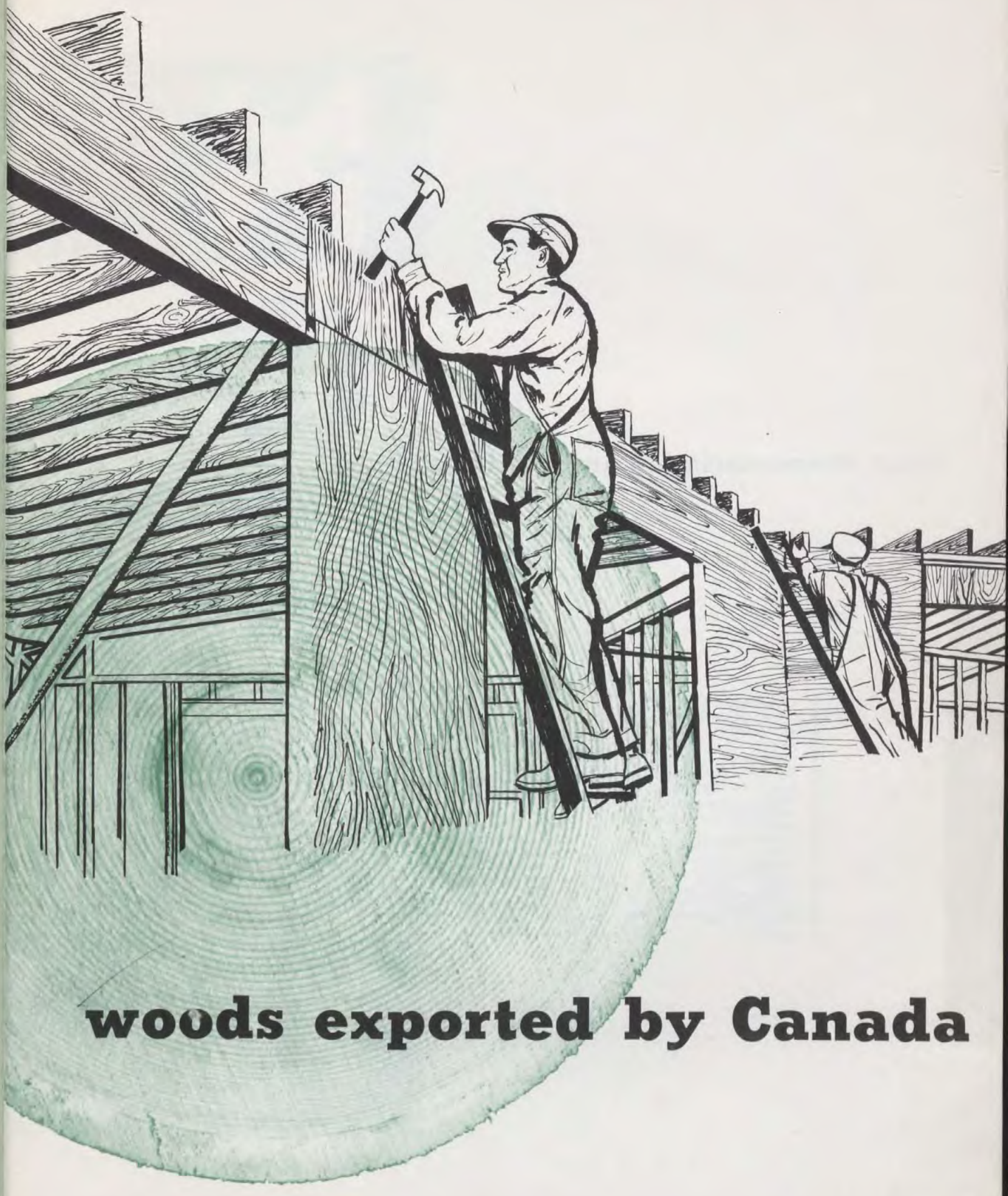
CANADIAN WOOD

AT WORK



woods exported by Canada

their characteristics and principal uses

Index

canadian wood

wood is at work in more than fifty countries throughout the world. As diverse as the countries to which it is exported are the ways in which it serves man. It gives him a home and furnishings, structural timbers to thrust towers high in the air or sink shafts deep in the earth. Canadian wood builds factories, it makes the containers for the goods, and it supports the railways that take them to market. It spans rivers, it carries lines of communication, and it fastens the Monday wash. Canadian wood is indispensable to the lives of millions in many parts of the world.

Canada's prominent position in world lumber markets is based on vast timberland resources. Twenty per cent of the total land area of Canada is covered with productive forests. It is estimated that these forests contain close to 200,000,000,000 cubic feet of accessible timber—with proper management, an inexhaustible supply. Roughly three-quarters of this is softwood—the pines, spruce, Douglas fir, western hemlock and western red cedar. The remainder are hardwoods, growing principally in eastern Canada, such as the birches, maple, basswood and poplar.

Thousands of mills process the logs into lumber, plywoods and veneers, ties, poles, hardwood flooring, timber, and other products familiar to those who import or use Canadian woods. The mills range in size from the giants, cutting as much as half a million feet board measure in a shift, to the small portable mills capable of cutting only one or two thousand feet a day.

Historically, the lumbering industry has been one of

Canada's economic mainstays. During the first half of the eighteenth century there was a limited export of planks and masts to France, and of barrel staves for the French West Indies molasses and rum trade. But it was during the Napoleonic wars that Canada emerged as a major exporter of forest products. In 1808, the continental blockade cut off Britain's supplies of shipbuilding timbers from the Baltic, and she turned to Canada as a new source. In the century and a half since, Canadian lumber in varying forms has moved steadily to the United Kingdom market.

The nineteenth century saw the second great surge in the industry's growth. Men in search of gold pushed westward across the continent and brought into production the great forests of the West Coast. At the same time, the United States began to deplete her eastern forests in sustaining her rapid economic growth. Turning to Canada, the United States bought more and more, until she became the principal importer of Canadian lumber.

Today, about half of the Canadian lumber production finds its way to foreign markets. The United States, the United Kingdom and the Commonwealth buy the most, but Canada also serves many other markets, as far apart as Sweden and Venezuela, Egypt and Fiji.

Just as the pattern of the Canadian lumber trade has varied over the years, so have there been changes in the way that wood is used and in the type of wood products exported. In the year 1850, for example, it is estimated that some eight million tons of dry hardwood were burned to manufacture the potash that Canada sold abroad. Today, advances in technology enable us to make much better use of our forest resources.

Wooden boards of relatively small size can be built up in laminations and be made to span walls 60, 80 and 100 feet apart. Laminations, much stronger than single timbers of equal size, are produced as beams, trusses and chords to meet architectural and engineering needs. New wood adhesives and bonding techniques have been developed to such a degree that glue-line strength can be greater than the strength of the wood itself. Plywood panels bonded with waterproof glue represent the greatest advance in the building trade in recent years. They can be used outdoors in any climate. Wood, impregnated with preservatives, withstands decay and is immune to attack by marine borers. These technological improvements, added to the natural qualities of beauty, warmth of texture and adaptability to human service, account in large measure for the world-wide demand for Canadian wood.

