AFTERNOON SESSION.

ALL THE NATIVE SHRUBS WORTH PLANTING.


We can all remember the time when a native shrub was not considered worthy of cultivation for the simple reason that it grew wild along the wayside, but when we stop and examine a native specimen and sum up its real merits we are surprised to find it is equal if not superior in many respects to the foreign kinds. For many locations I prefer the native, not for its hardiness alone, its beautiful flowers, foliage, fruit and colored branches, but for its adaptability to existing conditions. For covering a steep bank where a lawn cannot be maintained what is better than the Coral Berry (symphoricarpus vulgaris) a native shrub possessing both upright as well as trailing branches which root at each joint thus protecting the bank against damage by heavy rains. We often see planted around railway stations and public city institutions of all kinds, foreign shrubs illly adapted to the surrounding conditions miserably existing. Our native shrubs are more used to these conditions, often being covered with dust during the dry season, twisted and shaken by heavy winds and laden down with ice and snow in winter. Yet they withstand these impositions with apparent impunity and after a favorable shower and a little sunshine continue to shower forth to the passing public the glory of their wonderful existence, proving beyond a doubt they are built of just the right kind of material to defy the heat and dust in summer as well as the ice and frost in winter. That they possess a wonderful degree of beauty and usefulness cannot be gainsaid neither can it be denied that they are now being introduced into society when we consider the fact that the leading landscape architects of this country advocate their use in a very large measure. Who would have thought twenty years ago that nurseriesmen would be propagating for sale thousands of Viburnum Dentatum, cassinoides, Lentago, Opulus and a host of others and yet such is the case, and I am told by reputable nurseriesmen that the supply is unequal to the demand. At the close of my address as a matter of discus-
sion will some member show me where the foreign shrub, all
things considered, supersedes our natives. Mention one pos-
sessing two distinct features in its growth such as we find in
the Coral Berry. Van Houten's spirea is gorgeous for about
two weeks with its graceful flowers in countless clusters, but
what is it after that? Merely ordinary autumn foliage. Fig-
ure out the number of days that a foreign shrub is especially
attractive and I shall endeavor to mention a native that has its
foreign rival beaten to a standstill.

For border plantations native shrubs may be selected each
one possessing its own peculiar characteristics. Cornus florid-
dum for instance excels and continues to bloom for two or three
weeks followed by foliage of a grayish green color to a beauti-
ful red. It is regarded as one of the most valuable for orna-
mental planting. Others excel in fruit such as the highbush
Cranberry (Viburnum Opulus) which stands as a leader in
the red fruited section and justly so. Its berries color early
from green to yellow by August and a fiery red by October
continuing until the middle of winter it is right to consider
it a leader. Others again are considered favorites for the
glorious foliage effects in the symphony of autumn coloring.
The champion in this class probably being Viburnum cassi-
noides (the Appalachian tea or white rod) considered by Prof.
Sargent perhaps the most beautiful of all. He praises the
beauty of the thick shining leaves and the great compact
rounded clusters of flowers, but the autumn coloring of its
foliage is its principal feature, rivaling if not excelling the
rainbow in its color effect.

Others too possess an appreciable amount of autumn colors
especially that humble little shrub of the woodland "Viburnum
Acerifolium" common known as dockmackie or maple leafed
arrow-wood. It is classed among the smallest of Viburnums
scarcely ever exceeding more than four or five feet high in
the shade, but it grows somewhat taller in the open border.
These two varieties with perhaps C. floridum added are rivals
for first honors in the "free for all" race for autumn coloring
and too much cannot be said in their favor. The downy leafed
Arrow-wood (V. pubescens) comes highly commended. Mr.
Manning says:

"The whole plant is covered with white flowers in early
June followed later with berries of the deepest blue black.
Although a native of rocky woods and thriving in a dryish soil
it also does well in the open border. It forms a shapely bush
and the foliage in autumn is an attractive dark color almost
black."

