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The Distribution of the Native Forest Trees of Nebraska

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THE DISTRIBUTION

OF THE

NATIVE FOREST TREES

OF NEBRASKA

BY CHARLES E. BESSEY
THE DISTRIBUTION OF THE NATIVE FOREST TREES OF NEBRASKA.

BY CHARLES E. BESSEY.

For nearly twenty years I have been collecting data as to the distribution of the native forest trees of Nebraska, and have made preliminary publications of such results as were reached from time to time.* In each successive list some additions were made and corrections entered, so that at the present time we are able to indicate with a good deal of accuracy the species and their distribution throughout the state. We know also the origin of all our species, and much as to the past and present movements of the trees and the forest areas which they make. With regard to these matters sufficient publication has already been made. In the present paper some corrections in names have been made, and for the first time maps are used to show their distribution. These were first drawn in 1892 for my own use in the study of the movements of the different species, and then copied for use in the forestry exhibit in the Columbian Exposition in 1893. They are now published with such corrections as I have been able to make through continued personal observation, and the aid which I have received from accommodating correspondents. It is hoped that their publication will stimulate to still further corrections, and I shall be greatly obliged for any additions or suggestions from anyone who has facts which do not appear in this report as a whole. It should be said that the maps are drawn in bold outlines, and no attempt is made to indicate little details. It is not intended to indicate that a particular tree is found everywhere within the area assigned to it on the map. If however, any species is known to occur a considerable distance outside of the areas marked on the map the fact should be communicated to me at once. Wherever possible, specimens of the leaves or fruits should be secured and sent to me, along with the information.

Address all communications to me at The University of Nebraska, Lincoln, Nebraska.

*Report read at Summer Meeting of the Nebraska State Horticultural Society, August, 1891.

Trees and Shrubs of Nebraska, in Nebraska Farmer, November, 1891.

Preliminary Report on the Native Trees and Shrubs of Nebraska, in Bulletin 18, Nebraska Agricultural Experiment Station, 1902.

A Second Report upon the Native trees and Shrubs of Nebraska, in Annual Report of the Nebraska State Horticultural Society, 1892.

A Third Report upon the Native Trees and Shrubs of Nebraska, in Annual Report of the Nebraska State Board of Agriculture, 1893.

The Nomenclature of the Nebraska Forest Trees, in publications of the Nebraska Academy of Sciences, 1898.

The Forests and Forest Trees of Nebraska, in Annual Report of the Nebraska State Board of Agriculture. 1899.
1. ROCK PINE.

*Pinus scopulorum* (Engelmann) Lemmon, Garden and Forest, 10 (1897).—In former reports this has been called "Bull Pine," and the species has been given as *P. ponderosa*, but I am now convinced that it is better to regard it as a separate, but closely allied species. The two trees differ in size of tree, cones, and length and number of leaves, the Rock Pine being smaller, having smaller cones, with leaves in twos, and shorter than in the true Bull Pine. This tree forms dense forests in the northwestern and northern portions of the state, extending from the Wyoming line along Pine Ridge and the Niobrara river to the eastern boundary of Rock and Keya Paha counties. It occurs also on the North Platte river as far east as Deuel county, and also south of that river on the Wild Cat mountains, and the outlying hills. It is so abundant in this latter region that saw mills have been erected, and much lumber manufactured from it. It is said to occur, also, in isolated patches on the high rough land between the North Platte river and Pine Ridge. I have myself not seen the pine in this latter locality, but it is so reported by government surveyors. It occurs in limited areas in the Loup valley in the eastern edge of the Sand Hills, and also in Greeley and Custer counties. It formerly occurred along the Platte river eighteen or twenty miles east of the junction of the North and South Platte rivers, as is shown by fragments of roots dug from the ground. Similarly, it formerly occurred in Franklin county in the Republican valley, where it seems now to be extinct. This tree has acquired new interest within the last few years from the fact that it has been found to be an excellent one for planting in the Sand Hills of central Nebraska, where extensive plantations have already been made. Its seeds germinate readily, and the young trees are hardy and easily transplanted. In the parts of the state where the trees grow naturally, seeds are formed abundantly, and in many places where fires and cattle are kept out the seedlings are very numerous and thrifty. Even in the far western portions of the state it is not at all an uncommon thing to find an old tree surrounded by a colony of young trees which have sprung up from the seeds scattered by the wind on the prairie sod. The lumber made from this tree is of fair quality and resembles somewhat that of the Hard Pine of the South, but with a coarser grain and a little more tendency to warp. It makes good "dimension lumber," and is considerably used for this purpose in the western and northwestern portions of the state.

2. EASTERN RED CEDAR.

*Juniperus virginiana* L. Sp. Pl. 1039 (1753).—Eastern Nebraska along the streams and occasionally scattered over the hills in central Nebraska,
and possibly to the western border. This Red Cedar does not occur in dense growths any place in the state. This valuable tree has been extensively planted in eastern Nebraska, and there is no doubt as to its hardiness and usefulness. The wood is perhaps the most durable of all that grow naturally in the state, and it makes fence posts that are almost indestructible. It has one great drawback, and that is its susceptibility to a fungous disease, the "Cedar Apple" which disfigures it, and what is still worse, infects the neighboring apple trees, causing them to be affected with a serious "rust" of the leaves. So serious a disease has the apple rust become in some parts of the state that orchardists have taken to cutting out their Red Cedars in order to avoid the infection. Red Cedars should not be planted in close proximity to apple orchards.