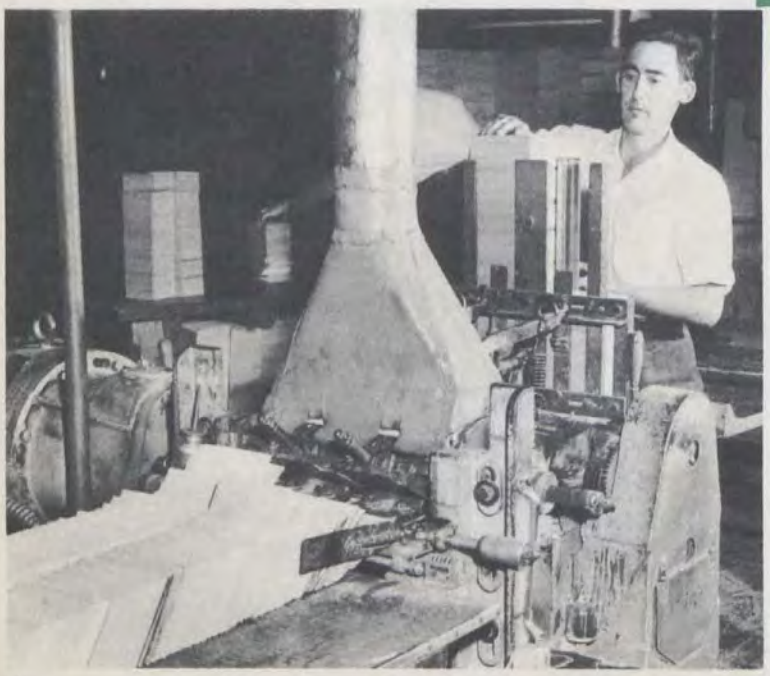
Although some 150 species grow in Canada, this publication deals only with the eighteen exported in the greatest volume. *Canadian wood at work* gives you some of the end uses of Canadian wood, the best varieties for each purpose, and the important characteristics of the various species. You can obtain additional information from Canadian government commercial representatives located in more than fifty cities throughout the world, or from the Commodities Branch, Department of Trade and Commerce, Ottawa.

barrels

Yellow Birch
Douglas Fir
Elm Spruce
Maple
Basswood
Red Pine
White Pine
Balsam Fir
Poplar

baskets

Birch Elm
Basswood
Spruce, Maple
Poplar



battery separators

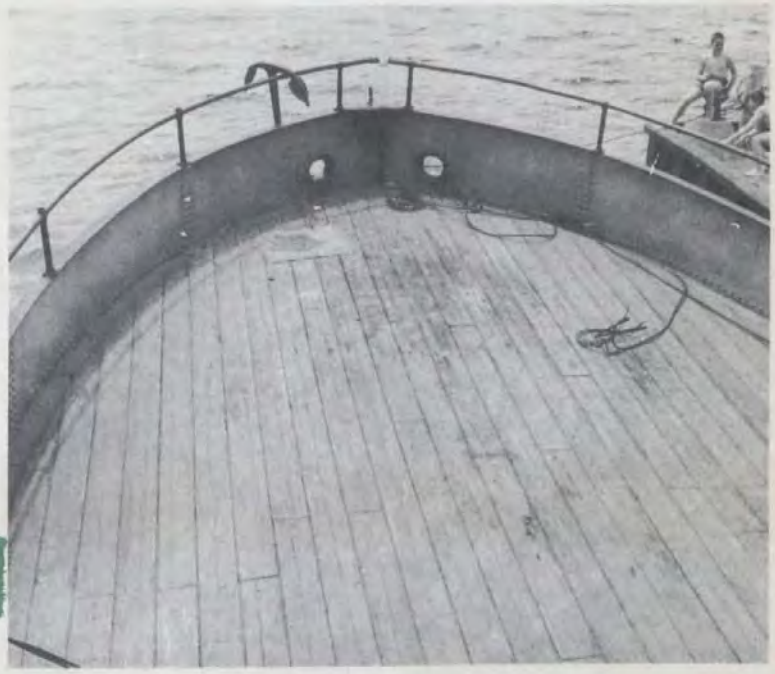
Douglas Fir
Yellow Cedar
Basswood

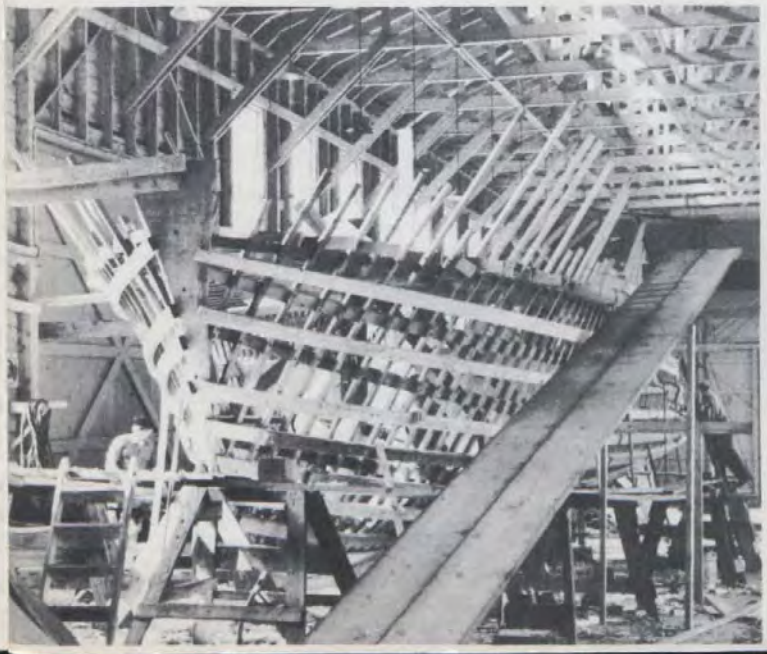
beekeepers' supplies

White Pine
Basswood
Western Red Cedar
Poplar Spruce

boats and ships
(decking)

Red Pine
White Pine
Douglas Fir
Western Hemlock
Spruce
Yellow Cedar
Plywoods





Douglas Fir
Larch
Yellow Cedar
Maple
Yellow Birch
Spruce

boats and ships
(frame and keel)

eastern white cedar

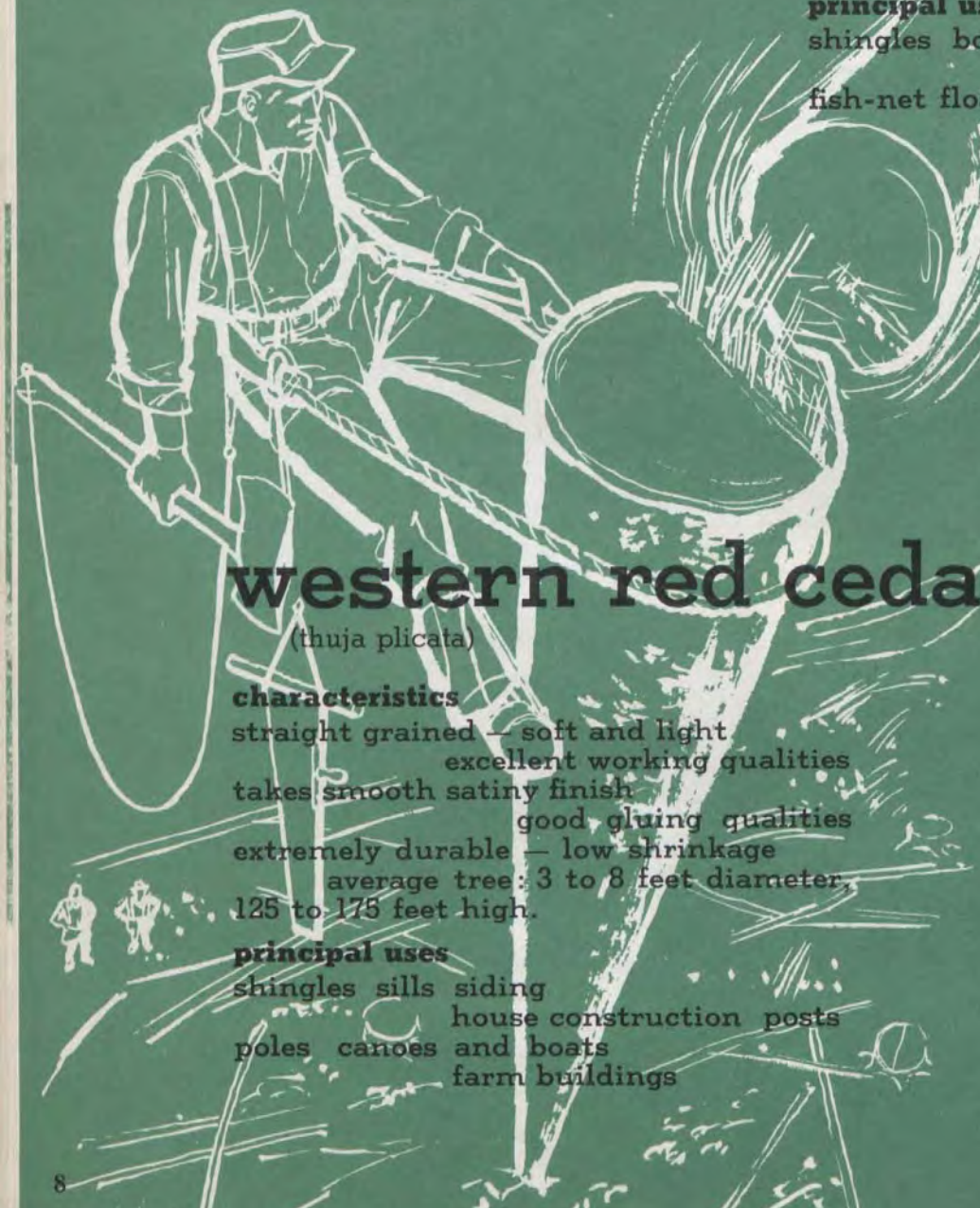
(thuja occidentalis)

