

Do You Know?

Rats average 10 young to a litter, and may have up to 12 litters a year.

The *pearling* industry in Australia is expanding to meet American demands.

What is called the High C variety of *tomatoes* has at least twice as much vitamin C as the standard varieties.

There are nearly 192,000 railroad *bridges* in the United States; the sum of their lengths is about 4,000 miles.

Sugar is primarily a food, but it is used in hair tonics, shoe polishes, adhesives, photographic materials and explosives.

Sugar cane is a tall perennial grass; its stalk is divided into sections by joints, and each section contains a bud which will sprout when planted.

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Anthracite silt is an excellent fuel for the production of these gases, Dr. Johnson states, because it is non-coking, non-caking, free of tar, has a low sulfur content and a high ash-fusion temperature. The new process is related to the German method for gasifying brown coal. In it, the anthracite silt can be processed into three gases, two of which are fuel gases.

In the process, anthracite silt, air and steam are fed into a refractory-lined cylinder. Combustion takes place with the silt boiling inside the cylinder while the heavier ash settles to the bottom and is ejected by a rotary grate. The gas obtained is fed through a second bed of burning silt, fortifying it with addi-

tional carbon monoxide. The result is producer gas.

If gas of higher heat quality is desired, steam is forced into the burning silt in the second stage of the process. To produce gases from which liquid fuel is made, the same method of fluidized or boiling combustion bed is used. However, by intermittently blowing air and steam into the combustion chamber, or by using a continuous blast of oxygen and steam, a synthesis gas of carbon monoxide and hydrogen is produced. It is from these the liquid fuel is made as is done in making liquid fuels from natural gas or other coal.

Science News Letter, March 20, 1948

MEDICINE

Anti-Leukemia Weapon

➤ ARSENIC made radioactive in the atomic pile is now being tried in the treatment of leukemia and Hodgkin's disease, a group of University of Chicago and Argonne National Laboratory scientists reported at the meeting in Atlantic City of the American Association for Cancer Research.

The scientists are Drs. William Neal, Leon O. Jacobson, Austin M. Brues, Howard Ducoff, Robert Straube and Thomas Kelly.

"Very nice responses" have been obtained in some of the 12 patients treated so far. But, Dr. Jacobson cautioned, he does not know how long the improvement will last or even whether the present improvement is any better than the temporary responses obtained with other kinds of radiation treatment.

Use of the radioactive arsenic was started about nine months ago. It is being tried in the hope of obtaining both the chemical effect of ordinary, stable arsenic and the radiation effect of the radioactive chemical. Arsenic, as phy-

sicians know, has been used for treatment of leukemia and allied conditions since 1878.

The radioactive arsenic was first used in tracer studies on both laboratory animals and humans. These studies showed that the chemical was quickly and widely distributed throughout the body, which meant that its penetrating rays would get to the parts of the body where they were needed. The tracer studies also showed that the chemical is rapidly excreted, so there would be no danger from over-long irradiation.

Additional safeguard in the use of radioactive arsenic is the existence of BAL, or British Anti-Lewisite. This chemical can remove radioactive arsenic from the body as quickly as it removes the stable form of arsenic.

The radioactive arsenic used is arsenic⁷⁶. It has a short half-life, 25 hours, and must be used pretty rapidly after it comes from the atomic pile. It is made by pile irradiation of cacodylic acid, an arsenic-containing compound.

Science News Letter, March 20, 1948

MEDICINE

Breast Cancer in Mice

➤ A CANCER experiment which brought results exactly the opposite of the ones the scientists expected was reported by B. E. Bennison of the National Cancer Institute at the meeting in Atlantic City of the American Association for Cancer Research.

The experiments concerned the breast cancer in mice which is transmitted through some agent in the mouse

mothers' milk. The agent is thought to be a virus. Since the spleen helps in resistance to ordinary infections, Dr. Bennison removed the spleens from young mice who had been nursed by mothers carrying the cancer-causing agent in their milk. He expected the young mice to develop cancers at an earlier age than these usually appear.

Instead, it took longer for the cancers