

MEDICINE

Gland Role in Mental Ills

Adrenal hormone discovery may lead to more successful treatment of mental sickness if further research reveals the relation between glands and emotional stress.

► A GLAND DISCOVERY that gives a new lead to the mental disease problem is announced by Dr. Hudson Hoagland, Dr. Gregory Pincus and Fred Elmadjian of the Worcester Foundation for Experimental Biology.

In the mentally sick, the Worcester group finds, the adrenal glands respond to stress in a way strikingly different from their response to stress in normal persons. The adrenals are small organs that sit like cocked hats one atop each kidney. They produce two hormones, epinephrine, also called adrenalin, and cortin. The cortin-producing part of the gland, which is not under nervous control, is the part that responds differently under stress.

A count of certain white blood cells called lymphocytes gives one measure of the activity of the cortin-producing part of the adrenals. In normal persons, operation of a pursuitmeter under simulated high altitude flying conditions may drop the lymphocytes 40%. A rise of like amount on the average occurs in mentally sick patients when operating the pursuitmeter under the same conditions. The amount of stress this operation involves has been called by Army pilots as tiring as close formation flying under poor weather conditions.

The mentally sick are persons who have broken psychologically under the stresses of life. It now appears that the functioning of certain glands in the mentally sick is inadequate to meet stress situations. Whether the gland failure is responsible for the mental sickness has not yet been determined, but scientists have long been searching for such a physiological failure to explain the psychological break.

More successful treatment of mental sickness might follow the important lead which the Worcester discovery gives. At present the scientists are trying to localize the mechanism responsible for the gland failure. It may be in any of three places: 1. the outer part, or cortex of the adrenal gland which produces cortin; 2. the pituitary gland in the head which normally stimulates the adrenal glands to produce cortin; 3. the hypothalamus in the base of the brain which

controls the pituitary gland. Since the hypothalamus is intimately related to emotional life, a defect in it could have widespread repercussions in both the psychology and physiology of the patient.

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GENERAL SCIENCE

Only Two U. S. Delegates To UNESCO Are Scientists

► ONLY TWO of the 45 U. S. delegates and counsellors at the United Nations Educational, Scientific and Cultural Organization general conference in Paris are representatives of the natural sciences. They are Dr. Arthur H. Compton, chancellor of Washington University, St. Louis, and Dr. W. Albert Noyes, president-elect of the American Chemical Society.

This small proportion compares unfavorably with the proportion of scientists in other delegations. France, for example, has seven scientists among the 35 members of her delegation, and Australia has three out of 10.

In fact, it may be said that among the more important countries represented, the U. S. has the lowest representation of science of any delegation.

In view of the great weight which the U. S. delegation's views carry in the councils of UNESCO, it is feared that this may adversely affect some of the scientific projects now before the conference.

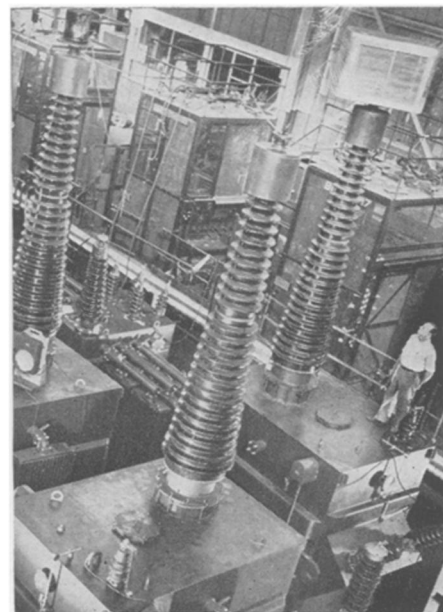
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INDUSTRY

Batteries Are Scarce Because of Lead Shortage

► THERE IS A HARD winter ahead for automobile owners whose cars need new batteries. The shortage of batteries is due to a shortage of lead, and little relief is expected in the next few months.

The United States is one of the world's greater lead-producing nations but even in the lush production years two decades ago did not mine enough to meet all domestic needs. It imported about one-



TRANSFORMERS—Built to step-up electric current to as much as 500,000 volts these transformers will serve the world's most powerful transmission line. Westinghouse Electric Corp. photograph.

eighth of the total consumed, which included recovered lead as well as metal just from the ground.

Since before 1930, American production has been decreasing more or less steadily. The average annual lead refined from ore during the 1925-29 period was approximately 660,500 tons. In 1944, less than 395,000 tons were produced. For 1946 the production is estimated at approximately 335,000 tons.

America each year uses great quantities of reprocessed old lead. This secondary recovery in the 1925-29 period was 280,000 tons a year. Much larger recovery prevailed during the war years, but it had dropped to 332,000 tons in 1944. Recovery this year is predicted as much less, but figures are as yet unavailable.

The decrease in lead production in the United States is due to depletion of ore deposits in certain districts, and to manpower shortage during the war and since. Strikes have been a factor. Shortages abroad are due to lack of equipment and manpower resulting from war devastation. Little lead may be expected for some time from Germany, Yugoslavia and Burma, and even lead imports from Mexico will be curtailed.

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