

Shells and Society at Tikal, Guatemala

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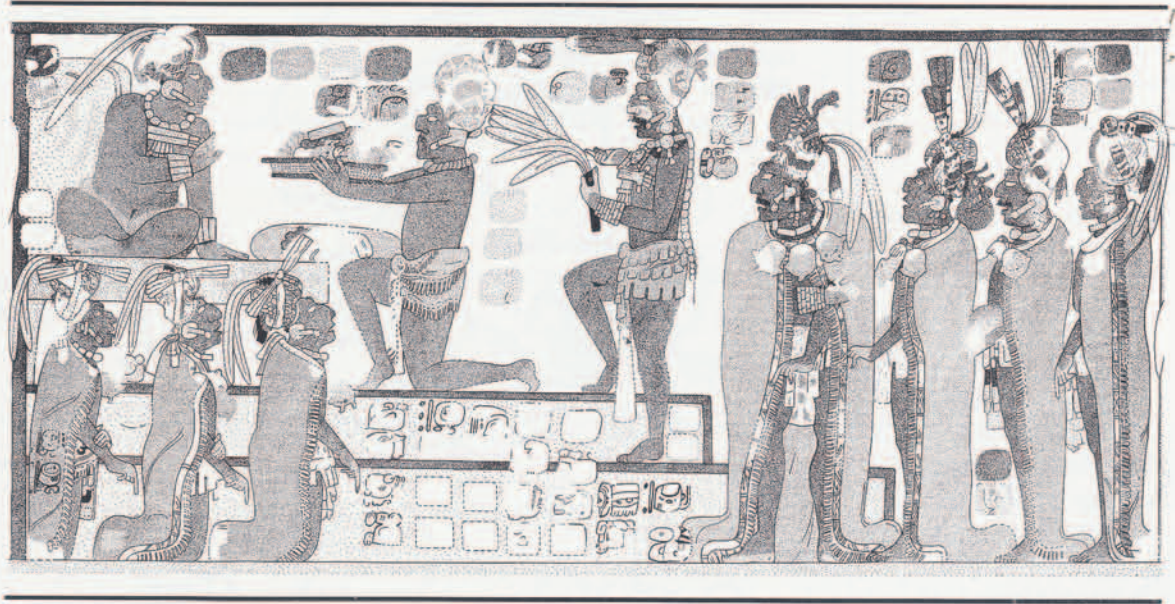


FIG. 1 SHELLS AND THE MAYA ELITE. This rollout of the polychrome painting on a stuccoed, cylindrical pottery vessel shows Maya elite bedecked with feathers and ornaments of shell, jade, and pearls. Seven of these richly attired men wear perforated *Spondylus* shells at the necks of their heavy, fringed capes. The vessel is from Burial 116, a Late Classic Period chamber burial in Civic-Ceremonial Group 5D-2 (see Fig. 12, Locus 5) The height of the vessel is 26.8 cm.

Photograph courtesy of the Tikal Project; Tikal neg. 64-5-108

Thousands of unworked marine shells, shell artifacts, and fragments of production waste, or debitage, were recovered from the University of Pennsylvania Museum's excavations at Tikal. Shell was clearly of importance to the inhabitants of this landlocked city (Figs. 1, 2). Enough data are now available to allow us to think about social contexts: we can try to link the shells from archaeological context to the people who once used them.

Sometimes the shells of freshwater mussels were worked into artifacts, but most of the shell recovered from Tikal was of marine origin intentionally brought into the city. Shell was used primarily for social and ceremonial purposes, and different social groups used it in different ways.

Marine shellfish were probably not a food source for Tikal residents. Local freshwater snails were eaten, but their occurrence at the site varied more by chronology than by social context. It is not certain that land snails were used at all. Accordingly, excavated freshwater and terrestrial snails will not be considered here.

SETTLEMENT AND SOCIETY AT TIKAL

Current views of Tikal's chronology place its initial permanent settlement around 800 B.C., during the Middle Preclassic Period. Towards the end of this period and during the following Late Preclassic Period (circa 350 B.C. to A.D. 250), social ranking developed, with a

