

## CHEMISTRY

**Rare Element Rhenium Produced in Germany**

OVER three hundred pounds of the rare chemical element rhenium will be made available for industrial use each year by the utilization of a waste material from a Mansfield copper ore, the German correspondent of the American Chemical Society reports.

Rhenium was discovered in 1925 by Drs. Walter and Ida Noddack, a husband and wife team of Berlin chemists, and it is element 75 in the table of atomic numbers. The first gram (less than a thirtieth of an ounce) of the metal cost the discoverers some \$12,500 to produce.

Dr. Wilhelm Feit of a chemical concern at Leopoldshall, Germany, tested the schist waste for rhenium because it contained molybdenum, an element with which Drs. Noddack found rhenium associated. Although the molybdenum-bearing waste contains only two parts rhenium in ten million, Dr. Feit has extracted the rare element from it successfully.

Metallic rhenium and its compounds are expected to prove useful as catalysts in speeding up chemical reactions in various ways. It will also probably be used as an alloy with the noble metals, such as platinum. Its present price is about \$1,600 a pound.

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## GENERAL SCIENCE

**More Than Nine Millions Cut From Research Funds**

MORE THAN nine million dollars have been cut from the funds of the U. S. Government departments devoted to scientific research. This is revealed by a survey made by Science Service of the figures in Congressional appropriation bills just published.

During the fiscal year 1931-32 just ended, about \$75,800,000 was available in the various departments for scientific and research work. For the coming year this amount has been slashed by the economy program to about \$66,300,000. This is a cut of approximately 12.5 per cent.

Hardest hit among the departments doing scientific work are the Geological Survey in the Department of the Interior whose funds are reduced 30.6 per cent., the National Bureau of Standards with a cut of 25.7 per cent., the Bureau

of Fisheries with a cut of 32 per cent. and the Bureau of Labor Statistics whose funds have been reduced 22.5 per cent. The total saving of all government expenditures was only about 19.7 per cent.

Some individual programs of research are even more seriously affected than the average reduction would indicate. Cuts on specific items at the National Bureau of Standards, for example, vary from 12 and 16 per cent. on some to as much as 50 per cent. on others. In addition to cuts in appropriations, money available for scientific research is further depleted by the special economy legislation providing for a pay reduction of 8.3 per cent. which money cannot be used by the departments where the saving is made but is to be impounded and paid back into the treasury.

The regular appropriation bill for the U. S. Coast and Geodetic Survey cut its funds \$676,120, or 22 per cent., but the Emergency Relief Act more than compensated for this cut by a \$1,250,000 appropriation.

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## PHYSIOLOGY

**Brains Mapped in Study of Man's Rise to Supremacy**

MAN OWES his slow but steady rise to supremacy in the animal kingdom to the domination of his higher brain centers over those other portions of his nervous system which in lower animals are relatively independent.

This is confirmed by a two-year experimental investigation of nervous systems of primates made by Dr. John F. Fulton and Dr. Allen D. Keller in Yale University laboratories.

Thirty-six animals, including monkeys, baboons, gibbons, and chimpanzees, representing progressively higher stages of development, were studied to reveal the evolutionary background of the human nervous system.

The parts of the cerebral hemispheres of the brain which control the extremities in these forms were stimulated electrically so that exact "maps" of these centers for movement of various parts were secured. These regions were then removed and it was found that the animals highest in evolutionary development of the brain (i. e., the chimpanzee) suffered the most marked paralysis, approaching that of human beings.

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**IN SCIENCE**

## METEOROLOGY

**Pillars of Sea Mist May Be Foundation of Myth**

THE BIRTH of Venus from the foam of sea, one of classic antiquity's most charming legends, may possibly be traceable to an actual phenomenon.

To the same source may be traced the tales of the "daughters of Nereus," who often rose from their briny home and danced over the waves, helping or warning endangered mariners.

This opinion is ventured in the German scientific journal *Forschungen und Fortschritte* by Prof. Johannes Walther of Halle University. Prof. Walther tells of a recent voyage in Grecian waters, when a snowstorm was brewing and the waves were high. The cold air striking the warm water caused numerous columns of white vapor to rise over the foamy caps of the waves. They hovered momentarily, then were caught up whirling by the wind, and as they spun away through the air it did not require any violent stretch of the imagination to see them as feminine figures dancing in filmy draperies. It all happened in ten minutes or less; but the time sufficed to give Prof. Walther a better understanding of the old legends.

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## SEISMOLOGY

**Another Quake Affects Mexican West Coast**

AN EARTHQUAKE centered in the Pacific off the Mexican coast south of the city of Colima Monday morning, July 25, at 4:12.7 a. m. E.S.T. The exact location of the earthquake, the latest in a series that has affected the west coast of Mexico, was determined through instrumental reports telegraphed to Science Service by seismological stations and interpreted by the U. S. Coast and Geodetic Survey. The epicenter was 17 degrees north latitude and 104 degrees west longitude.