3. WESTERN RED CEDAR.

*Juniperus scopulorum* Sargent, Garden and Forest, 10 (1897).—This species has been so much confused with the foregoing that it is quite difficult to assign its range with accuracy. All the Red Cedars in the state were until recently supposed to be of one species, namely, the first mentioned, but Professor Sargent has determined that in western Nebraska, many, if not all, of the trees belong to the western species. In assigning its range, I should give it as the western counties of Nebraska extending eastward along the Platte and the Niobrara rivers for a hundred miles or more. What is said above as to the value of the Red Cedar, applies equally well to the western species. I do not know whether this species is as subject to the disease ("Cedar Apple") as the eastern species, but incline to the belief that in this respect the western form is superior to the other. It is a prettier, more glaucous tree, and it may be distinguished by the fact that it forms larger "berries" than the common Red Cedar, and they do not ripen until the second year. The "berries" of the Red Cedar of the eastern part of the state ripen the first season. The western Red Cedar is to one which has been called "Platte Cedar" and "Silver Cedar" by the Nebraska horticulturists. It occurs in the mountains westward in Wyoming and Colorado.

4. PAPAW.

*Asimina triloba* (L.) Dunal, Monographie de la Famille des Anonacees, 83 (1817).—This small tree, which in Nebraska is usually a shrub, occurs in southeastern Nebraska in Pawnee, Richardson, Nemaha, Otoe, and Saunders counties, and probably in one or two adjacent counties. While it is a shrub in Nebraska it is a tree attaining a height of thirty-five to forty feet, and a diameter of a foot in some portions of the United States. Its large fruits are much relished by many people, and greatly disliked by all the rest. In those parts of the state where it may be grown it might well be planted as a pretty ornamental shrub or small tree.
5. BLACK WILLOW.

Salix nigra Marshall, Arbustum Americanum, 139 (1785).—This species and the next have been so much confused as to make it difficult to determine the exact range of each. This one probably occurs throughout the state. The Black Willow attains with us a height of forty to fifty feet, rarely sixty to seventy feet, and a diameter of a foot or a little more, but in the eastern states it sometimes reaches to considerably more than a hundred feet, with a diameter of two to three feet. Its leaves are narrow, green above, and slightly paler beneath, and the petioles (leafstalks) are very short. The wood is light and soft, and well adapted for making into paper pulp. It is much used for making into charcoal. The slender shoots are used also for basket making. When we add the considerable fuel value of the wood, and take into account the ease of propagation by cuttings, it must be acknowledged that this tree is worthy of cultivation in suitable localities. There is no reason why many a waste place should not be filled with Black Willows and made to yield valuable returns year after year.

6. ALMOND WILLOW.

Salix amygdaloides Andersson, Ofversigt af Kongliga Vetenskaps Akademien, 6 (1858).—Apparently this species has the same range as the foregoing, namely, throughout the state. It is common along the streams, and may be distinguished from the Black Willow by the fact that in the Almond Willow the leaves are broader, and much lighter colored beneath, and the petioles (leafstalks) of the Almond Willow are much longer than in the other species. The tree attains a height of sixty to seventy feet and when well grown a diameter of two feet, but it is usually smaller than these dimensions, especially in the western parts of the state. Its wood resembles that of the Black Willow, but it is a little lighter in color, and a little heavier in weight. The wood has similar uses to that of the Black Willow, and there is no doubt that this species could be profitably grown for fuel and other purposes.

7. SHINING WILLOW.

Salix lucida Muehlenberg, Neue Schriften der Gesellschaft Naturforschender Freunde zu Berlin, IV (1803).—Occurs in Cass county. This is a small tree with a bushy appearance, and in fact it is more often a shrub than a tree. It is sometimes eighteen to twenty feet in height, with a smooth bark, and the twigs are yellowish-brown and shiny. On account of its small size this tree has little value, although no doubt its wood might be used for the production of charcoal.

8. SAND-BAR WILLOW.

Salix fluviatilis Nuttall, Sylva of North America (1842).—Common throughout the state in moist situations, especially on sand-bars in streams. It is the most abundant species on the sand-bars and islands of the Platte river. This is a most variable species as to the narrowness of the
leaves, which ranges from almost linear to lanceolate, and also as to the size and height of the tree itself. In some places the tree attains to the height of twenty or more feet, while in others it is a shrub not over a yard or so in height. Occasionally it becomes a large tree sixty to seventy feet high, and with a trunk a foot in diameter. Its wood is compact, and still heavier than the Almond Willow. Its color is reddish brown, and it is probably more durable than most willows.

9. BEBB'S WILLOW.

Salix bebbiana Sargent, Garden and Forest, VIII., November (1895).—Reported from Dawes and Sioux counties, but probably more widely distributed. Although a shrubby plant with us, this species attains tree-like dimensions in some regions, being as much as twenty to twenty-five feet in height. It has gray hairy twigs and dull green leaves on short petioles. It has little value economically.

