

MEDICINE

Insulin Shock Slows Down Brain Activity, It Is Found

Thinking Part of Brain, Which Requires Largest Fuel Supply, Is First To Be Affected By the Injection

PATIENT suffers from severe form of insanity, schizophrenia, called "split personality" by the man in the street. Viennese doctor finds that powerful shock from insulin, life-saver to diabetes, effects remarkable cures.

Thus the first two chapters of "perhaps the most important advance in the treatment of mental disease in many years." Now a third chapter is added:

Insulin shock slows brain, particularly conscious regions, down to tiny fraction of former activity.

This was the report (*Science*, Sept. 17) by four psychiatrists, Prof. Harold E. Himwich and Dr. J. F. Fazekas of Yale University and Drs. Karl M. Bowman and Joseph Wortis of Bellevue Hospital. Their work may lead to an explanation not only of the cure but of the way in which the brain works as well.

Tests on the blood entering and leaving the brain during the shock revealed that the supply of glucose, the brain's fuel, and oxygen with which to burn that glucose, are reduced by two-thirds,

the four research scientists declare.

Sixty-five per cent. of the oxygen and almost five-sixths of the sugar ordinarily present are not available to the brain in the presence of the shock dose of insulin. "Insulin, in reducing the blood sugar, deprives the brain of its food-stuff," thus slowing down the rate of activity of the brain.

Metabolism of the entire brain, the authors remark, is depressed by the injection of the insulin, but since the rate of activity differs in different parts of the brain, it is manifested first in that part of the brain requiring the largest fuel supply, the cerebral hemispheres, where conscious actions are controlled.

Support for this view of the effect of the radical but effective insulin cure is found in the fact that coincident with the shock and the slowing down of the brain, normal reflexes gradually give way to a state in which the patient makes no response to ordinary stimuli, the four find.

Science News Letter, October 2, 1937

PSYCHOLOGY

War Seen as Mental Ill Attacking Whole Nations

WAR IS a mental disease that attacks nations instead of individuals, in the opinion of scientists taking part in a special session of the American Psychological Association meeting. The special session was devoted to a consideration of human conflict.

Society's mental ills, like those of the individual, are caused by the frustration or inability to satisfy certain deep-seated human needs, these scientists believe.

"Labor strife, class antagonisms, and wars between nations are as much products of these frustrations as are the emotional maladjustments and neuroses of the individual," declared Dr. Robert R. Sears, of Yale University's Institute of Human Relations.

Much progress toward the prevention of mental disease in the individual has been made by the recent mental hygiene program, but prevention of the mental diseases afflicting nations and groups of people in society must, except for a lucky accident, wait for a better scientific understanding of their causes and the natural laws controlling them. Dr. Sears called the reports at the special session a beginning to that end.

"In this era of violently conflicting theories about human affairs, with opinion and prejudice fighting for control over reason, this return to experimental method cannot help but be a healthy influence," Dr. Sears said.

Science News Letter, October 2, 1937



TOMB OF DISCOVERER

Here lies Hsu Shih, a Chinese alchemist who sought magical islands where life would be eternal. He found Japan.

ANTHROPOLOGY

Scientific Expedition From China Helped Found Japan

ONE ASPECT of the present conflict between China and Japan is that the latter with its latest technologic aids to warfare, represents the return, in a 2,000-year delayed sense, of ancient Chinese scientists.

While the Greeks coined the present word for alchemy, written records show that the Chinese practiced alchemy too and that there, as in the western world, science got its start in searches for the elixir of life and the transmutation of base metals to gold.

Emperor Shih Huang Ti, whose Great Wall is among the battle sites of the present-day conflict, was among those who sought, through his alchemists, to find the secret of immortality.

In a recent report to the American Chemical Society Prof. Tenney L. Davis of Massachusetts Institute of Technology, aided by the Japanese scientist Rokuro Nakaseko, described from old manuscripts how Emperor Ti was influenced by two of his favored alchemists to send a large expedition to search for and colonize three mythical islands whereon the inhabitants would dwell in peace and with immortal life.

The expedition sailed but never re-

turned. The leading scientist—pardon, magician—became the king of the new country. Emperor Ti paced the shores of China for three years seeking his expedition to what has since turned out to be Japan.

Thus ancient Chinese scientists helped found Japan. If present efficiency of operation is any indication, the descendants of those scientists are equally proficient in getting what they want.

Science News Letter, October 2, 1937

PUBLIC HEALTH

Military Activity in China Has Increased Neurosyphilis

NEUROSYPHILIS has increased in China as a result of the official and unofficial warfare that has disturbed that country for the past quarter century, Dr. J. L. Maxwell of the Henry Lester Institute of Medical Research in Shanghai reports. The institute has now completed its third year of work.

"During the last 25 years a licentious soldiery has overrun the countryside and has raised the incidence of neurosyphilis both by spreading infection and, according to Dr. Maxwell, by inducing a state of nervous strain in the rural population," states a resume of the report in the *Lancet* (Sept. 11).

Typhoid fever, a rarity among the Chinese population 30 years ago, has now become one of the commonest causes of admission to hospitals and at

the top of the list of deaths from infections. Medical and health authorities cannot explain why this disease should have increased so during the period in which cleanliness and water supplies have "vastly improved" along the coast and inland towns.

Appendicitis has also increased greatly, particularly among the wealthy city population. This, it is thought, may be due to changes in diet.

The medical institute has carried out studies of dietetic defects and nutritional diseases in the rural districts and among the factory workers in towns. More than half of the younger factory workers show signs of malnutrition, mainly "from lack of animal fats and first class protein in their diet."

Commenting on the work of the in-

stitute, the editor of the *Lancet* states:

"It seems tragic that such valuable work should receive a check. We are glad of an assurance that the institute has so far escaped damage and we may hope that Dr. H. G. Earle and his 30 assistants will soon be free to continue their work unmolested."

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SAFETY ENGINEERING

Grade-Crossing Accidents Hit Six-Year High

A NEW version of the "man-bites-dog" story is told in the account of last year's grade-crossing battle between road and rail.

The once popular sport of racing the locomotive has given away to crashing into the sides of sleepers or freight cars going by at night, accident figures reveal. More than four-fifths of accidents at grade crossings at night last year occurred in that fashion.

More than half of the accidents reported in Illinois occurred at crossings protected by gates, signals or watchmen. One railroad reports that heedless motorists crashed into more than 500 of its gates.

Deaths from grade crossing accidents reached the highest total in six years last year, when 3,792 grade crossing accidents, more than half of which occurred at night despite lighter traffic, took place.

Blame for the increase was placed on the fact that an automobile traveling at night at high speed cannot stop within the distance its headlamps light up. In many cases, even if motorists see the warning gate, the car cannot be stopped in time.

Directional floodlighting of grade crossings and the sides of slow-moving freight trains has been successfully tried by a midwestern railroad. The crack Chicago and Northwestern "400" train between Chicago and Minneapolis has been equipped with a powerful beam that flashes its warning 2,000 feet ahead.

Train-actuated barriers that rise out of the road have also been tried, it is reported. One device works as follows:

Five seconds after the warning lights flash, the barriers rise to a warning height of four inches. Should a motorist be too near to stop in time he can still safely pass over the barrier, which can be depressed once. Two seconds later, however, the barrier rises to a height of nine and a half inches and locks in place. A vehicle hitting the barrier,



PROTECTION

Motorists who persist in racing against the locomotive engineer and the Grim Reaper may find this life-saving device protecting them in spite of themselves. A barrier that can stand an impact of 3,000,000 pounds rises out of the road. It is operated automatically.