

PSYCHIATRY

Chemical for Mental Ills

Fight against mental disease by chemical therapy is new method showing great promise. Use of metrazol and insulin 20 years ago was the start.

► A CHEMICAL to save men's minds, as sulfa drugs and antibiotics save men's lives seems close. The fight against mental disease through therapy with chemicals is gaining.

A prediction that "thousands of institutionalized mental patients will be able to return to their homes, families and jobs" has been made on the basis of results so far with one promising new medicine.

This medicine is called Serpasil. (See SNL, June 13, 1953, p. 365.) It has been on trial at Modesto State Hospital in California. Out of 73 patients treated, 20 have lost all symptoms and eight have been discharged.

Dr. Robert Noce, director of that hospital's clinical services, has stated that he believes "every type of the mentally ill can be helped, even some of the mentally retarded."

Changes in brain wave tracings back up the doctors' observations that the personalities of the patients are undergoing basic reorganization.

But Serpasil, derived from the snake-like root of an Indian plant and manufactured by Ciba Pharmaceutical Products Company, Inc., Summit, N. J., is only the latest development announced in the now promising chemical attack on mental sickness.

Equally good results were announced recently for another drug, chlorpromazine (see SNL, April 3, p. 213), and shortly after that a hormone treatment for mental disease was proposed on the basis of this hormone's chemical and physiological characteristics. (See SNL, May 8, p. 294.)

The modern chemical attack on mental sickness got its start about 20 years ago when metrazol and insulin were first used. Doctors were greatly heartened then because they saw apparently hopeless patients restored to sanity, and because the treatments seemed to show mental sickness might after all be a matter of body chemistry and, therefore, susceptible to rational treatment through chemistry.

However, metrazol and insulin seemed to act through the terrific jolt, or shock, they gave the patients. Treatment swung quickly to shock methods with electric currents used instead of chemicals.

The new medicines swing back to a much older approach, that of quieting and soothing the disturbed mind.

Chlorpromazine and Serpasil both are sedatives. In fact, when chlorpromazine was first brought out by Smith, Kline and French of Philadelphia in 1953, its quieting action was noted as a side effect. Interest then was on its ability to stop nausea and vomiting.

However, when Montreal doctors began

using it to quiet severely excited mental patients, they found it not only quieted the patients but brought about recovery and sustained absence of symptoms in 13 of 71. In seven cases, patients were able to leave the hospital and in another 27 symptoms were lessened.

Serpasil also was first reported in connection with non-mental disease patients. It was believed valuable for high blood pressure sufferers because of its soothing effect. The soothing quality had a "remarkable" effect on the Modesto Hospital violent patients but in addition the drug showed more remedial effect on the illness itself.

These drugs may not stand the test of time as remedies for mental disease. Some scientists will see more promise in the proposed use of the hormone chemical, serotonin. This is based on the finding that anti-serotonins, chemical antagonists to serotonin, cause mental aberrations that closely mimic serious mental diseases such as schizophrenia.

The cause of such mental disease might, therefore, be lack of serotonin in the brain or a block in the brain's ability to use it. Giving serotonin or a closely related chemical might remedy the mental sickness by attacking the cause, Rockefeller Institute for

Medical Research scientists suggested to the National Academy of Sciences meeting in Washington in April.

A similar approach to the problem of mental sickness comes from research by Boston scientists. They find they can bring on mental aberrations mimicking mental disease by a chemical called d-lysergic acid, or LSD for short. This chemical could be made in the body by faulty breakdown of adrenalin, hormone poured out by the adrenal glands when a person is faced with danger or in a stressful situation. This may be the link in the long-suspected relation between the adrenal glands, stress and mental disease.

From these many and diverse approaches, the hoped-for chemical cure for insanity may be coming.

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AERONAUTICS

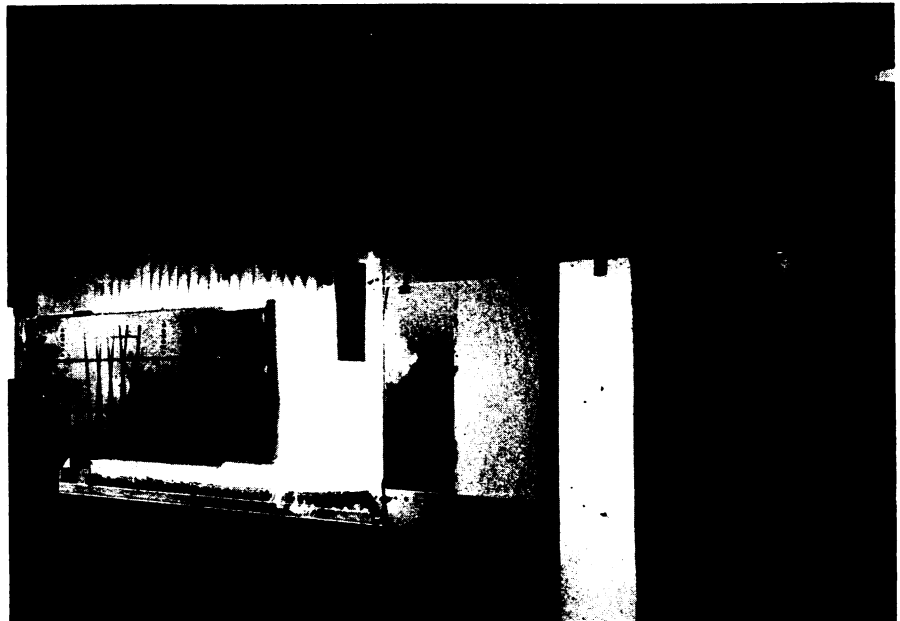
Reverse Thrust Stops High-Speed Turbojets

