

## PSYCHOLOGY

## Improve Care for Insane

► THE SAME HOSPITAL atmosphere and similar types of custody and treatment should be provided for "criminally insane" patients as for other mentally ill persons.

This recommendation is made by Prof. F. LeGrande Magleby of the University of Utah on the basis of a poll of superintendents of state hospitals. Prof. Magleby reports his findings in *Mental Hygiene* (July), publication of the National Association for Mental Health.

Fewer than half of the criminally insane are more violent or dangerous than the average non-criminal patients in state hospitals, is the opinion expressed by 46 of 63 superintendents. Only five believe that all the criminally insane are more violent or dangerous than the average non-criminal patients.

"Hardly a day goes by in a big mental hospital," comments one superintendent, "that someone does not become combative and occasionally one may lose his life."

"There is not a single state hospital," said another, "which does not have many paranoid schizophrenics, who are oftentimes more dangerous than the ones in the criminal department."

Only 19% of 6,578 criminally insane pa-

tients in 51 state hospitals are classified as guilty of or awaiting trial for murder. Other patients were charged with forgery, theft, drunkenness, perjury, attempted suicide and other offenses.

It was the opinion of 39 superintendents (67% of those reporting) that fewer than half of the criminally insane in state hospitals are more apt to attempt to escape than average non-criminal patients.

Present practice varies greatly in treatment of the criminally insane. The Colorado and New Mexico state hospitals provide similar types of custody and treatment for the criminal and non-criminal patients. In some instances they work side by side on hospital farms or shops.

At Rusk, Texas, by contrast, the majority of the criminally insane are housed in separate buildings which are completely surrounded by two "escape-proof" fences topped by electrically charged wires.

One superintendent reports that he has among his "criminally insane" a 10-year-old boy who killed another person. His behavior in the hospital is quite acceptable and he attends classes, social activities, recreation, etc.

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## PSYCHIATRY

## Study Schizophrenic Brain

► EVIDENCE that schizophrenia may be the result of chemical immaturity of the nervous system has been offered by a Harvard research scientist.

Adult schizophrenics were found to have considerably less neuraminic acid, a component of the brain's gray matter, in the spinal cord fluid than do nonschizophrenics, Dr. Samuel Bogoch of the department of psychiatry, Harvard Medical School, and neurochemical research laboratory of the Massachusetts Mental Health Center, Boston, reports in the *Archives of Neurology and Psychiatry* (Aug.), published by the American Medical Association.

There have been many attempts to show some chemical cause of schizophrenia through the study of blood and urine, but there has been no definite demonstration of a chemical disorder in the central nervous system proper, he explained. This evidence opens new avenues of investigation into possible chemical causes of schizophrenia.

The levels of neuraminic acid in the cerebrospinal fluid of adult schizophrenics is "comparable only to values found in some children under seven years of age," Dr. Bogoch declared.

The low values in adult schizophrenic patients may indicate a form of chemical immaturity that would correlate well with clinical evidence of a failure of psychological maturity in the schizophrenic.

Dr. Bogoch studied the neuraminic acid concentrations in the cerebrospinal fluid of

29 adult schizophrenic patients; 72 children under seven years of age; 29 children between the ages of seven and 15, and 65 non-schizophrenic adults.

The exact function of neuraminic acid in the nervous system is not definitely known, he added. It appears to play some role in the function of the "blood brain barrier," which helps maintain the special environment of the brain.

This new theory can be proved or disproved, Dr. Bogoch said. Tests are now underway to determine the effect of the administration of neuraminic acid itself and of neuraminic-acid-containing substances to psychotic patients.

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## BIOLOGY

## New Antibiotic From Streptomyces Fungus

► DESERT SAND may have yielded another antibiotic to help fight disease.

Desertomycin, as the new antibiotic is called because the *Streptomyces* fungus that produces it is found in African desert sand, has a "very significant" cell-killing or cytotoxic effect, four Hungarian scientists report in *Nature* (Aug. 9). Test tube experiments show that it inhibits the life-activity of leukemic cells.

The antibiotic may prove to be effective against some of the many disease-causing organisms now becoming resistant to penicillin and streptomycin.

Flavofungin, an antibiotic, was reported earlier as being produced by the same fungus, *Streptomyces flavofungini*.

J. Uri and R. Bognar of the University of Debrecen, I. Bekesi of the Hungarian Academy of Sciences, and B. Varga of the Pharmaceutics Factory "Hajdusagi," Debrecen, made the report.

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## CHEMISTRY

## Rubber Holds Properties At Temperature Extremes

► A SYNTHETIC rubber is unharmed by oils and aviation fuels, and retains its properties at high jet aircraft temperatures, as well as at very low temperatures.

The nitrile silicone rubber maintains its strength at temperatures ranging from 100 degrees below zero Fahrenheit to 500 degrees above.

Most important to America's national defense program, however, is the rubber's resistance to oil, kerosene and aviation fuels, making possible new designs of gaskets, fuel lines and other components of modern aircraft.

The latest entry in the rapidly growing field of specialty silicones was demonstrated by the General Electric Research Laboratory of Schenectady, N. Y.

Although many of the individual properties of the new rubber are found in other recently developed synthetics, the GE product is the first to claim marked oil resistance at such a wide temperature range of operation.

Science News Letter, August 23, 1958



**OIL RESISTANCE**—Dr. Ben A. Bluestein of General Electric's silicone products department, Watertown, N. Y., shows how oil-resistant the new rubber (left) is compared with ordinary silicone rubber. Both samples were the same size before being placed in a jar of jet engine fuel.