10. DIAMOND WILLOW.

Salix missouriensis Bebb, Garden and Forest, 8 (1895).—The tree here referred to is the one to which the common name of Diamond Willow has been applied. For some years it was supposed that the variety vestita of Salix cordata was this tree, and it was so named in my previous lists, but that has been determined by Sargent to be an error.—Common along the Missouri and Niobrara rivers, and also on the Loup and Republican rivers, as well as in Banner and Scott's Bluff counties. The Diamond Willow has been well known to many Nebraskans for a long time, but it is only within the last few years that it has been given specific rank. It is sometimes a tall shrub, and it ranges from this to forty or more feet in height. Its bark is gray, and the twigs are gray-hairy. The leaves are pale beneath. The wood is dark brown, and is said to be durable when used for fence posts. Many of the stems and branches have diamond-shaped depressions upon the surface, from which the common name has been derived. These are now thought to be due to the punctures of certain insects, resulting in the death of the cambium in diamond-shaped areas.

11. QUAKING ASPEN.

Populus tremuloides Michaux, Flora Boreali-Americana, 11 (1803).—Occurs in the western counties of the state from Banner to Sioux, Dawes, and Sheridan. It has been reported from the southern counties, but this is probably an error. The Quaking Aspen is a mountain tree which has come into the state from the west, accompanying the Pines with which it is associated in the Rocky mountains. It is a most useful tree in the Wyoming and Colorado mountains, always coming in whenever the pines or other conifers are destroyed by fire, and holding the ground until the pines spring up again. A few years after a great forest fire the mountains are covered with these quick-growing trees, which do not make a dense enough shade to prevent the growth of little pines, in fact the conditions for the springing up of pines are
better by far than where there are no Aspens. Thus the Aspens serve a good purpose in the re-foresiting of the mountains, and where man does not interfere the pine forests will certainly follow the Aspen growth.

12. BALSAM POPLAR.

*Populus balsamifera* L. Sp. Pl. 11:34 (1753).—In previous lists this has been given as the variety *candicans*, but I am confident that our tree is the species proper and not the variety.—Occurs in Sioux county.

This northern tree comes into the state from the mountains westward, and grows in such a limited area that it has no commercial importance. It is brought into cultivation in some places and makes a pretty tree.

13. NARROW-LEAF COTTONWOOD.

*Populus augustifolia* James, Long's Expedition, 1, 497, (1823) —In a few canyons in the Wild Cat mountains in Scott's Bluff county, and also in canyons in Pine Ridge in Sioux county. This interesting Cottonwood is common in the mountains west of Nebraska, and it comes down into the state in but two regions, as just indicated. The tree has much the appearance of the willow, the leaves being long and narrow. It attains a height of from thirty to sixty feet, and further west occasionally has a diameter of trunk from eighteen inches to two feet. The wood is darker than that of the common Cottonwood, and is a little more compact and slightly heavier. Its fuel value is also slightly greater than that of the common Cottonwood.

14. RYDBERG'S COTTONWOOD.

*Populus acuminata* Rydberg, Bulletin of the Torrey Botanical Club, 20:50 (1893). (Silva, IX., 172.)—In the canyons of the Wild Cat mountains in Scott's Bluff county. While it is known to occur in the Black Hills, it has not yet been discovered in any part of Pine Ridge in Sioux county.

Until 1891 this species was confused with the Narrow-leaf Cottonwood, and in some places with the common Cottonwood. In the city of Colorado Springs, in Colorado, it has been planted along the street sides for many years, and it was not distinguished from the common Cottonwoods; in fact it was supposed to be of that species. In order to separate the two-species, it is necessary only to examine the leaves, which are pointed below and finely serrated on the margins in the new species, while in the common Cottonwood the leaves are truncate-based and coarsely serrated. The wood appears to be much like that of the common Cottonwood.

15. COMMON COTTONWOOD.

*Populus deltoides* Marshall, Arbustum Americanum, 106 (1785).—This has borne the name of *P. monilifera* Aiton in previous lists and in Gray's Manual. In Coulter's Manual it is *P. angulata* Aiton, while in De
This quick-growing tree is one of the most important in the state. It is propagated very easily, and grows with such rapidity that within a few years the settler is able to supply himself with fuel and some of the wood which he needs in making various things about his buildings. As a shelter from the fierce blasts of winter, and the equally fierce midsummer's sun it has proved its usefulness to both man and beast. Rightly seen it is a beautiful tree, and may well claim a place for this purpose alone. I have seen Cottonwood trees that rivalled the Elm in beauty and stateliness. Here and there along the streams are to be found giants with trunks four to six feet in diameter, whose great tops spread outward and upward into a mass of delicate green against the sky, and with a form as perfect as that of any tree I have ever seen. It is only when the tree is sending out into the breeze its thousands of cotton-covered seeds that we find it to be troublesome. And yet when we remember that we have here a beautiful mechanism for the distribution of the seeds, and that every little fluffy bit of floating cotton is carrying a tiny plantlet, a minute tree in fact, it may make us more tolerant when we find our coats flecked with white. This cotton-shedding period lasts for but a short time, and all of the rest of the year the Cottonwood is one of the cleanest of trees. I have often admired the beautiful white branches of a particular tree under which I have walked every day for the past eight years, and at night when the whole top is lit up with the bright electric light, bringing out the silvery white of the branches against the background of green leaves I am always compelled to stop and look again and again at the beautiful tree.

