

SCIENCE

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VANDALISM AMONG THE ANTIQUITIES OF YUCATAN AND CENTRAL AMERICA.

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THE ancient buildings and sculptures of Yucatan and Central America have within a few years been much damaged and disfigured by the indifference of the natives of those countries, and by the vanity of travellers, some of them unfortunately American, who paint their names in large characters on the sides of the buildings and carve them on the sculptures.

Briefly, I will enumerate a few instances that have come under my personal observation.

The magnificent "House of the Governor" in Uxmal, probably the grandest building now standing in Yucatan, is almost covered with names on the front and on the cemented walls inside. These names are painted in black, blue, and red, and the letters are in some cases twelve inches high, and here are to be seen the names of men who are widely known in the scientific world. The "House of the Dwarfs" in the same city has suffered in a like manner. Many of the sculptures which have fallen from the buildings in Uxmal have been wilfully broken, and I noticed particularly that two of the beautifully carved turtles from the "House of the Turtles" had been broken apparently by a machete.

The large face figured by Stephens in "Incidents of Travel in Yucatan," Vol. II., p. 434, is in a mound in the backyard of a shop in Izamal. This has been almost destroyed. The whole of the face between the eyes and the lower part of the chin is gone, and I was told that the stones thus obtained were used in repairing a fence. On the other side of this mound is the bas-relief in stucco discovered by Charney, and this is slowly crumbling away. The steps leading up to the top of the Great Pyramid are being thrown down; and many mounds in Yucatan are being destroyed at the present time to furnish building material. In fact, if a bee's nest should be found in one of the old buildings, the Indians would tear down part of the structure to get at the honey.

In Copan, when the Peabody Museum Honduras Expedition compared the condition of the "Idols" to-day, with the photographs taken by Mr. A. P. Maudslay seven years ago, it was found that during that time some of the very finest sculptures had been disfigured by blows from machetes and other instruments. The Stela given as a frontispiece in Stephens's "Incidents of Travel in Central America," Vol. I., has been much marred by some one who has broken off several ornaments and a beautiful medallion face from the northern side. One of the faces and several noses have been broken off from the sitting figures on the altar figured by Stephens in the same volume, opposite page 142. On some of the idols and altars names have been carved, notably on the back of the Stela figured opposite page 158 in Stephens, and a large fragment has been broken from the same Stela. While excavating in one of the chambers of the Main Structure we uncovered a beautiful hieroglyphic step, but before we had time to secure a photograph of it, some visitor improved the opportunity while no one was about to break off one of the letters.

In Quirigua a small statue, discovered by Maudslay and removed by him to a small house near the rancho of Quirigua, had the head and one of the arms broken from it during the interval between two visits. This statue was of the highest importance, as it very much resembled the celebrated "Chaac-mol" now in the Mexican Museum, but discovered by Le Plongeon at Chichen

Itza. One of the Stelæ at Quirigua has had a name carved on it quite recently; but the sculptures of this place are in a much better state of preservation than those of Copan owing to their being at some distance from the road, and being covered with a dense tropical growth; while those of Copan are within a mile of the village, and there was formerly a road over the Plaza Grande and among the idols. The burning of the bush, to clear the land for milpas, has also injured many of the sculptures owing to the cracking of the stones by the heat.

While in Nicaragua I learned that the sculptures on the Island of Zapatero in Lake Nicaragua have within a few years been much broken and disfigured. These were described by Squier in "Nicaragua, Its People, Scenery, Monuments, etc.," Vol. II.

As the governments of Mexico and the Central American republics are making little or no effort to preserve or care for the antiquities within their boundaries, it remains for the United States to do something to preserve these vanishing memorials of the past. The initiative has been taken by the Peabody Museum, Cambridge, which has been granted, for ten years, the care of the antiquities of Honduras. A wall has been built enclosing the principal remains in Copan, and a keeper been placed in charge with strict orders to allow nothing to be destroyed or carried away. Thus a strong effort is being made by the Peabody Museum to protect the wonderful carvings in stone of the ancient city of Copan.

ANCIENT JAPANESE CLOCKS.

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THE ancient Japanese, in common with most Oriental nations, measured time by the position of the sun. Their day commenced and ended with sunrise. As Japan lies between the thirtieth and the forty-fifth parallels of latitude, the days and nights vary considerably in length during the year. To fulfil the conditions of their notation a timepiece must divide into equal parts the periods of daylight and the periods of darkness. To construct a timepiece which will perform this erratic division of time is a mechanical problem of no mean order. This, the ancient Japanese have accomplished in several very ingenious ways.

Their clocks may be roughly divided into two general classes:—

1. Those with a constant rate, in which the changing length of the hours is indicated by the spacing of the numerals, which are engraved on movable pieces of metal.
2. Those with a varying rate, having the numerals equally spaced, the length of the hour being regulated by the rate of the clock.

Under the first division there are two types, namely, clocks with rectilinear dials, and clocks with circular dials. Clocks of the former type are driven by a weight or a spring. Those of the second type by weight only. The power is transmitted by a cord or chain to which, in clocks with rectilinear dials, the index is attached. The hour-signs are engraved on separate pieces of metal, which slide in a vertical groove in the front of the case. Parallel to this is a slit in the case, through which the hand is attached to the cord. The hours of day and of night are indicated by different characters. The spaces between these signs are regulated by moving the pieces of metal bearing the hour-signs nearer together or farther apart as occasion may require. Some clocks of this type are provided with graduations and a table by which the hour-signs may be properly adjusted in accordance with the season of the year. The hand moves downward over the face of the dial as the clock runs down and resumes its place at the top when it is wound. The escapement is the verge, with crown-wheel, balance-wheel, and hairspring. The driving-power is either a weight or a spring, as before stated.