

MEDICINE

Pituitary Gland in Cancer

When pure growth hormone is given to rats, they not only double their normal size, but they get cancers. The reason for this effect is not known.

► A NEW idea of how cancer starts is developing from studies reported by University of California medical researchers at the meeting of the American Medical Association in San Francisco.

The pituitary gland, tiny but powerful organ at the base of the brain, is involved. This gland is known to produce half a dozen or more hormone chemicals, among them ACTH, currently famous for the dramatic relief it has brought in arthritis and other conditions.

ACTH acts on the cortex, or outer part, of the adrenal gland. But it is the growth hormone of the pituitary gland that is arousing scientific interest in connection with cancer.

When this hormone in pure form is given to normal rats, the animals grow twice the normal size. But they also get cancer. Some of the animals got cancers in the lungs. Others got them in the ovaries. In one instance, four different tumors, or cancers, developed on one ovary. And some animals got a very rare form of adrenal gland cancer. Almost all of the rats got cancers of the breast tissues.

These results occurred when the animals were given the pure growth hormone over a long period, about half the animal's nor-

mal life span.

Just why the pituitary gland growth hormone has this effect is not known. Cancer, of course, is a form of abnormal growth, but pituitary growth hormone ordinarily is a stimulator of normal growth. When given to animals that have had their own pituitary glands removed, the pure growth

ANTHROPOLOGY

Hunger Regulates Lives

► WHEN a people live in a state of semi-starvation, hunger dominates their lives. Hunger becomes such a motivating factor that they will kill useless persons, regulate their love life by the state of their food supply and dream at night about food.

This was discovered in a year's study of a nomadic Indian tribe of Bolivia, so dominated by the need for food that other skills, the arts and religion had either been lost or were never learned.

The study was made by Dr. Allan R. Holmberg, anthropologist, and was issued by the Smithsonian Institution in Washington.

Dr. Holmberg found that this tribe—the

hormone stimulates growth without producing cancers.

Next experiment the California researchers want to try is injection of a known cancer-causing chemical, such as methylcholanthrene, in rats without pituitary glands, to see whether the cancers develop in the absence of growth hormone.

The experiments may shed some light on why sex hormones bring temporary relief in some forms of cancer, and they give some rational basis for the often-suggested idea of irradiating the pituitary gland in the hope of controlling cancer.

The studies reported at the meeting were by Drs. Henry D. Moon, Miriam E. Simpson, Choh Hao Li and Herbert M. Evans.

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Siriono Indians—even wore no clothes, although a scorching sun and hordes of insects would seem to make clothing imperative.

The Siriono were selected for study because they are almost constantly hungry, depending almost entirely on wild game and fish, berries, nuts and other wild food from the forest to keep them from starvation. Following up studies made at Yale's Institute of Human Relations, Dr. Holmberg wanted to find out what effect the anxiety and frustration caused by continuous food shortage would have on the people suffering them.

Among a people who are always hungry, food becomes the greatest interest in life, Dr. Holmberg found. People do not marry for love among the Siriono. Wives and also "other women" outside the home are wooed by promises of food. Young girls fall for the man who is the best hunter. And wives quarrel with their husbands not because of infidelity but because he gives food to another woman.

Even sexual activity is governed by the food supply. When the food deprivation is relieved temporarily by an abundance of food, as when a hunter returns with a good bag of game, everybody eats to excess. The periods of deprivation, Dr. Holmberg observed, are accompanied by sexual abstinence; periods of gluttony are followed by sexual excesses.

The backwardness of the Siriono people is blamed, at least in part, by Dr. Holmberg on their preoccupation with the food problem. Technology is mostly absent, art non-existent, social and political organization relatively simple.

The hunter must walk as far as 20 miles in a day searching for game, but roads are unknown and trails not cleared. Although waterways are abundant, canoes or boats are unknown.

The Siriono is aggressive. He fights for his share of food. He eats principally alone



FLAMINGO'S NEST—Despite their captivity in the San Antonio zoo, the two flamingos in the center do not allow that to interfere with their plans for a family, as they constantly continue to set on the one egg. This is one of the rare instances of flamingos nesting in actual captivity.

in the night or during the day may steal off in the forest to eat. He eats whenever he can, even if he is not hungry, and even when he sleeps, he dreams about food.

The old and very sick who might prove a burden on the food supply are often callously abandoned to die.

The single exception to the every-man-for-himself attitude of the Siriono is his

treatment of children. Children are loved to excess and overindulgently treated. When a mother feels that she must punish her child, she herself weeps. Babies are nursed until they are about three years old. And when a child is suffering from hunger, fatigue, or pain, he is shown more love than at other times.

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BIOLOGY

Germ Warfare in Korea?

► GERM warfare may get a trial very soon, if the fighting in Korea continues. The situation might be considered by the Soviets as a good one in which to stage a trial of such a weapon, if they have developed a satisfactory method of using it.

B. W., short for biological, or germ warfare was mentioned in San Francisco, as a possibility "in the event of future wars" in a report by Dr. Joseph E. Smadel, of the Army Medical School, at the second military medical session at the American Medical Association meeting.

