

ENDOCRINOLOGY

Blood-Forming Organs May be Controlled by Pituitary Gland

Specially Prepared Extract of Pituitary Found To Produce Anemia As Well As Stomach Ulcers in Rabbits

THE PITUITARY gland, already recognized as "dictator" of most of the other glands in the body and largely the controlling factor in growth and reproduction, may have still another unsuspected role. It may control the way new blood replaces old blood in the body.

New experiments just reported in London, England, indicate that pituitary extract injections produce anemia in animals and two days later new blood cells start to appear to replace the old, depleted ones.

The pituitary gland's new role is suggested in a letter from Prof. E. C. Dodds, Director of the Courtauld Institute of Biochemistry, London, and Dr. R. L. Noble, to the editor of *Nature* (May 11). Dr. Noble is working at the Courtauld Institute with the Ellen Mickle Fellowship from Toronto University.

Last year the scientists reported their discovery that stomach ulcers can be produced experimentally by a specially prepared pituitary extract.

Now, they have found that this extract, when given to rabbits, has the additional effect of creating anemia. Marked poverty of the blood appears suddenly four or five days after the injection is given, they report. About two days later there appear cells of a certain type which show that active blood regeneration is taking place. Moreover they consider a series of experiments to have proved that the anemia can not be caused merely by loss of blood from the stomach ulcerations.

There is, therefore, a possibility that what doctors call the "reticuloendothelial system"—the system concerned with the production of new blood-cells and with the destruction of the old ones—may be to some extent controlled by the pituitary gland, the scientists point out.

"So far as we are aware, this is the first time these changes have been produced by an extract of a normal gland," they add in referring also to changes in the bone-marrow and in the secretion of bile which accompany the great change in the number of red blood-cells.

The action of the pituitary upon the blood-renewing system may not be direct.

One explanation might be that the possible hormone which stimulates the flow of acid in the stomach may also stimulate the production of an enzyme that in turn acts upon the blood-renewing bone marrow.

Science News Letter, June 1, 1935

ARCHAEOLOGY

Cave Found in Bible City Recalls Burial of Sarah

DISCOVERY of a large burial cave in the Bible city of Mizpah, making plain the customs described in the burial of Sarah by Abraham as told in the Old Testament, is announced by Prof. William F. Badè, director of the Tell en-Nasbeh Expedition of the Pacific School of Religion.

"The very important materials from this cave are now being studied," said Prof. Badè.

From the badly crushed and disturbed skeletal remains, and the bronze and iron

ornaments worn by the Bible age people, the archaeologist has learned that at least 60 individuals were buried in this cave during the early Iron Age, between 1200 and 900 B.C. The sixty or more burials indicate a long family history, it is explained, and illustrate the story of Abraham's purchase of the cave of Machpelah to bury his wife Sarah. Abraham was told, "in the choice of our sepulchres bury thy dead." In other words, certain caves were cemeteries, and the archaeologist explains that Abraham purchased a cave long used as a burial place, such as the one now found at Mizpah.

The cave at Mizpah is revealed as a burying ground used even by the people of Canaan in the early Bronze Age, 2500 to 2000 B.C., before they were expelled by invading Israelites who became new masters of the land. Pottery mingled with human bones is attributed to these Canaanites. The Israelites had cleared out the old burials, depositing them near the cave entrance.

Israelite burials in this family cave are mainly women, as shown by bracelets and anklets still encircling the bones of arms and legs. Toggle pins of bronze six inches long held in place the garments that have long since vanished.

"Iron was still a scarce and mysterious metal," Prof. Badè says, "as shown by several iron finger-rings, which must have been intended to protect the wearer against evil spirits."

The part of Mizpah, or Tell en-Nas-



CAVE TOMB OF MIZPAH

In such a cave burial place did Abraham lay his beloved Sarah to rest, scientists believe.

beh, now being excavated was occupied by the more prosperous class, it is inferred from the spaciousness of the rooms, the private cisterns belonging to some houses, the inscribed weights and the jar handles marked with ownership seals. Two of these are almost certainly

those of Shebna, official scribe during the reign of King Hezekiah, Prof. Badè believes.

A dye plant, with all the heavy equipment still in place, was found in one of the larger houses.

Science News Letter, June 1, 1935

MEDICINE

X-Raying Pituitary and Adrenals Relieves Diabetes

ENCOURAGING results from treatment of diabetes by X-raying the pituitary and adrenal glands were reported by Drs. B. O. Barnes, W. L. Culpepper and J. H. Hutton of Chicago to the American Physiological Society.