I have had prepared a few photographs showing some of the purposes to which native shrubs are available. These pictures were taken on the grounds in my charge and whereas they hardly do credit to the shrub itself the object of their being planted there is seen at a glance. Plate No. 1 shows a service road screened from residence by Cornus stolonifera or red osier. Number 2 shows a belt of Prickly Ash (Zanthoxylum Americanum) just now bearing rose colored berries packed in clusters around its branches. Plate No. 3, continuous groups of native shrubs and wild flowers taken from the lawn side, service road being entirely screened. Number 4, same group taken from service road showing residence and lawn effectually screened. Number 5 continuation of No. 4. Plate No. 6, lawn group of Cornus paniculata. This shrub is used extensively in shrub plantations as it adapts itself to all conditions whether the soil be wet or dry, rich or poor, the location shady or in full sunshine. Plate No. 7 shows a mass effect on property line fence, the taller shrubs being faced down by dwarfer kinds. The wild gooseberry (Ribes oxyanthoides) serves this purpose best as shown in the right hand corner. Plate No. 8 shows the coral berry serving the same purpose. Plate No. 9 shows a group of natives with the wild black currant on the left, the idea of this being to have the shrubs meet the grass with no intervening strip of bare ground. These pictures are taken with a view of inducing people to plan the arrangement of their home ground however small these may be and make them in pleasant weather as livable and attractive and as free from the gaze of the curious public or prying neighbor as are the rooms of the house and attractive at all times to look upon. By a careful study of these suggestions any one at a minimum cost may make their home grounds more attractive than we often see them and when we consider the fact that the time and money spent is a valuable asset to the property we cannot help but wonder why people do not take advantage of the beauties of nature more than they do. Here I find myself drifting from my subject and beg your pardon. I still wish to say a few words in praise of the common elder (Sambucus nigra), bordering the streams and lanes with its spreading clusters of cream-colored flowers which emit a peculiarly pleasant odor followed later with large clusters of dark berries often used for making wine. It was a common practice with boys where I was raised to cut up the fine white wood into skewers which were sold to the butchers.
**Roses.** In wild roses we have a number of useful varieties. Rosa setigera (the Michigan Prairie rose) can be seen on private estates around Lake Geneva planted in large clumps. During July it is completely covered with pinkish single blossoms that add color to its long drooping branches. Other varieties of equal beauty are R. humilus, R. lucida (from which we have a Hybrid "lucida alba"). Rosa Carolina of the swamps and R. nitida of the wayside. Native evergreen shrubs in my opinion are not so numerous however. The ground hemlock and common juniper may be used for lawn specimens but the most useful of all is the Thuja Occidentalis (the Arbor Vitae) used possibly more than any other as a hedge plant. When planted in good soil it makes a vigorous growth thus admitting being trimmed into any desired effect. Another good hedge plant is the common barberry (Berberis vulgaris) although of European origin it has become thoroughly wild in many parts of this country and being extremely hardy adds one more to our already long list of useful shrubs. The flowers emit a peculiar fragrance and the stamens possess the animate power of responding to the touch. Take the point of a tooth pick and try it on an open flower.

I give, herewith, a description of two poisonous natives for the information of those who are unable to distinguish them from harmless plants which at a casual glance they somewhat resemble. Poison Sumach (Rhus venenata) is a native shrub six feet high and extremely poisonous to many. Usually found growing in swamps, has light yellowish bark, dry light gray seeds in loose open clusters; whereas the harmless species grow in dry land, have dark bark, large dense conical bunches of red seed and narrow leaflets.

Poison Ivy (Rhus Toxicodendron) often found climbing is also very poisonous to many persons. It is often confused with the Virginia Creeper which has five leaflets while the leaves of Poison Ivy are three divided. The berries of Poison Ivy are light colored while those of the Virginia Creeper are black. Poison Ivy is reputed to be especially harmful in dull weather or at night.

I have here compiled a list of shrubs (giving the common and botanical names) best adapted to the different locations and conditions.
Wild Roses.

New Jersey Tea, a low-growing native shrub.
Native Shrubs from 6 to 12 feet high for back row of Shrub Plantations.

