

## Do You Know?

Eggs will absorb odors quickly if stored with onions or lemons.

Some 2,000 gallons of paint is required to cover the dome and central section of the national Capitol in Washington.

From 1937 to 1947, butter consumption in America declined from 16 pounds to 11 pounds per person.

Some 40,000,000 cars, trucks and other

motor vehicles will be using American streets and highways before the end of the year; it is a 17% increase over the 1941 figure.

The importance of chemistry in the world is indicated by the membership in the American Chemical Society; it is the largest professional scientific society in the world and now has some 58,000 members.

To take a census of fur-seals on Alaska's Pribilof islands, every breeding place, or rookery, on the islands was photographed from a plane at 1,000-foot altitude; the fur-seal herd numbers over 3,800,000 animals.

### ENGINEERING

## Fuel Oil Saving Possible With New Combustion Head

➤ A SAVING of 25% in fuel oil is possible with a new combustion head for home burners revealed by the Shell Development Company in New York. After several years of testing, the patented device is now available to burner manufacturers without royalty to the developing company.

The new combustion head is for use with high-pressure, gun-type oil burners. It is offered to burner manufacturers without royalty in the interest of fuel conservation. It was perfected by the company in 1944, and first installed for tests in the homes of a few company employees. Since then it has been licensed to a few oil burner manufacturers, permitting them to make it an integral part of their domestic burners.

Design of the combustion head is the key point in efficient oil-burner operation. All other parts of the burner serve merely to convey the air and oil to the combustion head. Here the oil is finely atomized, thoroughly mixed with air and burned. While as much as 150% excess air may be needed with conventional combustion heads, the new Shell head requires only from 5% to 10% excess air. The result is a tremendous saving in heat losses through the chimney, and combustion that is free of soot and smoke.

Science News Letter, October 16, 1948

### CHEMISTRY

## Simple Sugars Can Now Be Made from Farm Wastes

➤ SIMPLE SUGARS, fermentable into industrial alcohol and other useful products, can be made from the cellulose in corn-cobs, oat hulls, straw, sugarcane bagasse and other farm wastes by a process on which U. S. patent 2,450,586 has just been granted to two U. S. Department of Agriculture scientists, Drs. John W. Dunning and Elbert C. Lathrop of the Northern Regional Research Laboratory at Peoria, Ill.

Wood sugar and related compounds containing only five atoms of carbon per molecule are first obtained by treating the cellulosic material with dilute sulfuric acid. The residue is quickly dried in a current of warm air, ground up fine, and converted into a slurry or thin paste. This is treated with a warm solution of sulfuric acid, at from 7% to 9% concentration, under pressures of from five to 45 pounds per square inch. This converts the cellulose into dextrose, which emerges as a 10% sirupy solution. This is treated with lime to neutralize the remaining acid, and is then ready "as is" for fermentation.

Science News Letter, October 16, 1948

Electric fences, placed along railroad lines where there is danger of rock fall, automatically set block signals in stop position when broken by sliding earth or falling rock.

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