

TECHNOLOGY

Beach Sands Made Hard

Powdered blackstrap molasses combined with bunker fuel oil or asphalt, depending on availability, makes sandy surfaces suitable for heavy equipment.

► **BLACKSTRAP MOLASSES** and bunker fuel oil are the principal ingredients of a newly developed binder to make beach sands hard enough for the passage of heavy military equipment in future amphibious landings. Asphalt can be used instead of the oil.

At a conference on soil stabilization at the Massachusetts Institute of Technology, Cambridge, Mass., the development of this binder, now known as Plasmofalt, was described by George W. Rappleyea of the Tropical Agricultural Research Laboratory, Southport, N. C., where the work was done under contract with the U. S. Marine Corps.

The use of molasses as a stabilizer is not new, he stated. In 1910, the U. S. Department of Agriculture constructed an experimental road in Newton, Mass., using molasses as a binder. The road was a failure because the molasses, being soluble in water, washed away during the first heavy rain. He referred also to experimental work in India during the 1936-38 period in which the binder was a polymerized mixture of

blackstrap molasses and asphalt.

"In the development of Plasmofalt," he said, "we proceeded on the theory first that oil and water do not mix, and second, that by using a dehydrated molasses or a powdered molasses and a suitable catalyst we could obtain quickly a composition that would be insoluble in water and a binder with unusual adhesive qualities."

Bunker fuel was used because it is more readily available than asphalt in most parts of the earth.

Developed is a Plasmofalt concentrate which contains a maximum amount of powdered molasses, catalyst and accelerator in a minimum amount of fuel oil. A 55-gallon drum of this when sent ashore and mixed with 10 barrels of fuel oil from the ship's bunkers produces two tons of Plasmofalt when heated a half hour at 450 degrees Fahrenheit. These two tons, when mixed with sand, gravel or crushed rock, make 42 tons of paving material, or enough to make a paving of 840 square yards one inch thick.

Science News Letter, June 28, 1952

GENERAL SCIENCE

AEC Research Funds Cut

► A **DRASTIC** cut of 30% in physics research funds for the Atomic Energy Commission will seriously interfere with the search for new sources of atomic energy, including atomic bomb materials, **SCIENCE SERVICE** has learned.

The AEC asked for \$49,000,000 for physics research operations and new plant and equipment in its regular appropriation. Both the Senate and the House cut this to \$34,000,000. The bill which includes this appropriation now is in conference.

Much of the appropriation, according to **SCIENCE SERVICE** sources, would have paid for investigation into the function of the meson in the fission of atoms. A meson is "thought to be a particle." It is possible that, when uranium is fissioned, as in an A-bomb explosion, mesons fly out of the atoms. It is the belief of physicists that if and when it is discovered how and why mesons fly out of atoms when they are divided, it will be known how to divide or fission many elements.

If we can use other elements for providing atomic energy by fission, we have vast new sources of atomic energy.

According to **SCIENCE SERVICE** sources, the 30% cut in physics research funds will

seriously curtail this line of research. There is disagreement as to the relative abundance of uranium, primary material for A-bombs, but all are agreed that ability to use other elements for atomic energy would be highly useful.

There is some hope that the AEC may use funds out of its \$3,000,000,000 supplementary appropriation for this purpose. The Senate Appropriations Committee, in reporting out the cut, said that the AEC may "discuss" with the committee the possibility of using supplementary funds for any functions cut in the regular appropriation bill.

Science News Letter, June 28, 1952

CHEMISTRY

Try to Find Taste Part of Maple Syrup

► **NOW THEY** are trying to take the taste out of maple syrup and study it.

Scientists want to find out what it is that makes maple syrup taste like maple syrup and not like something else. If they can do this, Dr. William L. Porter, analytical chemist of the Eastern Regional Research Laboratory, Philadelphia, said, perhaps farmers

can produce better syrup and there will be better flavoring for maple sugar and ice cream.

Dr. Porter told the American Chemical Society's summer analytical symposium in East Lansing, Mich., that maple sap from the tree has absolutely no maple flavor. This is acquired in the process of making the syrup. He and Dr. Charles O. Willits have divided both the sap and the syrup into three components and subdivided those even further. But they have not yet isolated the taste-causing component.

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MEDICINE

Baby's Arrival More Likely Late Than Early

► **TO EXPECTANT** parents wondering whether the baby will be born before or after the date the doctor predicted: The baby is twice as likely to be late as early.

This is from statistics gathered by Dr. Edward Liston of Palo Alto, Calif.

Out of 1,284 consecutive babies born at the Palo Alto Hospital between September, 1950 and April, 1951, only 32 arrived on the date set. Births were before the predicted date in 425 cases, late in 827.

As to whether baby is more likely to be late or early when he is the first child in the family, Dr. Liston's figures show this: More than three weeks early were two first babies and five born to mothers who already had had babies. More than three weeks late were three first babies, six in the later than first baby group.

Dr. Liston reports his study in **CALIFORNIA MEDICINE** (June), official journal of the California Medical Association.

Science News Letter, June 28, 1952

ENTOMOLOGY

Tag Sprays for Study Of Insect-Killing Action

► **KILLING** of flies by pyrethrum sprays will be better understood when Gulf Oil scientists use a thousandth of a pound of radioactively tagged insecticide that they have just manufactured.

One pound of the "hot" insecticide would cost \$18,000,000.

Grown in a hot house atmosphere containing radioactive carbon dioxide, pyrethrum plants were carefully raised and their one to two percent of "hot" pyrethrins extracted. This precious material will be used to trace the paralyzing and lethal action in the bodies of insects it kills.

Discovery of synergistic chemicals that can step up the action of pyrethrum and lessen insecticide expense may result from the researches outlined to the Chemical Specialties Manufacturers Association meeting in Boston by A. C. Miller, Gulf Oil entomologist.

Science News Letter, June 28, 1952