characteristics

light wood — fine even texture
good working qualities
very low shrinkage — very durable
average tree: one foot diameter,
45 feet high.

principal uses

shingles boats and canoes
fence posts and poles
fish-net floats garden furniture



western red cedar

(thuja plicata)

characteristics

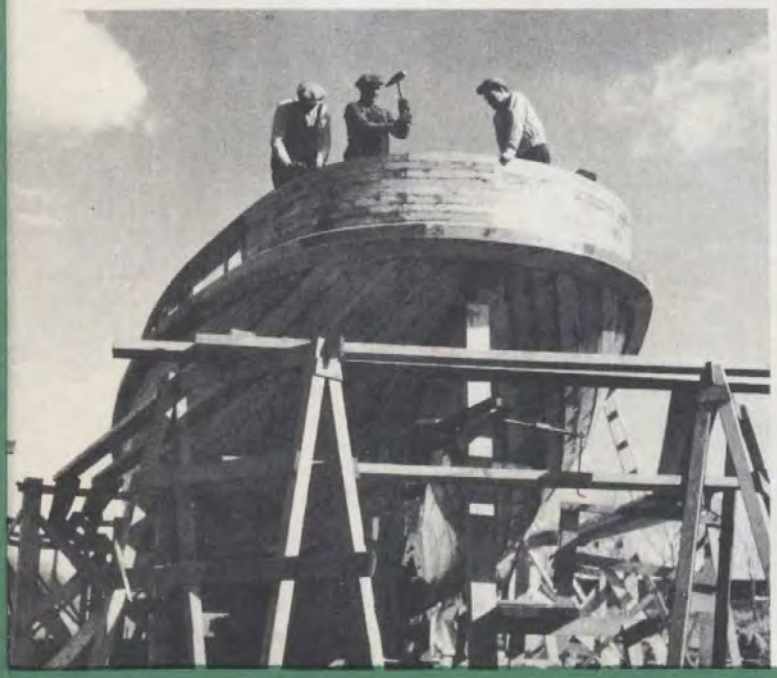
straight grained — soft and light
excellent working qualities
takes smooth satiny finish
good gluing qualities
extremely durable — low shrinkage
average tree: 3 to 8 feet diameter,
125 to 175 feet high.

principal uses

shingles sills siding
house construction posts
poles canoes and boats
farm buildings

boats and ships
(oars and paddles)

Spruce
Maple
Elm



Red Pine
Yellow Cedar
White Pine
Larch Spruce
Douglas Fir
Maple
Birch
Plywoods

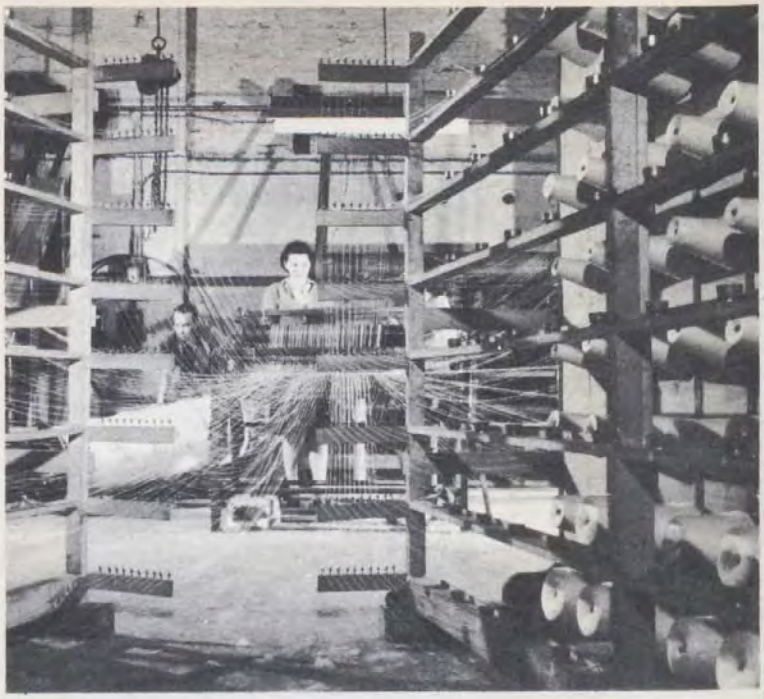
boats and ships
(planking)

boats and ships
(canoe ribs and braces)

Elm
Yellow Cedar
Spruce
Basswood

bobbins, spools and shuttles

Maple
Birch
Plywoods



Douglas Fir
Maple Birch
Red Pine
Western Hemlock
Spruce
Jack Pine
Plywoods

bodies and boxes
(auto transport)

boxes and crates

Spruce
Pine
Hemlock
Douglas Fir

Balsam Fir
Basswood
Larch
Poplar
Maple
Birch
Elm
Cedar
Plywoods

yellow cedar

(chamaecyparis nootkatensis)

characteristics

fairly hard and strong
good working qualities
low shrinkage and high durability
resistant to acids and termites
average tree: 2 to 3 feet diameter,
80 feet high.

principal uses

battery separators boats
and canoes cabinet work
patterns tanks cooling
towers house construction

balsam fir

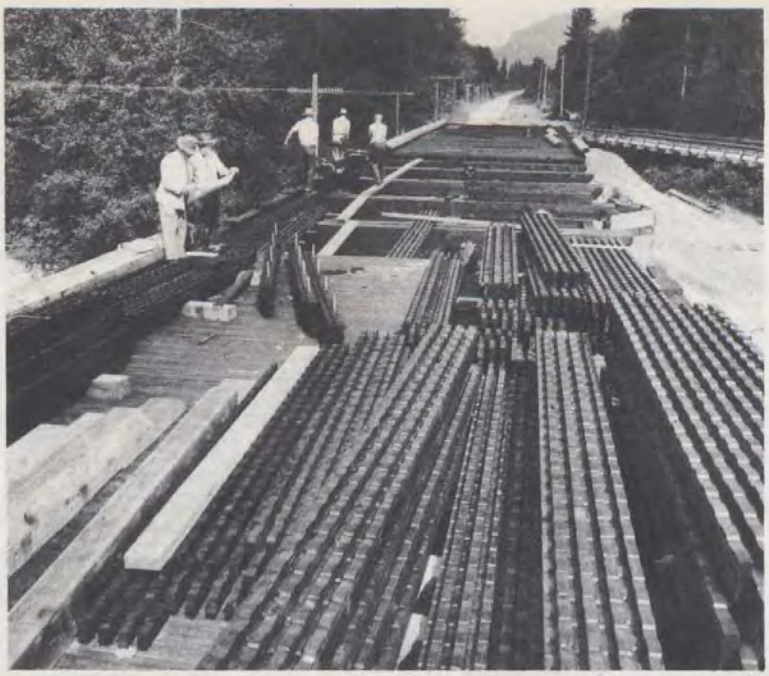
(abies balsamea)

characteristics

soft and light — takes a good finish
holds nails well — average tree:
1 to 2 feet diameter, 50 to 60 feet high.

