Miss Ethel Horton your criticism

THE TREES of NORTHFIELD



HARVEY E. STORK PROFESSOR OF BOTANY CARLETON COLLEGE

1948

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It is the hope of the writer of these notes that they will serve to increase interest in the better use of a wide variety of trees to beautify our city. This first compilation no doubt contains errors and certainly omits many items of historical or scientific nature on our trees. We invite the reader to contribute material on unusual varieties, history and age of well-known trees, the story of beautification of different parts of the city, and any other pertinent data.

> PUBLISHED BY THE AUTHOR NORTHFIELD, MINNESOTA 1948

CENSUS OF STREET TREES OF NORTHLIELD . JULY 1948

993

580

148

131

117

85 65

52

34

31

25

20

10

10

10

9

9

8

8

7

5

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4

4

4

3

32

2

2

2

2

2

American elm Hard maple Soft maple Linden Boxelder Hackberry Chinese elm Black walnut Schwedler's maple Green ash Norway maple Slippery elm Black ash Cottonwood Ohio buckeye Ironwood Horse chestnut Catalpa White spruce Mountain ash Apple Black locust Russian olive White birch Blue spruce Arbor vitae Weeping willow Honey locust Trembling aspen Plum Red cedar Red oak Cutleaf weeping birch Amerchino elm Norway spruce Choke cherry

1000 - -

stated as all the same the

Large-toothed aspen	2
Butternut	2
Silver poplar	2
Lombardy poplar	1
Bolleana poplar	1
Hawthorn	1
Jack pine	1
Austrian pine	1
White willow	1
White oak	1
Yellow birch	1
Black cherry	1
Total trees - 24	26
Total species -	48

SHRUBS AND PERENNIALS

Lilac	17
Peony	17
VanHoutii Spiraea	14
Tartar. Honeysuckle	8
A.Waterer Spiraea	4
Phlox	4
Mock Orange	4
Pfitzer juniper	3
Hydrangea	1
Snowball bush	1
Caragana	1
Japanese barberry	1
Tiger lily	1
Grape vine	1
Gooseberry	1
Total plants -	78
Total species -	15
Toolar obcorco	

INTRODUCTION

Northfield is a city rich in trees. Looking eastward from Manitou Heights, one sees in summer a green grove broken only occasionally by the steeple of a church, the tower of a school, or the roof of a commercial or factory building. It seems hardly possible that this forest shelters a population of five thousand people.

Not only is there a large number of trees but there is a rich variety. particularly for a region so limited in number of hardy species as is this northern inland country. A census of street trees in July, 1948, revealed there were 2426 trees of 48 different species growing in the parking between sidewalk and curb. The trees growing on lawns, in gardens, and yards are estimated to be somewhat more numerous than the street trees, so that we arrive at over 5000 as the total number of trees in the city proper. exclusive of those on the campuses of the colleges. That's more than one tree for each inhabitant including the dogs. There are some 15 varieties to be found in home plantings that are not represented among the street trees. so that we have at least 63 different kinds of trees growing in the city. exclusive of rare and trial species in the Carleton Arboretum. We are concerned here throughout this report with trees and have nowhere included shrubs. The census report tabulated on page 1 shows only those species of trees, shrubs, and flowering plants that are found on the parking of streets between sidewalk and curb.

The American elm easily takes first place among street trees here as it does in the whole United States. This species deserves its popularity since it rates first on any score-card of street trees: it has attractive foliage, graceful branching, no flower or fruit nuisances, great hardiness, long life, freedom from fungus and insect pests. On the last score however we are not sure of the future. The Dutch Elm disease is threatening the elms of some of the eastern cities with complete annihilation and is appearing sporadically farther west. The region about Indianapolis, Indiana, is seriously threatened at present. The disease is caused by a fungus which would not be so serious if it were not for the fact that bark beetles and other insects readily spread the spores even to distant trees. We cannot gaze in a crystal ball and predict what the future of this disease will be. The hope is that methods of arresting its advance will be found by pathologists and entomologists, but that does not prevent responsible persons from cautioning about going all out for elms in new plantings. At least, we have here an argument for diversification in selectimg varieties of street trees.

Selection of resistant varieties of the American elm seems to have met with failure. The Department of Agriculture is seeking a good hybrid of American Elm and Chinese Elm that will have most of the desirable characteristics of the former parent and the resistance of the Chinese Elm. We have cooperated in sending to Washington the past two years seeds from these two parent trees where the branches intermingle along the Nutting Road just below Oak Street. Natural hybridization occurs only occasionally; artificial cross pollination has not proved feasible. The Japanese Elm seems to be highly resistant if not immune, though there is some difference in results reported by different authorities. This species is much like the American Elm, and may prove to be the best substitute. One of these trees sent by the Bureau of Plant Introduction was planted in 1928 in the Carleton Arboretum and may be seen near the boundary fence of the Baker School, southeast of the Bryn-Jones home.

The Hard Maple holds second place among our trees. How extensively it has been planted is evident in the fall when autumn colors come on. In most parts of the city however the glacial gravels underlying the soil are not conducive to the best growth of this species and they tend to become decrepit at too early an age.

A common criticism of the street trees of Northfield is that they have not been headed up high enough in their earlier years by sufficient use of the pruning shears. Many have branches drooping so low as to brush the head of a tall person, and most of them would be better if the lowest branches were higher so as to give a better view across the street. In the case of hard maples, the grass beneath would do better if the lower branches did not make for denser shading.

Another criticism of Northfield street trees springs from the fact that every householder has his own ideas about what to plant, how far to space trees, and how to prune them, or rather how not to prune them. A better total picture is attained if there is uniformity in any stretch of street, or at least harmony in type and spacing. The property owner may exercise his individuality in the selection and placing of trees on his lawn and in his backyard, but rugged individuality should stop at the sidewalk if an attractive vista down the street is desired. This can be attained if there is central authority in the selection of species and spacing of the trees. Such central authority in larger cities is the park board which plants and cares for the street trees and assesses the property owners for the cost. The cost need not be great if a city nursery is maintained or if a local nursery is engaged to produce good hardy trees. Looking ahead a couple of decades and more, it would seem

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to be wise formany city, large or small, to evolve an overall plan for street tree planting, and set up proper authority for carrying it out. We would then not have such incongruities as spruces, peonies, spiraea bushes, elms, and 57 other varieties making for disharmony along our street parkings. There is a stretch of St. Olaf Avenue where some thought was given to the uniformity of species, their spacing and location, some years ago. These arching elms now stand in striking contrast to other stretches of the same avenue where 15 different species can be counted in the length of three blocks.