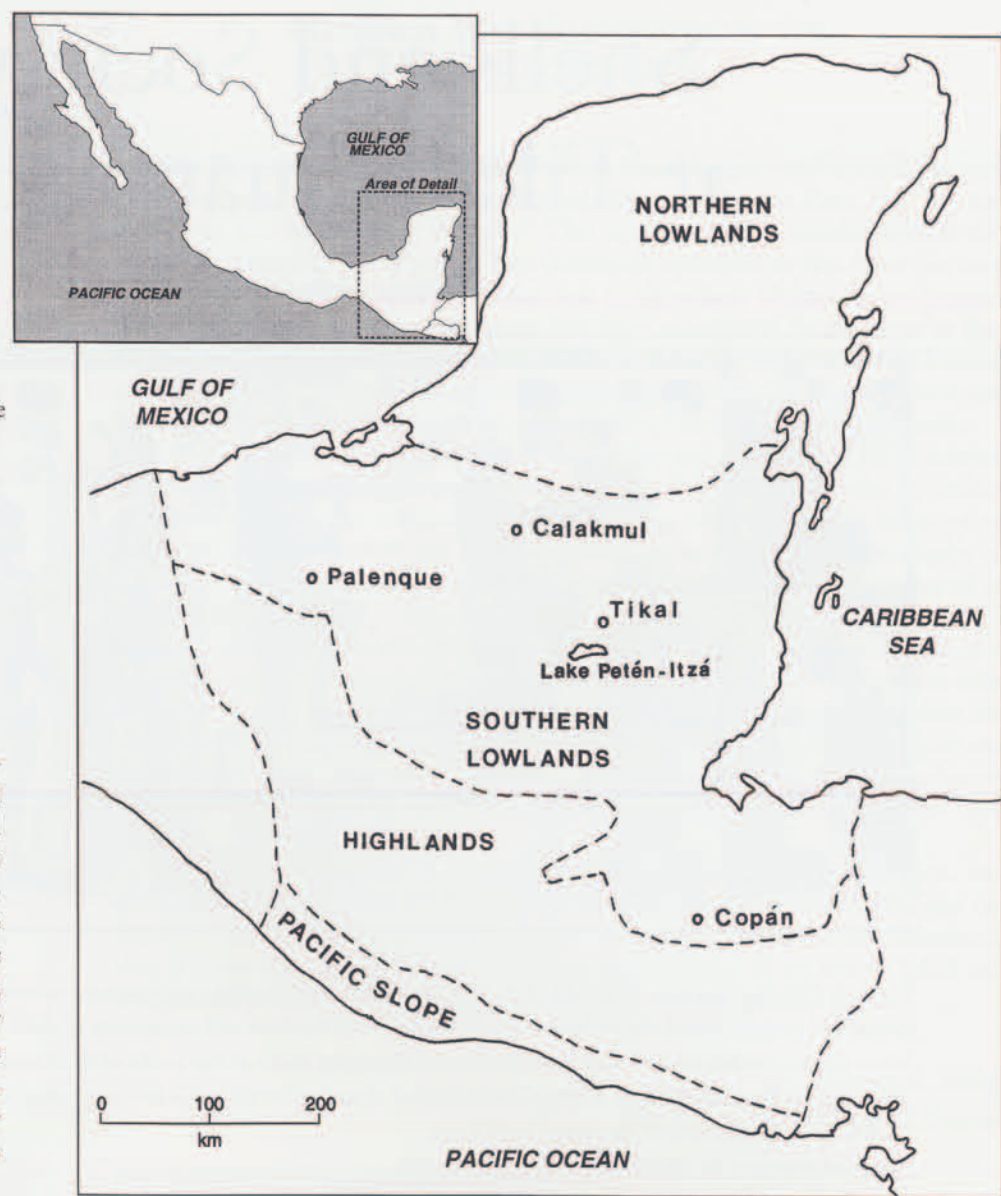


FIG. 2 THE MAYA AREA. Tikal is located in the heart of the Southern Maya Lowlands of Mesoamerica. From Mobley-Nagy 1994

small group of persons inheriting a more elevated social position than the rest of Tikal society. A more elaborate social and economic stratification was present by the beginning of the Classic Period (circa A.D. 250–850), if not before. Many researchers believe that there were at least two strata: elite, who ruled and who were supported by the rest of society, and commoners.

During the course of the Classic Period, Tikal's glory days, differences between elite and commoners increased. Around the middle of the 9th century, during a development often referred to as the Maya Collapse, the elite vanished from the archaeological record throughout the Southern Lowlands. Tikal went into decline during the succeeding Terminal Classic Period (circa A.D. 850–950), and by the end of the 10th century it no longer had a permanent population.

Elites and commoners had different lifestyles, visible in architecture, household furnishings, clothing, tools, ceremonial paraphernalia, and personal ornaments. It is the elite who are depicted on the carved stone monuments, public buildings, and decorated pottery vessels for which the Lowland Maya are famous. The two strata were, for the most part, segregated, living in distinctive

kinds of houses in distinctive kinds of structure groups. After death they were treated differently, too. Elites frequently were given elaborate burials in richly furnished graves. Rulers got funerary temples, chamber burials, carved and plain stone stelae and altars, and votive caches. Commoner burials were much less elaborate and many have no offerings of durable material.

The Classic Period settlement pattern of Tikal has been characterized by its structure groups, which form natural units of study (Fig. 3). William A. Haviland has defined five types for use in the Tikal Project: Civic-Ceremonial Groups, Range Structure Groups, Intermediate Structure Groups, Small Structure Groups, and Minor Centers. (It is uncertain if the same classification and social correlates apply during the Preclassic and



FIG. 3 TIKAL'S EPICENTER AND CENTER. This 16 square kilometer area of the Tikal Map shows the boundaries of the Epicenter and Central Area at the end of the Classic Period. Although they are too small to show clearly on the map, the structure groups surrounding the monumental core of the city vary considerably. From Puleston 1983

Terminal Classic Period.) These structure group types together with the portable material culture and offerings found in them, can be linked to social strata by applying a few commonly held, very general assumptions about rank, wealth, and material culture in complex societies.