I have several times called attention to the fact that the common opinion as to the uselessness of the wood for fuel and other purposes is unfounded. From a careful study of the tables of the fuel values of the woods of the United States I have been able to show that weight for weight Cottonwood has a higher heat-producing value than any of the woods ordinarily used for fuel in Nebraska. It is only when we compare the woods by bulk that Cottonwood seems to be inferior, but then it must be remembered that Cottonwood grows so much faster than any other wood that this is entirely overcome. We can grow from six to fifteen times as much wood in a Cottonwood tree as in any of the Ash, Oak, Walnut, or Hickory trees, and when we calculate the heat-values we find that the Cottonwood produces fully five times the heat that is to be obtained from the most rapid-growing of the Ashes, and the figures for the other trees are still more favorable for the Cottonwood.

As to the value of Cottonwood for construction I may quote from a recent letter written by Hon. R. W. Furnas, who has had almost a half century of experience with the Cottonwood in Nebraska. He says, "Let me say a word for the Cottonwood as the friend of the pioneer. It was the easiest grower of all the seedlings we first used to
plant out. It grew readily almost wherever it was planted—grew quickly, giving the earliest return. There is no lumber that holds nails better; scarcely any other that will last longer under cover, in the dry. There is a good nice house in this county (Nemaha) built entirely of Cottonwood timber, planted and grown on the farm of its owner. In early steamboat days the captains would give more for half seasoned Cottonwood for fuel than for any other, and said that it made better and more valuable steam heat than any other wood.” (Letter dated April 1, 1904.)

16. BASSWOOD OR LINDEN.


This beautiful tree is often planted in the eastern part of the state, and in and about Lincoln there are many thrifty trees. It is worthy of more attention on the part of those who plant for ornamental purposes, Its usefulness as a honey producing tree should commend it to the bee-keepers of the state. There is no reason why it should not be very generally planted in all of the eastern counties.

17. WHITE ELM.

*Ulmus americana* L. Sp. Pl. 226 (1753).—Throughout the state, along rivers and smaller streams, in some places rare and much scattered, but in other places, especially in the eastern portions, sometimes very abundant.

No other tree approaches the White Elm for shade and ornamental purposes in this part of the country. While it can not thrive where there is a deficiency in the amount of moisture in the soil, there are few places where it may not be grown in Nebraska with the addition of a little water when the rainfall is less than usual. Under irrigation it grows vigorously, and after it is well started it does well in regions where it would not grow when younger. Its roots when once they have penetrated the lower layers of the soil are able to supply enough moisture for all of the demands made upon the tree. As a tree for planting on the grounds around the dwelling house the Elm is unexcelled. Already there are to be seen many stately trees in eastern Nebraska which were set out by the early settlers. Along the streams in all parts of the state there may be found many trees of the same beauty and symmetry as the famous trees in the Connecticut valley. I have seen trees whose trunks were fully five feet in diameter, and whose spreading tops covered at least an eighth of an acre of ground. It should be planted by everybody who owns a piece of ground. We can not have too many beautiful Elms.

18. ROCK ELM.

*Ulmus racemosa* Thomas, American Journal of Science, 19:170 (1831).—Known to occur in but two places in the state, viz: near Meadville,
Keya Paha county, and near Plattsmouth, Cass county, but probably to be found elsewhere in the northern and eastern counties.

Without question this tree has been confused with the White Elm, and indeed it is not easy to distinguish them unless one has the flowers or fruits (seeds). The twigs are more or less marked with rows or ridges of cork, and this should enable one to recognize the species, but apparently this feature is not as well marked as it is in eastern trees. The wood is superior to that of the White or the Red Elm, being harder and more durable. Our tree planters in eastern Nebraska should give it more attention, as the timber will be valuable when the trees attain sufficient size.

19. RED ELM.

Ulmus fulva Michaux, Flora Boreali-Americana, 1:172 (1803). In some recent lists this bears the name U. pubescens Walter, Flora Caroliniana (1788), and there is reason to believe that this may be the prior name.—Common in the eastern part of the state to Franklin, Adams, Buffalo, and Brown counties, and reported from the valley of Medicine Creek in Frontier county.

On the University Campus there are a number of good trees of the Red Elm which show that they are good trees for planting on grounds. Throughout the city there are many more and in all cases they appear to be as good as the White Elm so far as the first few years of growth are concerned, but there can be no doubt that when the two trees have reached their maturity the White Elm will be the finer tree. Still it is a good thing to plant the Red Elm also. It may be noted in passing that there is one objection to the Red Elm, i.e., that sometimes the boys in the neighborhood discover that the bark is edible, and cut large pieces from the trunk for their use. I have seen some trees in Lincoln which were badly injured in this way. Fortunately few boys are able to distinguish the Red ("Slippery") Elm from the White Elm, and the taste of the bark of the latter is not such as to encourage bark-chewing on the part of the boys.

20. HACKBERRY.

Celtis occidentalis L. Sp. Pl. 1044 (1753).—More or less common throughout the state, but less abundant in the west.

Few trees are better adapted for planting for ornamental purposes than the Hackberry, as its tough branches are able to endure any amount of beating by the wind without injury. It is very rare indeed that one finds a tree that has been injured either by winds or by sleet or wet snow. Then, too, the trees are remarkably free from insect pests, the only one of any importance being a minute mite which produces little clusters of twigs ("witch brooms") which disfigure some of the trees. The tree is about as quick-growing as the Elm, to which it is related, and the wood has a good deal of value for fuel,
13 Narrow-leaf Cottonwood

14 Rydberg's Cottonwood

15 Common Cottonwood

16 Basswood

17 White Elm

18 Rock Elm

19 Red Elm

20 Hackberry

21 Mulberry

22 White Ash

23 Red Ash

24 Green Ash
ranking for this purpose a little higher than Green Ash, and a little lower than White Oak.

21. MULBERRY.

*Morus rubra* L. Sp. Pl. 986 (1753).—In the southern and eastern portions of the state from Jefferson county to Richardson, Nemaha, Sarpy, Burt and Cedar.