Northfield owes much to the pioneers who loved trees and started the earliest planting. Robert and William Watson were responsible for awakening an interest in ornamental planting seventy years ago. Some of the oldest specimens still standing in all their vigor on the property owned by the Watsons between First and Second Streets from Nevada eastward to the tennis courts were planted by these brothers in 1879. Robert Watson together with Charles P. Nichols planned the planting and chose the wide variety of specimens for Oaklawn Cemetery, a beautiful burial park, in which the finest monuments are spruces, pines, larches, birches, catalpas, and dozens of other choice species.

Mr. Nichols started a nursery at Waterford in 1886. About 1891 he bought the Sylvestre Sherpy farm on the eastern edge of Northfield and moved his nursery there. The Wardell nursery between the two cemeteries still carries on from the Nichols days. Much of the nursery stock for the early Northfield plantings came from Nichols.

The writer invites readers to send any historical data for a later edition.

OUR EVERGREEN TREES

Evergreens are popular in this northern country because they maintain their needle-like leaves through the winter when the broad-leaf trees are bare. One cone-bearing species, the larch, that is classified here is an exception to the term evergreen as it sheds its needles in the fall. It is easy to learn to distinguish the different kinds of conebearing trees if one learns how the cones look, what kinds of needles there are and how they are arranged on the twig.

The pines always have their needles arranged in pairs, in threes, or in fives. All others have needles singly attached. The spruce needles are square in cross section and can be rolled between thumb and finger the way one might twirl a match stick. But the fir needle is flattened and cannot be rolled between thumb and finger. So one may remember: Square-Spruce, Flat-Fir.

WHITE PINE

The most valuable soft-wood timber tree of the Eastern United States is a native of Minnesota and well known to campers in the northern part. It is the only pine you will encounter here that has its needles in clusters of five (unless you happen onto one of the few specimens of Swiss Stone Pine). The trunk and branches are dark and quite smooth except in old trees. It makes a good specimen tree for the lawn or background of the house.

Several notable old trees grace the home grounds of some of our citizens:

Front lawn, 203 Maple Backgrounding the house at 306 East Fourth Christiansen home, 812 St. Olaf Avenue A grove of White Pines was planted by the Class of 1909 just west of the men's dormitcries on the Carleton Campus. Here you can get an idea of how much growth the species makes in 40 years.

Two of the early specimens planted by Robert Watson are more than two feet in diameter one on the north-west corner of the Isabella Watson place, 103 Maple, the other behind the Dr. Watson home, 115 Maple.

SCOTCH PINE

This species has two needles together. They are longer than those of Jack Pine but shorter than Austrian, averaging about two inches. The bark on older trunks and branches is reddish brown and papery, peeling off in layers of filmy tissue. The habit of the tree is quite informal, its shape often being irregular, but this seems to add to its picturesqueness. The reddish bark makes it easy to recognize. It has long been highly prized in Europe as an ornamental tree and deserves wider use with us as a lawn tree.

Catholic Cemetery Along lane west of Pine Hill Village North side of house, 302 Maple Back of Laird Hall, Carleton In front of Northfield Foundry office 2 trees behind house at 418 St. Olaf Ave. 4 fine ald trees, south side of house, 211 South Madison Several south of St. Olaf Athletic Field behind the great willow tree.

2 great trees north of Old Main, St. Olaf Campus.

AUSTRIAN PINE

A hardy introduction from Europe that has

long been a valuable addition to our evergreens. The trees are coarse textured with thick twigs and long needles (3 - 6 inches) that are arranged in pairs. The bark of the trunk and larger branches is always dark colored and much rougher than that of White Pine. The trees are symmetrical with conical crown unless crowded by other trees. On small home grounds, the texture of this tree is a little too coarse; it belongs in more spacious areas. It can be recommended as specimen for the background of the house.

Fine old monarch specimen on Watson
lawn, 517 Union
Young tree, front lawn, 901 West Second
Three young trees, 302 Manitou
Two tall trees in front of St. Olaf Gymnasium
Three trees across drive south-east from
St. Olaf Library.
Several old trees north-east of Laird
Hall, Carleton.

NORWAY PINE (OR RED PINE)

Minnesota's fine native timber tree is also a worthy ornamental tree. It resembles the muchplanted Austrian Pine, but lacks the dark color of the bark, being reddish instead. Needles are in pairs, as long as those of Austrian Pine (about 5 inches).

> Small trees north of Leighton Hall, Carleton.

Small trees south-east of Pine Hill Village.

3 young trees, north side of front lawn 320 Manitou.

PONDEROSA PINE

Also called Western Yellow Pine. Planted

to some extent instead of Austrian Pine which it resembles. Its bark is reddish though and the needles are attached in groups of three (some times two) instead of the uniform groups of two.

> Group south of Pine Hill Village 3 young trees, south-east corner of backyard, 320 Manitou St. South-east of Gridley, Carleton Campus.

SVISS STONE PINE

This resembles our White Pine in that it has 5 needles in a cluster, but the bark is almost black and rough even on the young branches, contrasting with the smoothness of the white Pine.

> Two fine specimens of over 50 years in Oaklawn Cemetery.

On front lawn of Isabella Matson home, 103 Maple Street. This fine specimen was planted in 1903.

JACK PINE

A very hardy native Minnesota tree succeeding in poor sandy soil. It is not very shapely and not used much for ornamental purposes. The needles are very short and arranged in pairs.

> Parking, 219 West Woodley 2 good trees east side of 902 West Second(at edge of Hospital Grounds).In front of them is an Austrian Pine. Corner of lawn, 318 North Plum Group south-east of Pine Hill Village.

MUGHO PINE

This is usually a shrub, but grows into a small tree or more often a group of several trunks together. The dwarf variety makes good ground cover of planted close together, but should be kept low and dense by pinching off the terminal buds. It is a mountain species with flexible branches that are pressed to the ground by the winter snows.

