ARCHAEOLOGY

News of Prehistoric America Reported to Mexico Meeting

Scientists Hear of Discovery of Temple Buried for Hundred of Years Beneath Another at Chichen Itza

NEWS of prehistoric America — its buildings concealed beneath buildings; its fortune-telling mothers; its first, all-but-wild corn crops—latest scientific discoveries on these and several hundred more angles of ancient Americans are being reported in a barrage of papers read or declaimed before the International Congress of Americanists meeting in Mexico City.

Discovery of a temple which has been concealed for hundreds of years beneath the famous lofty Mayan temple "El Castillo" at Chichen Itza was reported by José A. Erosa Peniche. The stairway, facade and chambers of this ancient building, which Mayan Indian architects covered over to raise a higher, more impressive temple on the lofty pyramid base, were found by tunneling beneath the present structure, to avoid damaging it. Other archaeologists told of probing other Indian monumental buildings in similar fashion, as Mexico burrows deeper beneath the visible present.

Mayan Indians, greatest scholars of ancient America, knew exactly when to introduce inter-calendar days necessary to keep their year in step with the sun. So Erwin P. Dieselforff of Copan, Guatemala, has concluded. Eclipses of the sun were of major interest to these ancient American astronomers, he declared, explaining the Mayan method of forecasting when eclipses would occur.

Mayan Indian mothers consulted astrologers in their anxiety to know what good fortune or bad might be the destiny of their babies. Four of the lists of days and their omens, found in the books of Chilam Balam, have been studied by Alfredo Barrera Vázquez of the National Museum, in Mexico City, and he has concluded that the custom of guarding babies' fortunes by giving them calendar names up to a certain age was used by Mayan mothers of Yucatan, as well as by those in Indian nations of Mexico proper.

Tackling the much-argued question of when the first corn was raised by the first New World farmers, Pablo Martínez del Río advanced the theory that agriculture may have had a more rapid rise in America than in the Old World. Differences in methods of seed selection and cultivation, he believes, speeded up results for Indian farmers, so that it is not necessary to conclude, as some botanists have, that American Indians must have started on their road to higher civilization an extraordinarily long time back.

Newest excavations at Monte Alban, Mexico, scene of the discovery of a Treasure Tomb a few years ago, have demonstrated who built the mountain-top city. Indians of the same cultural heritage built both Monte Alban and the remarkable valley city of Milta not far away. Architectural ideas are the same in both cities, Dr. Alfonso Caso, director of Monte Alban excavations, has concluded. Three stages of Monte Alban's ancient history have been traced, and can be linked in time with Mexico's cultural stages of the Archaic, older than the Christian era, then Teotihuacan or Toltec, and Aztec.

The effort to find out what was going on in different parts of Middle America, during its great Indian era, have led archaeologists to explore pit tombs near Guatemala City. Dr. A. V. Kidder of the Carnegie Institution of Washington reported finding that these tomb-builders were living while Monte Alban in southern Mexico was in its middle stage, and the great Toltec Indian civilization in central Mexico was nearing its decline. Pottery from the Guatemalan tombs provides the key for linking the tomb builders with other tropical American cultures and drawing Central America more closely into the picture.

Success in finding one of the missing stone statues from Tiahuanaco, Bolivia, which a French traveler carried off to Europe a century ago, was reported by Henri Lehmann. Modern scientists have never seen these statues, he said, until now one of them, a statue combining human and animal features, has been found and placed at the Gate of the Sun in Tiahuanaco.

Science News Letter, September 2, 1939

A man can stand hot sun that will kill a desert diamond-back rattlesnake.

BOTANY

NATURE RAMBLINGS by Frank Thone

Roots by the Ton

WHEN a mowing-machine, or a big flock of hungry sheep, has finished with a field we say, "The grass is all gone."

That is a serious over-statement. A highly important half of the grass remains—the close-knit webwork of roots and underground stems. These still hold the soil against erosion, and will send up another crop of stems and leaves to make next season's pasture or hay.

Quantitative studies of this important but usually overlooked half of the grass have been going on for many years at the University of Nebraska, out on the prairies where Grass means Life. A new and comprehensive grassroots survey, extending from western Iowa across Nebraska and Kansas into the plains of eastern Colorado, has recently been completed by Drs. S. B. Shively and J. E. Weaver, for the Conservation and Survey Division.

These two botanists and their associates sought out still-unbroken stretches of native prairie of many different types, ranging from the tall, rank big bluestem to the curling, ground-hugging buffalo grass. They removed hundreds of sample sods, each half a square meter in area and ten centimeters (four inches) deep. They carefully washed out the soil, carefully determined volume and weight of the mass of roots and underground stems or rhizomes.

Results of this grassroots botanizing are astonishing. The root and rhizome crop of typical grasslands in West and Midwest can be measured in tons per acre. Total lengths add up into miles per square foot of sod.

