

PUBLIC HEALTH

Overlooked Disease Cause

Rats may spread polio. At least 93 persons bitten in four years within an area of two square miles in Baltimore. Rats have a craving for human blood.

► **PHYSICAL** contact between rats and human beings may be a way, heretofore overlooked, in which such diseases as poliomyelitis and rabies are transmitted, Dr. Curt P. Richter of the Johns Hopkins Hospital, Baltimore, reports. (*Journal, American Medical Association*, June 2.) Dr. Richter calls attention to the large number of people who have been bitten by rats and the probably much higher incidence of actual physical contact.

At least 93 persons were bitten by rats during the four years from 1939 to 1943 within an area of less than two square miles in the city of Baltimore, Md. The Johns Hopkins Hospital, located within this area, treated 65 of these cases. Although 10.7% of them developed rat bite fever, none died as a result.

The age of the patients ranged from two months to 65 years, most of them (60%) being babies under one year of age. Persons were more apt to be bitten in heavily infested districts with poor housing and living conditions.

All of the people were bitten at night,

the hands and face being most frequently bitten as they are exposed during sleep. In many cases the bites did little more than puncture the skin and draw blood before the patients were awakened. In some instances, however, part of the face was chewed away before the rat was driven off.

Once having bitten a human being, Dr. Richter points out, the rats are apt to bite others. In one house four children and two adults were bitten within a short time. The first bite usually awakens the victim, however, and the rat is frightened away.

Rats have a real craving for fresh human blood, Dr. Richter's experiments showed. The human blood used to feed the rats was obtained from the hospital operating room. Whereas the average normal food intake of full-grown wild rats does not usually exceed 35 to 40 grams, 139 grams of fresh blood mixed with 8% citrate were consumed within less than 24 hours by two of the eight common Norway rats trapped in the city alleys and yards.

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GENERAL SCIENCE

Hope of More Meat

An anti-fatigue chemical, and new ways to control cancer and mental disease also seen in researches at new scientific foundation.

► **HOPE** of increased meat production, an anti-fatigue chemical, and new light on the problems of cancer, mental disease and aging, may come from researches going on at a new scientific institution dedicated in Worcester, Mass., on June 9.

It is the Worcester Foundation for Experimental Biology, non-profit and educational institution supported in part by the community of Worcester and Worcester County and in part by grants from philanthropic foundations, industry, government agencies and private individuals.

Director of the new institution is Dr. Hudson Hoagland. Dr. Gregory Pincus

is director of the Foundation's laboratories at nearby Shrewsbury, Mass. Officers of the Foundation are: President, Dr. Harlow Shapley, director of the Harvard College Observatory, Cambridge, Mass.; Vice president, Rabbi Levi A. Olan, Worcester, Mass.; Secretary, Dr. Roy G. Hoskins, director, Memorial Foundation for Neuroendocrine Research, Harvard Medical School; Treasurer, Dwight E. Priest, president, Parker Manufacturing Co.; Assistant Treasurer, John Z. Buckley, treasurer, Parker Manufacturing Co.

More steak and chops will not be available this summer as a result of the Foundation studies. The experiments have not

yet reached so close to practical application. They illustrate, however, one of the tenets of the Foundation, that the same sort of advances in health, nutrition and medicine will come from fundamental research in biology as the great advancements in modern engineering which were based on understanding and application of basic physical and chemical principles.

The physiology of the development of mammalian eggs and embryos and the regulation of reproduction by hormones have long been studied by some of the personnel of the Foundation's staff, Dr. Hoagland stated. They are continuing this work in the direction of attempting to produce multiple young per birth in domestic animals—experiments which if successful would make possible substantial increase in the world's meat yield.

Hormones, the chemicals produced by the endocrine glands of the body, are being extensively studied in other aspects of their effects on living beings.

In a study of mental patients, coordinated changes in electrical brain wave activity and hormone reactions have been found to accompany changing psychiatric reactions in the patients.

Possibility that the acute fatigue suffered by patients with certain types of mental and emotional disorders may have a glandular basis is suggested by another series of investigations of hormone physiology.

This work started with the finding by the Worcester group that excretion via the kidneys of certain types of hormones, or chemicals derived from them, is different in persons suffering from cancer.

Later the Worcester group found that excretion of these chemicals which are derived from adrenal gland hormones, is greater in men who suffer most from fatigue when working under stress. This showed that the ability of men to withstand fatiguing ordeals is related to the functioning of the adrenal gland cortex.

The Worcester scientists next searched for a way to offset this. They found it in a synthetic chemical, pregnenolone. Daily doses of this resulted in improved target meter performance by healthy young men working under simulated flying conditions and improvement in production rates and waste savings by factory workers in operations involving incentive piece work pay.

Finally, scientists at the Foundation are slowly accumulating information about hormone action as a function of age which may help to prolong man's useful years.

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