

## PALEONTOLOGY

**Prehistoric Rabbits Sought In Fossil Deposits**

**A** HUNT for the world's oldest rabbits is under way at the California Institute of Technology, Pasadena. Eustace L. Furlong, curator of vertebrate paleontology, and R. W. Wilson, graduate student, are undertaking the quest of two-million-year-old bunnies.

The scientists are digging into a mound of sedimentary dirt, rich in fossils, which was brought here by its discoverers from Denio, in the northwest section of Nevada, and from it have been removed many bones which have added to the comprehensive study of prehistoric rabbits.

The specimens are being compared with recent finds made in Mint Canyon, near Saugus, northeast of Pasadena, by Prof. Chester Stock, of the California Institute of Technology, the late Prof. W. D. Matthew of the paleontology department of the University of California, and Dr. John H. Maxson, of the Los Angeles Museum. Here were found abundant remains of rabbits, peccaries, antelopes, camels and extinct horses, together with large tortoises.

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## PHYSIOLOGY

**Gland Extract Used For Disorders of Youth**

**A** VARIETY of disorders of youth ranging from serious misbehavior to slowness of growth have been treated effectively through the use of the hormone extract of the parathyroid glands, Dr. Walter Timme of New York City, reported to the Association for the Study of Internal Secretion at Philadelphia. His patients, who were adolescent boys and girls, were suffering from deficiency of calcium.

The young sufferers complained of symptoms varying from undue fatigue and slowness of growth to extreme conduct disorders. Physical examination showed extreme nervous irritability which resulted in the behavior disorders.

"These patients were inordinately affected by environment changes, temperature variations, noises and disturbances of all kinds," Dr. Timme said. "Opposition and criticism irritated them and they reacted rapidly to them. One of our patients, in such a moment of disturbance, threw his sister out of

the window because of some slightly disparaging remark she had made. Immediately after the act, contrition arises, but too late. Thus arise many criminal cases, assaultive and homicidal in character.

"Another group is composed of those who show quickness and alertness in responsive speech, in other words are witty. These witty responses are almost never the result of thought processes but are due to rapid awakening of associations of many kinds, and the retort is actually made before the talker is aware of what he has said."

Dr. Timme found that these patients were not benefited by being given calcium alone, because their mechanism for utilizing this vital salt was functioning below par. When he gave them the parathyroid gland extract with doses of calcium they recovered.

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## MEDICINE

**Viosterol Found Beneficial In Radium Poisoning**

**A** LMOST simultaneously with the news of the twentieth death from radium poisoning among the unfortunate watch factory workers, comes the announcement of a promising method of treating the condition. Viosterol, now often given children in place of cod liver oil to prevent or cure rickets, has benefited a number of victims of radium poisoning, Dr. Frederick B. Flinn of Columbia University, New York, has reported to the American Medical Association.

Because radium is related to calcium, it was supposed that any treatment that would affect calcium might have a similar action on the radium deposits, Dr. Flinn explained. So he first tried treatment with an extract of the parathyroid glands. These small glands, located behind the thyroid in the neck, are thought to regulate the calcium of the body.

Parathyroid treatment had been moderately successful, when Dr. Flinn suggested the use of viosterol. Vitamin D, calcium utilization in the body, bone formation and the parathyroid glands are all linked together, so viosterol, which is a potent source of vitamin D, was a logical selection.

The results of this treatment in eight cases have been good. In two cases, radium was completely eliminated from the body. In the other six the amount of radium was materially reduced.

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## GEOLOGY

**Newly Emerged Islands Not From Lost Atlantis**

**T**HE "LOST ATLANTIS" theory of the origin of the tiny scraps of new land that have emerged near St. Paul's Rocks in the middle of the South Atlantic off the coast of Brazil is scouted as utter nonsense by Dr. Henry Washington, volcanologist of the Carnegie Institution of Washington. Dr. Washington recently completed a critical study of rocks from the St. Paul group, and is perhaps better acquainted than any other scientist with the structure of the earth's crust in that little-visited part of the world.

Scientists have a pretty good idea of the depth of the ocean over all its extent, Dr. Washington explained. There is nothing to indicate a sunken continent, but there is a most peculiar submarine ridge running down the length of the Atlantic, splitting the ocean into an eastern and western half. It is like a great mountain range, with only the highest peaks emerging as islands.

These emerged peaks are familiar to us as the islands and island groups of the Azores, Ascension, Tristan da Cunha, St. Helena, Gough, Bouvet, and St. Paul's Rocks. The newly emerged islets, if they stay above the surface, will add another lower summit or two to the dry part of this sub-Atlantic mountain range.

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## ENGINEERING

**Single Telephone Operator To Give Whole City Time**

**A** SINGLE telephone operator will soon be able to give the correct time to a whole city by means of new equipment devised by the Bell Telephone Laboratories in New York.

