Massac Co., Benke, no. 4679, as *L. filiformis*.

Although Hitchcock reduced outright to *L. filiformis* (Lam.) Beauv. the weaker and more flaccid *L. attenuata*, they are far more distinct than many so-called species separated by him: such fluctuating and intergrading complexes as *Panicum Werneri* Scribn., merely a glabrous or glabrescent *P. linearifolium*, or *P. xalapense* HBK., with its assigned diagnostic characters hopelessly crossing those of *P. laxiflorum* Lam. *Leptochloa filiformis*, except in the smallest individuals, is commonly 0.7–1.2 m. high, with the leading panicles 1.5–6 dm. long, made up of stiff spikes up to 1.5 dm. long; its glumes merely acute, not at all or but rarely overtopping the 2–4 florets; the grain 0.7–0.9 mm. long. It is a wide-ranging weedy species from the West Indies and Florida to Mexico, north to Virginia, Indiana, Illinois, Missouri and Kansas. *L. attenuata* is weaker and softer, 1–6 dm. high, with the leading panicles rarely 3 dm. long, made up of flexuous spikes 2–11 cm. long; its slender glumes



aristate, the 2d overtopping the lemmas, and its grains are 0.4–0.5 mm. long. It occurs from southern Illinois to Louisiana and Texas. Even though its doom has been settled by an edict from Washington it is well to study the plants themselves. If *L. attenuata* is not a good species it is, at least, a very strong (though physically weak and flaccid) variety. The great and wise soil-chemist, Hilgard, decrying the tendency of the uncritical majority to follow blindly and without careful checking the emanations from the government bureau which most concerned his field, used to refer to these uncritical flocks as being "under the divine official afflatus of that head center".

*PASPALUM LAEVE* Michx. Stations cited by Edna Mosher.

*P. SETACEUM* Michx. Cited by Lapham, Patterson and most others, including Miss Mosher (with citation of specimens) but not by Jones.

*P. SETACEUM*, var. *LONGEPEDUNCULATUM* (LeConte) Wood (*P. longepedunculatum* LeConte). Definite stations cited by Miss Mosher.

*P. BUSHII* Nash. Stations cited by Miss Mosher.

*ECHINOCHLOA PUNGENS* (Poir.) Rydb. (*E. muricata* (Michx.) Fern.). See Wiegand in *RHODORA*, xxiii. 57–60 (1921). Illinois specimens cited by Wiegand.

*E. PUNGENS*, var. *OCCIDENTALIS* (Wieg.) Fernald & Griscom. (*E. muricata*, var. *occidentalis* Wieg.; *E. occidentalis* (Wieg.) Rydb.) TYPE from Grand Tower, Illinois.

*E. PUNGENS*, var. *MICROSTACHYA* (Wieg.) Fernald & Griscom. (*E. muricata*, var. *microstachya* Wiegand; *E. microstachya* (Wieg.) Rydb.). Illinois material cited in Wiegand's original account.

Although Hitchcock (therefore the *Flora of Illinois*) could not see the specific characters which sharply separate the indigenous North American *Echinochloa pungens* from the introduced *E. crusgalli* (L.) Beauv., they were understood by Michaux (and Richard), by Poiret, Wiegand and some others. In the introduced *E. crusgalli* the nodes and rachis of the panicle bear slender bristles, such bristles wanting or few in *E. pungens*. In *E. crusgalli* the spikelets are subglabrous or with appressed setiform hairs on the surfaces, bulbous-based hairs, if present, marginal; while in *E. pungens* the glumes and sterile lemma are more often echinate, with some or all of the trichomes pustular-based. In *E. crusgalli* the coriaceous lemma is obtuse, with a soft and soon withering tip; while in the indigenous *E. pungens* the coriaceous lemma is acuminate or subacuminate to a firm (nonshriveling) tip.

