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## Some Species Previously Recorded in the Oklahoma Flora Now Needing Verification

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It is sometimes assumed that a study of our flora cannot be as complex, from a bibliographic standpoint, as that of Eastern States, because their botanical explorations, and consequent enumerations, began at an earlier date than our own. It is true that we are unable to match the

Clayton collections in Virginia, described by Gronovius in 1739 in *Flora Virginica*, which was one of the publications used by Linneaus in the preparation of his *Species Plantarum* in 1753. But even these collections and publications have a bearing on our own flora. For example, *Rhus copallina* L. rests upon Clayton material. Fernald and Griscom (3), in discussing many similar cases, show that the Virginia plant is an epidemic one and that our common winged sumac is a different taxon, *R. copallina* L., var. *latifolia* Engler. Thus we see that a name in our flora involves an understanding of some of the earliest taxonomic work done in the United States.

Dealing more directly with our flora are such publications as the following. Nuttall's Collections toward a flora of the Territory of Arkansas (6) lists the plants that he collected in the Territory of Arkansas in 1819. Many of these were described as new species. Some were collected in what is now Oklahoma, as the eastern part of our state was then included in the Territory of Arkansas. Others also occur in our state, although they were described from what is now Arkansas. J. M. Holzinger in the first volume of the Contributions of the U. S. National Herbarium identified and listed plants collected by C. S. Sheldon and M. A. Carleton in what is now Oklahoma. In 1900 an Annotated Catalog of the Ferns and Flowering Plants of Oklahoma was published by E. E. Bogue at Stillwater. In 1902 A. H. Van Vleet, Territorial Geologist, published his Plants of Oklahoma at Guthrie. In 1916 G. L. Stevens wrote a Flora of Oklahoma as his doctor's dissertation at Harvard. This was not published, but many of the records therein were perpetuated by R. E. Jeffs and Elbert L. Little in their Preliminary List of the Ferns and Seed Plants of Oklahoma published at Norman in 1930. Thomas R. Stemen and W. Stanley Myers published their Oklahoma Flora in Oklahoma City in 1937.

Works of the kind mentioned in the preceding paragraph are, through necessity, compilations in some degree. They contain the ideas of many taxonomists other than the author. In preparing such a publication today literally hundreds of monographs and other taxonomic articles must be utilized. For example Pennell (7) in 1935 described four new species of *Pentstemon* that occur in Oklahoma. Fernald (2) in 1941 advanced reasons for using the name *Andropogon Gerardi* for the species previously known as *A. furcatus* or *A. provincialis*. Furthermore differing generic and specific concepts must be accounted for. The genus *Oenothera*, as delimited by its monographer, P. A. Munz, and by other conservative taxonomists, was treated a generation or two ago as several segregate genera, *Calytophis*, *Hartmannia*, *Kneiffia*, *Lavauzia*, *Megapterium*, *Raimannia*, and *Salpingia* by such authors as Small and Rydberg. Similar situations occur in the treatment of species. One author will list three or four species; another will treat the same populations as one species with two or three varieties. In both instances the floral and vegetative morphology are the same for both authors. It is the interpretation that differs: whether the groups under consideration should be treated as genera or sections of genera, as species or as varieties and formas.

How may these differences in concept result in the presence of names now needing verification? A possibility is illustrated by the following example. In Jeffs and Little's preliminary list (4), there appears the name *Dianthera ovata* Walt. This is an acanthaceous plant now generally referred to *Justicia*. Since no material can be found in our herbaria referable to *Justicia ovata*, at least as defined by Small (9), and since some of it can be referred to *J. lanceolata*, quite distinct from our common *J. americana*, we begin to question the validity of the record. However we find that *Justicia lanceolata* was originally described as *J. ovata* Walt., var. *lanceolata* Chapman. Now since a species *must* contain its varieties, it would be perfectly correct to refer to our taxon as *J. ovata*. In so doing one is merely not differentiating to variety. However, another author,

believing it to be a distinct species, would refer to the same thing as *J. lanceolata*. We now have two different specific names, *J. ovata* and *J. lanceolata*, both pertaining to the same plant.

In my own recent accounting of our flora (10) I have chosen to retain many records I actually considered as dubious, until they can be studied more. It is all too easy to overlook a rare species; one must be at the right spot at the right time in order to find it. On the other hand a knowledge of our flora must be based eventually on available herbarium specimens.