Every quarter of a minute a tone signal sounds in a circuit into which all inquiries for "Correct time, please," are plugged. Just before the time signal sounds a special operator speaks and tells the exact time to be announced.

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# CE FIELDS

## MUSEUMS

### Museum Budgets Increase To Nearly \$17,000,000

INTEREST of the American public in the educational material displayed in museums has increased enormously in the past 25 years, if one may judge by the increase in the annual budget used by these institutions.

In 1906, the total amount spent by all the museums of the country was \$3,000,000. Today, the annual budget amounts to \$16,900,000. These figures have been made public by Dr. Laurence Vail Coleman, director of the American Association of Museums, Washington, D. C., in a report to the Association.

A recent development of museum work which has attracted wide interest is the construction of small outdoor museums or "trailsides" in the state and national parks for the purpose of giving instruction in natural science to the tourists who visit there.

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## PHYSICS

### Electron Waves Will Reveal Structure of Crystals

WAVES of electrons will soon allow the scientist to obtain a clearer picture of the internal structure of crystals than ever before possible, Dr. C. J. Davisson of the Bell Telephone Laboratories, New York, predicted to the American Association for the Advancement of Science and the American Physical Society in Pasadena.

Very short wavelengths are available in electron waves and this results in greater power to photograph the fine crystal structure of matter. Dr. Davisson is a pioneer in the use of electron waves since he won international fame a few years ago by proving that electrons acted like waves in much the same way as light and X-rays. He has also developed lenses for concentrating the beam of electrons. Since the electron may be termed a particle of electricity, his work bridges the previous gap between matter and electricity.

Just as shortening the wavelength of light used in illuminating a microscope allows smaller objects to be seen, use of electrons made visible by their effects on photographic plates allow physicists to study more minute structure in crystalline matter, Dr. Davisson explained. The electron waves are diffracted by crystals and give rise to diffraction patterns which are quite similar to those produced by X-rays. X-ray studies have given much information on matter's structure in the past decade.

The scattering power of atoms is about a million times greater for electron waves than for X-rays, Dr. Davisson explained. The electron waves will therefore give information chiefly regarding the structure of surfaces of crystals, whereas the X-rays give information about the structure of the bodies of crystals. He also expects that the electron waves will allow the study of layers of gas attached to the surfaces of metal crystals.

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## MEDICINE

### Artificial Antitoxins May Fight Diseases

THERE IS HOPE that eventually artificial specific protective substances superior to those formed during natural convalescence from disease may be produced in the chemical laboratory and may become the main therapeutic instruments in the prevention and treatment of microbic infections, Dr. W. H. Manwaring of Stanford University told the American Association for the Advancement of Science in Pasadena.

He explained that numerous specific antitoxins and other protective antibodies have already been synthesized in the laboratory, with the possibility that in time such syntheses will be so perfected as to be of clinical value.

Up until five years ago the generally accepted theory of specific bodily defense against disease was that proposed by Dr. Paul Ehrlich, who assumed that a minute sample of a specific chemical defense against each and every microbic infection is preexistent in normal human flesh, together with a physiological mechanism for its emergency increase in times of specific need.

Dr. Manwaring and Dr. A. P. Locke of Chicago, working independently, discovered that many new, previously non-existent specific biochemical defenses are synthesized as a result of interaction between infections and tissues of the body.

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## SURGERY

### Operation Saves Victims Of Mercury Poisoning

AN OPERATION which will save the lives of persons who have swallowed the deadly poison, bichloride of mercury, has been described by Dr. Samuel Berger of Cleveland. The operation is called cecostomy and consists of an opening into the cecum, which is a sort of dilated pouch into which open the large and small intestine and the appendix.

Dr. Berger and associates, Drs. H. S. Applebaum and A. M. Young, examined carefully the bodies of persons who had died by poisoning with bichloride of mercury. They found that gangrene developed in the lower intestine in a large percentage of patients who lived beyond the first 24 hours after swallowing the poison. This gangrene was responsible for the deaths of these patients.

The treatment which Dr. Berger and associates then instituted consisted of a constant flushing of the gastro-intestinal system with water through the opening made by the cecostomy operation. This flushing interrupts the passage of the poison from the stomach to the colon and averts the development of gangrene.

The procedure is only successful when performed within a few hours after the poison has been swallowed, Dr. Berger emphasized. Patients in whom it was carried out after two days or more all died.

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## ENTOMOLOGY

### Capper Agricultural Award Goes to Foe of Insects

FOR distinguished service in leading the army of science against the armies of insects that threaten man's crops, his forests, his house and his health, Dr. L. O. Howard, former chief of the Bureau of Entomology, U. S. Department of Agriculture, has been designated to receive the Capper award for 1931. This award consists of a gold medal and a cash purse of five thousand dollars. It was founded by Sen. Arthur Capper of Kansas, and is given each year to a scientist who has made notable contributions to the progress of agriculture. Last year's Capper prizeman was Dr. S. M. Babcock of the University of Wisconsin.

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