Obviously not a street tree because of its low spreading habit, but commonly planted on lawns.

> In front of Gymnasium and also Agnes Melby Hell, St. Olaf Campus. East of Laird Hall, Carleton

NOR JAY SPRUCE

A hardy tree introduced from Europe, resembling somewaht our native White Spruce. However it differs in having a much larger cone (5" - 7"long) and in a coarser appearance of the branches. The larger branches extend out at almost right angles like the yardarms from a ship's mast and the twigs hang from these, whereas the White Spruce has side branches more erect and denser.

> Some fine old specimens are found in Norway Valley, St. Olaf Gampus, planted about 1890 Grove of ancient trees north of Old Main, St. Olaf Campus 2 trees on parking, 908 West Second West of 717 East Second (Faculty Club) 2 large trees, Matson home, 517 Union 5 trees in front of garden, north of 918 Mashington Lawn, 518 Union North side of house, 103 Maple. Planted in 1879.

NORWAY WEEPING SPRUCE This is an oddity used occasionally as an arresting specimen to give a bizarre effect. You can see an example on the lawn of 115 Maple Street.

WHITE SPRUCE

Our hardiest evergreen and the species that is most likely to grow successfully. It is a native of Northern Minnesota and extends away up to the Arctic Circle. The Black Hills Spruce is merely a variety of this species. This variety has been sold most by nurseries in recent years.

It is distinguished from Norway Spruce by the usually smaller softer needles, by the denser branching of the crown, and by the smaller cones (1" - 2" long).

The color of the trees varies among individuals from green to a bluish color that may make them look like Blue Spruce. However, by running the hand over the foliage one can easily distinguish the sharp pricking tips of the Blue Spruce from the softer tips of the White Spruce.

> 2 fine trees with very blue needles, south side of 318 South Orchard, corner South Orchard and West Fourth. Between them is a Norway Spruce. Extensive planting south and west of practice field beyond Water Tower, St. Olaf Campus. On lawn of Bethel Church 2 trees, 317 North Plum 2 trees beside front walk near sidewalk, 104 South Madison 2 large trees on front lawn, 211 Manitou Extensive planting between Observatory

and Lyman Lakes, Carleton

2 trees encroaching on sidewalk, 411 East Second. 1

Big tree on parking, 901 South Second Parking, 100 West Woodley Parking, 1112 South Water

BLUE SPRUCE

This is one evergreen that almost everyone recognizes without difficulty unless some individual trees of the White Spruce species are so blue as to be confused with it. Because it is so distinctive it should be used sparingly and with discrimination. It is an accent tree, good as an exclamation point if used in the right place.

In 1938 several cases of Blue Spruce canker were reported in Southern Minnesota. This disease kills the lower branches, causing a whitish resin to drip from lesions in the bark. It attacked a grove on the Carleton Campus east of Laird Hall, also a prize specimen of a tree on the west end of the house, 506 East Third. The trees are not killed but rendered unattractive by loss of lower branches.

Blue Spruce is at its best in youth. After twenty years most of the trees become unattractive and should be replaced. There are exceptions. Well-known is the large one at the Headley home, 815 East Second, beautifully illuminated at Christmas time. In older trees the needles are often green instead of blue. The fine conical symmetry of this tree is duplicated by the Concolor Fir which tree grows old much more gracefully, and one might well consider choosing this species before planting a Blue Spruce.

Examples are numerous and easily recognized. We will refer to only one which stands on the parking at the Swenson home, 506 Nevada Stree. We think this species is out of place on the parking, but this is a beautiful specimen.

DOUGLAS FIR

The firs are distinguished from the Spruces by their flattened needles. The spruce needle can be rolled between thumb and finger while the fir needle is too flat to roll. The cones of the Douglas fir are quite easily recognized as they are our only cones with sharp three-pointed bracts sticking our from under each cone scale.

The species deserves wider use in Northfield. When we see it growing as a small ornamental tree it is hard to realize that in the Pacific Northwest it is the most valuable timber tree, attaining a size second only to the Big trees of California.

> North of Laird Hall Along drive, south-east of Goodsell Observatory.

2 large trees on lawn, 1218 St. Olaf Ave.

BALSAM FIR

Occasionally planted for the fragrance of its needles. None occurs on our streets. 2 trees on slope east of Observatory, Carleton Campus.

CONCOLOR FIR

A Rocky Mountain species that is a good substitute for the blue spruce as it keeps its symmetrical form as it grows old. The bluish-white flat needles are longer than those of any other of our firs or spruces, averaging about 2 inches.

> Fine old tree north of house, 103 Maple, planted in 1903. Old tree, South-east of Gridley Hall. In the grove to right of path leading

to May Fete Island, -- planted in 1920.

HEMLOCK

Recommended for planting where other trees do not succeed because of deep shade. The needles are flat, with two white stripes on the under side. They are arranged in two ranks on the twig.

> North-west corner of lawn, 109 Maple. South end of Burton Hall Terrace, Carleton Campus. North of Leighton Hall.

ARBOR VITAE

The Arbor Vitae is better known here as a shrubby hedge plant rather than a tree. In our northern swamps it grows large and is the source of telephone poles. As a tree it is known as White Cedar. There are numerous varieties, globose, columnar, etc., of both the Asiatic species and the American species.

It occurs rarely among our parking trees but the columnar variety is a common choice for two sentinel trees on either side of the entrance to the house. These occur, for example, at the following homes: 517 East Second; 716 East Fourth; 118 South Madison; 804 St. Olaf Ave.; 1300 St. Olaf Ave.

An old hedge on the south side of 817 Union has grown to tree-like proportions.

- 30 foot tree on lawn, east side of 103 Maple.
- A tree occurs on the parking, 114 East Ninth.

RED CEDAR

This is a Juniper species native to Minnesota growing as a small tree in fencerows and on rocky bluffs. It has bluish berries instead of cones. Its many varieties are much used in landscape planting, many of the Cedars or Junipers are low shrubby, others are columnar trees of various colors,--silver, gold, bronze, etc.