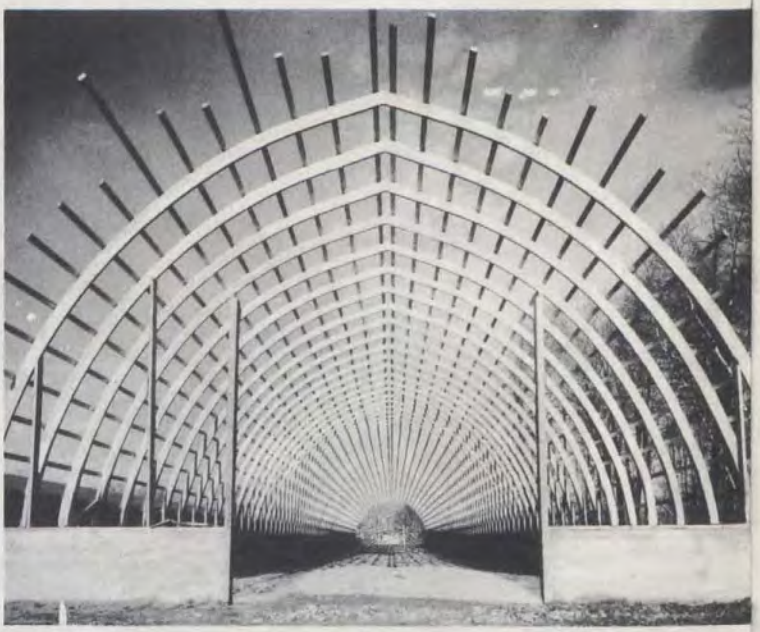
principal uses

pulp boxes and crates, barrels
light household construction



bridges

Douglas Fir
Larch
Western Hemlock
Red Pine
Spruce
Jack Pine
Eastern Hemlock



buildings

(light structural framework)

Spruce
Douglas Fir
Pine
Hemlock
Balsam Fir
Larch
Western Red Cedar
Plywoods

b buildings

(heavy structural framework)

Douglas Fir
Red Pine
Spruce
Western Hemlock
Larch
Jack Pine

buildings

(sheathing and sub-flooring)

Douglas Fir
Hemlock
Pine Spruce
Balsam Fir
Larch
Western Red Cedar
Plywoods

buildings

(siding and exterior trim)

Western Red Cedar
White Pine
Douglas Fir
Hemlock
Red Pine
Spruce, Larch
Jack Pine
Plywoods

buildings

(shingles)

Western Red Cedar
Eastern White Cedar

douglas fir

(pseudotsuga taxifolia)

characteristics one of hardest and heaviest softwoods — distinctive figure — very strong and durable — seasons readily — average tree: 3 to 6 feet diameter, 150 to 200 feet high.

principal uses heavy structural purposes piling mine timbers poles and masts railway ties ship building house construction plywood.

eastern hemlock

(tsuga canadensis)

characteristics moderate strength — good nail holding properties — moderate shrinkage — average tree: 1½ to 2 feet diameter, 50 to 70 feet high.

principal uses general construction work bridge planking railway ties concrete forms boxes pallets pulp.

buildings

(windows sash and sills)

White Pine
Western Red Cedar
Douglas Fir
Larch
Spruce
Red Pine

buildings

(doors)

White Pine
Western Red Cedar
Douglas Fir
Yellow Birch
Maple
Spruce
Red Pine
Plywoods

buildings

(flooring)

Maple
Yellow Birch
Douglas Fir
Western Hemlock
Larch
Red Pine
Spruce
White Pine

buildings

(interior finish and woodwork)

Yellow Birch
Douglas Fir
White Pine
Western Red Cedar
Basswood
Hemlock
Larch
Spruce
Red Pine
Plywoods

carvings

White Pine
Basswood
Yellow Birch
Yellow Cedar
Red Pine

clothes pins

White Birch
Yellow Birch
Maple
Basswood
White Pine
Red Pine

western hemlock

(tsuga heterophylla)

characteristics

strong and hard — distinctive figure
takes a good finish — holds nails well
average tree: 20 to 30 inches diameter,
about 100 feet high

principal uses

general house construction
interior finish ladders railway ties
boxes painted furniture pulp

larch

western larch (larix occidentalis)
tamarack (larix laricina)

characteristics

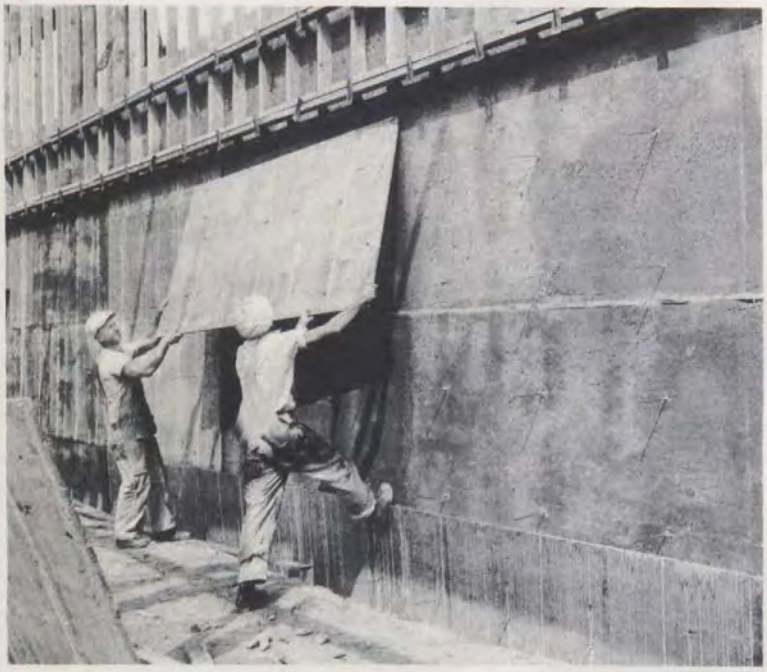
strong and hard — moderately durable
W. Larch 2 to 3 feet diameter,
100 to 140 feet high
Tamarack 1 to 2 feet diameter,
6 to 70 feet high