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Prickly Ash</td>
<td>Zanthoxylum Amer.</td>
<td>Light, shade, or sun</td>
</tr>
<tr>
<td>Hoptree</td>
<td>Ptelea trifoliata</td>
<td>Light, shade, or sun</td>
</tr>
<tr>
<td>Winter berry</td>
<td>Ilex verticillata</td>
<td>Light, shade, or wet soil</td>
</tr>
<tr>
<td>Staghorn Sumac</td>
<td>Rhus typhina</td>
<td>Poor soil</td>
</tr>
<tr>
<td>Smooth Sumac</td>
<td>Rhus glabra</td>
<td>Poor soil</td>
</tr>
<tr>
<td>Shadbush</td>
<td>Amelanchier Canadensis</td>
<td>Poor soil</td>
</tr>
<tr>
<td>Ninebark</td>
<td>Spirea Opulifolia</td>
<td>Rich or poor soil</td>
</tr>
<tr>
<td>Witch Hazel</td>
<td>Hamamelis Virginica</td>
<td>Shade, gravelly soil</td>
</tr>
<tr>
<td>Spice bush</td>
<td>Lindera Bendori</td>
<td>Wet soil</td>
</tr>
<tr>
<td>Silky Dogwood</td>
<td>Cornus Sibirica</td>
<td>Wet soil, light shade</td>
</tr>
<tr>
<td>Panicled Dogwood</td>
<td>Cornus Paniculata</td>
<td>Wet soil, White ft.</td>
</tr>
<tr>
<td>Round leaved Dogwood</td>
<td>Cornus Cincinata and Florida</td>
<td></td>
</tr>
<tr>
<td>Elder</td>
<td>Sambucus nigra</td>
<td>Wet soil, White ft.</td>
</tr>
<tr>
<td>Cranberry tree</td>
<td>Viburnum Opulis</td>
<td>Wet soil, Black ft.</td>
</tr>
<tr>
<td>Arrow wood</td>
<td>Viburnum dentatum</td>
<td>Wet soil, Red ft.</td>
</tr>
<tr>
<td>Nanny berry</td>
<td>Viburnum Lentago</td>
<td>Shade or sun black ft.</td>
</tr>
<tr>
<td>Speckled Alder</td>
<td>Alnus Incana</td>
<td>Wet ground</td>
</tr>
<tr>
<td>Apalachian tree or</td>
<td>Viburnum cassinoides</td>
<td>Wet ground</td>
</tr>
<tr>
<td>Withe Rod</td>
<td>Staphylea trifolia</td>
<td>Flowers and fruit light green</td>
</tr>
<tr>
<td>Bladder nut</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Medium and small native shrubs suitable for edges of Border Plantations.

<table>
<thead>
<tr>
<th>Common name.</th>
<th>Botanical name.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shrubby St. John's wort</td>
<td>Hypericum prolificum</td>
</tr>
<tr>
<td>New Jersey Tea</td>
<td>Ceanothus Am.</td>
</tr>
<tr>
<td>Fragrant Sumach</td>
<td>Rhus Canadensis</td>
</tr>
<tr>
<td>Dwarf cherry</td>
<td>Prunus pumila</td>
</tr>
<tr>
<td>Chokeberry</td>
<td>Pyrus arbutifolia</td>
</tr>
<tr>
<td>Dwarf June Berry</td>
<td>Amelanchier Can.</td>
</tr>
<tr>
<td>Meadow Sweet</td>
<td>Spirea salicifolia</td>
</tr>
<tr>
<td>Steeple bush</td>
<td>Spirea tomentosum</td>
</tr>
<tr>
<td>Wild Raspberry</td>
<td>Rubus strigosus</td>
</tr>
<tr>
<td>Flowering Raspberry</td>
<td>Rubus odoratus</td>
</tr>
<tr>
<td>Shrubby Cinquefoil</td>
<td>Potentilla fruticosa</td>
</tr>
<tr>
<td>Swamp Rose</td>
<td>R. Carolina</td>
</tr>
<tr>
<td>Dwarf Wild Rose</td>
<td>R. Nitida</td>
</tr>
<tr>
<td>Gooseberry</td>
<td>Ribes oxyanthoides</td>
</tr>
</tbody>
</table>

Native shrubs that will grow in light shade.

