



BLACK OAKS *The Important Distinctions*

OAK



Northern Red Oak
Quercus rubra

Black Oak
Quercus velutina

Scarlet Oak
Quercus coccinea

Bear Oak
Quercus ilicifolia

Black oak group: leaves sharp-tipped, acorns mature in two years and are hairy inside.

BARK

TEXTURE	Slightly ridged	Deeply fissured blocky, ridges very dark	Ridges small and irregular	Smooth, with a few raised lenticels
COLOR	Dark gray to black; inner reddish	Black; inner—deep orange or bright yellow	Dark gray to black; inner—pale red or gray	Gray to dark brown

LEAVES

LENGTH	5–8 inches	5–6 inches	3–6 inches	3–6 inches
COLOR	Surface—dull, dark green; below—yellow-green	Surface—dark green and shiny	Surface—bright green and shiny; below—paler	Surface—dark green; below—white or gray
SURFACE	Smooth beneath	Hairy beneath	Smooth beneath	Hairy beneath

ACORNS

SIZE	2–4 times longer than cup	Twice as long as cup	Twice as long as cup	Small, nearly hemispherical, striped above middle
CUP	Saucer-like, with scales fused	Bowl-like, with dull scales	Bowl-like, with shiny scales	Shallow

BUDS

SHAPE	Conical, smooth	Large, decidedly angled	Small, rounded	Small, short, blunt-pointed
COLOR	Chestnut brown	Yellowish-gray	Light brown	Reddish-brown
SCALES	Silky at tip	Coated with matted wool-like hairs	Hairy at tip only	Loose scales





WHITE OAKS *The Important Distinctions*



White Oak
Quercus alba

Chestnut Oak
Quercus prinus

Bur Oak
Quercus macrocarpa

Swamp White Oak
Quercus bicolor

White oak group: leaf lobes rounded, acorns mature in one year and lack hairs inside.

BARK

TEXTURE	Ridges broad, flat, flaky	Deeply furrowed	Deeply furrowed, flaky	Deeply fissured; broad, flat ridges, flaky
COLOR	Light gray	Reddish-brown to dark brown	Grayish	Grayish-brown, inner bark orange

LEAVES

LENGTH	4–7 inches	4–8 inches	6–12 inches	4–6 inches
COLOR	Surface—bright green	Surface—yellow green	Surface—dark green	Surface—dark green
SURFACE	Upper—dull	Upper—shiny	Upper—shiny	Upper—dull
SHAPE	Lobes rounded; cleft to midrib	Narrowly elliptical; shallow rounded lobes	Violin-shaped; lobes rounded	Slightly lobed

ACORNS

SIZE	Very fine	Three times as long as cup; long and wrinkled	Twice as long as cup	Three times as long as cup
CUP	Short-stalked	Hairy, moderately long-stalked	Margin fringed with long, hair-like scales, short stalked	Margins fringed with scales, long-stalked

BUDS

SHAPE	2–4 times longer than cup	Broadly ovoid, sharp-pointed	Broad ovoid, blunt or sharp-pointed	Roundish, blunt-pointed
COLOR	Dark red-brown	Yellowish-brown	Reddish-brown	Brown
SCALES	Without hairs	Without hairs	Coated with soft hairs	Small, without hairs





NORTHERN RED OAK *Quercus rubra* L.



*Northern red oak
is the most
common species of
oak in Maine.*

Northern red oak is the most common oak species in Maine. It occurs state-wide but is most abundant in the southern half of the state. Best growth is attained on rich upland soils. It grows to a height of 60–80 feet and a diameter of 2–3 feet, forming either a narrow or broad head. The branches are stout, horizontal or upright.

The **bark** on the trunks of old trees is dark gray or nearly black, and is divided into rounded ridges. On younger trees and branches, it is smooth and greenish-brown or gray. The inner bark is reddish. The **leaves** vary in shape, are 5–8 inches long, alternate, are dull, dark green above





and yellow-green below, and have bristle-tipped lobes. Some dead leaves may remained attached in winter.

The **flowers** appear in May, when the leaves are only partly grown. The **fruit** ripens the second year. The acorn is broad, large, 1–1¼ inches long, and up to four times longer than the shallow cup. Red oak acorns are a major source of food for many species of wildlife. The inside lining of the acorn is densely hairy. Its tannic acid content makes it bitter. The **twigs** are smooth, greenish to reddish-brown, and have a star-shaped pith.



The **wood** is hard, strong and relatively heavy. It is used for furniture, interior finish, planks and frames, lobster trap runners, flooring, piling, cross-ties, timbers, pallets, dowels and firewood. Historically, it was used for shipbuilding (ribs, beams and timbers), weir poles (some 60 feet long), as kiln wood and fence posts (when split).