principal uses

railway ties poles and posts
piling boxes and crates
general house construction

concrete forms

Spruce
Douglas Fir
Hemlock
Pine
Larch
Balsam Fir
Western Red Cedar
Plywoods

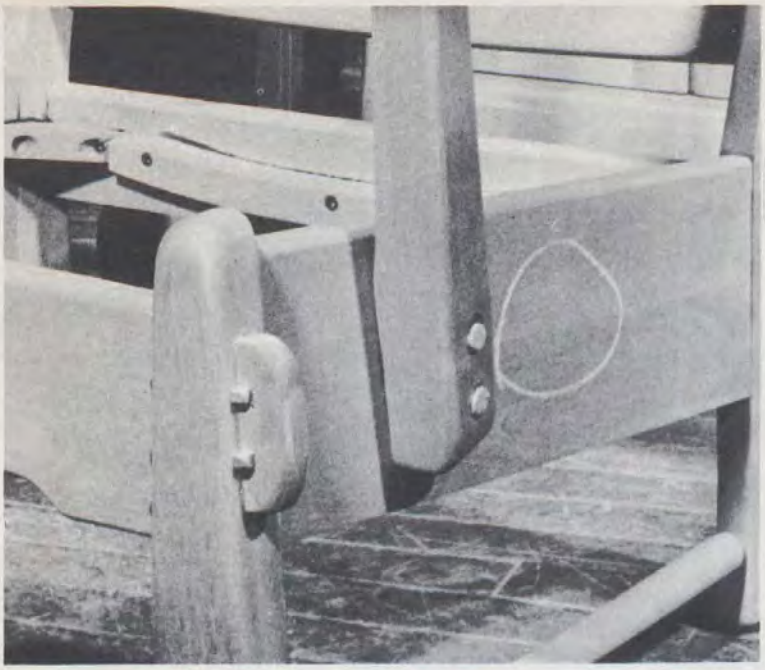


conduits, culverts and drains

Western Red Cedar
Douglas Fir
Larch
Jack Pine
Red Pine
Hemlock
Spruce
Plywoods

cutting boards

Maple
Yellow Birch



dowels

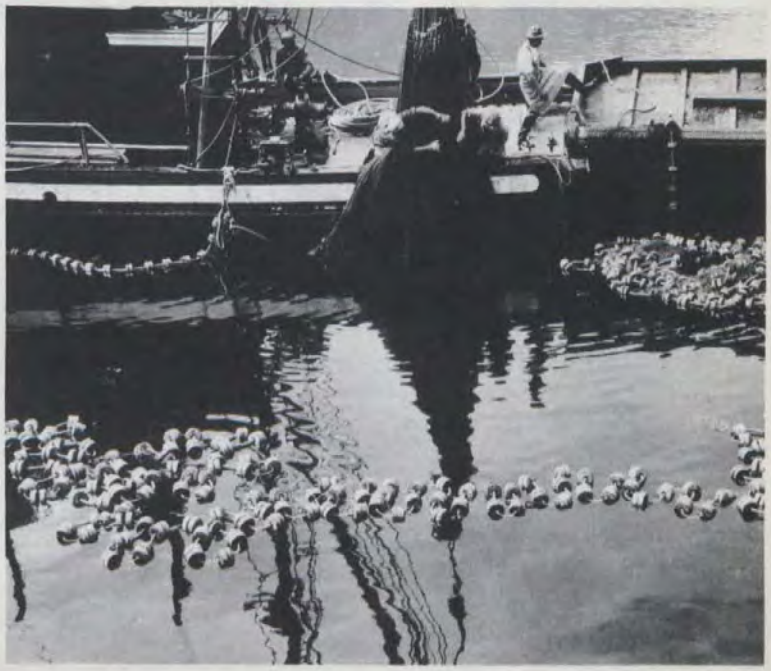
White Birch
Yellow Birch
Maple
Douglas Fir
Elm
Red Pine

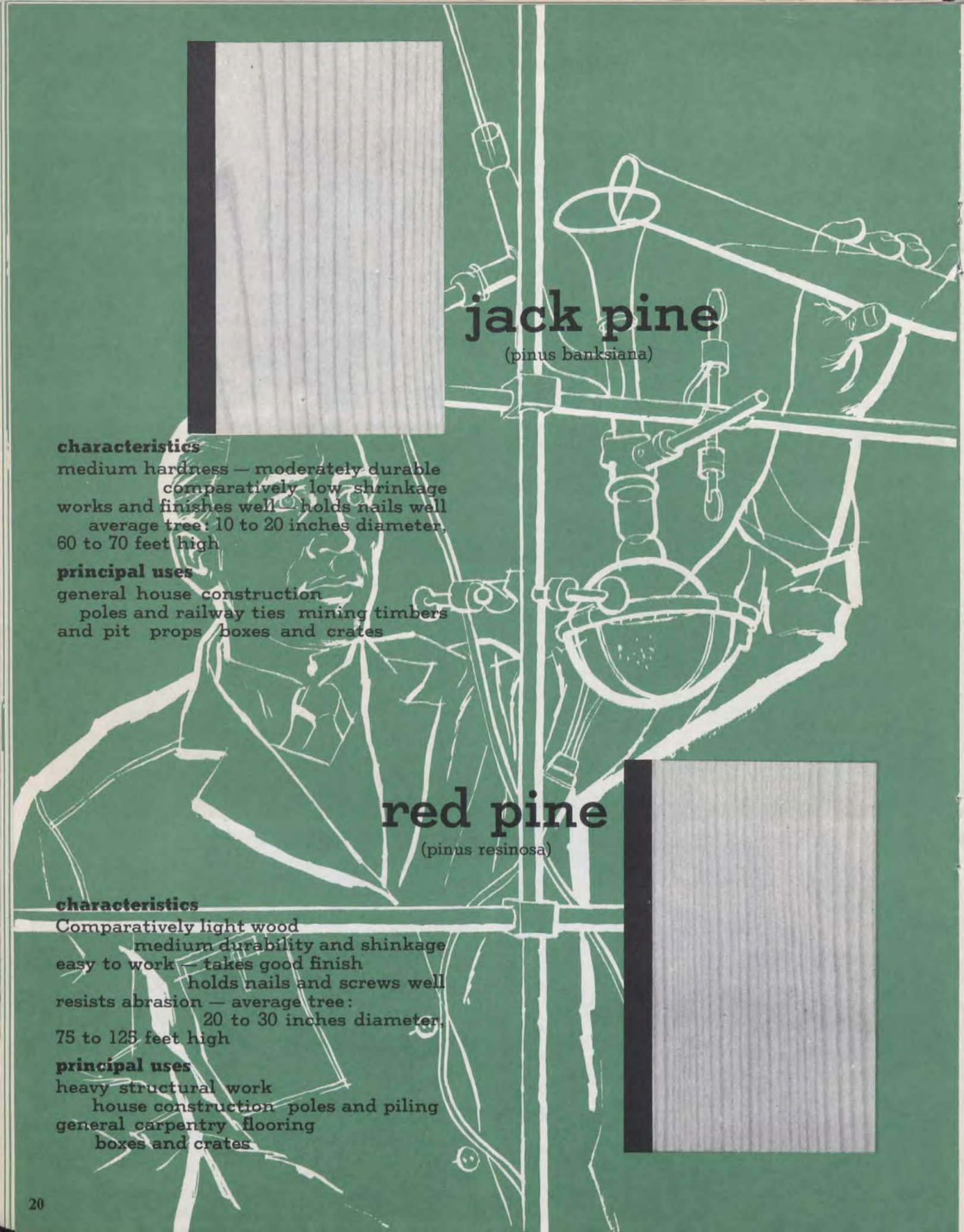
fencing

Spruce
Pine
Cedar
Douglas Fir
Hemlock
Larch
Plywoods

fish-net floats

Western Red Cedar





jack pine

(pinus banksiana)

characteristics

medium hardness — moderately durable
comparatively low shrinkage
works and finishes well — holds nails well
average tree: 10 to 20 inches diameter,
60 to 70 feet high

principal uses

general house construction
poles and railway ties mining timbers
and pit props boxes and crates

red pine

(pinus resinosa)

characteristics

Comparatively light wood
medium durability and shinkage
easy to work — takes good finish
holds nails and screws well
resists abrasion — average tree:
20 to 30 inches diameter,
75 to 125 feet high

principal uses

heavy structural work
house construction poles and piling
general carpentry flooring
boxes and crates

Maple
Birch
Elm
Basswood
Plywoods

furniture
(hardwood)

furniture
(softwood)

