

## ENDOCRINOLOGY

# New Functions Discovered For Secretions of Adrenal Glands

Extract That Saves Addison's Disease Victims May Also Be Necessary in Vitamin Utilization and Milk Production

**I**MPORTANT new functions of the vital adrenal glands, concerned with vitamin utilization and milk production, were reported by Drs. Frank A. Hartman, J. E. Lockwood and K. A. Brownell of the University of Buffalo to the Federation of American Societies for Experimental Biology.

Members of the Federation have previously heard the Buffalo investigators describe the life-saving cortin which they extracted from the cortex of these two small glands that lie just above the kidneys. Cortin has saved the lives of sufferers from Addison's disease, an ailment in which the adrenal glands are diseased and fail to produce enough cortin themselves for the body's needs. Animals deprived of their adrenal glands quickly die, but their lives may be prolonged indefinitely by administration of cortin.

This week the Buffalo investigators reported experiments suggesting that adrenal cortical extract, possibly cortin itself, helps the body to utilize vitamins C and B<sub>1</sub>. Likewise they have separated from cortical extract a substance that is necessary for the production of milk. They call this new hormone cortilactin.

The discovery of the relation of cortin to vitamin utilization came about when microscopic changes were found in adrenal gland cortex of animals getting too little of certain vitamins in their diets. This suggested that extra demands were being made of the glands to make up for the vitamin deficiency.

When an extract containing cortin was given to guinea pigs on vitamin C deficient diets, the onset of scurvy was delayed, the Buffalo investigators reported. The extract was prepared in such a way that none of the vitamin, which itself prevents scurvy, could have been present. Injection of this extract also delayed the onset of nerve symptoms due to deficiency of vitamin B<sub>1</sub> in the diet.

Apparently this function of the adrenal gland cortex is so important that provision is made for one gland to

produce more of the substance concerned in vitamin utilization in case of injury to the other gland. This extra production on the part of the remaining, healthy gland is continued for about five weeks after disease or injury has put the other out of action.

Discussing the milk-producing hormone, cortilactin, Dr. Hartman and associates explained that cortin alone does not have this action. Mother rats that have no adrenal glands cannot raise litters of young, even with enough cortin to keep the mothers themselves healthy and fat. Cortilactin must be added.

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## ARCHAEOLOGY

## Unusual Features in Ruins At Yellowjacket Canyon

**A**N INDIAN ruin in Yellowjacket Canyon, Colorado, which was sighted by the Spanish friar Escalante when he traveled toward Utah in 1776, has at last been excavated.

For two years, Victor F. Lotrich, a teacher, aided by C. A. Thomas, has been unearthing rooms and relics of this long-burned settlement.

The ruins reveal a number of features unusual in the ancient Southwest, Mr. Lotrich has found. Cliff dwellings and pueblos commonly included several kivas or ceremonial chambers among the living quarters. In this little settlement on the canyon rim there were 12 ceremonial chambers, while only 11 dwelling rooms have been found. One of the kivas is not round or oval as the Indian "churches" usually were, but has hexagonal walls. No other hexagonal kiva has ever been found.

"In the floor of this kiva, beneath the ventilator shaft," said Mr. Lotrich, "was a sealed room containing a burial, but prairie dogs had made nests there and destroyed all specimens, only fragments of unrelated pottery remaining."

Mr. Lotrich has named the site "Square Mug Ruin" after the most re-



## RARITY

*Among the thousands of bowls and similar pieces of pottery found in the Southwest, there are only two or three square pieces. This mug is the latest square container discovered.*

markable object in it. This is a square mug about two and one-half inches tall, decorated handsomely with a bat-wing design in a double triangle. Indian pottery was rounded, almost always. Among the thousands of bowls and other containers found in the Southwest, only two or three square pieces have ever been discovered, Mr. Lotrich said.

Thirty bowls and several large corrugated pots, water jars, dippers and cylindrical mugs have also been found in the ruin. These are pronounced typical of the Mesa Verde type of Indian culture in Colorado.

Remains of several of the old inhabitants have been unearthed. They had heads flattened at the back by binding against a hard cradle-board, in a fashion prevalent in the Southwest long ago. One of the skeletons had upon its right wrist a beautiful string of 52 turquoise beads.

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## VITAL STATISTICS

## Fewer Children Killed By Automobiles

**F**EWER CHILDREN are being killed by automobiles now than any time in the last ten years, statistics of the Metropolitan Life Insurance Company show. The decrease in the number of child automobile deaths began in 1930.