Northern red oak often has a reddish coloration in the bark fissures.

MAINE REGISTER OF BIG TREES 2008
Northern Red Oak Circumference: 265" Height: 84' Crown Spread: 71' Location: Vienna





BLACK OAK *Quercus velutina* Lam.



Black or yellow oak is found in southern Maine from Lincoln and southern Oxford counties southward; it is common near Fryeburg. It grows on dry ridges and gravel uplands. The branches are slender; and the head is narrow and open. It grows to a height of 50–60 feet and a diameter of 1–2 feet.

Black oak is used to a limited extent for interior finish, shipbuilding, flooring, piling, cross-ties, timbers, pallets, dowels, and firewood.





Black oak buds and twigs are covered with tan fine hairs.

The **bark** is smooth and dark gray or brown on young stems. On old trees, it is divided by deep fissures into broad, rounded ridges and is dark, almost black. It is rougher than red oak. The inner bark, which is characteristically bright orange or bright yellow, was used in tanning.

The **leaves** are alternate, 5–6 inches long, varying much in shape and general outline, usually seven-lobed with bristle points. The upper surface is glossy and dark green; the under surface is generally hairy with more obvious, rusty hairs in axils of veins.

The **flowers** appear in May when the leaves are only partly grown.

The **fruit**, which is bitter, matures the second season. The acorn is $\frac{1}{2}$ – $\frac{3}{4}$ inch long, almost twice as long as the cup and one-half enclosed by it.

The **twigs** are smooth; buds are densely hairy, angled and yellowish-gray.

The **wood** is hard, heavy, strong and coarse-grained. It is used for the same purposes as scarlet oak



MAINE REGISTER OF BIG TREES 2008
Black Oak Circumference: 181" Height: 73' Crown Spread: 73' Location: Fryeburg





SCARLET OAK *Quercus coccinea* Muenchh.



Scarlet oak occurs rarely in the southern tip of Maine. It grows on the dry soil of ridges and uplands in York, Cumberland and Androscoggin counties.

In Maine, scarlet oak is a smaller tree than red oak, growing to a height of 30–50 feet and 1–2 feet in diameter. The branches are slender and form an open, narrow head.

In Maine, scarlet oak is a smaller tree than red oak.





The **bark** on the trunks of old trees is separated into irregular ridges by shallow fissures, and is dark gray with a reddish inner bark.

The **leaves** are alternate, 3–6 inches long with a variable outline. The upper surface is bright green and shiny; the lower is paler and less shiny. Lobes are sharp-tipped. In fall, the leaves turn a deep scarlet, which accounts for the common name of the tree.

The **flowers** appear in May when the leaves are only partly developed.

The **fruit** ripens the second year. The acorn is about ½ inch long, about twice as long as the cup, and is from one-third to one-half enclosed by the cup. It is quite bitter.

The **wood** is hard, strong and heavy, but coarse-grained. It is used to a limited extent for interior finish, shipbuilding, planks and frames, flooring, piling, cross-ties, timbers, pallets, dowels, and firewood.



Scarlet oak acorns have small rings around the tip.



AREA OF OCCURRENCE

MAINE REGISTER OF BIG TREES 2008
Scarlet Oak Circumference: 73" Height: 73' Crown Spread: 40' Location: Yarmouth





BEAR OAK *Quercus ilicifolia* Wangenh.



Bear or scrub oak is a small, thick-
et-forming, shrubby tree usually
less than 20 feet high. It is common on
the sand barrens of southern Maine,
extending into Oxford County where
it is common on the barrens surround-
ing the Saco River near Fryeburg. It
also occurs in eastern Hancock County,
and on rocky ridges and barren ledge
sites along the coast.

The **bark** is smooth, gray-brown,
and has a few raised lenticels. On larg-
er trees the bark may become rough
and scaly.

*Bear oak wood is occasionally used as fuel, but is
generally not considered to be of commercial value.*





The **leaves** are the primary distinguishing feature. They have 5–9 bristle-tipped lobes, are whitened on the underside, alternate and 2–4 inches long. The second set of lobes from the base tends to be much larger than others.

Male **flowers** are pale reddish-green catkins that appear in May when the leaves are only partially grown. The **fruit** is a dark brown acorn $\frac{2}{5}$ – $\frac{4}{5}$ inch long that matures in the fall of the second season.

The **twigs** are slender and densely hairy during the first year. The terminal buds are clustered, chestnut brown and blunt-pointed. The lateral buds are of similar size to the terminal.

