

gested, thus enabling the police to begin a search for the scene of a crime. Or, X-ray diffraction methods and X-ray spectrography may provide the essential evidence.

Another example is the cooperative project in which Dr. Herbert Friedman of the Smithsonian Institution is working with biochemists and others on the physiology of the honey guide bird. This may result in a method for breaking down the protective waxy coating of some bacteria.

Collecting new specimens continues to be an important museum activity. Museum-supported expeditions explore many of the exotic regions of the world, bringing back some of it for the stay-at-homes.

Today no one can criticize our museums as mere curio shops. They are dynamic institutions, actively seeking knowledge and better ways to communicate their findings to us on those days when we wander through their gay, bright halls.

Science News Letter, August 8, 1959

#### ENGINEERING

### Pills for Rockets May Mean More Thrust

PILLS for rocket engines could help cure a costly "disease": corrosion.

Untimely chemical reactions in both liquid and solid rocket fuels could be avoided by putting special fuel additives in capsules. Proposed additives include oxidizers, to give more power to the engine, and "dampers," to control the rate of fuelburn. Some reactive chemicals are now avoided because they will eat out the insides of rockets.

By putting them in capsules, the Southwest Research Institute, San Antonio, Texas, reported, the disease of corrosion might be overcome. To achieve this goal, SRI scientists have developed two ways to make pills. Some as small as pinheads, the capsules use magnesium, aluminum, glass and paraffin for "skins." (Gelatin is used for medical pills.)

A gravity feed apparatus is the basis for the first manufacturing technique. The film, or encapsulating material, and the filler flow into a chamber where the film material spreads across an opening. The film deforms under the weight of the filler and finally falls through the hole. Surface tension of the film shapes the capsule into the proper form.

A nozzle device makes smaller capsules. Here, the combined film and filler material is flung against the hardening bath which covers a rotating wall. Changes in the size of the nozzle opening and the speed of rotation make it possible to vary the size of the capsules.

Science News Letter, August 8, 1959

#### CHEMISTRY

### Molten Salts Suggested For Reactor Fuel

A BETTER FUEL for high temperature nuclear reactors than the uranium metal rods now in use may be uranium salts which are mixed with other molten salts.

So says Dr. Haakon Flood of Norway, an authority on molten salt chemistry, basic also in metallurgy and ceramics.

He is visiting professor of engineering at the University of California, Los Angeles, and also serving as adviser to American atomic installations on chemical problems of fueling reactors with uranium salts.

He explains that uranium metal rods have two major disadvantages. They lose their shape when exposed to radiation from the fission process. And they do not work continuously, since the rods have to be taken out of the reactor to remove impurities caused by fission products.

Reactors using molten uranium salts may overcome these disadvantages. The salts, in liquid form, do not change shape, and can be continuously purified by a cycling process, in which the liquid is pumped out, purified and returned to the reactor.

On the other hand, the use of molten salts raises some new problems, such as finding the proper material for the salt containers. Important investigations along these lines have been reported by the Oak Ridge laboratories.

During the fall semester, Dr. Flood will teach a special UCLA course in high temperature salt chemistry. In his own country, he is professor of inorganic chemistry at the Norwegian Institute of Technology, and head of the Institute of Silicate Science.

Science News Letter, August 8, 1959

#### MEDICINE

### Non-Drinking Moslems Develop Liver Cirrhosis

MOSLEM MEN and women of the Sahara desert develop cirrhosis of the liver at an early age despite the fact that these people do not use alcohol.

These persons also had more than their share of liver cancer, a team of investigators report in the University of Chicago Press's *Cancer Research* (July).

A total of 238 Negroes from French West Africa were found to have cirrhosis of the liver. Cancer of the liver was found in 104 of these individuals.

The average age of the cirrhotic group studied, the majority of whom were Moslem, was 34.6 years. Females appeared to be less prone to the disease, but this may be due to the fact that females are less likely to go to a hospital than males. Curiously enough, those patients with both cirrhosis and cancer of the liver lived longer than did those with cirrhosis alone, Dr. Paul E. Steiner of the University of Pennsylvania points out.

He reasoned that the person whose liver ceases to function will die soon, while the person with a healthier liver may live longer, during which time the liver may also develop cancer.

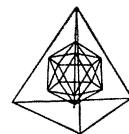
An additional 238 cases were studied for cancer of the liver. Some of these had cirrhosis. But the scientists found cirrhosis did not aid the development of cancer. Malignancies occurred as early, if not earlier, in the noncirrhotic liver, they emphasize.

The average of the victim of cancer of the liver was 36 years. They offered no reason for the development of cirrhosis in these Africans.

Drs. Robert Camain of the Institut Pasteur, Dakar, and J. Neuk of the Hopital le Dantec, Dakar, French West Africa, assisted Dr. Steiner.

Science News Letter, August 8, 1959

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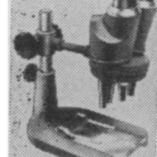


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