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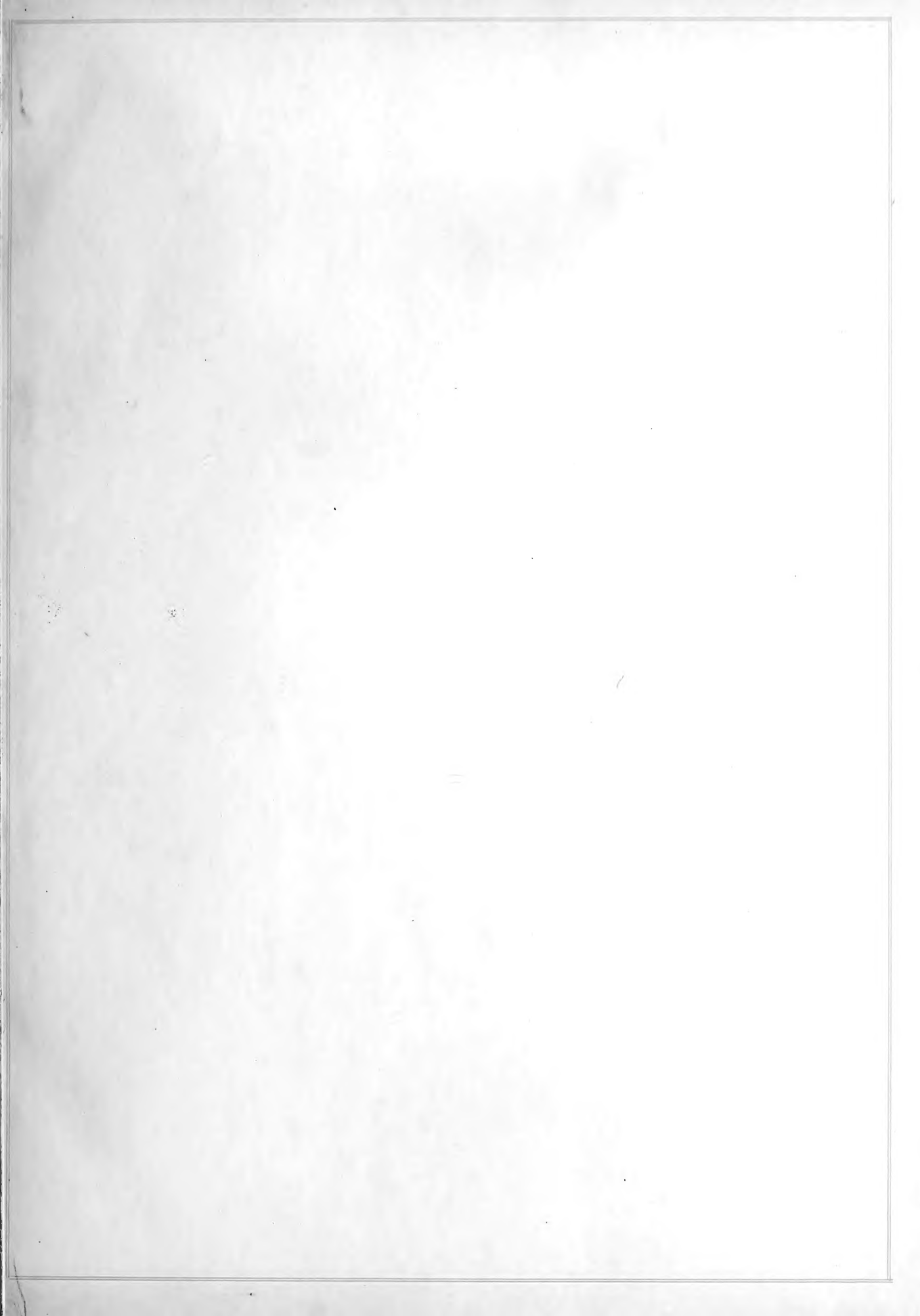
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NOTES UPON
TREES and SHRUBS

ADAPTED TO CENTRAL ILLINOIS

With especial reference to their value in ornamental planting

BY

GEORGE GIBBS JR.



THE SIS

For degree of Bachelor of Science in the College of Science

IN THE

UNIVERSITY OF ILLINOIS

PRESENTED JUNE 1900



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May 31, 1900

THIS IS TO CERTIFY THAT THE THESIS PREPARED UNDER MY SUPERVISION BY

George Gibbs Jr.

ENTITLED

~~Notes on~~ ~~Trees and~~ ~~Shrubs~~

Adapted to Central Illinois

IS APPROVED BY ME AS FULFILLING THIS PART OF THE REQUIREMENTS FOR THE DEGREE

OF

Bachelor of Science

J. M. Durwill,

HEAD OF DEPARTMENT OF

Botany.

NOTES UPON TREES AND SHRUBS ADAPTED TO CENTRAL ILLINOIS.

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As far as possible a complete list of the trees and shrubs, both indigenous and introduced, that are adapted to Central Illinois has been made in this study. It has been the endeavor by this means to get at the origin and the value of the material to be had for park and ornamental planting. Champaign has been the center of action, while all possible data have been obtained in regard to the surrounding country. Although it has not been practicable to obtain the facts concerning all plants grown in this region, some data, at least, have been gathered relating to all our common trees and shrubs.

In addition to actual observation in the field a study has been made of all the articles found in the library. The books that bear upon the subject may be divided, for convenience into four classes as follows:

1. Text books, manuals, and general works.
2. Works upon forestry.
3. Nursery catalogues, and lists.
4. Fragmentary and special articles, consisting of theses,

monographs, magazine articles, etc.

I. Text-books, Manuals, etc.

- Apgar, A. C. Trees of the Northern United States, 1892. Very good; includes native, and many introduced species.
Lib. G. G. Jr.
- Benthun and Hooker. Genera Plantarum, 1876, Latin; in three volumes; gives all known genera of plants with their distribution.
- Britton and Brown. An Illustrated Flora of the Northern United States and Canada, 1896. The most complete manual published. Does not include many cult. species of foreign origin.
- Brown, D. J. Trees of North America 1846. Includes foreign trees grown here, but not complete. Old.
- Chapman, A. W. Flora of Southern United States, first ed. 1860, others since then (1894). Best manual of that locality.
- Cooper, J. G. List of trees geographically, 1858; in Proc. Smithsonian Inst.
- Danberry, Chas. Popular Geography of Plants, 1855.
- Emerson, George B. Report on Trees and Shrubs Growing Naturally in Forests of Mass., 1875. Very good as a reference book.
- Gray, Asa (1) Field Forest and Garden Botany, 1895. Especially given to cultivated plants.
(2) Flora of United States. Synoptical, 1884. 2 Vol.
(3) Manual of Botany, Sixth ed. 1889. Most convenient



for field work, not so full as Britton and Brown.

Kerner and Oliver, Natural History of Plants, 1895. In 4 Vols,

large illust. Valuable as a popular work.

Lindlay and Moore, Treasury of Botany, London, 1846. Useful

for reference work.

MacMillan, Minnesota Plant Life. Metaspermae of Minn. Valley 1892.

Michaux, F. A. The U. S. Sylva, 1859. 3 Vol. colored illust.

Newhall, Trees of Northeastern United States. In Champ. Lib.

Nuttall, Thos. North American Sylva, 1859. A continuation of

Michx. 2 Vol. colored illustrations.

Sargent, C. S. (1) United States Forests. 10th Census Vol. 9.

sixteen colored maps.

(2) Sylva of the United States. 12 Vols.

Large illust. by half tones; these, however, of only frag-

ments, no whole trees shown.

Sudworth, G. B. Nomenclature of United States

Arborescent Flora. United States Bul. 14. Dep. Agr.

Div. Forestry, Synonymy, but no descriptions.

Vines, S. H. Text-book of Botany, 1895.

Touches upon paleobotany, good on floral parts and relationships.

Warming and Potter. Systematic Botany, 1895. Very full on

plant histories and relationships.



II. Works Upon Forestry.

Brown, James (1) The Forester. Edinburg 1871.

(2) Several local works, both practical and historical.

Carrière, Les Arbres et la Civilization. Old.

Cobbett, Wm. The Woodlands.

Fuller, A. J. Practical Forestry, 1889. A description of indigenous and exotic trees.

Fuller, A. S. Forest Tree Culturist, 1870. illust. by wood cuts.

Hough, F. B. Elements of Forestry, 1882.

Meehan, Thos. American Hand-book of Ornamental Trees, 1853.
Small.

