

Settlement Patterns in Uxmal Area, Yucatan, Mexico*

En el curso del levantamiento cartográfico de Uxmal se redescubrió la muralla que circundaba el núcleo central de este centro Maya. A modo de prueba se examinaron más detenidamente algunos grupos de viviendas situados en el norte. Ellas dieron por resultado una relación estrecha entre la topografía, la naturaleza del suelo y los complejos habitacionales. También aquí se hallaron indicios evidentes de una estructura social y urbana, y el proceso de población pudo ser investigado retrospectivamente hasta el período preclásico.

At Uxmal, one of the most important archaeological sites of the Puuc region of northern Yucatán, the Centro Regional del Sureste of the Instituto Nacional de Antropología e Historia is conducting a detailed study of the community structure and settlement patterns. Among the results obtained from this settlement pattern survey are the rediscovery of the Uxmal site wall and a study of a residential sector on the north side of the site. In this sector, which represents a sampling of the overall habitational zone of the site, we have been able to determine a strong interrelationship between ecological factors such as soil and topography and the distribution of residential complexes.

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Considering the extent of the residential zone, the highly nucleated character of the remains, and clearcut evidence of social stratification we believe that the community reflects a number of features showing an urban character. Also, the ceramics from the survey attest to a long span of occupation at the site, beginning in Formative times.

As an ecological zone, the Uxmal area offers a number of advantages for human settlement; most important is the quality of the soil, which is highly fertile and is found in deep deposits around the site. On the other hand, the scarcity of water in the region posed a serious problem for human settlers; the Puuc region lacks *cenotes* and rivers, and offers only a few scattered *aguadas* or waterholes, most of which are dry during several months of the year.

The Maya of Uxmal overcame the water problem by building *chultunes*, or underground cisterns, for purposes of rainwater storage; in our limited survey we have plotted over 122 of these (Barrera Rubio 1977a and González Fernández 1977), in an area of approximately one square kilometer; these are found in *plazas* at the center of the site, and in terraces and platforms in the residential zone.

The stagnant water in the seasonal *aguadas* in the area were a likely supply of water for construction purposes, but were probably not major sources of potable water.

Archaeological surveys in the Puuc area in the past have paid scant attention to settlement patterns. Chroniclers, travelers and explorers have waxed eloquent on the beauty and monumentality of the architectural remains of Puuc sites; work in recent years has concentrated almost exclusively on the consolidation and conservation of these remains.

Reports on the residential areas have been superficial and few and far between; the first such observation was made by Edward H. Thompson (1886: 252 f.), who reported a number of small mounds and platforms in the vicinity of Labná, and consequently deduced that these were the foundations for perishable residential structures.

Much later Karl Ruppert and Ledyard Smith (1957: 580 – 584) reported several residential clusters at Uxmal, Kabah, Sayil and Chacchob. At Uxmal they made a sketch map of 33 isolated structures on the south side of the site next to the road to San Simón. Aside from these brief reports, settlement pattern studies at the site level in the Puuc area are nonexistent.

The absence of settlement pattern data in one of the most important archaeological regions in the northern Mayan Lowlands prompted our survey and the selection of Uxmal as an excellent site for a case study.

Our project is conducted under the premise that settlement patterns reflect the economic and social structure of the community and its

adaptation to the surrounding natural habitat. In the case of Uxmal we have determined that the diversity and distribution of residential structures, the energy cost invested into their construction, their proximity to goods and services areas, water cisterns and fertile soil, all provide indications of social stratification and community organization at Uxmal. In addition, preliminary reconnaissance of the outlying areas is under way, with the objective of establishing links between the site proper and minor secondary centers in the periphery; this will enable us to provide a preliminary sketch of the political organization at the regional level.

The project began with the detailed mapping of the civic ceremonial center, including all major structures not marked on previous maps of the site. In the course of this mapping we relocated the wall around the central part of the site which was partly mapped on its west side by Stephens and Catherwood in 1841 – 1842 (Stephens 1843, I: 165); later reports of the wall were made by Eligio Ancona in 1878 (1978: 85) and César Sáenz (1972: 36).

These reports only provide incomplete data of the wall which we have now mapped in its entirety; this was made possible with the help of detailed 1 : 20,000 scale airphotos of the site provided by the Compañía Mexicana de Aereofoto (Fig. 1).

The wall has an irregular elliptical plan; the north-south axis is approximately one kilometer long, and the east-west axis measures approximately 600 meters. Most of the major buildings are located inside the wall. The west and south sides of the wall are fairly well preserved, while sections along the north and east sides have been destroyed by the construction of the modern highway and tourist facilities.

Similar walls have been reported from several sites in northwestern Yucatán; at Aké, Muna and Chunchucmil; these walls have been dated to the Pure Florescent period (800 – 1000 A.D.; Kurjack and Andrews 1976: 322). Our test pitting in the Uxmal wall indicates a similar date of construction (González Fernández 1977).

Most of the major buildings of the civic ceremonial center are located inside the wall. The same is true for the above mentioned sites. At Uxmal, our general impression is that the wall encloses the central precinct in which the elite lived; this was the seat of government, and the nucleus of economic activity in the city.

Beyond the wall lived the minor functionaries and servants of the elite, along with the majority of the population, composed by peasants who provided the economic foundations for the city. The settlement pattern survey of this area reflects an efficient adaptation to the surrounding habitat. As mentioned above there is a clear interdependence between topographical features, soil types and human settlement patterns.