As this species is a native of the state it should be planted for its fruits which are much better than those of the so-called Russian Mulberry.

22. WHITE ASH.

*Fraxinus americana* L. Sp. Pl. 1057 (1753).—In eastern Nebraska from Sarpy county southward.

Although this tree is found only in a narrow strip along the eastern portion of the state, it may be grown considerably further west in favorable localities. Where it is well grown it attains to the height of a hundred feet or more, and a diameter of three or four feet. I have seen good trees in the rich lowlands along the Missouri river in Sarpy county which were seventy-five or eighty feet high, and nearly two feet in diameter. Few trees have a higher value for their timber than the White Ash, the wood being particularly strong and tough, while at the same time light in weight. Its use in the manufacture of agricultural implements, and in making oars and light spars is well known. In furniture making also it is much used, and some of the finest interior finishings are made of White Ash lumber.

23. RED ASH.

*Fraxinus pennsylvanica* Marshall, Arbustum Americanum, 51 (1785). This is the *F. pubescens* Lamarck (1786), which name it bears in Gray's and Coulter's Manuals.—Throughout the state, but less abundant than the next species.

There is very little difference between this and the next species, in fact I am much inclined to doubt the distinctness of the two. In the Red Ash the young twigs are downy, while in the Green Ash they are smooth; there is also the same difference in the leaves, but these are not accompanied with any other differences, either in the trees themselves or their fruits, and for this reason I suspect that we have here merely individual and not specific differences.

24. GREEN ASH.

*Fraxinus lanceolata* Borkhausen, Handbook Forst. Bot., 1800. Sargent, Silva of North America, VI., 50 (1894). It afterwards received the name *F. viridis* by Michaux filius in Histoire des Arbres in 1813, and the latter name has been very generally adopted by American botanists, and is still used in Gray's and Coulter's Manuals, but this name is clearly antedated by the one given above.—Common along streams throughout the state.

The Green Ash resembles the White Ash in general appearance and
in the quality of the wood, but the tree is smaller and less inclined to
grow upright into a tall tree with an elongated unbranched trunk.
It does not, therefore, produce as large logs for sawing into lumber.
Yet since the best and toughest timber from the White Ash comes
from the younger and smaller growth, this difference in the two trees
is not as important as it would seem to be at first sight. There is no
reason why a great deal of the supply of “White Ash” timber might
not be obtained from the vigorous trees of the Green Ash. The tim­
ber is given by the best authorities as a little more elastic under stress,
and a little stronger under breaking tests than that of the White Ash.

25. PRAIRIE APPLE, or WESTERN CRAB APPLE.
*Malus iowensis* (Wood) Britton, Illustrated Flora of the Northern States
and Canada (1897). This is the *Pyrus iowensis* (Wood) Bailey of the
“Check List” and the *Pyrus coronaria iowensis* (Wood) of some previ­
ous lists.—In eastern Nebraska from Gage to Richardson, Johnson,
Nemaha, Butler, Holt, and Brown counties.

This is one of the prettiest of our native trees for ornamental pur­
poses. On the University Campus there is a fine tree ten or twelve
feet high which is every year a mass of beautiful pink blossoms, at­
tracting the visitor and commanding the admiration of every one.

26. BLACKTHORN.
*Crataegus tomentosa* L. Sp. Pl. 476 (1753).—Eastern Nebraska from Rich­
ardson to Lancaster and Douglas counties.

27. DOWNY HAW.
*Crataegus mollis* (Torrey & Gray) Scheele, Linnaea 21:569 (1848). This
is the *C. coccinea mollis* T. & G. of the sixth edition of Gray’s Manual
and the *C. subvillosa* Schrader of some lists.—With apparently the
same range as the preceding, with which it is commonly confused.

28. RED HAW.
*Crataegus colorado* Ashe.—This has hitherto been called *Crataegus coccinea*
L. Sp. Pl. 476 (1753), but Professor Sargent decides that our tree is
one of Ashe’s new species.—Thomas county, along the Middle Loup
and Dismal rivers.

29. THORNY HAW.
*Crataegus occidentalis* Britton, Manual of the Flora of the Northern States
and Canada (1901).—In previous lists this has borne the name *Crataegus coccinea macracantha* (Lodd.) Dudley, Bulletin of Cornell University,
2:33 (1886). In the “Check List” this was considered to be a distinct
species under Lodgdie’s original name *C. macracantha*, but it is now
regarded as distinct from that species also.—In northern counties
from Knox to Cherry, and also in Thomas county along the banks of
the Middle Loup river.

The Hawthorns (or Haws, as they are commonly called,) are in a
state of extreme confusion, which has been increased by the zeal which
many systematic botanists have recently shown in the description of
new species founded upon differences which are in my opinion often
entirely inadequate. Some of these days we must have a revision of
the whole genus, and then it is to be hoped that many of the hastily
formed species will be reduced to mere synonyms of well established
species.

