

## Intensive Gardening Among the Late Classic Maya

A Possible Example at Ixtutz, Guatemala

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The lowlying areas of the Southern Maya Lowlands of Mexico, Guatemala, and Belize were at one time crisscrossed with extensive agricultural field systems. Much recent work in the Maya area has focused upon these newly discovered agricultural features and their implications for Maya civilization (Harrison and Turner 1978; Flannery 1982). It would appear that the beginnings of these field systems date to the Maya Preclassic Period or prior to A.D. 300; they likely continued to be utilized until the onset of the Maya Postclassic Period or until about A.D. 900.

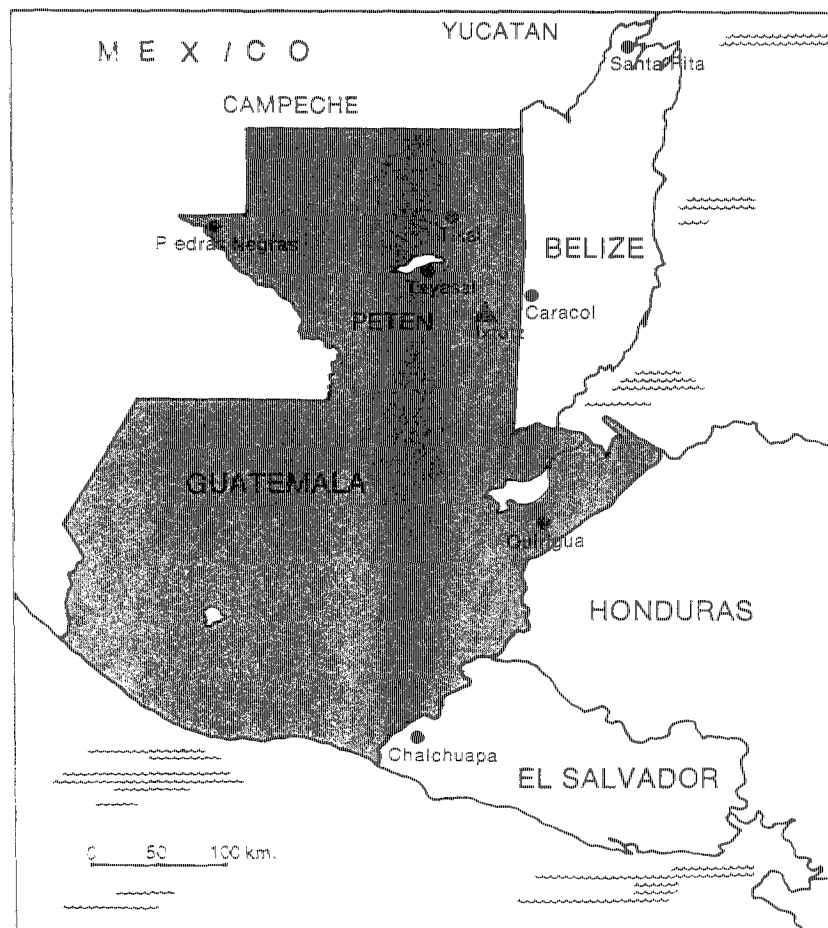
Investigation undertaken on these widespread Maya field systems has tended to focus on their relationships to both ecological factors and settlement pattern. This has resulted in a broad understanding of the form that these field systems took, the way that they affected settlement, and their associated technologies. At the same time, however, the contrast between these larger scale, probably commercial, efforts and smaller scale 'gardens' has not been adequately explored.

The existence of intensive gardening of both plants and trees among the Postclassic Maya is noted in the ethnohistorical period and is no longer seriously questioned as existing for earlier periods. Three basic types of field systems have been noted in the literature: terracing, raised or ridged fields, and infield or kitchen gardens (see the articles by Harrison, Wiseman, and Puleston in Harrison and Turner 1978). Terracing involved the construction of roughly parallel walls following steep contours and the deposition (either natural or more likely cultural) of earth on the upslope side. Raised fields in the Maya area resembled the later Aztec *chinampas* in that they involved the inter-related use of canals and elevated sections of earth, frequently in floodplains. Infield gardens were usually

composed of specialty crops and planted in a flat cleared area near places of habitation.

Unlike the larger, outfield systems, such as terracing and raised fields, which leave distinct archaeological evidence in the form of large-scale earth-moving projects, the smaller infield gardens have yet to be directly identified archaeologically. The reason for this is that "gardens involve techniques rather than engineering and, as a consequence, leave few traces" (Wilken 1971: 441). Even should any traces be left, one would be hard pressed to assign the

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Map of the Southern  
Maya Lowlands in  
Mexico, Guatemala and  
Belize.