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# E FIELDS

## ENTOMOLOGY

## Weird Stink-Bug Parents Produce Curious Eggs

See Front Cover

"LIKE PARENT, like child," is one of the oldest and best-known folk-proverbs. It holds outside the human realm, too. For instance, the pair of stink-bugs which Cornelia Clarke's magnifying camera lens caught for the cover of this issue of the SCIENCE NEWS LETTER are weird enough little monsters, in all conscience; and their cluster of eggs, each crowned with its little cirlet of bristles, are just as odd in their own way.

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## ARCHAEOLOGY

## Document by Persian Emperor Found at Persepolis

WHEN the Persian Emperor Artaxerxes I completed his palace-masterpiece, the Hall of a Hundred Columns in Persepolis, he made an inscription to tell of the historic event, and placed the document in the foundation of the building. The historic document, which was "news" in the fifth century B. C., has become news again. It has been unearthed by American archaeologists who are excavating the ruins of Artaxerxes' palace.

Discovery of the document has just been announced by Dr. James H. Breasted, director of the Oriental Institute of the University of Chicago, upon receipt of a cablegram from the Institute's Persian expedition led by Dr. Ernst E. Herzfeld.

Dr. Breasted has not yet learned the contents of the Persian emperor's statement, but there is reason to believe it contained facts that will add to knowledge of Persian history.

The excavators previously found a marble slab bearing 40 lines of writing buried under the harem palace of Xerxes, the father of Artaxerxes. This inscription has yielded important facts regarding the ancestry and reign of the famous Emperor Xerxes.

Finding the second such inscription leads the expedition to believe that a

record of this sort will be found under each of the great buildings of the Persian emperors, in the old capital city.

The vast group of Persian palaces is nearly a third of a mile long and a thousand feet wide, Dr. Breasted explained.

"The Oriental Institute expedition," he said, "has discovered that this enormous terrace was systematically laid out and the positions of the buildings determined in advance, so that before they were erected, the engineers could lay out a vast drainage system in which the conduits and the down-spouts carrying off the rain water from each building were already in place before the buildings were begun."

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## SEISMOLOGY-FISHERIES

## Earthquake Activity May Affect Catches of Fish

THE OCCURRENCE of earthquakes may increase the catch of mackerel and other fish, it was suggested by Dr. Torahiko Terada, of the Earthquake Research Institute of Tokyo Imperial University.

Dr. Terada found a parallelism between the incidence of earthquakes and particularly large catches of fish over a period of years, which he believes cannot be explained as mere coincidence.

"Though it will be premature to propose anything like an explanation of the relation of which the existence has just been sheerly shown here as probable," he said, "it will not be useless to point out different possibilities conceivable in connection with the present problem, especially for the purpose of drawing the attention of oceanographers and biologists in seismic countries, without whose collaborations it will be difficult to pursue the present investigation any further.

"Firstly, the seismic shocks or some kinds of mechanical stimuli associated with them may be directly felt by fishes and induce them to approach the fishing ground in some or other ways. Secondly, the shocks may somehow affect the depth of the layers with the greatest density of some planktons edible for the fishes. Thirdly, the earthquakes may affect the chemical nature of the coastal sea water due to the disturbance of the subterranean water and thus indirectly affect the planktons or fishes. These possibilities could be tested by observation, or by some experiments, if desired."

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## ORNITHOLOGY

## Bobwhite Becomes Friendly In the Summer Time

THE BOBWHITE quail, known to winter hunters as a wild, timid bird, haunts farmyards and appears to like human society in the summer, Arthur C. Bent says in a report issued by the Smithsonian Institution.

Among other curious facts about this common bird, Mr. Bent explains why they are believed sometimes to "withhold their scent" thus eluding dogs.

"The explanation probably is that the rapid passage through the air dissipates most of the scent from the plumage. The birds being frightened, crouch low on the ground with feathers closely pressed against the body, shutting in body odors. And, as they have not run anywhere, there is no foot scent."

Under ordinary circumstances, however, the bobwhite shows a definite preference for using his feet rather than his wings, it seems.

"Quail do much of their traveling on foot, and they are great travelers," Mr. Bent reports. "In some sections they are said to make seasonal migrations from one type of country to another, the journeys being made largely on foot. I believe they prefer to escape their enemies by running, until too hard pressed. A bird dog will often trail a running bevy for a long distance."

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## ASTRONOMY

## Borelly's Comet Sighted On Regular Visit

BORELly'S periodic comet, an occasional visitor to the neighborhood of the sun, was sighted by Dr. George Van Biesbroeck of Yerkes Observatory, Williams Bay, Wis., early on Saturday morning, July 30. The information was forwarded to the American clearing house for astronomical news at Harvard College Observatory.

When first observed, the comet was of twelfth magnitude, far below naked-eye visibility, and had no tail. Its position, in the astronomical equivalents for latitude and longitude, was right ascension five hours thirty-one minutes fifty-four and seven-tenths seconds, declination plus thirteen degrees two minutes thirteen seconds. This puts it in the neighborhood of the zodiacal constellation Taurus, the bull, near the very bright star Aldebaran.

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