

MEDICINE

Drug To Help Addicts

➤ **CRYING, FRETFUL** babies who cannot sleep or gain weight, drug addicts in a police station, epileptics and victims of head injuries, skin disease and headache sufferers and mental patients outside of institutions have been getting help in varying degrees from reserpine, the Indian root medicine already widely used to reduce high blood pressure.

The new medicine's wide range of usefulness apparently comes from its quieting, or "tranquilizing" effect. (See SNL, Feb. 12, p. 102.)

Use of reserpine in cases of narcotic drug addiction was reported in New York by Dr. Eugene F. Carey, surgeon of the Chicago Police Department. Dr. Carey spoke at a conference on reserpine held at the New York Academy of Sciences.

Used in an experiment at Chicago police headquarters, reserpine helped to "cancel out the mental terrors and fears" which plague addicts who have been deprived of their favorite drug by law enforcement officers.

By producing a "tranquilizing effect" in the addict, reserpine makes withdrawal sickness easier for him to bear, Dr. Carey found. He said treatment with reserpine may prove to be extremely important in aiding the drug addict, since his mental attitude is of paramount importance and "can in fact, make him or break him."

For headaches, reserpine apparently is

most helpful when high blood pressure is involved. Tension headaches are helped somewhat, migraine not at all, Dr. Arnold P. Friedman of the Headache Clinic at Montefiore Hospital, New York, reported on the basis of preliminary trials.

The overall condition of headache patients was "greatly improved" so that specific medicines could be used more effectively or were not necessary, Dr. Bernard M. Barrett of Pensacola, Fla., and Dr. F. K. Hansel of Washington University School of Medicine, St. Louis, reported from their headache study.

The tranquilizing effect of reserpine was credited for bringing relief to patients miserable with itching skin trouble and this same tranquilizing effect was seen responsible for banishing the irritability, moodiness and changeable personalities of patients suffering from convulsive disorders such as epilepsy. The results of trying the drug in skin conditions were reported by Drs. Charles R. Rein and John J. Goodman of New York. The use of the medicine in epilepsy and for head injury victims was reported by Dr. Vasilios S. Lambros of Arlington Hospital, Arlington County, Va.

The reserpine conference was under the chairmanship of scientists from Ciba Pharmaceutical Products, Inc., Summit, N. J. The Ciba brand of reserpine is called Serpasil.

Science News Letter, February 19, 1955

Harrison, professor of microbiology and vice-president of the University.

Heading the group from Notre Dame were James A. Reyniers, director of the Lobund Institute, and Philip C. Trexler, Robert F. Ervin, Helmut A. Gordon and Morris Wagner. The research was supported in part by contracts from the Office of Naval Research.

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TECHNOLOGY

Transistor to Convert DC to AC in Missiles

➤ **THE GERMANIUM** transistor, versatile little crystal substitute for the radio tube, was described as an ideal converter of weak DC electricity to AC in guided missiles.

Such transistors, now being tested, are not only small and light, but they are practically immune to shock and vibration. Other advantages of the device, called a "chopper," as explained to the American Institute of Electrical Engineers in New York by A. P. Kruper of Westinghouse Electric Corporation, East Pittsburgh, Pa., are:

It works from about 58 degrees below zero to 194 degrees Fahrenheit. It can operate on a fraction of a millivolt of electricity. It has long life.

The conversion from DC to AC is desirable, he pointed out, because AC amplifiers are much easier to design and are free of the drift and instability of DC amplifiers.

Science News Letter, February 19, 1955

DENTISTRY

Blame Strep. for Decay

➤ **A MEMBER** of the streptococcus germ family is now blamed for causing tooth decay.

Studies showing that this strep., called an enterococcus, caused tooth decay in rats have won the 14th annual prize essay award of the Chicago Dental Society for Dr. Frank J. Orland and associates of the University of Chicago's Walter G. Zoller Memorial Dental Clinic in Chicago.

The germs most commonly thought responsible for tooth decay, the acid-producing lactobacilli, were not involved at all. But the enterococci also produce acid that dissolves away the tooth enamel to allow invasion of the softer tissues underneath.

The average human mouth may have a hundred or more different forms of bacteria, or germs in lay terms, the scientists pointed out.

Enterococci are found in human intestines.

How many other bacteria are involved in tooth decay, and what can be done about it, are not answered by the studies.

The rats in the tests were grown from birth in the germ-free chambers of the Lobund Institute at Notre Dame University,

Ind. One group of rats, in the germ-free environment, had their mouths swabbed with enterococci and one other organism. Another group was raised in a normal, germ-laden environment. Both ate the same diet, which was known to encourage tooth decay in non-germ-free rats.

The rats with normal mouth germs developed serious tooth decay. And the inoculated rats in the otherwise germ-free environment were found upon examination also to have developed typical symptoms of decay.

Bacterial examination showed the enterococci to be the predominant organism while the second organism could only rarely be found. After the rats were killed, microscopic photographs of slices of the teeth showed that only the enterococci had deeply invaded the decayed areas.

The rats developed decay up to an old age equivalent to a human age of 20 years. This decay was produced in spite of the fact that the rats were not exposed to the acid-producing lactobacilli.

Associated with Dr. Orland from Chicago were Dr. J. Roy Blayney, emeritus director of the Zoller Clinic, and R. Wendell



MICROSCOPIC MAZE—The zig-zag pattern of bismuth manganese crystals are visible for the first time through a microscope with use of a strong varying magnetic field. The stripes represent areas of alternating magnetic polarity found by Dr. Benjamin W. Roberts of General Electric Research Laboratory.