Reports. Forestry Commissioners, Government Reports, and Public Documents.

III. Nursery Catalogues, etc.

Andorra Nurseries, Chestnut Hill, Pa.

Ellwanger and Barry, Rochester, N. Y. Very good.

Greening Bros, Monroe, Mich. Mostly fruits.

Ivson and Boggs, Indianapolis, Ind.

Thos. Meehan and Sons. Germantown, Pa.

Phoenix Nursey, Bloomington, Ill.

Reading Nursery, Reading, Mass. Most complete.

Storrs and Harrison, Painesville, Ohio.

IV. Specials, Fragmentaries, etc.

Brendel, Flora Peoriana, 1887.

Buillard, Flora Parisiensis, 1776. 6 Vol, Colored illust.

Coleman, W. S. Our Woodlands, Meaths, and Hedges. London, 1866.

Elementary; gives insects.

Clinton, G. P. Flora Champaign Co. Thesis and card catalogue.

Gray, Sam'l. British Plants, 1821.

Gordon, Pinetum, 1880. Complete manual of Coniferae. 500.p.p.

Holston, B. B. Study of Timber Trees of Washington Co. Ill.
1894.

Hoopes, Book of Evergreens, 1868.

Knobel, E. Guide to Trees of New England by their leaves. 1894'
Lib. G.G.Jr.

Magazines, Reports of Gardens, etc.

Am. Naturalist, Some good articles. Few on botany.

Am. Jl. Science, formerly Sillman's Jl. Abstruse, but few arti-
cles on botany.

Annals of Botany. Good but mostly physiological botany.

Annals of Natural History, Botany, French.

Botanical Gazette.

Bulletin New York Botanical Gardens.

Bulletin Boston Park Improvement Association. Not in our Lib.

Edinburg Jl. Sc.

Garden and Forest. Fine, but discontinued.

Hooker J1. Botany.

Journal Linn Society.

Meehans Monthly.

Missouri Botanical Garden Report.

Nature. Popular small magazine.

Park and Cemetery. Not in our Library.

Popular Science Monthly. Few articles on Botany.

Science, popular magazine, some good articles on Botany.

Torrey Bulletin.

Torrey Memoirs.

Trans. Linn. Society.

Mouillifert P. Trait des Arbres et Arbrisseaux, 1891. 1500 p.p.

on woody flora of Europe, especially of France.

From a comparative study of these books together with observations and field notes a list has been made of woody plants that are adapted to our conditions. In these investigations the purpose has been to answer three questions; first, what trees and shrubs should we find; second, what do we find, and third, where did they come from.

To discover what plants should grow here, it is necessary to know what our environments are, and also what is the history of the changes in soil, climate, etc., for such events concern the agents which would enable these plants to grow. Central Illinois is situated in a glacial region with a soil made up of many kinds of materi-

als brought here by the ice. In some places the surface is composed of gravel or of clay and is only fairly productive, but in general we have a deep layer of very rich and productive humic soil. Our climate is temperate, though subject to high winds, and to sudden changes of temperature. The flora of this country was all destroyed during the glacial period, by ice coming down from the north, consequently we now have a collection of plants that have immigrated from the south and from the north, making for use a new and varying flora. North America as a whole is very rich in trees and we are located in the area of greatest development of deciduous trees. Therefore, we should expect to find ^{here} all plants that grow in rich soil in the temperate zone and that are able to resist sudden changes in climate, high winds and hot sun.

While we should expect a great variety of trees and shrubs, the distribution has been checked by several obstacles. A large per cent of Central Illinois was covered with prairie sod; this sod, once established, has been a very formidable barrier to the spread of other plants. Fire driven by strong winds has destroyed forests and given the advantage to the sod. Probably the wind unchecked, as it is in such a flat country, has also acted directly by breaking down our trees. Therefore we do not find as good native woods as we should. However, since the land has been under cultivation the true possibilities of our locality have been demonstrated, and we find that a large variety of plants will do well here when circumstances are favorable.

The third question to be considered in our flora, is as to where our plants came from. The land must have been left in a barren condition by the retreating glaciers, and open to the first plants that

entered. The water courses toward the south formed good channels of distribution, so a large number of our plants came from that direction and obtained wide distribution aided as they were by wind, migrating birds, and the various sources of seed transportation. From the north came a number of other plants, but in smaller quantities than from the semi-tropical regions. In addition to this natural distribution the hand of man has played a prominent part. He has imported plants from the east and west where migration has been checked by mountain ranges and oceans. Many of the old world plants have been successfully grown here, and the Orient, especially Japan and China, is becoming an important source for new species. In order then to trace the origin of our flora, we must consider the work nature has done from the north and the south, and the influence exerted by man from east and west.

Our woody flora may be divided for convenience into trees, including all perennial woody plants that rise from the ground with a single rigid trunk; and shrubs including "woody perennials," not trees that persist above ground; this latter class will also include the few woody persistent vines. This classification is not scientific, nor is it a rigid one, but it affords popular lines of distinction. The order of families and genera as given in Britton and Brown's illustrated flora has been followed, and only those plants that have grown well in our locality have been considered as adapted to this region.

TREES.

The trees belong to two distinct classes according to the character of their fruits, the gymnosperms with naked ovules, and the

angiosperms with ovules enclosed in an ovary. The first class consists chiefly of evergreen trees; the second chiefly of deciduous trees and shrubs.

Gymnosperms.

Mostly evergreen trees with needle-like leaves. The trees of this class prefer in general a granitic debris with a dry subsoil. However, four species are indigenous to this part of our state (*Pinus strobus*, *P. Banksiana*, *Juniperus Virginiana*, and *Thuja occidentalis*), and a number of others do well here.

Family Pinaceae Conifers.

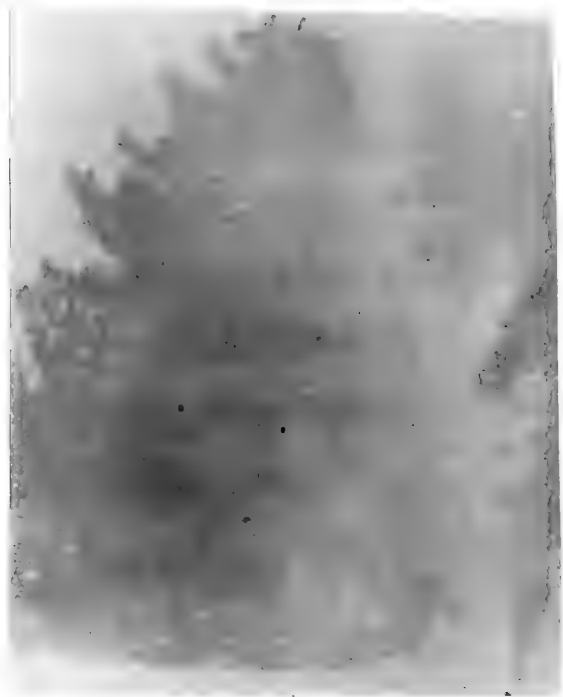
PINUS.- Pine. Mostly large trees common in cultivation.

P. strobus L. White Pine. Wild in northern part of the state where it forms a very large tree; here, forms quite large handsome specimens in cultivation.

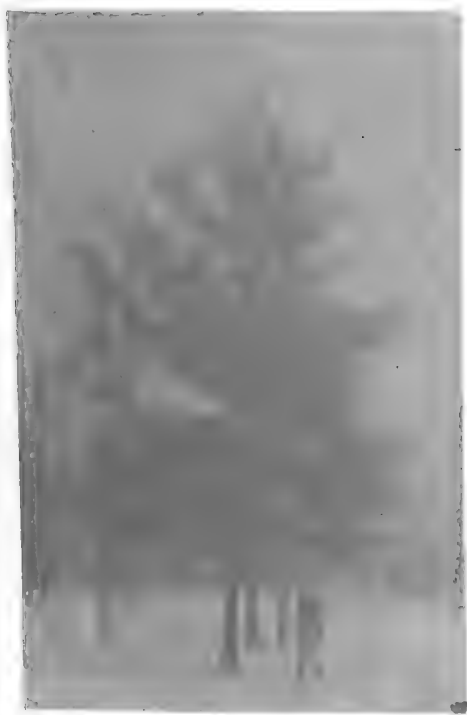
P. resinosa Ait. Norway Pine, Red Pine. Thrives in our soil, forms medium sized tree, with crooked branches, and reddish yellow bark.

P. Austriaca Hoss. Austrian Pine, Black Pine, cultivated from Europe. Very variable. Sometimes makes a very handsome specimen if allowed to branch near the ground.

