

## PHYSIOLOGY

**X-Ray Movies Show Heart Wanders in New-Born Baby**

**X**-RAY motion pictures dispelled a recent scare of thymus deaths among new-born infants, Dr. Robert F. James, research physician of the Westinghouse Electric Co., reported to the Society of Motion Picture Engineers.

"X-ray photographs," Dr. James reported, "disclosed a large shadow in the vicinity of the thymus, a ductless gland in the upper section of the chest. But none of these infants showed typical symptoms of the disease and subsequent X-ray pictures failed to show the shadow."

"The attending physicians who observed the shadow concluded that the penetrating X-radiation used in making the photographs checked the thymus enlargement. When continuous X-ray motion pictures were made, however, the shadow taken to be an enlarged thymus was found to be merely the shadow of the infant heart, coming and going with the pulse."

In new-born infants, Dr. James indicated, the positions of the organs of the body are not completely fixed as they are later in life. The hearts of these infants suspected of thymus enlargement were simply in an unexpected place. Without motion pictures by X-rays the phenomenon would not have been disclosed.

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## NUTRITION

**Calls Food Faddists A Menace to Health**

**F**OOD faddists—"the vegetarians, the meat eaters, the drinkers of butter-milk, and gnawers of apples"—insult reason and menace health, the meeting of the American Dietetic Association was informed.

Deploring the magnifying of half truths and other devices of "high powered salesmanship," Dr. Martin E. Reh-fuss, professor of clinical medicine at Jefferson Medical College, Philadelphia, said:

"Diet faddists have reached a point where they are a positive menace to the health of the community and an insult to the reasoning of intelligent men and women."

People have become food conscious to a superlative degree, Dr. Reh-fuss declared.

Men and women in early stages of tuberculosis, cancer, and other diseases may be found today seeking relief in diet fads, he said, and meanwhile losing valuable time in getting treatment. Many get their diet advice entirely by mail, thus ignoring the first rule in going on a special diet—to have a complete physical and laboratory examination.

Dr. Reh-fuss described to the dietitians biological experiments he has conducted which disprove the recent popular suggestion that proteins and carbohydrates should not be eaten at the same meal. Dr. Reh-fuss tested the digestibility of these two kinds of food together when eaten by normally healthy people and in addition he tested fifty patients suffering from various diseases.

Chopped beef was used in the tests to represent protein and mashed potatoes to represent carbohydrate. In the sick persons, some suffering from stomach disease, gall bladder trouble, nervous disorders, and other ailments, it took only about three minutes longer for the stomach to digest the beef and potatoes together than the meat alone.

"This explodes the idea that these foods will not digest in the stomach when combined," Dr. Reh-fuss pointed out.

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## PALEONTOLOGY

**Ancestral Rhinoceros Skull Found in Northern India**

**T**HE skull of a one-horned rhinoceros, apparently the ancestor of all modern rhinoceroses, has been found in the Siwalik Hills of northern India, and is now in the American Museum of Natural History. A detailed study of the specimen by Edwin H. Colbert, of the Museum staff, indicates that it represents an animal quite different from any previously known in its group, so that it has been set up as a new genus and species: *Gaiotherium browni*.

The first or generic name is compounded of a Hindustani word for rhinoceros, *gairda*, and the Greek word meaning beast. The second or specific name is given in honor of Dr. Barnum Brown, who obtained the skull for the Museum.

The skull is somewhat smaller than that of a full-grown modern rhinoceros, but the snout is relatively longer. The teeth are broad, and comparatively simple in structure. In general, the animal represents a more primitive evolutionary type.

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**IN SCIEN**

## GEOLOGY

**Find Wave Print on Sands Of Time in Ancient Rock**

**H**ALF a billion years ago, a series of ripples played over the shallow water at the beach-edge of a lake, in what is now the state of Arizona. One of the ripple-marks, left by the water in the soft sand that day, has just been identified as such, hardened into rock through long burial and pressure.

The discovery of this well preserved water ripple mark in the Archean sediments of the Grand Canyon, a section of the world's oldest sedimentary rocks, has been announced by Drs. J. H. Maxson and Ian Campbell, geologists of the California Institute of Technology. It has the distinction of being the oldest recorded fossil of its type in North America.

The significance and interest in the discovery, apart from its antiquity, are indicated in the interpretation of the record of geologic processes and history, which in this case suggests a lake deposit origin.

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## ENGINEERING

**Largest Steel Frame Single Dwelling**

See Front Cover

**I**N THE exclusive Ottawa Hills residential section of Toledo, Ohio, is rising the framework of the largest steel frame home ever constructed, as shown on the cover illustration of SCIENCE NEWS LETTER this week. Since the home is of welded design, the steel carpenters working on it use only one tool—the electric arc. No noise of hammers echoes throughout the neighborhood; only the hissing of the flame directed by the grotesquely-masked welder.

Fifteen tons of steel will go into the completed structure. Its cost will be approximately the same as wood.

Whole sections of the walls are welded on the ground, then erected and joined with connecting sections into one solid piece of metal.

