

## PHYSIOLOGY

## Frogs and Turtles Deaf to High Tones

**B**ULLFROGS and turtles are unable to respond to human speech or other high tones as do mammals but they can hear only deep sounds like the low croak of the bullfrog himself, Drs. E. G. Wever and C. W. Bray of Princeton have reported to the New York branch of the American Psychological Association. This high tone-deafness of reptiles and amphibians was discovered in the course of a series of experiments which the scientists have been conducting to determine by what process hearing is made possible.

The nerve current carried by the auditory nerve is similar in general character to the sounds stimulating the ear of the animal, it was indicated by the experiments. Impulses initiated by speaking into the ear of the frog made the speech audible, after amplification, in a telephone receiver hooked up to the auditory nerve. It did not sound like speech, however, but merely like a buzz. For the turtles, the speech could not be understood but was clearly distinguishable as someone talking. The impulses when amplified about 800,000 times can actually be measured by a cathode ray tube measuring device for electrical current, Dr. Wever found.

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## PSYCHOLOGY

## Early Training May Cause Mental Disorders in Children

**T**HE EARLY training of children was cited as one of the causes of mental disorders by Dr. Mandel Sherman, of the Washington Child Research Center, Washington, D. C., in a report to the Ohio State Educational Conference.

"The not uncommon development in a child of the attitude that he is the center of importance, is an example of the way in which an early mental habit results later on in behavior which is considered abnormal," Dr. Sherman said.

"Such a child has the greatest difficulty in adjusting himself to other people for he finds that others outside the home do not and cannot take the same attitude towards him as his parents. He is no longer the center of attention, he is no longer the point around which the activities of the others revolve. As a result he must either retire from so-

cial contacts or he must develop the attitude that others are being more unfair to him than to everyone else.

"The newer system of education which begins with the pre-school child may be a solution to many of the problems of emotional and mental disturbances. If the plans of some of the child development institutions are carried out it will mean the beginning of education into the ways of the world at a very early age. Children will not be protected in the home because the longer reality is kept from a child the more difficult will be his adjustment to it. . . . If we are to throw children into a complex unfriendly world we must also train them very early in life to be able to adjust to the conditions which they are likely to meet."

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## PHYSIOLOGY

## Good-Nature of Fat People Explained Biologically

**T**HE PROVERBIAL good-nature of fat people was given biological explanation by Dr. Harold E. Himwich and Dr. J. A. Fulton of Yale University at the recent meeting of the Federation of American Societies for Experimental Biology.

Placid and good-natured people, who take life easily and do not get excited do not burn up much fat. Instead, it is stored in their bodies just under the skin and over the abdominal areas.

"Last June it was found that injections of adrenalin raised the blood fat," Dr. Himwich stated. "Since it is known that adrenalin is liberated in emotional stress, we set out to determine the blood fat content during fear and rage.

"A cat in a small cage was placed in front of a large dog. The dog tried to get at the cat and, being prevented by the cage, became more and more enraged. The cat inside the cage became more and more frightened. A sample of the blood of both animals was procured both before and after.

"We found that the fat content of the blood rose rapidly during the development of emotional states in both dog and cat. Hence it seems probable that the tissues of the body are afforded increased amounts of fat to supply energy for the exigencies of the moment. The amount of fat consumed seems to be the same for both emotions."

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# IN SCIEN

## PSYCHOLOGY

## Folks Keep Time To Jazz More Than To March Time

**T**HE SOUND of music, especially that with pronounced rhythm, will cause most people to move or sway if not actually to beat time. That there is a wide variation in the amount of this movement dependent upon individual differences and upon the type of music was shown by experiments conducted at the University of Wisconsin, and reported in Chicago at the meeting of the Midwestern Psychological Association by Dr. Richard W. Husband and Maxine Brostrom.

The 84 persons studied listened to the various types of music while standing on an ataxiometer, an instrument which records the sway of the body forward and backward and also to the right and left.

Jazz, as might be expected, caused the greatest amount of movement, but march time, commonly thought to set nearly every man's feet to pounding, actually produced the least movement in men. For women, the type of music producing least swaying was symphony music. Waltz time produced the second highest amount of movement.

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## MEDICINE

## Creeping Paralysis Virus Discovery Not Accepted

**T**HE DISCOVERY of a virus reported to be the cause of creeping paralysis or multiple sclerosis by Kathleen Chevassut and Sir James Purves-Stewart of Westminster Hospital is not accepted by the leading medical research workers and clinicians in London, Dr. W. L. Holman, professor of bacteriology at the University of Toronto, has declared.

Dr. Holman has recently returned from England where he investigated the work of Miss Chevassut. He does not believe the evidence justifies the statement that the causative agent of this baffling disease has been discovered.