Douglas Fir
White Pine
Red Pine
Spruce
Western Red Cedar
Poplar
Hemlock
Plywoods

greenhouses

White Pine
Red Pine
Western Red Cedar
Douglas Fir
Yellow Cedar

gun stocks

Yellow Birch
Maple

handles

Birch, Maple
Elm
Douglas Fir
Western Hemlock
Red Pine
Basswood
Poplar
Spruce

ironing boards

Basswood
White Pine
Douglas Fir
Spruce
Poplar
Plywoods

white pine

(pinus strobus)

characteristics

softest Canadian pine — light wood
durable — low shrinkage
uniform texture — finishes well
works exceptionally well under tools
good nail holding and gluing properties
average tree: 20 to 30 inches diameter, 90 to 125 feet high

principal uses

patterns windows general house construction cabinet work boxes window blind rollers interior finish garden furniture

characteristics

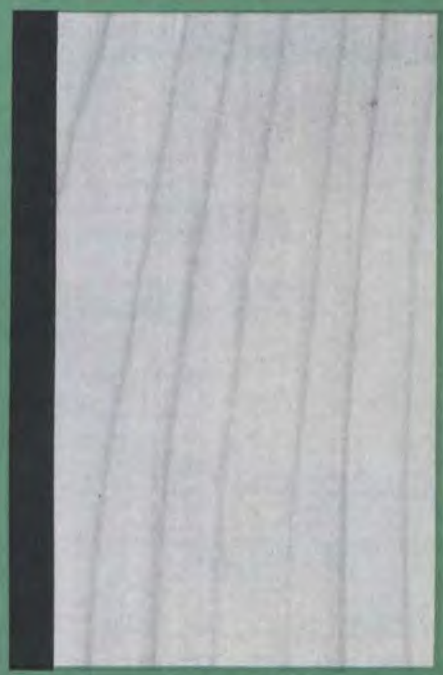
comparatively soft — moderate strength
very resilient — average shrinkage
works well and takes smooth finish
holds nails well — little odour or taste
average tree: 1½ to 2 feet diameter, about 50 feet high

principal uses

light and medium construction formwork scaffolding boxes and containers piano sounding boards general carpentry pit props furniture ladder stock pulp

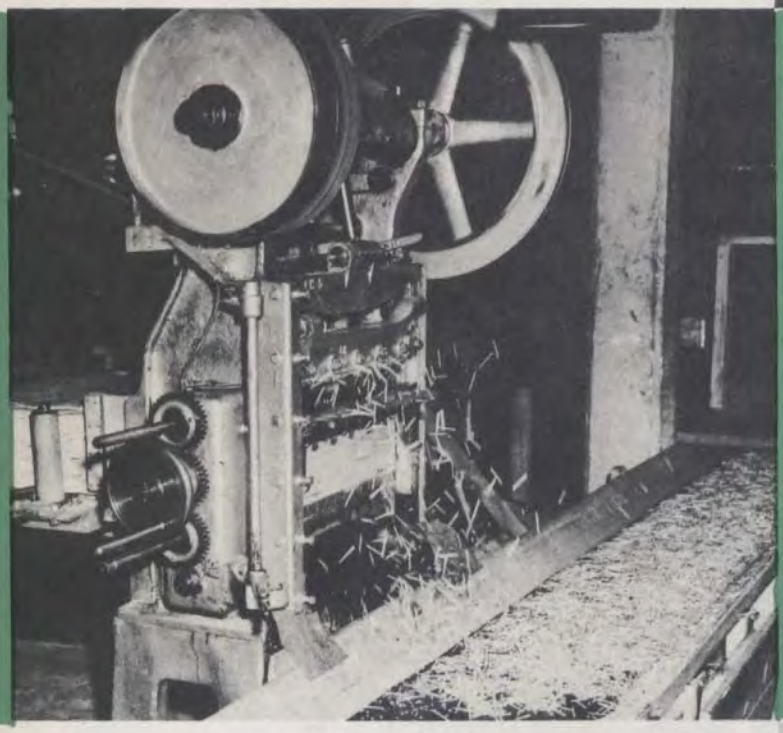
spruce

(picea)



ladders

Elm
Yellow Birch
Maple
Douglas Fir
Western Hemlock
Spruce
White Pine
Red Pine

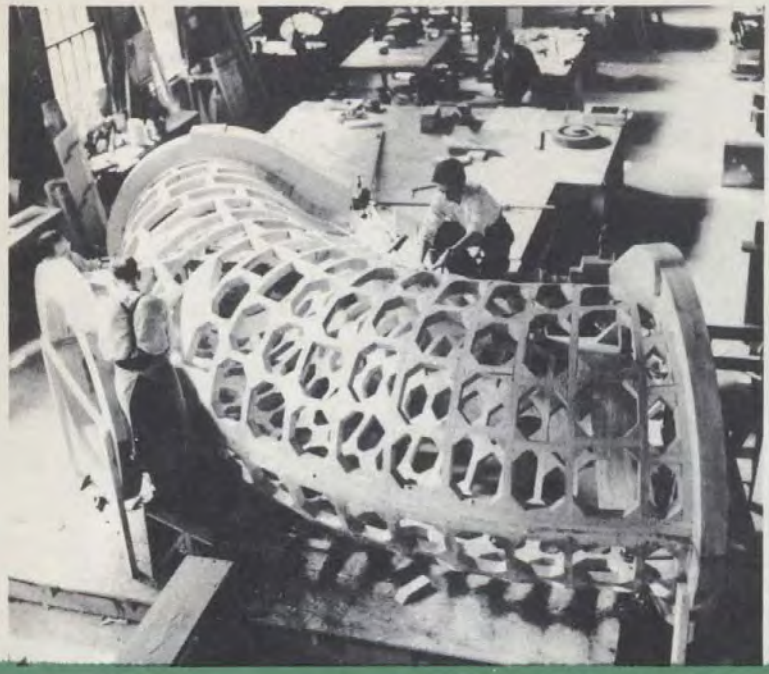


match splints

Poplar

musical instruments and sounding boards

Maple
Birch
Spruce



patterns and models

White Pine
Red Pine
Western Red Cedar
Basswood
Plywoods

picture framing

White Pine
Basswood
Cedar
Yellow Birch
Maple

piling, docks, wharves

Douglas Fir
Red Pine
Larch
Hemlock
Cedar
Spruce
Jack Pine

basswood

(tilia americana)

characteristics

light hardwood
takes smooth finish
holds paints and lacquers
extremely well
good gluing properties
little odour or taste
average tree: 20 to
30 inches diameter,
60 to 70 feet high

principal uses

furniture patterns
and models
interior trim
piano keys
woodenware
baskets boxes
venetian blinds
veneers

characteristics

medium hardness and weight
good serviceable wood
works exceptionally well
under tools
average tree:
10 to 14 inches diameter,
50 to 60 feet high

principal uses

spools bobbins
dowels woodenware
furniture veneers
and plywood

white birch

(betula papyrifera)

pit props

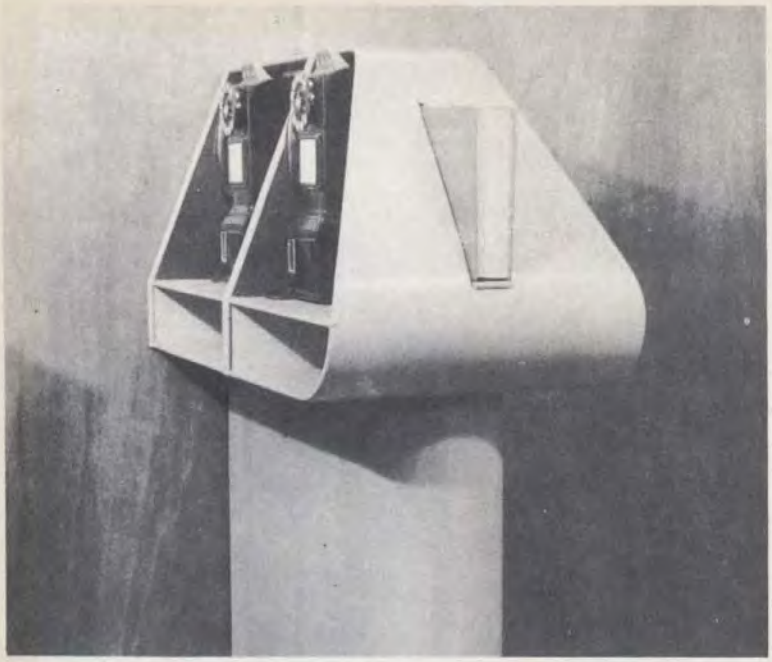
Spruce
Jack Pine
Larch
Douglas Fir

poles and posts

Cedar
Red Pine
Douglas Fir
Hemlock
Larch
Spruce

plywood
(softwood)