> 3 large old trees on lawns of 103 and 105 North Plum Lawn, 819 West Second Lawn, 412 West First Iawn, 318 South Plum Parking, corner of East 9th and Winona

EUROPEAN LARCH

This is the most commonly planted of the larches. It is our only needle-leaved tree that sheds its needle leaves in winter. On the Carleton Campus I hear loud lamentations each fall over "that poor pine tree that's dying" when the needles fall. In the spring however there is a joyous resurrection and I know of nothing more exciting than the gracefully pendulous branches of the larches putting out their filmy new foliage. The rounded comes usually persist for several years and most trees are characterized by the abundant load of cones. For the finest display of this species you must go to the home at the south end of Division Street where almost a score of these old monarch trees hold sway. Other locations are.

> Several large trees north of Old Main, St. Olaf Campus

2 south of Agnes Melby Hall, St. Olaf East of Carleton College Greenhouse East of Leighton Hall, Carleton

TAMARACK (AMERICAN LARCH)

We prefer the American Indian name, Tamarack, for the American species and Larch for the European. The Tamarack is abundant in the northern part of the state, being able to live both in bogs and uplands. It is not so neat and symmetrical as the more commonly planted European species.

Carleton Faculty Club, 710 E. 2nd.

DAHURICAN LARCH

This introduction from Eastern Siberia is proving very desirable and deserves a place beside the European species. The three trees south and east of the Carleton Observatory were sent for trial by the U. S. Bureau of Plant Introduction.

OUR BROADLEAF TREES

AMERICAN EIM

This tree holds first place as a street tree in the esteem of Northfielders and of the nation as a whole. Some of our trees are older than Northfield itself. Both campuses have virgin trees. Mr. M. E. Neville says that some of the old elms in the vicinity of 302 St. Olaf Avenue were there when original building started. Two great virgin elms south across the field from the St. Olaf art building and now forming a background of the new residence at 1404 Forest Avenue are pointed out as the trees which President Mohn used as hitching posts. One still carried the iron ring until reeently. Another notable tree is the 3 foot elm at the lower end of Norway Valley.

Until 25 years ago, the "St. Olaf Elm", standing at the jog in Forest Avenue where it meets W. 4th St., was a famous landmark. It is described as a very fine specimen. To date we have not discovered any pictures of it. About 1894 or 1895

it was slated to be cut down but some tree lovers came to its rescue and it was granted another 25 years of life. It stood in the jog of the street directly east of the Professor Andrew Fossum home. In order to assure its future Professor Fossum prevailed on the city council to set aside the little triangle on which the tree stood as a city park. This was newsworthy at the time because it was represented as the smallest city park in existence. Professor Fossum further was instrumental in organizing a baseball game between the two local colleges, the proceeds of the admissions charge to be used in surrounding the park with an iron railing and in doing some tree surgery on the old monarch. It was further stipulated that the tree was to be named after the winner of the game. That night it was christened "The St. Olaf Elm."

Dr. Paul Fossum, son of the learned professor of Greek and research scholar, recalls from his earliest memories the occasion of fencing the park when some tar for the posts that being heated on the kitchen stove caught fire and smudged the house. Others recall swinging on the iron rod that was put in to tie the two great branches together. So far as we know, this triangle of ground is still one of our city parks. If you visit it you will see only tarvia paving as it has been incorporated into the street.

An elm derived by graftage from the original George Washington Elm of Mount Vernon stands on the grounds of our City Library. Its copper plaque bears the emblem of the D. A. R. and the Inscription, "Planted by Josiah Edson Chapter, D. A. R. May 7, 1932.

There are many such descendants throughout the country of this famous old elm under which Washington took command of the First American army. When it was dying, Jackson Dawson, a famous horticulturist grafted from a branch of the old tree. This first grafted tree stands on the grounds of the Public Library at Wellesley, Mass.

Individual trees of this species vary greatly and we have numerous varieties, such as the Moline elm, the Parkway elm, the Vase elm, etc. These are grafted or budded from original choice trees and assure uniformity when the trees grow up, which is not true of trees grown from seed. The rows of trees on either side of the walk from the Carleton Library down to Division street are trees that were budded from a fine parent tree on Girard Avenue in Minneapolis.

The West end of St. Olaf Avenue and Manitou Street both show the desirability of uniformly planted elms in making an attractive street.

While the American Elm rates first as a street tree, it may not be wise to plant this species exclusively as it is threatened with extinction in the East because of the Dutch Elm Disease, a fungus disease carried by beetles from one tree to another. It has reached epidemic proportions in some areas farther west, notably in the Indianapolis area. We are not able to predict what progrees will be made by scientists in the prevention of this disease and therefore cannot counsel anyone whether or not to plant more American elms.

An effort is being made by the Department of Agriculture to find a hybrid between the immune Chinese Elm and the susceptible American Elm which will be immune and at the same time retain the fine qualities of the latter. In two different seasons we have sent seeds to the Department collected from these two species in places where their branches intertwine so that natural cross pollination is facilitated. Artificial cross-pollination is very difficult because of the structure of the elm flowers. Among the notable elms of Northfield we may refer to only a few:

> Old monarch encroaching on the sidewalk, 1212 St. Olaf Ave. North side of St. Olaf Library On sidewalk, 208 South Linden On sidewalk, Corner East Water and West 7th St. North side of 414 East Fourth Corner, West First and Orchard

AMERICAN EIM X CHINESE ELM

These hybrid trees have been sold under the name of Amerchino Elms. They give promise of growing into good looking trees. It is not known whether they are immune to the Dutch Elm Disease.

> East of heating plant on Carleton Campus 2 trees on parking, 414 West First

SLIPPERY ELM

Differs from the American Elm in having larger and rougher leaves with the two halves of the blade somewhat trough-shaped instead of flattened. In pioneer days the rough leaves served instead of sandpaper for smoothing home-made axe handles. The buds of this species have a brown woolly surface. Found rather frequently in our plantings.

> Parking, south corner of 508 Union Parking, 200 east 6th St.

CHINESE EIM

Most of the trees that pass under this name are really the Siberian Elm (Ulmus pumila). The true Chinese Elm is Ulmus parvifolia. But since even some of the nurseries use this name, it is probable that it will become extablished. It is recognized by the lop-sided base of the leaf blade such as all elms have and by the smaller leaves than other elms.