30. JUNE BERRY.

Amelanchier canadensis (L.) Medicus, Geschichte der Botanik unserer
Zeiten, 79 (1793).—In southeastern Nebraska from Richardson county
to Sarpy.

31. CHOKE CHERRY.

Prunus virginiana L. Sp. Pl. 473 (1753).—In the southeastern counties
from Franklin to Richardson, Cass and Sarpy.

This must not be confused with the Dwarf Wild Cherry (Prunus
demissa) which is commonly, but erroneously called “Choke Cherry”
by the people in central and western Nebraska.

32. WILD CHERRY.

Prunus scrotina Ehrhart, Beitraege zur Naturkunde, 3:20 (1788).—Southeastern Nebraska from Franklin to Richardson and Cass counties.

This tree yields such a valuable wood that it should be much more
extensively planted in the eastern part of the state where it is known
to grow well under cultivation.

33. WILD PLUM.

Prunus americana Marshall, Arbustum Americanum, 117 (1785).—Common throughout the state.

34. KENTUCKY COFFEE TREE.

Gymnocladus dioica (L.) Koch, Dendrologie, 1:5 (1869). This is G. canadensis Lamareck (1783), and of the ordinary manuals. It was first
named Guilandina dioica by Linne in Sp. Pl. 381 (1753).—Eastern and
northern Nebraska from Richardson county to Lancaster, Cuming,
Dixon and Rock.

35. HONEY LOCUST.

Gleditsia triacanthos L. Sp. Pl. 1056 (1753). In nearly all publications
the generic name is given as Gleditschia in spite of the fact that Linne
spelled Gleditsia, evidently from Gleditsius, Latinized from the German Gleditsch.—Southern, eastern, and northern counties from Franklin
to Richardson, Lancaster, Douglas, Dixon and Holt.

This is one of the most valuable of our native trees for planting
in dry situations, as it withstands drought better than almost any other
tree. Last summer I saw it in the Crimea, and the region around
Odessa, Russia, under conditions of extreme drought, and everywhere
was assured that it was one of the best trees for planting where the
moisture is deficient. The wood, also, is valuable, and for this purpose
alone it is worth planting in all of eastern Nebraska.
36. RED-BUD.

*Cercis canadensis* L. Sp. Pl. 374 (1753).—In southeastern counties from Richardson to Lancaster and Douglas.

In Nebraska this pretty tree does not grow large, rarely exceeding ten or twelve feet in height, but in more favorable regions it attains a height of fully fifty feet. Its odd habit of putting forth its pretty pink-purple flowers before the leaves show signs of appearing gives it an interest possessed by few other trees.

37. SYCAMORE.

*Platanus occidentalis* L. Sp. Pl. 999 (1753).—Along the Missouri river from Richardson county to Douglas.

Although the wood of the Sycamore is very valuable for certain kinds of work in the making of furniture and smaller ornaments, there is not yet sufficient demand for it to warrant planting it for this purpose. It is however a fine shade tree, and it is especially well suited for planting in cities and towns, where it seems to endure the peculiar conditions better than most other trees. A few of these trees ought to be found upon every farm, and no street in any of the towns and cities of eastern Nebraska should be without a number to give variety to the tree planting.

38. BUCKTHORN.

*Rhamnus lanceolata* Pursh, Flora Americae Septentrionalis, 166 (1814).—In eastern and northern Nebraska from Gage county to Saunders, Sarpy, Washington, Dixon, Keya Paha, and Cherry.

This is a small tree not well known by any but the botanists and a few people who are familiar with our rarer kinds. It might well be introduced into cultivation as a pretty deep green small-sized tree.

39. INDIAN CHERRY.

*Rhamnus caroliniana* Walter, Flora Caroliniana, 101 (1788).—In Saunders and Cass counties.

This tree resembles the Buckthorn very closely, with which it has been confused.

40. BUFFALO BERRY.

*Leptargyraea argentea* (Pursh) Greene, Pittonia 2:122 (1890). This small tree is still commonly called *Shepherdia argentea* in catalogues, as it is in Gray's and Coulter's Manuals.—From Cedar, Dixon, Saunders, and Franklin counties westward to Cheyenne, Scott's Bluff, Sioux and Dawes.

The pleasantly acid fruits are so delicious that the tree (or tall shrub) is worthy of general cultivation. There can be no doubt that this might be made one of our most attractive berries if we were to take up its improvement under cultivation. Even in the wild state the berries are as good as many of our garden fruits, rivalling the cranberry which it replaces in many a home on the Plains. Although the berries are generally red, there are found now and then amber-colored
berries, which appear to be a little less acid than the red kinds. I suggest that these amber-colored trees should be taken as the wild stock upon which improvements are to be made, as in this way we might expect earlier favorable results.

41. BUCKEYE.

Aesculus glabra Wildenow, Enumeratio Plantarum Horti Regii Botanici Berolinensis, 405 (1809).—In extreme southeastern counties. Pawnee, Richardson and Nemaha.

The Buckeye is found in so small a part of the state that it is scarcely known except as it is occasionally cultivated.

42. MOUNTAIN MAPLE.

Acer glabrum Torrey, Annals of the Lyceum of New York, 2:172 (1826).—In the mountain regions of Sioux and Scott's Bluff counties.

