

is part of the laboratory's work on a series of pulsed type radio aids to aerial navigation.

The two-color radar viewing screen aids control-tower operators to "see" better the airplanes in the 50-mile region surrounding the airport. The rotating antenna of this particular radar-scanner makes a complete revolution every second, turning from six to ten times more rapidly than older types. The result is that the detection and tracking of moving planes is made visually clearer.

The distance measuring equipment is an airborne radar device which provides constant and accurate measurement of distances from moving planes to fixed ground radio-responding beacons. It uses the so-called challenger-responder principle. Both the airborne challenger and the ground beacon have a pulsed transmitter and a receiver. The pulse sent out from the plane is received at the ground beacon and causes its transmitter to respond with a similar pulse. The distance is given on a dial in the plane computed automatically from the time required for the pulse to make its trip.

The new microwave laboratory tower resembles somewhat a lighthouse with a building on its top instead of the glass housing for the signal lights. It has a rigid steel frame which is sheathed in aluminum. At the top are three large enclosed landings for research purposes and several interior platforms for the installation of experimental microwave equipment.

Science News Letter, May 29, 1948

PHARMACY

Pain-Killing Drug To Be Available

► PATIENTS racked by chronic pain from causes other than cancer may soon have a new pain-killing drug to relieve their suffering.

The drug is metopon, an opium derivative which was released just a year ago for cancer patients only. A plan is now being considered for extending its distribution to other chronic pain sufferers, H. J. Anslinger, U. S. Commissioner of Narcotics, told the New York Academy of Sciences conference on analgesics.

If the new plan goes into effect, metopon will be available in drug stores on a physician's prescription. Its production and distribution, however, will still be subject to the Federal narcotic drug laws.

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PSYCHIATRY

Psychotics Have Defect

Blocking occurs between glands and central nervous system which is shown by blood tests made under stress. Changes occur in brain.

► MENTAL PATIENTS have a defect which blocks messages between the brain and nervous system and the glandular system in their bodies, a team of Washington University medical scientists reported to the American Psychiatric Association meeting in Washington. This may throw light on the fundamental nature of mental ills.

The scientists are Drs. Ernest H. Parsons, Ethel Ronzoni-Bishop, Sidney Hulbert and Edwin F. Gildea.

Counts of white blood cells and measurements of blood sugar gave the clue to existence of this defect. Unlike normal persons, the mental patients do not mobilize the sugar in their body in response to mental stress. Nor do they show the change in number of white blood cells shown in normal persons under stress.

The failures to show these measurable physical responses to mental stress were not due to defects of pituitary or adrenal glands, the scientists stated. Rather, they were due to a blocking of the communication system between the brain and nervous system and the glands that ordinarily respond to stress messages from the brain and nerves.

Changes in Brain

Definite changes in the brain, seen under the microscope, exist in the important mental disease labelled schizophrenia, Dr. N. W. Winkelman of Philadelphia and Dr. M. Harold Book of Norristown, Pa., declared.

Schizophrenia has sometimes been called a disease of split personality. Psychiatrists describe the patients as living in a dream world where they have sought escape from harsh reality.

Drs. Winkelman and Book, on the basis of their findings in 10 cases, contend that the disease should be classified as an organic rather than a personality disorder.

Where the disease exists under 40 years of age, they believe the changes in the brain cells are usually due to a biological susceptibility similar to the disposition of some bodies to tuberculosis. The early brain changes are slight and

similar ones have been found in the brains of normal people. This, the doctors believe, is what has led to psychiatrists' differing views on schizophrenia.

The situation, they pointed out, can be compared roughly to an automobile which develops a knock in the motor. The driver may think this merely an unusual noise but to the mechanic it is evidence of a burnt-out bearing.

Original Sin

The "original sin" which preachers and philosophers have talked about for centuries and for which they prescribed the antidote of love is probably a feeling of hostility, or hate, present in human infants months before they are born, the meeting was told.

Dr. J. C. N. Cushing of Baltimore offered this explanation. He told of seeing definite avoiding reactions in fetuses only 14 weeks old, or about six months before birth. The reactions were seen in moving picture studies of fetuses.

The avoiding reactions, he said, would be interpreted as hostile gestures in older individuals. They are evidence that hate, or hostility, is so primary an emotion that it has its genesis even before birth.

By the time the baby is born, it has stored up so much hostility, or hate, that for the rest of life it is faced with the problem which forces it constantly to seek affection to counterbalance the latent hostility.

Scare Stories Don't Harm

The "sensational press" is probably not doing any special harm to children and may even help some, Dr. Sophie W. Schroeder-Sloman, Chicago psychiatrist, declared.