This species was widely planted 15 and 20 years ago but its popularity has decreased since the trees often do not do well when they grow older. We have some healthy specimens on our lawns and parkings over twenty years old but most of them do not look healthy. While not recommanded for Minnesota, it is a lucky gift to the drier plains westward where it apparently thrives better. It is a pleasure to see these trees growing cheerfully along the streets of towns in our dry western plains area that were virtually treeless twenty years ago.

CAMPERDOWN EIM

This large wide-spreading variety of the English elm is seen at the base of the slope south of the St. Olaf Art Building, in the "Carleton Chapel Elm" (once known as the "Seccomb Elm", and in the specimen north of Gridley Hall.

HACKBERRY

This native tree is a sister genus of the elms and is being recommended more and more as a substitute for the emm because of the danger of extermination of that fine tree by the Dutch Elm Disease. It has many of the fine qualities of the elm and deserves consideration as a street tree. Some of the trees have deformed masses of twigs called "witches' brooms" which are caused by the depredations of a small mite that infests the twigs. Examples of these can usually be seen in the row of trees on East Second Street between Union and Washington.

The fruits of this tree are about the size of a pea with a small amount of very sweet pulp around a large seed. The Indians however gathered them to eke out the slender sugar supply in their diet. The name "Sugarberry" is sometimes used for this tree.

9 great trees between Library and Administration Building, St. Olaf Campus
Parking, 519 St. Olaf Ave.
Good group west of 406 St. Olaf Ave.
5 fine young trees, 118 South Madison
Parking, corner Washington and 8th St.
Parking, 205 College
Parking, 404 Washington
2 trees on parking, 2 on lawn, 910
Winona
Lawn, 806 Division.

HARD MAPLE

This tree takes second place as a Northfield Street tree. It presents a good shapely crown and attractive foliage but is particularly prized for its gay autumn coloration. The dense foliage casts a deep shadow and that interferes with the best growth of grass beneath. If the trees are trimmed when young so that the first branches are rather high the shading of the grass is somewhat decreased. Many of our street trees have their branches hanging too low anyway. This species grades into the black Sugar Maple which is also

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HARD MAPLE

This tree takes second place as a Northfield Street tree. It presents a good shapely crown and attractive foliage but is particularly prized for its gay autumn coloration. The dense foliage casts a deep shadow and that interferes with the best growth of grass beneath. If the trees are trimmed when young so that the first branches are rather high the shading of the grass is somewhat decreased. Many of our street trees have their branches hanging too low anyway. This species grades into the black Sugar Maple which is also





represented in our plantings but cannot always be clearly distinguished. The trees do not grow very old in Northfield probably because the lack of depth of good soil. In the north woods of Minnesota you can see Hard Maples 300 years old, their trunks scarred by the stone axes of the Chippewas in quest of the sugary sap in years long gone by. But here in Northfield trees of 75 years are decrepit old specimens.

NORWAY MAPLE

This is the European edition of our Hard Maple. Its leaves are usually larger and the two points at the base of the blade more pronounced. Sometimes the two trees are hard to distinguish but if you see the fruits there can be no question. Those of the Norway have the pair of winged fruits directed apart at a wide angle, while those of the Hard Maple are almost parallel. The fruits of the former are also much larger.

2 good young specimens on parking, 410 East 4th.

SCHWEDLER MABLE

This is a variety of Norway Maple selected for the red foliage of the spring-time, which however turns green in the summer except for the reddened petioles. It is often called the "Red Maple" but that name should apply to our native maple with red buds, twigs, and flowers.

This variety is very popular right now, but we cannot be sure that it is a tree that grows old gracefully. Some older specimens we know are rather decrepit. It is also subject to sun-scald of the bark.

Parking, 306 East Fourth Parking, 411 Union Parking, 1110 South Division

SOFT MAPLE

This species is easily distinguished from the Hard and Norway Maples by the grayer, more scaly bark, and by the deeper cut leaves, which are usually a lighter green. Some varieties like the Weir's Cutleaf Maple at the Carleton Arboretum entrance have the leaves cut very deep. The trees become much larger than the other maples. A great tree encroaching on the sidewalk. 711 Union

> Large old trees across the street from the Twin City Milk Prod. building.

TARTARIAN MAPLE and GINNALA MAPLE

Two shrubby species that grow into small trees. The Ginnala has slender tapering leaves that turn various colors of red and orange in the autumn. Recommended for specimen planting.

Tartarian Maple may be seen south side of Gridley Hall, Carleton; Ginnala, on the north side of the Methodist Church.

BOXELDER

This is really a maple as you can see from its patred winged key fruits, but its leaves are quite different since they are compound. It is our only tree that covers its bud with the base of the petiole. The twigs are smooth and variable in color through various olive greens to a mahogany color.

It is not recommended for ornamental planting. In fact it is considered a weed tree and if the seedlings are not destroyed in the hedgerow or along the garden fence, they grow into little trees in the course of several years. It is not very attractive so far as the shape of its crown is concerned but by pruning can be shaped into any dense shape. Its wood is brittle and branches easily break from old trees.

The trees assume a more attractive appearance if the branches are cut back severely so that the crown becomes denser.

Because of its rapid growth, the tree is sometimes known as a "real estate man's" tree since it makes a quick showing when planted about new homes. It is also useful in the drier prairie and plains country westward where any trees that will grow are welcome.

There are some good examples of large old trees on the parking between South Water and South Spring on West Wth Ste

> Large 3' specimen on corner of lawn, 218 West Eighth St. A huge tree encroaching on sidewalk in front of 7L2 West 3rd St. Parking, 706 Union Parking, 906 Union

LINDEN (NSSWOOD)

This native tree is quite popular as a lawn and street tree and it deserves to be. It has an attractive shape and good foliage, is reasonably free of fungi or insect pests and it grows to a great age without becoming over large. The fragrance of its flowers in June is well known to those who know the trees as is also the buzz of the bess that come for nectar. In the fall the little round nutlets flutter out on specially constructed glider planes.

