Reports from the Field

EXpedition

The Copan Corte: A Window on the Architectural History of a Maya City

Many Museum members are familiar with the popular "Reports from the Field" lecture program. In an effort to expand the focus of that program and to reach those of you who live far from Philadelphia, this series will examine some of the field research being carried out by the Museum and associated departments at the University of Pennsylvania.

Sylvanus G. Morley referred to the river cut through the Acropolis at Copan, Honduras, as "the largest architectural cross-section in the world" (The Ancient Maya 1946:354). Although perhaps overstated, these words certainly convey the magnitude of this feature, known simply as the corte (or "court"). The corte is the result of centuries of erosion by the Rio Copan which has removed the eastern side of the Acropolis, exposing an accumulation of buildings measuring some 275 m wide north-south, and some 40 m high (Fig. 1). Although the corte has been known to agriculturalists as early as ca. 1000 B.C. The culmination of this occupation was during the Maya Classic period (ca. A.D. 250-900), when Copan became the political, economic, social, and ideological capital of a lowland Maya city-state. Copan's inscriptions provide a historical record of the royal dynasty that ruled from this capital, chronicling a roster of at least 18 kings who held power between ca. A.D. 400 and 800 (Figs. 4-5).

The focus of Copan's development as, represented by both the archaeological and historical record, was the Acropolis—one of the largest architectural complexes in the Maya area and the center of power for the Classic polity for some 400 years (Fig. 7). Here were the palaces, temples, and administrative buildings used by Copan's rulers and their immediate kin. Typical of most ancient Maya monumental construction, the Acropolis consists of an accumulation of superimposed buildings. As structures were terminated, their supporting platforms were buried, building roofs removed, and rooms filled to provide firm foundations for new platforms and the buildings that covered them. The result is an excellent record of the entire sequence of construction, including evidence of individual building functions, rituals, and related activities.

Earlier Work with the Corte

The corte was reported to the outside world by Copan's first explorers and investigators, John Lloyd Stephens, Frederick Catherwood, and Juan Galindo, in the first half of the 19th century. It was mapped and photographed by Alfred P. Maudslay, the indefatigable pioneer of Maya archaeology, at the end of the same century. Maudslay also described the corte in his report on Maya sites and monuments (published from 1880 to 1900), but misinterpreted its significance, seeing the exposed plaster floors and masonry walls as "Foundations" for the visible buildings of the Acropolis. John Owens seems to have been the first to have recognized the importance of the corte as exposing the sequence of earlier buildings underneath the temples and palaces on the surface. (Owens was a staff member of the expedition to Copan sent by the Peabody Museum of Harvard University at the turn of the century.) From that point on, archaeologists have realized that the Copan corte provides a cross-section of the architectural history of the Acropolis. Nonetheless, for a long time the sheer size of the exposure seems to have inhibited any attempt to take advantage of it.

But if archaeologists ignored the corte, the Rio Copan did not. Two major temples originally towered above the river along the very eastern edge of the Acropolis. Called Structures 20 and 21, they were photographed and mapped by both Maudslay and the Peabody expedition. But soon after the Peabody team left Copan, a great flood undercut the eastern edges of both structures and they collapsed into the swirling river. The prevention of further destruction became a priority for the next investigation at Copan, conducted by the Carnegie Institution of Washington during the 1900s. Thanks to this work the course of the Rio Copan was diverted and the Acropolis has been spared further damage.

During the Carnegie investigation, Edwin M. Shook prepared the first scaled section drawing of the corte. The energies of the other archaeologists, however, were dedicated to excavating and restoring structures belonging to the final stage of Acropolis construction, including two of the largest buildings and the famous Hieroglyphic Stairway containing the longest text in the entire Maya area, and nothing more was done to gain information from the corte.

Origins of Current Research on the Corte

The modern era of archaeological research at Copan began in 1975. In that year, Gordon R. Willey of the Peabody Museum (Harvard) proposed to conduct a comprehensive settlement survey of the Copan valley. This resulted in the first assess-

Figure 2. Map showing location of Copan and other major Maya sites.
ments of the size and character of the ancient population at Copán. Although the focus of Willey’s own investigation was on mapping and test excavations in the surrounding valley, the proposal he made to the Instituto Hondureño de Antropología e Historia for archaeological research at Copán was a comprehensive and long-term plan that included investigation of the entire site by excavation, as well as provisions for establishing a research center and for the preservation and protection of the ruins for future generations.

