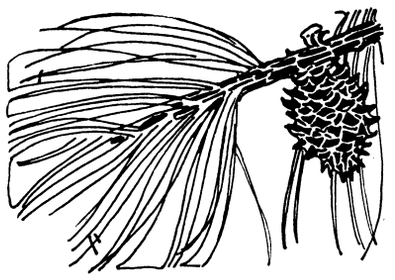
FORESTRY

NATURE RAMBLINGS
by Frank Thone



Pine Outyields Cotton

KING COTTON'S possible abdication to Prince Pine in the South has been much talked of in a general way, since it has become a part of common public information that the shrub's white lint and the tree's white wood yield the same basic material, cellulose, used now in a score of industries, from textiles and transparent wrapping materials to molded plastics and automobile lacquers.

Definite quantitative status is now given, in a preliminary way at least, by figures presented by Henry Bull of the Southern Forest Experiment Station. Mr. Bull estimates that under average growing conditions, ordinary Arkansas cotton land planted to loblolly pine will yield four and one-half times more cellulose per acre under the new crop than it did under the old.

The cotton land selected for comparison is not the best in the South, but is classified as only moderately productive, yielding about 145 pounds of lint cotton per acre. The same land, under best tree-growing conditions, can yield 3,616 pounds of dry wood per acre per year, with a net cellulose content of 1,627 pounds, or 11 times as much wood cellulose as cotton cellulose.

However, Mr. Bull admits, to compare the best that land can do in producing wood with "only average" in producing cotton is hardly fair. So he reduces the tree stand to an "only average" basis for purposes of comparison. Recent Forest Service figures show that the average wood production of trees in that general region is about 40 per cent. of the maximum possible. Applying this factor, therefore, to comparative yields, Mr. Bull shows that loblolly pine would still outyield cotton 4.5 times, in per-acre production of cellulose.

Direct comparisons may be misleading, however, Mr. Bull warns. Cotton cellulose and pine cellulose are quite different substances and have very different qualities and uses. But even so, the much greater possible production of pine cellulose on certain Southern lands would seem to make the subject worthy of very serious consideration.

Science News Letter, October 14, 1939

METEOROLOGY

Britain And France Aided By Advance Weather Data

Weather Moving From West to East Hits Western Europe Before It Reaches Nazis; Germans Lack Reports from Sea

WEATHER, which regularly migrates from west to east, is proving an ally of the Allies in the present war, as it did in 1914-1918. Britain and France know what the weather is going to be like over Germany before the Germans themselves know, and can plan their military operations accordingly.

The British and French have this private foreknowledge of German weather because they get the same weather first. Storm centers and areas of fair weather that eventually reach Germany cross Britain or France on the way, or at least some stretch of ocean patrolled by Allied warships and open to non-German commercial shipping, from all of which weather information can be obtained for Allied use but denied to Germany.

To be sure, German submarines may possibly be sending weather information home by radio, but that would be a risky procedure, with British and French destroyers and aircraft constantly on the alert to pick up any hint of a U-boat's whereabouts. And if the anti-submarine campaign succeeds completely, as the British Admiralty claims it will, even this slender source of weather information would then be lost to the Reich.

In the meantime, every effort is being made in Britain to deprive the Germans of any possible crumb of weather information. Publication and broadcasting of weather data are strictly forbidden; not even the occurrence of a local thunderstorm may be mentioned. Public forecasting in the islands has undergone a complete black-out, lest the enemy glean any helpful information from it.

Weather broadcasts are still being radioed from such places as the Azores Islands, Greenland and of course the United States; but these are too remote to give German meteorologists any real help. And the coastal countries—Belgium, the Netherlands and Denmark—are too near and too small to be of any use.

Weather knowledge has become of immense value in war. Before a major offensive is launched the general staff wants to be assured that it will not bog down in mud. Before an air raid takes off, or a naval move is undertaken, the chances of storm, cloudiness, fog and high wind must be determined. Chemical warfare is notoriously dependent on wind and the chances of rain. Meteorologists have taken the place of the augurs and soothsayers who used to go with the armies of antiquity.