Dr. Smadel did not refer to the Korean situation in his formal paper. But he did say, discussing germ diseases of future wars, "that these include those human infections caused by microbial agents or their products which might be disseminated artificially by wilful intent." In other words, germs used as weapons.

"This last subject is certainly not one to be dismissed casually, neither is it one to strike hopeless terror into the minds of civilian and military personnel," he stated.

"The risks associated with the limited geographic use of such methods are no more hazardous to persons directly exposed than are the effects of high explosives or nuclear weapons.

"There is no reason to believe that a large scale man-made episode, provided it could be accomplished, would spread and become an epidemic among the unexposed," he added reassuringly.

"Small scale episodes, which are undoubtedly possible, could be delimited and controlled by the present methods available to the public health and civilian and military medical personnel."

Even without germ warfare, there are a number of diseases that may for the first time become military problems. Infantile paralysis is one of these which Dr. Smadel mentioned. Polio "does not at present constitute a military problem but the recent outbreaks of this disease among the Eskimo populations point to a need for considering this malady in troops operating in the Arctic where ordinary sanitation is essentially impossible to maintain," he stated.

One of the numerous viruses, discovered in Africa and South America in recent years by members of the Rockefeller Foundation during their studies on yellow fever might

be the cause of a "new" disease of military significance, he continued.

Among the old diseases which plagued armies in World War II, the following may be expected to appear again in future wars: diarrhea, dysentery, influenza and pneumonia, and, even though they were relatively well controlled, typhus, typhoid and paratyphoid fevers, plague, cholera, smallpox, epidemic meningitis, scarlet fever and streptococcus throat infections and wound infections.

Any American fighting men wounded in Korea are being evacuated by air, if armed forces plans revealed to the American Medical Association are being followed.

Hospital trains and hospital ships are out, in military medical planning. As long ago as last August (1949), air evacuation was adopted as "the sole method of patient movement for the armed forces, replacing hospital ships and hospital trains," Lieut. Col. B. A. Strickland, director of the military medicine division of the Air Force School of Aviation Medicine, announced.

Over 1,423,263 patients were evacuated by air between 1942 and 1949, he reported. Since 1945 only one death has occurred in air evacuation.

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MEDICINE

Device Helps Prevent Baby Suffocation Danger

► NEWBORN babies in danger of suffocating can be saved by a new mechanical device which starts them breathing normally.

The device, called an air lock, was shown to physicians at the meeting in San Francisco of the American Medical Association. It has already lowered the baby death rate at St. Joseph's Maternity Hospital, Houston, Tex., by one-fourth, Dr. Allan Bloxson reports. Dr. Bloxson is on the staff of the hospital and of Baylor University College of Medicine at Houston.

The newborn baby in danger of asphyxiation is put into a tube-like tank immediately after birth, instead of being slapped, held hanging by its heels or having a suction tube put into its windpipe. Pressures within the lock are automatically regulated to simulate as far as possible those during

the second stage of labor. In normal babies and normal childbirths, the pressures during labor initiate the baby into breathing.

Heat and humidity are regulated and increased oxygen concentrations are furnished. Since the air lock is of glass, baby's behavior while in it can be watched. After baby is in the apparatus, pressure in the air lock is raised to three pounds per square inch by tightly closing the lock. When this level is reached, the lock automatically opens and the pressure is lowered to one pound. Then a switch closes the lock again. This automatic cycling is repeated every 45 seconds. The air lock has been used in 100 cases out of 1,786 deliveries at St. Joseph's Hospital. The death rate in the first four months of this year, other than stillbirths, was 1.9% compared to a mortality rate of 2.5% in the same period of 1949, before the lock was used.

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GEOLOGY

New England May Have Been Sub-Tropical

► SCIENTISTS studying a long-abandoned, almost forgotten coal mine in Brandon, Vt., have come face to face with an intriguing question: Was northern New England once sub-tropical?

Fossilized plants and woody tissue preserved in the soft coal are of types found today only in southern U. S. latitudes, Dr. Elso S. Barghoorn of Harvard and Dr. William Spackman of Penn State report in the JOURNAL OF THE SOCIETY OF ECONOMIC GEOLOGISTS.

The Brandon deposit of lignite, a fuel that lies between peat and soft "brown coal" in its geologic development, has long been recognized as a geologic black sheep. It isn't where it ought to be. Discovered 102 years ago and actively mined only for a few decades, the pocket of soft, sooty fuel is "as out of place in Vermont as pigmies and palm trees," said Dr. H. A. Meyerhoff of the American Association for the Advancement of Science, who has also studied the geology of the Brandon area.

How the lignite was formed, why it was deposited in Brandon when very few other instances of Tertiary age low grade coal exist in the northeastern United States, are mysteries "for which there is at present no easy resolution," Drs. Barghoorn and Spackman say.

Plants in the Brandon lignite are unusually well preserved. Most of them can be identified with certainty. Of 13 known types, nine grow today only in swamps of the Atlantic and Gulf coastal plain from the Carolinas southward.

"It is evident . . . that the climate which prevailed during the accumulation of the Brandon sediments was very different from that which now prevails in these latitudes," the scientists say.

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