

## ARCHAEOLOGY

# Bones and Dart Points Date American 12,000 Years Old

## Six "Folsom" Points Found Among Skeleton Remains In Minnesota Gravel Pit Proof of an Ancient Race

FROM a gravel pit near Fertile, Minn., have been picked pieces of human bones mingled with six of the finely-fashioned dart points, skillfully chipped from flint, called "Folsom and Yuma points."

These Folsom and Yuma points are America's most intriguing relics made by human hands. For in New Mexico, Colorado, Oklahoma and other States these dart points were found associated with the remains of animals that scientists are confident have been extinct in North America for at least 10,000 or 12,000 years, a period of time that takes their antiquity back far beyond the Indian tribes Columbus found on his arrival.

Now Prof. A. E. Jenks of the University of Minnesota reports in the journal, *Science*, his evidence that these pieces of man-fashioned flint have been found unmistakably buried with a human being.

### Outstanding Mystery Solved

Here is the solution of what is generally conceded to be an outstanding mystery in American prehistory. The discovery for which Minnesota now claims credit has been sought in almost every state in the Union. In almost two-thirds of the States have been found the sharp stone points for tipping wooden spears, made after the prehistoric trade-marks that modern science calls Folsom and Yuma in honor of the places where such stone work was first identified. The stone points resemble arrow tips but they are thousands of years older than the invention of bows and arrows in this country. The darts could be found, and with them bones of mammoths, extinct species of bison and other game belonging to the last days of the Ice Age. But where were the hunters? So long as the hunters themselves were missing, some anthropologists withheld judgment cautiously as to whether there were actually in America human beings as long ago as the age of the mammoths.

The ancient American from Minnesota, probably unimportant during his life and now suddenly thrust into the scientific limelight, has already been named. He will go into scientific history as "Brown's Valley Man" after the modern name for his burial place.

### Amateur's Quick Intelligence

Full credit for the first stages of the discovery is given by Dr. Jenks to William H. Jensen of Brown's Valley: "To his quick intelligence the rescue and conservation of the find is due."

It was last October that Mr. Jensen happened to spy a symmetrical bit of flint in some gravel dumped on his driveway for road repair work. Being a collector of Indian antiquities, Mr. Jensen recognized it as a hand-shaped stone weapon. Fragments of human bone also caught his eye in the gravel. He hastened to the pit where the drayman was getting his road material and there he discovered portions of skull and other bones of a human burial, in the bottom of the seven-foot pit dug by the energetic drayman. Five weapon points of the type used by the oldest hunters known in America were picked out or dug out of the gravel of the ancient grave.

Mr. Jensen felt that he had something remarkable and interesting, and three months later—this discovery drama moved slowly—he wrote to Dr. Jenks about it. In June the drama rose toward its climax when he sent Dr. Jenks a photograph and the University anthropologist recognized to his surprise that the gravel pit grave had held a hunter who used the famous Folsom type of stone weapon.

### Re-Dug the Pit

Late in July Dr. Jenks and six archaeology students arrived at Brown's Valley and confirmed their privately received report by re-digging the drayman's gravel pit. They brought up 17 more bones of the badly shattered skeleton, and could fit some of the pieces to bones found earlier by Mr. Jensen.

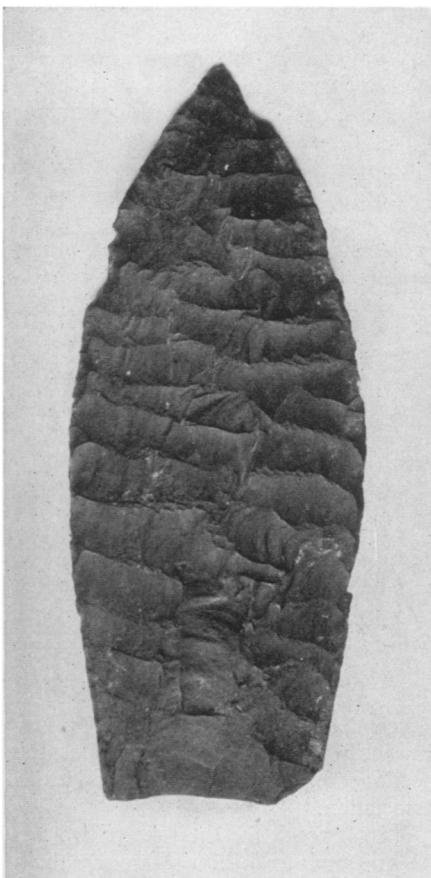
They also dug out a sixth flint weapon of ancient pattern.

To get the verdict of a geologist as to the age of the gravel deposit, Dr. Jenks has queried the dean of specialists on American glaciation, Dr. Frank Leverett. Dr. Leverett dates the gravel when Lake Agassiz spread over this as belonging to the Ice Age period, section of the country, and, more particularly, he believes the gravel was deposited near the beginning of the Tintah stage of the glacial lake, or about 12,000 years ago.

### No Loam in Pit

Since the burial pit contained no trace of the black loam blanket, which has long covered the layer, Dr. Jenks is convinced that the hunter was buried there in America's Ice Age.

