Reconstructing An Ancient Table
The 'Pagoda' Table from Tumulus MM at Gordion

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The University Museum excavations at Gordion in central Turkey were begun in 1950 under the direction of Rodney S. Young, Professor of Archaeology at the University of Pennsylvania and Curator of the Mediterranean Section of the University Museum. Gordion was the capital of the ancient Phrygian empire, ruled at the height of its power by King Midas, known to the Assyrians first as an adversary and then ally of Sargon II in the late 8th century B.C. and to the Greeks for his legendary wealth. The largest tumulus, or burial mound, at Gordion may have covered the tomb of Midas himself. Thus it acquired the name Tumulus MM, for Midas Mound. Today this great mound stands 53 meters high, with a diameter of almost 300 meters. The excavation of this imposing monument in 1957 naturally caused much excitement. Young had located the tomb chamber beneath the mound by boring a series of holes with a light drilling rig. A trench was then opened on the southwest perimeter, and a tunnel was dug straight inward toward the chamber, which lay roughly at the center of the mound. A crew of Turkish miners was employed to shore up the tunnel as the digging proceeded. About 135 meters from the edge of the tumulus, the tunneling revealed a wall of roughly cut stone blocks. Behind this was a rubble fill; then a casing of large, unfinished logs; more rubble; and finally a small
chamber of squared timbers measuring a little over 5 x 6 meters in its interior.

The tomb's occupant, a man about 65 years old, must have been a king. He lay in a sledge or coffin (at first identified as a four-poster bed). It was made from a huge log cut in half and hollowed out, with ledges on both ends. The tomb was very rich, although it contained no gold. Among its contents, which dated to the late 8th century B.C., were over 160 bronze vessels: large and small cauldrons, jugs, situlae, ladles, and more than 120 bowls. Along the west wall were 11 bronze belts. More than 160 bronze ibises, or safety pins, were found on and near the body of the king.

At least 14 pieces of wooden furniture had been placed in the tomb, and many were in extraordinarily good condition, due to the fairly constant relative humidity which had prevailed inside the chamber.

Very little ancient wooden furniture survives, in any state of preservation, so this was a rare find. Tumulus F at Gordium, excavated the preceding year, had also contained wooden furniture, but the roof of the chamber had collapsed, and most of the furniture was crushed and fragmentary. Some of the furniture at the north end of the Tumulus MM chamber had also been damaged, here by water seepage from the drilling rig. These were the king's "bed" or coffin and several low stools or couches which had been piled in the northeast corner. But the rest of the furniture was very well preserved. Against the east wall were two lavishly inlaid wooden screens. Eight plain, three-legged tables had collapsed under the weight of bronze bowls which had been piled on top of them. And to the south of the wooden screens, against the east wall, another table had collapsed—an ornate, inlaid table of imaginative design, which became known as the 'Pagoda' Table because of the oriental-looking struts which had supported the table top.

Also piled with bronze bowls, the 'Pagoda' Table seems to have come apart in a spectacular way. The legs had fallen inward, and the 'Pagoda' struts had scattered. But the frame itself did fall intact, with two 'Pagoda' struts still in place above it. The basic form of the table could be determined with little trouble. It had three legs, which had inlaid, reeded tops and abstract animal claw feet. The frame was made up of four joined side pieces. Each side consisted of inlaid squares or rectangles connected by double bars. This gave the squares the appearance of being dovetailed together, whereas actually each side was cut from a single piece of wood. Above the inlaid squares of the frame were the 'Pagoda' struts and handles which had supported the table top. At the corners, the four handles enabled the table to be lifted from the front and back. From the remaining squares of the frame rose the 'Pagoda' struts. These are of two types. Eight of them look something like stylized trees. Single stems sprout leaves, which support two and then three uprights. The other six struts are different: two opposed pairs of leafed uprights are connected by a single plain segment. From the tops of the feet of the two rear legs rose elaborately carved pieces which supported the frame near its rear corners. The two front corners of the frame were supported by two more inlaid struts, these springing from a single curved piece which fit over the front legs behind its foot. The table top rested on the 'Pagoda' struts which rose from the frame.

After the contents of the tomb were removed, studies of the artifacts were undertaken. The wooden furniture was reconstructed in working drawings, and certain pieces were published, along with some of the furniture from Tumulus F, by Rodney Young (Young 1974). A reconstruction drawing of the 'Pagoda' Table first appeared in this article, along with Young's appraisal of the table's artistic merit. To Young, here was an exercise in bad taste. Certainly, in this first reconstruction the piece looked alarmingly dissonant. However, the drawing incorporated several errors; it was also a very sketchy and, in some ways, misleading representation of the whole. Nor was the matter to receive further consideration. The Gordium excavations were halted by
Young’s death in 1974. No one undertook further study of the wooden furniture. Thus Young’s early ideas and the working reconstruction drawings were published in his posthumous volume 1 of The Gordion Excavations Final Reports (Young 1981). It was while helping to illustrate this volume that I first encountered the ‘Pagoda’ Table in all its complexity. Realizing that the old reconstruction drawing incorporated errors, I had hoped to make a new reconstruction, using the photographs and notes on hand in the Gordion archives in the University Museum.