Civic-Ceremonial Groups were special-purpose, nonresidential complexes associated with the elite. Their often monumental temples, and the stelae and altars, chamber burials, and elaborate votive caches frequently

accompanying them, represent the greatest material and labor investments of the city.

The elite themselves are thought to have lived in Range Structure Groups, defined by substantial, multi-roomed, masonry residences known as range structures or palaces. These were built on earthen substructures and sometimes roofed with corbelled vaults.

Intermediate Structure Groups are intermediate in size and complexity between Range Structure Groups

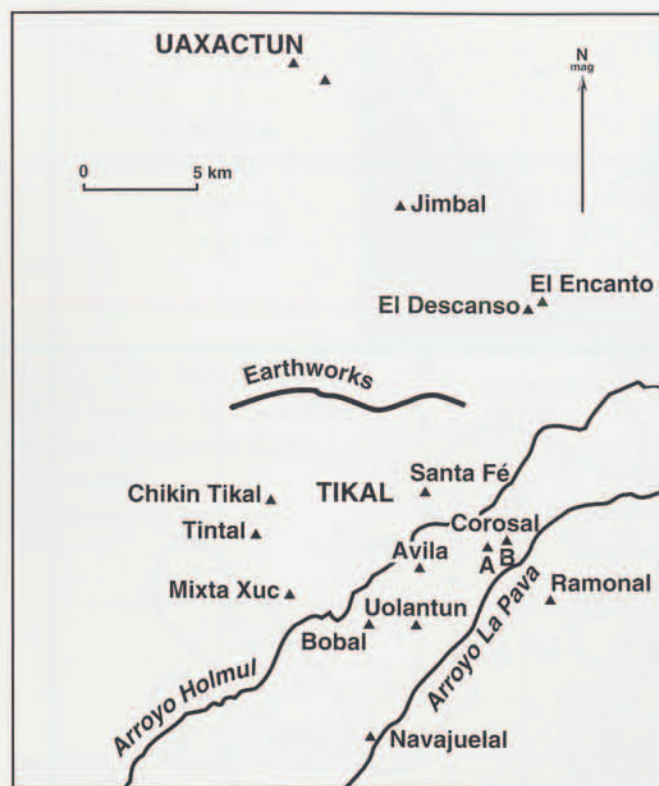


FIG. 4 TIKAL AND ITS ENVIRONS. Minor Centers, indicated by the open triangles, were located beyond a distance of about 4 kilometers from the center of the city. During the Early Classic Period, an Earthwork running east and west was constructed between Tikal and Uaxactun, an important secondary center to the north. From Puleston 1983

and Small Structure Groups, including some of the features of both. Elites definitely lived in some Intermediate Structure Groups, while high-ranking commoners may have inhabited others. Because of the small excavated sample, this remains the most poorly understood structure group type.

Much of Tikal beyond the central core is made up of Small Structure Groups. It is assumed that commoners lived in them—the thousands of farmers and artisans who sustained the city. Much of our best evidence of Classic Period craft production, including shell-working, comes from Small Structure Groups near the center of the site.

Beyond a radius of about 4 kilometers from the center are substantial structure groups called Minor Centers (Fig. 4). They appear to have served as the administrative central places for their immediate vicinity,

and their relationship to central Tikal changed over time. Elite residents of Minor Centers had the rank and wealth to set up carved and plain stone monuments and to construct temples that had richly stocked caches and chamber burials. However, all of the investigated Minor Centers also had sizeable commoner populations.

By the end of the Late Classic Period, just before the cessation of virtually all construction, Tikal had a roughly concentric settlement plan focused upon the Great Plaza and North Acropolis (Group 5D-2), its monumental core and its civic and ceremonial heart (Fig. 3). Dennis E. Puleston defined three site areas based upon settlement density on arable land. The Epicenter was the most densely built up part of the city and included most of its large-scale, vaulted, stone masonry ceremonial and residential architecture. The Central Area surrounding the Epicenter comprised many Small Structure Groups with interspersed Intermediate Structure Groups. Beyond the Center was a more sparsely settled Peripheral Area, whose boundaries are, in part, still vague. The Peripheral Area included mainly Small Structure Groups and isolated small structures. However, at intervals there were Intermediate Structure Groups, Range Structure Groups, and Minor Centers, which I believe were necessary for administrative and economic integration.

Most shell artifacts, shell working debris (debitage), and unworked shells were found in what archaeologists call primary or in situ recovery contexts. At Tikal these can be collectively referred to as special deposits. Special deposits include burials, caches, and so-called problematical deposits, ones which depart in some way from the usual burials and caches. The rest of the sample came from general excavations. This recovery context includes everything not found in a special deposit, such as midden deposits, construction fill, surface finds, and test pits.