In the Uxmal area there are three major different soil types, called in the Mayan language: *Pusluum*, *Kankab* and *Akalché*.

Pusluum is a reddish brown soil (Munsell 1975: 5 YR 4/3), which is reputed to be the most fertile of the region for seasonal agriculture; it is always found on hillsides and natural rises with good drainage. *Kankab* is a dark red soil (Munsell 1975: 2.5 YR 3/6) found in flat lands without good drainage. *Akalché* soils are light olive brown bottom soils (Munsell 1975: 2.5 Y 5/4) and are often the receptacles of seasonal *aguadas*.

In our survey we found that all the residential complexes were located in the *Pusluum* soil areas (Fig. 2). However, the *Kankab* and *Akalché* areas were also exploited, as they still are today. Several colonial sources indicate that the Maya exploited several kinds of soil types and microenvironmental areas simultaneously; certain areas of the Puuc were reputed to have produced two crops a year (RY, I: 138, 207). These sources and other data imply that the Puuc region was the foodbasket of northern Yucatán (Patch 1977: 63).

In the area in which we mapped most of the residential structures we found a great variety of residential types; most prominent were large platform complexes supporting vaulted buildings and assorted perishable structures. These complexes also incorporated most of the *chultunes* located in the survey, some of which have relief carvings in their interior walls (Fig. 3).

Other complexes are characterized by small platforms without vaulted buildings; these rarely have *chultunes*. Finally, at the bottom of the social scale, we have isolated foundations of apsidal and round structures which lack *chultunes* altogether.

Excavations in the residential areas did uncover ceramics which date to Formative and Terminal Classic (Pure Florescent) times. The lowest levels of the excavations contained wares characteristic of Smith's Tihosuco complex (Yucatán opaque ware, Nolo Red and Ucu Black groups). These formative wares represent approximately 10% of the sample. The primary period of occupation was during the Pure Florescent, as most of our ceramics are representative of the Cehpech complex.

CONCLUSIONS

The ultimate objective of our project is to provide a general view of the types of settlement patterns that occur in this previously unsurveyed region in the northern Maya Lowlands. On the basis of our work so far we would like to make two preliminary observations.

Our survey of *chultunes* reflects a massive investment of labor for purposes of rainwater storage; on the other hand, the vast rainwater facilities indicated a precarious dependence of the population on seasonal rainfall patterns. The primary association of *chultunes* with high status residential complexes also reflects elite control of water deposits.

Another fact that became apparent in the course of our study was that the Uxmal settlement pattern is quite different from that of other sites in northern Yucatán. At sites like Chunchucmil (Vlcek 1978), Dzibilchaltun (Kurjack 1974), Cobá (Fletcher and Kintz 1977; Garduño 1977), Mayapán (Smith 1962), Cozumel (Freidel 1976) and Tulum (Barrera Rubio 1977), which are located on flat plains, the habitational zones tend to be evenly distributed over the landscape. In the hilly Puuc region the settlement pattern reflects an adaptation to the irregular terrain. At Uxmal residential complexes occur in nucleated clusters on elevated land areas. These grouping of residential units on natural features also makes the use of walls unnecessary, unlike the above mentioned sites, which have extensive networks of such walls defined by features of the terrain.

We believe that Uxmal has an urban character similar to the above mentioned sites. What remains to be determined is whether the settlement pattern it exhibits reflects a different kind of social structure or merely an adaptation to a different type of terrain.

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Fig. 1: Aerial photograph of Uxmal, Yucatán. Note part of the low wall enclosing much of the central group.



Fig. 2: Uxmal and its surroundings. House platforms are visible in the cleared fields, these are located southeast of the civic ceremonial center of Uxmal.

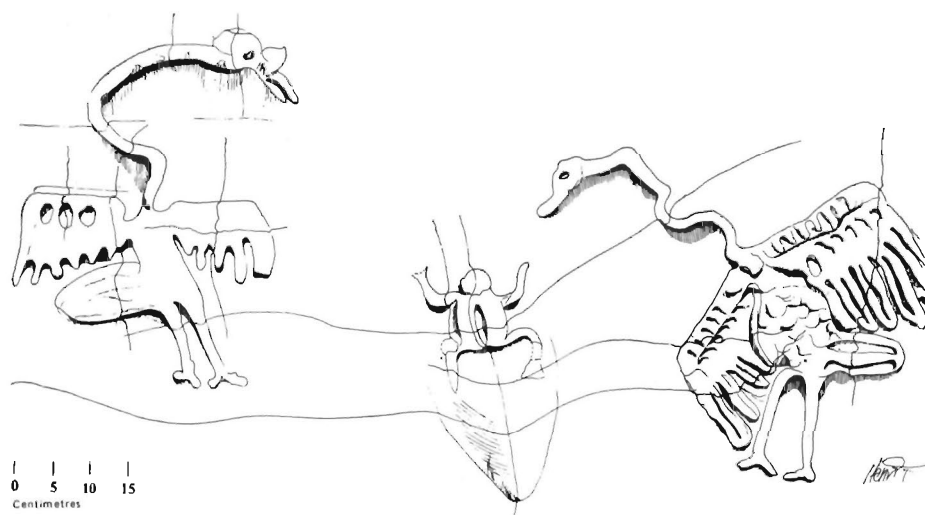


Fig. 3: Representation of aquatic animals associated with the rain cult: stucco bas-reliefs located on an interior wall of an underground cistern that was found in an habitational platform in the northern sector of Uxmal. (Drawn by Henri Christopher Dunster)