Douglas Fir
Western Red Cedar
Western Hemlock



plywood
(hardwood)

Birch
Basswood
Maple
Poplar
Elm

pulpwood

Spruce
Balsam Fir
Hemlock
Poplar
White Birch

railroad ties

Douglas Fir
Western Hemlock
Jack Pine
Red Pine
Birch
Maple

yellow birch

(betula lutea)

characteristics
heavy and hard wearing
high mechanical properties
uniform texture
pleasing subdued figure
takes smooth finish
and polish, easily worked
equal lateral and
linear shrinkage
average tree: 20 to
30 inches diameter,
60 to 80 feet high

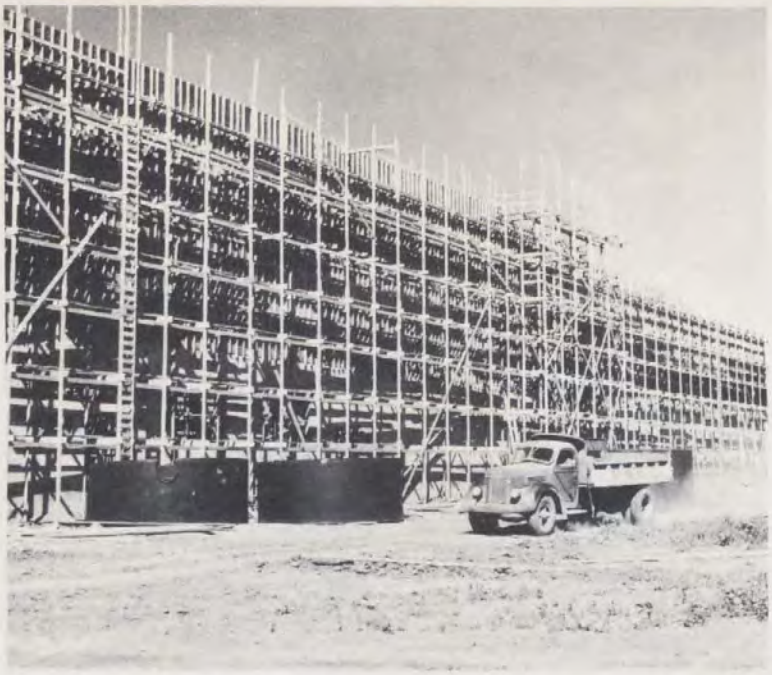
principal uses
flooring, furniture
interior trim
and finishing, doors
cabinet work
veneers and plywood
woodenware
shuttles
mining timbers
sporting equipment

characteristics
hard and heavy wood
very strong and durable
takes smooth finish
holds nails exceptionally well
average tree: about
2 feet diameter,
50 to 60 feet high

principal uses
agricultural implements
furniture sporting
equipment tool handles
veneers
cheese drums

rock elm

(ulmus thomasi)



scaffolding

Spruce
Douglas Fir
Hemlock
Balsam Fir
Larch
Pine

scientific instruments

Maple
Birch
White Pine
Basswood
Cedar
Spruce
Elm

sewing machines

Birch
Maple
Elm
White Pine

silos

Douglas Fir
Spruce
Western Red Cedar
Pine
Hemlock
Plywoods

spoolwood

White Birch

sporting goods

Maple
Birch
Elm
Basswood
Plywoods

sugar maple

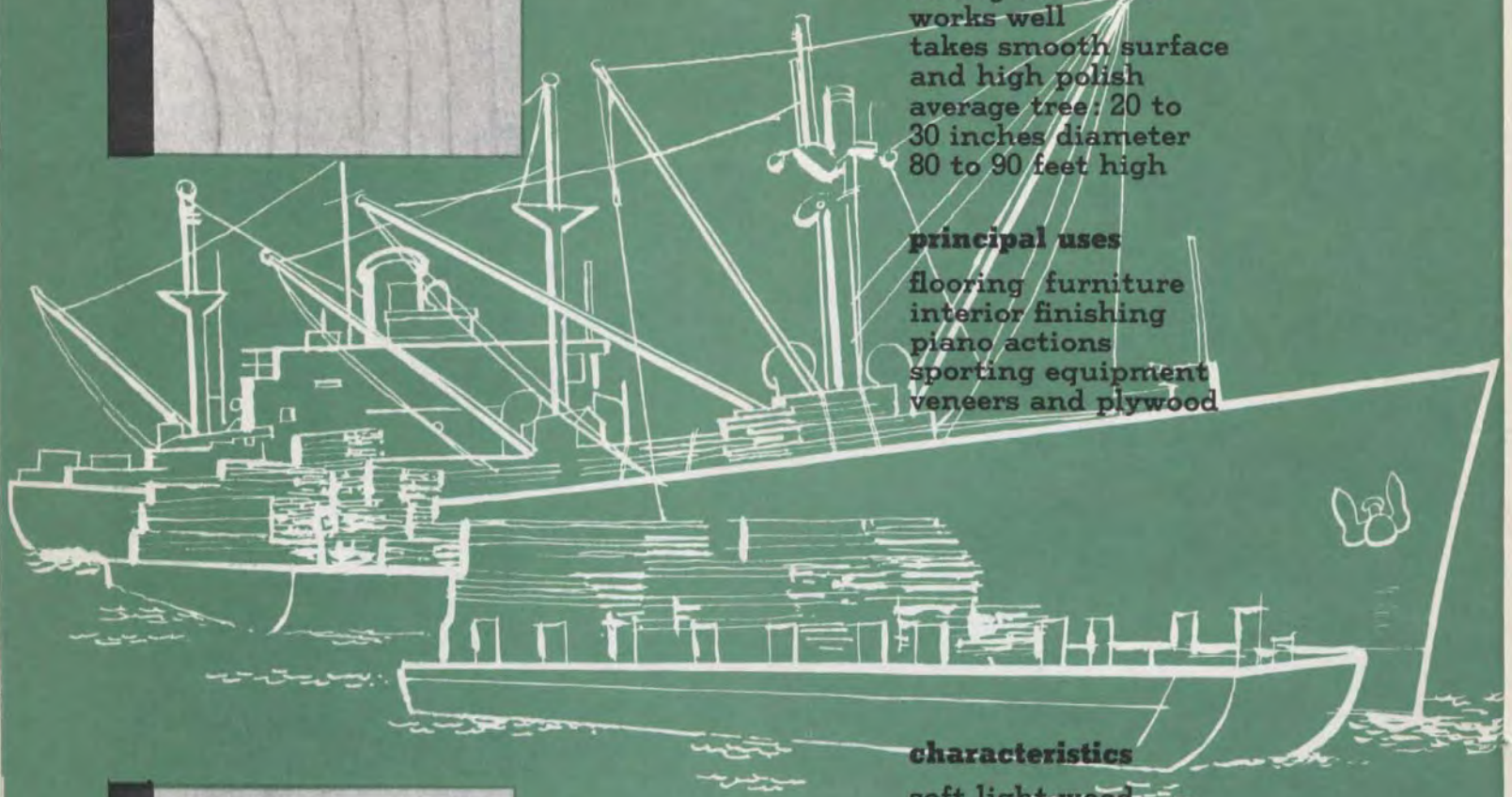
(acer saccharum)

