

## RADIO

## "Searchlight" Radio Beams Increase Station's Range

WITH "steerable" radio antennae that send out radio transmission in a searchlight beam instead of broadcasting it, modern radio transmitters of 50,000 watts are able to make themselves heard in distant countries at the same intensity as a 1,200,000-watt transmitter with the older type aerials.

Engineers of the National Broadcasting Company call this one of the great modern advances of radio, which is permitting it to play so important a part in this war. They say that even though heavy penalties are imposed on those caught listening to foreign broadcasts in the oppressed countries of Europe, mail

reaching the United States provides proof that these broadcasts are reaching interested ears.

From early morning to late at night NBC transmitters at Bound Brook, N. J., are sending out programs to the world, shooting them in the proper direction, in the correct language, at hours best adapted to the regions reached. With 100 degrees span between the direction of Mexico City and that of Pernambuco, a number of antennae are required to reach Latin America. A much smaller number suffice for Europe, with a span of only 30 degrees from Madrid to Moscow.

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## AGRICULTURE—RESOURCES

## Select Superior Tung Trees For Cultivation in South

SUPERIOR varieties of tung trees, source of the tung oil highly valued in the paint and varnish, linoleum, printer's ink and other industries, are being given an extensive test by the U. S. Department of Agriculture. Because the Chinese war has drastically reduced imports from the principal source of this oil, while domestic plantings now in existence supply only a very small percentage of American requirements, new sources within United States boundaries are very seriously needed.

Department scientists caution that tung cultivation should not be undertaken by amateurs, and it should not be attempted on a large scale even by experienced planters of other crops. Tung trees are very "fussy" about their soil, highly sensitive to cold, and in any case must reach the age of five years before they come into bearing. Still, any farmer far enough south (within about 100 miles of the Gulf Coast) might find it profitable to set out a few trees, just as an experiment. Tung trees are quite ornamental, with glossy, heart-shaped leaves and beautiful flowers in spring.

Department of Agriculture plant scientists have, during the past three years,

selected 500 trees in the extensive orchards already growing in the South as particularly promising. A second selection reduced the number to 80. Thousands of young trees were propagated from this group of parents. Last November's freeze cut down the nursery stock severely, but the survivors—some 40,000 of them—have been planted in 13 test orchards along the Gulf Coast, from Texas to Florida.

In the meantime, chemists in the Department have greatly improved the efficiency of oil extraction methods. American tung oil already commands a premium over the imported product, and the market is far from being saturated.

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## PUBLIC HEALTH

## Warn Against Substituting Cadmium For Tin in Trays

WARNING against war-increased danger of acute poisoning from cadmium-plated food utensils, such as metal pitchers and refrigerator ice trays, appears in a report by Dr. Samuel Frant and Irving Kleeman, of the New York

City Health Department. (*Journal, American Medical Association, July 12.*)

They report several outbreaks, involving about 50 persons, of acute poisoning from small amounts of cadmium that got into iced drinks and frozen desserts from ice cube trays and a metal pitcher that had been replated with cadmium. Fortunately, no one died, although all those who had the contaminated foods became violently ill within 15 minutes.

The ice cube trays had not had any cadmium on them originally, according to the refrigerator manufacturers' reports, but had apparently been coated with cadmium during reconditioning. In one outbreak, ice cubes for cooling punch had been made shortly after a leak of the refrigerant, sulfur dioxide, had been repaired. The sulfur dioxide dissolved in the water to give sulfurous acid which reacted with the cadmium to give cadmium sulfite. In other cases the cadmium got into the food from the action of acids in flavored crystals for making fruit drinks or in gelatin powders for frozen desserts.

Because of defense preparations, the plating industry is seeking substitutes for tin and other war-needed materials. The New York scientists warn that cadmium is not a suitable substitute in plating food utensils. The New York City sanitary code has already been amended to prohibit the use of cadmium in articles used for food and drink.

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## NUTRITION

## British Public Demands Pickles—and Gets Them

PICKLES are so insistently demanded by the British army, navy, air force and civilian public that several thousand acres of land are being planted this year with onion, garlic, mustard, gherkins, red cabbage and cauliflower.

"Will science say the decision is wrong?" Dr. Magnus Pyke, puts the question, discussing vegetables as food in *Nature* (April 26).

Dr. Pyke points out that suggestions of the Scientific Food Policy Committee have been followed to assure a supply of green vegetables the year around. Double acreage of carrots is planted. Greenhouses have abandoned flower growing to produce tomatoes.

But with all this, adds Dr. Pyke, Britons are "insistently crying out for a vegetable product of negligible value, namely pickles." So the British public will get them.

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