

ENDOCRINOLOGY

New Pituitary Hormones Discovered and Predicted

One New Substance Restores Wasted Adrenal Cortex; Possible Diabetogenic Hormone Produces Diabetes

NEW HORMONES from the pituitary gland, some just discovered and others not yet found but predicted, were described at the Congress of American Physicians and Surgeons in Washington last week.

One of these new hormones is an entirely new substance, different from any other ever obtained from the pituitary gland. It was announced by Dr. Herbert M. Evans of the Rockefeller Institute, New York City. This substance greatly increases the effect of one of the female sex hormones and apparently has a sex-stimulating effect of its own. But it is so new that Dr. Evans was not yet ready to discuss its significance.

Another new pituitary hormone apparently presides over the vitally important cortex of the adrenal glands, Dr. Evans pointed out in reviewing the work that scientists all over the world have been doing on the pituitary gland.

When the pituitary, by a very delicate operation, is removed from its protected location in the center of the head, the cortex of the adrenal gland wastes away. Without this part of the adrenal gland, or the hormone it produces, cortin, life cannot go on. A certain extract of the pituitary gland, however, restores to normal the adrenal cortex that had wasted away upon removal of the pituitary gland.

If the research of the next few months shows this pituitary extract to be distinct from all the other pituitary hormones, it will be the new adrenaltropic hormone of the pituitary, Dr. Evans predicted. The relation of this pituitary-adrenal situation to the adrenal cortical hormone essential for life is not yet clear, he added.

Another dramatic development of the anterior pituitary story is the relation between this gland and the body's use of sugar. Dr. B. A. Houssay of Buenos Aires showed that the death which usually occurs soon after the pancreas is removed can be either prevented or averted for a long time, if the pituitary gland is removed at the same time as the pancreas. The latter organ is the one

that contains the insulin-producing islands of Langerhans. When this organ does not produce enough insulin, diabetes follows.

Now Dr. Evans and his associates at the University of California have found that a true diabetes can be produced in dogs merely by giving them a certain extract of the pituitary gland. This together with the work of Houssay and other scientists seems to establish the fact that there is a relation between the pituitary gland and the body's use of sugar. Dr. Evans and associates are now at work on the task of distinguishing this possible new hormone, the diabetogenic hormone, from the others of the pituitary gland.

The tendency toward the coinage of new pituitary hormones is being vigorously resisted by him and by other scientific workers, Dr. Evans declared in conclusion.

ELECTROTHERAPY

Largest X-Ray Tube Begins To Battle Against Cancer

THE MIGHTIEST weapon yet to enter the war against cancer was put in operation at the Mercy Hospital Institute of Radiation Therapy of Chicago. It is a new 800,000-volt X-ray tube which, operating on a current of 1/100 of an ampere, is estimated to emit radiation equal in quantity to that from \$75,000,000 worth of radium.

The giant tube is 14 feet long and is composed of two sections. It was built at Schenectady by Dr. W. D. Coolidge and his associates. The apparatus exceeds by 100,000 volts the working voltage of any other installation known to be in regular operation, the General Electric Co. says, and has a current capacity twice as great as that of any other very high voltage X-ray tube and machine.

The building in which the apparatus

is installed, built specially for it, is 62 feet long, 32 feet wide, and 36 feet high. Over forty tons of lead were used in construction for protection against the cumulative effects of the X-rays upon those who are working in the laboratories constantly.

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REFRATORIES

New Silicon Carbide Brick For Electric Furnaces

THE DEVELOPMENT of an improved silicon carbide refractory brick for electric furnaces was reported to the Electrochemical Society by G. S. Diamond, Buffalo, N. Y., chemist. The expansion of the new brick when heated is exceptionally low, and is only one-ninth that of the silica brick usually used. It is expected that the new refractory will find use in electric furnaces used in melting various kinds of metal, particularly those not containing iron.

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See Front Cover

The room in which the patient is placed, under the anode end of the tube, is lined with 22 tons of lead. Through a periscopic device, the operator has the patient in full view during the treatment, and may converse with him through the same opening. Automatic safety devices throughout the installation are prominent. If the door to the patient's treatment room is accidentally opened, the X-ray is automatically cut off; it is also shut off if the door to the high-voltage room is opened or left open.

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