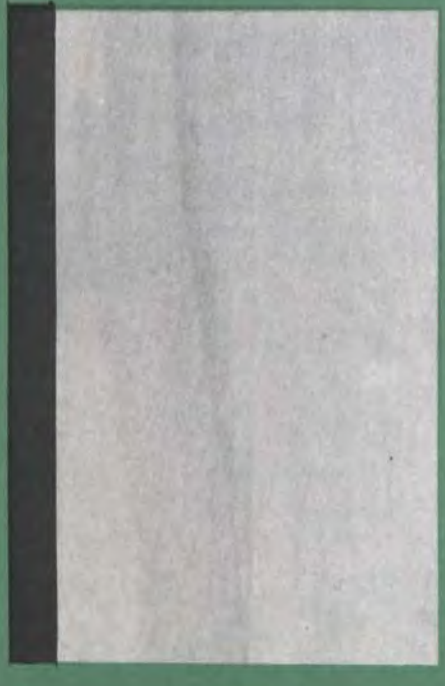
characteristics

hard and heavy
good resonance
properties
pleasing figure
strong stiff wood
works well
takes smooth surface
and high polish
average tree: 20 to
30 inches diameter
80 to 90 feet high

principal uses

flooring furniture
interior finishing
piano actions
sporting equipment
veneers and plywood





characteristics

soft light wood
works well
good nail
holding qualities

principal uses

veneers and
plywood
boxes
baskets
matches
corestock
pulp

poplar

(populus)

tanks

Douglas Fir
Western Red Cedar
Yellow Cedar
Red Pine
White Pine
Spruce
Hemlock
Plywoods

timbers

Douglas Fir
Spruce
Red Pine
Western Hemlock
Larch
Western Red Cedar

tongue depressors

White Birch

Maple
Birch
White Pine
Spruce
Basswood
Plywoods

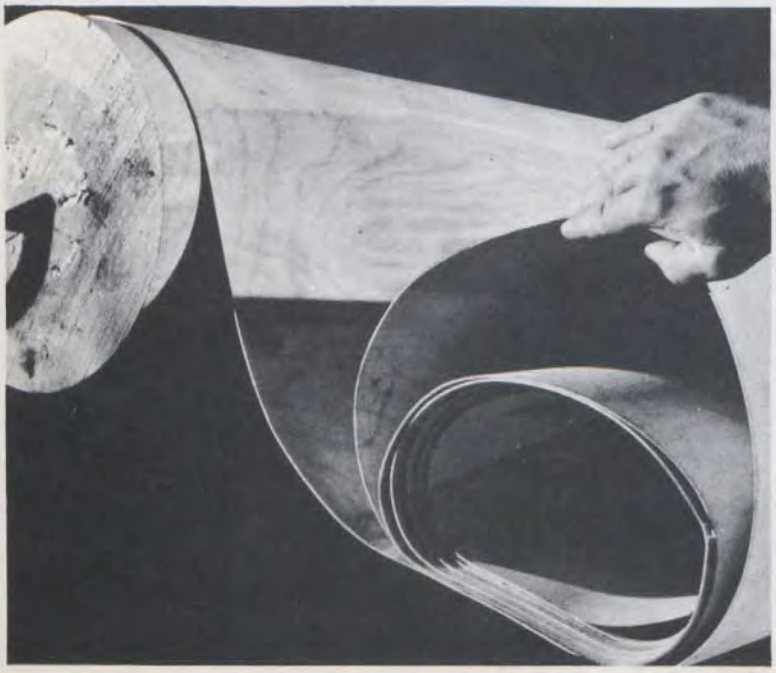
toys and novelties

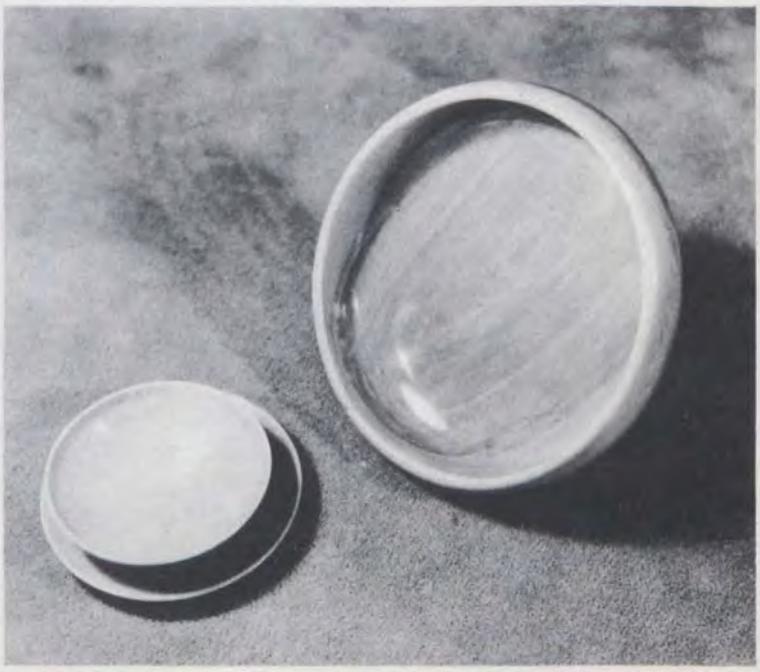
veneers

Birch
Elm
Maple
Basswood
Poplar

woodenware

Birch
Maple
Basswood
Pine
Cedar
Douglas Fir
Spruce
Plywoods





additional information

grading

The principal Canadian lumber associations have established grading rules for lumber. These rules are generally published in booklet form and can be obtained from the following trade organizations:

British Columbia Lumber Manufacturers' Association,
Forest Industries Building,
550 Burrard Street,
Vancouver 1, B.C.

The British Columbia Lumber Manufacturers' Association publishes grading rules for Douglas fir, western hemlock and western red cedar. Other rules in use in British Columbia for these species include those issued by the West Coast Lumbermen's Association, of Portland, Oregon, governing shipments to the United States, and the Pacific Lumber Inspection Bureau, for export by water.

Canadian Lumbermen's Association,
27 Goulbourn Avenue,
Ottawa, Ontario.

The Canadian Lumbermen's Association has rules for the grading of white pine, red pine, jack pine, spruce, balsam fir, eastern hemlock, and hardwood flooring. It has adopted the grading rules for spruce and balsam fir published by the Northeastern Lumber Manufacturers' Association, New York, and the rules for the measurement and inspection of hardwood lumber published by the National Hardwood Lumber Association, Chicago.

Maritime Lumber Bureau,
P.O. Box 189,
Amherst, N.S.

The Maritime Lumber Bureau has established rules for the grading of spruce and balsam fir.

Of interest to buyers of Canadian wood and wood products are the standards prepared by the Canadian Standards Association. For a list of publications dealing with standards for wood and wood products, write to:

Canadian Standards Association,
National Research Building,
Ottawa, Ontario.

technical data

The Forest Products Laboratories Division, Department of Northern Affairs and National Resources, carries out basic and applied research into almost every aspect of wood utilization, and publishes

the results of this research. The publications of the Forest Products Laboratories are grouped under the following broad subject headings:

Mechanical Properties, Panel and Laminated Construction
Plywood, Adhesives and Dielectric Heating
Containers and Packaging
Wood Preservation and Other Treatments
Wood Pathology (including Sap, Stain and Mould Prevention)
Wood Paints and Coatings
Wood Technology, Timber Physics
Wood Uses, Manufacture, and Waste Utilization
Wood as Fuel
Lumber Seasoning
Wood Chemistry
General

For a complete list of these publications, write to:

Forest Products Laboratories Division,
Department of Northern Affairs and National Resources,
Ottawa, Canada.

trade and commerce

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