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# ICE FIELDS

## METEOROLOGY

### Another Drought Due Old Records Indicate

**W**ILL there be another drought in the summer of 1931?

This question is raised by a study of weather sequences in Baltimore during the past 113 years, made by John R. Weeks, Maryland state meteorologist, and reported in the Bulletin of the American Meteorological Society.

Mr. Weeks summarizes his results as follows:

"Rule, assuming as a normal the average from 1871 to 1929, which is 12.77 inches, a summer with rainfall less than seven inches at Baltimore is followed the next year by a summer with rainfall less than normal ten times out of eleven. Three times out of four the rainfall the next summer is three inches or more below the normal. Six times out of eleven it is five inches or more below the normal. The driest summer, 1869, was followed by a very hot summer with rainfall less than half the normal."

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## PHYSIOLOGY

### Excess Fat of Body Changed Into Sugar

**I**F YOU eat too much fat and not enough sugar, will your body automatically transform some of the excess fat into carbohydrate fuel food? Dr. John R. Murlin of the University of Rochester has suggested that the versatile human body thus answers its own demands for proper food by manufacturing the needed sort even if it does not get just the right raw materials.

Volunteers lived on a diet of pure cream for five days in the experiments reported to the Federation of American Societies for Experimental Biology by Dr. Murlin and Miss Estelle E. Hawley, his associate. Each morning and evening they were fed their meals of cream and then they were put through tests to ascertain how the body used this unbalanced food ration. One brave temporary martyr to science remained

in an ice box for an hour and a half in order to test his metabolism on the fat diet under the influence of reduced temperature. He shivered for an hour during this experience.

Sufferers from diabetes seem to be able to eat fat without filling their blood with sugar that is dangerous to them. This has caused physiologists to believe that the body could not manufacture sugar or other carbohydrates from fatty foods.

Physicians have recognized heretofore that sugars could be converted into fat by the body and they have repeatedly warned pleasingly plump people against eating too much sugar and starches. Now, if Dr. Murlin's experiments are further confirmed, they can feed their obese patients high fat diets in necessary cases with the assurance that the body will look out for itself and make the sugar it needs to supply energy.

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## ORNITHOLOGY

### Malau Bird Hatches Eggs By Natural Heat

**A** BIRD that displays something of the languor of the tropics is described by Dr. T. A. Jagger, director of the Hawaiian Volcano Observatory. Evidently finding sitting on its eggs too exacting, the malau bird, a unique inhabitant of Niuaufou, one of the Tonga Islands, digs a hole three to five feet deep in the slope of the warm volcanic sand, lays her long, pink egg in the bottom, scratches her way out, filling the hole behind her with sand, and lets nature do the rest.

The sun heats the sand to from 85 to 95 degrees Fahrenheit. If the natives do not molest the egg and it is allowed to hatch, the young bird digs its own way out. The egg is the size of that of a goose. In another effort to save labor, different hens reoccupy the same holes over and over.

The malau bird is a small bush hen of the genus *Megapodius*, which has another representative in Australia. The zoological name means "big-foot."

The malau has large yellow legs with claws adapted for digging. It is about the size of a small Leghorn hen, with a black body and small, scrawny head. Its whistle resembles that of the quail.

The particular habitat of the malau hen is the ironwoods and other growth, especially in those places where the afternoon sun heats the sand hills made in 1886 by a volcanic explosion.

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## REFRIGERATION

### Paper and Air Suggested As Ice Box Insulation

**S**HEETS of paper with a one-tenth inch air space between them may make a more satisfactory insulating material for the walls of ice boxes than the solid board materials now commonly used, it is indicated in a report to the American Society of Refrigerating Engineers meeting in Kansas City by J. L. Knight of the General Electric Company.

The ideal insulating material would be nothing but air, if it transmitted heat by conduction alone, that is, the same way one end of a metal rod gets hot when the other end is heated, according to Mr. Knight's report, for the pure conductivity of air is much less than that of any commercial insulant now known.

"Unfortunately," it was stated, "radiation and convection may transmit several times as much heat as conduction, so that the net insulating effect is poor."

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## ARCHAEOLOGY

### To Search For America's Oldest Arctic Inhabitants

**T**HE SEARCH for America's oldest Arctic inhabitants is about to take two young archaeologists to the most northern point on the American continent. Arriving at Point Barrow, about five degrees north of the Arctic Circle, they will spend the brief summer season digging into frozen ground at sites where prehistoric Eskimos are known to have had settlements.

The two young men, James A. Ford and Moreau B. Chambers, both of Mississippi, are to conduct the expedition for the U. S. National Museum. Even by making closest possible boat connections, they will have only about a month at Point Barrow, before they must catch the last boat out or be blockaded in for the winter.

Point Barrow is regarded by scientists of the National Museum as a highly strategic point in American archaeology. Most American archaeologists hold that the first people who ever migrated into America must have come by way of Bering Strait, and that traces of their settlements, if any remain, will be discovered somewhere along the coast of the region.

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