Yields vary with rainfall, just as top yields vary. Thus, a series of 27 samples of big bluestem sod averaged out at 4.54

dry-weight tons per acre for the western Iowa area, 3.54 tons per acre in the country around Lincoln, Neb., and 3.17 in the drier region southwest of Lincoln. This falling curve closely follows the falling curve of annual precipitation for the same areas.

Organic matter in the soil—the stuff that comes from decaying plants and gives life and energy to the soil—also decreased uniformly with less rainfall. In western Iowa it constitutes 7 per cent by weight of the surface four inches of soil. In eastern Nebraska there is only 6 per cent. This falls to 4.5 per cent in central Kansas and finally to about 2.5 per cent in Colorado.

Science News Letter, September 2, 1939

MEDICINE

New Anti-Pneumonia Drug Can Damage White Blood Cells

Find Trouble in Three Children Who Were Treated With Sulfapyridine; Sulfanilamide Also Has Effect

WARNING that the drug sulfapyridine, used successfully in treating pneumonia, can damage dangerously the white blood cells is contained in a report by Drs. Nathan Rosenthal and Peter Vogel of New York City. (*Journal American Medical Association,* Aug. 12)

They found granulocytopenia in three children treated with the drug. Sulfanilamide also causes the trouble, and cases caused by sulfapyridine have previously been reported in adults. Careful tests of blood for possible danger signs are advised when the drug is being used.

Science News Letter, September 2, 1939

Feeds on Human Ear Drum

A UNIQUE case of a Japanese beetle feeding on the ear drum of a man is reported by Dr. Max Kimbrig of Huntington, N. Y. The legs or biting equipment of the beetle were stuck fast in the ear drum when Dr. Kimbrig removed it, and a large part of the drum was perforated.

"Since the Japanese beetle is herbivorous, it is difficult to understand his appetite for human ear drums," Dr. Kimbrig reports. "I have been unable to find in the literature any report of the destruction of an ear drum by a beetle that lives on plants."

Science News Letter, September 2, 1939

New Light on Cancer

THE RECENT report of two Dutch scientists, Drs. Fritz Kogl and Hanni Erxleben, that they had found unnatural forms of amino acids in malignant tissues, is given notice in the *Journal,* an editorial stating that, if confirmed by other workers and if all types of cancer tissues contain them, "a new and fertile field for study into the nature of cancer will be opened."

Science News Letter, September 2, 1939

Vitamin F Declared Dead

DECLARING that vitamin F has not been established as a vitamin although it has been commercialized by firms marketing cosmetics, an A.M.A. committee has endorsed the elimination of the term by the American Society of Biological Chemists and the American Institute of Nutrition. Reduction of the number of vitamin A and D preparations is recommended. Even since the committee on vitamins made its most recent report, the *Journal* observes that "vitamin B_6 has been synthesized, the chemistry of vitamin K has been clarified to a considerable extent, and evidence has accumulated about the significance of these factors and of riboflavin in nutrition.

Science News Letter, September 2, 1939

SOCIOLOGY

Labor Laws Make School's Job Bigger

LABOR laws raising the age at which children can enter industry has had one effect which many people may not have heard about. One result of these laws, Miss Katharine F. Lenroot, chief of the U. S. Children's Bureau, has pointed out, is to increase the number of children in schools by many thousands.

In some localities this has made the matter of space an acute problem. The principal problem, according to Miss Lenroot, is that of meeting the needs of adolescent boys and girls.

"The very fact that in the past many boys and girls were inclined to leave school at the age of 14 may indicate that some particular need of the child is not being met by the school," Miss Lenroot said. "At no time in life, perhaps, do restlessness and the spirit of adventure become such definite factors in the child's life. Practically all juvenile delinquents are children of school age."

Miss Lenroot does not, of course, hold the school entirely responsible for juvenile delinquency. Home environment and the attitude of the parents play a large part. But it is usually during his school days that the child's most serious delinquency develops and the school is therefore most intimately involved.

Schools are meeting the problem first, by giving more attention to the person being taught than to the things he is being taught; second, by giving vocational training and guidance; third, by establishing child guidance centers or other services for getting at the underlying cause of a child's dissatisfaction with school and remedying it.

"When the school program is enriched and vitalized so that the needs of all children are met, school becomes an exciting experience," Miss Lenroot said. "When teachers can and do know the kind of children with whom they work, they can make a great contribution to preventing delinquency and to promoting the welfare of all children."

Science News Letter, September 2, 1939

●RADIO

Dr. H. E. Howe, editor of Industrial and Engineering Chemistry, will be the guest scientist on "Adventures in Science" with Watson Davis, director of Science Service, over the coast to coast network of the Columbia Broadcasting System, Monday, September 11, 4:30 p.m., EDST, 3:30 EST, 2:30 CST, 1:30 MST, 12:30 PST. Listen in on your local station. Listen in each Monday.