"The year 1932 was the third successive year in which there had been a sizable drop in the death-rate of children from this cause," the company's statisticians report. (Turn Page)

They attribute this gratifying reduction in automobile accident deaths of children to the safety campaigns that have been waged by schools, police departments, insurance companies and women's organizations.

Until recently nearly one-fourth of all those killed by automobiles were children. Now less than one-fifth of automobile fatalities are those of children. Along with the marked reduction in the number of child victims, there has been a decline in the total number of automobile deaths during 1932. But the reduction in the child death-rate from this cause was marked in 1930 and 1931 in spite of the large increase in the number of cars on the roads in those years.

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#### ARCHAEOLOGY

### Stone Age Men Used Wooden Tools

**T**HE OLD STONE AGE may not have been so "stony" as it is often pictured. A French prehistorian has discovered that crude stone weapons of one of the early European cultures were probably turned out by blows of wooden instruments.

Reporting the latest views of French archaeologists on the Old Stone Age, before the central section of the American Anthropological Association at Chicago, Robert F. Greenlee said that the French prehistorian Coutier has demonstrated that a wooden instrument may effectively flake flint. In the Acheulian culture, which flourished in Europe over 100,000 years ago, hunters and fighters used improved weapons, compared to the still earlier Chellean men. The French archaeologist believes that these finer, flatter, and longer implements were the result of learning to shape stone with wood.

Mr. Greenlee, who recently assisted the noted French archaeologist, Abbé Breuil, in the task of reproducing Stone Age art on cavern walls, described a new chronology of the Old Stone Age.

Stone tools are about the only "standard" relics left of early periods of Old Stone Age life. These have been sorted into type cultures and named. By studying the tools in relation to geology, the Abbé Breuil has proposed some revisions in the present line-up of early Old Stone Age cultures.

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#### ASTRONOMY-METEOROLOGY

## Less Radiation From Sun Forecast For Next Two Years

**S**UN'S weather forecast: Colder for the next two years.

The long-range forecast of the variations of the sun's radiation, announced by Dr. C. G. Abbot, secretary of the Smithsonian Institution, is "solar radiation generally below normal."

This is not a forecast of earthly weather. Dr. Abbot emphatically stated that weather is much more complex than variation of solar radiation "owing to circumstances of mountains, deserts, vegetation, oceans, ocean currents, snow, clouds, humidity, wind, which affect localities differently."

"Yet I am firmly persuaded that the main part of the departures from normal monthly mean temperatures at many localities" he writes in a bulletin of supporting data, "are produced by the seven periodic variations of the sun."

These are intricately woven periodicities of 7, 8, 11, 21, 25, 45, and 68 month periods which he has discovered as the result of observations and calculations extended over many years.

In making his two-year prediction Dr. Abbot combined the expected curves of each of these periods into one general curve. Two years ago he made a similar prediction with less accurate data, which in general has been fulfilled. The sun, as he predicted, has given off considerably more heat than normal.

Dr. Abbot and his colleagues are working on the problem of applying the solar radiation results to the prediction of temperatures at various inland points in this country.

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#### GENETICS

## Liability To Cancer Not Inherited, Rat Study Shows

**L**IABILITY to cancer as such is not inherited, results of a twelve-year investigation with rats has shown. The studies were made by Drs. M. R. Curtis, W. F. Dunning and F. D. Bullock of Columbia University and are reported in the *American Journal of Cancer*.

The investigations are said to answer the question whether you are more likely to have cancer because one of your ancestors had it.

Chance is an important factor, the Columbia investigators said. Liability to cancer is not carried in the germ cells that carry hereditary traits, such as hair and eye color, it appears from their studies. The only way in which heredity can affect the development of cancer is insofar as it determines whether or not you will have a long life, and whether you will or will not be susceptible to a given irritant. This is because, in the opinion of the Columbia investigators, length of life and

irritation are the only two factors responsible for development of cancer.

Dr. Francis Carter Wood, director of Columbia University's Institute of Cancer Research where the work was done, described the experiments and their significance as follows:

"For twelve years these investigators have been breeding white and colored rats and infesting them with a parasitic worm which causes cancer of the liver. Over 26,000 have been so treated and the total number of animals studied is more than 52,000. Of the 26,000 only 3,300 developed cancer.

"The studies of the condition underlying the appearance of this cancer have shown that the only factors in the appearance of the cancer have been the length of the life of the animal and the amount of irritation produced by the worm. If only a few worms grow in the liver, the animal may live a long time without having cancer, but the more worms that develop, the more