See Front Cover

► A WAY of stopping high-speed turbojet airplanes during landing has been developed by the National Advisory Committee for Aeronautics. The new device was demonstrated at the Lewis Flight Propulsion Laboratory, Cleveland.

It will make possible the use by modern jets of the relatively short runways of today's airports.

A double set of blades are locked inside the tail part. When these are moved into the propelling stream of hot gases, a reversal in thrust occurs. This acts as a brake,



HIGH-TEMPERATURE RESEARCH—A portion of an aircraft wing is exposed to intense heating from incandescent carbon rods in investigations at the NACA's Langley Aeronautical Laboratory. Such tests provide data on heating at flight speeds many times the speed of sound.

giving the same effect as a reversal of airplane propellers that is familiar to airline passengers in their landings. These blades are closed and tucked out of the way when the jet plane is actually in flight.

In the demonstration, a jet plane was actually made to move backwards on a landing strip through the use of this device, which is shown on the cover of this week's SCIENCE NEWS LETTER.

To provide wheel brakes of sufficient size to stop jets in their landing runs would require too much weight.

Aeronautical designers are looking forward to long-range missiles that will travel at the high speeds of 6,600 miles per hour. The temperatures reached at such speeds would be enough to melt any presently known materials. Such aerodynamic heat has been most pronounced when missiles that have climbed outside the earth's atmosphere re-enter it at an extremely high rate. The temperatures thus reached are sufficiently high to vaporize even diamonds.

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PSYCHIATRY

Attendance at School

► MANY A school child who answers "present" at daily roll call is nevertheless absent from school, as many teachers know.

The child is present physically, not playing truant, but he is absent "psychologically." He attends school but stops learning. Yet he is average or above average in intelligence and has had good marks and passed from grade to grade up to a certain point.

The point is when emotional conflicts grow too much for the child to handle. He feels that disaster is about to overtake him and his only defense is to stop learning.

This explanation for psychological absence from school was discovered in the case of five boys by Dr. Mira Talbot and Mrs. Isabelle Henson, psychiatric social worker, of the Board of Education, City of New York. Details of the study are reported in the *American Journal of Orthopsychiatry* (April).

The five boys were treated through psychiatric social work without psychoanalysis. Four of them made a complete recovery and were able to continue learning again.

The fifth was a failure in treatment from the social worker's viewpoint because he gave up school and went to work as soon as old enough. However, he and his mother are satisfied with the results and he is enjoying his work and social life and "acts as though he had been relieved of an overpowering burden."

All five boys had lost their fathers, three through serious illness and death, one through divorce and one through complete domination by his wife. All the boys had been "pressured" by their mothers for academic success and at the same time prevented from achieving it by their mothers who had conflicts of their own. All the

ASTRONOMY

Publish Sky Atlas

► THE FIRST section of a unique sky atlas, result of the most comprehensive survey of the heavens ever attempted, will be published next year.

As outstandingly beautiful as some of these photographs of the heavens are, probably only astronomical observatories and research institutions will place orders for the volume, since the cost is expected to be from \$1,600 to \$2,000 a copy, depending on the total number ordered.

The atlas will include a total of 1,758 14-inch-square photographs, covering all the sky visible from Palomar Mountain, taken with the 48-inch Schmidt telescope of Palomar Observatory. The negative prints will be copies of glass plates exposed in this telescope, each covering an area about as large as the Big Dipper's bowl.

The areas overlap slightly, and each one is photographed twice, on blue-sensitive

and red-sensitive plates, in immediate succession. Some features are present only on plates sensitive to one of these two colors.

The atlas, to be issued in three or four annual sections beginning next year, is the result of the National Geographic Society-Palomar Observatory Sky Survey. Mount Wilson and Palomar Observatories are jointly operated by the Carnegie Institution of Washington and the California Institute of Technology.

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PUBLIC HEALTH

TB Major Problem Among Merchant Seamen

► TUBERCULOSIS IS a major problem among seafarers, an expert committee sponsored jointly by the World Health Organization and the International Labor Organization reports.

Crowded living conditions on board ship favor the spread of the disease. So do long voyages during which adequate treatment is not available. Visits to ports where there may be much more than the average amount of tuberculosis also favor its spread among seamen.

For these reasons, the committee recommended that all new men entering the merchant marine should be examined for tuberculosis, and that everything possible should be done to prevent their going to sea until the results of the examinations show they do not have TB.

Periodic reexaminations and rehabilitation of tuberculous seamen so they can return to the sea or to other work were further recommendations of the committee.

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