At this time, the senior author of this article was excavating with his colleague, William R. Coe, at the neighboring site of Quiriguá, Guatemala. Recognizing that we would be in the field at the same time, the Harvard and University of Pennsylvania projects had discussed ways and means of cooperating and sharing data. In early 1975, as discussions on cooperation between the two projects continued, Coe and Sharer joined Willey in Copán to assist in drafting plans for research in the Acropolis. One feature of the resulting plan was a comprehensive investigation of the corte, including a thorough recording of the architectural stratigraphy, tunneling excavations to expose and record earlier levels of construction, and consolidation of the corte face to guard against collapse and further destruction. Trampling through the dry bed of the Rio Copán in 1975, Sharer never dreamed that he and The University Museum’s American Section would one day find themselves in the midst of a multi-year program aimed at carrying out that investigation.

**The University Museum’s Corte Excavations**

In 1978, the first attempt to realize the plans for a corte investigation was made. George Guillemin, an experienced field archaeologist who had previously worked for Penn’s Tikal project, excavated three tunnels that extended from the corte beneath the Acropolis East Court. Tragically, Guillemin died shortly thereafter, and his tunnels were abandoned. While test excavations at the base of the corte were conducted in 1979 by Marshall Becker and 1988 by Saul Murillo, no further work was done, even as plans were being made to completely fill in the old river course and consolidate the exposed face of the corte.

Meanwhile, in the years following the end of the Penn project at Quiriguá in 1979, Sharer and David Sedat (a University Museum Research Specialist) began developing another major archaeological project in the Maya area. When those plans became stalled, William Fash, who had been conducting research at Copán longer than anyone (continuously since 1978), proposed that Sharer and Sedat consider launching an internal program at Copán. The aim would be to salvage the work begun by Guillemin and to recover as much data about the Acropolis architectural sequence as possible before the corte was finally consolidated and sealed.

After studying this proposal, and estimating that the Copán corte work could be realized during the two- or three-year delay expected before beginning work in Guatemala, Sharer agreed to accept Fash’s offer. Julia Miller was the first member of the Penn team to begin work, conducting a feasibility study in 1988 on the remains of Structure 21 (discussed further below). In January 1989 the new Penn program began the first full-scale season of corte research, and it is now clear that it will take far longer than our original estimate to complete the excavations.

The Penn program is part of the Proyecto Arqueológico Copán Copán (PAAC), a consortium of programs and institutions that are dedicated to an interdisciplinary investigation of Copán’s Classic period development. As such, the PAAC is one of the heirs to Gordon Willey’s original research plan for Copán. The PAAC is under the overall directorship of William Fash, with each of the directors of the participating programs serving as co-directors. As of this writing the other consortium directors are Ricardo Aguirre of the Foundation for Pre-Columbian Studies at Copán; E. Wyllis Andrews of Tulane University; Rudy Laras, Director of the Copán consolidation program; and Robert Sharer, director of the Penn research, known formally as the Early Copán Agrícola Program (ECAP).

![Figure 3. View of the Copán Valley from the north, with the Copán Main Group and Acropolis covered by trees in the middle background (beyond the buildings housing the Copán archaeological project laboratories, storerooms, and offices).](image)

![Figure 4. The Copán dynasty.](image)

![Figure 5. West side of Altar Q, which records the Copán royal dynasty, showing portraits of the founding rulers, Yax K'uk' Mo', center left, and the 16th ruler, Yax Pac, center right.](image)
Archaeology and Tunneling

Tunneling to excavate ancient sites has a long, albeit checkered, career in archaeology. Many archaeologists disapprove of tunneling on the grounds that tunneling makes accurate recording of horizontal and vertical position and relationships difficult. In addition, tunnels can be physically dangerous, and have negative associations because they are often the means by which looters steal buried antiquities. But under the proper circumstances, tunneling can be a valuable and cost-effective archaeological excavation technique. At Copan, the corte provides crucial stratigraphic control, and computerized mapping (see box on the COMPASS system) allows accurate vertical and horizontal recording of any location or building within the tunnels. Also, at Copan the density of the construction fills makes tunneling unusually secure (each tunnel is about one wheelbarrow wide and the height of an average person). Extra precautions, such as emergency lights and exits, increase the safety margin. While the most commonly used method of exposing deeply buried deposits—trenching—is inherently destructive of overlying construction, and therefore ethically difficult to justify in many cases, tunneling allows exposure of buried buildings at any level without destroying later material. In addition, the corte is far lower than that of trenching since far less matrix has to be removed (although backfilling tunnels can be more difficult and expensive than filling in a trench). Finally, unlike trenches, tunnels do not disturb the surface appearance of a beautiful site such as Copán.

