

## ETHNOLOGY

## Head Hunters of Jivaros To be Featured in Movie

**J**IVARO Indians of Ecuador, noted the world over for their exploits at head hunting, are to have a new experience this winter. They are to be featured players in natural colored moving pictures, with sound accompaniments, taken by a scientific expedition.

Pictures of this famous, yet still somewhat mysterious tribe, are one of the projects of the Latin-American Expedition, Inc., which recently sailed from New York. The expedition, directed by Lieut. Donald C. Beatty, of the Air Corps Reserve, includes on its staff Matthew W. Stirling, chief of the Bureau of American Ethnology, who will be in charge of scientific investigation.

Mr. Stirling states that he anticipates no special difficulty in getting the Jivaro head hunters to pose for the talkies. Popular tradition has it that the Jivaros are one of the most dangerous of tribes to encounter. Their fantastic custom of taking the head of an enemy and shrinking it to the size of an orange has gained the Jivaros not only fame but some fearful respect. The heads are not merely war trophies, but are believed by the Jivaros to bring power in battle to the possessors.

Jivaros still hunt heads, secretly, more or less, Mr. Stirling said, but he added that he has traveled through Jivaro country before, and "found them very friendly." They should make attractive subjects for color photography, he believes, for they are probably the most colorful in dress of any South American tribe. Gay feathers of the toucan are a feature of Jivaro costume.

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## ZOOLOGY

## A Sea-Going Lizard From Galapagos

See Front Cover

**W**HEN Darwin, as a young naturalist just out of school, visited the Galápagos islands, he saw a number of things that helped to crystallize and precipitate in his mind the concept, already seeded there, that later revolutionized all biology and much of philosophy. Not the least provocative of speculation was a most peculiar species of sea-going lizard, the marine iguana that basked—and still does bask—in thousands on the sun-warmed rocks, slipping off into the

water betimes to browse on the thick-growing seaweeds.

Reptiles, Darwin knew, are predominantly dry-land and fresh-water inhabitants; very few of them brave the sea. Big marine turtles are the most successful; there are also a few crocodilians and one small group of snakes; finally, these odd iguanas. How land-bound even these latter are in their instincts can be discovered when they are frightened. Instead of swimming out into deeper water when danger threatens, they scramble for shore. Pick one of them up by the tail and fling him out to sea, and he immediately comes back almost to your feet!

Yet the marine iguana also shows his own adaptations for a life, if not on the ocean wave, at least beneath it. Most of his kin have all sorts of frills, dewlaps and other excrescences that would be as much in a saurian swimmer's way as puffed sleeves on a bathing suit would be in the way of a human mermaid. But the marine iguana affects a stern and Spartan economy of profile; all that he retains of the heritage of his race are knobby spines on his head and the waving digitate frill down his back; and even this last is cropped close.

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## ARCHAEOLOGY

## Plentiful Remains Found In Survey of Indian Sites

**P**OTTERY, rock-pictures, old campsites with teepee-rings and fireplaces, "game-blinds," and deserted quarries of red chert and yellow jasper, are among the relics found in a survey of about 200 Indian sites in Eastern Wyoming.

The region searched for Indian remains included the archaeologically rich district of the so-called "Spanish Diggings." Of special interest were the quartzite quarries, which were said to recall similar quarries in England and Western Europe. Successive growths of lichen found on stone tools and refuse left by the Indian workers are expected to yield the relative age of these quarries.

In Eastern Colorado certain stone enclosures were found obviously old, but whose use is a mystery. A rock-shelter of long prehistoric occupation was partly excavated. At the "Chalk Bluffs" in Northern Colorado, as well as in Eastern Wyoming, finely-worked arrowpoints of the presumably ancient "Folsom" type were found.

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# IN SCIEN

## PALEONTOLOGY

## Snail Tracks of Lower Cambrian Time are Found

**T**HERE were snails on earth half a billion years or more ago, in the time known to geologists as Lower Cambrian. Their shells have not yet been found as fossils, but they left their tracks on the silts and sands of that ancient world that have since hardened into rock.

These tracks have been known for a long time, but have always been credited to worms. But recently two geologists, Dr. and Mrs. Carroll Lane Fenton, made a critical study of snail tracks on the seashore and compared them with the ancient tracks on their stone specimens. Their conclusion is that the tracks are much more like those of modern snails than they are like any other animal trails.

To the objection that no snail shells have yet been found in Lower Cambrian fossil beds, they point out that it is not necessary to find any; for many species of snails known today are shell-less.

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## PUBLIC HEALTH

## New Epoch in Conquest Of Disease is Predicted

**A** NEW EPOCH, that of the invisible viruses, is opening in the fight against diseases, Dr. H. H. Dale told members of the British Association for the Advancement of Science at their centenary meeting in London.

"For the study of infection, the past century and the latter half of it especially, has been the epoch of the visible bacteria," he said. "The new century seems likely to give us an epoch of not less important discovery concerning the viruses," he predicted.

