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PRE-HISTORIC STONEWORK OF MEXICO.¹

By O. H. HOWARTH.

The term "pre-historic," as used in relation to the human races and remains in the New World is applied under conditions widely different from those which we usually associate with it in the Old. If we speak of a "Stone Age" in Mexico or Central America, we are dealing with a period which, so far as we can assign any limit to it, runs far down into the Christian Era, and thus overlaps that which in Europe is not only historical but comparatively recent. On the other hand, if we attempt to trace it backward, there is no reason to put any other limitations upon it than those which we gather from similar observations in the Eastern Hemisphere. If a Stone Period is characterised by the use of stone implements in the apparent absence of any art in metal, we find such a period extending practically down to the age of the Spanish Conquest; and yet the observations of Dr. Hamy, quoted by Lucian Biart in his History of the Aztecs, indicate that man was contemporary in Central America with the Mastodon; and that there is no reason to assume any interruption in his descent from those ages.

My purpose in these notes is to endeavour to point out the lines upon which a distinction may be sought for between actually historic stonework in Mexico and that which can only be regarded as pre-historic. It may, of

¹ Read at the Monthly Meeting of the Institute, Nov. 5th, 1891.

course, be remarked that the whole question turns upon the definition of history, and of the exceedingly vague boundary line between reliable history and unreliable history. Of the latter commodity Mexico, unfortunately, furnishes a large contribution. In fact, its unreliable history may be said to reach a later date than that of any other country which can claim a history at all. But alongside of its recent unreliable history stand the monuments of its recent Stone Age; and as these again stand alongside of others of far more remote antiquity, it remains for us to ascertain whether any links can be detected in the chain of the prolonged Stone Period thus recorded.

In making the following suggestions it may be of some assistance if I refer briefly to the process by which the central and southern districts of Mexico became populated, so far as they can be traced. The chief point to be noticed is the number and variety of sources from which that population has evidently been derived. We have, in the first place, reason, if not evidence, for supposing (as already remarked) that there may have been a continuity of a race in the fullest sense aboriginal, and connected with a period to which only a geological date can be assigned. Subsequently to this there has no doubt been a parallel process to that which we assume to have occurred in the animal and vegetable kingdoms in reference to remote ocean islands, which, at absolutely uncertain intervals, varying perhaps from a few hours to many centuries, have been populated by the germs of plants and animals, conveyed by winds, floods, or the chance visits of migratory birds. The same winds and waves have doubtless carried to the shores of Mexico and Central America stray human denizens of other continents whose descendants have mingled with and modified from time to time the races already established there.

In Mexico there are three distinct sources from which such incursions may have taken place: viz: by immigration from the north, and from the south, and by the accidental landing of storm-driven wanderers from the Asiatic or other continents. Reliable Mexican history shews us this by such entirely distinct languages as those of the Toltecs, the Acolhuas of Anàhuac, the Tarasques of Michoacan, and the Mayas of Yucatan. It may be expected that

before the fusion of these various races, the more civilised of them would have left more or less distinctive marks of identity in the character of their permanent stonework.

In reviewing shortly the features of that work I shall consider it under the two main groups of Structural work, and Implements; the former comprising buildings and sculpture, and the latter tools, weapons, and personal ornaments.

Among structural works the numerous pyramids forming the substructure of temples or sacrificial platforms are by far the most striking and instructive feature from the point of view of an unwritten history. Not less colossal in size than the pyramids of Egypt, and even exceeding in some of their dimensions the largest of these, they also possess in their remarkable variety of design a characteristic which does not belong to any similar structures in the known world. In examining a series of such buildings, spread over an area of country not less than 2000 miles in length, one cannot but be struck with the importance of this variety of type as affording a possible key to the problem of their respective antiquity. As one observes in other products of human art the extraordinary conservation which, in a medium grade of civilisation, carries on the same types from age to age, the variation of design in a building so vast as these pyramids becomes still more striking—still more suggestive of a history extending over immense periods of time and many fluctuations in art and culture.

