

medical sciences notes

PROSTHETICS

Implanted capsule to control limbs

Tiny radio stations embedded in the active muscle tissues of disabled or paralyzed persons could be used to control artificial limbs, the movements of an electric wheel chair, suitably equipped doors and light switches. Such a device is under development in London.

A capsule, three millimeters in diameter and 19mm long, would be wholly implanted in a muscle. Electric changes, which occur in muscle tissue when activated, would act as a potential across the capsule, which would transmit the signal to a receiver located on the skin.

Present methods of converting muscle electricity into prosthetic commands rely on direct wire connection, with attendant risk of infection.

Laboratory tests of the capsule at the Center for Muscle Substitutes, West Hendon Hospital, London, have been successful, according to Dr. R. E. Reilly. Trials in animals are about to begin.

PUBLIC POLICY

Senator Hill, research backer, to retire

The last member of the Washington triumvirate that pushed the Government into ever-increasing support of medical research is approaching retirement.

Senator Lister Hill (D-Ala.) announced he will retire in January, 1969, the end of his present term. Of the other two, Dr. James A. Shannon, director of the National Institutes of Health, expects to retire Sept. 1, and Representative John E. Fogarty (D-R.I.) died a year ago.

Senator Hill has spent almost 45 years in Congress. His positions as Chairman of the Labor and Public Welfare Committee and the appropriations subcommittee that handles the budget of the entire Health, Education and Welfare Department, have allowed him to see to it that medical research each year gets more money than before, and usually more money than the researchers ask for—an almost unique event in Washington.

PROPHYLAXIS

Common medicine blocks strontium absorption

A common antacid has been found to inhibit absorption of radioactive strontium in the human body, even if taken after exposure to the dangerous substance.

Aluminum phosphate gel, widely used in the treatment of peptic ulcers, is well tolerated in the body. When taken just before administration of strontium-85, it cuts the amount of absorption by 87 percent. A lesser, but still high percentage of absorption is blocked when the gel is taken a half hour to an hour after exposure to the strontium.

While strontium-85, harmless in the dosages used for testing, was used in the work, the results predict the gel's action against strontium-90, a byproduct of nuclear explosions.

Strontium-90 has a long half-life and is especially hazardous because of its tendency to concentrate in bones, where it can seriously damage the blood-forming marrow.

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The research, supported by the Atomic Energy Commission and the Public Health Service's National Center for Radiological Health, was conducted at the Veterans Administration Hospital in Hines, Ill., by Drs. Herta Spencer, Isaac Lewin and Joseph Samachson.

HYDROPHOBIA

U.S. escapes native rabies deaths

The United States has completed its first year without a single death from rabies originating within its borders.

In each of the four preceding years only one such death was reported. The highest number in recent times was nine deaths in 1956.

Two persons who contacted the disease overseas died in the U.S. during 1967: a 58-year-old woman bitten by a stray dog in Guinea and a 9-year-old boy bitten by a dog in Cairo.

Surgeon General William H. Stewart of the Public Health Service, who issued the report, estimates that some 30,000 persons were treated with rabies vaccine last year.

NEUROLOGY

Heart insulated from emotional shock

A researcher at the University of Washington-National Institute of Health Regional Primate Center in Seattle has located within the brains of African pigtail monkeys the areas that control the heart muscle's responses to emotion. Cutting out these areas insulates the heart from emotional shock.

Orville A. Smith, Ph.D., says these foci—the frontal lobe and hypothalamus—were confirmed in monkeys, and there is no reason to believe they are differently sited in man. The experiments indicate that prefrontal lobotomy—an operation discredited in the 1930's—has an indirect effect on the autonomic nervous system which controls the heart, glands and smooth muscles.

Trained to expect an electric shock to follow a flashing light, normal monkeys showed abrupt increases in heart rate and blood flow when the light began. Lobotomized monkeys, although they could remember what was coming, showed no emotional response to the light; they reacted only to the shock itself.

OBSTETRICS

Low birth weight vs. prematurity

Low birth weight is being proposed as a substitute term for prematurity.

Dr. Peter Gruenwald of Sinai Hospital and Johns Hopkins University, Baltimore, made the suggestion at the International Conference on Prematurity at Fort Lauderdale, Fla.

Dr. Gruenwald says a high proportion of small infants classified as premature are actually full-term but have been affected by intrauterine growth retardation.

The present estimate of low birth weight is four and a half pounds, but Dr. Gruenwald proposes lowering the weight after working out details.

Intrauterine growth retardation indicates fetal malnutrition, the Baltimore physician says.