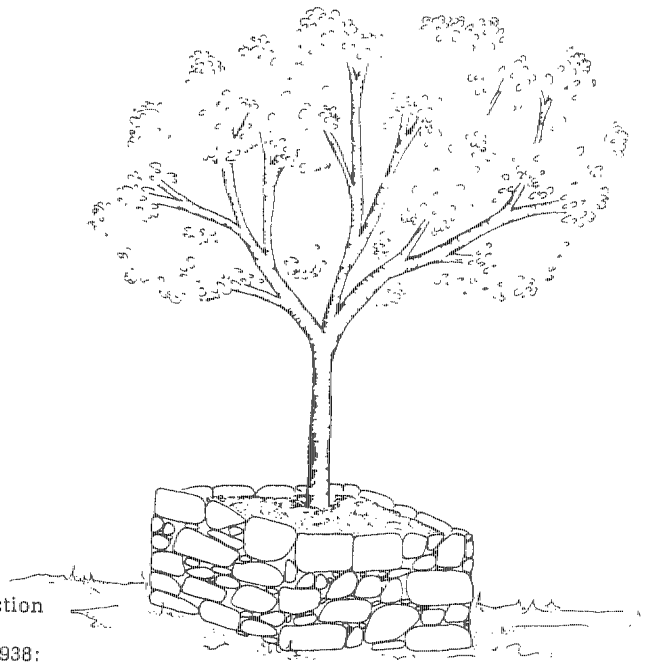
term 'garden' as the functional use for these remains. In spite of the inherent problems, it will be suggested here that a previously unexplained feature at the site of Ixtutz may have represented an intensive garden/orchard system of the Late Classic Maya and possibly be of ceremonial importance. Several alternative explanations for its function will also be considered.

### GARDENS IN THE MAYA AREA

Infield gardening in the Maya area included orchards, gardens, and probably a mix of the two. The cultivation of trees (arboriculture) has been noted by Puleston (1968, 1971) and can also be clearly derived from ethnohistoric sources. Speaking of the tree from the bark of which the Maya made *balche* (a fermented drink), Landa noted that "all of them planted it in their yards or spaces around their houses" (Tozzer 1941: 198). The translation of Avendano's 1695 account (Means 1917: 156) also suggests the presence of farms or orchards associated with Maya houses. Roys (1943: 39-40) noted that "it seems likely that many vegetables now usually grown in patches in the fields were formerly cultivated in town gardens adjoining the houses."

Ethnographic work in the Maya area confirms the existence of gardens among modern peoples with the types of these gardens varying slightly throughout the area. Wauchope (1938: 132) noted that almost every Yucatecan family has some sort of flower garden, although the plants that he described as growing in the garden—"virginia tobacco (*virginia*), sweet basil (*albahaca*), pepper (chili habanero), poppy (us + se?), rose (*lol*), *margarita*, heart of *juanita*, *clabela*, and *pastora*"—do not suggest a purely decorative garden. Wauchope also indicated the existence of special vegetable gardens within some properties where onions, peppers, tomatoes, coriander, garlic, cabbage, epazote, and squash were grown. Onions and garlic were often grown in elevated gardens as protection from animals and fowl. Wauchope (1938: 132) noted that this platform type of garden was described for the 19th century Maya as well. Although more gardens are now made on the ground (Wauchope 1938: 46), the existence of cultivation in a hollow-log is also described by Redfield and Villa Rojas

2  
Low rock construction around a fruit tree (after Wauchope 1938: Figure 49).



### Acknowledgments

A special citation must be given to Merle Greene Robertson for her aid in the preparation of this paper and for permission to use several of her 1971 photographs. It is due to her efforts that the site of Ixtutz is known today, she having discovered it in 1970 as part of her program of recording Maya stelae. It is only with hindsight that Ixtutz has been recognized as a site visited by an exploration party in 1852 and briefly published a year later by Carl Ritter (1853). In 1971 Robertson undertook two different seasons of work at Ixtutz; it was with her that Arlen Chase first visited the site. Julie Benyo revisited Ixtutz (which was then known as Borachero) with the authors in 1977 and we gratefully acknowledge her cheerful assistance. Thanks are also due Robert Sharer who critiqued several earlier versions of this paper.

(1971: 35, 46) in the Yucatecan community of Chan Kom. They (1932: 38) mention that great pains were taken by the inhabitants of Chan Kom to raise vegetables in their gardens (separate from their *milpas* or maize fields) for use as condiments. In Chan Kom the men clear the little kitchen gardens and may help plant them, but the women water and weed them (Redfield and Villa Rojas 1971: 68). Both Wauchope (1938: 133) and Redfield and Villa Rojas (1971: 47) commented on the fact that Yucatecans highly prize fruit trees:

Much attention is given to fruit trees; seedlings are cared for and transplanted, and grafting is understood and practiced. Papayas (*put*) are the commonest; these are easily grown and nearly every yard contains a few. Oranges (*pakal*), both sour (*meeek*) and sweet (*chuhuc pakal*), limes, and grapefruit are not uncommon, and there are also several kinds of bananas (*haaz*), custard apples (two varieties: *chac op* and *yaax op*), guavas (*pichi*), pomegranates, guanabanas (*pox*), hog plums (*abal*)—of which there are three varieties: *toxilo abal*, *kan abal*, and *tuzpana abal*—chirmioyas (*pox*), soursops (*tzutzulpox*) and *guayos* (*uayan*).