An old "unter den Linden" avenue of these trees flanks the walk on East First Street south of Gridley Hall. The oldest of these were planted soon after the founding of the College. Large fine tree, 200 South Linden Parking, 405 East Eight St. Parking, 411 - 415 Washington.

CANCE BIRCH (PAPER BIRCH)

A fine native tree with coarser leaves than the European White Birch. Not planted so commonly as the European. Both of them are rendered unsightly all too often by the peeling of the white bark by children and half-wits. The white papery bark never grows back, once it is peeled. One can camouflage these places somewhat with whitelead paint.

On Vacant lot, corner East 3rd and Union Lawn, 1204 St. Olaf Avenue.

EUROPEAN WHITE BIRCH

More commonly planted than the native Cance Birch. Its leaves are some-what smaller and more triangular in outline. The bark of old trunks becomes more rough and furrowed than that of the Cancer Birch.

> Between 101 and 103 Winona 515 East Water Lawn, 306 Manitou 2 trees on lawn, 101 South Lincoln On lawn, south of house, 513 Nevada On lawn, 104 East 8th.

CUTLEAF TEPING BIRCH

This form with deeply cut leaves and pendulous branches is very popular. It serves as an accent tree and should be used as an individual and not in groups. Young trees are common about the city.

> On lawn, 508 Union South-east of Agnes Melby Hall, St. Olaf.

YELLOW BIRCH

This native of Minnesota is common in Bottom lands but not often planted as an ornamental. The late Dr. Babcock put several in the tourist park along with some cance birches. He planted a considerable variety of trees in this development.

Northfield has two good old specimen trees of this species:

> On parking, 208 East 6th St. At entrance to Walden Place from Forest Avenue.

BLACK BIRCH

A tree with dark colored bark. It is hardy here but is not rated so high ornamentally as are its sister species.

> Large old specimen, north-east side of the house, 103 Maple.

CATALPA

This has the largest simple leaf of all our trees. The leaves are not just opposite but are attached in threes at each level. The large clusters of flowers in the spring make the tree stand out among the less conspicuously flowered. The long slender pods often reach a length of two feet.

Catalpa is a common street tree and merits its popularity. But it is more often used as a single specimen lawn tree.

In park across from Rock Island Depot

On lawn, 415 St. Olaf Ave. On lawn, 1118 St. Olaf Ave. In park west of Farmers' Elevator On lawn, 906 Union Allen Memorial Hospital, 111 North Division Front lawn, 712 East Fourth On parking, 510 East Second 2 young trees north side of Central Park

BLACK WALNUT

This well-known native sheds its leaves early in the fall, and puts out new leaves late in the spring. Its foliage is usually not very dense and it is subject to attack by leaf-eating caterpillars. So it does not rate high as an ornamental but is probably chosen for planting because of its nuts. However, when the nuts fall on the sidewalk, they are somewhat of a nuisance. Its wood also is the finest American cabinet wood.

> 4 young trees on parking, 316-318 Plum On lawn, 904 Forest East side of house, 1119 St. Olaf Ave. Parking, south of house, 519 College Corner of lawn, 214 East Fourth Good specimens on parking across street from 611 East Second.

The native stand in the Carleton Arboretum beyond Waterford is the most northerly natural area that we know for this species.

BUTTERNUT

Common on the bluffs along the Cannon River, but not often planted. The bark is of a lighter color than that of Black Walnut. The nuts are about twice as long as their diameter while those of Black Walnut are almost globose. Parking, 1110 South Water A double tree at edge of lawn, north side of 101 Lincoln.

SWAMP HICKORY (BITTERNUT)

A native tree with smooth bark and alternate compound leaves with usually 5 but also 7 or 9 leaflets. The nuts are not very desirable. It is a neat-looking tree useful merely as a specimen. As such, it is equal to the Walnut or Butternut.

> Big two-trunked tree, corner of vacant lot, west Second and South Linden 2 big trees on lawn between 107 and 113 North Linden.

RED OAK

This species has sharp needle-pointed lobes and the acorn cups are very shallow like saucers. The species shows fine autumn coloration. There are not many younger specimens in the city but some fine old trees, some of which are probably still standing from the days the Big Woods was cleared to make way for the city.

West of Men's Gymnasium, Carleton Campus
2 great trees south-eastward from St.
 Olaf Library
2 on front lawn, l2Ol St. Olaf Ave.
Parking, 1308 St. Olaf Ave.
2 trees on West boundary,..910 St. Olaf Ave.
Row of seven trees on front lawns, 319,
 401, 405, 409 Manitou
Double-trunked spreading tree, corner
 of front lawn toward City Hospital,
 708 West Second
North of house, 103 Maple St. 20 in. diameter

BUR OAK

The lobes of the leaves are rounded and the cups of the acorns are rough bur-like. Some virgin trees of the Big Woods still persist on the college campuses and elsewhere in the city. The tree is however not used much as an ornamental. The lack of autumn coloration probably is against it.

> Fine old specimen on north-east corner of lawn, St. Johns Church Front lawn right beside sidewalk, 608 St. Olaf Ave.

OHIO BUCKEYE and HORSE CHESTNUT

This tree is native here and therefore hardy and frequently planted as an ornamental. Its great clusters of flowers in the spring recommend it. The nuts resembling chestnuts are sought by squirrels and buried in the fall. These are often forgotten and it is not uncommon to find seedling trees in gardens and lawns.

The leaves are compound, all of the five to seven leaflets radiating from the tip of the petiole. The leaflets are mostly five in number while those of Horse Chestnut, its European cousin, are mostly seven. The broadest part of the Ohio Buckeye leaflet is in the middle, while the broadest part of the Horse Chestnut leaflet is nearer the broad tip. The two hybridize and some of our trees are intermediate in their characters.

The five trees on the parking in front of the Senson home, 506 Nevada St. are Horse Chestnuts. So also is the tree on the parking on Union St., west of 300 East 5th St.

