

CARDIOLOGY

Giraffe Aids Heart Study

A study of the neck of a giraffe has revealed a mechanism that alleviates the necessary high blood pressure that boosts blood uphill to the animal's brain.

► THE LONG NECK of the giraffe is now the focal point in a study of the mechanism of high blood pressure.

The giraffe takes top honors for having the highest blood pressure readings, according to Dr. Robert H. Goetz of the Albert Einstein College of Medicine in New York.

The African animal has exhibited pressures ranging from 282/158 to 353/300 to bridge the length blood must travel uphill from the heart to the brain.

Dr. Goetz, working with a grant from the New York Heart Association, observed that when the giraffe stoops to drink, it lowers its head many feet, increasing the pressure even further. This pressure should cause the blood vessels to burst.

When the giraffe raises its head after drinking, it describes a semicircle 20 feet in diameter. If a human were to imitate this motion, he would probably faint.

Observations of these behaviors of the giraffe led to the suggestion that special mechanisms must be present in the neck of the giraffe. Dr. Goetz has now confirmed the fact that the animals have a "power-

transformer" to protect the brain from forceful surges of blood.

The transformer is known as the rete mirabile caroticum, or wonder-net of the carotid, the main artery to the brain. The transformer interrupts the blood flow through this main artery, breaking it up into fine streams that finally reach the brain without the damaging pressure behind them.

Inspection of the blood vessels themselves did not reveal any evidence that the high blood pressure in the giraffe causes arteriosclerotic changes. All of the blood vessels were normal.

Dr. Goetz found that giraffes also have an extremely high red blood cell count, near 12,000,000. It is known that natives of high altitudes, where the oxygen content of the air is lower, also have high cell counts.

The body compensates for less oxygen by producing more blood cells to carry it to needy body cells. Therefore, the high count in the giraffe might be due to a limited supply of oxygen, he postulated.

The oxygen saturation in the blood of the

giraffe was found to be only between 90% and 93% and due to a dead space in the trachea because of the length of the animal's neck which diluted the oxygen content of breathed air.

Science News Letter, February 28, 1959

MEDICINE

Doctors Stumble Onto Aid for Gout Sufferers

► SCIENTISTS have stumbled upon a new use for a well-known drug that may benefit 300,000 Americans.

The drug is zoxazolamine, a muscle relaxant. Now it is being considered for the treatment of gout.

Dr. J. J. Burns of the National Heart Institute, Drs. T. F. Yu and Alexander Gutman of Mount Sinai Hospital and Dr. Lawrence Berger of Goldwater Memorial Hospital in New York were studying the fate of this drug in the body when they noticed large amounts of a white crystalline compound accumulating in the urine of patients receiving zoxazolamine as a muscle relaxant.

During gouty attacks, uric acid builds up in the blood and tissue, crystallizing in cartilage at the ends of bones.

The crystals turned out to be uric acid, the substance that piles up into lumps. The men presumably have found a chemical that will remove uric acid and help reduce the size of these lumps.

Gout is one of the rheumatic diseases that has plagued man for more than 4,000 years. It affects about 300,000 Americans today.

When the investigators tried zoxazolamine on several gouty patients, they noticed that it appeared to be a more powerful eliminator of uric acid than any other substance. A larger clinical test of the drug is now under way.

Science News Letter, February 28, 1959

MEDICINE

Cancer Takes Annual Toll Of 4,000 Children

► CANCER TAKES the lives of about 4,000 children under 15 years of age each year.

Within the age group of from five to 14, cancer takes more lives in the U. S. than any other disease. The highest death rate from cancer in childhood occurs among preschool youngsters, rising gradually to a peak between ages three and four, statisticians of the Metropolitan Life Insurance Company have calculated.

Leukemia, cancer of the blood, is the most common form of malignancy in children. It is responsible for nearly half the cancer death toll at ages under 15.

Cancers of the nervous system, chiefly the brain, constitute the second most frequent category and account for about one-fifth of all deaths from cancer in childhood. Other fairly frequent sites of childhood cancer are the kidney and bone.

Science News Letter, February 28, 1959



GIRAFFE'S TRANSFORMER—Dr. Robert H. Goetz, director of experimental surgery at the Albert Einstein College of Medicine, points to the rete mirabile caroticum, or power transformer, that breaks the force behind blood that travels uphill eight to 10 feet to the animal's brain.