These trees may be enclosed in low rubble walls (Fig. 2). Even though some of the



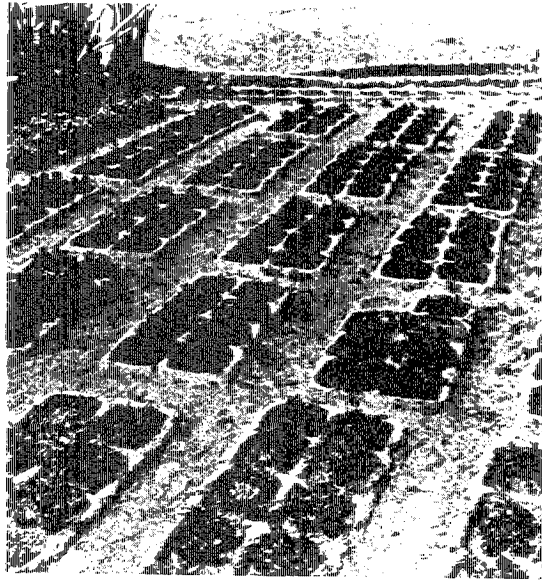
plants and trees listed above (such as oranges, limes, grapefruit, bananas, pomegranates) are a product of Spanish contact, the care taken with fruit trees and other plants is obviously a precolumbian characteristic.

Wauchope (1938:133) also pointed out that some houses were almost obscured by the trees or by the corn stalks growing around them. Anderson (1952: 136-137), who visited and photographed Indian gardens in Santa Lucia, Guatemala, stated that "the garden I charted was . . . covered with a riotous growth so luxuriant and so apparently planless that any ordinary American or European visitor, accustomed to the puritanical primness of north European gardens, would have supposed . . . that it must be a deserted one." He (1952: 140) further noted that "in terms of our American and European equivalents the garden was a vegetable garden, an orchard, a medicinal garden, a dump heap, a compost heap, and a beeyard." The confused layout of aboriginal gardens (Fig. 3) may help to explain why the early Europeans, while clearly noting arboriculture, did not take much note of Maya gardens. All of these gardens were used for specially valued plants as is evident from both

Wauchope (1938: 132) and Anderson (1952: 226-227).

#### INTENSIVE GARDENING IN THE SOUTHWESTERN UNITED STATES

While the known ethnographic examples of gardens in the Maya realm would not readily leave archaeological traces and while, not unexpectedly, archaeological examples of such gardens remain unidentified in the Maya area, archaeological and ethnographic examples of gardens have been identified in the southwestern United States. Although an analogy to the southwestern United States for the Maya area might be considered inappropriate because of environmental differences, especially since the problem at hand is subsistence technology, an indirect historical analogy is being considered here since: a) both economies are known to have placed importance upon the same foodstuff, maize, as well as to have shared other cultivable plants; b) the distance between the two groups "as measured in terms of space, time, and form" (Ascher 1961: 322-323) is relatively small, especially in light of known historical and prehistoric connections between the two areas (Hedrick, Kelley, and Riley 1974); and c) there is an



3  
Modern Maya garden  
representing Anderson's  
'riotous growth.'

4  
Bordered garden system  
(‘waffle garden’) from  
the Zuni area of the  
American Southwest  
(Curtis 1925).

apparent closeness of fit and relationships between forms. It should be noted in addition that these analogies are not meant to suggest details of specific techniques of microclimatic management, but rather general similarities in form and function.

Vivian (1972) noted various combinations of features characterizing water control systems of the Anasazi. These include bordered gardens, gravel-mulched bordered gardens, check dams, contour terraces, ditches, canals, headgates, diversion dams, and reservoirs. Vivian (1972: 96-97) used the term 'bordered gardens' to indicate small garden plots. These always have earth or stone borders to conserve moisture, but vary in size and shape. Some bordered gardens also have a surface mulch of small gravel to help maintain moisture. Figure 4 shows one example of a bordered garden system.

Forde (1931) discussed various Hopi agricultural systems—including irrigated, bordered gardens. He (1931: 391) noted that trees "which are encouraged to grow extensively around these irrigated plots assist materially in reducing the loss of water by evaporation," thus directly linking gardens and arboriculture. Forde (1931: 393) also noted that the irrigated gardens

