

GORDION REPORT, 1957

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In the course of the 1957 campaign at Gordion work was done on the ancient road discovered in 1955, on the city mound, and on the smaller habitation mound to the southeast of it ("Küçük Hüyük"); also the tomb under the greatest of the grave mounds was opened.

A thirty-meter stretch of the road was cleared at the foot of the slope close beside Koertes' Tumulus II. This area is on the fringe of the large common cemetery which contains burials ranging from Hittite to Roman times. It was hoped that graves might be found under the road which could give an indication as to the date of its construction. Though no graves were found, cuts through the road showed three superimposed layers of construction of which the earliest seems, on the evidence of potsherds found beneath it, to date from the sixth century. This evidence thus suggests that the earliest phase of the road belonged to the period of the Persian Empire, and that our road may have been a part of the Royal system.

Work on the Küçük Hüyük went far to clarify the findings of previous campaigns. The entire mound is artificial and apparently dates back no further than the Lydian period-late seventh and sixth century. It formed a part of the defensive system of Gordion at that time: a crescent-shaped wall of kerpiç 3,50 m. in thickness and probably 14 m. or more in height, with square towers projecting from its outer face at irregular intervals of about 16 m. At the center on a high platform of kerpiç built against the inner face of the wall stood a large building of kerpiç, perhaps a barrack, which was certainly three and probably four storeys in height. There is evidence for a settlement of lesser hou-

ses within this crescent-shaped fortification, protected at the west perhaps by a branch of the Sakarya River which ran between the Küçük Hüyük and the main mound. The barrack building was destroyed by fire subsequent to a battle around the middle of the sixth century; it has been suggested elsewhere that this battle took place in the course of the campaign of Cyrus the Great against Croesus (547-6 B. C.). In any case the Lydian settlement was abandoned at that time and a large tumulus of clay was heaped over the kerpiç building and the central part of the wall; presumably there is an important mid-sixth century burial somewhere beneath, perhaps close to the outer face of the wall.

On the city mound the excavated area was extended to west and south and down to the Phrygian level. Again it was observed that the clay laid in as a bed for the new city of the Persian period rests directly on top of the burned debris from the destruction of the Phrygian city; there is no intervening layer of the Lydian period, and this part at least of the city mound seems to have been uninhabited during the interval. The megaron with the mosaic floor found in 1956 was cleared completely. As expected its south and west walls were covered with scratched pictures or doodles. The building, destroyed in the early part of the seventh century, must have been built at least as early as the middle of the eighth. As shown by the doodles on its walls on three sides (on the fourth or front it faced on an open paved area), it had originally been a free-standing building. At some later time two small houses were built against the south side, covering the already-existing wall scratchings. Still

later it was decided to raise the entire level at the south by making a terrace with its floor at a level nearly two meters higher than that of the megaron. The two houses were completely buried under the filling of the terrace, which itself carried an extensive building at the south, consumed in the same fire that destroyed the megaron. The filling of the terrace, entirely of stone rubble, yielded no sherds; a few fragments found overlying the floors of the small houses included bichrome and polished wares, but not enough to establish a pottery sequence. A half century seems a conservative enough estimate for the free-standing period of the megaron, for the construction and use of the houses against its south wall, for the construction of the terrace under which they were buried, and for the use of the building on the terrace before its destruction. Of this latest building parts of three rooms were cleared. All were crammed with pottery which had been badly broken and burned in the destruction. The vessels ranged from large coarse pithoi or storage jars to miniature cups and jugs. Most were of fine polished ware varying in color from black to grey, buff, or red according to the circumstances of burning. Painted pottery, in a minority, included bichrome ware and vessels painted with geometric designs in a matt brownish glaze. Two of the rooms contained raised platforms or stands used for grinding grain into flour. On one of these lay five pairs of lower and upper grinders, together with a heap of charred grain, once contained in a wicker basket, which had evidently been in process when the destruction came. One room was excavated to its full length of 13,50 m. A row of holes in the floor, regularly spaced and corresponding in their spacing to a series of vertical strips on the wall face where there was no plaster, indicate a roof or ceiling supported on rows of wooden posts - more probably a ceiling, which suggests a house with two storeys.