Accounts of the successful British air raid on the Kiel Canal area indicate that it was timed on a knowledge of weather probabilities. The pilots' stories of taking off in clear weather, flying into rain, and swooping out of clouds to loose their bombs on German warships and shore works all suggest rather strongly that English weather men knew

where a helpful storm area might be centered.

The converse of this story is one from World War days, of a pair of Zeppelins that started from their German base in what looked like good flying-and-bombing weather, but ran into a storm of which they had no warning and were both lost in the North Sea.

In old sailing-ship days, a fleet about to go into battle sought to get the "weather gage" of its opponent, that is, to maneuver into a position to his windward. The geographic position of England and France would seem to give them a permanent weather gage of Germany.

Science News Letter, October 14, 1939

ZOOLOGY

Three Sets of Whale Twins Reported in 1938-9 Catch

WHALE stories, via U. S. Bureau of Fisheries (although whale is mammal): Three sets of twins, rare events in whale family life, were found in the catch of U. S. whaling vessels during the 1938-39 season.

Yet unborn, two sets were finback whales and one the blue kind.

Two 96-foot whales were harpooned in the Antarctic. More oil production per foot of whale was obtained in Antarctic and Australian waters. A total of 7,156,700 gallons of oil was processed from 2,204 whales, along with 216 tons of bone and 396 tons of meat fertilizer. The total value of catch, estimated conservatively: $3,250,000.

Science News Letter, October 14, 1939

RADIO

Europe's Radio Broadcasts Can Be Turned to Bedlam

Interference Would Work Best for Nations Having Weak Transmitters; Reception Best in North-South Direction

EUROPE'S powerful propaganda by radio between warring nations can be turned into a complete Babel of interference at any instant. This potent "weapon" in the conflict can easily be converted into a completely useless tool.

This is the verdict of radio experts at the National Bureau of Standards when informed of interference, or "radio black-outs," which cut off British news. Powerful band music from an unidentified station blocked out much of an important announcement for European listeners.

All that is needed to convert Europe's radio waves into a bedlam of squeals and whistles is for some small transmitter, in any European nation, to broadcast on the same frequency as some other station. The resulting interference destroys the effectiveness of the legitimate station.

Two can play this war of interference, of course, but it works best for a country having only weak and low cost transmitters in contrast to the elaborate powerful units of Germany, Great Britain, France and Italy.

The broadcasts of the United States to South America, a new tool of the nation to combat European propaganda broadcasts there, cannot be effectively blocked off by the interference, "black-out" technique, the government experts state. The reason is the fortunate habit of short radio waves of varying in transmission effectiveness with zones of day and night over the earth.

It will be possible for stations in the U. S. to employ short wavelengths in the daylight hours which can not be used in over-the-ocean transmission from Europe where it is then nighttime.

Moreover, in general, long-distance radio transmission is better in north-south directions than in the east-west line because the waves are moving parallel to the earth's magnetic field.

Broadcasts from Europe to America on shortwave, especially, have occasional troubles from this cause because the "great circle" path of the radio signals passes very close to the north magnetic pole of the earth which is far south of the geographical pole. Disturbances in the radio reflecting layers of the ionosphere are much greater near the magnetic poles than elsewhere.

Science News Letter, October 14, 1939

GENERAL SCIENCE

British Science Journal Is a War Casualty

SCIENCE PROGRESS, a quarterly review of scientific thought, work and affairs, now in its 34th volume, is suspending publication with its October issue because of the war conditions. This leading British science journal was edited until his death by Sir Ronald Ross, discoverer of the transmission of malaria by mosquitoes.

Science News Letter, October 14, 1939

GENERAL SCIENCE

War Takes the Soap From Babies' Gift Layettes

THE LAYETTES being sent by the American Red Cross to Europe's refugee babies will contain no baby soap. Soap is contraband.

Science News Letter, October 14, 1939