In Illinois *Echinochloa pungens* is represented by three varieties, so different that, when he published them, Wiegand stated that in his first manuscript he had treated them as distinct species but that further study revealed some intergradation. Rydberg had no such hesitation. How torn the recent author must have been between the two culture-heroes, Hitchcock and Rydberg. Had he taken a cue from the scholarly and accurate Dr. Lapham *Echinochloa* might have been differently treated. In 1856 (or 57) Lapham wrote: "The Barn yard grass is a coarse species, introduced from Europe; but we have at least two varieties that are native, growing in moist rich grounds, and along the margins of lakes and streams". Lapham really saw something.

*ERIANTHUS BREVIBARBUS* Michx. The TYPE, bearing Michaux's label "hab. in collibus desertis ab amnio Wabash ad Ostium Missouri 5 diebus distantibus", which, as indicated in *RHODORA*, xlv. 248 (1943) was "in southern Illinois, presumably between Jefferson County at the east and Randolph County at



the west", was shown in RHODORA l. c. plate 759, while plate 760 showed a modern specimen from a tributary of the Mississippi farther south.

In the same paper (pp. 224–230, plates 749–752) it was shown that the name *Muhlenbergia mexicana* has been wrongly applied and that (pp. 255–258) the name *Andropogon furcatus* Muhl. (1806) was antedated by *A. Gerardi* Vitman (1792). Nevertheless, the *Flora of Illinois* continues the erroneous use of *Muhlenbergia mexicana* and prefers the latest of three specific names for the *Andropogon*!

CYPERUS VIRENS Michx. (*C. pseudovegetus* Steud.). See RHODORA, xlvii. 109, plate 876. Metropolis (gravelly creek-bank), Gleason, no. 2242.

FIMBRISTYLIS BALDWINIANA Torr. "west to Illinois", etc., Britton in Britton & Brown, Ill. Fl. ed. 2, i. 321 (1913); undoubtedly correct, there being characteristic material in the Gray Herbarium from eastern Missouri. Cited as *F. laxa*, by Lapham, Brendel and others.

SCIRPUS HALLII Gray. TYPE from "Along ponds, Mason Co., Illinois . . . , E. Hall"—Gray, Man. ed. 4, xcix (1863), error for Menard Co. Cited many times subsequently. TYPE in Gray Herbarium.

S. HETEROCHAETUS Chase. "ILLINOIS: Henderson Co., near Oqua[w]ka, H. N. Patterson; near Dupond [Dupont], J. A. Steyermark 4471; South Eastern Railroad, H. Eggert in 1876"—A. A. Beetle in Am. Journ. Bot. xxviii. 693 (1941).

S. RUBRICOSUS Fernald (*S. Eriophorum* Michx., illegitimate substitute-name). Open wet bottomlands, Makanda, Gleason, no. 2243 (as *S. lineatus*). Cited by both Patterson and Brendel.

COMMELINA DIFFUSA Burm. f. (*C. nudiflora* sensu many auth., not L.). Mound City, Aug. 1, 1862. Geo. Vasey (as *C. virginica*). Also cited by others from southern Illinois.

C. ERECTA L., var. ANGUSTIFOLIA (Michx.) Fernald in RHODORA, xlii. 439 (1940). Including *C. angustifolia* Michx., *C. Nashii* Small and *C. crispa* Wootton & Standley (enough binomials to make it eligible to the *Flora of Illinois*). Wooded dunes, Bath, Aug. 17, 1903, Gleason: Chandlerville, Aug. 13, 1886, A. B. Seymour; east of Havana, Evers, Jones & Jones, no. 588.

C. ERECTA, var. DEAMIANA Fernald, l. c. 440, pl. 631 (1940). Oquawka, Gleason.

HETERANTHERA LIMOSA (Sw.) Willd. Ponds, St. Clair Co., Aug. 2, 1877, Eggert. Lapham (Cat.) cited it in 1857 but his material was cited in Gray, Man. ed. 2: 485 (1856) from "Illinois". In fact, the Illinois records go way back to Michaux's *Flora* (1803), the Illinois material collected in 1795. Michaux described and illustrated (plate 5) *Heteranthera limosa* as a new species, *Leptanthus ovalis*, "HAB. in paludosis Illinoensibus. Augusto florens".