Ohio Buckeyes are seen at:

Lawn, 1212 St. Olaf Ave. Lawn, 316 Manitou In park west of Farmers Elevator West side of 717 E. 2nd Faculty Club Parking, 600 East Water

WHITE MULBERRY

This tree has been extensively planted as an ornamental in this country but we do not know of any trees in Northfield except several on the Carleton campus and in the Arboretum. It is an asiatic tree that has been almost exclusively favored the world over for its leaves as food for the silk worm. Trees sold by nurseries are usually varieties of this species and may vary in color of berries, but they are mostly white. In this they contrast with our native Red Mulberry which should succeed here as it is found naturally in the south-eastern part of the State.

The white fruits resemble those of a blackberry but they are more long and slender. The leaves vary from those that are not lobed to some with a single deep lobe or even with several lobes.

> Beside north entrance of Leighton Hall Entrance, Carleton Arboretum 207 Lincoln.

WEEPING MULBERRY

A mutant of the Russian Mulberry which originated on the grounds of John C. Teas, Carthage, Missouri, about 1883 and can be propagated only by grafting or budding. When grafted several feet high on straightstock of White Mulberry it makes One of the best small weeping lawn trees. A good specimen on lawn, 609 Division.

RUSS LAN OLIVE

This immigrant from Siberia has become a worthy citizen, quite hardy and distinctive because of its light gray foliage that can be recognized among other greens even at a distance. It is not truly an olive but its fruits resemble olives in structure. They are much smaller, however, and covered with the same silvery scales as the leaves,- hence the name Silverberry by which the shrubby native American species is known. Another relative is a native of this country,- a shrub called Buffalo-berry, the fruits of which are prized for jelly especially westward over the plains states.

> Several trees about the house where Washington meets Division Street Park, west of the Farmers' Elevator Groups of trees on the west boundary of Northfield Hospital grounds. 1111 St. Olaf Avenue In grove, north-east of Old Main, St. Olaf Campus.

WHITE WILLOW

Occurs occasionally on lawns. It is not recommended for a street tree. The large tree in front of the house at 300 North Linden gives character to the house. A great old tree with several trunks is a landmark at the corner of 8th and Nevada. There is a small tree on the line between 707 and 709 Washington.

WEEPING MILLOW

Several varieties of Weeping Willow are used

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as specimen trees on home plantings in all parts of the city. They are so highly individualistic that they should be used sparingly. Their best situation is beside a pool.

> 2 large trees in front of Odd Fellows Home

402 West Third 914 West Second 118 South Madison 809 St. Olaf Ave. 1111 St. Olaf Ave. 302 Manitou 306 North Water 506 East Water 801 Union 1112 East Fremont

SHINING WILLOW

Usually shrubby but may grow to small tree size. The leaves are much broader than most willow leaves and are quite glossy on both surfaces. This glossy character of the leaves is what recommends the species for planting.

> On lawn, north-east of City Hospital At the corners of Laird Hall, Carleton.

GREEN ASH

This is native and our most commonly planted species of ash. Its leaves are compound and attached opposite on the twig. Leaflets are usually 5 or 7 in number. There are male trees and female trees. The female trees produce paddle-shaped winged fruits similar to those of maple but symmetrical.

> 2 large trees southwestward from the St. Olaf Athletic Field.

A good female specimen in front of garden to the north of 513 Union.

The White Ash is also native and resembles this species except that the under sides of the leaflets are whitish rather than green. It is seldom seen in our plantings

BLACK ASH

This is a tree with coarser twigs than the Green Ash and with buds dark-brown to almost black instead of gray-brown. It may have as many as 11 leaflets on a leaf while the green ash rarely has as many as nine. The male trees often have unsightly black galls that develop when an insect deposits her eggs in the male flowers. The tree on the parking in front of 200 College usually is infested with these insect galls.

> Good large specimens on parking between 309 and 315 Linden By sidewalk on lawn between 1304 and 1308 St. Olaf Avenue Male trees with male flower galls, parking, 910 Forest In front of Music Hall, Carleton.

IRONWOOD (HORNBEAM)

This small tree is also known as the "Hop Hornbeam" because of the clusters of nutlets surrounded by bladdery enclosures resembling hops. It has very hard wood and is used by lumbermen to make wooden wedges and hand pikes. It endures shade readily and is commonly found in the woodlands hereabouts as an undergrowth tree. For ornamental planting it is recommended mainly for those seeking variety and a departure from the monotony of the standard species.

Parking, 310 East Sixth 2 specimens on parking, 1101 Division 3 specimens on parking, 1010 South Water A round-crowned specimen on parking, 1100 South Water The largest specimen we know is 11 inches in diameter, - south-east of house, 103 Maple.

BLACK LOCUST

This American tree would be seen much more commonly in our plantings if it were not for the locust borer. Most trees succomb to it sconer or later so that our surviving trees are mostly young. The tree has attractive fragrant pealike flowers in May and produces pods of usually less than three inches. The leaves are compound, with 11 - 15 leaflets. At the base of each peticle the twig bears a pair of spines. Nurseries also offer varieties with rose-colored flowers.

East side of Davis Hall, Carleton On lawn, 105 West Water On parking, 818 College Parking, 801 West First Between 817 and 819 West First St.

HONEY LOCUST

Differs from the Black Locust in having variable compound leaves, sometimes singly compound, sometimes doubly compound. In the latter case the leaf may become quite large. The leaflets are shaped like those of black locust but are smaller and lack the sharp point at the tip. The pods are much larger,- a foot or more long, flattened and twisted out of shape. The native wild trees (native as far north as south-eastern Minnesota) have vicious branched thorns which may be as much as 6 inches long Nurseries sell a variety that is thornless (inermis), some of which occur on lawns about town.

- 2 trees on parking on Washington Street side of 115 East 5th St.
- 2 young trees on lawn of Watson home, 517 Union St.
- A thornless tree on parking, 215 North Linden
- Parking, 213 South Madison (? next to 211)
- Parking, 104 South Madison
- West side of house, 1308 St. Olaf Ave. On lawn, north-eastward from St. Olaf Library.
- South-west corner of Willis Hall, Carleton
- At the parking, Carleton Arboretum entrance.

KENTUCKY COFFEE TREE

A broad-branching tree with gray scaly bark. The leaves are twice compound with leaflets and inch or less long. The whole leaf may be as much as $2\frac{1}{2}$ feet long. In the fall the leaflets fall off first and the naked leaf stalks remain to fall later in the winter. The large bean-like pods as big as a banana but flat, make this tree easy to recognize.