Dr. Dale opened a special discussion of these ultramicroscopic organisms which cause many serious diseases of plants, animals and man, among them rabies, infantile paralysis and foot and mouth disease. He pointed out how little is known about them.

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# CE FIELDS

RADIO-ASTRONOMY

## Eclipses May be Visible Everywhere by Television

**T**HE WHOLE WORLD may some day be able to see the sun in total eclipse through the medium of television, Prof. Elihu Thomson, American electrical pioneer, predicted at the Faraday Centennial in London.

"Though direct observation of a total eclipse is necessarily confined to the dark tract of the moon's shadow, television may bring us from a distance images of the sun in eclipse," Prof. Thomson said.

This prediction may be fulfilled next August, when an eclipse cuts across New England; but technical development of television broadcasting may not then be sufficiently advanced.

Even television is an outgrowth of Faraday's epochal work, Prof. Thomson said; and the Marchese Marconi, inventor of wireless, said, "In a sense wireless dates from the discovery made by Faraday that it is not necessary for two electrical circuits to be in physical contact in order that electric energy might pass across the small space between them."

Marconi expressed as his opinion, "Television is now beginning to emerge from the laboratory stage."

Marconi declared that radio, especially since the advent of short waves, has become the worldwide voice of all nations, promoting peace through interchange of knowledge.

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ENGINEERING

## Frozen Concrete is Used In Russian Buildings

**C**ONCRETE that freezes while setting—the process of becoming elastic and stable—will fail when thaw time comes. All engineers know that. But if the concrete is frozen before it begins to set, beating nature to it, as it were, it will be in a normal condition after thawing and will set in approved fashion.

This idea has been put into actual practise in the Union of Soviet Socialist Republics where the winters are long and cold. Reporting in the *Engineering News-Record*, A. M. Gunzburg states that he has applied this unorthodox method of concreting to buildings in the Ukraine for many years and all have turned out satisfactorily.

The procedure involves certain requirements. Because the concreting must be done rapidly, the forms are made shallow and the reinforcing bars are so arranged as to allow the concrete to flow freely and leave no empty spaces. The mixture must be cold, the water used having a temperature of 40 to 50 degrees Fahrenheit. Operations are carried out in a sheltered location and pains are taken to see that the mass freezes completely.

All this is done in the winter. When spring comes the concrete, with a little water added, thaws and behaves in a normal manner.

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PSYCHOLOGY

## Correction not Much Help In Judgment of Length

**R**EPETITION of attempts to judge the length of cardboard strips will lead to improvement regardless of whether the person making the guesses is given any information as to the correctness of his former estimates. And the improvement is nearly as great as when he is told each time whether his estimate is right or wrong.

This conclusion, which is at complete variance with the findings of Prof. E. L. Thorndike in a similar experiment, is announced by Prof. R. H. Waters of the University of Arkansas.

Prof. Waters attempted to duplicate exactly Prof. Thorndike's experiment except that he used, besides the group which received correct information regarding their estimates and the one which received no comment, two additional groups one of which received wrong information and one of which was given correct information part of the time and misleading comments the rest of the time.

The group who were misinformed about their judgments half the time also made some improvement, but not so much as did the group who were given no comment at all. The accuracy of the group who were given wrong comments decreased.

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ORNITHOLOGY

## German Stork Loses Way And Ends Flight in India

**A** GERMAN stork that got lost on its way to Egypt, the usual wintering-ground of its species, and wound up in India, has recently been reported at Berlin. It was picked up at a little lake near Bikaner, Rajputana. On its leg was a numbered band, giving a key to its record in the archives of a German natural history society.

It had been caught, leg-banded and released in Beinrode, near Hattorf, in northern Germany. When flying-time came in the autumn it foregathered with 34 other storks, but for some reason did not depart when its companions left. A week after they had gone, it flew away also. The general direction of migration apparently had been indicated by the flight of the other birds, which flew southeastward until they reached Asia Minor and then "turned the corner" toward Egypt. The solitary belated stork seems to have followed the same course, but having nobody to show it where to change its course for Egypt, kept on flying until it passed clear over Persia and Baluchistan and landed in India.

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ENGINEERING

## "Whitewash" Car Inspects Track for Rough Spots

**W**HITEWASH is dropped on portions of the track of the Great Western Railway in England. This is done for the sake of the passengers' comfort. Not that whitewashing the track will make it any easier to ride over, but it will enable the maintenance crews to spot bends, where otherwise they might not, and to take care of them or any other fault in the track. In consequence, the whitewash car is a regular inspector of the lines.

A special electrical apparatus, operated by a current from the car's lighting system, controls the whitewash pot. When the car sways farther than it should to one side or the other, the valve to the pot is opened electrically and a quart of whitewash runs out on the track. The apparatus, described in the technical journal, *The Engineer*, involves the use of electric coils which act to complete a circuit, whereby electro-magnets attached to the whitewash valve are energized.

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