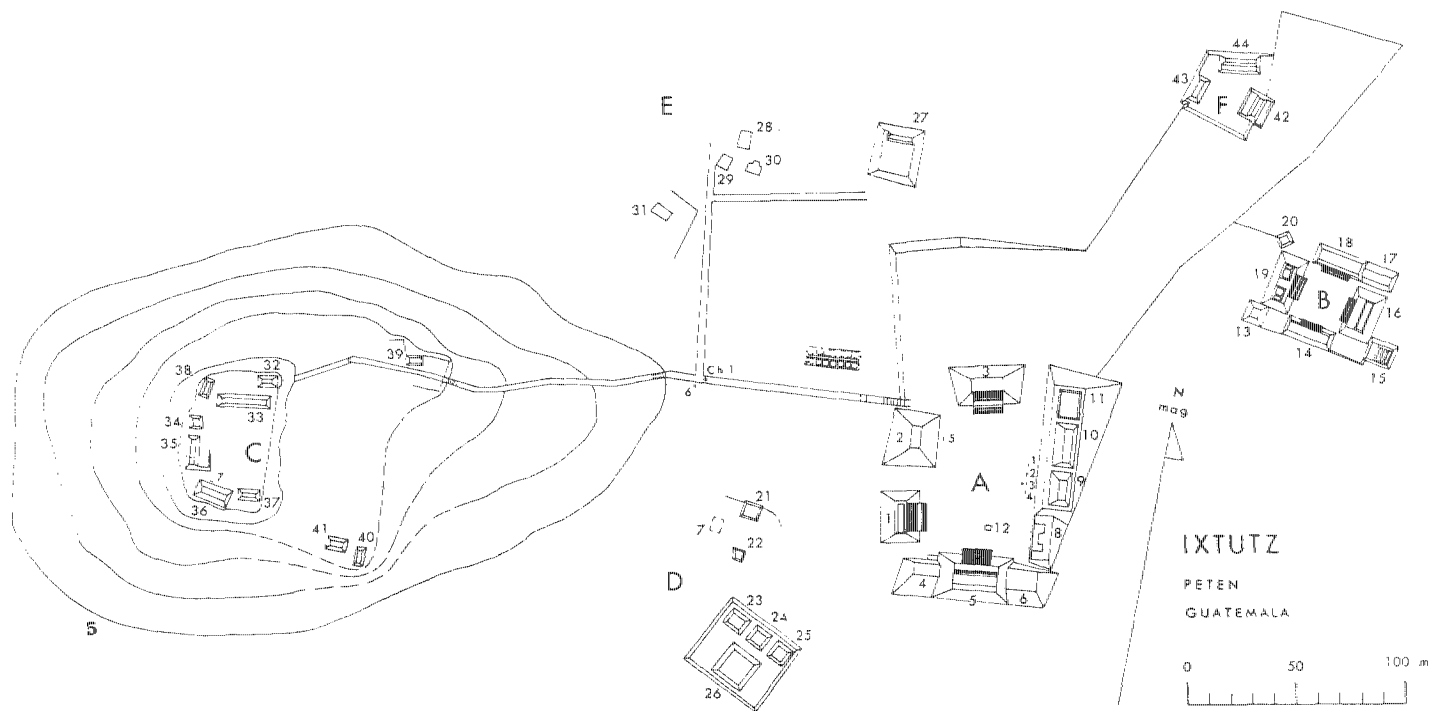
played a ceremonial social role in providing corn for the *nimankatcina* or first fruit ceremonies, something analogous to the Maya *pibinal* or first corn ceremony. Hack (1942: 19) describes irrigated gardens for the Hopi and also noted their ritual importance. Evidence of bordered gardens among the Sia is suggested in the work of Stevenson (1894: 10):

The ruins upon the mesa, showing well-defined walls of rectangular stone structures northwest of the present village, are of considerable magnitude, covering many acres . . . The Indians, however, declare this to have been the great farming districts of Po-shai-yan-ne (quasi messiah), each field being divided from the others by a stone wall, and that their village was on the mesa eastward of the present one.

Russell (1908: 88-89), in his discussion of the agricultural systems of the Pima Indians, also notes fields, canals, and roads made by the Hohokam:

On the slopes of the Santan hills north of the present Pima village of Santan there are several hundred acres of stony mesa that have been cleared and cultivated . . . The rocks have been gathered in rows that inclose rectangular areas of but a few square yards in extent. There are about six clumps of creosote bush inclosed in it. This locality adjoins a large ancient canal and an extensive ruin of a stone pueblo.