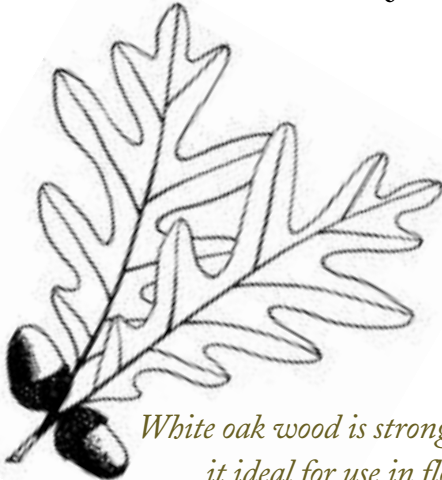
The **wood** is occasionally used as fuel, but is generally not considered to be of commercial value.

Bear oak twigs are finer than the other native oaks and covered with hairs.





WHITE OAK *Quercus alba* L.



White oak, which gets its name from the color of the bark, occurs naturally in southern and central Maine as far north as Oakland in northern Kennebec County. It grows on sandy land, gravelly ridges and moist bottomland, but makes the best growth on rich, heavy, upland soils. In good situations, it attains a height of 60–70 feet and a diameter of 3–4 feet. When not crowded by other trees, the

White oak wood is strong, heavy, hard and durable, making it ideal for use in flooring, furniture and boatbuilding.





White oak acorns mature in one year. They contain less tannin than red oak acorns and are preferred by wildlife.

bole (trunk) is short, the limbs are large and diverging, and the head is broad and rounded. In the forest, it has a long bole and a narrow head.

The **bark** on the trunk is separated into thin, irregular flakes and varies from light to ashy-gray.

The **leaves** are usually nine-lobed. The lobes are rounded, slightly cleft or cleft nearly to the midrib, alternate, 4–7 inches long, bright green above, pale green or whitish beneath. They sometimes remain on the tree during winter.

The **flowers** come out in May when the leaves are half grown.

The **fruit** ripens in September of the first year. The acorn is about 3/4 inch long, 2–4 times longer than the cup, and about one-quarter enclosed by it. The fruit is edible. American Indians pounded it into a flour and bleached out the tannin with hot water.

The **twigs** are gray to purple; buds are blunt-pointed, and scales are without hairs.

The **wood** is strong, heavy, hard and durable. It is used for ship and boatbuilding, railroad ties, piling, agricultural implements, interior finish, furniture, flooring, pulp, and firewood. In the past, it was used for deck planking on ships, tight cooperage (tight casks capable of holding liquid such as whiskey), and spokes and rims of wooden wheels.

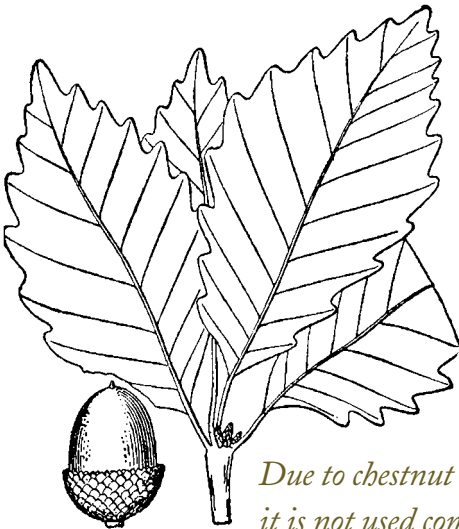


MAINE REGISTER OF BIG TREES 2008
White Oak Circumference: 239" Height: 64' Crown Spread: 95' Location: Pittston





CHESTNUT OAK *Quercus prinus* L.



Chestnut oak only occurs in the southern tip of Maine. It is found on Mt. Agamenticus in the town of York and has been reported from Oxford County. In Maine, trees grow 12 inches or more in diameter and about 40 feet in height.

The gray-brown **bark** is smooth on young trees, but becomes thick and very deeply furrowed on older trees. The **leaves** are similar to those of the American chestnut. They are yellow-

Due to chestnut oak's rarity in Maine, it is not used commercially here.





They gray bark of the chestnut oak is very deeply furrowed.

green above, hairy below, narrowly elliptical with shallow rounded lobes without bristle tips. They are often widest above the middle.

Male **flowers** are yellow-green, borne on catkins and appear in May. Female flowers are reddish, borne in spikes with the leaves in mid-spring. The edible **fruit** is a large, 1½ inch long, ellipsoid acorn that matures in one season. Its cup encloses about half of the acorn. The **twigs** are hairless and orange-brown to gray. The chestnut brown buds are clustered toward the end of the twig, pointed, and quite long and narrow in shape.