The results were obtained with dogs that had diabetes as a result of removal of the pancreas. One of the physicians had previously found that X-ray treatment of pituitary and adrenal glands improved the condition of human patients suffering with diabetes.

The pancreas is the organ that contains the group of insulin-producing cells known as the Islands of Langerhans. When these cells are damaged by disease or removed, so that the body is deprived of its natural supply of insulin, diabetes follows. During the last few years evidence has been accumulating that some other glands besides the pancreas might be involved in diabetes.

Thyroid, pituitary and adrenal glands all seem to play a part in controlling the body's use of sugar, which is the mechanism that goes wrong in diabetes.

Dr. Barnes reported last year that diabetes experimentally produced may be markedly improved by removing either the pituitary gland, located at the base of the brain, or part of the adrenal glands that lie atop the kidneys. Naturally, this drastic procedure cannot be used in the treatment of diabetes in human patients.

In the experiments reported, diabetes was produced by removal of the pancreas and the animals were given enough insulin to correct the diabetes. After a control period, X-ray treatments were given and it was found that with these treatments the animals needed much less insulin. The X-ray treatments apparently had an effect similar to removal of the pituitary and adrenal glands.

Science News Letter, June 1, 1935

Keefe, "there arose a popular belief that the surface of the Sargasso Sea was studded with derelict ships from the time of Columbus to recent years. They were all supposed to be wedged together in an impenetrable mass of sea weed, which was likewise swept into this area from the Gulf of Mexico and the Caribbean shores where it originally grew.

"This is just a tall story. Ships traveling from New York to the Guianas, to Brazil and to Africa, pass directly through the region. They report occasional large masses of floating weeds, it is true, but no more than the usual number of derelict ships and wreckage seen on the high seas.

"The behavior of the drifting sea weed or gulf weed is peculiar. At times the floating weed masses may come together to form great undulating golden-yellow prairies. One mass has been reported by actual measurement to have been seven and one-half miles long, and one-half mile wide. It was so thick that sailors who set out to capture a sleeping hawksbill turtle in the tangle, found their ship's boat inextricably caught, and they had to be hauled off by a rope from another boat."

Dr. Keefe's talk was put on the air over the network of the Columbia Broadcasting System.

Science News Letter, June 1, 1935

ZOOLOGY

Man-Eating Sharks Are Claiming More Victims

MAN-EATING sharks have been claiming increasing numbers of victims recently along the Australian coast, especially on the beaches of New South Wales, says Gilbert Whitley in a report to the *Victorian Naturalist*.

The number of authentic shark-attack records in the decade 1912-21 was 13; in the decade 1922-31 it jumped to 45, and in the three-year period 1932-34 there were sixteen recorded cases of shark onslaughts.

It is believed that the increasing use of bathing beaches is responsible for the rising count of tragedies. Enclosing beaches in netting or "shark fences" is strongly advised, with patrolling from airplanes or "shark towers" where such complete protection is not practicable.

Science News Letter, June 1, 1935

By banding young storks in the nest, European scientists are trying to learn how these birds are guided in their long migratory flights.

OCEANOGRAPHY

Sargasso Sea Really Exists Despite Mythical Tales

SARGASSO Sea tales, about lost ships stuck forever in a thick expanse of floating weed, are myths pure and simple. But the Sargasso Sea itself really exists. Fact was separated from fable in an address given by Dr. Anselm Keefe, professor of biology at St. Norbert College, speaking under the auspices of Science Service.

The Sargasso Sea owes its existence, Dr. Keefe said, to a tremendous eddy formed by currents circling the whole North Atlantic Ocean. It is an area of relatively still water, greater than the whole Mississippi valley, larger than Alaska, and almost as large as Australia.

The mass of floating weed in the Sargasso Sea belongs to the botanical genus *Sargassum*, represented in Chicago by two dominating forms. The *Sargassum* weed is well known on the shores of the ocean, where it grows attached to the rocky bottom. To what extent the floating midocean masses are recruited from the shore growths, and how much they replace themselves by their own growth, Dr. Keefe said, are still matters of debate among botanists.

"Owing to the fact that wreckage and the usual driftwood borne by the parts of the gulf stream nearest the area gradually float off onto its surface," said Dr.