

machine showed that an average value of 2.84 tricks for each hand could be obtained. This came about because the greatest number of cards by suits in a bridge hand, dealt for even the ideal case of perfect randomness, are of three cards each. As such they have no trick-taking value based on the long and short suit designations.

With the card dealing apparatus, four instead of three card suits appeared with the greatest frequency, and there

was an accompanying increase in two cards and one card short suits. Either length or shortness in a suit is necessary to obtain the trick values being considered in Prof. Woodruff's research.

Moral: If you can't afford a card dealing machine, always shuffle the pack four times.

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Science News Letter, February 9, 1935

The discovery site is not very far from Clovis, New Mexico, where Dr. Edgar B. Howard of the University Museum, Philadelphia, has made notable discoveries indicating existence of early inhabitants in the region. It is also not far from Folsom, New Mexico, where one of the first startling clues suggesting that America was inhabited more than a very few thousand years ago came to light.

Science News Letter, February 9, 1935

ARCHAEOLOGY

Uncovers Evidence of Early Mammoth Hunters

A TEXAS county judge, J. A. Mead, turned amateur archaeologist, has unearthed important evidence regarding the most elusive characters of America—the shadowy mammoth hunters.

These ancient Americans are believed to have hunted long-vanished types of big game with stone-tipped spears some 15,000 or 20,000 years ago.

Digging in a farmer's field seven miles northwest of Miami, where he presides over the Roberts County court, Judge Mead unearthed a stone dart point lying directly between two ribs of one of the big mammoths or elephants that once lumbered over Texas plains. Two witnesses, "responsible citizens," watched while the Judge removed from the earth some of the teeth and big bones of the fossilized animal.

Finding a hand-made weapon among bare bones of a long-dead elephant is fairly strong circumstantial evidence that a man slew the elephant. Archaeologists are seeking just such evidence, carefully uncovered, to build up the

case for the existence of ancient Americans.

Judge Mead reported his evidence to Floyd V. Studer, director of archaeology for the Panhandle-Plains Historical Society, who at once visited the site.

Announcing the discovery to Science Service, Mr. Studer said:

"While I have personally found several true Folsom or Yuma points in this immediate area, this is the first time one has been reported in direct association with fossil mammals.

"The bones were found in blue-green clay, which indicates a lake bed. There is no evidence of river or stream sand. This blue-green formation lies undisturbed about 18 inches below the present soil level."

The weapon found with the elephant's ribs is described as four and a half inches long. It does not have a groove down its entire center, as the typical Folsom darts do. But in some other respects, such as the smooth edge of the base, it is characteristic of certain weapons ascribed to the age.

ARCHAEOLOGY

Discovery of Edomite Ruins Dates Coming of Israelites

DISCOVERY of the fortresses of the Edomites, Bible enemies of the Israelites, has given science a new, strong clue to the century when the Israelites marched toward their Promised Land.

An expedition by four institutions, exploring the Arabah Valley of Transjordan by camel and motor car, has traced the boundaries of the ancient Edomite Kingdom, locating important Edomite cities, villages, and fortresses, reports Dr. Nelson Glueck, of Hebrew Union College at Cincinnati, one of the four institutions taking part.

The Edomites, explains Dr. Glueck, blocked the way of the Israelites as they moved northward from Egypt toward their Promised Land. The kinds of pottery found today in the deserted kingdom of the Edomites show that they were established there between the thirteenth and the eighth centuries B. C.

"The date of the Exodus must be assigned to the thirteenth century, B. C.," declares Prof. Glueck on this evidence.

Had the Exodus taken place earlier than that century, it is reasoned, the Israelites would have found neither Edomites nor Moabites to oppose their progress. And according to Biblical account in Numbers 20, the Israelites were compelled to go around Edom. Had the Israelites come earlier, he added, they would probably have occupied the territory of Edom themselves, leaving Palestine farther north for later comers.

The first known fortresses of the Edomite enemies of Israel were large walled enclosures, built of rough flint blocks, and strengthened with revetments and towers. Edom, Prof. Glueck says, was a highly civilized and intensively settled country in the days when it stood in the way of the advancing Israelite forces.

Science News Letter, February 9, 1935

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