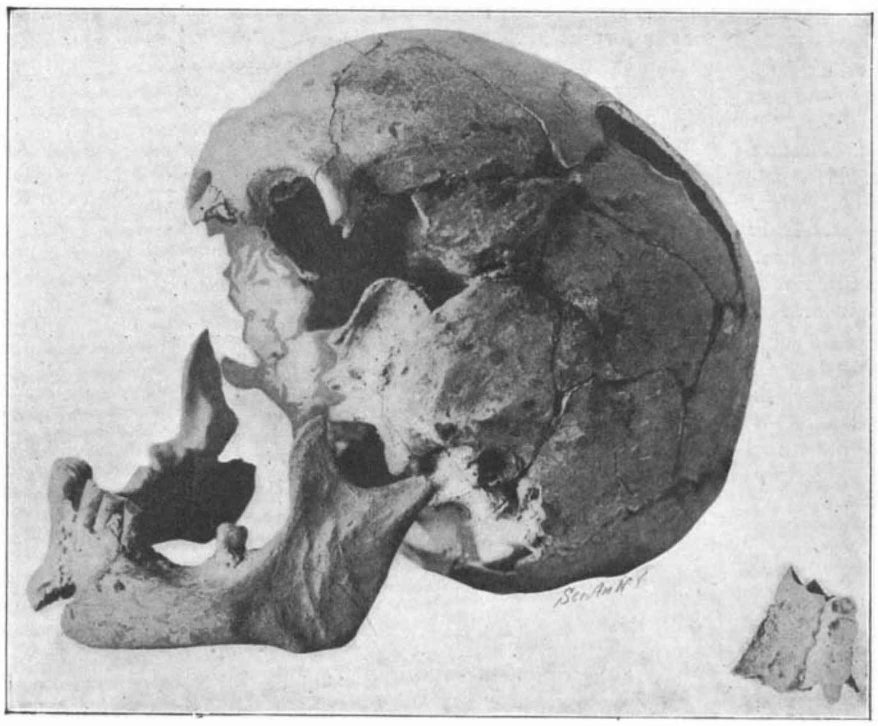
### THE LANSING SKELETON.

Among the subjects discussed by the International Congress of Americanists, held at the American Museum of Natural History, was the antiquity of man. One of the exhibits was the "Lansing Man," consisting of a skull and a few bones said to be at least eight thousand, and, perhaps, thirty thousand years old, found by a farmer near Lansing, Kans., last February.

In the opinion of Prof. Upham, the Lansing skeleton offers probably the oldest proof of man's presence on this continent; yet it is only a third, probably only an eighth, as old as the flint hatchets of St. Acheul. It has been estimated that man in the Somme Valley and other parts of France, and in Southern England, made good paleolithic implements fully a hundred thousand years ago. When the earliest man came to America cannot probably be closely determined. It may have been during the glacial period; it may have been earlier. In Prof. Upham's opinion, the Lansing discovery gives us much definite knowledge of a glacial man, dolichocephalic, low-browed, and prognathous, having nearly the same stature as our people to-day. Prof. Williston believes that the Lansing man was doubtless contemporary with the equus fauna, well represented in the late Pleistocene deposits of Kansas, which include extinct species of the horse, bison, mammoth and mastodon, moose, camels, llamas and peccaries. He was also the contemporary of the late paleolithic men of Europe, whose advanced implements showed that they had developed beyond the stages of primitive savagery.