Wherever goods are unevenly distributed, different types of exchange systems are thought to result in distinctive spatial patterns of consumption and use. One type of pattern is known as a distance-decay curve, in which the frequency of a product declines as one moves away from its source. Distance-decay curves may be explored at various scales, from within the same site to between regions; I was interested in local patterns at Tikal. Because the three areas defined by Puleston are broad and irregular in shape, I divided the site into a larger number of regular concentric zones centered on the middle of Square 5D of the Tikal site map (Fig. 5). Zone 1, which encompasses most of Square 5D, has a radius of 0.25 kilometers. Zones 2 through 26 are each 0.5 kilometers broad. Artifact frequency, expressed as piece or fragment per excavated lot, should be regarded as an approximation rather than an exact figure.

I plotted the frequencies of shell finds against concentric zones, site areas, and structure group types in order to examine patterns of shell use at Tikal. The results will be discussed below.

THE TIKAL SAMPLE

A count of the excavated sample includes more than 4042 unworked shells, 5542 complete and fragmentary finished shell artifacts, 3707 pieces of debitage, and 229 pieces of probable debitage. Marine shells and freshwater mussels were present throughout nearly the entire period of settlement, although they occurred in the largest numbers and greatest variety of recovery contexts during the Classic Period.

Generally, preservation was not good, even of shells in special deposits. In the few cases where species could be determined, the majority of marine shells came from the coasts of the Yucatan Peninsula. A few species came from the Pacific Coast. They had been brought to Tikal as early as the late Late Preclassic Period and continued to be imported throughout the Classic. The greatest use of Pacific shell was during the Early Classic Period (circa A.D. 200–550). Freshwater mussel shells may have come from Lake Petén Itzá and from the few permanent rivers in the Southern Lowlands (Fig. 2). Both thin- and thick-walled kinds are present.

Since several types of pottery vessels and chipped and ground stone artifacts were imported in finished form, it is likely that some items made of shell were, too. Further research may eventually permit us to pinpoint the origins of different types of shell artifacts. For the moment, however, I will have to speak of worked shell from Tikal as though it had all been locally produced.

SHELL ASSEMBLAGES

People in any society identify themselves through the display and use of certain kinds of goods. Particularly in rank and stratified societies much effort and expense may be devoted to obtaining socially correct clothing, personal jewelry, and official regalia, and appropriate materials for religious rituals. Objects, then, become important indicators of social standing and usually carry restrictions regarding their use.

The spatial distribution and recovery contexts of portable material culture at Tikal indicate that at least two shell assemblages were present during most of its

permanent occupation. There was what I call a higher ranked assemblage associated with the elite (Fig. 6) and a lower ranked assemblage associated with either lesser elite or wealthy commoners (Fig. 7). Persons at the bottom of the social hierarchy may have possessed no shell at all.

I consider the first assemblage to have been the possessions of individuals of highest rank because of its almost exclusive occurrence in Civic-Ceremonial, Range Structure, and Intermediate Structure Groups, which are associated with higher rank on the basis of architecture and associated special deposits (Fig. 8). Most examples were found in special deposits, specifically in burials and caches. Virtually all of these special deposits were the result of elite activities. As one would expect, the spatial distribution of this assemblage over the 0.5 kilometer concentric zones does not show a smooth decrease from the site's core (Fig. 9), but rather has peaks in Zones 4 and 20 where rich caches and burials occurred in, respectively, an Intermediate Structure Group and a Minor Center.

Marine shells and freshwater mussels were present throughout nearly the entire period of settlement

The most striking characteristics of this assemblage are the emphases upon red thorny oyster (*Spondylus*) shell (Figs. 10, 11), found as artifacts, debitage, and unworked specimens, and upon unworked marine shells in offerings. Less common components are artifacts of mother-of-pearl (Fig. 6d, j) and matte white marine shell (Fig. 6i), and both composite and true pearls (Fig. 6e). Artifact types of this assemblage were

used as ornaments or insignia, or figured in rituals. Particularly during the Early Classic Period, statuettes of small-element mosaic work of jade and shell (Figs. 6m and 13), small anthropomorphic cut-out figurines here referred to as Charlies (Fig. 6k), hundreds of unworked marine shells, and thousands of tiny fragments of *Spondylus* debitage were included in special deposits, particularly in structure caches. Unworked marine shells from special deposits were usually small, irregularly shaped, thin-walled, waterworn, or otherwise unsuitable for artifacts.

The appearance of this assemblage towards the end of the Middle Preclassic apparently coincides with the emergence of rank society just as the assemblage's disappearance at the end of the Classic Period apparently signals its collapse. For the Late Preclassic and Classic Periods, *Spondylus* and mother-of-pearl marine shell ornaments, together with pearls, were status symbols of the elite (Fig. 1). They were esteemed much as gold, gems and, in Grahame Clark's words, other "symbols of



FIG. 5 CONCENTRIC ZONES USED IN THE ANALYSIS. Twenty-six zones centered upon Square 5D of the Tikal Map helped plot the spatial distribution of portable material culture. Zone 1 has a radius of 0.25 km. Zones 2-26 have radiuses of 0.5 km. Only the first 7 are shown here.