JUNCUS BREVICAUDATUS (Engelm.) Fernald (*J. canadensis*, var. *coarctatus* Engelm.). Cited by Patterson from Kankakee County; also cited by Brendel. J. DEBILIS Gray. Cited by Patterson from "Southern Illinois".

CHAMAELIRIUM LUTEUM (L.) Gray. "Illinois"—Gray, Man. ed. 2: 478 (1856); also cited by Patterson and by Brendel. Fine specimen from Abingdon in Gray Herb.

SMILACINA TRIFOLIA (L.) Desf. Patterson (1876), Brendel and Higley & Raddin cite stations in northern Illinois.

SPIRANTHES LUCIDA (H. H. Eaton) Ames. "Menard county, Hall"—Patterson Cat.; "Among the drift hills near Mokena, south of Chicago . . . two specimens found"—E. J. Hill in Bull. Torr. Bot. Cl. xxvi. 306, 307 (1899). In both cases called *S. latifolia*, thus apparently unrecognized by the author of the new *Flora*.

MALAXIS BRACHYPODA (Gray) Fernald. *Microstylis monophyllos* sensu e. Am. auth., not (L.) Lindl. "Swamps. Menard county, Brendel; Elgin, Kane county, Vasey"—Patterson Cat.

SALIX LONGIPES Shuttl., var. WARDI (Bebb) Schneid. "In Illinois . . .



in St. Clair and Madison Counties"—Schneider in Journ. Arn. Arb. i. 28 (1919).

*S. MISSOURIENSIS* Bebb. Little Wabash bottoms, Richland County, *Robert Ridgway*, no. 1580; "It occurs in Illinois along the Ohio River near its junction with the Mississippi"—C. R. Ball in Deam, Shrubs of Ind. 52.

*CARYA GLABRA* (Mill.) Sweet, var. *MEGACARPA* Sarg. (*C. megacarpa* Sarg.). "Tunnel Hill, Johnson County"—Sargent, Trees and Shrubs, ii. 201.

Although later ranked as a strong geographic variety, this tree was originally treated as a species. That makes it eligible.

*C. BUCKLEYI* Durand, var. *ARKANSANA* Sarg. (*C. arkansana* Sarg.), "southern Illinois"—Sargent, Man. Trees N. A. ed. 2: 199 (1922). Cited by Ridgway and others.

*FAGUS GRANDIFOLIA* Ehrh., var. *CAROLINIANA* (Loud.) Fern. & Rehder.

The tree of southern Illinois is so distinct from true northern *Fagus grandifolia* that it stands well apart. Clearly cited by E. J. Palmer.

*ALNUS GLUTINOSA* (L.) Gaertn., "naturalized in some places south of Jackson Park. It has spread into the wet land, making thickets . . . They fruit when at the height of four to six feet"—E. J. Hill in Bot. Gaz. xxi. 121 (1896). That sounds like naturalization.

*ULMUS SEROTINA* Sarg., "southwestern (Grand Tower, Jackson County, *H. A. Gleason*) and southern Illinois (Richland County, *R. Ridgway*)"—Sargent, Man. Trees N. Am. ed. 2: 316 (1922).

*IRESENE RHIZOMATOSA* Standl. (*I. celosioides* Michx., not L.). "Im Ohio-gebiet", Brendel, Fl. Peor. (1882). Cited by others.

*SPERGULARIA MARINA* (L.) Griseb. "Chicago, . . . Moffat 283"—Ruth P. Rossbach in RHODORA, xlii. 128 (1940).

Although the author of the *Flora of Illinois* specially cites (p. 287) Mrs. Rossbach's monograph, he drew no sustenance from it, completely omitting the genus *Spergularia* from the enumeration.

*CERASTIUM BRACHYPODUM* (Engelm.) Robinson, "southwestern Illinois"—Britton in Britt. & Brown., Ill. Fl. ed. 2, ii. 48 (1913).