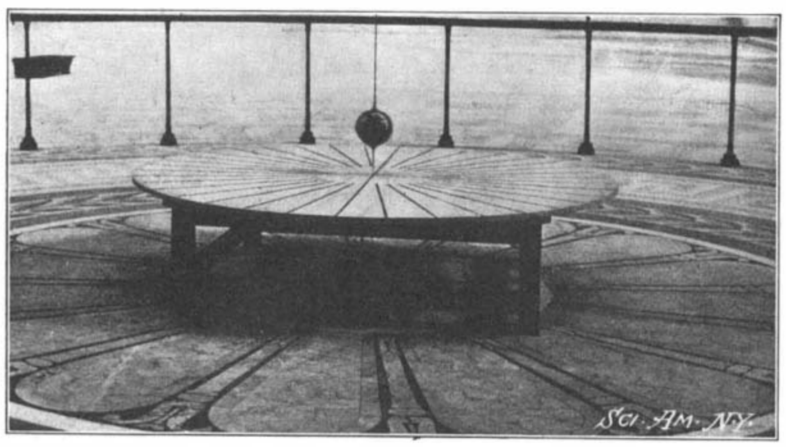
At the International Congress referred to, anthropologists, if not more cautious in their estimates than Prof. Upham, were at least not so enthusiastic. Dr. G. A. Dorsey, of the Field Columbian Museum, who presented the skull to the Congress, considered that it was that of a man fifty-five years of age, six feet in height, whose lower limbs showed greater development than the upper. In his opinion the skull was practically identical with the skull of the ordinary Indian of the plains. Dr. Hrdlicka, who has made a very careful investigation of the Lansing man, states that: "The inevitable conclusion from the examination which was conducted, absolutely without any prejudice or preformed opinion, is that the Lansing skeleton is practically identical with the ordinary male skeleton of a large majority of the Middle and Eastern States Indians. Any assumption that it is thousands of years old would carry with it not only the comparatively easily acceptable assumption of so early an existence of man on this continent, but also a very much farther reaching and far more difficult conclusion, that this man was physically identical with the present-day Indian, and that his physical characteristics during all the thousands of years assumed as having passed since his existence, have undergone absolutely no important physical modification."




**THE SKULL OF THE "LANSING MAN."**
Variously estimated at from 8,000 to 30,000 years old.

### THE PANTHEON EXPERIMENTS WITH FOUCAULT'S PENDULUM.

Newton was the first to conceive the idea of experimentally proving the diurnal movement of the earth. He reasoned that as the earth revolves, all the points of its surface must have an angular velocity which increases with the distance from the ideal axis of rotation, which ceases at the poles, and which reaches its maximum at the equator. As a result of the movement of the earth, the summit of any edifice moves from west to east more rapidly than its base. Hence it follows that if a ball of lead is dropped from the top of a tower, preserving its initial velocity during the fall, it should strike the ground a little to the east of the foot of the vertical dropped from the starting point.




**THE TABLE OVER WHICH THE PENDULUM BOB SWUNG.**

Experiments have confirmed this idea. Benzenberg, at the beginning of the nineteenth century, actually measured with precision the deviations which occurred in the interior of a church tower, and of a mining shaft, notwithstanding the restricted height from which the bodies fell. Later, Léon Foucault resorted to the pendulum in order to demonstrate the rotation of the earth.

It was in 1851 that Foucault made his classic experiments in the Pantheon at Paris. Unfortunately, the *coup d'état* of December 2, 1851, interrupted his investigations. It was determined at a recent meeting of the Société Astronomique de France to repeat his experiments. All that is left at the Pantheon to mark the investigations of 1851 is the balustrade over which many an eager observer hung when Foucault carried out his work. Camille Flammarion was deputed to repeat the observations of the apparent displacement of the pendulum. The bob used was not that of Foucault, but that of the pendulum employed by Maumené at the Cathedral of Rheims. Its weight, however, was the same, 28 kilos. In order to suspend this massive weight, a piano wire 67 meters long and 72 millimeters in diameter was employed.