From Puleston 1983 and Moboly-Nagy 1994

excellence" are esteemed in our society. They were markers of social rank in a system of hierarchically valued goods and were governed by sumptuary rules stipulating who could use them. One had to be a person of considerable importance to have a pearl or an object of thorny oyster shell included in one's grave.

Artifacts from the second type of assemblage were usually recovered from general excavations, indicating that unlike the first type, they were not taken out of circulation: only rarely did they occur in burials or other kinds of special deposits. They were better represented in Small Structure Groups than in other types (Fig. 8). Shell types making up this nonelite, lower ranked assemblage were white marine shell, mainly conch (Figs. 10 bottom, 7a-c, f, h, j) and freshwater mussel (Fig.

One had to be a person of considerable importance to have a pearl or an object of thorny oyster shell included in one's grave

7k, l). With the exception of trumpets (Fig. 10 bottom), artifacts appear to have been entirely ornamental in function and to have been worn by persons of intermediate social positions, between the highest ranking elite and the lowest ranking commoners.

The lower ranking assemblage was present by the late Middle Preclassic Period, with some types surviving into the Terminal Classic. In contrast to

the higher ranking assemblage, distribution over zones shows a more regular distance-decay curve (Fig. 9).

PROCUREMENT, PRODUCTION, AND DISTRIBUTION

Present evidence indicates that during the Classic Period artifacts destined for commoners were



FIG. 6 EXAMPLES FROM THE HIGHER RANKED SHELL ASSEMBLAGE. (a) beads, (b) carved pendant, (c) large pearl bead-pendant, (d) nacreous shell pendant, (e) large baroque pearl pendant with tiny, drilled perforations, (f) carved ear plug, (g) spangle, (h) two plaques, (i) horse collar ornament, (j) two inlays, (k) three "Charlies" with incised or painted details, (l) composite pendant of nacreous shell, (m) mosaic elements of different kinds of shell, some painted or incised.

From Moboly-Nagy 1994

produced by craft specialists who lived and worked on a part-time basis in the Small Structure Groups of the Central Area. Debitage was discarded on the household middens (Fig. 14). Specialists living in the same groups made artifacts for the elite.

As noted above, during the Early and Middle Classic Periods structure and monument caches included quantities of *Spondylus* debitage. This suggests that, at least for those periods, artisans turned over to their patrons not only finished artifacts but also the by-products resulting from their manufacture. This curious association of production waste with ritual deposits was also true of other materials esteemed by the elite, such as jade.



FIG. 7 EXAMPLES FROM THE LOWER RANKED SHELL ASSEMBLAGE (note the exceptions of 7e, g and i). (a) carved, collared bead, (b) cut pendant, (c) cut conch shell artifact, (d) cut tinklers, (e) freshwater mussel with an incised design, (f) worked crown conch shell with the original form largely preserved, (g) a pair of L-shaped ear ornaments of the higher ranked assemblage, (h) one of a pair of rosettes and pegs, perhaps a lower ranked version of the L-shaped ornaments, (i) two finger rings, (j) probable inlay, (k) probable inlays or sew-on ornaments, (l) broad, flat ring

From Moboly-Nagy 1994

There is, at present, little direct evidence for the manner in which Tikal's inhabitants obtained unworked shells or shell artifacts, or how these goods were distributed within the city. Some of the freshwater mussels could have been procured from sources within a day's walk from the center of the city. Since the lion's share of shell was used by the elite, it is likely that all marine shell procurement was directly under their control.

The spatial occurrence of the higher ranked assemblage suggests that the elite also controlled the distribution of shells once they reached Tikal. They gave some of it to artisans and then dispersed finished artifacts and unworked shells among themselves through exchange or as gifts.

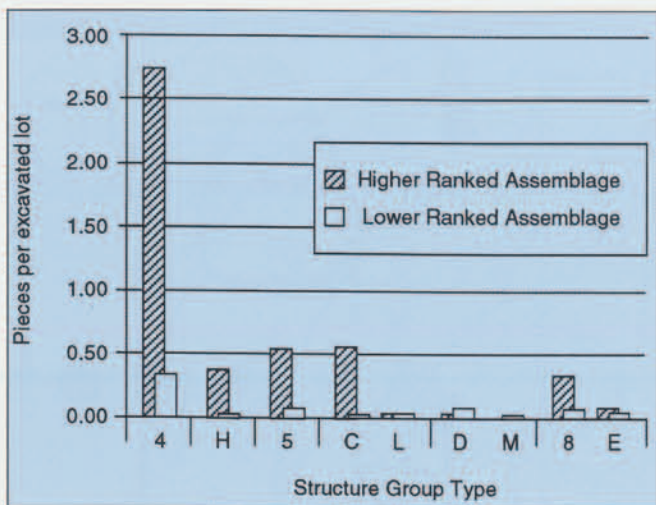


FIG. 8 OCCURRENCE OF SHELL BY STRUCTURE GROUP TYPE. The social correlates of shell during the Classic Period are shown by the occurrence of higher and lower ranked shell assemblages in different types of structure groups. Relative frequencies are approximated by the number of pieces per lot of the total number of dated and provenienced lots excavated for the particular structure group type. Only structure group types with more than five shell-bearing lots were included in the calculations.

