

## 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-