P. Sylvestris L. Scotch Pine. Cultivated from Europe, common,



Pinus Austriaca
Austrian or Black Pine



Pinus strobus.
White Pine.

forms large tree.

P. divaricata (Ait) Scrub Pine. Along streams.

LARIX. Larch. Deciduous, but leaves out very early.

L. Americana Michx. American Larch.

Wild in northern Illinois, sometimes cultivated. Forms a large pyramidal tree with drooping branchlets.

L. Europaea DC. European Larch. Cultivated from Europe; larger and more delicate and drooping than above, more used in cultivation.

PICEA. Spruce.

P. excelsa Link. Norway Spruce. Common in cultivation; forms a large tree with tall spire and stout horizontal branches with drooping branchlets.

P. Mariana (Mill). Black Spruce. Much like the last though not so tall, native farther north. Common in cultivation.

P. pungens Englm. Colorado Blue Spruce. Occasionally cultivated, from Rocky Mountains.

PSEUDOTSUGA.

P. taxifolia (Lam.) Douglas Spruce. A very large growing tree recently introduced from the west, no large specimens are found here, but the young trees prove hardy.

TSUGA.

T. Canadensis L. Hemlock. Forms a very graceful and handsome tree if allowed to branch near the ground. Cultivated.

ABIES, Fir Trees. Not so rugged and striking as the spruces.

A. Balsamea L. Balsam Fir. Often cultivated; forms a medium sized pyramidal tree.

TAXODIUM.

T. distichum (L). Bald Cypress. A large growing irregular-shaped tree, common in southern part of the state. Cultivated here, forms while young, tall, conical, regular shaped tree. Leaves pinnate, delicate, deciduous.

THUJA.

T. Occidentals L. Arborvitae. Small tree or shrub, wild and cultivated, common.

JUNIPERUS. Two of the four North American species grow here, especially in cemeteries in cultivation.

J. Communis L. Common Juniper. Prefers a thin soil, is liable to rot in our rich loam. A variety, *Hibernica*, forming a slender conical or columnar small tree, is a favorite in cultivation.

J. Virginiana L. Red Cedar. Cultivated and in woods, forms larger tree than above species.



Taxaceae. Yew Family.

GINKGO. A very old genus with only one species living.

G. Biloba L. (*Salisburia adiantifolia*). Maiden Hair Tree. Often cultivated, forms a large tree of fine shape, seems perfectly hardy.

Angiosperms.

We find most of our trees and shrubs belong to the class of Angiosperms. The woodlands here, though separated by large areas of prairie land, contain a great variety of plants. The varieties found, however, vary greatly, for even adjoining localities, due in part to the newness of the flora and the unequal distribution that has occurred since the Glacial Period, but it is found by experiment that the plants that grow anywhere in this region, will grow almost everywhere here, when transplanted. The flora of this geographical area is especially marked by the high development of its deciduous trees, therefore the list of them is found to be large.

MONOCOTYLEDONS. No trees except in tropics.

DICOTLEDONS. Stem formed of pith, wood and bark increasing in size by annual layers.

Juglandaceae. Walnut Family.

JUGLANS. A genus of large handsome trees with spreading branch-



es, very ornamental when full grown; objectionable only on account of strong aroma from their leaves.

J. nigra L. Black Walnut. Native here, fond of rich soil.

J. cinerea L. Butternut. Like the above, native here. Not so good as *nigra* for ornamental planting as it is coarse, and has fewer branchlets.

J. sieboldiana Maxim, Japanese Walnut. A medium to large-sized tree cultivated from Japan. Hardy at Agricultural Experiment Station.

HICORIA. Raf. Hickory trees. Called by Gray *Carya*. We are near the center of distribution. Four species grow wild in this county and three others have been reported from this region.

H. pecan (Marsh). Pecan nut. A large slender tree, occurring in woods in some parts of the state.

H. minima (Marsh). Bitternut. A medium to large slender tree; common in woods.

H. ovata (Mill) Shagbark. Also common, forms large tree with very rough bark.

H. laciniosa (Michx). King nut. Large, handsome tree, abundant in woods.

H. alba (L) Mockernut. White Heart Hickory, common in woods.

H. microcarpa (Nutt) Small fruited hickory, reported from Macon county Ill., (G1)

H. glabra (Mill). Pignut. Reported from Peoria. (B1).

Salicaceae.

POPULUS. Trees of large habit, but having some objectionable features. They are continually shedding fruit bark or foliage.

P. alba L. White or Silver-Leaf Poplar. Common in cultivation; from Europe and Asia. Forms large, broad-topped tree.

P. grandidentata Michx. Large-toothed Aspen. Occurs in our woods, common in cultivation, has good form, but is affected by wind and by insects.

P. tremuloides Michx. Quaking Aspen. Grows here in cultivation, and in some localities wild. It is the smallest of the poplars, forty or fifty feet high.

P. dilatata Ait. Lombardy Poplar. A common tree in cultivation; grows very tall and slender. Of little value in small planting, though often used.

P. deltoides Marsh. Cottonwood, Carolina Poplar. A very rapid growing tree that stands transplanting well, not good for a permanent specimen, owing to short life and weak appearance.

SALIX. A group of trees whose species are very hard to identify. Owing to lack of material the list has not been completed.

S. nigra Marsh. Black willow. Common along our streams.

S. amygdaloides Anders. Peach-leaved Willow. Reported from Peoria (31)

S. lucida Muhl. Glossy Willow. In woods (G. P. Clinton.)



Populus deltoides.
Cottonwood.



Salix Alba.
White Willow.

S. alba L. White Willow. Forms a large tree, often cultivated for ornament and shade. From Europe.

S. Babylonica L. Weeping Willow. A large handsome weeping tree, often cultivated, especially in cemeteries, also useful in parks. Native of Asia.

S. fluviatilis Nutt. A much branched shrub. Reported by G. P. Clinton.

S. humilis Marsh. Reported from Peoria (B1).

S. Tristis Ait. Reported from Peoria. (B1).

S. discolor Muhl. Reported from Peoria. (B1).

S. Serice Marsh. Reported from Peoria. (B1).

S. candida Fluegge. Shrub. Reported from Peoria. (B1).

S. cordata Muhl. Reported from Peoria. (B1)

S. myrtilloides L. Reported from Peoria. (B1).

Betulaceae.

CARPINUS.

C. Caroliniana Walt. Blue Beach. A shrub or small tree found in thickets along streams.

OSTRYA.

O. Virginica (Mill). Hop Hornbeam. Ironwood. A small tree; common; its leaves much resemble the elm.

CORYLUS. See shrubs.

BETULA.. Aromatic trees belonging chiefly farther north.

B. papyrifera Marsh. Canoe Birch. Often cultivated; forms a graceful tree, especially good with evergreens.

B. nigra L. Black Birch. Common along streams. (T.J.B.)

Forms a slender tree with reddish twigs.

B. alba L. European. White Birch. Often cultivated, especially in cutleaf and weeping varieties.

B. lenta L. Cherry or Sweet Birch. Reported from Mt. Carmel, Ill. (Seymour).

ALNUS.

A. glutinosa (L) European Alder. A medium-sized tree, occasionally cultivated, quite ornamental.

Fagaceae.

CASTANEA

C. dentata (Marsh). American Chestnut. Occasionally cultivated here, belongs farther east.

QUERCUS. We are in the area of greatest development for the oaks, and just west of the center of distribution. Our woods contain ten or twelve wild species. They form valuable timber trees, and are very useful for ornamental planting.

Q. rubra L. Red Oak. One of our first-class large trees, common in woods; usually of irregular shape. Ornamental when properly planted.

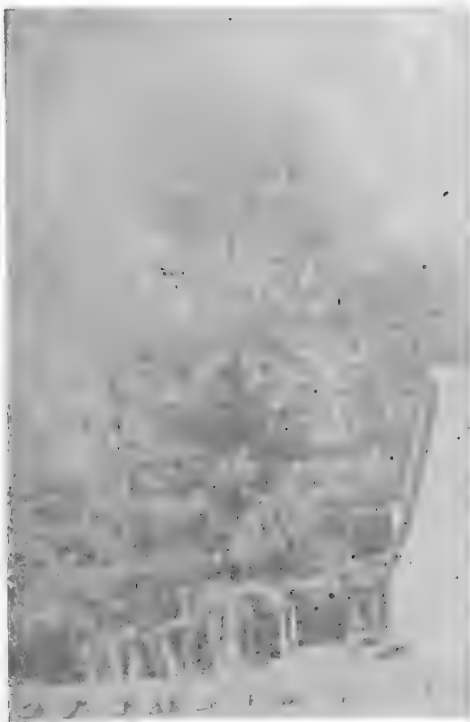
Q. palustris DuRoi. Pin Oak. Occurs in damp woods.