*STELLARIA CRASSIFOLIA* Ehrh. "Ringwood, Illinois, *Vasey*"—Gray, Man. ed. 3: 59 (1862); "Illinois, *Vasey, Hill*"—Robinson in Proc. Am. Acad. xxix. 286 (1894); "N. Illinois, *Vasey, Hill*"—Robinson in Gray, Syn. Fl. i<sup>1</sup>. 235 (1897). Plenty of other citations, by Patterson, Brendel (1882 and 1887) and by Higley & Raddin (with record of a new station).

*DIANTHUS DELTOIDES* L. Hillery, June, 1907, *Gleason*.

*CLAYTONIA CAROLINIANA* Michx. Records by Patterson, Brendel and Higley & Raddin.

*NUPHAR VARIEGATUM* Engelm. "A few specimens near South Chicago"—Higley & Raddin.

*ANEMONE QUINQUEFOLIA* L., var. *INTERIOR* Fernald. Illinois material cited in original description.

*ARGEMONE INTERMEDIA* Sweet. Sands, banks of Illinois River, Mendosia. July 20, 1878, *A. B. Seymour*.

*RORIPPA OBTUSA* (Nutt.) Britton. Old specimen marked in Hall's handwriting, "Illinois, *E. Hall*". Cited by Vasey in Trans. Ill. Nat. Hist. Soc. ed. 2, i. ser. 1. 140 (1862), by Patterson and by Brendel.

*DESCURAINIA SOPHIA* (L.) Webb. "Thoroughly naturalized along the roadside", Fountaindale, *Bebb* in Gray. Herb. Cited by Patterson with note from Bebb.

*RESEDA ALBA* L., "streets of Morgan Park"—E. J. Hill in Bull. Torr. Bot. Cl. xxvi. 309 (1899). Also later records.

*PODOSTEMUM CERATOPHYLLUM* Michx. "South Chicago"—Higley & Raddin.

*HEUCHERA AMERICANA* L., var. *INTERIOR* Rosend., Butt. & Lak. Many Illinois specimens cited in the Monograph by the authors of the variety.



*H. RICHARDSONII* R. Br., var. *GRAYANA* Rosend., Butt. & Lak. Many Illinois specimens cited in the Monograph. In the *Flora of Illinois* this is made a mere synonym of the very different *H. hispida* Pursh, a local montane species not occurring in Illinois.

*PYRUS ANGUSTIFOLIA* Ait. (*Malus angustifolia* (Ait.) Michx.), "in southern Illinois (Pope and Johnson Counties. *E. J. Palmer*)".—Sargent, *Man. Trees N. Am.* ed. 2: 386 (1922). Listed by Patterson from "Washington county . . .; Wabash, Schneck"; also by several others.

*POTENTILLA MILLEGRANA* Engelm. "Illinois"—Rydberg in *N. Am. Fl.* xxii<sup>4</sup>. 305 (1908).

*GEUM RIVALE* L. "Near Elgin, Kane county, Vasey; McHenry, Miss Holmes. Rare"—Patterson Cat. "Wet bogs and swamps; rare", Higley & Raddin.

*PRUNUS MUNSONIANA* Wight & Hedrick, "southern Illinois (Alexander, Gallatin, Pope, Johnson and Richland Counties)"—Sargent, *Man. Trees N. A.* ed. 2: 569 (1922). Palmer discusses its abundance.

*BAPTISIA TINCTORIA* (L.) R. Br., var. *CREBRA* Fernald. Many records (simply as *B. tinctoria*) by Lapham, Patterson, Brendel et al.

*LUPINUS PERENNIS* L., var. *OCCIDENTALIS* S. Wats. Probably all Illinois material belongs to this chiefly inland variety.

Typical *Lupinus perennis*, with minutely pubescent to glabrous stems, occurs from southwestern Maine to New York and south to Florida. Var. *occidentalis*, with the upper half of the stem and upper (as well as lower) petioles with long spreading villi, occurs from New York to Ontario and Minnesota, south to Maryland, West Virginia, northern Ohio, Indiana and northern Illinois.

*TRIFOLIUM RESUPINATUM* L. Mount Prospect, Cook Co., Benke, nos. 5598 and 5946.

*PSORALEA TENUIFLORA* Pursh and var. *FLORIBUNDA* (Nutt.) Rydb. (*P. floribunda* Nutt.).