After much study, I began to understand the table. The photographs revealed a magnificent object. The handles, frame pieces, ‘Pagoda’ struts, and the supports which rose from the feet of the table looked different from the way they had earlier been drawn. The shapes were elegant, playing off against each other but tying the design together. In the drawing, the squares of the frame did not look as if they were connected by dowels. The profile of the legs was incorrect, and the feet had been improperly rendered. The top of the table looked too small, and photographs showed fragments of the top which turned up along the edge. The table was certainly nearly square, but the drawing made it look rectangular. The ‘Pagoda’ struts had no design at all on them in the drawing, and the squares of the frame bore patterns which did not correspond to their real designs. Finally, the two rear legs did not seem to be correctly placed. Photographs showed that the struts which rose from their feet actually supported the side frame pieces at their ends, and not the back of the frame. The legs should have curved out in some manner toward the rear corners, not directly toward the back of the table.

Furthermore, the detail drawings which were to appear in the final publication (Young 1981; 104–105) were incomplete, and their accuracy could not be verified. Yet while the table’s reputation improved, the table itself remained a puzzle. The early photographs couldn’t tell us enough, and now we had more questions than answers. It seemed to everyone a good idea to go back to the beginning and start again, so I went to Turkey in 1981 to study the table which had been in storage in the Museum of Anatolian Civilizations in Ankara since the time of its excavation.

The pieces of the table had been neatly placed in an old display case, stored in a small room with the rest of the Gordion furniture. They were removed to the laboratory for study. A number of long dowels which had never been photographed turned up—this was good news. But unfortunately one of the ‘Pagoda’ struts was missing. The pieces of the table badly needed cleaning and conservation: the wood had lost much of its density and was very delicate. It had to be handled with extreme care. Robert Payton, conservator for the British Institute of Archaeology in Ankara, was restoring pottery in the laboratory of the museum while I was studying the table. This was a provident coincidence, as he turned out to be a wood specialist and much interested in the Gordion furniture. After some negotiation, he obtained a leave to work on the ‘Pagoda’ Table, and we scheduled the conservation program for the following year.

In trying to understand how the pieces of the table fit together, the first and most obvious step was to attempt to work out the internal brace system by arranging the long dowels. The pieces readily complied. The long and short dowels were then fit into the legs. This had been impossible to accomplish from photographs, because the legs showed many cuttings. It had not been apparent which were mortises—the cuttings which receive the end pegs, the tenons, of corresponding members—and which had held patches—small pieces of wood inserted to replace or mask imperfections. Once I actually held the dowels and tried to fit their tenons into the various cuttings in the legs, their placement became clear. Dowels ran from the legs to the frame, their position indicated by mortises cut in the backs of the four frame pieces. The two longest dowels connected the two sides of the frame to the central dowel which ran from the back of the front leg toward the rear of the table. The tenons of these two longest dowels fit into mortises cut in the lower of the double bars at the center of each side frame piece. Soon it was possible to sketch an accurate plan of the table’s dowel system at the level of the frame. The two rear legs did indeed curve out toward the rear corners. The fancy struts which rose from the tops of their feet could now be understood. The bottom section of each strut was aligned with the foot into which it was secured. As it rose, each strut gradually twisted, so that its top was perfectly flush with the side frame whose end it supported. This twist seems to have been a deliberate play on the functional purpose of the vertical strut. It had been visible in the early photographs but had been taken to be a warp. The next step was to place all the ‘Pagoda’ struts in their proper positions. This was accomplished by fitting the lower tenons of the struts into the mortises in the upper edge of the frame—an obvious solution, but again impossible from photographs.

Now my drawings could be planned.
Because of the darkening of the wood, contrast between the once light wood of the table and the darker wood of the inlay had been greatly reduced. The inlaid design would be difficult to see in a photographic print. But in drawings the design would be clear; the wood could be restored to its original state, and missing parts could be replaced. Furthermore, if there existed any order to the elements of design, complete detail drawings would bring it out. So it seemed best to draw every piece of the table and details of all the inlay. It was also important that the 'Pagoda' struts be pictured above the frame pieces. Sketches were made and measurements and photographs were taken so that the drawings could be completed back in Philadelphia.
slots at the ends of the left and right frame pieces. The joints were secured with square pegs slipped in from the top and small round pegs hammered in from the sides. The leg strut which supported frame piece C can be un-twisted in a drawing, showing the entire face and revealing the whimsicality of the inlay. A drawing of the left rear leg recaptures its original curve and, again, brings out details of the inlay which would not be visible in photographs.