ECAP is charged specifically with investigating the origins and development of the Acropolis in all stages prior to its final phase and revealing the full sequence of buried architecture. While such evidence exists at most Maya sites, access to the full sequence is usually hindered by the dismantling of later construction to expose earlier buildings. But the corte removes these problems at Copán: all levels of the Acropolis are both visible and accessible for investigation (see Fig. 1). By tunneling laterally from the corte, architecture at any level can be followed and exposed—and evidence of associated activities can be recorded—without destroying later superimposed construction (see box on tunneling).

After three full seasons of excavation (1989-91), over one kilometer of tunnels have been opened to follow the buried structures under the Acropolis (Fig. 6). These now total 28 platforms and 16 buildings, representing a 400-year sequence of construction. Dating of construction levels is based on stratigraphy, supplemented by radiocarbon assessments, associations with ceramics.

Figure 6. Cleared face of the corte showing the lowest levels of Division V (ca. A.D. 100-400), lower left, and entrance to one of the Early Copán Acropolis Program’s tunnels probing the buried architecture of Division IV (ca. A.D. 400-500), upper right.

Figure 7. Map of the Copán Main Group, showing the Acropolis with the corte along its eastern edge.
The COMPASS System

In 1991, we implemented a Computer-Assisted Surveying and Mapping system known as COMPASS to record the architecture exposed in our tunnel excavations. COMPASS was under development by Andrew Weiss since 1986 at the Museum Applied Science Center for Archaeology (MASCA) of the University Museum. While this system had been used previously for topographic mapping and systematic surface collection in several parts of the world, its use at Copán represents the first application to large-scale architectural mapping, and the first time it has been used in tunnels.

COMPASS allows drafting of maps in the field using computer-assisted drafting software on a Macintosh computer. We are able to quickly produce field maps to check on progress and guide further excavation. Examples of COMPASS-generated maps can be seen in Figures 8 and 9. The speed, accuracy, and efficiency achieved by this surveying system have proved to be far greater than with conventional optical instruments. We plan to continue to use the COMPASS system to record the results of our excavations, and hope to expand our coverage to include all PACA excavations in the Acropolis.

and other artifacts, and newly discovered inscriptions with Maya calendrical dates. Our tunnels also connect to excavations elsewhere in the Acropolis, including the tunnels beneath Structure 20 (with the Hieroglyphic Stairway) to the northwest, where additional earlier buildings have been revealed that can be tied into our overall sequence.

These excavations have documented the construction sequence of the eastern half of the Acropolis. They also provide independent means for testing the results of recent historical research based on decipherments of Copán's inscriptions. For example, the historical texts refer to a ruler named Yax K'uk' Mo' who apparently founded the royal dynasty about A.D. 428. Significantly, the ECAP excavations show that the beginnings of the Acropolis date to about A.D. 400, with the construction of a series of monumental platforms and buildings that were placed over an earlier complex of simple, low residential platforms (designated as Division V, ca. A.D. 100-400). These monumental constructions (Division IV, ca. A.D. 400-500) seem to represent the founding of the first royal administrative, residential, and ritual complex at this location, to judge by the scale and elaboration of structures, especially their associations with hieroglyphic inscriptions and painted stucco decorations.

The initial complex was dominated by a huge terraced platform, measuring some 50 m north to south, 68 m east to west, and over 9 m in height, that once covered the bulk of the southeast quadrant of the Acropolis (its original easternmost extent is unknown due to destruction by the Rio Copán). In the northeast quadrant, a lower platform supported a large administrative/residential complex of multi-roomed, vaulted masonry buildings (Fig. 8). Excavation thus far has defined eight of these structures, arranged around three courts (Court B, the only adequately defined example, measures ca. 25 m by 20 m). The exteriors of these northern buildings were decorated with elaborately modeled and painted stucco reliefs, and at least one interior had a painted hieroglyphic fresco.