The higher ranked assemblage is associated with special deposits in Epicentral Civic-Ceremonial Groups (4), Peripheral Minor Centers (H), Epicentral Range Structure Groups (5), and Central Intermediate Structure Groups (C). It also accompanied problematical burials not associated with architecture in the Epicenter (8) and Center (E). The lower ranked assemblage was more common in Small Structure Groups of the Center (D) and Peripheries (M). Both assemblages appear to be equally represented in Intermediate Structure Groups in the Peripheries (L).

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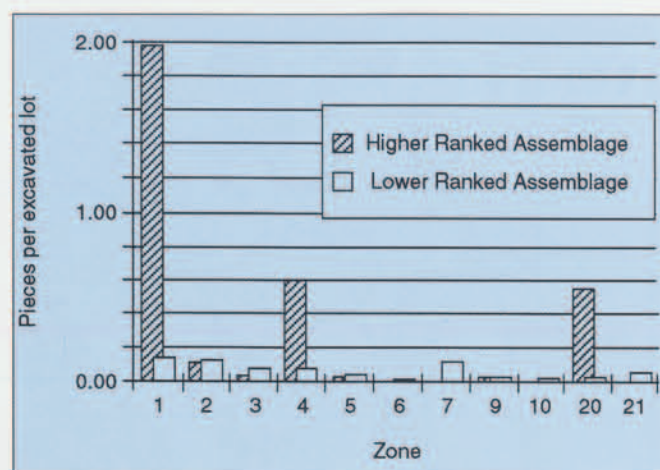


FIG. 9 OCCURRENCE OF SHELL BY ZONE. Distance-decay curves of Classic Period higher and lower ranked shell assemblages by zones, expressed as number of pieces per lot of the total number of dated and provenienced lots excavated for the zone. Only zones with more than five shell-bearing lots were included. The lower ranked assemblage shows a smoother curve than that for the higher ranked assemblage. The peaks for the latter in Zones 1, 4, and 20 represent concentrations in elite special deposits.

From Moboly-Nagy 1994



FIG. 10 CLASSIC PERIOD SHELLS. Shown are an unworked thorny oyster (*Spondylus* sp.) shell, a scallop shell pendant with the original form largely preserved, and a conch shell trumpet. The trumpet is 16.0 cm long.

Photograph by Hans-Ruedi Hug



FIG. 11 SHELL PENDANT AND BRACELET. The bracelet (reconstructed) is one of two made up of small *Spondylus* shell beads with polished bone clasps. The *Spondylus* pendant is one of a pair (also Fig. 6b). These artifacts came from a Late Preclassic chamber burial in Group 5D-2. The pendant is 6.6 cm long.

Photograph by Hans-Ruedi Hug

The manner in which shell artifacts reached consumers of lower rank is less clear. However, the distance-decay curve over zones (Fig. 9) suggests market exchange. That is, although the elite may have controlled shell procurement, they may not have been involved in the distribution of goods that were not of immediate interest to them.

SHELLS AND SOCIETY AT TIKAL

According to our present state of knowledge, higher and lower ranked shell assemblages were both present by the late Middle Preclassic Period, along with other indicators of rank society. During the Classic Period shell artifacts were widely distributed throughout the city, indicating that nearly everyone had them. The spatial distribution of shell debitage suggests that artifacts of both assemblages were made by craft specialists, most of whom lived in Central Area Small Structure Groups.

The higher ranked assemblage was heavily concentrated in special deposits. During the course of the later Preclassic and Classic Periods, elite activities required increasing quantities of a large number of durable precious goods, including shell. The use of shell in caches peaked during the later Early and Intermediate Classic Periods, while its use in burials reached its high point during the later Late Classic Period. The procure-