Q. velutina Lam. Quercition. (*Q. tinctoria*) A very large tree with dark bark, and dark green dull leaves. Occurs in woods; known by orange color of live bark.

Q. nigra L. Water Oak. Black Jack. In general distribution,



Quercus Alba.
White Oak.



Quercus Rubra
Red Oak.



Quercus Robur
English Oak.

forms a small tree.

Q. Imbricaria Michx. Shingle Oak. A large tree in woods.

Q. alba L. White Oak. The finest of the oaks, especially for specimen trees. Common, grows very large.

Q. macrocarpa Michx. Burr Oak. In woods, and cultivation.

Q. platanoides (Lam). Swamp White Oak. (*Q. bicolor*). Common in woods.

Q. accuminata (Michx), Chestnut Oak. (*Q. Muhlenbergii*). A very large tree found in our woods.

Q. Robur L. English Oak. Forms a large tree in cultivation.

Q. prinoides Willd. Shrubby Chinquapin. Reported from Peoria.

Ulmaceae.

ULMUS.

U. Americana L. American Elm. Our most useful shade tree, forms a large, graceful, open head. Common in all situations, much used in cultivation.

U. Racemosa Thomas. Cork Elm. Not so large nor so handsome as the last. Reported from Decatur, Ill. (Gl), from here (T.J.B.). Perfectly hardy.

U. campestris L. European Elm. Much like American, but not so graceful, has a closer head, is more resistant to the wind in very exposed places.

U. fulva Michx. Slippery Elm. Occurs in woods. Coarser than *U. Americana*, not so good for cultivation.

U. Montana, grafted on other stock, forms handsome, pendulous, shrubby tree.

CELTIS.

C. occidentalis L. Hackberry. Common in woods and in cultivation; forms a handsome first-class tree.

Moraceae.

MORUS.

M. rubra L. Red Mulberry. A medium-sized, native tree, often cultivated.

M. alba L. White Mulberry. An Old World tree, cultivated here for fruit. Var. *tartarica*. Loudon. Russian Mulberry. Also cultivated for fruit.

TOXYLON.

T. poniferum Raf. Osage Orange. A medium-sized tree, much used in the form of sheared hedges. Not good for ornamental planting.

Magnoliaceae.

Trees or shrubs coming from the semi-tropical regions, that still retain some tropical characters, especially in their large glossy leaves.

MAGNOLIA. No species are indigenous, but several prove hardy.

M. accuminata L. Cucumber Tree. A medium-sized tree, cultivated here, grows as far north as Michigan.

M. macrophylla Michx. Large-leaved Magnolia. A small tree with very large leaves. Reported from Princeton, Ill. (Bryant).

M. Soulangeana. Japanese Magnolia. Forms a handsome large shrub with big light colored flowers. Cultivated.

LIRIODENDRON. A genus of only one or two species, native of North America and China. Very old in geologic history.

L. Tulipifera L. Tulip-tree. A magnificent, first-class tree, indigenous to part of this state, does well in cultivation.

Anonaceae.

ASIMINA.

A. triloba L. Papaw. A small tree, more often a shrub, common in woods.

Lauraceae.

SASSAFRAS.

S. Sassafras (L). Sassafras Tree. A medium-sized tree, with handsome foliage; common in woods.

BENZOIN. See Shrubs.



saxifragaceae. See Shrubs.

Hamamelidaceae.

LIQUIDAMBAR.

L. *Styraciflua* L. Sweet Gum. Grows here, but has not been fully tested.

Platanaceae.

A family of one genus of trees found in the north temperate zone.

PLATANUS. Large trees sometimes damaged by a fungus.

P. *occidentalis* L. Plane-tree. Sycamore. One of the largest trees east of the Rocky Mountains. Common in river bottoms, the largest specimens often hollow.

P. *orientalis* L. Oriental Plane-tree. Sometimes cultivated, but not so hardy as our sycamore.

Rosaceae. See Shrubs.

Pomaceae.

SORBUS.

S. *Americana* Marsh. American Mountain Ash. A tall shrub or slender tree.

S. *Aucuparia* L. European Mountain Ash. Cultivated from Europe, forms a fine large tree, but rots badly where wounded.



PYRUS.

P. communis L. Common Pear, cultivated everywhere. Native of Europe and Asia.

P. Cydonia L. Common Quince. Cultivated from Europe.

MALUS.

M. angustifolia (Ait) Narrow-leaved Crab. A small tree in woods, especially southward.

M. coronaria (L). America Crab-apple. A small tree in woods and cultivated, bears large, very fragrant flowers.

M. Ioensis (Wood). Much like above; not common here.

M. Malus L. Common Apple of cultivation.

M. Souldardii (Bailey) A small, upright, stout tree with large fruit, one found along roadside-Mahomet.

AMELANCHIER.

A. Canadensis (L) June-berry. Service-berry. Along streams, forms a shrub to medium-sized tree. Does well cultivated in shrubbery.

CRATAEGUS.

Shrubs or small trees common in woods; they form dense clumps, and are usually armed with thorns.

C. Crus-galli L. Cockspur Thorn. Has especially large thorns.

C. coccinea L. Red Haw. Bears large, red, edible fruit.

C. macroantha Lodd. Found in St. Joe, Ill. (G.P.C.)

C. mollis (T. and G.) much like *C. coccinea*.

C. tomentosa L. Pear Haw. More delicate leaves and branches than the others; more ornamental.

Drupaceae. Plum Family.

PRUNUS.

P. Americana Marsh. Wild Yellow or Red Plum. A small tree of little value in ornamental planting.

P. angustifolia Michx. Reported from Menard Co. (Hall).

P. cerasus L. Sour Cherry. Common in cultivation.

P. Pennsylvanica L. Wild Red Cherry. Reported from Ringwood Ill. (Vasey), also from Ogle County. (T.J.B.).

P. Virginiana L. Choke Cherry. A small tree common in woods.

P. serotina Ehrh. Wild Black Cherry. A large tree in our woods.

P. Japonica Thunb. Common Flowering Almond. A common shrub in cultivation.

AMYGDALUS.

A. Persica L. Peach. Common in cultivation, often escapes into border of woods.

Caesalpinaceae.

CERCIS.

C. Canadensis L. Red Bud. Small tree common in woods, does well in cultivation; prominent for pea-like flowers in May.

GLEDITSIA.

G. triacanthos L. Honey Locust. A large tree often covered with thorns, occasionally found in woods and in cultivation.

GYMNOCLADUS

G. dioica L. Kentucky Coffee Tree. Cultivated, and in woods; forms a large ornamental tree with rugged clublike, crooked branches, and large fruit pods that often hang all winter.

Papilionaceae. Pea Family.

ROBINIA.

R. Pseudacacia L. Locust-tree. A large tree, common in cultivation; a poor specimen tree, as it is badly broken by winds, it is always shedding, and it is apt to spread badly from the root.

Rutaceae. Rue Family.

XANTHOXYLUM

X. Americanum Mill. Prickly Ash. A shrub or small tree, common in woods.

PTELEA

P. trifoliata L. Three leaved Hop-tree. A shrub or small tree in woods.

Sinarubaceae

AILANTHUS

A. glandulosus Desf. Tree of Heaven. A large, rather coarse, rank growing tree; in cultivation and escaped.

Anacardiaceae. Sumac Family. See Shrubs.

Celastraceae. See Shrubs.

Aceraceae.

Acer.

A. saccharinum L. Soft Maple. A large ornamental tree;



Acer platanoides
Norway Maple.



Acer saccharinum Wierii
Wiers Cutleaf Maple.



Acer Negundo. - Box Elder

common in woods and in cultivation.

A. saccharum Marsh. Sugar or Rock Maple. A handsome, but slow growing tree, very formal and dense; common in woods and in cultivation.

A. Negundo L. Box Elder. A hardy, rapid growing, medium sized tree; not very ornamental, but much used.

A. platanoides L. Norway Maple. A formal, very dense tree of medium size; in cultivation.

A. campestre L. European Maple. A low tree; in cultivation.

Hippocastanaceae. Buckeye Family.

AESCULUS.

