

## ARCHAEOLOGY

# Mammoth Tusk is Found At Folsom Man's Summer Camp

## Hunters of 10,000 Years Ago Left Quantities of Debris Where They Hunted, But No Trace of Themselves

UNEARTHING a mammoth tusk at the now-famous summer camp of America's Folsom Men in Colorado, Dr. Frank H. H. Roberts, Jr., of the Smithsonian Institution has the first evidence that shaggy elephants were hunted around this prehistoric camp ground.

The summer campers, as revealed by Dr. Roberts in five seasons of digging, were alive during closing days of the last Ice Age, at least 10,000 years ago. The extent of their camp, and quantities of stone implements and debris of meals, tell of hunters who returned year after year. Their game is identified as herds of bison, musk-ox and camel that browsed in lush pastures where streams flowed from the melting glaciers.

New discoveries this summer include several new kinds of knives and scraping tools, all unmistakably like the workmanship of America's other Folsom Age hunters. Many of the hunters' crude attempts at art have been unearthed, indicating that in this early era American art was merely geometric lines scratched on bone.

Although Dr. Roberts has sought tirelessly for bones of the hunters themselves, the Folsom Men in Colorado and elsewhere in America continue to be ghostlike figures known only by their trail of characteristic weapons and tools and the bones of animals they killed.

Dr. Roberts also investigated two reported sites of Folsom Man in Wyoming and in Canada, finding typical Folsom weapons as far north as Saskatchewan.

Tracing the hunters into the north country may eventually clear up the question as to when America was first inhabited, that is, whether man arrived early in the last Ice Age, before glaciers closed the available corridors from the north, or whether they waited until the ice melted enough to provide a route where game and plant life existed. According to another theory, a corridor east of the Rockies remained ice-free, affording passage into America at any time during the last Ice Age.

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## SEISMOLOGY

## Earthquake Tidal Wave Moved 440 Miles an Hour

THE RECORD-breaking earthquake that crashed into front page news on Armistice Day was traced to its epicenter, within a few hours after it happened, by scientists of the U. S. Coast and Geodetic survey, and of the Jesuit Seismological Association at St. Louis from data collected by Science Service. The epicenter lay deep under the ocean at latitude 53 degrees north, longitude 158 degrees west, about 250 miles southwest of Mt. Katmai in Alaska, and 2,200 miles north of Honolulu. The time of origin was 9:48.6 a. m., Honolulu Time, Nov. 10.

The tidal wave that reached Honolulu five hours after the shock had to travel at the speed of the world's fastest airplanes, 440 miles an hour, to make the trip in that time. The highest speed hitherto recorded for an earthquake wave is 286 miles per hour.

Severity of the Japanese earthquakes of Nov. 5-6 was indicated by a veritable flood of data that poured into the offices of Science Service. A score of observatories, from Puerto Rico to French Indo-China, and from Alaska to British Samoa, reported four main shocks, two of which were very violent. Two epicenters were involved, each of which produced two shocks.

The first epicenter was in latitude 38 degrees north, longitude 140.7 degrees

east, about 150 miles northeast of Tokyo, on the seacoast. The shocks from this epicenter came on Nov. 5, at 5:43.3 p. m. and 7:50.2 p. m., Japan Time.

The second epicenter was off the coast, on the edge of the Japan Deep. The first shock from this locality, more violent than those on the seacoast, came at 5:54 p. m., Japan Time, on Sunday, Nov. 6, with an aftershock, at 6:38.9 a. m. on Nov. 7.

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## ENGINEERING

## Germany Making Use of Carburetor-less Engines

LARGE numbers of German airplanes are flying with carburetorless gasoline engines. They are using fuel-injector pumps, tried out in the United States but used for the first time on a large scale in Germany, it is reported in *The Aeroplane*, authoritative British aeronautical weekly. (Oct. 19)

Improved economy, better fuel mixture, decreased danger of fire and more exact control of the fuel are among the advantages claimed for this new departure from orthodox powerplant design.

The development is significant in view of the aerial armament race, for no airplane is any better than its engine or engines.

Critics of the carburetor system, which mixes fuel and air in one central location and then distributes it to the different cylinders, claim that the carburetor makes one cylinder too closely dependent on the others. It also makes for, they claim, more inefficient use of fuel because of the relative difficulty of controlling the mixture and because a different mixture is provided in each cylinder. These disadvantages are overcome with fuel injectors, it is asserted.

Fuel savings up to 15 or 20 per cent. are claimed. (Fuel injectors have been used in the United States, among others, by professional aerobatic flyers, many of whom claim, however, that their rebuilt motors consume more gasoline than they would with carburetors. This may, however, be due to the fact that they use engines originally designed for use with carburetors).

Such engines are being used in the German air force, it is stated.

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An ice pack 5,000 square miles in area was encountered by a recent expedition between Baffin Land and Labrador.

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