made at Los Angeles, at the Coast and Geodetic Magnetic Observatory, by means of automatic photographic registry, point to a very recent (just before the establishment of the observatory in 1882) occurrence of the maximum east declination at that place.

In passing up the Pacific coast, we notice everywhere in Oregon and Washington Territory that either the reversal of the secular motion has already occurred, or is about to occur shortly. The present is therefore a very important epoch in the science of terrestrial magnetism as relating to our western coast, and hence demands special watchfulness on the part of the survey, in order that its charts may show our latest knowledge respecting this, to the navigator, most important information. C. A. S.

Washington, Sept. 21.

Archæological Remains in the Costa Cuca (Guatemala).

DURING my late archæological tour through Central America, I met an intelligent countryman of mine, Mr. Hermann Wundram, who spoke very enthusiastically of the mounds and idols on the coffee-plantation Santa Margarita, of which he is the *administrador*. After having visited the ruins of Iximché, Utatlan, and other places of historical interest in the Altos of Guatemala, and being anxious to see these remains, of which, to my knowledge, no explorer has made any mention, I rode from Quetzaltenango down to Retalhuleú, in whose vicinity they are situated.

Scattered over a vast area on the plantations of Santa Margarita and San Isidro, they consist of foundation-walls of stone edifices, and of a number of mounds of different heights and circumferences, either single or in pairs. One of the mounds has been used until recently as a burial-ground by the Indians. Their relative position cannot be determined, as the dense coffee-plantations can be penetrated but with the utmost difficulty.

In the neighborhood of the mounds stand upright sculptured monoliths, or lie half buried in the ground. On two of these appears in low relief the figure of a twisted serpent, surrounded by ornamental scrolls artistically executed. The ornaments have, however, no resemblance to Mexican picture-writings or to Maya hieroglyphs. One of the serpents looks at a rectangular shield in the centre of the slab, 13 inches high and 9 inches wide, and divided into four panels, the upper panel ornamented with two figures such as here given. This stone is 4 feet 6 inches wide, 5 feet above and 1 foot 6 inches below the ground.  In front of it stood a half-burned tallow candle, as an offering of the Indians, who adore these relics of their ancestors as saints, — a queer mixture of Pagan heathenism and Christian belief.

The other stone is 3 feet 8 inches wide and 4 feet 4 inches high, but the upper portion is broken off. On several of the monoliths the figures are so much obliterated, that only a few triangles and rectangles in groups can be made out; and on one of them, apparently of grayish marble (12 feet 9 inches high and 5 feet wide), but a few lines could be distinguished. A stone figure (5 feet 9 inches high and 3 feet 2 inches wide) representing the upper half of a man, and resting on a double base of oval form (4 feet wide), had but four fingers on the clumsy hands; and of the square face, only the broad-cornered nose and half of the right eye could be recognized. At the side of the figure lay a small statue, probably that of a child, with mutilated arms and broken-off head.

Near by was a cylindrical stone, of 28 inches diameter, in the form of a millstone, with a cavity of 22 inches diameter in the centre, and a half-oval annex at the lower end. A similar stone found here, but without the annex, had been placed on one of the corners of the yard in front of the planter's residence. The central cavity was of the same width as that of the former stone, but the margins were partially ornamented. I could not make out any other explanation of their use, but that these stones had served as receptacles for the hearts of the victims, after these had been torn from the breast; at least, they had a striking resemblance to the Cuauhxicalli of the ancient Mexicans.

At another side of the yard stood the sculptured bust of a man, also found in the ruins, 3 feet high, and resting on a base 11 inches high. The face was nearly round; eyes, nose, mouth, and rectangular ears, very large; the forehead low and much receding; the arms bent over the chest, with no hands; the back flat, as having leaned against some object. An obtuse-angled collar, reaching to the middle of the chest, seems to indicate that the figure represents a chieftain.