Typical *P. tenuiflora* extends south to Texas, New Mexico and Arizona. Its racemes are 1.5–4 cm. long, with usually only 1 or 2 flowers at a node, these only about 5 mm. long, with calyx 2–2.5 mm. long. Var. *floribunda* is found southward only to Arkansas and Texas. Its racemes are up to 1 dm. long, with 2–4 flowers at a node, the calyx 3 mm. long, the corolla 6–7 mm. long. Since one of the very few geographic varieties not reduced to synonymy in the *Flora of Illinois* is *P. psoraloides*, var. *eglandulosa* (Ell.) F. L. Freeman, which differs in being "less glandular", one wonders why the much stronger *P. tenuiflora*, var. *floribunda* is suppressed. Typical *P. tenuiflora* is in the Gray Herbarium from Palatine, Lisle and Beardstown; var. *floribunda* (maintained by Rydberg as a species (*Psoralidium floribundum*) from Carlisle, Peoria, Joliet, Lemont, Athens and Malomet.

*AMORPHA NITENS* Boynton. "ILLINOIS: Golconda, Pope County"—E. J. Palmer in *Journ. Arn. Arb.* xii. 177 (1931).

*A. FRUTICOSA* L., var. *TENNESSEENSIS* (Shuttlew.) E. J. Palmer, l. c. 192 (1931). Illinois specimens cited.

*A. FRUT.*, var. *EMARGINATA* Pursh. Several Illinois specimens cited by E. J. Palmer, l. c. 196.

*A. FRUT.*, var. *CROCEOLANATA* (P. W. Wats.) Schneider (*A. croceolanata* P. W. Wats.), "northward in the Mississippi valley to southern Illinois"—E. J. Palmer, l. c. 182.

*TEPHROSIA VIRGINIANA* (L.) Pers., var. *HOLOSERICEA* (Nutt.) T. & G.; Fernald in *RHODORA*, xlv. 452 (1943) (*T. holosericea* Nutt.).



Typical *Tephrosia virginiana*, Florida to Texas, north to southern New Hampshire, Massachusetts, New York, southern Ontario, southern Michigan, southern Wisconsin and Missouri, is silky-villous, the upper internodes of the stem and the leaf-rachises with long spreading villi, the leaflets green and glabrous or only sparsely strigose. It is represented in the Gray Herbarium by Illinois material from Wolf Lake, Forest City and Makanda.

Var. *holosericea*, as its name implies, is silky-villous throughout, the leaflets densely silvery-silky above. It occurs from Michigan and Wisconsin to South Dakota, south to Arkansas, Oklahoma and Texas but not in the more eastern states. Illinois material in the Gray Herbarium is from Ottawa, Peoria, Olney and Havana.

ASTRAGALUS TENNESSEENSIS Gray (*Geoprimum* Rydb.). "Ill., Morris (Vasey), Ogle Co. (Bebb)"—Robinson & Fernald in Gray, Man. ed. 7: 515 (1908); "Sandy banks of Rock River, Ogle county, 1858, but not since found, Bebb; Will county, Vasey"—Patterson Cat. Specimens from both Morris and Ogle County, also from Ottawa (*H. L. Boltwood*) in Gray Herb.

STYLOSANTHES BIFLORA (L.) BSP., var. *HISPIDISSIMA* (Michx.) Pollard & Ball. Herod, *Gleason*, no. 2903.

S. RIPARIA Kearney. Grand Tower, *Gleason*, no. 2910.

APIOS AMERICANA Medic., var. *TURRIGERA* Fernald in RHODORA, xli. 546, pl. 575, figs. 1 and 2 (1939). Illinois specimens cited.

STROPHOSTYLES HELVOLA (L.) Ell., var. *MISSOURIENSIS* (S. Wats.) Britton (*S. missouriensis* (S. Wats.) Small).

The outright reduction of var. *missouriensis* to *S. helvola* can be justified only if one overlooks its coarser habit, much larger and unlobed blunt to merely acutish leaflets, larger flowers and legumes, and seeds 8–12 (instead of 6–9.5) mm. long, with hilum 5–7 (instead of 4–5) mm. long. See RHODORA, xlv. 421 (1942).