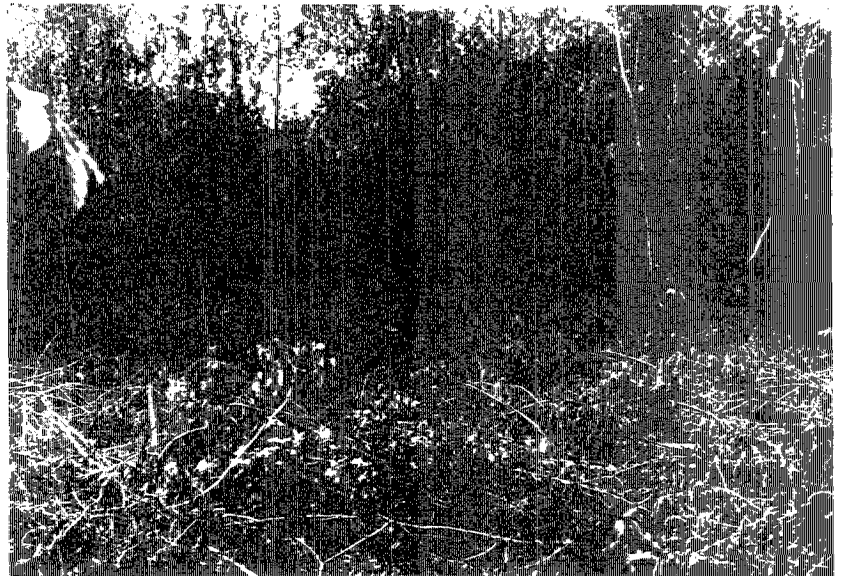
The archaeological and ethnographic data from the southwestern United States, then, suggest that: 1) local environmental variables lead to a specialized subsistence technique; 2) even within one region several subsistence practices are combined to form the total system; and 3) intensively cultivated gardens are and were utilized for rare or ceremonial plants such as sweet corn used in first fruit ceremonies. While these same three points can be derived from the Maya data, the actual archaeological form of the garden cannot. Thus, while the analogy is appropriate for either the Maya or Southwest areas, only the Southwest provides an archaeological example of the shape that these infield gardens may have taken. This form would appear to be homologous to the feature found at Ixtutz.



**5**  
Plan of Ixtutz, Guatemala combining the Robertson (1972) and Graham (1980) maps; small numbers 1 through 7 indicate monuments; numbers 8 through 44 are structure numbers; letters A through F indicate structure groups; the gridded area discussed here occurs between Groups A, C, D, and E.

**6**  
Ixtutz Structure 19 (Structure Group B) as viewed from the east; excavation of the mounded building would reveal facades of finely cut stone. (Photograph by Merle Greene Robertson, 1971.)

**7**  
A small exposed portion of the northern substructure facade of Ixtutz Structure 1 showing the dressed masonry evident at the site. (Photograph by Merle Greene Robertson, 1971.)



6



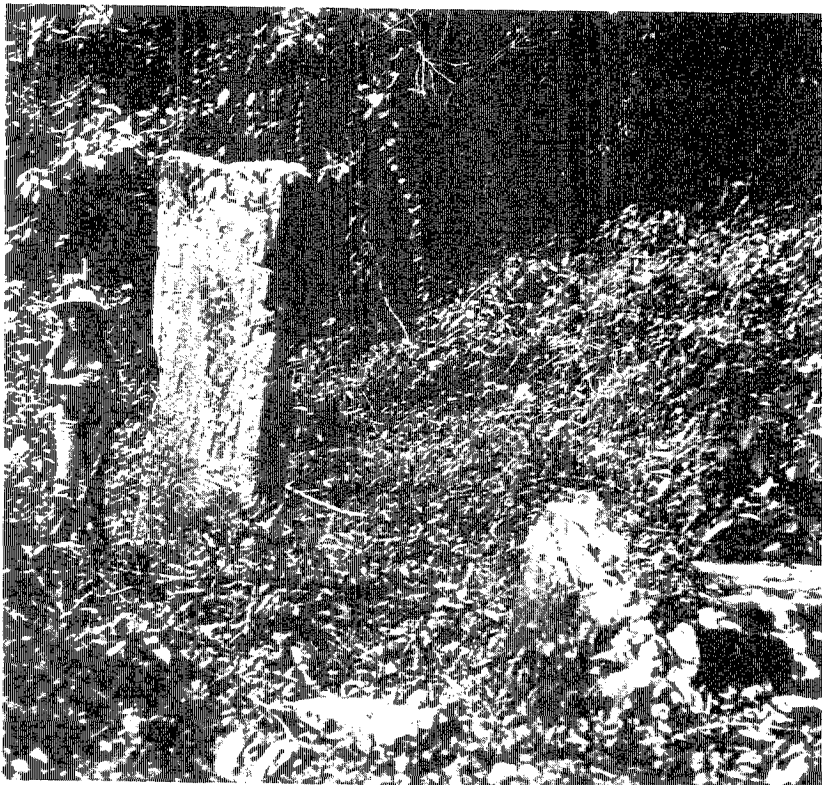
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8 Stairway for Ixtutz Structure 3 looking north with parts of the recovered hieroglyphic Panel 1 resting on them. (Photograph by Merle Greene Robertson, 1971.)

9 1977 photograph of the monuments in Plaza A looking north, the standing monument being Ixtutz Stela 1.