AE. Hippocastanum L. Horse-chestnut. A small or sometimes large tree; cultivated; native of Asia.

AE. glabra Willd. Ohio Buckeye. Shrub to medium sized tree; in woods and in cultivation.

Tiliaceae

TILIA

T. Americana L. American Linden. A handsome, first-class tree; in woods and cultivated.

T. heterophylla Vent. White Bass-wood. A small tree with larger leaves than above; in woods and in cultivation.

T. Europaea L. European Linden. Smaller and more dense than *T. Americana*, also more formal; cultivated from Europe.

Cornaceae. Dogwood Family.

COENUS.

C. Florida L. Flowering Dogwood. A small tree or large shrub; often cultivated, rarely in woods.

C. Amonum Mill. Kinnikinik. A shrub in woods. Common.

C. stolonifera Michx. Red-osier Dogwood. A shrub often cultivated for effect of its red stems; common in woods.

C. alternifolia L. A small tree or shrub. Common in woods.

Ericaceae. Heath Family. See Shrubs.

Ebenaceae,

DIOSPYROS.

D. Viriginiana L. Persimmon. A medium sized tree; cultivated, especially for fruit.

Oleaceae. Olive Family.

SYRINGA.

S. vulgaris L. Lilac. A large shrub or small tree; common in cultivation.

S. persica L. Persian Lilac. A more slender shrub than above; in cultivation.

FRAIXINUS. A group of ornamental medium to large-sized trees.



Fraxinus lanceolata.
Green Ash.

F. Americana L. White Ash. A handsome large tree; in woods and cultivated; reaches its greatest development in this region.

F. lanceolata Borck. Green Ash. Not so large as above. Common.

F. Pennsylvanica Marsh. Red Ash. Not so common as preceding species.

F. quadrangulata. Michx. Blue Ash. A large tree in woods and cultivation.

F. nigra Marsh. Black Ash. A large swamp tree; occasionally in woods, and in cultivation.

CHIONANTHUS.

C. Virginiana L. Fringe-tree. A shrub or small tree cultivated for ornament. Likely to winter-kill in severe seasons.

BIGNONIACEAE.

CATALPA. Very striking trees of North America, Eastern Asia and the West Indies. Usually irregular in shape and rapid growers.

C. Catalpa (L). Indian Bean. A medium sized tree usually with flat, spreading top, leaves large. Cultivated.

C. speciosa Warder. Large Indian Bean. Larger, more upright growing tree with larger leaves than above.

C. Koempferi Sieb. & Zucc. Japanese Catalpa. Smaller and of less value than two preceding species. Cultivated from Japan.

RUBIACEAE. See Shrubs.

Caprifoliaceae. See Shrubs.

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SHRUBS, INCLUDING WOODY VINES.

Although there is no definite line separating shrubs from trees we find they constitute quite an extensive and distinct group in themselves. The thickets and woods contain a number of native species, while many others are found here that have been introduced through cultivation. Owing to the limited amount of ornamental planting within reach for investigation the list is not complete. It is somewhat inexact too, owing to the fact that many species have been reported from only one or two specimens, and might not prove satisfactory for general use. As a whole, however, the list is fairly representative of the shrubs that do thrive in this locality, and all the common species are included.

Gymnosperms.

THUJA. See Shrubs.

JUNIPERUS. See Trees, also

J. Sabina L. Shrubby Red Cedar. A low or trailing shrub; often cultivated, especially on rockeries.

Angiosperms.

Monocotyledons.

Liliaceae.

No true shrub in this locality, though *Yucca filamentosa* L. is

sometimes classed as one.

Smilacaceae.

SMILAX. Climbing, usually prickly vines. Only one perennial species common here.

S. hispida Muhl. Greenbrier. A high climbing vine in woods. Not of any value for cultivation.

Dicotyledons.

Like the trees that occur here the shrubs are chiefly of highly complex structure, and belong to the class of dicotyledons.

Betulaceae.

CORYLUS.

C. Americana Walt. Hazelnut. A small to medium-sized shrub; in thickets and sometimes cultivated.

C. rostrata Ait. Beaked Hazelnut. Very similar to above species.

C. Avellana L. European Hazelnut. Filbert. A small tree or shrub; cultivated from Europe. (Agricultural Experiment Station).

Magnoliaceae.

MAGNOLIA. See Trees.

Tamariscineae.

TAMARIX

T. Gallica L. French or Common Tamarisk. A shrub with

long slender drooping branches. Cultivated from Old World. Flowers very small, appearing before leaves. Somewhat liable to winter-kill.

Ranunculaceae. Crowfoot Family.

CLEMATIS. Climbing vines or erect herbs of wide geographical distribution.

C. Virginiana L. Virgin's Bower. Long vine of rapid growth; common in cultivation.

C. Jackmanii. Jackman's Hybrid Clematis. A handsome flowering vine, good for trellises. Occasionally damaged by severe winters.

ATRAGENE.

A. Americana Sims. Purple Virgin's Bower. A trailing or climbing vine; common in cultivation.

Berberidaceae.

BERRERIS.

B. vulgaris L. European Barberry. A shrub 6 - 8 feet high; common in cultivation. Forms a very handsome head. Variety purpurea, a shrub much like the last but with purple leaves is also cultivated.

B. Thunbergii DC. A low shrub introduced from Japan.

Menispermaceae.

MENISPERMUM. Only one species native to North America.

M. Canadense L. Canada Moonseed. A climbing vine in woods and cultivated, prefers moist places.

Calycanthaceae.

BUTNERIA.

B. Florida L. Flowering Shrub. A medium-sized to large shrub; common in cultivation; introduced from farther north.

Lauraceae.

BENZOIN. A group of shrubs of North America and Eastern Asia.

B. Benzoin L. Spice Bush. A large shrub; common in fields and woods.

Saxifragaceae.

DEWZIA.

D. gracilis Sieb. & Zucc. A small shrub from Japan; does not stand winter well.

D. scabra Thunb. A tall shrub from China and Japan, also quite tender.

HYDRANGEA. A genus of about thirty-five species in North America, Eastern Asia and the Himalayas. One species native here, others in cultivation.

H. arborescens L. Wild Hydrangea. Occurs here as a medium-sized shrub along banks of streams.

H. paniculata Sieb. Common Out-door or Hardy Hydrangea. A medium-sized broad spreading shrub. Much used in planting, especially variety Grandiflora. Cultivated from Japan.

PHILADELPHUS. Mock Orange.

P. grandiflorus Willd. A large shrub with recurved branches; cultivated from farther south.

p. coronarius L. Common Syringa or Mock Orange. A shrub with erect branches; common; cultivated from southern Europe.

Grossulaceae. Gooseberry Family.

RIBES. Several species common in woods and in cultivation.

R. Cynosbati L. Wild Gooseberry. A small shrub in woods, not ornamental.

R. gracile Michx. Missouri Gooseberry. A common wild shrub.

R. rubrum L. Common Garden Red Currant.

R. aureum Pursh. Missouri Currant. A large handsome shrub flowering in early spring; cultivated and escaped.

Hamamelidaceae.

HAMAMELIS.

H. Virginiana L. Witch Hazel. A shrub or small tree; cultivated, and reported from woods.

Rosaceae. Rose Family.

OPULASTER.

O. opulifolius L. Ninebark. A shrub, native farther north and east, cultivated here in shrubberies.

SPIRAEA.

S. Salicifolia L. American Meadowsweet. A low to medium-sized shrub; common in cultivation.

S. Japonica L. A shrub from Japan. Cultivated in University of Illinois grounds.

S. Thunbergii Sieb. A dwarfish shrub with delicate branches; with many small white flowers in early spring. Cultivated from Japan.

S. trilobata L. A spreading bush; cultivated from Siberia.

RUBUS. A group of perennial herbs, shrubs, or trailing vines.

R. odoratus L. Purple-flowering Raspberry. A bristly shrub; cultivated for flowers.

R. strigosus Michx. Wild Red Raspberry. Common in woods, varieties cultivated for fruit.

R. occidentalis L. Black Raspberry. Occurs in woods, varieties cultivated for fruit.

R. villosus Ait. High Bush Blackberry. Common in woods and in cultivation.

ROSA. Erect or climbing shrubs, generally having prickly stems, several species wild, others in cultivation.

R. setigera Michx. Prairie or Climbing Rose. Common in thickets.

R. blanda Ait. Meadow Rose. Common in woods.

R. humilis Marsh. Low or Pasture Rose. Occurs in woods.

R. rubiginosa L. Sweetbrier. Escaped, and in cultivation.

R. Eglanteria L. Yellow Rose. Common in cultivation.

R. spinosissima L. Scotch Rose. A species cultivated from Europe.

Several other exotic species are hardy here, and are cultivated.

