

## ENDOCRINOLOGY

**Sex Gland Stimulating Cells of Pituitary Found**

► DISCOVERY OF the special cells in the pituitary gland in the head which stimulate the male and female sex glands to produce their hormones was announced by Drs. Agnes S. Burt and Joseph T. Velardo of Massachusetts General Hospital and Harvard Medical School at the meeting of the American Association for the Advancement of Science in Boston.

These cells are believed to play a part in the striking, if temporary, improvement in some forms of cancer after sex hormone treatment.

The cells are called amphophils. They consist of a protein combined with a carbohydrate and when seen under the microscope, show a few granules, but not as many as two other pituitary gland cells, the basophils and acidophils.

The amphophils were discovered through post mortem examination of pituitary glands from 18 patients. One-half of each gland was used in tests on rats that had had their pituitary glands removed. The other half was studied under the microscope. This gave the scientists a way to learn which cells from the body's "master gland," the pituitary, controlled which of the other glands. In six pituitary glands, there was a large amount of sex gland stimulating hormone. In six, there were smaller amounts, and in six there was little or none. The number of amphophil cells in the pituitary glands decreased as the amount of sex gland stimulating hormone decreased. This suggested that the amphophils are the ones that produce the sex gland stimulating hormone.

A highly significant reduction in amphophils was found in pituitary glands from women with breast cancer who had been given female hormone treatment. This, the scientists pointed out, suggests that part of the good results of female hormone treatment in such cases may come because the female hormones suppress the output of some of the pituitary gland hormones.

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**Adrenals Help Adapt To Cold Climate**

► THE ADRENAL glands, famous for producing anti-arthritis cortisone, apparently help people adapt to life in a cold climate, such as the Arctic.

Using eosinophil cells in the blood as an index, Miss M. Eileen Denison and Dr. M. X. Zarrow of Purdue University, Lafayette, Ind., found that these glands become overactive immediately upon exposure to cold, but as the animal adapts to a cold environment, the adrenals return to a normal rate of activity.

Their studies were carried out under a grant from the Office of Naval Research and reported at the meeting of the American Association for the Advancement of Science.

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**HOVERING HELICOPTER**—Information on an airplane's position, in the form of output signals from the Raydist location system shown at left, are fed into an autopilot located in the helicopter to keep it hovering where desired.

## AERONAUTICS

**Helicopter Service in Fog**

► FUTURE INTER-CITY helicopter service, which may permit you to fly through pea-soup fog virtually to the doorstep of your destination, has been brought one step nearer by a new radio device tested at the Patrick Henry Airport, Warwick, Va.

The navigational aid permits the tracking of helicopters with extreme accuracy. It even has landed a helicopter so near two coins hidden near the airport runway that the pilot could scoop them off the ground without climbing out of his seat.

Called Raydist, the Hastings Instrument Company's development is visualized as a possible aid to stratavision—the proposed system of spreading television programs over a larger area by transmitting them from high-flying airplanes. The Radist aid could keep a helicopter pinpointed above a certain spot on the ground.

It is also believed that the device could be used in surveying and mapping work, and in automatic inter-city mail deliveries. It may have military implication also, particularly in rescuing battle casualties from the front lines.

The Radist system uses a set of ground-based radio transmitters not handicapped by line-of-sight conditions. A small transmitter is carried in the helicopter. Instruments compare the radio waves from the ground stations and the helicopter. This yields the position of the aircraft.

When tied in with an autopilot, the device permits the helicopter to be flown completely from the ground and with great accuracy to its destination. The landing point is figured out in terms of its coordinates on a map, then the 'copter directed.

Within the ring of ground-based radio stations, the system is accurate to about five feet. Thus, if the "lay of the land" at the landing site is known, no television camera is needed to show the remote pilot what the craft is settling in.

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## ANIMAL NUTRITION

**Sugar Tests Show Rats Know Calories**

► RATS KNOW their calories, it seems from experiments by Drs. William J. Griffiths Jr. and T. J. Gallagher of the University of Mississippi.

When given their choice between sugar in water and the equally sweet but calorically useless saccharine in water, they take about as much of one as of the other when at rest. But when forced to swim in a tank until exhausted, they take on the average about 10 times as much of it as they do when at rest, and take a little less of the saccharine solution than when at rest.

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