Our research, controlled by the well-defined architectural stratigraphy of the corte and recorded by the COMPASS system (see box), allows important insights into the timing and scale of activities sponsored by members of Copán's ruling dynasty. Events in Copán's historical record, such as the elli and ríter, the political fortunes of its rulers, can be compared to shifts or changes in the monumental landscape, and the data sought to identify Structure 21's function and place in the overall Acropolis sequence. The structure remains in the final hypothesis based on sculptural motifs and dating evidence is that Structure 21 was a major Mayan palace built under Copán's 13th ruler, 1 Rabbit, built between A.D. 715 and 771 by one of his immediate successors, either the 14th or 15th ruler.

Although this identification cannot be considered conclusive, the evidence recovered from the investigation of Structure 21 shows how much can be learned by combining archaeological, epigraphic, and iconographic data even when the original building has been almost completely destroyed.

Conclusion

By excavating a series of tunnels from the stratified architectural remains visible in the corte, the Early Copán Acropolis Program is documenting a 400-year sequence of monumental architecture directly associated with Copán's hieroglyphic text. As a result, our research is providing a study of changes in the architectural form, function, and organization as it relates to the entire life-span of an identified lowland Maya ruling dynasty. Our research is also documenting the architectural layout of a major lowland Maya polity center with functional variation. When our work is completed, we will be able to suggest stages of its development and the stage of its development to a degree of detail impossible to achieve at other sites. Given the practical and ethical concerns of using destructive conventional excavation techniques to provide such documentation, it seems likely that our investigation of the architectural evolution of the Copán Acropolis will not be duplicated any time in the near future.
Acknowledgments

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Robert J. Sharer has been a faculty member in the Department of Anthropology at the University of Pennsylvania since 1977. He has directed archaeological projects in El Salvador, Guatemala, and Honduras prior to the Copán research. He has published several monographs reporting the results of this past research, in General Editor of the Quirigal Reports being published by The University of Pennsylvania, and is the author or co-author of several books in the Maya, including Quirigal, A Classic Maya Center and its Sculptures (Carolina Academic Press, 1990) and the 5th edition of The Ancient Maya (Stanford University Press, in press).

On the platform, a B. A. in Art from Manchester College, and has been a graduate student in the Dept. of Anthropology at the University of Pennsylvania since 1997. As a member of the ECAP staff, she supervised excavations at Copán during the 1981 and 1982 field seasons, and is currently conducting her Ph.D. dissertation research on the effect of social groups in the Copán Acropolis. She has reported the results of this research at the 1981 and 1982 meetings of the Department of Anthropology, and co-author of an article on the Copán research that was presented at the Journal of Archaeology of Mexico.

Julia Miller began graduate studies in the University of Pennsylvania in 1986, receiving her B.A. in anthropology from Kenyon College. Before joining the staff of ECAP, she spent a season conducting acoustic surveys in the Leno Valley of Honduras. She is currently preparing her Ph.D. dissertation on Structures 31, 31A, and the earlier buildings of the northeastern quadrant of the Copán Acropolis. She is also the author of a paper on the excavations she supervised from 1986 to 1990. She is the co-author of a chapter in the Copán Notebooks and an article to be published in Ancient Mesoamerica, and is currently being presented at professional meetings.

Over the years, the foundations that Gordon Willey established for the comprehensive archaeological investigation of Copán are being realized. Although his settlement program ended in 1976, other projects have continued to gather environmental, architectural, iconographic, and epigraphic data from Copán. As a result, it is the most thoroughly investigated and best known of all Maya sites. This is not to say the work is even close to completion, for so much remains to be investigated, analyzed, and published that it seems likely Copán will remain a focus of an international research effort for years to come.

Robert J. Sharer, Luis F. Traxler, and Julia C. Miller

Figure 10a, b. Jade objects from two of the caches associated with the Division II Ante structure. (a) Jade carving from a dedication cache beneath the Ante platform staircase (within its shell container); (b) pair of carved jades from the termination cache inside the room of Ani, the building on the summit of the Ante platform.

Figure 1. The Calusa lived within the Glades archaeological culture area located at the southern end of the Florida peninsula. Fishing folk who lived among lowlying coastal mangrove swamps and grassy marshes rich in flora and fauna, the Calusa did not practice agriculture. Though elements of Calusa art, architecture, and what we know of Calusa religion may have been similar to those of Mississippi traditions to the north, Calusa culture was distinct.

TWO TERRESTRIAL ECOLOGICAL REGIONS

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