S. UMBELLATA (Muhl.) Britton. Cobden, *Gleason*, no. 1311; Makanda, *Gleason*, no. 2440; Metropolis, *Gleason*, no. 2439; Coatsburg, Adams Co., Evers, Jones & Jones, no. 591, collected in 1941 and correctly identified!

The name *Phaseolus helvolus* sensu Torr. & Gray and authors up to 1889 was wrongly applied to this species. Consequently, records of that period under *P. helvolus* belong to *Strophostyles umbellata* (*S. peduncularis*). Under the name *P. helvolus*, the present species was listed by Lapham (1857) and by Patterson, and from "Sandboden" by Brendel (1882) and again in 1887. Higley & Raddin cite it as *Strophostyles peduncularis* Ell., with the clear explanation that it is "*Phaseolus helvolus*, of Manual, 5th Ed., not of L." That should have put on guard any compiler of a *Flora*, even though he lacked a background of knowledge of the bibliography and identities of plants of the state.

GERANIUM SIBIRICUM L. "Illinois"—Hanks & Small in N. Am. Fl. xxv<sup>1</sup>. 7 (1907). Urbana, *Gleason*, no. 34.

LINUM FLORIDANUM (Planch.) Trelease. See RHODORA, xxxvii. 430, pl. 396, figs. 11–14 (1935): "north to southern Illinois". Specimen without further data than "Illinois" in Gray Herbarium.

CROTON TEXENSIS (Klotsch) Muell. Arg. "Illinois" with citation of specimens, Ferguson in Mo. Bot. Gard. Rept. no. xii. 68 (1901).

TRAGIA CORDATA Michx. Rocky woods bordering Ohio River, Golconda, Pope Co., E. J. Palmer, no. 19,582 (as *T. macrocarpa*). As far back as 1876



recorded by Patterson (Cat.) as *T. macrocarpa* Willd., from "Banks of the Ohio at Golconda, Pope county, Forbes."

*ACALYPHA OSTRYAEOFOLIA* Riddell (*A. caroliniana* Ell., not Walt.). Definitely in Lapham's Catalogue. By Patterson cited from "Near Jonesboro, Union county, Vasey; Wabash, Schneck".

*ILEX OPACA* Ait., "southern Indiana and Illinois"—Sargent, *Man. Trees* N. A. ed. 2: 670 (1922).

*ACER PENSYLVANICUM* L. Two stations near Chicago reported by Higley & Raddin.

*A. RUBRUM* L., var. *TRILOBUM* K. Koch (var. *tridens* Wood; *Rubacer carolinianum* (Walt.) Small), "southern Illinois"—Sargent, l. c. 699. Cited and discussed by Palmer.

Quite as well defined, in its own way, as *Acer rubrum*, var. *Drummondii* (Hook. & Arn.) Sargent, which is glorified in the *Flora of Illinois* as a full species.

*CARDIOSPERMUM HALICACABUM* L. Rich ground, St. Clair Co., Aug. 1878, Eggert. The first record from Illinois was by the first and greatest botanist to explore southern Illinois, André Michaux, who in 1803 recorded *Cardiospermum* from "juxta amnem Kaskaskia, ab occidente in flumen Mississippi defluentem". Lapham knew about it but Michaux's pioneer exploration from the lower Wabash to the Mississippi from August to October, 1795, with a base at Kaskaskia, seems not to have been known by the very modern author of the *Flora*.

*CEANOTHUS AMERICANUS* L., var. *PITCHERI* T. & G. Shirland, *Gleason*; Peoria, *McDonald*; Macon Co., *Clokey*, no. 2432; Champaign, *Pease*, nos. 12,405 and 13,003.

Distinguished from the acute- or acuminate-leaved typical *Ceanothus americanus* (with leaves green and glabrous above) by its blunt or round-tipped leaves pilose above. If *Rorippa islandica* (Oeder) Borbás, var. *hispida* (Desf.) Butters & Abbe is a species, as the *Flora of Illinois* maintains (p. 139), merely because it has "Stem hirsute" as opposed to the "Stem glabrous or nearly so" of true *R. islandica* (*palustris*), surely *Ceanothus americanus*, var. *Pitcheri*, known only from the Interior, is a sharply defined geographic variety.