The following enumeration lists 22 species needing the verification of herbarium sheets. Any such authentication will be deeply appreciated. If it cannot be provided, the names should be dropped from our flora.

*Zigadenus elegans* Pursh (*Anticlea elegans* (Pursh) Rydb.). This species was collected by Van Vleet according to Stemen and Myers, and the name is listed by Van Vleet as the only species of *Zigadenus* in his Plants of Oklahoma. Although we find no substantiating specimens for this record, we do have numerous sheets of another species, *Z. Nuttallii*.

*Streptopus amplexifolius* (L.) DC. is not found in our herbaria.

*Brasenia Schreberi* Gmel. There is a possibility that this name, in our flora, rests upon material of *Nymphoides peltata* in the Gentianaceae. There is some resemblance, but not in actual floral morphology.

*Hydrastis canadensis* L. is a species I have not seen.

*Dicentra canadensis* (Goldie) Walp. All of the material of this genus seen in our herbaria should be referred to *D. Cucullaria* (L.) Bernh.

*Ribes curvatum* Small is restricted in range by its author to Alabama and Georgia. No state material has been seen, so we do not know the basis for the report.

*Crotalaria rotundifolia* (Walt.) Poir, has not been seen in our herbaria.

*Dalea grisea* (T. & G.) Shinnery (*Petalostemum grisea* T. & G.). The author has seen only its close relative, *D. villosa*, from Oklahoma.

*Phaseolus polystachios* (L.) BSP. has not been seen. If it is here, it should be found in the eastern part of the state.

*Aesculus octandra* Marsh. We are west of the range given by Fernald (1). Oklahoma material labelled as this species has been found to be *A. discolor* Pursh.

*Ascyrum stans* Michx. If this species is in our state it should be found in the eastern part. It is easily recognized by its three styles. *A. Hypericoides* has only two. It is possible that the broad-leaved variety of the latter species, *A. Hypericoides*, var. *oblongifolia*, has been mistaken for *A. stans* due to the leaf shape.

*Oenothera brachycarpa* Gray is cited by Munz (5) from no closer than west Texas and the mountains of New Mexico. It seems probable that Oklahoma reports of this species should be referred to *O. triloba*.

*Anagallis arvensis* L. has not been seen from Oklahoma.

*Lysimachia ciliata* L. The only sheet so labelled, Stevens 1439A, has the tapering leaf bases of our common species, *L. lanceolata*, rather than the ovate ones of *L. ciliata*. It is probable that this sheet is the basis for the inclusion of the latter species by Stevens in his manuscript Flora, and for its consequent acceptance by Jeffs and Little.

*Solanum Dulcamara* L. No authenticating herbarium specimen has been seen. Since the species is a garden escape, it is possible that it has been collected at some time, but it is doubtful that it should be admitted to our flora.

*Collinsia verna* Nutt. All Oklahoma material seen has been referable to *C. violacea*.

*Justicia ovata* Walt. In addition to the possibility of confusion in nomenclature mentioned earlier in this paper, it may be further noted that the only sheet labelled *J. ovata* at the University of Oklahoma, hence the probable basis for the Jeffs and Little report, proves to be a sheet of *Dicliptera brachiata*.

*Lonicera glaucescens* Rydb. Fernald (1) states that this entity occurs as far southwest as "Mo. & ne. Kans." I have seen no herbarium material from the state.

*Baccharis neglecta* Britton has not been seen in our herbaria.

*Bahia oppositifolia* (Nutt.) DC. All the available Oklahoma material of this genus is referable to *B. Woodhousei* as can be readily ascertained by noting the lanceolate, pointed pappus scales having an excurrent midrib. *B. oppositifolia* has obovate, rounded pappus scales in which the midrib does not reach the apex.

*Coreopsis verticillata* L. Much material is so labelled in our herbaria. Most of it proves to be *C. grandiflora*, var. *Harveyana*. Some of it is *Thelesperma megapotamicum*. Dr. Goodman also found this to be the case when he recently examined the material in the Bebb Herbarium of the University of Oklahoma. It is interesting to note that the nearest locality recorded by Sherff (8), one, and the only one, from Arkansas, is for a cultivated specimen.

*Prenanthes altissima* L. The only specimen seen that was so labelled, Van Vleet, bank of the Cimarron, 6 miles south of Dixie, July 26, 1905, proves to be *Cacalia atriplicifolia*.

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