In selecting a few of these types of pyramids for comparison I will mention first some of those in the States of Mexico and Hidalgo which I have had a recent opportunity of examining. The Pyramid of Cholula is probably the largest single structure of stonework in the world. It is associated with the dynasty of the Toltec race which preceded that of the Aztecs, and has probably afforded the earliest glimpse of reliable history in Mexico. But it by no means follows that the original pyramid was constructed during that period, though the histories of Bernal Diaz and Solis afford some record as to the foundation of its temple. The pile of loose volcanic boulders forming its solid core is characteristic also of the pyramids of Teotihuacan in the valley of the San Juan, twenty-five miles north

east of the city of Mexico; and though actual history describes these latter in a state of completeness and use for sacrificial purposes, many evidences convince me that the original formation of these enormous piles of loose stone is of far greater antiquity. The mere fact that they were commenced upon bases 5, 6, and even 700 feet square, and thus contain at their present height of 200 ft. or thereabouts, a mass of more than a million cubic yards each, of stone, seems to be evidence of a considerable lapse of time occupied in mere construction; while the type, which is in these instances a simple pyramid in three terraces, is the crudest in the series. The coating of stucco with which they were afterwards covered, and portions of which still remain, developed the bevelled face which is also observed on several of the pyramids further south. This form of outer coating being the easiest and least artistic in construction may afford some guide as to its period—probably among the earliest. The pyramid of Cholula was surmounted by a stuccoed temple or saint-house, also pyramidal in form; but on the summits of the two great pyramids of Teotihuacan there is no appearance of any such structure, and unless it can be assumed that they were entirely demolished and every stone of the material removed, it is probable that none ever existed. The Pyramid of the Sun (the larger of the two at Teotihuacan) has at its top a square platform of rough stone slabs and the remains of a round column; and though these are no doubt of a date as early as the Aztec and possibly the Toltec city I am inclined to think them much more recent than the body of the pyramid itself. On the extensive site of ruined remains called Los Edificios, near Zacatecas, about 500 miles north of Mexico city, we find again the plain pyramid with stuccoed and bevelled faces, on a smaller scale; and here the absence of later ornamentation as well as of pottery and obsidian implements seems to shew that, in those comparatively barren regions, art in stone building never advanced so far, nor were settled communities so long-lived, as in more favoured districts. In the pyramid of Mayapan (going southward again) we have the bevelled face developed into actual steps, and the steps intersected by a sort of buttress on each face of the pyramid. In one

¹ The great pyramid of Egypt was about 755 feet square.

instance the faces of the pyramid are curved outwards to an angle resembling the cutwater of the piers of a bridge. The necessity of obtaining access to the top of pyramids of large size led to the use of flights of steps smaller than those of the pyramid itself; and in the case of the pyramid of Quemada (Zacatecas) there is evidence of such an external flight having been added to the original structure. At Tusapan, near Papantla, where the pyramid is faced with long and steep bevels, a regular stone staircase with massive copings on each side ascends the whole height.

In this case the temple, also pyramidal in form, displays a sort of string-course with a plain diagonal ornament sculptured on it. At Uxmal a latticed sculpture of more elaborate design is seen. At Papantla the whole type becomes more ornate; the pyramid having seven terraces with square sunk panels or entablatures on each vertical face, and a broad stairway from base to platform. At Copan and Palenque a similar type occurs with yet more florid sculpture; at Huatusco is a pyramid of three terraces with flights of steps occupying half the breadth of the face, and carrying a temple of obelisk form, sweeping into a graceful curve at the foot. At Xochicalco, near Cuernavaca, in the State of Morelos, a trench or fosse is formed round the pyramid, which is ascended by spiral terraces, and carries on its summit a smaller pyramid of solid dressed stone sculptured with fine hieroglyphics. A large pyramid at Tehuantepec, in the south of Mexico, has the lower faces curved convexly outwards, with a broad flight of steps, a solid plinth above each curved face, and a temple on the top. In the great Teocalli, or temple pyramid of Mexico City there were four terraces with a communicating flight of stairs at each successive angle, thus necessitating a circuit of three sides of the pyramid in ascending each tier.

I have thus named but a few typical examples taken from all parts of Mexico; and yet when we come to compare these successive grades of stonework with the magnificently decorated palace-walls of Palenque, and the elaborate mosaics of Monte Alban, and of Mitla, in Oaxaca, we find that even the pyramids do not exhaust the stages of progress in structural art during that Stone Age. The highly ornamental and delicately carved figures of the

various deities presiding over War, Death, the Ocean, Agriculture, Sun-Worship, and Human Sacrifice, shew a still further advance in design. However difficult the task of unravelling the tang'ed web of this history there is at least one proposition unmistakably clear, viz: that the development of art in stone came neither from the North nor from the South, nor from across the Ocean, but grew up with a growing national life in the course of ages of time. Lucien Biart, in his History of the Aztecs, quotes the pyramids of Chiapas as an example of this, and despairs of arriving at any definite rule of classification beyond the fact that they are "the work of one race, operating at different ages, and obeying identical traditions of art and civilisation."

