

showing that China was in step with Europe in the latter part of the Old Stone Age.

A new and more important niche in human pre-history was assigned to Wadjak Man, by Prof. G. Pinkley, London University, who concluded from study of the teeth that Wadjak Man, previously considered a forerunner of Australia's natives, foreshadowed the Mediterranean type of man.

Solo Man, prehistoric race in Java 40,000 years or more ago, demonstrated by additional evidence—his stone and bone implements—that he was akin to his Neandertal contemporaries in Europe.

A dictionary of the Indian sign language, begun by the late Major General Hugh Scott, was completed for the Bureau of American Ethnology by Richard Sanderville, 70-year-old Blackfoot Indian.

Prof. A. E. Jenks, University of Minnesota, reported finding in Minnesota a human burial accompanied by stone dart points which he pronounced "Folsom and Yuma" types, thus for the first time bringing together an early American hunter and the stone-tipped weapons he used in slaying mammoths and other extinct animals.

The first discovery of a settlement site of America's most ancient known people, the hunters who made "Folsom type" weapons, was made in Colorado, and announced by Dr. Frank H. H. Roberts, Jr., Bureau of American Ethnology.

Salvaging of Indian ruins, and valuable historic data connected with them, was made possible at various sites where Federal funds were allotted for museums, CCC camps, or other agencies to conduct excavations.

Evidence of a brilliant civilization was discovered in Panama, when Dr. S. K. Lothrop, Peabody Museum of American Archaeology and Ethnology, Harvard, unearthed graves of chieftains decked in golden ornaments and surrounded by quantities of cultural objects.

The fortress of Sacsahuaman, wartime capital of the Incas, was unearthed by archaeologists of the Peruvian National Museum.

Pre-Incan Indian life on the shores of Lake Titicaca, Bolivia, 1,200 years ago was reconstructed by excavation of adobe and stone houses, with basement burials, by Dr. W. C. Bennett, American Museum of Natural History.

That the dawn age of man's emergence into cultural evolution lasted tens, possibly hundreds of thousands of years, was suggested by J. Reid Moir's announcement that he sorted crude "dawn" tools of England's Stone Age into four kinds belonging to geologic periods ending in the Pliocene.

Helpful evidence for reconstructing Ireland's pre-history was found by the Harvard archaeological expedition in Ireland, which made the first discovery there of relics of four Stone Age cultures in stratified position at one site.

A musical pipe made of a lion's tooth, found in the mountains in Czechoslovakia, was pronounced by Prof. Karel Absolon, Brno University, the oldest musical instrument known in the world.

Discovery of inscriptions and public buildings at ruins believed to be Olynthos, in Macedonia, confirmed this site as Olynthos, Dr. David Robinson, Johns Hopkins University, reported.

Excavations at the Athenian Agora, directed by Prof. T. L. Shear, Princeton University, yielded ruins of the city's most famous altar dedicated to the Twelve Gods,

and the circular Tholos, a valuable landmark for tracing the plan of the ancient city.

Workmen repairing the Church of St. John Lateran, Rome, came upon walls of the first seat of the Popes, 319 A.D., and also ruins of a first-century Roman residence.

Ruins of Nessa, capital of the ancient Parthian archers, were located near Aschabad in the Turcoman Soviet Republic, by Russian archaeologists, and the palace, chief temple, and other remains investigated.

The long-sought cemetery of Troy, belonging to the city of the Trojan War period, was found by the University of Cincinnati expedition, led by Prof. Carl W. Blegen.

The fortress of King Saul at Gibeah, his walled capital, was identified at Tell el-Ful, in excavations by Prof. W. F. Albright, director of the American School of Oriental Research at Jerusalem.

The American Schools of Oriental Research began excavation at the Bible town Bethel, as a memorial to the late Prof. M. G. Kyle who made outstanding contributions to archaeology of Bible times.

Excavation of Rayy, famous walled city in Persia, was begun by a joint expedition of the Boston Museum of Fine Arts and the University of Pennsylvania Museum, and early discoveries included ruins and relics from almost every age of Persian history to the thirteenth century.

At the foot of the Elbrus Mountains of Persia, Dr. Ture Arne of Sweden found remains of a Copper Age town of 2000 B.C. which may serve to identify the cradle region of Indo-European peoples.

A temple of the Persian deity Mithras, "strongest rival of Christ in the third cen-

tury A.D.," was discovered at Dura Europos by archaeologists of Yale and the French Academy.

With the finding of a cemetery of 200 graves older than 3000 B.C., the joint expedition of the British Museum and the University of Pennsylvania Museum ended its 12 year program at Ur of the Chaldees.

At Tell el-Amarna, capital of Pharaoh Akhnaton, the Egypt Exploration Society discovered striking evidence of the haste with which the city was built, and traced foundations of the roofless temple where the Pharaoh worshipped the Sun-Disk.

The Metropolitan Museum of Art completed its work at Lisht, Egypt, after 14 seasons, the new discoveries including an entrance chapel to a royal pyramid, showing for the first time what the architecture of these chapels was like.

## Astronomy

Previously accepted dimensions of the Large Magellanic Cloud, nearest of external galaxies, were doubled (not less than 20,000 light years diameter) by studies under Dr. Harlow Shapley, Harvard Observatory.

The Milky Way galaxy in which we dwell (about 30,000 light years to its center) is no larger than other galaxies seen as spiral nebulae, Dr. J. S. Plaskett and Dr. J. A. Pearce, Dominion Astrophysical Observatory, Victoria, concluded from a study of the gravitational behavior of the so-called Class B stars.

The Milky Way galaxy was found to be only half as large as heretofore supposed



### TAKING PUNISHMENT

*This is what actually happens in that fraction of a second when the football player's toe meets the pigskin for the perfect placement kick. This high speed electrical flash photograph, taken at an exposure speed of 1/100,000th of a second by Prof. Harold E. Edgerton of the Massachusetts Institute of Technology, reveals for the first time what the eye has never seen. The kicker, Wesley E. Fesler, former all-American end at Ohio State University and now kicking and end coach at Harvard College used a ball inflated to the full playing pressure of approximately 13 pounds to the square inch. Measurement show that his foot penetrated at least half the diameter of the ball. Note the dust just to the left of the ball suspended in mid-air. The wires visible to the right of the pigskin were used to make the contact for the flash exposure.*