The right side of the table looks very much like the left side, but the inlaid patterns are different. The right rear leg strut closely resembles that on the left, but the inlay is again different: the design on the two pendant aces is reversed, with four rows of triangles above and diamonds below. The inlay on the top section of the right rear leg is like that shown in the drawing of the left rear leg, except the diamonds run around the upper band and the meander around the lower. It is almost as though one of these two top sections had been put on upside down. The inlay on the top of the front leg makes a compromise between the other two: the meander is above and the diamonds below, as on the left rear leg; but the meander runs to the left, as on the right rear leg. Soon it becomes clear that the artist is playing a delightful game with the spectator.

The front frame piece (frame piece A) had handles at its ends, with three
'Pagoda' struts between them. The top of the right handle is broken. The frame piece was supported from below by two corner struts, which almost look like stylized hands. These sprang from the ends of a single curved piece below. This lower, curved strut is inlaid on the top and front, and its disc terminals are inlaid with rosette-like patterns on their front and back faces. The front leg (leg A) has a notch cut behind its foot, into which the curved front frame support fits. This leg has a tighter curve than the back legs, bringing it close to the frame. The face of the front leg is inlaid, whereas the two rear legs are plain.

A drawing of the front frame face allows the broken parts to be restored and brings out more idiosyncrasies in design. It is interesting to compare the front of the table with its left side. The 'Pagoda' strut in the center on the front is rather different from the two struts of its type on the left side. Some of the inlaid squares of the front seem related to squares of the side, but only in a casual way. The two front handles are inlaid quite differently from one another. The drawing brings out one further peculiarity—alternating panels of inlay in both front handles are missing. Only depressions remain; the tiny holes indicate that some sort of inlay was once pegged in. No such inlay was found in the tomb. In the drawing, the sides of the missing sections have been restored, since many of them are now broken away.

The back of the table was like the front but lacked a lower support. Its inlaid decoration is as energetic as that of the other three sides, and it offers no key to any overall design rationale. Alternating panels of inlay are also missing from the back handles.
In 1982, pieces of the top turned up among the remains of another table top. The 'Pagoda' Table's top had a very different profile than the tops of the plain tables from the same tomb, and so it was easily identifiable. Very few fragments had survived, but those that did indicated that the table top had been plain, without inlay, the wood's grain figuring in a decorative manner. The underside of a few fragments showed cuttings for the 'Pagoda' struts. These cuttings were recessed in two steps, to receive both the top tenons and a little of the struts' top crossbars. The cuttings covered about 7 mm. of the 'Pagoda's struts. This is also the height of the top sections of the leg tenons. The lower, thicker sections of these tenons were enclosed by collars of wood which were carved in one piece with the table top and projected below its lower surface. The top seems to have been about 1.6 mm. thick. This evidence strongly suggests that the leg tenons did not show through on the top's surface, as the early drawing suggests. Finally, the top was quite square, about 78 x 80 cm. Its dimensions could be approximated from the extent fragments. The overhang was greater over the front and back faces to cover the handles.

After all the details of design and construction were clear and drawings of all the component parts had been finished, a perspective drawing could be started. First, I placed a small version of the table plan (scale 1:4) at the top of my available working surface, which was 35 x 60". This version had to contain all the features I wished to reproduce in the perspective drawing, so I added the table top and the projecting handles at the front and back. I made the plan as small as possible without losing detail. The smaller the plan was, the farther away I could place the viewer's sight point, minimizing distortions. I chose a sight point about 6 feet away from the table, at eye level for a standing figure, looking almost directly toward the left front corner of the table—this would place the viewer, in effect, within the confines of the king's tomb. A standing position seemed natural for someone approaching the table to look at it. The obvious advantages of this sight point were the almost equal views of the front and left sides, diagnostic views of the front and left rear legs, a good look at the way the curved front frame support fits over the front leg behind the foot, and a view through the frame showing the internal bracing system. The drawing produced would also preserve the table top's square shape, without creating any distortions which might make the table look rectangular. One unforeseen problem was that the third leg became somewhat hidden by the frame, the internal braces, and the left front handle.