KERRIA.

K. Japonica DC. Japanese Rose. A small shrub with bright yellow flowers and bright green leaves; cultivated from Japan.

Pomaceae.

CRATAEGUS See Trees.

Drupaceae.

PRUNUS. See Trees.

Papilionaceae. Pea Family.

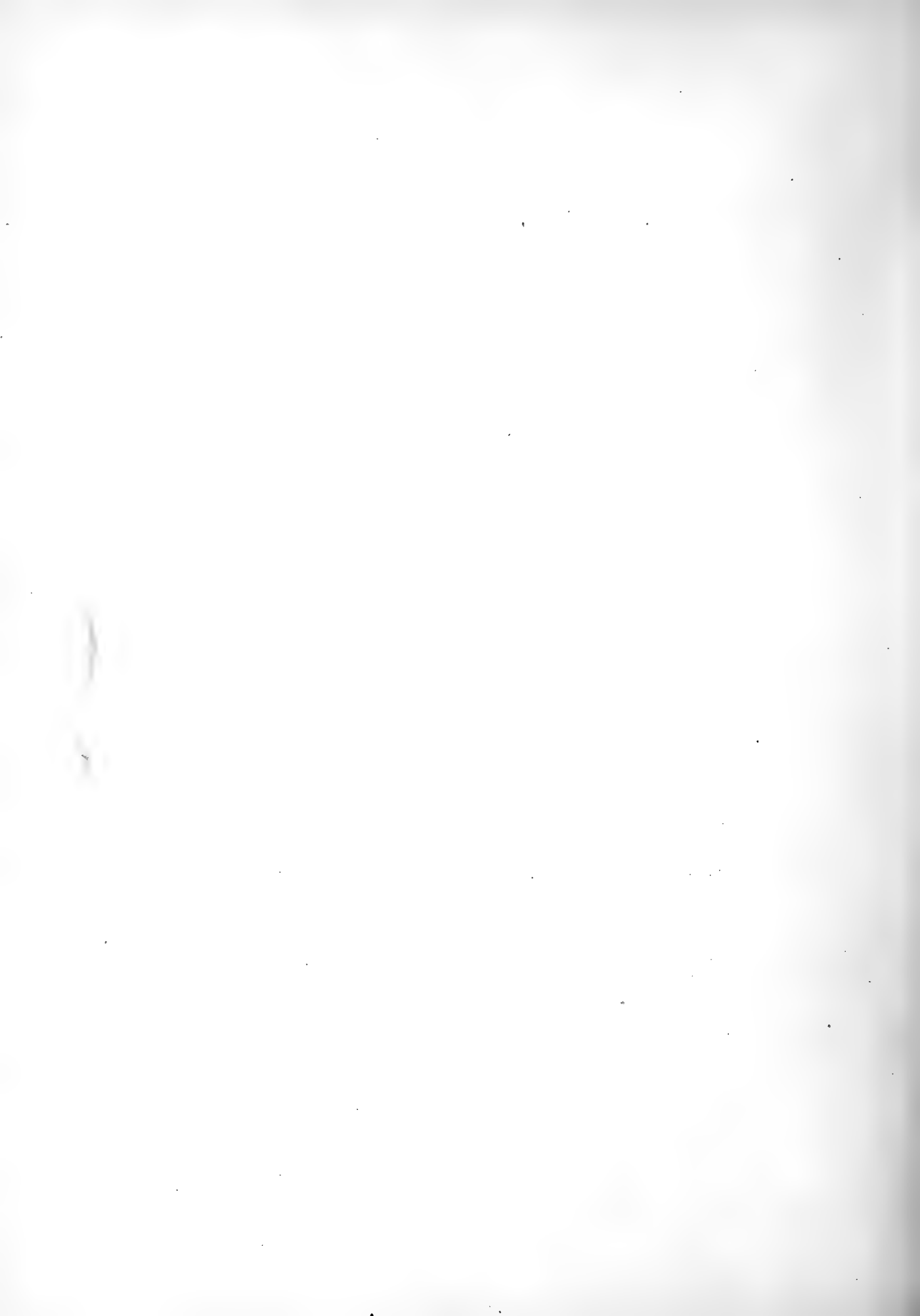
AMORPHA.

A. fruticosa L. False Indigo. A large shrub native in our woods.

A. canescens Pursh. Lead Plant. A small prairie shrub or herb, native here.

KRAUNHIA. Wisteria, a group of four species, three Asiatic, one American.

K. frutescens (L.). American Wisteria. A large rapid growing vine that reaches thirty or forty feet in length; common in cultivation, especially upon piazzas.



Anacardiaceae. Sumac Family.

RHUS. A class of rather coarse shrubs good for backgrounds and thicket planting.

R. hirta L. Staghorn Sumac. A large shrub or small tree, not common nor of very general distribution in our locality.

R. glabra L. Smooth or Scarlet Sumac. A medium-sized shrub; common in woods and thickets.

R. radicans L. Poison or Three-leaved Ivy. A woody, climbing or erect and bushy vine. Common in thickets, on trees, and on fences.

COTINUS.

C. cotinoides (Nutt). Wild American Smoke Tree. A large shrub or small tree. Common in cultivation, belongs farther south.

Celastraceae.

EUONYMUS.

E. odoratus Nutt. Running Strawberry bush. A low, decumbent shrub; occasionally found in woods.

E. atropurpureus Jacq. Wahoo. A shrub or small tree, common in woods. Ornamental, especially when in fruit.

E. Europaeus L. Spindle tree. A shrub much like above. Cultivated from Europe.

CELASTRUS.

C. scandens L. Shrubby or Climbing Bittersweet. A twining woody vine. In woods.

Staphyleaceae.

STAPHYLEA.

S. trifoliata L. American Bladder nut. A large shrub; in woods; not very ornamental.

Hippocastanaceae.

AESCULUS See Trees.

Rhamnaceae.

RHAMNUS.

R. cathartica L. Buckthorn. A large shrub, often thorny; occasionally grown in cultivation.

R. lanceolata Pursh. Lance-leaved Buckthorn. Reported from Englewood, Illinois. Common in southern Illinois.

R. alnifolia. Reported from Elgin, Illinois.

CEANOTHUS.

C. Americana L. New Jersey Tea. Red-root. A small shrub, Common on prairie land.

Vitaceae. Grape Family.

A family of very wide distribution.

VITIS. Grape Vine. Many species and varieties cultivated for fruit, the following ones in woods.

- V. Labrusca L. Sweet-scented Grape.
 V. aestivalis Michx. Summer Grape.
 V. cinera Engelm. Downy Grape.
 V. cordifolia Michx. Frost Grape or Chicken Grape.

AMPELOPSIS.

- A. cordata Michx. Cissus. Reported from Grafton, Illinois.
 (Seymour).

PARTHENOCISSUS.

- P. quinquefolia L. Virginia Creeper. A high climbing vine;
 in woods and often cultivated.

- P. tricuspidata (Sieb & Zucc). Japanese Ivy. A high climbing
 vine from Japan; much cultivated, especially on buildings.

Thymeliaceae.

DAPHNE.

- D. mezereum L. Spruce Laurel. A small shrub; has been tried
 here; should do well.

DIRCA.

- D. palustris L. Leather-wood. A small to medium-sized
 shrub; in thickets.

Cornaceae.

- CORNUS. See Trees.

Ericaceae.

RHODODENDRON.

R. maximum L. A large shrub or small tree; one specimen found in cultivation, but not in good condition.

Oleaceae.

SYRINGA. See Trees.

FORCYTHIA.

F. viridissima Lindl. A ~~small~~ vigorous, drooping, ornamental shrub with yellow flowers preceding the leaves, cultivated from China and Japan.

CHIONANTHUS. See Trees.

LIGUSTRUM.

L. vulgare L. Privet. A shrub often used for hedges, does well here.

Bignoniaceae.

TECOMA.

T. radicans (L) Trumpet-creeper. A high, climbing, woody vine; common in cultivation, and escaped.

Rutaceae.

CEPHALANTHUS.

C. occidentalis L. Button-bush. A shrub; common in low places.

Caprifoliaceae.

SAMBUCUS.

S. Canadensis L. American Elder. Common Elder. A shrub with stems woody only near the base; common in woods; good for mixed shrubbery.

VIBURNUM.

