

GEOGRAPHY

Scientists to Explore "Lost World" in Grand Canyon

SCIENTISTS from the American Museum of Natural History, aided by the U. S. National Park Service, will set out early this fall to explore a "Lost World" in the Grand Canyon of the Colorado River.

Shiva Temple, a sheer-sided "island" standing in the Canyon, has never been scaled by man. It will be attacked by a mountain climbing party headed by Walter A. Wood, Jr., of the American Geographical Society.

Should he and his assistant, who will start out Sept. 10 from the North Rim of the Canyon, be successful, they will lower ropes to bring an exploring party up to the top of the mesa.

Shiva Temple and Wotan's Throne, a second objective of the expedition, are both plateaus cut out by the Colorado River while it was cutting the Grand Canyon, now almost 6,000 feet deep. They have been isolated from the main-

land for several million years. They have never been visited although hundreds of visitors can see them from the canyon's edge, a few miles away.

Old forms of life, which have had an opportunity to develop atop Shiva Temple without any contact with the mainland, will be studied, it was stated, to find any significant changes as compared with related species on the mainland.

Changes such as these are found when comparing animal life on the two rims of the Grand Canyon. The Kaibab and Albert squirrels, the former inhabiting the North Rim and the latter the South Rim, constitute an outstanding case of changes that have occurred in the same species when different members of it are isolated over long periods of time. Although generally similar, the two squirrels show markedly different coloring.

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GEOLOGY

Oil Hunting Is Still Risky Despite Better 1936 Record

SEARCHERS for new oil pools had a better "batting average" last year than they did in 1935, according to figures collected by Dr. Frederic H. Lahee, chief geologist of the Sun Oil Company of Dallas, Texas. This study, which included only true wildcats, "that is, wells drilled completely separate from producing pools," showed that these wells failed only 89 per cent. of the time in 1936, as against 93 per cent. failures in 1935.

With all the advances made in drilling and locating methods, reports Dr. Lahee to the American Association of Petroleum Geologists, there still remains a large element of risk in the business of discovering oil wells. In the case of most of the wells included in this study of the Gulf Coast area, there were some indications of possible subsurface oil, such as a dome or fault. On drilling, however, the chance of success decreased as the pay sands were found to be

absent, the oil absent, or other conditions unfavorable.

Even with the most improved methods of locating oil, it is difficult to predict subsurface conditions, and the risks involved in wildcatting, whether by a large oil company, or by a farmer who drills in his back pasture, are great and probably always will be.

Often, according to Dr. Lahee, two or more holes are necessary to prove or disprove the commercial possibilities of even a clearly recognized structure. Perhaps the risks involved are best shown by the comparison of feet drilled in dry holes and producing wells. During 1935, 10.31 feet were drilled in dry holes (wells that did not produce) for every foot drilled in a producer. In 1936, the ratio was 6.83 feet of dry hole drilled for each foot in a producing well.

Annual studies of drilling successes and failures would be valuable, says Dr.

Lahee, in determining the costs of discovering new wells, and the financial risks of wildcatting. The improvement in 1936 is attributed by Dr. Lahee to chance rather than to improved methods.

Despite geophysical prospecting, more accurate mapping, and great experience, oil men still hold firmly to the belief that "only the drill can tell."

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AVIATION

Robot Detects and Radios Cloud's Altitude to Pilot

A DEVICE intended to measure the height of cloud and fog banks over airports and then instantly and automatically radio the information of ceiling height to airplanes flying in the neighborhood, is revealed in a patent (No. 2,081,134) just granted to John P. Buckley of Washington, D. C.

When placed on isolated mountain tops and high territory, this device warns the pilot flying in a fog whether or not the mountain top is clear, says the inventor.

The novel automatic "ceiling informer" consists of two pivoting search lights spaced apart a definite distance. By ingenious mechanisms they are focussed so their beams intersect at the bottom of the cloud or fog bank. Thus a light spot is formed at the intersection of the beams.

Light reflected from the light spot on the bottom of the cloud is picked up by a photo-electric cell. The current generated in this cell by the reflected light controls the operation of an attached radio transmitter. A coded disk turned by a motor acts like a telegraph key to broadcast automatically a different signal for each cloud bank altitude.

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ETHNOLOGY

Wells Replace Rain Dance As Indians' Water Source

THE rhythmic clank of the drilling rig is successfully displacing the tomtom of the rain dance as a means of getting irrigation water for the sun-cursed desert lands at Acoma Pueblo, New Mexico, reports the U. S. Department of Interior.