One unforeseen advantage of the corner view was the way it clearly showed the greater overhang of the table top at the front and back and the way the varying distance of the legs from the frame was seen to tie in with this variation in the overhang of the top. The front elevation was then placed to the side on a hypothetical ground line. Vanishing points were determined by a series of mechanical projections (Forseth and Vaughan 1980: 99-117; 130-133), and the perspective could be drawn. After the table was sketched out in a line drawing and enlarged so that the inlay could better be drawn in, I drew a pencil version, complete with pencil shading. Next I made an ink line drawing to test different methods of shading and various line weights. The test was photographed and reduced to the size at which the drawing would eventually be printed, I could then choose the best means of shading in ink, and I completed the drawing.
On paper, it was possible to reconstruct the table completely. The result was something of a surprise. This is a representatively Phrygian piece, with its curvilinear shapes, its fine workmanship, and its playful decoration which is both rich and energetic. Yet the overall design is inventive and unique. The table is interesting to look at, through, and down upon. The 'Pagoda' struts alternate from the left side around the front and from the right side around the back, but not from back to left or front to right. Corresponding parts are often found to be different in small but noticeable ways. The inlaid design lacks both the symmetry and the sequential coincidence normally associated with design using geometric motifs. This is not staid, elegant geometric ornamentation; it is more personally engaging, idiosyncratic, and exuberant. All of this creates a tension which makes the piece live. Yet certain apparent disparities in fact contribute to the harmony of the whole. The rectangular frame ends perfectly in a square top when the overhang is greater at the front and back to cover the handles. The two rear legs were set back farther from the sides of the table than the front leg was from the front frame. But because of the greater overhang of the top at the front, both front and side legs are equally visible from the corners of the table. The two rear legs are closer to the back of the table than they are to the sides; this compensates for the greater overhang of the top at the back. One drawing is only a suggestion—it must have been delightful to walk completely around this piece.

Fortunately, this will soon be possible. Robert Payton cleaned and consolidated the wood in Ankara in the fall of 1962. We
will reassemble the table for display this summer. Mr. Payton reports that the wood is now lighter in color and that he was able to re-glue broken pieces to minimize the appearance of warpage. The table will acquire a glass top and a new top. A preliminary wood species analysis indicated that the light wood of the table was boxwood and the darker wood of the inlay was juniper. These results must be confirmed, and the top, which was certainly made from a third, softer wood, must be tested. Scraps of ancient glue were taken, and identification is possible. Preliminary analysis is pending.

However, much we may now know about the 'Pagoda' Table, we still don't know everything. Why were there so many extra cuttings and patches in the top, legs, and frame? They might be mistakes, or perhaps they indicate repair. Why is the missing 'Pagoda' strut so different from the other struts of its type? It looks like a replacement. What was once inlaid into the four handles, and when and why was it removed? Was the tomb robbed before it was sealed and piled with the earth of the tumulus? Or was the table put into the chamber in its damaged state?

And what does all this have to do with the great King Midas who turned everything he touched to gold? If indeed Tumulus MM is Midas' tomb, was he buried without any?

**Suggested Reading**

Baker, Hollis S. 1966

Blackburn, Graham 1977

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New York: Van Nostrand Reinhold.

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Mellink, Machtd J. 1985

Richter, G. M. A. 1968

Young, Rodney S. 1974

1981

Elizabeth Simpson received her B.A. in Mathematics and her M.A. in Art History from the University of Oregon, and is currently a Ph.D. candidate in Classical Archaeology at the University of Pennsylvania, where she is writing her dissertation on the furniture from Tumulus MM at Gordium. Her principal areas of interest are the ancient Mediterranean and Near, Middle and Far East, with a special interest in interconnections between East and West in the early Iron Age. She has done field work in Jordan and in Turkey, where she has worked for the past three years. She is affiliated with the Gordium Excavations both as an architect for the Gordium Publications Project and as coordinator for the study, reconstruction, and conservation of the Gordium furniture.

She is currently preparing for publication a University Museum monograph on the pre-Kimmerian wooden furniture from Gordium, which will contain new photographs and reconstructions of all the Gordium furniture, including photographs of the 'Pagoda' Table taken after cleaning and conservation as well as the complete set of detailed drawings of the table.

The Fifth Century A.D. Buddhist Cave Temples At Yin-Kang, North China

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The Yin-kang caves belong to a string of early Buddhist cave temples that stretches across northern China from Kansu in the far west to Manchuria in the east (Fig. 1). The caves lie above the Wu-chou River, about 15 km. west of the modern industrial city of Tai-yung, in the north of Shansi province, and right next to a pass leading into Inner Mongolia (Fig. 2). Since the 5th century B.C. this city had been of some strategic importance. In Han times (202 B.C.-A.D. 220) it was known by the name of Ping-ch'eng, and it sits between two stretches of the Great Wall.

This area being remote until fairly recently, these caves were less well known than others, like Tun-huang in western Kansu or those of Lo-yang, further south in Honan. Japanese scholars worked at Yin-kang between 1938 and 1945 to document what was to be seen there. We owe to them a most thorough photographic record and description (Mizuno and Nagahiro). In the last decade, an extensive program of excavation and restoration has been in operation. Though not yet complete, the results are impressive.

Truncated mud-brick pyramids, the remains of watchtowers to guard the important pass, appear on the hillcrest before the amber colored cliffs of Mount