MEDICINE

Study of Pituitary May Yield Thyroid Disease Treatment

A NEW treatment for Graves' disease or exophthalmic goiter may result from studies of the pituitary gland reported by Drs. J. B. Collip and Evelyn M. Anderson of McGill University, Montreal, to *The Lancet*.

Although Graves' disease is a malady resulting from overactivity of the thyroid gland the McGill investigators have previously found that it may be produced in animals, at least, by a hormone from another gland, the pituitary. Injections of this pituitary gland hormone produce typical symptoms of Graves' disease, including the familiar protruding eyes, enlarged thyroid gland and elevated metabolic rate. This latter indicates that the energy transformations always going on in the body are proceeding at a faster rate than normal.

Metabolic Rate Drops

This metabolic rate drops after continued injections of the thyroid-stimulating pituitary hormone, eventually becoming much lower than normal, Drs. Collip and Anderson have now found. The animals apparently develop resistance to the hormone. When blood from these resistant animals was injected into normal animals and into animals having no pituitary glands, the thyroid-stimulating hormone had no effect.

Animals that had become resistant to the thyroid-stimulating hormone, however, responded to a dose of dried thyroid gland with the rise in metabolic rate characteristic of an increase of thyroid substance in the body. This indicates that the resistant substance in the blood acts between the thyroid gland and the pituitary gland, checking the effect of the latter on the former, and not between the thyroid gland and the other body tissues.

Far From Application

Present treatment of Graves' disease is directed toward checking the effect of the thyroid gland on the tissues by removal of part or all of the gland. The indications are that future treatment may be directed toward checking the thyroid-stimulating hormone of the pituitary with serum from resistant animals. However, much more investigation will be needed before anything like practical application in humans can be attempted.

"Further investigations along these lines are being made," Dr. Collip stated in his scientific report.

He and his associates also have obtained evidence that a similar substance capable of checking the effects of other pituitary hormones may develop and they are investigating this problem also.

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MILITARY SCIENCE

Air Raid Menace Debunked By Soldiers and Scientists

WAR CLOUDS pile up and darken on the horizons of Europe and the Far East; yet even as their first far-off menacing lightnings flash, there arise counter-prophets to deny the worst of the impending woes we have been taught to expect from a "next war."

Gas attacks upon cities by swooping airplanes are not going to wipe out whole populations. So leading students of military science are now insisting.

Maj.-Gen. Harry L. Gilchrist, who has just retired as head of the chemical warfare arm of the U. S. Army, has long been a disbeliever in the military practicability of airplane-gas attacks on cities; and recently Capt. B. H. Liddell Hart, well-known British military historian and critic, has entered a denial in similar vein.

Comes now a Swiss military engineer, Capt. W. Volkart, to add his voice of doubt to theirs. Admitting the possibility of severe material damage and deep effects on popular morale by airplane bombing raids on limited objectives, such as arsenals, factories and railway centers, he registers thorough skepticism as to the likelihood of success of any attempt to wipe out a whole city by a mass attack with gas bombs.

To make the case concrete he chooses the city of Zürich, with a population of about a quarter of a million, occupying an area of some 17 square miles, of which about six square miles is really densely inhabited. To depopulate a given area and keep it unoccupiable, Capt. Volkart says, requires a concentration of two grams of mustard gas per square meter (roughly one ounce to 15 square yards). With a little pencil-and-paper work, he reaches the figure of 150 tons of mustard gas as the minimum necessary to devastate the densely populated part of Zürich.

The typical heavy night bombing plane carries a ton of combat load. Thus 150 planes could turn the trick, flying under ideal conditions, without opposition, and every bomb scoring a perfect hit. But, Capt. Volkart objects, under wartime conditions such hundred per cent. success could not be expected. Allowing for accidents, defensive fighting by combat planes and anti-aircraft guns, missing of targets, reduction of gas efficiency by ground wind, and other factors, he estimates that the number of planes needed for such a raid would be nearer 500 than 150—and no European power, he says, has 500 heavy bombers at present.

Weather alone, Capt. Volkart continues, would constitute a considerable defense measure. Fog would make a raid impossible, low clouds reduce its efficiency, rain or snow absorb the gas, freezing weather slow down its evaporation and make its elimination by the local fire department easy.

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ZOOLOGY

Rare African Antelopes Mounted in Field Museum

BONGOS, the only large antelopes that shun the open grassy plains and live in the heavy forests, especially the dense bamboo thickets, shy, unapproachable, rarely seen even by the most experienced hunters and explorers, are to be familiar sights henceforth to anybody with sufficient curiosity to visit the case in which a notable new group is mounted at the Field Museum of Natural History in Chicago.

This new group, believed to be the only museum group of these animals in the world, was opened to public view a few days ago. The five specimens are the gift of Capt. Harold A. White of New York and the late Maj. John Coats, of Ayrshire, Scotland, who jointly financed and led to Africa the expedition which collected them. They were also successful in making the first motion pictures ever taken of living bongos.

Full-grown bongos range from 400 to 600 pounds in weight. The bongo is