

ENDOCRINOLOGY

Find Pineal Hormone

Melatonin, the first hormone isolated from the pineal gland, is expected to provide scientists with some answers to the mysteries surrounding this gland.

► THE FIRST hormone ever isolated from the mysterious pineal gland has been discovered.

The hormone has been named Melatonin. The function of the new hormone has not been determined either in humans or in animals, according to five scientists at the Yale School of Medicine.

However, tests in frogs show Melatonin lightens the skin shade and reverses the darkening effect of other hormones. The Yale investigators are working on experiments to see if the hormone has any connection with the skin cancer known as melanoma.

More than 250,000 beef pineal glands were required to isolate the hormone because the gland produces a very minute amount of the hormone, the scientists say. This limited quantity of Melatonin, at present, delays many of the experiments for testing it. Melatonin belongs to the chemical family known as hydroxyindoles.

Tests to determine if Melatonin was present in other beef glands and organs

were all negative, Drs. Aaron B. Lerner, James D. Case, Yoshiyata Takahashi, Teh H. Lee and Wataru Mori, all of the Yale section of dermatology, say. Their report appears in the *Journal of the American Chemical Society* (May 20).

Dr. Lerner first decided to work on the pineal gland several years ago when he was conducting research on factors that lighten and darken skin, particularly frog skin used in laboratory experiments. Melanocyte stimulating hormone (MSH) from the pituitary gland is the most potent skin darkener, while adrenalin and serotonin lighten the skin.

Pineal gland extract had been known to exhibit skin lightening properties, but the exact hormone had never been isolated.

The pineal gland is located deep in the brain of human beings. It is a small, conical-shaped gland about one-half inch in length. The gland has long puzzled medical scientists who still have not discovered its function or purpose in the body.

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SURGERY

Parathyroids Transplanted

Surgeons have met with success in a rare operation, the transplantation of parathyroid glands from one human to another. Two patients gained partially functioning glands.

► THE LIMITED success of transplantation of thyroid and parathyroid glands from one human to another has been reported by two surgeons.

Two adult patients now have partially functioning parathyroid glands.

The first transplant occurred 16 months ago. The second occurred six months ago. Thyroid glands, taken from dead infants, transplanted in both patients have shown no evidence of functioning.

The first patient, a 28-year-old male, whose thyroid and parathyroid were removed when they became cancerous, received the glands of a stillborn infant. Before surgery it had been necessary for him to take 24 grams of oral calcium, 100,000 units of vitamin D and another anti-tetany drug daily.

These drugs were necessary to control tetany, a condition due to decreased parathyroid function, in which cramps, convulsions and muscular twitching occur.

When his condition stabilized following surgery, the calcium dosage was reduced to one to four grams daily, while all other drugs were eliminated. No further symp-

toms have occurred, Drs. George L. Jordan Jr., chief of the surgical service, and Riley P. Foster, both of the Veterans Administration Hospital in Houston, told the American Association of Plastic Surgeons meeting in Dallas.

The other patient, a 53-year-old woman, received thyroid and parathyroid glands from an infant who had died of congenital heart disease. Following surgery, her calcium dosage was cut by two-thirds, other medication was eliminated.

In addition to showing no tetany symptoms, the doctors reported, this patient has reported a considerable return of energy following the transplant operation. The length of time survival will continue cannot be predicted, the surgeons said.

Surgical transplant of parathyroid or thyroid is rare. The first transplant was made in 1952 at the Albert Einstein Medical Center in Philadelphia.

Dr. Jordan transplanted parathyroid glands from a stillborn infant to a 36-year-old veteran one year ago. He is reported to be in good health.

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● RADIO

Saturday, June 14, 1958, 1:30-1:45 p.m., EDT.

"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio network. Check your local CBS station.

Dr. Hugh L. Dryden, director of the National Advisory Committee for Aeronautics, Washington, D. C., will discuss "Space Research."

ROCKETS AND MISSILES

Commission First Navy Talos Missile Cruiser

See Front Cover

► THE FIRST U. S. Navy ship armed with the Talos "muscle missile" has been commissioned.

The U.S.S. Galveston, the second Navy ship named after the Texas city, was formally put into service by Rear Adm. E. R. McLean, commandant of the Fourth Naval District. The command was accepted by Capt. John B. Colwell, skipper of the new vessel.

Designed primarily as a "fleet protection instrument," the Galveston is the only U. S. ship of any kind equipped with the supersonic ship-to-air missile, Talos. Developed by Bendix Aviation Corp., the Talos is capable of delivering an atomic warhead anywhere within a radius of 65 miles.

The Galveston's mission in event of war would be not only to destroy attacking enemy aircraft but also to bombard enemy ships and coastal installations.

The photograph on the cover of this week's SCIENCE NEWS LETTER shows a pair of the Talos missiles. Gunner's Mate 1/C Donald Welch, of Seymour, Tex., makes a final check from the turret hatchway of the Galveston.

The Talos is powered by a ram-jet engine of 40,000 horsepower, giving it a supersonic speed faster than a bullet and a range far in excess of Navy big guns. As auxiliary equipment, the Galveston will mount five- and six-inch guns.

Although fired from only one launcher on the Galveston's after-deck, the Talos missiles can be loaded quickly enough that the second is fired before the first hits its target. Navy officials refused to comment on the number of warheads carried by the Galveston, but hinted that an enemy could not deploy a task force capable of taxing the Galveston's destructive capacity.

If the six-inch guns have to be manned after all the missiles are used, a Navy officer said, the ship is as good as dead.

The actual range of the missile on contact is not now known but will be determined after extensive shake-down cruise tests before the Galveston joins the Sixth Fleet in the Mediterranean later in the year. Since the Talos missile is designed to carry an atomic warhead, its effective range is indeterminate, but of "atomic proportions," the Navy said. That is, even if an enemy sends a large formation of aircraft and spreads them out, the missile can still hit them because of the size of the blast.

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