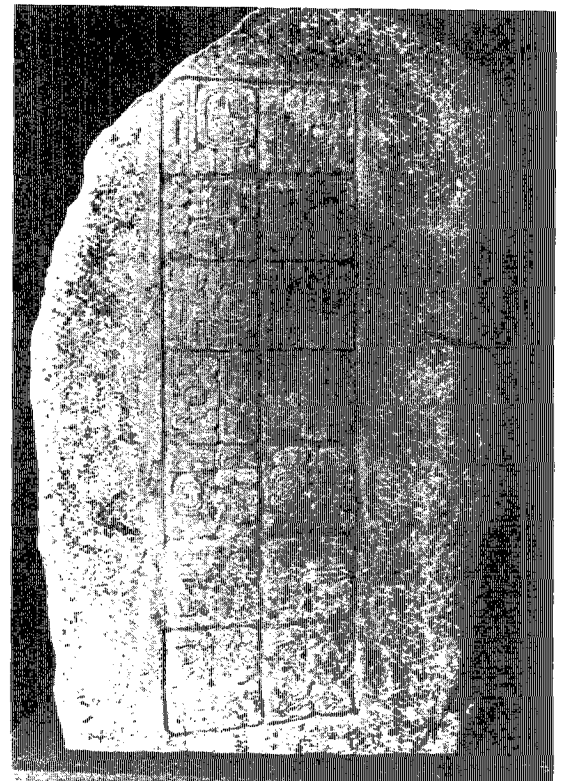


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## IXTUTZ

The site of Ixtutz, located in the southeastern Peten region of Guatemala, may provide an archaeological case of intensive gardening among the Late Classic Maya. Ixtutz was first visited in 1852 (Graham 1980: 171) and was rediscovered over a century later in 1970 (Robertson 1972). In 1971 the site was mapped during a period of two weeks; it was later remapped by Ian Graham (1980); a composite of these two maps is presented in Figure 5. The site of Ixtutz evinces at least six architectural groups and at least 44 buildings (Figs. 6 and 7). Group A contains a building with a hieroglyphic panel (Fig. 8) as well as four carved stelae (Figs. 9 and 10). These monuments may be dated to between approximately 9.17.0.0.0. and 10.1.0.0.0. (A.D. 770 to A.D. 850 in an 11.16.0.0.0. correlation) in

10 Ixtutz Stela 4 with hand and grain scattering motif in hieroglyph at position B2a.



10

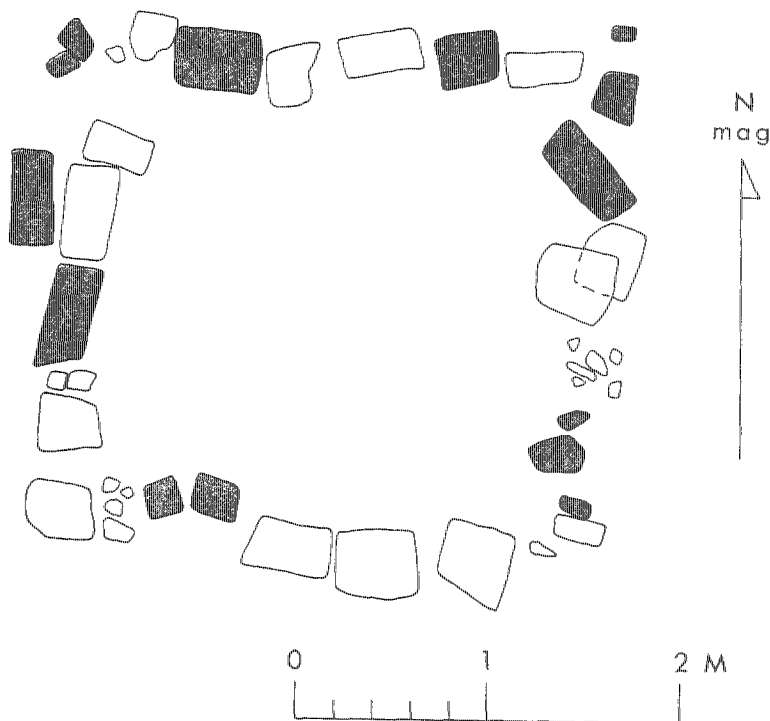
Maya count, indicating that Ixtutz dates to the Late to Terminal Classic Periods of the Southern Maya Lowlands.

The most interesting feature of the site is unfortunately the one which is least known. Epicentral to Ixtutz is an area approximately 80 m. wide and 75 m. long which is bounded on all four sides (Fig. 5). Within this 6,000m. square area is a series of passageways, chultuns, and gridded areas roughly 2.5 m. on each side.

An intriguing section of the site is the entire, roughly square area bounded by the Acropolis Causeway on the south, the North Causeway on the west, the Chapulte Causeway on the north, and the platform terrace of Group A on the east. The area is completely level without any mounds. It was not possible in the limited time available to satisfactorily investigate this area, and only a 24 x 7 m. zone could be mapped. This zone was 6 m. north of the Acropolis Causeway and parallel to it. The section contained four parallel rows of crudely cut stones about 20 x 30 cm. each which ran the entire 24m. length, continuing an unknown distance both to the east and west. The first two parallel lines of stone were laid out 3m. apart and the enclosed area was divided with similar stones at intervals of 3 and 2.5m. as if divisions of market stalls. A third and fourth set of parallel stone lines were laid out 1m. north of this series of enclosures and appeared to be designed in the same general pattern but with variations as to the size of the compartments.

