

of the development of the spiral galaxies, those great universes of stars far outside our own galaxy. Further progress is foreseen in the study of stellar evolution, which is undergoing a revival, and there will be interpretations of those peculiar variable stars whose varying light does not follow the usual patterns. On Feb. 4 there will be a total eclipse of the sun that will extend over the far-flung battle zones of the area north of Japan, the Aleutians and Alaska. Although totality lasts for eight-tenths of a minute at Anchorage, Alaska, near sunset, it is unlikely that there will be any extensive expeditions to observe it.

Anthropologists and archaeologists can do little or no field work these days in digging up past civilizations or studying strange peoples in various parts of the world. But they are hard at work summarizing for war purposes all that is

known about our enemies in order that this information may be used in fighting the war. It is particularly important to do this for the Japanese, although data on the Germans as well will be useful in the post-war years when the United Nations forces will need the greatest possible amount of factual help in setting the world to order and in handling the problems of peoples whose minds and feelings have been indoctrinated with false science and ideals.

The shape of the future after our military victory is won will gradually emerge during the year. Scientists will find themselves particularly concerned with the major problems of raw materials, regarding peoples and commerce that must be solved to keep the world free, peaceful and contented, as well as fed, clothed and housed.

*Science News Letter, January 2, 1943*

#### NUTRITION

## Tests for Coffee

► SIMPLE TESTS for telling whether the coffee you brought home on your precious number 27 coupon has been adulterated are given by C. E. Shepard, chemist of the Connecticut Agricultural Experiment Station.

Examination of coffee samples recently submitted to the station showed one of them to be almost 50% impure. A flat taste or lack of kick may be, as coffee drinkers often suspect, signs of adulteration.

Chicory is the most common adulterant of coffee, Mr. Shepard stated. One test for detecting chicory in ground coffee is made by placing a good pinch of the material on a piece of white paper. Examine the individual particles with a hand lens, though you can tell the difference between coffee and chicory without this aid. Coffee grounds are usually light brown and granular, while those of chicory, being made from a root, are fibrous and darker in color.

The "water test" shows up the difference even more distinctly. Half a teaspoonful of coffee is placed in a glass a quarter full of water. Most of the true coffee will stay on top for a time, but grains of chicory or other fibrous vegetable material quickly become water-logged and sink to the bottom, often coloring the water brownish. After allowing the material to soak for ten minutes, the water is drained off, and the grains spread out in a dish or on a

piece of white paper. If, on prodding with a match stick or tweezers, a granule appears hard and resistant and "jumps away", it most likely is coffee. But if it is plastic, almost like gelatin in consistency, it is a foreign substance, probably chicory.

Chicory is made from the root of a perennial vegetable grown in the Northeast. Addition of chicory or any other harmless vegetable material to coffee is not considered illegal, Mr. Shepard points out, so long as its presence is plainly indicated on the package label. Some people prefer coffee that contains a little chicory and even add it themselves. Most consumers, however, want only pure coffee, and a mixture of coffee and other materials should be sold for what it is.

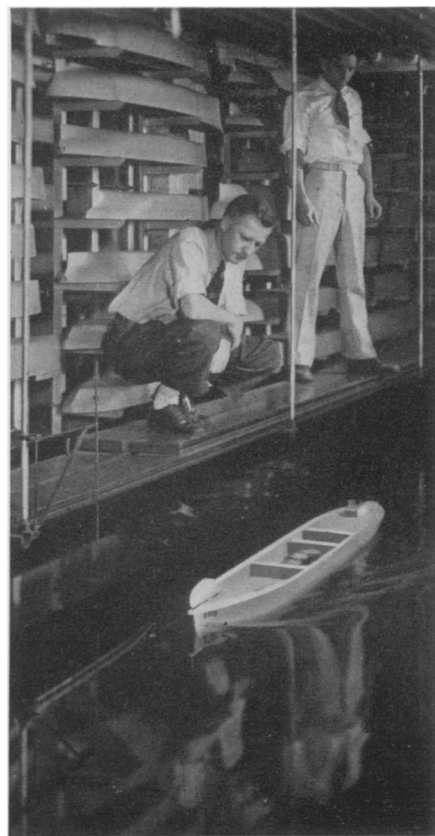
*Science News Letter, January 2, 1943*

#### ENGINEERING

## Ship Models Are Tested For Wartime Research

► SMALL TOY-LIKE ships and naval equipment are being built in increasing numbers by the nation's gigantic shipyards.

They're expensive luxuries, thought some of the old-time shipbuilders. But marine engineers find them a quick and economical way to discover how our sea-going vessels may be improved, reports



*NOT JUST FUN—This little boat is a model being tested at the forty-foot model basin of the Newport News Shipbuilding and Dry Dock Company. Such tests result in the improvement of sea-going vessels. The photograph is from the U. S. Maritime Commission.*

S. B. Besse, model engineer, of Newport News, Va.

Engineers are shown testing a model in the official photograph from the U. S. Maritime Commission shown on this page.

Arrangement models help determine the best possible location of compartments and equipment. Government contracts often require machinery room models before actual construction of large naval craft.

Development of intricate structures that are hard to visualize from plans, is aided by design models.

Planning models are used in general yard work, where heavy and bulky equipment must be handled, as well as for construction purposes.

*Science News Letter, January 2, 1943*

Nylon brushes, resembling over-sized bottle brushes, are used to clean Navy guns.