GEOGRAPHY

Enormous Canyon Discovered In Unexplored Mexico

Barranca del Cobre Found 12 Days Journey From Last Outpost Is Great Scenic Wonder Over a Mile Deep

VERIFYING Indian tales that an enormous canyon resembling the Grand Canyon in size and grandeur exists in a practically unexplored part of Mexico, a zoological expedition, sent out from the zoological section of the California Institute of Technology, has rediscovered the Barranca del Cobre, a canyon described as one of the great natural wonders of the earth.

The expedition, consisting of four Americans, led by Robert T. Moore, associate in vertebrate zoology of the Institute, while making a zoological cross-section of extreme northern Sinaloa, penetrated to little known portions of Chihuahua to reach the immense chasm.

A valuable collection of birds and mammals, some new to science, was obtained.

Mr. Moore penetrated far into the hinterland of the high Sierras by means of pack trains and Talamare Indian guides. Twelve days on mule back or afoot took the party through practically unexplored areas, known only to the sly-mouthed Indians and a few Mexican miners.

On the sixth day an altitude of 8,500 feet was reached and the party entered an unexpectedly verdant country, where powerful streams had helped to erode the western face of the Mexican tableland into deep canyons which supported a growth of large pines and cedars. Several of these "barrancas," 2,000 feet deep or more, were crossed in an effort to reach an enormous canyon, which had been reported by the Indians to the leader of the expedition on his trip to southern Sonora in the spring of 1933.

Hundred Miles Long

The Barranca del Cobre was reached on the twelfth day after the departure from the last outpost of civilization. This canyon proved to be fully as large as the Indians had stated. It is claimed by the Talamares to be a hundred miles long.

The Moore expedition was equipped with excellent barometers for ascertaining altitude and depths. At one point where the rim of the barranca dropped almost sheer to the Uriqui River in the bottom, the barometers registered a perpendicular distance of more than a mile. On the rim, 1,000 feet higher, it is estimated that the canyon has a depth of at least 6,500 feet. The party spent a week exploring the bottom and walls of one portion of this great gash in the earth's surface.

Mr. Moore stated that it will take a corps of surveyors several months of exacting work to determine the real width and depth of this huge natural wonder.

Shy and Elusive

The Talamare Indians proved to be a shy and elusive race. Local legends give rise to the belief that they were driven out of the lowlands of Sonora by the more warlike Yaqui Indians many decades ago and since then have led a fugitive life in these rough mountains and canyons. They cut and burn down the forests on the steep slopes of the mountains to provide fields for cultivation, so that their cornfields fairly stand on end.

Plows, hewn out of the roots of trees, are used by these primitive people. Pairs of oxen pull them up the steep mountain sides between the huge stumps of freshly-cut trees. So precipitous are these farms that it is not unusual to see the legs of one ox above the back of its mate.

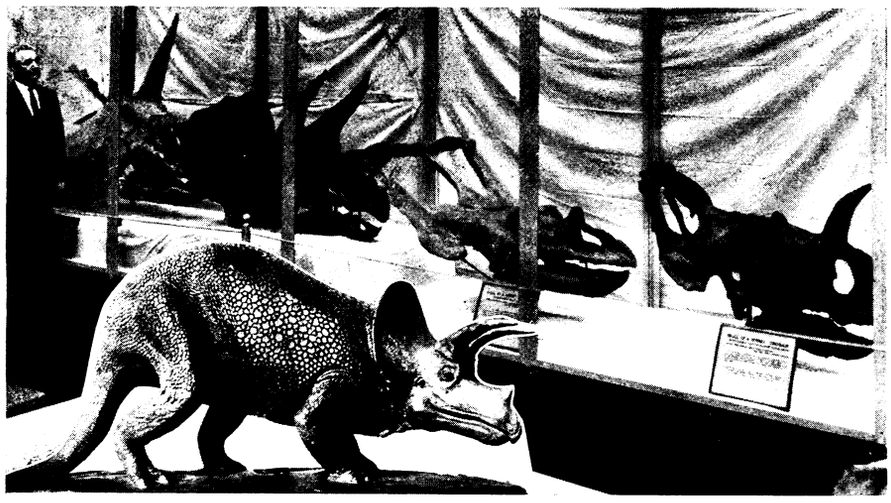
In the great Barranca del Cobre, some of these Indians were found living under the sloping walls of great cliffs, raising their families and subsisting in these difficult places without any other kind of shelter from the elements.

Science News Letter, October 20, 1934

PHYSICS

New Kind of Helium Discovered in England

THE production of a new kind of helium of atomic weight six instead of the usual four was reported to the recent International Conference on Physics by Prof. M. L. Oliphant of Cambridge's Cavendish Laboratory. Dr. Oliphant was one of the discoverers recently of triple-weight hydrogen. The new helium of atomic mass six was obtained by bombarding beryllium with



PARADE OF HEADS AND HORNS

This procession of four huge skulls in a row has just been arranged at the Peabody Museum of Yale University to show visitors how evolution revised the dinosaur "models" 60,000,000 years ago in America. The Triceratops, at the extreme left, is famous for having the biggest head and, in comparison, the smallest brain of any land animal known. This specimen is the only one of this type of dinosaur ever found in which the bones of the head are not fused. It has been mounted with the bones slightly apart, so that any one bone may be removed for study. Chief Preparator of Vertebrate Paleontology Fred W. Darby is shown inspecting the exhibit. The inset is a restoration of Triceratops.

deutons, the hearts of double-weight hydrogen.