Although this tree occurs in but a small area in the extreme western portions of the state, I have no doubt that it might be successfully grown throughout the state. In Colorado I have seen some fine trees in gardens and parks, and there is no tree which responds more readily to care and cultivation. In its wild state it is a shrubby tree or large spreading shrub, but when cared for it becomes a tree resembling the Silver Maple, but smaller, and with more of a drooping habit. Its leaves are interesting on account of the fact that they show all gradations from simple leaves which are deeply lobed to those which are fully compound. Our people who wish to add a novelty should not neglect this pretty tree.

43. SILVER MAPLE.

Acer saccharinum L. Sp. Pl. 1055 (1753). This tree is commonly given the name A. dasycarpum Ehrhart, Beitraege zur Naturkunde, 4:24 (1789), but the name given by Linne certainly belongs to this tree, since the specimens in his herbarium with this name attached, as well as the original description, agree fully with our tree. Dr. Gray long ago (1839), in a letter to Dr. Torrey (Letters of Asa Gray, 1:150), called his attention to the fact that Linne referred to the tree subsequently described by Michaux (Flor. Bor.-Am., 2:253, 1803) as A. eriocarpum, which is identical with Ehrhart's A. dasycarpum. For some reason, not now regarded as valid, no effort was made to restore this name, and so we find that in all the editions of Gray's Manual, down to the present, the error has been permitted to stand.—In the counties east of the 98th meridian, where it grows naturally along the streams and in the low lands. West of this line it is planted abundantly, and in nearly all parts of the state where sufficient water is available it thrives.

The Silver Maple (often called Soft Maple) is too well known to need description. It is our only species of true Maple which grows wild in the eastern part of the state contrary to what many people think. I have many times been assured that the Sugar Maple (Hard Maple) and the Red Maple grow wild in Nebraska, but this is an error
for both species, neither one being true natives, and in fact very few planted trees of either species are to be found within our boundaries.

44. BOX ELDER.

*Acer negundo* L. Sp. Pl. 1056 (1753). This is the *Negundo aceroides* Moench (Methodus Plantarum Horti Botanici et Agri Marburgensis, 1794), and this name has been generally adopted in American manuals. In Gray's and Coulter's Manuals this name is used. Since, however, this tree is really a maple, there is no good reason for abandoning the name originally given by Linne.—Throughout the state.

Last summer I found that in the excessively dry regions bordering the Black Sea, and in many places in Transcaucasia the Box Elder is regarded as one of the best trees to resist drought. In the regions mentioned it is the most valuable tree for planting, and I am told that it is planted in the region east of the Caspian Sea, and into Turkestan, a thousand miles or more still further east.

45. SUMACH.

*Rhus copallina* L. Sp. Pl. 266 (1753).—Occurs only in the extreme southeastern part of the state, Richardson county, where it is a mere shrub. In the South it is a small tree.

46. BUTTERNUT.

*Juglans cinerea* L. Sp. Pl., ed. 2, 1415 (1763).—Found sparingly in the southeastern part of the state from Gage to Johnson, Nemaha, Otoe, and Cass counties.

The Butternut might well be planted for ornament, and also for its valuable wood. While not as valuable as Walnut, it is allied to it and commands a good price now, and no doubt this will advance rapidly in the future, as the Walnut becomes scarcer.

47. WALNUT.

*Juglans nigra* L. Sp. Pl. 997 (1753).—Found quite abundantly in the southern, eastern, and northern portions of the state, from Harlan county, Saline, and Lancaster to Burt, Dixon, Knox, Rock and Cherry, and eastward.

Wherever this tree can be grown it should be freely planted. It is a beautiful tree when well grown and especially on large grounds attains to a stateliness which adds much to the landscape. I was much pleased last summer to see a magnificent tree of the Walnut at Livadia in the Crimea, the country seat of the Russian Emperor. It grew sufficiently isolated so that its top had become a dome-shaped canopy of regular proportions, and in fact was one of the most beautiful trees on the estate. The wood has long been one of the most expensive in the United States, and there is no question as to the ultimate profit to be reaped from large plantations of Walnut trees for its wood alone.

48. SHELLBARK HICKORY.

*Hicoria ovata* (Mill.) Britton, Bulletin of the Torrey Botanical Club, 15:283
This was first called Juglans ovata by Miller in the Gardener's Dictionary, edition 8 (1768). In 1808 Rafinesque separated the hickories generically from the walnuts under the name Hicoria (by a typographical error printed "Scoria"), but Nuttall, in ignorance of this, made a genus with the same limitations, but with the name Carya (Genera of North American Plants, 2:220, 1818). Nuttall's name was taken up by botanists generally, that of Rafinesque being allowed to remain in obscurity until it was revived by Britton in 1888. Through a mistake by Michaux (Flora Boreali-Americana, 2:193, 1803) this was called by him Juglans alba, but it is not the J. alba of Linne (Sp. Pl. 997, 1753). Nuttall transferred this mistake, calling this tree Carya alba, the name by which it has generally been known. In Gray's Manual, even in the latest edition, Nuttall's name is used.—Common in the southeastern counties from Gage to Cass.

This tree is worthy of extensive planting on account of the excellent nuts which it yields, as well as for its superior wood, which is useful in many ways.

49. BIG HICKORY NUT.

Hicoria laciniösa (Michaux) Sargent, Silva of North America, VII., 157 (1895). This is the H. sulcata (Willd.) Britton of previous lists, and is the Carya sulcata of Gray's Manual.—In the southeastern counties only, certainly in Richardson county, and reported from Sarpy.