<table>
<thead>
<tr>
<th>Common name.</th>
<th>Botanical name.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prickly Ash</td>
<td>Zanthoxylum Amer.</td>
</tr>
<tr>
<td>Winterberry</td>
<td>Ilex verticillata</td>
</tr>
<tr>
<td>Burning bush</td>
<td>Euonymus atropurpurea</td>
</tr>
<tr>
<td>New Jersey Tea</td>
<td>Ceanothus Americana</td>
</tr>
<tr>
<td>Fragrant Sumach</td>
<td>Rhus Canadensis</td>
</tr>
<tr>
<td>Ninebark</td>
<td>Spirea Opulifolia</td>
</tr>
<tr>
<td>Fl. Rasp</td>
<td>Rubus occidentalis</td>
</tr>
<tr>
<td>Gooseberry</td>
<td>Ribes Floridum (useful for edging as the foliage droops to ground)</td>
</tr>
</tbody>
</table>
### Common name | Botanical name
---|---
Witch Hazel | *Hamamelis Virginica*
Silky Dogwood | *Cornus sericea*
Round leafed Dogwood | *Cornus circinata*
Red berried Elder | *Sambucus racemosa*
High bush Cranberry | *Viburnum Opulus*
Dockmackie | *Viburnum acerifolium*
Arrow wood | *Viburnum dentatum*
Sheepberry | *Viburnum Lentago*
Coral berry | *Symphoricarpus vulgaris*
Snow berry | *Symphoricarpus racemosus*
Bush Honeysuckle | *Diervilla trifida*
Bladder nut | *Staphylea trifolia*
Sweet pepper bush | *Clethra Alnifolia*¹
Sweet Fern | *Myrica Asplenifolia*²
Common Juniper | *Juniperus communis*
Ground Hemlock | *Taxus Canadensis*³

**Native shrubs best adapted to wet ground.**

### Common name | Botanical name
---|---
Winter berry | *Ilex verticillata*
Chokeberry | *Pyrus Arbutifolia*
Shrubby Cuiquefoll | *Potentilla fruticosa*
Dwarf Wild Rose | *R. lucida*
Wild Black Currant | *Ribes floridum*
Spice bush | *Lindera benzoin*
Red Osier Dogwood | *Cornus stolonifera*
Elder | *Sambucus nigra*
Button Bush | *Cephalanthus Occidentalis*
Swamp Blueberry | *Vaccinium corymbosum*
Sweet Fern | *Myrica asplenifolia*
High Bush Cranberry | *Viburnum Opulus*
Sweet pepper | *Clethra Alnifolia*
Bitter Sweet | *Solanum Dulcamara*
Speckled Alder | *Alnus Incana*

**Native shrubs that will grow in poor or light soil.**

### Common name | Botanical name
---|---
Common Barberry | *Berberis vulgaris*
Shrubby St. John's wort | *Hypericum prolificum*
New Jersey Tea | *Ceanothus Americana*
Staghorn Sumach | *Rhus Typhina*
Smooth Sumach | *Rhus glabra*
Dwarf Cherry | *Prunus pumila*
Shadbush | *Amelanchier Canadensis*
Dwarf Wild Rose | *Rose nitida*
Witch Hazel | *Hamamelis Virginiana*
Round leafed Dogwood | *Cornus circinata*
Coral Berry | *Symphoricarpus vulgaris*
Bush Honeysuckle | *Diervilla Trifida*
Black Huckleberry | *Gaylussacia resinosa*
Sweet Fern | *Myrica Asplenifolia*
Common Juniper | *Juniperus communis*

Native shrubs along service road at H. H. Porter's, Lake Geneva, Wis. No. 5 illustrating Native Shrubs, Tiplady.
DISCUSSION.

Mrs. Hugh Kelly—How do you keep Jersey tea from spreading? I find when I cut off my seeds that the plant dies, and if I let the seeds dry, so many little plants come up that it gets to be a nuisance.

Mr. Tiplady—Cultivation will do that. Let the seeds fall; hoe them up when they germinate in the spring.

Mrs. Johnson—Will the sweet pepper bush and sweet fern survive the winters in this part of Wisconsin?

Mr. Tiplady—Positively live through the winter without protection, both of them. The sweet pepper bush, the Clethra alnifolia, grows around Lake Geneva, also around Oconomowoc; it is a good blooming and sweet scented shrub.

Mr. Toole—I would like to ask Mr. Tiplady if he has ever had any experience in transplanting the leatherwood? Out of a couple of dozen I have planted I have had one small one live. I have taken large ones and small ones and yet cannot make them live.

Mr. Sandsten—Mr. Toole the year before last sent me six of the leatherwood bushes and I had no difficulty at all in making every one of them grow.

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PRACTICAL BOTANY.

Prof. A. B. Stout, Baraboo.

This paper is attempted with the understanding that the subject be presented mainly from a teacher's point of view and that it should refer chiefly to that teaching of botany in the Public Schools which pertains more or less directly to the interests of Horticulture. This in general is the interpretation to be placed upon the rather condensed topic of "Practical Botany."

In beginning we must note that as a science botany has made a remarkable advance during the past few years. The microscope with other improved means and methods of study has made known the structure and life histories of the lower forms of plant life. This has also revealed the real structure, life history and physiology of the higher plants. The un-