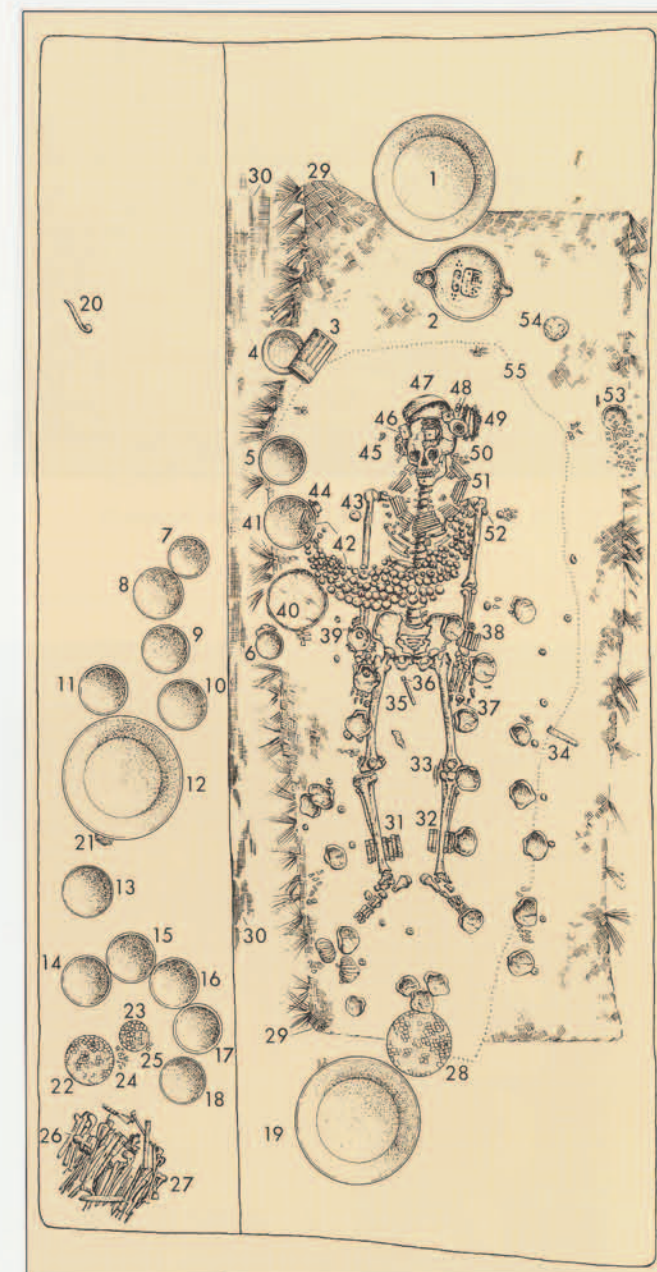


FIG. 12 PLAN OF BURIAL 116. This elaborate Late Classic Burial beneath Temple I in Civic-Ceremonial Group 5D-2 holds the remains of a ruler who died at the age of 65. Wearing jewelry of jade, pearls, and shell, he lies surrounded by polychrome painted pottery vessels and objects of bone, stone, sting-ray spines, and shell. The large quantity of red thorny oyster shell reflects the high rank of the deceased.

Photograph courtesy of the Tikal Project; Tikal neg. 73-5-X3



FIG. 13 HEAD OF JADE AND SHELL WORK.
The head probably belonged to a full-figure statuette. It was made of wood covered with a thick coat of white stucco into which are set small elements of jade and *Spondylus*, mother-of-pearl and white marine shell (also Fig. 6m). Some details are added in black paint. Note the recycled bead fragment above the right ear plug. From an Early Classic Period structure cache in Group 5D-2. The height of the head is 2.4 cm.
Photograph by William R. Coe