But the study should not be a hopeless one. An important step will surely have been made when the whole of these successive types of stonework have been collated for comparison, and I would strongly impress upon anyone to whom the opportunity may occur in visiting those countries to make it a duty to obtain either photographs or accurate sketches of every structure which shews a development of design; and especially of all the pyramidal forms (however crude and dilapidated) in which the controlling idea is identical.

I proceed now to compare with these examples of constructive art the minor relics in stone which in so many cases accompany them. These include domestic implements, weapons, and ornaments; and they have the peculiarity that, while comparatively few in kind, they are exceedingly abundant in numbers.

The black or grey obsidian, which in so many parts of this volcanic region has served the purposes of flint elsewhere, has furnished the arrowheads and knifeblades which on many of the ancient sites are so plentiful that they can be picked up in handfuls on freshly disturbed ground. The art of manufacturing these from a material so difficult to model, has evidently existed through a long series of national changes. In the fields around the pyramids of Teotihuacan they seem to occur at all points and at all depths where any other remains are found, and their use has probably been contemporary with all the successive races or tribes which have occupied this

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sacred city from the original growth of the great pyramids. There is no doubt that it survived until the Spanish Conquest, as a full description is given by Torquemada (quoted by Dr. Tylor) of the method of splitting off the knife-blades from a solid block, by simple pressure. They were afterwards ground to an edge, which fitted them even for the purposes of a razor, when so required. The formation of arrow and spear-heads must have been a work of far greater toil and patience, as these seem to have been obtained entirely by chipping. The only locality which I have noted, so far, where these weapons do not occur is in the Edificios at Zacatecas; but this may have been due to the absence of obsidian in that district, and the substitution of some more perishable material for the same purpose.

Another example of long and laborious work is seen in the production of beads, hammer-heads, masks, collars or clamps for the necks of sacrificial victims, and small ornaments which may have been of the nature of charms made from greenstone, jade, and other hard materials, the moulding of which can only have been accomplished by grinding. This, in default of any harder substance, was probably effected with a tool of the same material. In evidence of this it is observable that perforations appear always to have been made with an obtuse point, the stone being too brittle to bear a sharp one. Operations of this kind, which undergo but little variation from age to age, may have survived from the earliest times; yet it seems to me by no means impossible that the collection, examination, and comparison of large numbers of these smaller objects from various sites may result in the detection of differences of type and methods of production, which may have an important bearing on the question of date. The association of any one type of implement-work with certain forms of pottery or images, and of these again with a specific type of structure in buildings, may point the way at least to some such classification as we seek for.

In considering the types of miniature sculpture in stone one can hardly pass over without notice the related forms so abundantly found in baked clay or terra-cotta. Through the medium of this species of modelling an insight is given,

or at least is suggested, into several domestic or public customs, of which otherwise no permanent memorial would have existed. When the human figure in stone gives us only the idealised and frequently grotesque forms of deities or natural forces, the faces moulded in clay convey invaluable hints of actual portraiture, and of true human types which were doubtless prominent at the time. The more these most interesting remains are studied and compared the more striking is the suggestiveness of their varied character. And if this is the case after examining the few scores of specimens which can be seen in the half-dozen museums and collections possessing them, how much promise would there be in the comparison of a few thousands, such as could, and in the course of time no doubt will, be made available. Even so small a collection as that which I was able to make in the course of a couple of days, near the pyramids of Teotihuacan, at once strikes the eye by the remarkable and almost lifelike variety of feature developed under a few prevailing types.

Besides the numerous articles of pottery, the uses of which are for the most part obvious, there are found in considerable abundance certain objects which still afford more or less of a puzzle to the investigator. One of the commonest of these is the so-called "candelero," or candlestick, which is almost as plentiful as arrowheads in the neighbourhood of some of the pyramids. The only conjectures which have been formed as to the actual use of this peculiar implement are based on the kind of circumstantial evidence which, in the infancy of such a study, is all-important, viz., the association with other objects. That they were a portion of the sacrificial equipment seems highly probable, and the only unexplained feature, if we accept their traditional name of candlesticks, is their invariable duplex form. The precise object of the terracotta seals or stamps is also by no means clear; but it is suggested that they may have been used for printing fabrics or some kind of decorative paper.

The two chief desiderata for pursuing these enquiries are undoubtedly the continuance of collection where possible, and of drawing or photographing where the object is a fixture. With such means for comparison an outline of history may be read even in the absence of more

definite data. As such work progresses with the more material advance of Mexico, there is every reason to hope that such a result may be attained, and that eventually some happy chance may lead to a solution of the riddle of Central American hieroglyphics. Until then, we can only peep between the leaves of a sealed volume which we know to be second to none in the world in interest. But that knowledge is our warrant for relaxing no effort and neglecting no means within our reach whereby the seal may at last be broken.