The rude and clumsy stone figures contrast strangely with the admirably correct and artistically executed reliefs of the monoliths: hence the inference seems to be justified that both belong to different peoples and different periods, — an inference which indeed is confirmed by the tradition of the Indians. They report that a city flourished here many years ago, but that it was destroyed by the Chinantecos. The latter term is derived from *chinamitl*, a Nahuatl word which signifies 'an enclosure of reeds' (*Seto ó cerca de cañas; chinantia, hacer seto* — Molina). The *Chinantecos* are therefore the makers and inhabitants of such enclosures. But to what known tribes does the term refer? When I travelled from Lake Atitlan, the most beautiful I ever saw, to Chichicastenango, and from Santa Cruz del Quiché to Totonicapam, — districts still inhabited by the Quichés and Cakchiquels, — I discovered the interpretation of the name. The dwellings of these Indians, mere huts of reeds and wooden sticks, nestle on the declivities of the hills or in the ravines, surrounded by *milpas*, and enclosed by fences of the above material, often scattered over an area of a square league. It is the same mode of settlement, which, according to Ximenez, was even at his time peculiar to the Quiché tribes, and bespeaks their ancient social organization. A number of these *chinamitales* formed the *amac* ('clan, gens') ruled by an *ahagua*. These *ahaguas*, in turn, constituted the great council of the tribe, without whose consent nothing could be disposed of.

That in the Indian tradition above quoted the name 'Chinantecos' refers really to the Quiché tribes, is corroborated by other aboriginal testimony. Indeed, we know from the 'Popol Vuh' and from the 'Titulo de los Señores de Totonicapam,' that the Quichés had extended their conquests under Quicab, who seems to be identical with the Hunahpú of Iuarros and of the 'Isagoge Historico,' down to the Pacific coast. Furthermore, we know from the 'Titulo de los Señores de Quetzaltenango,' that the country between Mazatenango (Cakolqueh) and Mazatlan was tributary to the Quichés; nay, even in the list of tributes, fish from the rivers Samalá, Uquz (Ocos), Nil, and Xab are enumerated. The fact that the ruined city is situated between the two last-named rivers, renders it almost a certainty that its inhabitants belonged to these tributary tribes, and that, from giving their conquerors a Nahuatl name, they were of Nahuatl origin.

There is another circumstance which points in the same direction; namely, the feathered serpents on the sculptured monoliths. They doubtless bespeak a Quetzalcoatl cult, — a cult conspicuously flourishing among the Nahuatl tribes. Four immigrations of such tribes into Guatemala are recorded by the Mexican and Spanish historians. The first one is that of the Toltecs after the destruction of Tollan, the seat of their great council-house (Ixtlilxochitl); the second, that of the Mexicans and Cholultecas, driven from Soconusco by the Olmecas, part of whom settled in Guatemala and San Salvador as Pipiles (Torquemada); a third one took place during a famine under the first Mocteuhzoma (Motolinia, Gomara, Herrera, Oviedo); and the last one under Ahuizotl, who, at the end of the fifteenth century, sent soldiers, under the disguise of merchants, to the Pacific coast of Guatemala, in order to form a nucleus for subduing the Quiché tribes (Iuarros).

For chronological reasons, and from the fact that the Toltecs were the most advanced of the Nahuatl tribes in the arts, I am inclined to attribute to them the origin of the ruined city and of the monolithic slabs, while I would assign to the Quichés the rude stone figures, since the latter present some resemblance to the clay idols found by Stephens in the ruins of Utatlan.

But while the sculptures on the monoliths in Santa Margarita and San Isidro show the same artistic skill and taste as those in Santa Lucia Cotzumalguapa, they are quite different from those in Quirigua, which I visited later on. The reliefs are lower, the objects represented dissimilar, and hieroglyphs totally absent.

Careful explorations in the dense forests along the Pacific coast would undoubtedly reveal more ruins and sculptures similar to those of Santa Margarita, which, along with those of Santa Lucia, would give additional proof of the Toltecan occupancy of this territory. GUST. BRUEHL, M.D.

Cincinnati, O., Sept. 12.