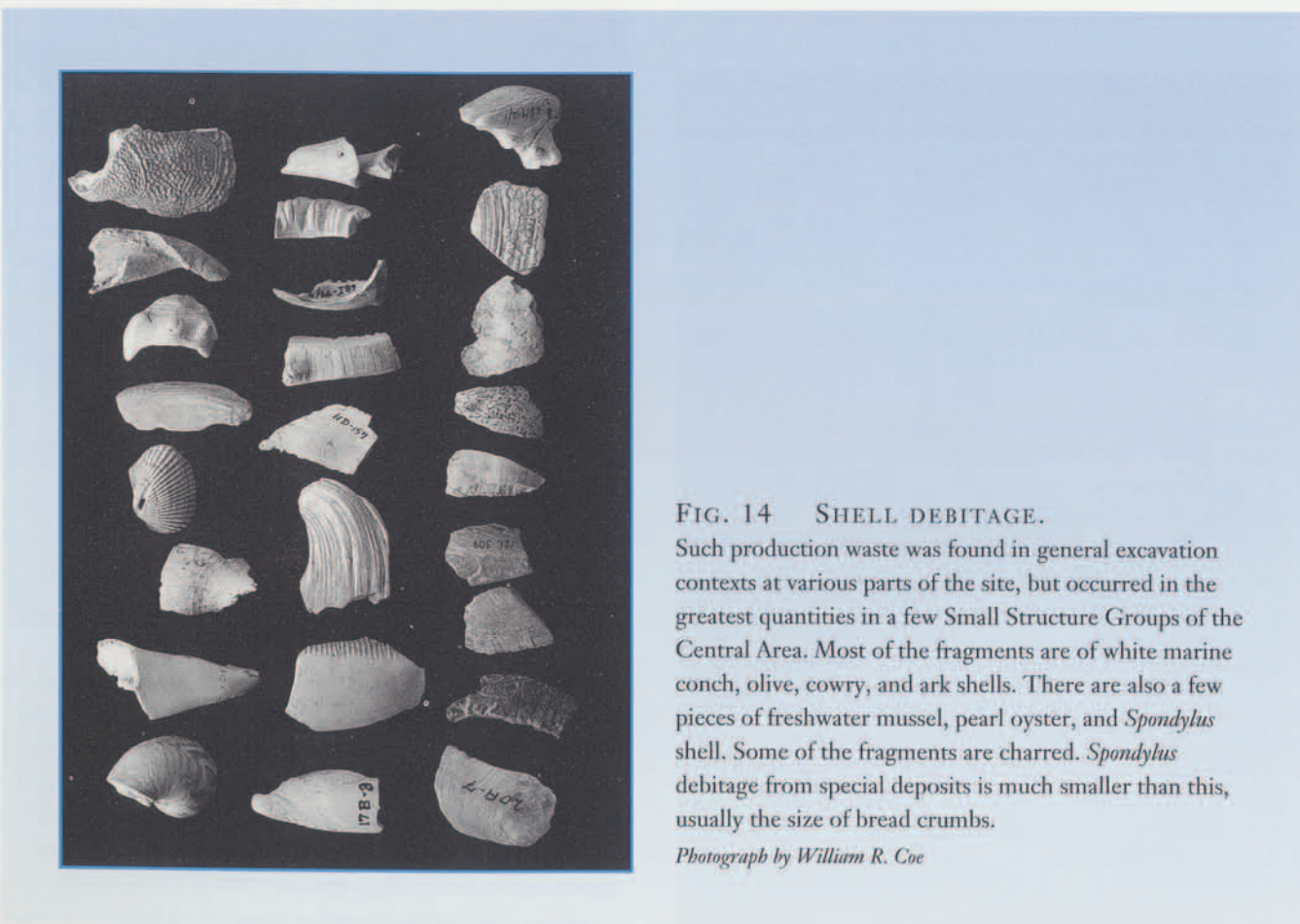


FIG. 14 SHELL DEBITAGE.
Such production waste was found in general excavation contexts at various parts of the site, but occurred in the greatest quantities in a few Small Structure Groups of the Central Area. Most of the fragments are of white marine conch, olive, cowry, and ark shells. There are also a few pieces of freshwater mussel, pearl oyster, and *Spondylus* shell. Some of the fragments are charred. *Spondylus* debitage from special deposits is much smaller than this, usually the size of bread crumbs.
Photograph by William R. Coe

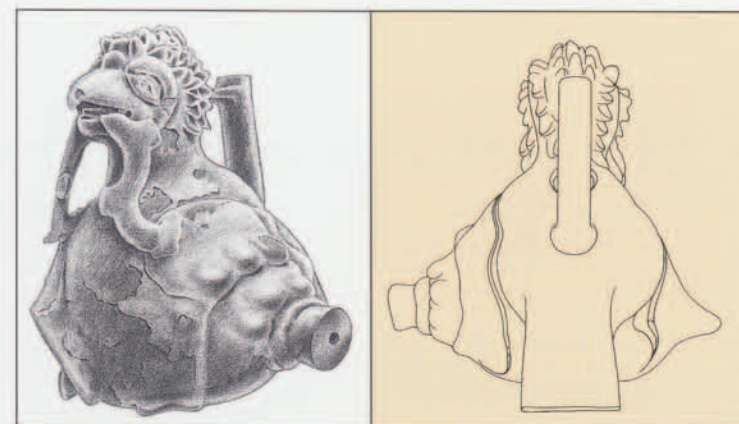


FIG. 15A, B BIRD-AND-SHELL EFFIGY JAR. Shells even appear in ceramic form. This Early Classic spouted effigy jar, decorated with polychrome paint on stucco, depicts a bird with the body of a conch shell trumpet, holding a speech scroll in its beak. It comes from Burial 10 in Civic-Ceremonial Group 5D-2.
Photograph courtesy of the Tikal Project; Tikal negs. 70-5-12, 70-5-17

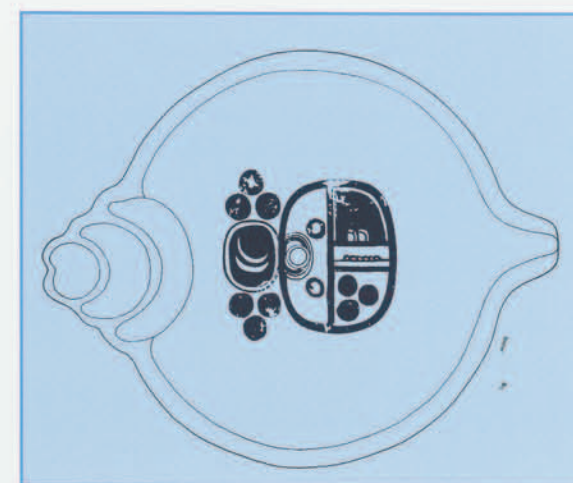


FIG. 16 SHELL-SHAPED TRIPOD PLATE. In this unique, Late Classic example, a plate takes the form of a bisected conch shell. A "kill hole" was neatly drilled in the center before deposition in Burial 116 (see Fig. 12, Locus 2).
Photograph courtesy of the Tikal Project; Tikal neg. 66-5-21

ment and distribution of the higher ranked assemblage appears to have been entirely in elite hands. The picture is less clear for artifacts of lower rank, most of which ended up in general excavations.

After the Maya Collapse at the end of the Late Classic Period, virtually all portable material culture

associated with the elite vanished. Commoner goods persisted into the Terminal Classic Period as the city went into its final decline. But even then, small amounts of debitage recovered from the Epicenter suggest that unworked marine shells may have occasionally been imported into Tikal and made into artifacts there. 2

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