

GENERAL SCIENCE

Metrazol Treatments Cure By "New Deal of Nerve Ends"

Some of Old Nerve Endings and Junctions in Sick Brains Are So Injured by Drug That They Are Replaced

DISCOVERY that metrazol "cures" sufferers from the usually hopeless mental disease, schizophrenia or dementia precox, by bringing about "a new deal of nerve endings" within the brain was announced by Dr. Carl C. Speidel, University of Virginia anatomy professor, at the meeting of the American Philosophical Society in Philadelphia.

Hundreds of mentally sick patients, doomed to a lifetime in the unreal world of the insane, have been shocked back to sanity and restored to normal life by metrazol treatments, since their introduction by Dr. Laszlo von Meduna of Budapest, Hungary. Scientists, however, have so far had no exact explanation of how the drastic treatment achieved its spectacular results.

What happens, it now appears from Dr. Speidel's investigations, is that some of the old nerve endings and junctions in the sick brains are so injured by the metrazol that they degenerate and are lost. New, healthy nerve endings and junctions then grow to replace the ones lost by degeneration. As a result of this new deal in nerve endings in the brain, the patient is equipped with brain nerves that can carry on mental functions in a normal manner.

Dr. Speidel's discovery of the new deal in nerve endings following the metrazol shock treatment was made by giving mild, moderate and severe metrazol treatments to frog tadpoles and watching the effects on the nerves of these tiny animals. Such observations cannot be made of the nerves in the sick brains of human patients, but Dr. Speidel has perfected a technic for observing directly under the microscope the living nerves of frog tadpoles as they grow and as they regenerate after injury.

When metrazol treatments were given the tadpoles, Dr. Speidel saw typical changes of irritation and injury take place in their nerves. Variable lengths of the nerve endings were lost by degeneration and in extreme cases a whole cluster of nerve endings was lost.

Slightly injured nerve fibers recovered quickly after the treatment and appeared

to be normal after a day or two. Severely injured nerve fibers which lost appreciable lengths of nerve substance by degeneration underwent the typical stages of regeneration.

"New endings grow out to establish connections which are different from those before metrazol treatment," Dr. Speidel reported.

"In other words, the metrazol treatment has brought about a 'new deal' of nerve endings.

"These observations strongly suggest that similar changes probably take place in nerve endings located within the brain at the synapses between nerve cells. On this basis the improvement in human mental conditions after metrazol injections is correlated with the breaking down of some of the old nerve endings and synapses, and the establishment of new ones."

Science News Letter, November 25, 1939

Totalitarianism Examined

TOTALITARIAN theories of war and education were put on the dissecting table by Prof. Walter Thomas Woody of the University of Pennsylvania and Prof. Hans Kohn of Smith College.

The totalitarian powers actually invert the war philosophy of Clausewitz, favorite philosopher of militarists, Prof. Kohn pointed out. Clausewitz held that war was a continuation of politics by other means, and the hard-boiled old realist Bismarck agreed with him and acted on the principle.

Totalitarians, however, go far beyond that "blood-and-iron" doctrine. They regard war, not peace, as the normal state of nations; with them politics is a continuation of war, "while what is called peace is only a pause between the real events, preparing for them, subservient to them."

Prof. Woody, taking up the question of education in totalitarian states, sees them pursuing a policy equally hostile to "the universalism which sought to unify Europe in the Middle Ages and the liberal educational principles that stemmed

from early rationalism and from naturalism of the eighteenth and nineteenth centuries."

This would appear to explain the simultaneous attacks, conducted in all totalitarian countries, against organized religion on the one hand, and on the other against freedom of speech, freedom of the press, and academic freedom in the universities.

Science News Letter, November 25, 1939

War Gas Anemias Explained

THE ACUTE anemias that follow gassing with arsine, treatment with the new chemical remedy, sulfanilamide, and the anemia that accompanies jaundice of the newborn, one form of heart disease, and numerous other conditions, have been explained by discoveries reported by Drs. Thomas Hale Ham and William B. Castle, of Boston City Hospital and Harvard Medical School.

Stagnation of blood within the veins is believed to be the mechanism that causes the anemia, their studies show. This condition makes the red blood cells swell, grow fragile and finally disintegrate with loss of the red coloring matter, hemoglobin. Such stagnation of the blood normally occurs in the spleen and



X-RAY HEART BEAT

This 100,000-volt X-ray camera works automatically with nine electrical relays which make up its mechanical "brain." At its formal dedication at the Samaritan Hospital, Troy, N. Y., the visitor is having his heartbeat photographed.