

Wintersteiner, director of the Institute's division of organic chemistry, spent several years pursuing the secrets of complicated reserpine-like substances. They have a chemical structure that can take 64 forms differing from each other only in the spatial arrangements of their atoms.

Only one of these forms, that found in nature, is known to be active. One critical problem was to introduce a certain hydrogen atom in the same spatial arrangement it is found naturally.

The reaction reported by the Squibb scientists solved this problem. The development is applicable to a wide variety of synthetic approaches to reserpine and similar substances starting from readily available chemicals.

Sales of calming drugs have reached an estimated \$30,000,000 to \$35,000,000 in this country. The *Rauwolfia* plant is now obtained in the U. S. from various overseas areas where embargoes, and transportation and other difficulties pose continuous supply problems.

Science News Letter, May 12, 1956

#### PSYCHIATRY

## Mental Illness Spotted

► **BRAIN WAVE RECORDS** made while the patient is under the influence of a drug called alpha-chloralose may help to identify a special kind of mental sickness and to diagnose it.

The sickness is one in which the patients have "spells" when they may break up the furniture, tear their clothes off, have hallucinations of people calling them names, grow confused and not know where they are.

After the "spell," the patients may have no memory of it, or only a hazy one. They are depressed and remorseful.

Such patients in the past have been thought to have a kind of epilepsy or a kind of schizophrenia or a disorder termed "hysterical acting out." The label given these patients has depended somewhat on whether the doctor was a neurologist, a psychiatrist or a psychoanalyst.

Discovery of the same kind of brain wave record in such patients was announced by Drs. Russell Monroe, George Jacobson and Frank Ervin of Tulane University School of Medicine, New Orleans, at the meeting of the American Psychiatric Association in Chicago.

The characteristic brain wave record showed up when the patients were given the alpha-chloralose. This drug acts to stimulate the thinking part of the brain, the cortex, while at the same time having the opposite effect of depressing the brain stem. Patients under the influence of this drug not only showed a characteristic brain wave pattern but showed rage and had "spells."

The psychiatrists were surprised to find that 48 of 65 mental hospital patients showed brain wave changes while under the influence of this drug, although normal per-

#### BIOCHEMISTRY

## Liver Found Rich in B-12

► **ANTI-ANEMIA** vitamin B-12 is found in the liver in abundance.

This organ can supply the body for up to three years in cases where B-12 absorption has been impaired, scientists at the University of California at Los Angeles and Los Angeles Veterans Administration Center reported.

Actual measurements of B-12 content of liver obtained from 132 autopsies were made. It was found that liver stores of the vitamin were not depleted in old age or cancer as has been suspected.

It was also shown there was enough B-12 in liver tissue to fulfill body requirements for at least three years without a "refill." This means that, in cases of surgical removal of the stomach and other gastrointestinal problems known to impair absorption of the vitamin, a B-12 deficiency state

would not be expected to appear for several years.

B-12 liver stores were found to be very low in cases of cirrhosis of the liver. Anemia associated with this disease may result from depletion of B-12, Miss Elizabeth Hvollboll and Drs. Marion Swendseid, Peter M. Lewis and James Halsted said.

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sons did not.

The findings, the Tulane group said, should spur further studies of brain waves in mental patients under the influence of such drugs. The findings should also lead to search for anti-convulsion drugs that might be used with psychiatric treatment for patients with these spells.

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#### MEDICINE

## Drop of Blood for Early Heart Attack Diagnosis

► **A DROP** of the patient's blood and a new instrument the doctor can carry in his bag will help diagnose a heart attack as soon as four hours after it has happened instead of the 24 hours it may take before the electrocardiograph picks up changes.

The new method was reported by Dr. Warren Wacker of Harvard Medical School and Peter Bent Brigham Hospital, Boston, at the meeting of the American Society for Clinical Investigation in Atlantic City, N. J.

It is based on the discovery that, shortly after a heart attack, two metal enzymes in the blood increase their activity in dramatic fashion while at the same time the amount of zinc in the blood serum decreases.

The enzymes are: 1. lactic dehydrogenase, which is a zinc enzyme that oxidizes lactic acid; 2. malic dehydrogenase, which oxidizes malic acid and is also presumed to be a metal enzyme. Both enzymes play a part in the burning of sugars in the body.

The sudden surge in the activity of the two enzymes is reversed almost as rapidly in the first two days after a heart attack.

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