*CALLIRHOE ALCAEOIDES* (Michx.) Gray. Gravelly slopes, Peoria, *McDonald*; dry ground, recently introduced, Champaign, June, 1899, *Gleason*.

*HYPERICUM ELLIPTICUM* Hook. "St. Clair county, Brendel; Fulton, Wolf—Patterson Cat. "Sudwärts"—Brendel (1882). Specimen from Athens in Gray Herb. Cited without locality by Vasey in *Trans. Ill. Nat. Hist. Soc.* ed. 2, i. ser. 1. 140 (1862).

*H. BOREALE* (Britton) Bicknell. Olney, *R. Ridgway*, no. 820.

*H. TUBULOSUM* Walt., var. *WALTERI* (Gmel.) Lott (*H. petiolatum* Walt.; *Triadenum petiolatum* (Walt.) Britton). Vasey, l. c. (1862). "Wabash county, Schneck"—Patterson Cat. "Im Ohiogebiet" as *Elodes petiolata*, Brendel (1882). Several other records.

*BERGIA TEXANA* (Hook.) Seubert. "Found in St. Clair county, two miles south of St. Louis, by Mr. H. Eggert.—Engelmann"—Patterson Cat. Cited by Brendel in 1882 and 1887.

*PASSIFLORA LUTEA* L., var. *GLABRIFLORA* Fernald.

True *Passiflora lutea*, occurring from Florida to southeastern Pennsylvania and Delaware, has the young stem pilose and the calyx pilose at base. The plant of the Interior (var. *glabriflora*) is glabrous throughout or only the stem rarely pilose. These are the characters used in the *Flora of Illinois* to distinguish two geographically inseparable "species" in *Rorippa*.

*MENTZELIA OLIGOSPERMA* Nutt. Cited by Lapham, also by Brendel (1882 and 1887). Fine sheet from Pike County, *Holton*, in Gray Herb.



RHEXIA MARIANA L., var. LEIOSPERMA Fernald & Griscom. Specimen from Metropolis cited with original description.

LUDWIGIA PALUSTRIS (L.) Ell., var. AMERICANA (DC.) Fernald & Griscom.

The plant of North America is so different from the typical European *Ludwigia palustris* that it has three specific names. Although only a strongly defined North American variety of a European type, it is as strong as the North American variety of Eurasian *Scheuchzeria palustris*, which the author of the *Flora of Illinois* separates as an American species.

MYRIOPHYLLUM EXALBESCENS Fernald.

It is not indicative of close study that the American plant is reduced outright to the Eurasian *M. spicatum*. If it were called *M. spicatum* L., var. *exalbescens* (Fern.) Jepson there would be some evidence of understanding. The American and the Eurasian plants differ in many points. *M. SPICATUM*: old dried stems remaining fulvous or olivaceous; principal leaves of primary axis with 14–21 pairs of stiff linear segments; bracts rhombic-obovate; bractlets suborbicular or reniform, broader than long, 0.5–0.8 mm. long; anthers linear, 1.8–2.2 mm. long. *M. EXALBESCENS*: old stems soon blanching; principal leaves of primary axis with 7–11 pairs of capillary soft (often flaccid) segments; bracts spatulate-obovate or oblong-cochleiform; bractlets ovate, longer than broad, 0.7–1 mm. long; anthers oblong, 1.2–1.8 mm. long.

It really does not clarify matters to merge them outright.

PROSERPINACA PALUSTRIS L.

True *Proserpinaca palustris*, occurring from the West Indies and Florida to Texas, and northward in the coastal states, has the thin- or wing-angled fruits with concave sides and 4–6 mm. broad (*P. platycarpa* Small). The plants of Illinois have smaller fruits (2.5–4 mm. wide). One, var. *CREBRA* Fernald & Griscom, has the fruits with flat to convex sides and subacute angles; the other, var. *AMBLYOGONA* Fernald (*P. amblyogona* (Fern.) Small) has the very plump fruits with broadly rounded or obsolete angles. These are real differences.