The **wood** is similar in character to white oak and has similar uses. In areas where chestnut oak is more abundant, it is sold as white oak. Due to its rarity in Maine, it is not used commercially here.



MAINE REGISTER OF BIG TREES 2008
Chestnut Oak Circumference: 191" Height: 90' Crown Spread: 72' Location: Yarmouth





BUR OAK *Quercus macrocarpa* Michx.



Bur oak is found in the southern two-thirds of the state and is locally plentiful in central Maine. It is quite common along the Sebasticook River, the lower Penobscot basin, and east into Hancock County. It grows in low, rich bottomland, and is rarely found on dry soil. It has a broad top of wide, spreading branches. The trunk is often clear of limbs for two-thirds or more of its length. It attains a height of 60–70 feet, and a diameter of 2–3 feet.

Very durable, hard, heavy and strong, bur oak is used for for cabinetry, barrels, hardwood flooring and fence posts.





Bur oak twigs have ridges of corky bark, a characteristic that is not shared by any of our other native oaks.

The **bark** is grayish, deeply furrowed and broken into plate-like irregular scales.

The **leaves** are roughly violin-shaped in outline, with rounded lobes that are not generally as deeply cut as the white oak. The upper end of the leaf is widest. They are alternate, dark green and shiny on the upper surface, pale green or silvery-white on the lower.



The **flowers** appear in May when the leaves are partly formed.

The **fruit**, which is edible, matures the first year and is usually solitary. It varies in size and shape. The acorn is about $\frac{3}{4}$ inch long, and about half enclosed by the cup. The margin of the cup is fringed with long, hair-like scales. The **twigs** have corky wings or ridges.

The **wood** is very durable, hard, heavy and strong. It is used for the same purposes as white oak.



AREA OF OCCURRENCE

MAINE REGISTER OF BIG TREES 2008
Bur Oak Circumference: 176" Height: 86' Crown Spread: 74' Location: West Gardiner





SWAMP WHITE OAK *Quercus bicolor* Willd.



Swamp white oak is not abundant, but occurs in small, widely scattered groves in York and Androscoggin counties. It grows in moist, fertile soil on the borders of swamps and along streams.

Swamp white oak grows to a height of about 50 feet and a diameter of 2–3 feet. The limbs are small, usually pendulous. The head is narrow, open and round-topped.

The **bark** on old trees is deeply furrowed, divided into broad, flat ridges, flaky and grayish-brown. On

Swamp white oak is not abundant, but occurs in small, widely scattered groves.



MAINE REGISTER
OF BIG TREES
2008

Swamp White Oak*

Circumference:

122"/126"

Height: 74'/75'

Crown Spread: 65'/60'

Location:

Wiscasset/Paris Hill

*Tie



young trees and branches, it is smooth and separates into papery scales that hang loosely. The inner bark is orange.

The **leaves** are alternate, 4–6 inches long and slightly lobed. The upper surface is dark green and shiny; the lower, pale white or tawny.

The **flowers** appear in May when the leaves are not more than half-grown.

The **fruit** matures the first season. The acorn has a long stalk, is about 1 inch long, three times as long as the cup and about one-third enclosed by it.

The **twigs** have a yellowish or a light orange to reddish-brown bark.

The **wood** is strong, heavy, hard and used for the same purposes as the white oak.



Swamp white oak twigs have small rounded buds. The bark of the twigs and small branches tends to peel and flake.





AMERICAN CHESTNUT

Castanea dentata (Marsh.) Borkh.



Most of the chestnut trees in Maine have been destroyed by the chestnut blight fungus, *Endothia parasitica*. There are national efforts underway to develop blight-resistant trees of this once very important tree species.

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The fruit of American chestnut is contained in a very prickly bur.



The natural range of American chestnut only extended into southern and central portions of the state. Chestnut now occurs infrequently, usually as sprout growth, in the southern half of the state on rich, well-drained soil. It has been planted occasionally as far north as Orono. The tree grows rapidly. In the forest, it has a tall, straight trunk free of limbs, and a small head. When not crowded, the trunk divides into 3 or 4 limbs and forms a low, broad top. It reaches a height of 60–70 feet and a diameter of 15–30 inches.

The **bark** on the trunks of old trees is dark brown and divided into broad, flat ridges by shallow, irregular fissures. On young stems, it is smooth and dark gray with a green tinge.

The **leaves** are coarsely-toothed and hooked, with the leaf margin rounded between the teeth. Leaves are alternate, 5–8 inches long, yellow-green and smooth on both surfaces.