(Robertson 1972: 91)

As this central area represented a definite anomaly in terms of structural components of Maya sites, Ixtutz was again visited briefly in the summer of 1977 (by the authors and Julie Benyo) and the central component reviewed and a small portion mapped in detail (Fig. 11). The unmortared stones were not always laid out in formal rows, but were definitely squared and raised above the ground in roughly rectangular, usually contiguous, grids. Overall the area may be similar to one described by Cyrus Lundell (1933: 73) for Campeche: "numerous areas in the forest . . . appear to have been marked off by stones as if the



11  
Detailed plan made in 1977 of one of the Ixtutz stone-lined grids.

entire region had been divided up into agricultural plots . . . assigned for intensive cultivation." Alternatively, this area may have represented the remains of territorial plots or boundary walls, well known from the northern and eastern parts of the Yucatan Peninsula.

Although analogy may be utilized to suggest that the gridded area at Ixtutz represents either arboriculture or a garden, other possible explanations for the use of this area would include market stalls (Robertson 1972: 91), animal pens, beehive stands, grave plots, or some other phenomena. Following is a brief review of the archaeological formation processes involved in certain of these alternative possibilities.

Should the gridded area of Ixtutz have functioned as a market area, as suggested by Robertson (1972: 91), several conditions may be expected. For instance, markets may be expected to be associated with a hard-packed recognizable plaza surface with much artifactual debris pounded into it based on ethnohistoric and ethnographic analogy. It may also be expected that the soil would be very organic, as tested by phosphate analysis, as a result of the decomposition of spoiled and discarded

produce. Workshop areas might also exist if the area served as a market. The gridded rock pattern would in this case have served as supports for perishable market stalls.

If this gridded area were proposed to function as an apiary, one might expect to find specialized vessels for collecting honey, specific areas for the processing of honey, and perhaps specialized pollen. Again, the rock grid pattern must be hypothesized to have functioned as supporting base walls, in this case for hives.

If animal pens were the proposed function, the soil should be very organic and if pollen were present, it might be expected to consist of specialized feed pollen. No artifacts, other than perhaps water jars or dishes, would be expected unless butchering practices took place, in which case, broken flint or obsidian cleavers and knives as well as bone debris might be found. Packed floors should also result. The rocks would in this case have served as supports for pens.

Should the gridded area have served as grave plots, one would expect burials and perhaps a preponderance of ceremonial artifacts such as censer ware. The gridded rock areas would in this case serve to delimit the grave plots.

For a garden area, specialized artifacts, such as water jars and perhaps weeding implements, may be expected and no hard-packed plaza should be in evidence. The water table should ideally be high and the soil organic from possible use of household refuse as fertilizer. Because of the function that an infield garden would have served, specific kinds of pollen from specialty plants, as well as from maize, should be present. No large rocks should occur within the gridded area, but smaller ones may. The larger bordering rocks would in this case serve to delimit the cultivated area and to maintain moisture within the plot.

Although the gridded area of Ixtutz may have served several of the above functions or perhaps some other purpose, both the extant archaeological data and the cited analogy support the likelihood that this locale could represent the remains of an intensive gardening/arboriculture system. Preliminary investigations show that the gridded central area at Ixtutz is largely devoid of ceramics, both on the surface

and underground (as evinced by upturned trees). This fact tends to negate the use of the area as a market, but does not preclude it. No skeletal material was found in disturbed grid areas. No hard-packed surfaces or floors are evident within this central area and no large stones exist within the gridded areas. This would tend to preclude both a market area and animal pens. No workshop areas were observed nor were an abundance of specialized tools or vessel types noted. Additionally, this epicentral locale has a high water table. Further investigation and excavation are needed to test each of the above options, but at this point the Southwest gardens provide the closest parallel in form to the central Ixtutz gridded stone feature.

#### IMPLICATIONS

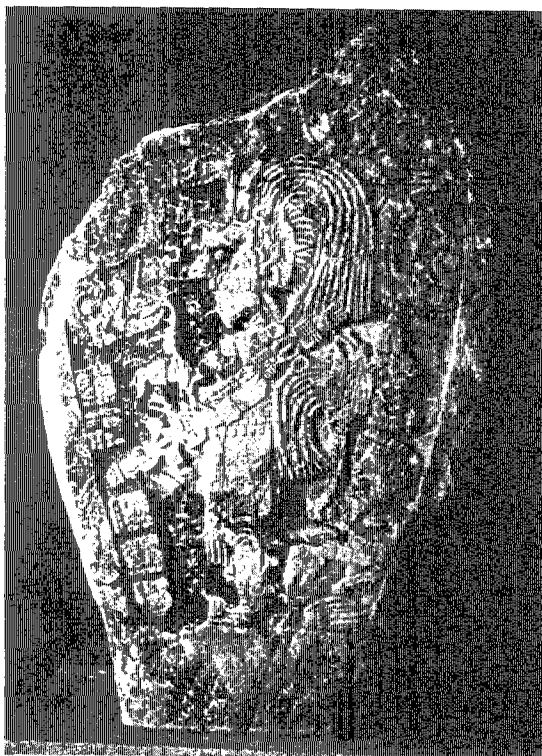
Irrespective of whichever of the alternative functions considered above applies to the Ixtutz gridded area, the location of this feature in the site is significant. The locale in which the feature was placed is bounded by four architectural groups. Plaza A to the east contains four carved stelae and one plain stela and is of obvious 'ceremonial' import. Group C, located to the west, contains one plain stela. The gridded area itself is bounded to the north, west, and south by the main causeways of the site of Ixtutz; to the east, it is bounded by the northern terrace wall of Plaza A. The area, then, is central to the site of Ixtutz and its location needs interpretation or explanation.