HYDROCOTYLE AMERICANA L. In Lapham's Catalogue; also listed by Higley & Raddin.

PTILIMNIUM COSTATUM (Ell.) Raf. Characteristic material of this long-styled southern species from Mound City and Desoto, Aug., 1862, *Vasey*, distributed without identification. Listed in Patterson Cat.

THASPIUM PINNATIFIDUM (Buckl.) Gray. Waldron, Kankakee Co., 1870, *E. J. Hill*, and banks of Kankakee River, Momence, 1894, *Hill*, with detailed account of characters—*E. J. Hill* in Bot. Gaz. xxi. 118 (1896).

One seeks in vain for any "pattern" which may have governed the selection of species to be continued as admitted members of the *Flora of Illinois*, except the stated one that, for the most part, the author had personally examined them; as if Michaux did not know his own species (the specimens extant, and photographs of many of them in some of our herbaria), as if the identifications of woody plants by Sargent, Ridgway or Palmer (the specimens extant) must be excluded, or as if the identifications of Lapham, Bebb and Hill (specimens largely extant) were unreliable!

Very naturally, the earlier botanical explorers of Illinois (before there were



well established institutional herbaria there) sent material of their more interesting plants or their puzzles to Torrey, Gray or Engelmann. It thus happens that great series of Illinois specimens are in the larger and older herbaria which, it would seem, were not critically canvassed in order that the already well accredited species of that state might be personally examined. In studying a single small genus I recently had before me the material from some of our larger herbaria. These showed from Illinois specimens from 33 botanists: in the Gray Herbarium alone from Babcock, Bebb, Benke, Wm. Boott, T. E. Boyce, V. H. Chase, Clokey, Eggert, Gleason, Greenman, Lapham, McDonald, Mead, E. J. Palmer, Patterson, Pease, Ridgway, Schneck, Seymour, Sherff and Umbach; while the Engelmann Herbarium had Illinois material from most of the same botanists as well as from Edgar Anderson, Bauer, Beckwith, Hitchcock, McCree and Pammel; the Torrey and Britton Herbaria material from many of the same collectors and from some others; the Philadelphia Academy similarly; while Duke has the very extensive Illinois herbarium of A. B. Seymour; the National Herbarium, Illinois material of many already cited, as well as of many others, including Crampton, Earle and Steele.

Nevertheless, some very local and not recently collected species are admitted and one which is "probably extinct". There seems no satisfactory excuse for the omission of any mention of 200 others, except what may be politely called lack of information, and for not examining (since that was a prerequisite) the larger and often older herbaria of the country for Illinois material of Bebb, Clokey (especially his own vast herbarium), Eggert (particularly at St. Louis), Gleason (largely at New York), Lapham, Mead, Palmer (very largely at St. Louis and at the Arnold Arboretum and, of course, in his extensive private herbarium), Pease, Ridgway (largely at the Arnold Arboretum and the Gray Herbarium), Seymour (his great herbarium at Duke), and many others. It is too bad that the old collections and records were not thoroughly checked.—M. L. FERNALD.

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GERANIUM NEPALENSE, var. THUNBERGII IN MASSACHUSETTS.  
—Last summer, while walking by an arbor-vitae hedge on my brother's place in Wellesley, I noticed a large patch of an unusual looking *Geranium* growing along the foot of the hedge and, on further examination, found it to be an abundant weed in a nearby garden. Being unable to find it mentioned in Gray's Manual or Britton & Brown, I took it to the Gray Herbarium, where Professor Fernald kindly identified it for me as *Geranium nepalense* Sweet, var. *Thunbergii* (Siebold & Zucc.) Kudo, a Japanese variety of a wide-spread Asiatic species not before reported from North America.

Later on, when I showed it to my brother, his only comment





Fernald, Merritt Lyndon. 1945. "An Incomplete Flora of Illinois." *Rhodora* 47, 204–219.

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