V. Opulus L. Sheep Berry. Sweet Viburnum. A shrub or small tree. Reported here. (G. P. Clinton). Var. = Snowball Tree.

V. prunifolium L. Black Haw. A large shrub; common in woods, cultivated for ornament.

V. Lantana L. Wayfaring Tree. A large shrub, with handsome dense head; cultivated from Europe.

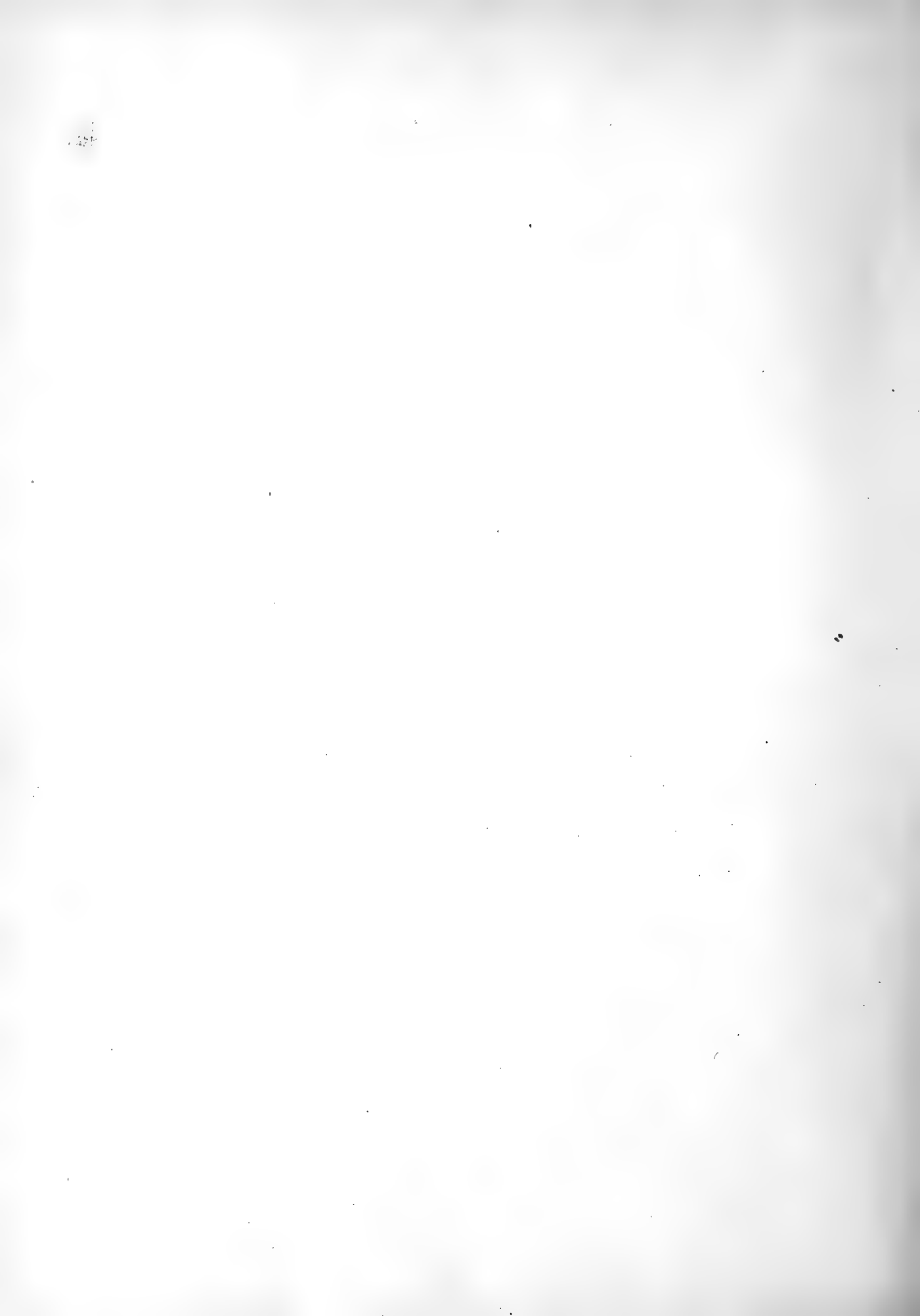
SYMPHORICARPOS.

S. racemosus Michx. Snowberry. A small erect shrub, with snowy white berries in autumn; common in gardens; cultivated from Europe.

S. Symphoricarpos (L). Indian Currant. A small shrub; common in woods, sometimes cultivated.

LONICERA. Erect or climbing shrubs, well adapted to this locality.

L. Caprifolium L. American Woodbine. A high climbing vine naturalized from Europe; cultivated.



L. dioica L. Smooth-leaved Honeysuckle. A shrubby or twining vine, common farther north. Small Yellow Honeysuckle.

L. Sullivantii Gray. A shrubby vine; cultivated.

L. sempervirens L. Trumpet Honeysuckle. A high climbing vine; common in cultivation.

L. Japonica Thunb. Japanese Honeysuckle. A vine naturalized from eastern Asia; in cultivation. (F.J.B.)

L. Cilata Muhl. American Fly Honeysuckle. A small shrub; in cultivation. (F.J.B.)

L. Tartarica L. Bush Honeysuckle. A large shrub; common in cultivation.

DIERVILLA

D. florida Sieb & Zucc. Weigelia. Bush Honeysuckle. A small to medium-sized shrub; common in cultivation. From China and Japan.