*Science News Letter, September 8, 1934*



### PROVES AMERICAN'S ANTIQUITY

*This bit of finely chipped flint found with the skeleton of the prehistoric primitive American hunter who probably used it, pushes man's antiquity in America back to some 12,000 years ago, when mammoths and mastodons, now extinct, lived on this continent. It was found in Brown's Valley, Minnesota, by Dr. Albert E. Jenks, University of Minnesota.*

PSYCHOLOGY

# "Nature Consists of Waves Of Knowledge in Minds"

Sir James Jeans in B.A.A.S. Presidential Address Presents Philosophical Meanings of New Physics

"NATURE consists of the general quality of waves of knowledge, or of the absence of knowledge, in our own minds."

Sir James H. Jeans, noted mathematical physicist, using these words has condensed reality, the very existence of human beings, and all other manifestations of the world we sense, into happenings in our brains. Thus the "universe around us" becomes mental.

In his presidential address opening the annual British Association for the Advancement of Science at Aberdeen, he presented striking philosophical interpretations of the new physics.

As to whether the universe is so predestined and planned that individual free-will and initiative is ineffective, Sir James finds that the new physics of today is far more hopeful than the classical physics of a generation ago that gave rise to materialism.

"Can our minds change what is happening in reality, or can they only make it look different to us by changing our angle of vision?" Sir James asked. "We do not know, and as I do not see how we can ever find out, my own opinion is that the problem of free-will will continue to provide material for fruitless discussion until the end of eternity."

## Reopened a Door

"The contribution of the new physics to this problem is not that it has given a decision on a long-debated question, but that it has reopened a door which the old physics had seemed to slam and bolt. We have an intuitive belief that we can choose our lunch from the menu or abstain from housebreaking or murder; and that by our own volition we can develop our freedom to choose. We may, of course, be wrong. The old physics seemed to tell us that we were, and that our imagined freedom was all an illusion; the new physics tells us it may not be."

Although Sir James did not use the word "God," he referred to what many might call God, "the problem which

would have commended itself to many philosophers, from Plato to Berkeley."

This question arose in his address in connection with his detailed illuminating contrasts of the old particle-picture of the universe of classical physics and the newer and more accurate wave-picture of the new physics.

"The old particle-picture which lay within the limits of space and time, broke matter up into a crowd of distinct particles, and radiation into a shower of distinct photons," he explained. "The newer and more accurate wave-picture, which transcends the frame-work of space and time, recombines the photons into a single beam of light, and the shower of parallel-moving electrons into a continuous electric current."

## Division Disappears

"Atomicity and division into individual existences are fundamental in the restricted space-time picture, but disappears in the wider, and as far as we know more truthful, picture which transcends space and time. The photons are no longer distinct individuals each going its own way, but members of a single organization or whole—a beam of light. The same is true of the electrons of a parallel-moving shower."

"The biologists are beginning to tell us, although not very unanimously that the same may be true of the cells of our bodies. And it is not conceivable that what is true of the objects perceived may be true also of the perceiving minds? When we view ourselves in space and time we are quite obviously distinct individuals; when we pass beyond space and time we may perhaps form ingredients of a continuous stream of life."

From this idea of each of us as an indistinct part of the universal life stream, Sir James considers it but a step to the solution of the greater problem which lies at the foundation of religion and mysticism.

In this manner physics, as viewed by Sir James, provides "a possible although very conjectural clue" to why in a na-

ture made of our mental ideas our many minds all construct one and the same nature and we all see the same sun, moon and stars.

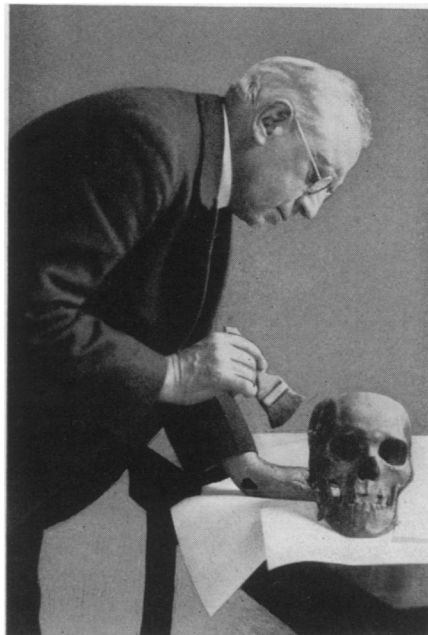
How Bohr, Einstein, Heisenberg, de Broglie and Schrödinger developed so successfully a universe of waves instead of particles, as in the classical physics, was recounted by Sir James. He finds the wave picture or analogy much more satisfactory, saying:

## Just Storminess

"The universe is no longer a deluge of shot from a battery of machine-guns, but a stormy sea with the sea taken away and only the abstract quality of storminess left—or the grin of the Cheshire cat if we can think of a grin as undulatory."

Space and time can not be classified as realities of nature but are mere mental frameworks of our own construction, Sir James said. In the new wave-picture of modern physics, ordinary time and space are inadequate to show two currents of electricity moving independently. Six dimensions of space and one of time are necessary.

*Science News Letter, September 8, 1934*



## FOUND 12,000-YEAR-OLD AMERICAN

Dr. Albert E. Jenks, University of Minnesota anthropologist, who has just announced "Brown's Valley Man," one of the oldest of authenticated Americans. Over a score of pieces of human skeleton were dug out of a Minnesota gravel pit by Dr. Jenks and William H. Jensen, amateur collector of Indian relics, who was the discoverer. In the photograph Dr. Jenks is examining an African skull, and not his most recent find. (See page 147.)