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# CE FIELDS

## ENGINEERING

### Robot "Brain" Solves Simultaneous Equations

**A** NEW mechanical robot "brain" capable of solving what mathematicians call "simultaneous equations" is working for science at the Massachusetts Institute of Technology.

Engineers hail this latest mechanical "slave" because it is believed to be the first mechanical calculating machine capable of handling and grinding out answers to the simultaneous equations that enter so largely into the design of buildings and other engineering structures.

Dr. John B. Wilbur designed it under the direction of Dr. Vannevar Bush, M. I. T. vice-president. The new machine consists of a maze of pulleys and steel tapes. Operators set scales corresponding to the values in the equations and after the machine operates the answers are read from other scales.

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## ORNITHOLOGY

### Wildfowl Suffer Through Faithfulness to "Flyways"

**L**ONG before aviation experts sought east-to-west flying routes across North America, the streaming squadrons of ducks, geese, swan and other wildfowl had established four great main north-south "flyways" for their spring and fall migrations. At the meeting of the American Ornithological Union in Chicago, Frederick C. Lincoln of the U. S. Biological Survey described these age-old roads of the sky, and told of the grief that recent drought, overshooting, agricultural spread and other factors have brought to the birds that perforce still follow the paths flown by their ancestors.

The four flyways are designated respectively as Atlantic, Mississippi, Central and Pacific. The Atlantic and Pacific flyways, as their names indicate, lie roughly between the sea-edge and the nearest high mountain ranges, although subsidiary migration routes spread fanwise inland. The Mississippi flyway

guides its wildfowl down the great central valley of the Mississippi and its tributaries. The Central flyway spreads from the upper Missouri and the western boundary of Arkansas over into the region around the Great Salt Lake and thence southward.

"There is no question that heavy overshooting, drainage, agricultural activities and drought have reduced the numbers of migratory waterfowl over the entire continent," said Mr. Lincoln in concluding; "but it is apparent that the decrease has been much more rapid in the central and Pacific coast areas. Because of the strong attachment that these birds have for their ancestral migration routes, abundance in one flyway does not mean an increase in other flyways in succeeding seasons:

"It would therefore appear inevitable that if the depletion of the birds of the Central and Pacific flyways . . . continues as it has in the last few years, a complete suspension of shooting privileges will be imperative to preserve the remnants of the waterfowl. The results of the present shooting season may be decisive."

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## PHARMACY

### Standardizes Two Extracts To Fight Heart Disease

**D**OCTORS fighting heart disease now have two more weapons to use, it appears from an announcement made recently by Dr. James C. Munch, director of research at Temple University's School of Pharmacy.

Heretofore digitalis has been chiefly relied on as a heart stimulant. It had the disadvantage that after taking it for a while, the patient built up a resistance to it, so that it was no longer effective. Physicians had then to prescribe other stimulants until the resistance to digitalis wore off.

Two important medicines thus used as substitutes for digitalis were an extract from lily-of-the-valley root, called *Convallaria majalis*, and an extract from another plant, *Adonis*, or pheasant eye. These plant products varied widely in strength and potency and also suffered by deterioration. When a physician prescribed them he did not know what the patient would get at the drug store. Now Dr. Munch has found a way to standardize these medicines as digitalis is standardized. This, he believes, will place them in the same class as digitalis.

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## EVOLUTION

### "Missing Link" in Modern Dog's Ancestry Discovered

**T**HE missing link in the long ancestry of the modern dog has been discovered, as a result of research by Paul O. McGrew, in the museum of paleontology at the University of California.

In tabulating fossil specimens obtained in an expedition carried on last summer near Valentine, Nebr., Mr. McGrew came across the skull of a primitive dog, belonging to the lower pliocene geologic period, about 17,000,000 years ago. Examination of the skull revealed characteristics in line with those of the dog of today. The resemblance was so clearly marked that at first it was thought the skull represented a primitive species of *Canis*, which is our modern dog. This theory was later discarded, and the specimen was established as being that of a primitive dog, directly descended from dogs of the lower miocene period, some 37,000,000 years ago.

The remote ancestor of the modern dog first made its appearance about 50,000,000 years ago, in the oligocene period. The dog of that day was about the size of a California ground squirrel. From this it gradually evolved through the ages into its present day form.

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## ASTRONOMY

### Fireball Rivalled Moon In Its Brilliance

**W**HEN a meteoric fireball flashed over Maryland, Pennsylvania, New Jersey and adjacent states recently (Oct. 17), it rivalled the moon in brilliance for those who were lucky enough to be near its path, Prof. Charles P. Olivier, director of the Flower Astronomical Observatory, and president of the American Meteor Society, found after a preliminary inspection of 125 reports sent him by those who saw it.

Although several thought that the meteor fell near them, there is no real evidence that the meteor hit the ground. One observation made from Princeton stated that the fireball disappeared when about 10 to 15 degrees above the horizon, and this proves, in Prof. Olivier's opinion, that the object, at least while still glowing, did not come very near the ground.

Prof. Olivier's investigation will not be completed for several weeks.

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