If it was a garden as suggested by analogy, then its central placement at the site of Ixtutz would imply that the items cultivated within this area were of special import to the Maya. The plants could have been used for offerings of food or drink, for incense or dyes, or for food for the 'high status' occupants of the neighboring plaza areas. Lundell (1933: 67), in discussing modern Maya gardening in Campeche, noted that plants used in religious ceremonies tended to be centrally located in Maya communities: "the village meeting house is surrounded by ornamental plants such as the tree called *flor de Mayo* (*Plumeria* sp.), planted for its beautiful yellow, white, and rose-colored flowers, which are used chiefly in religious ceremonies connected with agriculture."

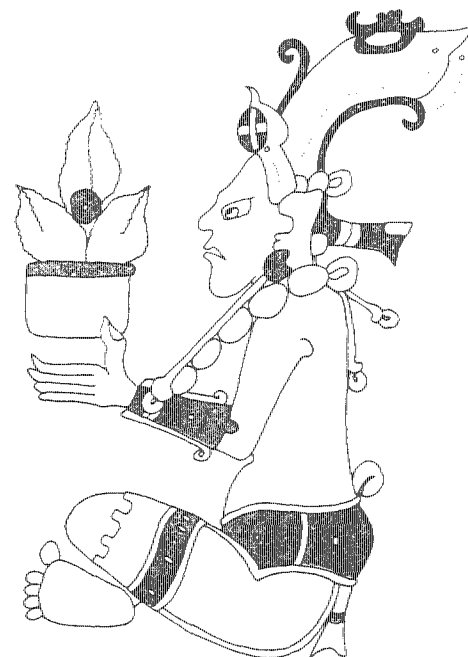


The association between Maya religion and cultivation is well known. Several Maya stelae (Figs. 12 and 13) show Maya lords scattering what may be kernels of maize in a ritual activity—perhaps maize grown specifically for ceremonial and sacred purposes in a garden like the postulated example at Ixtutz. The use of these ceremonial gardens by the Hopi (Hack 1942; Forde 1931) and by present-day Mesoamericans (Anderson 1952) to provide plants important for ritual purposes has been noted. It is probable that special maize was grown for Maya first fruit ceremonies (*pibilnals*) or for use in the divinatory kits of the Maya priests. Although maize (Fig. 14) was especially important to the Maya, other plants and trees of ceremonial or magical importance to the Maya may also have been grown in special ritual gardens. Careful analysis of soils at Ixtutz may reveal what plants were grown in such gardens during the Classic Period.

**12**  
Stela 1 from Ixlu showing an individual engaged in the ritual hand scattering motif, possibly throwing down kernels of maize used for the purposes of divining.



**13**  
Stela 40 from Piedras Negras showing an individual who may represent the Maya maize god also exhibits the ritual hand scattering motif.



**14**  
Postclassic Maya maize god from the Dresden Codex; note the similarity in the headdress to that worn by the individual on Piedras Negras Stela 40.

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## CONCLUSION

The epicentral portion of the site of Ixtutz contains a configuration which appears to conform to historic, ethnographic, and archaeological descriptions of intensive gardens, particularly when southwestern United States analogies are used to complement information from the Maya area. Further research is clearly necessary on the grid pattern at Ixtutz to test this and other possible functions. If the central location of the feature is any indication of importance, such research should also provide new insight on items which the Classic Period Maya prized. Additionally, it might provide a further indication of the important relationship between ritual and cultivation among the Maya, for if the identification of the gridded feature at Ixtutz as a garden

proves to be correct, this relationship would appear to have been manifested in the actual organization of the site.

It is hoped that the attention paid to the Ixtutz gridded area will lead to the recognition of similar low and almost invisible features elsewhere in the Maya realm regardless of their presumed function. The above discussion of intensive gardens should, irrespective of the outcome in this individual case, be indicative of the possibility for positive future work on the investigation of infield gardens. This is significant because any archaeological consideration of small scale gardens is likely to provide information on Maya agricultural practices complementary to that provided by the present research on the larger field systems.

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