Ancient legends, telling of a fertile land watered by springs, in the present site of the desert farms of the Pueblos, gave the engineers a hint of possible underground water. Early failure by the drillers seemed to disprove the ideas, but on the advice of the older Indians, engi-

neers drilled a well 1500 feet deep, in a site chosen by the tribesmen.

Seven hundred gallons a minute of pure, soft water gushed forth to prove that the Indians were right in their advice. After this preliminary success, more than 180 wells were drilled to a depth averaging 500 feet.

With a cooperation strangely in contrast to the wars of only a few generations ago, Indians are doing much of the work on drilling these wells, and by agreement with the Indian Service, they will bear the cost of maintaining the wells and ditches and operating the pumps.

These wells may soon usher in a new era in Indian agriculture, lifting it from submarginal in character to profitable and making Acoma Village self-supporting again, as it was in the distant past, before the coming of the white man. Water, to the Indians of the arid Southwest, is as important as the "black gold" petroleum of the oil fields.

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ZOOLOGY

Skunks Justify Themselves By Destroying Insects

SKUNKS can justify their existence as man's neighbors by their high destructiveness to insects. Recent reports told of the knowing way they have with hairy caterpillars, removing the irritating hairs by rolling the caterpillar on the ground with just enough pressure to strip it, yet not crush it. Now Karl P. Schmidt of the Field Museum of Natural History tells of two young skunks raised from earliest infancy on the bottle. The first time they were given woolly caterpillars to eat, they went through the dehairing performance like experts. The knowledge of how to deal with caterpillars seems therefore to be something they are born with, and never have to learn from their parents.

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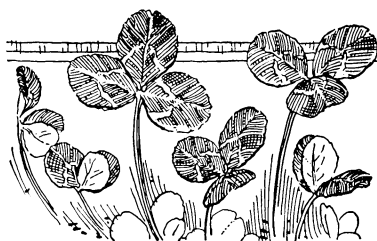
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Saving Their Country

SOIL erosion was a recognized menace to American agriculture even before the Revolutionary War, and the more progressive owners of land fought it with methods essentially the same as those employed today by the Soil Conservation Service.

How strongly early American agriculturists and statesmen felt about the matter is vividly brought out in a new Department of Agriculture publication, by A. R. Hall. That soil erosion should be a matter of public discussion was only natural, since the leaders of the people were often large-scale farmers themselves, like Washington and Jefferson.

Patrick Henry, whose electric phrase, "Give me liberty, or give me death!" helped to detonate the War for Independence, said after the war, "Since the achievement of our independence, he is the greatest patriot, who stops the most gullies."

The practical means for checking soil erosion adopted by Virginia farmers included contour plowing, which was then called horizontal plowing—furrows run around the slopes to catch and hold the water. Another device was leaving part of the land in permanently rooted vegetation, to bind the soil with roots. The colonists of Virginia also used what we now know as terracing.

Yet despite this recognition of the evil of soil erosion, and the knowledge of fairly successful methods to combat it, the soil of Virginia was nevertheless ruinously washed and gullied. Why?

Because, explains Mr. Hall, the Colonial farmer was an extreme individualist, and could not be induced generally to adopt sound soil conservation methods. Also, there was always a frontier of vir-

gin land to which he could retreat when he had ruined his farm.

Now, with the frontier gone, the problem becomes a national crisis. It is being met by common action organized through a national corps of scientific soil conservationists.

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PUBLIC HEALTH

Federal Health Aid to States Boosts Local Appropriations

FEDERAL aid to the states for health work has not resulted in a shifting of responsibility to Uncle Sam, Dr. Thomas Parran, surgeon general of the U. S. Public Health Service, stated on his return from a trip through the West. On the contrary, state and local health departments and private health agencies have increased their own appropriations for health work under the impetus of the \$8,000,000 which the U. S. Public Health Service, under the Social Security Act, has given to the states to aid in public health activities.

The gratifying situation described by Dr. Parran is in contrast to the relief situation, in which many local authorities are insisting that the federal government continue to bear the financial burden.

Dr. Parran said he found all over the country an increase in public health activities far out of proportion to the amount of money given by the federal government. In some places, under the impetus of the federal appropriation, local public health work has been started for the first time.

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