The **fruit** is a prickly bur containing 2–3 nuts tipped with hairs. The inner lining of the bur is plush-like.

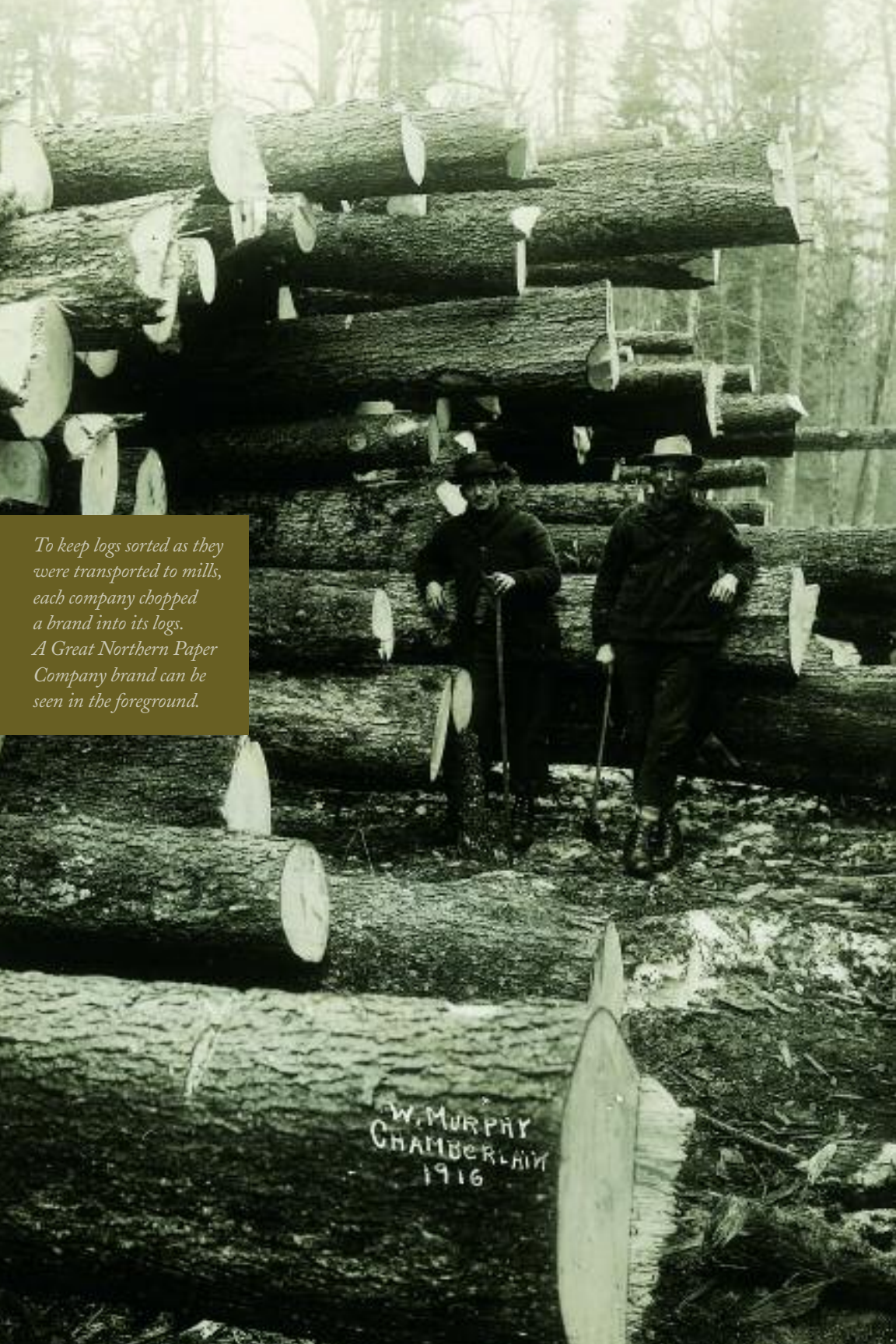
The **nuts** contain a sweet meat; they were once gathered in large quantities for the market.

The **wood** is soft, very durable, strong and splits easily. It is used for interior finishing and was once in much demand—prior to the blight—for telephone poles, railroad ties, beams and timbers up to 50 feet in length, furniture stock and fence posts. The durability of the wood is due to the tannic acid that it contains.



MAINE REGISTER OF BIG TREES 2008
American Chestnut Circumference: 117" Height: 45' Crown Spread: 44' Location: Orono





To keep logs sorted as they were transported to mills, each company chopped a brand into its logs. A Great Northern Paper Company brand can be seen in the foreground.

W. MURPHY
CHAMBERLAIN
1916