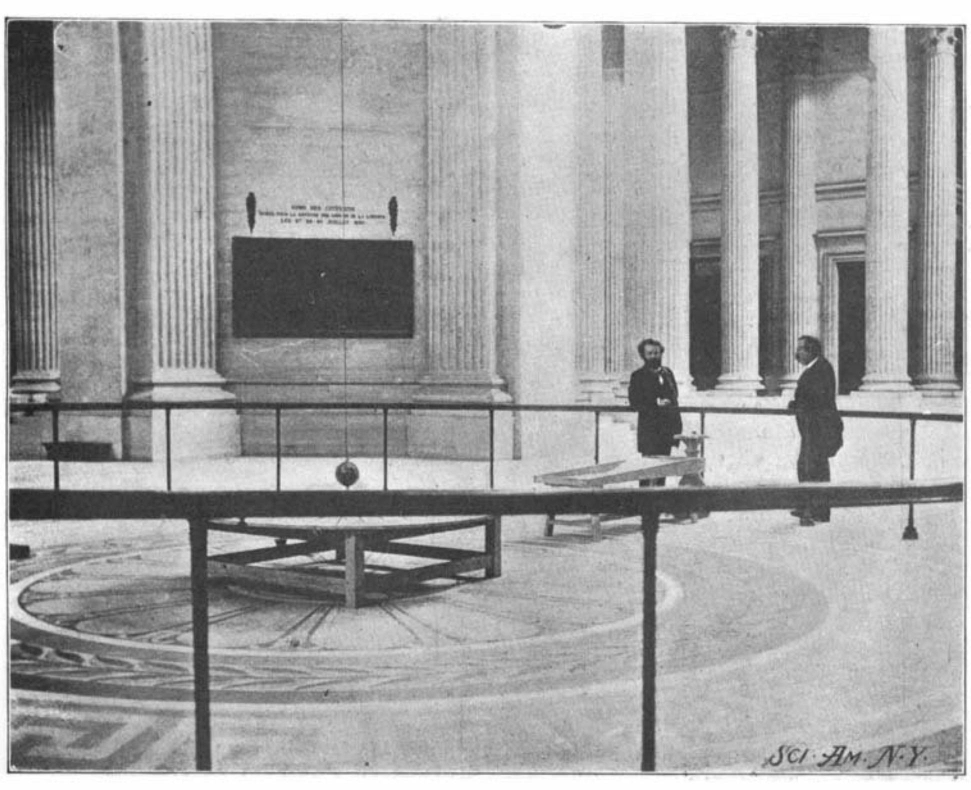
The duration of each beat of the pendulum expressed in seconds is equal to the square root of the length expressed in meters. For example, the duration of oscillation of a pendulum 64 meters in length is 8 seconds for a single beat. For a complete oscillation the time is 16 seconds. Since the total length of the Pantheon pendulum, measured from the center of the bob, is 67 meters, the duration of a single beat is 8.2 seconds. A double beat would, therefore, require 16.4 seconds. The pendulum was allowed to oscillate for several hours, the amplitude of its beats gradually diminishing.

The mechanical principle of the experiments is based on the law that the plane in which a pendulum oscillates remains fixed even though the point of the suspension of the pendulum be caused to turn. This principle can be demonstrated by means of a very simple apparatus. A small pendulum is mounted in a frame of wood, supported by a table. While the pendulum is oscillating the apparatus is caused to turn slowly. The direction of the plane of oscillation will remain the same.

If a pendulum were hung over the North Pole, the plane of its oscillation would remain invariable despite the rotation of the suspending wire. The earth will turn under the bob and the plane of oscillation will apparently revolve once in twenty-four hours around the vertical, in the direction contrary to the true movement of the earth's rotation; that is to say, from left to right, like the hands of a clock. At the South Pole the same phenomenon could be observed; only the plane of oscillation would seem to turn in the other direction by reason of the observer's changed position. It is evident that if the plane of oscillation seems to turn in a certain direction at one side of the terrestrial equator, it will appear to turn in the contrary direction at the other side. The plane of oscillation ought to appear immovable at the equator. There is no reason why it should seem to turn in one direction any more than in another, the observer at the equator during the twenty-four hours of rotation of the earth being always in the same position relatively to the oscillating pendulum.

If we shift the scene of this experiment to our own latitude, the phenomenon becomes more complicated, because the vertical from the point of the wire's suspension which, at the pole, is confounded with the axis of the earth, and has a fixed direction, now participates in the movement of the earth and describes a cone about that axis.

The plane of oscillation of the free pendulum, com-




**THE SAND-FILLED TROUGHS AND THE TABLE AS THEY APPEARED IN THE PANTHEON.**


**FLAMMARION STARTING THE PENDULUM BY BURNING THE SILK STRING WHICH HOLDS IT.**