Nervous, insecure children might actually be helped if reading crime stories in the newspapers made their nervousness so much worse that their parents finally noticed it and took them to a psychiatrist or mental health clinic. They needed such help anyway, but might not have gotten it if their anxiety and fears had not been aggravated to

the point where the parents saw it as abnormal.

Our children, she suggested, may have developed a certain immunity to horror stories as a result of their constant exposure to them by way of radio, comics and movies.

Her opinions were based on studies of children referred to the Chicago Institute for Juvenile Research in the wake of a highly-publicized kidnaping of a six-year-old girl, later found murdered and dismembered, which occurred in the heart of a middle class residential section of Chicago.

Six children, from seven to 11 years,

were brought to the Institute because they could not sleep or had bad dreams due to fear of kidnaping after reading newspaper accounts of the crime.

Without exception, Dr. Schroeder-Sloman said, all six children were insecure, had poor relationships with their parents, and could not trust them for protection. This easily explained their nervous condition.

Harder to understand, she said, was the lack of concern on the part of the majority of children in view of the tremendous amount of sensational publicity which had produced general anxiety in grown-ups.

Science News Letter, May 29, 1948

PSYCHIATRY

CO₂ As Mental Treatment

Patients inhale soda water gas and sleep, awaking relaxed and able to face their problems. Doctors took treatment themselves.

► CARBON DIOXIDE, the soda-water gas, is helping the mentally sick back to health, the American Psychiatric Association was told at its meeting in Washington.

The patients inhale the gas, mixed with oxygen. After 15 or 20 inhalations, they fall quietly into a deep slumber. Sometimes they dream. Sometimes not. When they wake up they are more relaxed and comfortable. And best of all, they can face their problems, talk them over with the psychiatrist, and win their way back to mental health.

Success with this treatment in 18 out of 37 patients was reported by Dr. J. A. Kindwall and five associates of the Milwaukee Sanatorium, Wauwatosa, Wis. There was no noticeable change in 11 and eight had their symptoms aggravated.

One patient who had been in a psychoneurotic depression for three years, with physical as well as mental symptoms, had 75 treatments and in five months was well. Another patient, with schizophrenic depression, became more tense under the treatments. They distressed her so that she was given only 15. She got well after electro-shock treatments given during insulin coma. But looking back she herself attributed much of her improvement and recovery to the carbon dioxide treatments. Whether she was right or wrong about this, her physicians do not know.

The patients who had pleasant or

neutral feelings with the treatment were helped, while those who were distressed or frightened by the carbon dioxide experiences were not.

Signs of addiction to the treatment appeared, even in patients who were distressed by it. Because they felt relaxed and more comfortable after each treatment, they often asked for more.

Several of the doctors took the treatments themselves. One took 97, averaging four a week with 30 to 40 inhalations of the gas each time. In about half the sessions he could recall no dreams but was aware that thoughts, mostly of daily events, were going through his mind. For the rest of the treatments he could recall dreams of a pleasant nature, often with romantic coloring. During one treatment he dreamed of an atomic bomb explosion but with no fear or unpleasantness.

"It was like a total dissolution, a pattern completed," he reported. He felt relaxed and comfortable during the dream. This dream occurred not long after one of his patients had a terrifying atom bomb dream while under the gas.

This doctor's personality did not change under the treatments, so far as he and his associates could tell.

Associated with Dr. Kindwall in the study of this new treatment were: Drs. Lewis Danziger, Ray Headlee, Carroll W. Osgood, H. Gladys Spear and Benjamin A. Ruskin.

Science News Letter, May 29, 1948



FOUR-SECOND CAMERA—The physician can read the record of a patient's heart almost as the beats are recorded. Shown at the camera is the inventor, Charles J. Glasser.

PHOTOGRAPHY

Camera Develops Film In Only Four Seconds

► A CAMERA which develops moving photographic paper or film four seconds after the picture is snapped has been developed for medical use.

Claimed to have the fastest complete developing process yet achieved, the new camera was built for medical work but may have applications in other fields of photography. The camera was successfully demonstrated by the Beck-Lee Corporation, Chicago.

Science News Letter, May 29, 1948

METALLURGY

Iron Powder Can Be Made More Cheaply

► HIGH-PURITY iron powder for chemical and metallurgical uses is made more cheaply than formerly in the process on which William J. Kroll of Niagara Falls, N. Y., has taken out patent 2,441,770. By this method, anhydrous ferrous chloride is reacted with anhydrous ammonia at a temperature between 500 and 675 degrees Centigrade, and the nitrated iron thus produced is then reduced, yielding pure iron, finely powdered.

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