

MEDICINE

New Drugs for Cancer Show Promise in Animals

► **NEW CANCER DRUGS** effective against several solid tumors and two types of mouse leukemia were reported at the American Chemical Society meeting in Los Angeles.

The new drugs, not yet tested on humans, were man-made at Arizona State University. Dr. Roland K. Robins said the compounds, called 9-(tetrahydro-2'-furyl) purines, were synthesized to overcome an obstacle found with other cancer drugs.

Some well-known drugs used against cancer, including 6-mercaptopurine, are effective at first, but lose their effect because they apparently lose the ability to pass through the fatty layer of membrane surrounding the tumor cell, Dr. Robins explained.

The new compounds are related chemically to the building blocks DNA and RNA (deoxyribonucleic acid and ribonucleic acid), which control the growth and duplication of all living cells, he said.

Although some the most important anti-tumor and antiviral drugs are structurally related to DNA and RNA, and work well at first, often a general resistance of the animal tumor gradually develops. This is not true of the new drugs, which do not become insoluble to fats by chemical changes in the body.

Drs. William A. Bowles, F. Howard Schneider and Leland R. Lewis collaborated in the report.

• Science News Letter, 83:237 April 13, 1963

CHEMISTRY

Quick Method Spots Insecticides in Milk

► **INSECTICIDES** containing chlorine can be accurately analyzed in milk and butter by a new hour-long technique.

Traces of insecticides as low as one part in a million parts of the dairy product can be detected by heating samples of the milk or butter to 530 degrees Fahrenheit and analyzing the products that have boiled off. An instrument called a microcoulometric gas chromatograph measures any traces of chlorine that are present.

The amount of chlorine found is a direct measure of the insecticide concentration in dairy products, Daniel E. Ott of the University of California at Riverside reported to the American Chemical Society's meeting at Los Angeles.

The rapid detection of what scientists call "organochlorine insecticide residues" in milk and butter is essential for screening suspicious dairy products before they reach the consumer, Mr. Ott said. Dr. Francis A. Gunther, also of the University of California, cooperated in the research.

Traces of poisonous chemicals get into milk or butter from three sources, Mr. Ott explained. A cow may have been accidentally sprayed and may have swallowed some of the spray, may have eaten forage dusted with insecticides, or chemicals sprayed on an adjacent field may have drifted over into the grazing pasture.

• Science News Letter, 83:237 April 13, 1963

BIOCHEMISTRY

New Drug Prevents Epileptic Attacks

► **A NEW DRUG** that prevents epileptic attacks in mice was reported to the American Chemical Society meeting at Los Angeles.

The new chemical, belonging to the piperidinediones family, warded off seizures that would otherwise have been brought on by chemical and electric methods, Prof. Charles F. Martin and Dr. V. L. Narayanan of Washington State University said.

The new drug would work in humans by controlling the level of glutamic acid in the body, the scientists suggested. The level of glutamic acid, a product of protein digestion, falls at the beginning of a seizure. Piperidinediones may control this level by stopping the conversion of glutamic acid to other substances, they indicated.

The disturbances in body chemistry that lead to an epileptic attack may thus be blocked, they reported.

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PSYCHIATRY

Monkeys Disturbed by Blood of Psychotics

► **INJECTIONS** of blood from normal persons under stress and from psychotics are both disturbing to monkeys. The injected monkeys have trouble doing assignments for which they were trained, psychologists have found.

Although the monkeys usually took an average of 90 minutes to complete push-button tasks they had learned, after injection they took up to five hours in some cases. Normal blood substances were not disruptive, Drs. Donald C. Ferguson and Alan E. Fisher of the University of Pittsburgh found.

The body's disturbances under conditions of stress may be in the same family as those in more severe behavior disorders, they reported to Science, 139:1281, 1963.

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Do You Know?

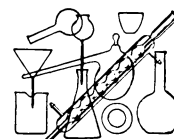
"Operatives," or semi-skilled workers, make up the largest occupational group in the U. S. labor force.

The *radioactivity* of one liter of milk in a given area is an indication of the radioactivity intake of the population in that area.

A *hypernucleus* is a nucleus in which a hyperon, an unstable elementary particle which exists about one ten billionth of a second, has been substituted for one of the normal nuclear building blocks, the protons and neutrons.

One phenomenon basic to materials science is *sintering*, the formation of solids from powders.

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