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Note

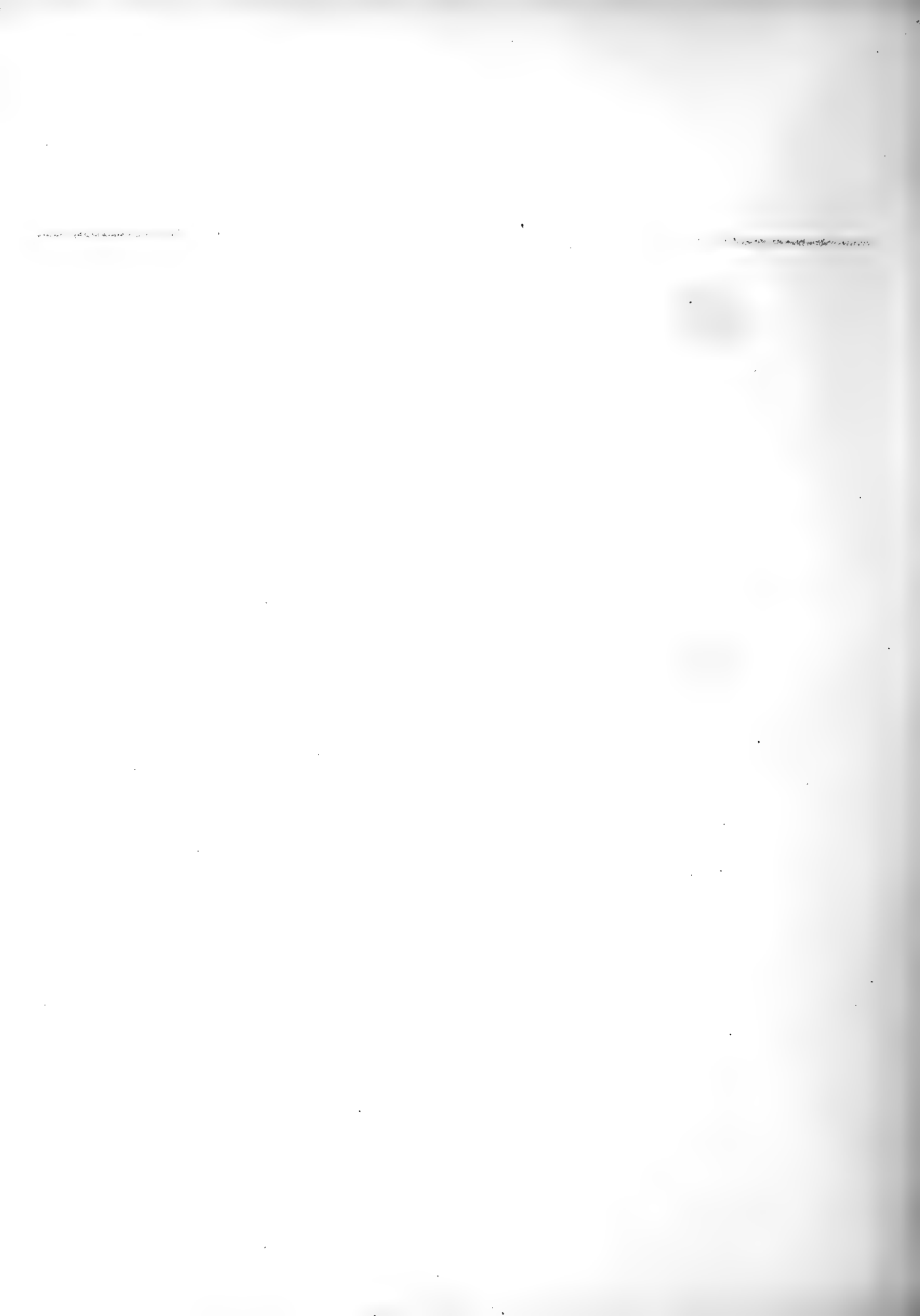
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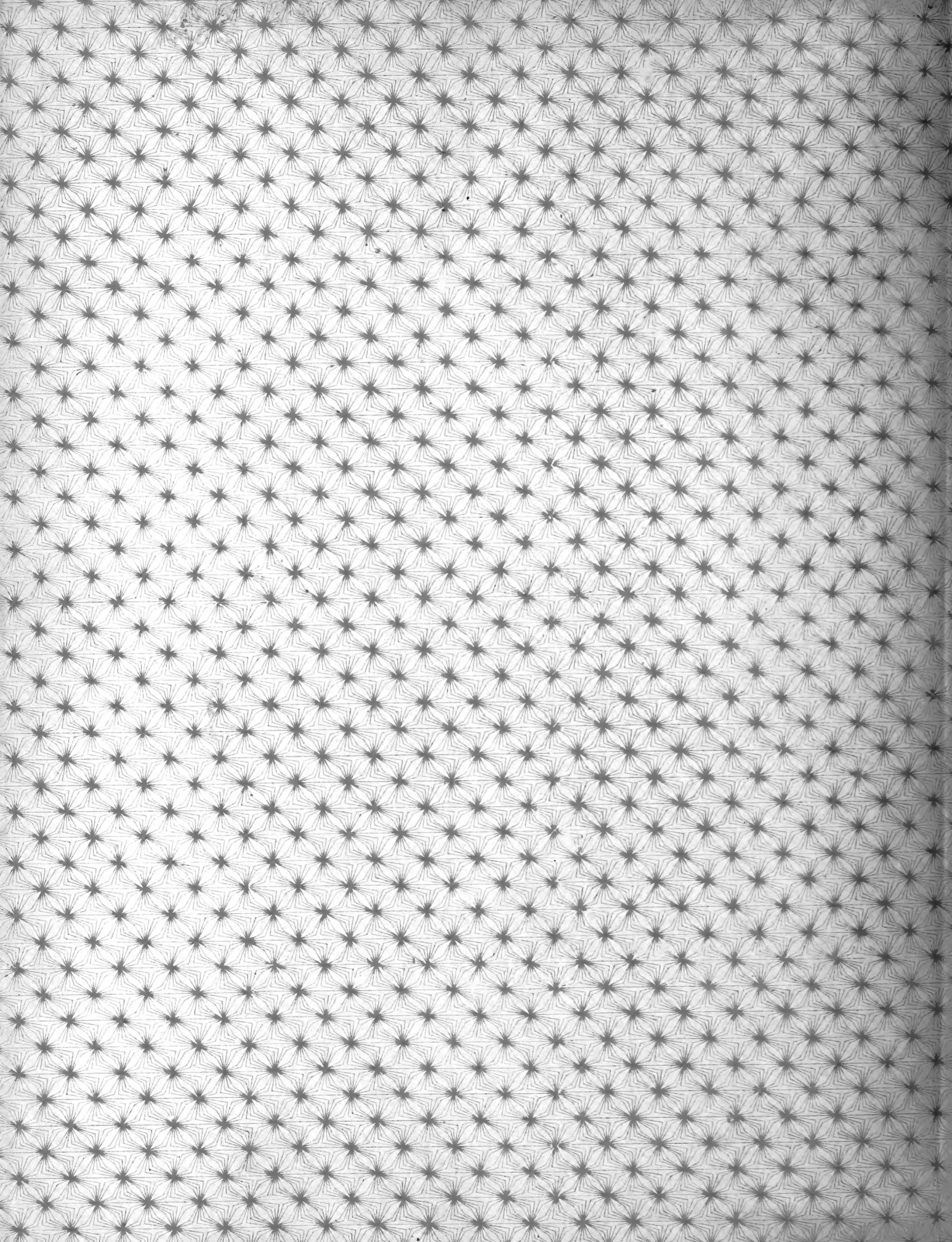


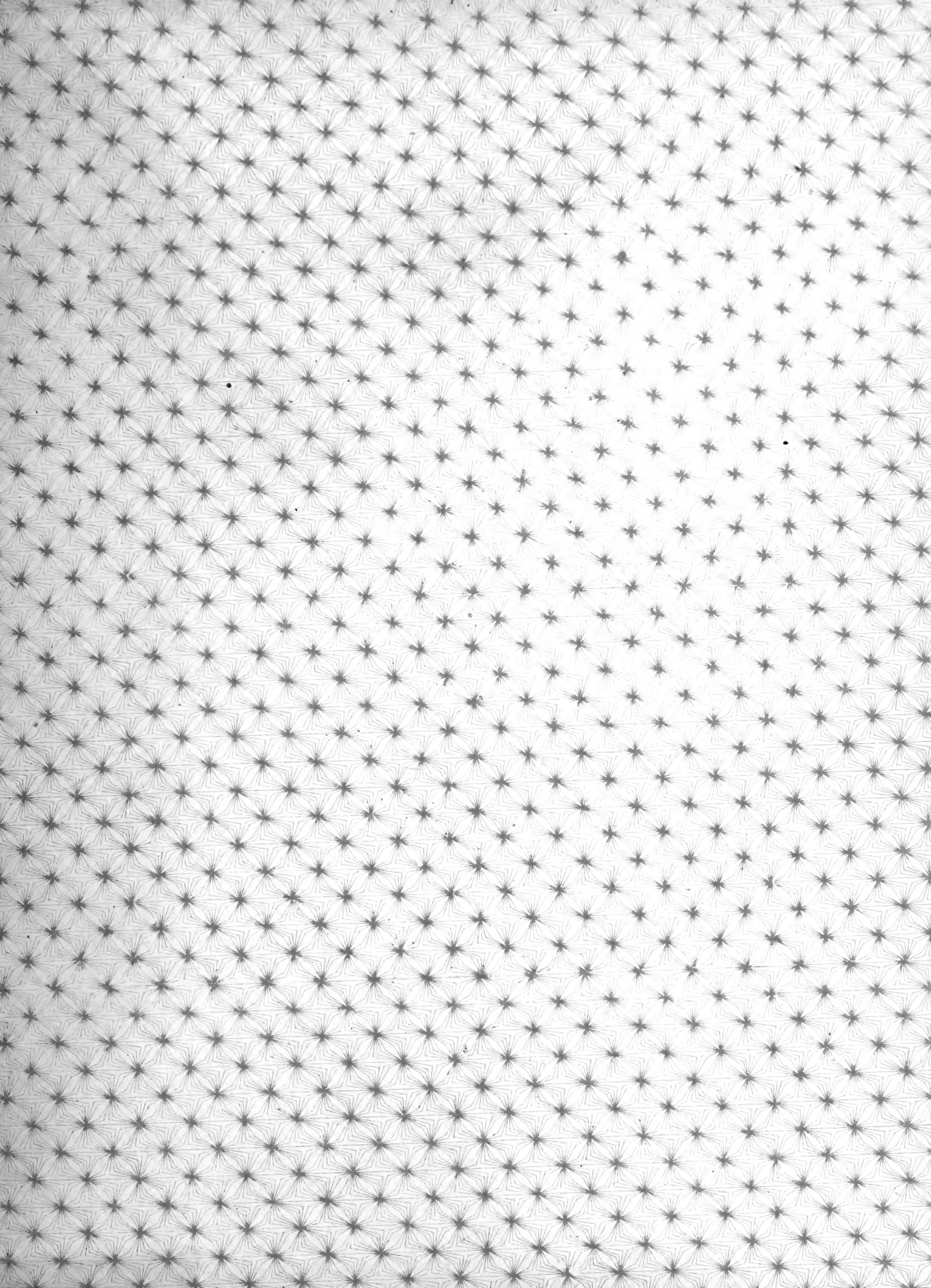
Sycamore.

American Elm.









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