



**LEFTING RABBIT**—When this bunny gets up to walk, it will keep circling to the left. The reason: an abnormally high amount of the nerve chemical, acetylcholine, has accumulated in the right side of the animal's brain. The nerve gas poison DFP, short for di-isopropyl fluorophosphate, can cause the rabbit to circle to the left if the chemical is injected into a vein deep within the right side of the neck. Injection of the anti-nerve gas chemical, atropine, will stop the lefting movement. The lefting rabbit is helping scientists at Galesburg State Research Hospital, Galesburg, Ill., learn more about the brain's chemistry and how to use chemicals to control brain diseases.

## PSYCHIATRY

## Diagnose Mental Ills

► **BRAIN WAVES** have now been put to practical use in diagnosing mental disease.

This use of the recordings of electrical impulses from human brains was developed by Dr. Charles Shagass of the Allan Memorial Institute of Psychiatry and McGill University, Montreal. It is believed the first time such use has been made of brain wave records.

Typical diagnostic records were shown during a visit of science writers to the Institute. (See p. 111 and SNL, Feb. 11, pp. 84 and 89 for related stories.)

Greatest practical importance is that the psychiatrist can quickly determine whether a patient is suffering from a psychotic depression or a neurotic depression. While symptoms of the two kinds of depression are often much alike, treatment is quite different. For the psychotic depression, electroshock is usually the treatment. For the neurotic depression, other, much slower methods must be used.

The test is made by injecting into the patient's vein a small amount of the sleeping medicine, sodium amytal. This small dose, equivalent to about one and a half

sleeping pills, is injected every 40 seconds, until the patient's speech becomes slurred. At the same time brain wave recordings are being made.

When the point of slurred speech has been reached, the brain wave record shows a change. This is called the sedation threshold. If the sedation threshold is low, the patient's depression is psychotic. The more neurotic the patient, the higher the sedation threshold, that is, the more of the sleeping drug is needed to bring about the characteristic change in brain wave record.

Dr. Shagass compares this sedation threshold test to the white blood cell test doctors make when a patient has fever, in order to determine whether the infection causing the fever is bacterial or virus caused.

Different degrees of anxiety in neurotic patients can be measured by the test. It also distinguishes between organic brain disease and some acute and chronic mental sicknesses.

Both the rabbit and brain wave records were shown to science writers on a tour of mental health facilities.

Science News Letter, February 18, 1956

## MEDICINE

## Indict Many Insects As Allergy Causes

► **ADD TO THE** long list of things that can cause allergic reactions like hay fever: may flies, silk cocoons, ant eggs, fruit flies, and perhaps other insects.

Nearly 30% of patients with asthma or hay fever symptoms were sensitive to these or other insects, Drs. Alan Feinberg, Samuel Feinberg and Carlos Benaim-Pinto of Northwestern University Medical Center, Chicago, reported at the American Academy of Allergy meeting in St. Louis.

"Since there exist tens of thousands of insect species, the problems of diagnosis and treatment are tremendously complicated," the doctors said. "We have found so far that patients who are sensitive to one insect as shown by skin tests are usually sensitive to a number of other insects."

They treated a small number of patients by desensitization with a series of injections of weak solutions of the insect antigen, the stuff that produces the allergy. Results were "encouraging."

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## DENTISTRY

## Blame Pyorrhea on Lack of Vitamins

► **DEFICIENCIES** of two B vitamins, pantothenic acid and nicotinamide, may help cause pyorrhea, according to findings of two scientists at the University of California College of Dentistry.

Drs. Hermann Becks and Perry Ratcliff have found the quantities of the two vitamins in body fluids of people with parodontal lesions, or pyorrhea, is lower than normal.

Generally, the disease is attributed to local irritants, such as tartar on the teeth or malocclusion. Actually, the vitamin deficiency as well as the mechanical factors may be involved.

Dr. Becks and Dr. Agnes Fay Morgan of the University of California, Berkeley, found 20 years ago that deficiencies of pantothenic acid and nicotinamide cause destructive changes in the mucous membrane of animals' mouths, such as gums, tongue and lips.

Experiments on man, however, have been difficult. Only recently have laboratory techniques been developed that make it possible to measure concentrations of the two vitamins in the blood and urine.

Tests by Drs. Becks and Ratcliff on 156 individuals between the ages of 10 and 75 showed that those with parodontal disease had approximately 30% less pantothenic acid and 15% to 20% less nicotinamide in the blood than normal.

The scientists are carrying the experiments further, to determine whether the levels of B vitamins can be increased and whether the treatment of pyorrhea is improved by the use of vitamins and diet.

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