Kentucky Coffee Trees are native this far north and may be seen at points along the river bluffs between Northfield and Faribault, notably at Echo Pass. A large tree occurs on the south side of Gridley Hall, Carleton Campus, another west of the Faculty Club, ---E. 2nd. St. None occur as street trees, and only an occasional small tree is found on lawns.

Useful as a specimen tree but not particularly desirable as an ornamental tree because of its coarse branches in winter. It is free of diseases.

West of 717 E. 2nd., Carleton Faculty Club South of Gridley Hall, Carleton On lawn, 1212 St. Olaf Avenue 2 trees, corners of lawn, 815 Manitou.

TREMBLING ASPEN

This tree often appears as a seedling in outof-the-way places but not many old trees are found in our plantings. It is seen as a street tree in front of 1008 South Water St. This tree is the "popple" of the northern lumber man and the "quakie" of the westerners. Common in the Carleton Arboretum

LARGE-TOOTHED ASPEN

Named for the large teeth on leaves. Native in our woods but rare in Northfield. Two fine specimens occur on the parking,

1009 Union and 1004 East Water St.

A young specimen may be seen across the road from the Lookout Point, Nutting Drive.

COTTONWOOD

For quick growth the Cottonwood is unsurpassed. It reaches a great size but the wood is not strong. It is not rated high as an ornamental tree. If planted at all, one should be sure to plant a male tree as the female trees shed great clouds of cottony down to litter the sidewalks, lawns, and porches. This is particularly objectionable when it clings to newly painted surfaces.

Well-known is the giant tree, the largest

in Northfield, on the corner of the Phillips lawn, Washington and East Fifth Streets. This was reported to be a large tree 60 years ago.

> Parking, 206 East Woodley South-east corner Washington and Fremont Parking, 104 East Eighth Parking, 314 St. Olaf Avenue Parking, 506 St. Olaf Avenue

SILVER-LEAF POPLAR

This old standby brought from Europe is easily recognized by its round crown and the white color under its maple-like leaves and on young twigs. Its crown is round and the bark on young trees grayish-white. It is notorious for its habit of spreading by sending up shoots from its roots. Old trees look like a hen surrounded by a brood of chicks.

> Parking, 404 Washington Lawn, 509 East Water Parking, 1105 Division

BOLLEANA POPLAR

This is a mutation of the Silver-leaf Poplar which it resembles except for the form of its crown. Its tall narrow columnar crown resembles that of the Lombardy Poplar. It is rapidly replacing the Lombardy as that species has a tendency in this region to die in the top as it grows older. It was introduced from Turkestan in 1872.

In regions of electrical storms, this species as well as the Lombardy, is planted as a lightning rod tree. Where a tall screen is needed alongside home grounds to shut out unsightly views, a closely planted row of this species affords a super-hedge. Otherwise, it should be used sparingly, - a single tree in the right place as an accent or exclamation point.

> 2 trees west side of high School Lawn beside 904 South Water St. 2 trees beside entrance, 309 Washington Screen on the north-east corner of Northfield Hospital grounds. Compare to the Lombardies to the south. 2 between heating plant and Athletic Field, St. Olaf Campus 109 Division 1201 St. Olaf Avenue 2 on north, 1 on east side of St. Olaf Library

LOMBARDY POPLAR

A well-known accent tree to be used sparingly for emphasis or to break up the lines of tall buildings. However, it is a good tall screen tree as shown on the east side of the Northfield Hospital grounds and on the west side of the house at 804 West First, also at 907 West First.

The tree is sometimes confused with the Bolleana poplar when viewed from a distance, but the green instead of white foliage and the triangular outline of the leaf are quite distinctive. The trees are at their best when young. Older trees dying in the top should be cut down and replaced by young ones.

> Corner of lawn, 213 Maple St. Young tree northward across the alley from 309 East Second Parking, at the end of East Sixth (613 East Sixth). Compare to the Bolleana poplar just west of it. South side of house, 400 East First St.

MOUNTAIN ASH

A fine ornamental species but tending to become diseased as it becomes cld. The young trees are very attractive with their compound leaves and white flowers in spring and orange to red fruits in the fall. The fruits are sought by birds in the winter.

> At foot of slope, east of St. Olaf Library Parking, 310 St. Olaf Ave. Parking, 502 West First North-east corner, Way Park 2 trees, front lawn, Northfield City Hospital Parking, 416 East Sixth Parking, 910 Union

OAK-IEAVED MOUNTAIN ASH

This differs from the preceding in having simple leaves which however tend toward becoming compound by forming large lobes at the base.

> South-westward from St. Olaf Athletic field. Beside it is a specimen of the more common compound-leaves species. Front lawn. 1008 St. Olaf Ave.

APPIE

Fruit trees are not recommended for planting on parking or front yard. They may be used in the backyard if a large area is available. The flowering crabs, however, such as Red Silver, Hopa, and other attractive varieties are highly ornamental and useful as specimen trees but not for the parking.

Hopa crab has been used extensively through-

out the city and is easily recognized by its usual abundant red blossoms in the spring and the red fruits in the fall. The group of Hopas across the Lakes on Carleton Campus is well known as is also the group of Dolgas north of it.

Varieties of the apple appear in home plantings at various places and on some parkings.

2 specimens, parking, 218 N. Plum Parking, 110 South Madison

HAWTHORN

Native Hawthorn are commonly found in wood and open pastures and at the edge of woodlands. Their thorns protect them from browsing animals. The white flowers and attractive "haws" recommend them for specimen planting on lawns. It occurs only once as a street tree: 1100 South Water

BLACK CHERRY (RUM CHERRY)

This native tree, becoming much larger than the Choke Cherry, is rare in Northfield but occurs in woodlots and fencerows in the vicinity. Its black older bark is almost black and flakes off in big scales. The fruits are less astringent than choke cherries and are prized for making jellies, cherry cordial, etc.

On parking, Winona between 8th and 9th.

CHOKE CHERRY

Commonly found as seedlings in fence rows, uncultivated corners of gardens, etc. Not generally planted as an ornamental.

> 3 small trees in a group, on parking, south side of 817 Union.

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