Helium is the rare gas of the air first discovered in the sun. Nearly a half century later it was found in the air of the earth. During the World War, American chemists extracted it from natural gas in quantity and used it to fill airships, replacing inflammable hydrogen gas.

The ordinary kind of helium consists of atoms having four times the weight of those of ordinary hydrogen. In the past few years multiple varieties of both helium and hydrogen have been discovered. Hydrogen now exists as "triplets," having atomic weights one, two and three. Helium has been detected of mass three and five besides its normal weight of four. Now comes the discovery of the kind of helium isotope having mass six.

Science News Letter, October 20, 1934

PHYSICS

Physics May Soon Discover New Group of Elements

DOCTOR Enrico Fermi the Italian physicist whose experiments on bombarding heavy uranium with non-electrical particles known as neutrons, has set the world of science in a controversy over whether or not superheavy element No. 93 was created, has just performed similar experiments on the element thorium.

In an interview in London, while attending the International Conference on Physics, Dr. Fermi indicated that his preliminary experiments make him inclined to anticipate the discovery of a whole new radioactive family between the elements actinium and thorium.

Actinium has atomic number 89 in the periodic table of the elements. Its atoms weigh about 227 times as much as those of hydrogen. Thorium has atomic number 90. Its atoms are 232 times as heavy as hydrogen.

By his atom bombarding experiments Dr. Fermi has discovered two radioactive substances of thorium having periods of one and fifteen minutes during which they decay, or disintegrate to half their amount. These are the first two members of the new, anticipated radioactive family for which he is searching. They are probably isotopes of thorium or actinium since there is no gap in the table of the elements at this point.

Paradoxical

A paradoxical action of gamma rays, one of the radiations from radium, was reported by Dr. R. A. Millikan to the conference on behalf of his Pasadena colleagues, H. R. Crane, and Dr. C. C. Lauritsen of the California Institute of Technology. They found that the higher the energy of a gamma ray the more it is absorbed. These experimenters produced gamma rays by bombarding lithium and fluorine with protons and beryllium, boron and carbon with deutons.

A record was made when the maxium energy of the gamma rays was measured as between twelve to thirteen million electron volts.

The theoretical physicists had a difficult time keeping up with the experiments reported. One suggestion of what happens in the central portion of the atom was made by Prof. G. Gamow, Soviet scientist who is lecturing this year at the George Washington University, Washington, D. C. Prof. Gamow suggested that within the nucleus there is an exchange of a proton and negative proton for nuclear neutrons. This change does not affect the mass or charge of the atom but it does provide an explanation of the uranium transformation. Prof. Fermi expressed doubt, however.

Science News Letter, October 20, 1934

MEDICINE

Advanced Cancer Now Called Arrestable Disease

By CHARLES A. DUKES, M.D., Vice-President-Elect, American College of Surgeons.

ONE of our great clinicians recently said, "You may die with cancer, but not necessarily of cancer."

Although there is great discouragement in the field of research as regards the cause of cancer, much has been learned about cancer and since the American College of Surgeons has sponsored and adopted certain rules governing cancer clinics, the clinical progress made in treatment and cure has marked a great advance.

The American College of Surgeons will be told that cancer is curable. Also that though you may have cancer, the mortality has been reduced in advanced cases from 90 per cent. or more to 25 per cent. or less. These cases have been classified among the so-called arrestable diseases.

I believe that the same encouragement that is given to the person who has tuberculosis, can be given to a high percentage of the advanced or neglected cases of cancer.

American College of Surgeons is presented, through public lectures and by the means of symposium in the scientific sections, the garnered knowledge of the medical world in the treatment of this disease.

Today it is well-known that due to the complexity of the decision about cancer treatment the cases are best handled through clinics in which are gathered together the pathologist, the surgeon, the internist, the specialist and the X-ray and radiologist. They study these cases and those who come early are assured of more than 75 per cent. of cures. Those who come late can be assured of relief from pain and in many cases an arrestment of the disease so that the statement made at the beginning of this article is made come true, that "You may die with cancer, but not of cancer."

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ASTRONOMY

Planet Pluto Similar In Size to Our Moon

PLUTO, the planet which was discovered by Lowell Observatory astronomers in 1930 beyond the orbit of Neptune, is probably very similar in size to the moon, whose diameter is 2,160 miles. Dr. Walter Baade of the Mt. Wilson Observatory has compared the brightness of Pluto with that of Triton, the satellite of Neptune. This moon is known to be about the same size as ours, and it appears even in the telescope as a point of light, like Pluto.

He has found that Triton is about a fifth of a magnitude brighter than Pluto, a very slight difference, and therefore concludes that they are similar in size. Pluto's average brightness is of magnitude 15.41, and when it is most brilliant it is only 14.14, much too faint to be observed with any but the largest telescopes.

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