50. MOCKER-NUT.

Hicoria alba (L.) Britton, Bulletin of the Torrey Botanical Club, 15:283 (1888). This is the Carya tomentosa of Gray's Manual.—Said to occur in eastern Nebraska by Professor Sargent. I have no specimens of this species.

51. PIG-NUT.

Hicoria glabra (Mill.) Britton, Bulletin of the Torrey Botanical Club, 15:283 (1888). This is the Carya porcina of Gray's Manual.—In Cass and Richardson counties.

52. BITTER HICKORY.

Hicoria minima (Marshall) Britton, Bulletin of the Torrey Botanical Club, 15:283 (1888). This is the Carya amara of Gray's Manual.—This is the most widely distributed of our hickories, occurring in the southeastern counties, Sarpy, Cass, Lancaster, Johnson, and Pawnee.

53. WHITE OAK.

Quercus alba L. Sp. Pl. 996 (1753).—Confined to the southeastern part of the state, and certainly known to occur in Cass and Nemaha counties.

Should be planted for its beauty of form, as well as for its valuable wood, which excels that of every other species of Oak in the northern states.

54. POST OAK.

Quercus minor (Marshall) Sargent, Garden and Forest, II., 471 (1889).—Said by Professor Sargent to occur in southeastern Nebraska.
55. BUR-OAK.

*Quercus macrocarpa* Michaux, Histoire des Chenes de l'Amerique, 2 (1801).

The most widely distributed of our oaks, occurring throughout the eastern half of the state west to an irregular line drawn from Harlan county to Custer and Cherry.

Although not quite as valuable a tree as the White Oak, the Bur Oak is well worthy of general cultivation. It can be planted successfully in all of the eastern half of the state, and this is more than we can hope for the planting of the White Oak. The Bur Oak supplies a good fuel, and its timber falls but little short of the excellence of the White Oak itself. It is worthy of extensive cultivation.

56. YELLOW OAK.

*Quercus acuminata* (Michx.) Sargent, Garden and Forest, VIII., 93 (1895).

This is the *Q. prinus*, var. *acuminata* of the fifth edition of Gray's Manual, and the *Q. muhlenbergii* of the sixth edition. This last name was used in the later lists issued by the botanical department of the University.—In Richardson county.

57. LOW YELLOW OAK.


58. RED OAK.

*Quercus rubra* L. Sp. Pl. 996 (1753).—Next to the Bur Oak, this has the widest distribution in the state. It extends westward from Richardson county to Lancaster and northward to Dixon.

59. SCARLET OAK.

*Quercus coccinea* Muenchhausen, Der Hausvater, V., 254 (1770). This species has commonly been attributed to Wangenheim (1787), but Muenchhausen antedates him by seventeen years.—In Richardson and Nemaha counties.

60. BLACK OAK.

*Quercus velutina* Lamarck, Dictionnaire de Botanique, 721 (1783). This is the *Q. discolor* of Aiton (1789), the *Q. tinctoria* of Michaux (1803), and *Q. coccinea tinctoria* of De Candolle (1864), which name it still bears in Gray's Manual.—In the southeastern counties alone.

61. BLACK JACK OAK.

*Quercus marilandica* Muenchhausen, Der Hausvater, V:253 (1770). By a mistake in determination Wangenheim described this tree (1781) under the name *Q. nigra*, which Linne had applied to another tree, an error which has been continued to the present, still occurring in the latest edition of Gray's Manual.—In the southeastern counties, Richardson, Pawnee, and Nemaha.
62. LAUREL OAK.


This species has been reported as occurring in southeastern Nebraska by Professor Sargent and others. I have not seen specimens collected within the state, but have specimens collected in Missouri a short distance from the southeastern corner of Richardson county. I think it likely that occasional specimens occur in the state.

63. IRONWOOD.


...In the eastern and northern counties, extending northwestward to Brown, Cherry, and even Sioux.

64. WATER BEECH, or BLUE BEECH.

*Carpinus caroliniana* Walter, *Flora Caroliniana*, 236 (1788). This is the *C. americana* of the fifth edition of Gray's Manual, and the *C. vir-*
giniana of some previous lists.—What is apparently this species has been reported from Sarpy county, and somewhat doubtfully, also, from Brown county. It has probably been confounded with Ironwood.

65. CANOE BIRCH.

Betula papyrifera Marshall, Arbustum Americanum, 19 (1785).—On the north slopes of the high bluffs, and in the ravines bordering the Niobrara river in Keya Paha, Brown, and Cherry counties.

The occurrence of this tree in the forest belts bordering the Niobrara river in northern Nebraska is one of the many oddities in the flora of the Plains. It is a puzzling question as to how it came into this isolated station, as it does not occur anywhere else on the Plains. It is at least four hundred miles from the Nebraska station to the nearest station in the northeast.

66. BLACK BIRCH.

Betula occidentalis Hooker, Flora Boreali-Americana, 2:155 (1839).—Known to occur in Sioux county, possibly occurring also in Scott's Bluff and Banner.

This tree is abundant in the mountains westward, and creeps downward into Nebraska along with a number of other Rocky Mountain species.

67. RIVER BIRCH.


I have some reason for doubting the correctness of the report upon which this species is admitted to the flora of the state.