

composition cork for crown cap liners; and ground cork for heavy-duty linoleum.

Cinnamon, among the oldest spices known, is the inner bark of a tree native to the island of Ceylon. The natives cut down the tops of the trees that are still young. New slender stems grow out from the stump season after season, making them look like shrubs.

Only after the tree is about six years old are the branches peeled. This is done just after the heavy rains, when the trees are full of sap, so the workers can easily separate the bark from the stems without breaking it.

The branches to be peeled are cut close to the trunk, then scraped and the bark removed in long sections. As these dry, they curl and form the familiar cinnamon sticks.

### Sassafras Bark

The first cargo of barks ever exported from what is now the United States included a large quantity of sassafras bark. This is used today, much as it was 300 years ago when shipped from Jamestown, in perfuming soaps and preparing scents and toiletries.

Fiber from redwood bark is blended with wool in making blankets, jackets and even felt hats. This reddish fiber is already widely used as insulation in houses and refrigerators, but its use in fabrics is relatively new.

In lumbering on the West coast where the redwoods grow, balls of felted redwood fiber were discovered in the bark shredding machines. This led to experiments to produce a "wool" fabric from redwood bark. The short, kinky fibers blend readily with sheep's wool and can be handled, napped and brushed. Separated by a machine, these fibers are blended with natural wool. The mixture is carded, combed and spun into yarn. Redwood fiber can replace 15% to 60% of the wool in some fabrics.

The earliest industrial use of any kind of bark was in tanning. The rough bark of oak, hemlock and chestnut was put right into the tanning pots with the raw hides. The tannic acid diffusing out into the water acted directly on the hides. Only within recent decades has tannic acid been extracted from the bark before using.

Today sumac bark also is used for tanning fine leather. In Australia tannic acid is extracted from eucalyptus and acacia trees.

Bark accumulating in large quantities at plants where tannin is extracted led to a search for uses for the fiber. It has

been found useful as a filler in paper, cardboard, wallboard, roofing felt, composition shingles and for ornamental purposes in some types of wallpaper.

The search for new uses for bark continues. Bark, that may be ten inches or so thick on some trees, is expected to become the Cinderella of the forest as research points to new uses.

Finding new outlets for forest products is but one phase of the industrial program now under way for increasing the permanent usefulness of American forests. First, there is the growing of trees in greater abundance. Second, there is protection of forest growth against destruction by fire, insects and disease. Third, there is greater utilization of each tree. It has been generally accepted that less than half of a log delivered to a sawmill emerges as lumber. For the remainder there has been little or no economic use. Today this part of the picture looks increasingly bright.

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### ABRONAUTICS

## Pusher Type Airplane Has Two-Bladed Propeller

See Front Cover

➤ A PUSHER TYPE of airplane, pictured on the cover of this SCIENCE NEWS LETTER, with its two-bladed propeller at the rear tip of its fuselage, is now ready for its first test flight. It is a five-passenger craft, with two engines inside the body to the rear of the passenger cabin, both of which operate the single eight-foot propeller working together, or either can do so working alone.

The new plane, still in experimental stage, is a product of Douglas Aircraft Company, and will be known as the Cloudster. It is an all-metal monoplane with a range of 1,100 miles and a speed of about 200 miles an hour. Its tricycle landing gear retracts into the nose and wings.

Power for the plane is furnished by two 250-horsepower Continental engines, mounted to use the aerodynamics principle of center-line thrust. Either engine can be cut in or out without affecting flight control. With one engine, the 35-foot long plane with a 40-foot wing span, can climb 600 feet per minute; with both in operation, the rate of climb is approximately 1,500 feet a minute.

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Two thin coats of *paint*, varnish, enamel or shellac are better than one thick coat when finishing furniture.



**LOGGING**—These logs are in a millpond headed for the saws. Some logs give up their bark easily during logging operations due to rough handling, but the majority cling to their coarse outer skin, making the job of "barking" no easy matter.

### EVOLUTION

## Smoky Industrial Cities Are Factor in Evolution

➤ SOOTY, smoky cities of the industrial age are apparently factors in evolution, Dr. E. E. Ford of the University Museum, Oxford, England, reported to the Conference on Genetics, Paleontology and Evolution. He has found two dark-colored variants of a common moth in the neighborhood of British cities, one of them nearly black, the other dark brown.

*Science News Letter, January 18, 1947*

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