To the west of the megaron lay a long enclosure wall parallel to it. This wall, nearly 3 m. in thickness, seems to have been taken down in Phrygian times and before the destruction, since it is preserved to a uniform height and its south end was buried beneath the floor of the terrace. It was evidently a boundary-wall dividing the megaron from a building that lay to the west. The wall ran toward the north beyond the north front of the megaron. The paving in front of the megaron comes to an end against the east face of this wall, of which the north end has not yet been found. One is inclined to assume a monumental gateway through it and giving access to an inner area at the west. A number of fragmentary orthostates decorated with relief sculpture was found in this area, and these may have served originally to ornament such a gateway.

Of the building to the west and within the enclosure wall only the eastern margin has been cleared. It was built of stone strengthened by a framework of wooden posts and beams. The length of its east side was 30.40 m., divided internally by one and possibly more cross-walls. This building was destroyed in the same conflagration as were the megaron and the terrace building; like the latter it seems to have been crammed with pottery. Plans for future work at Gordion must include the clearing of this building, of the gateway leading to it, and of the building on the terrace at the south. They must also include some deeper cuts below the level of the eighth-century city. Such deep cuts had been planned for 1957, but the digging of the tomb under the big tumulus required so many meters of rail that it was not possible to make them.

The location of the stone-pile over the tomb under the big tumulus had been determined by drilling in 1956. The borings indicated that the area occupied by stone at an average depth of 39 m. below the peak lay just to the southwest of center and was about 30 m. in diameter. Of the

various methods considered for reaching the tomb under this huge mass of earth and stone, tunnelling offered the advantages of doing the least damage to the mound and of requiring the removal of a relatively small volume of earth.

An open trench aimed toward the center of the stone pile was cut from the southwest margin of the mound to a length of about 70 m. The digging of the open cut gave an opportunity for observing the material - clay - of which the tumulus is built, and its stratification. The outer half of the cut was actually entirely through material washed down from above in the course of the centuries - an outer girdle around the base of the original mound 34.50 m. in width and about 4 m. deep at its inner end. The point at which the original tumulus began was quite clear; one must imagine an ancient mound considerably less in diameter than the present one, but much higher. As all the stratification in the undisturbed clay slopes gently toward the center, one must suppose that the mound was built by piling in the material over an outer ring toward the center. At the inner end of the open trench, 70 m. from the present edge of the mound, the face from which tunnelling was started stands to a height of 11.50 m.

Open cut and tunnel were made with their bottom at the level of the top of the hardpan so that any ancient cutting below this level would be immediately detected. The tunnel was carried through uniformly hard clay to a distance of nearly 70 m. from the face; the hardness of the material necessitated a minimum of shoring. At the inner end tunnelling was stopped by a roughly-built wall of soft limestone blocks eight to nine courses, or about 3 m., in height. An attempt to pass over the top of this wall by raising the roof of the tunnel showed that the clay here underlies the edge of the stone - pile, and the hole through which the stones began to pour down was quickly sealed off, but not before it had been noted that the thickness of

stone here is only about a meter, with the overlying clay sloping downward toward the perimeter-clearly close to the edge of the stone mass. A pit dug against the face of the stone wall showed it to go down at least two courses below the top of hardpan. The only possible procedure seemed to be to break a hole through the wall-a procedure seemingly safe enough on the assumption that the floor of the tomb would be at least as low as the bottom of the stone wall. With the opening of a hole through the wall stone rubble began to pour out, of round water-worn stones mostly the size of an orange, but with occasional bigger ones. The rough finish of the inner face of the wall, when it could be observed, indicated that we were not yet inside the tomb proper. The rubble continued to pour out and to be taken away for the better part of a week. Its removal revealed the face of a wall of large wooden logs piled one on top of the other to a height of eight or about 2.50 m., and parallel to the stone wall. When the rubble had stabilized itself more or less, the sides were sealed off and the tunnel was brought in to the face of the wooden wall.

The logs, of cedar and juniper, were of varying size, from 30 to 60 cm. in diameter. The branches had been trimmed off but the logs were otherwise unworked, and in places the bark could still be seen. They had been laid evidently in a system in which two big logs alternated with a smaller one; of the eight tree-trunks six were over 50 cm. in diameter, and two less than 50 cm. Holes bored through one of the smaller logs showed an inner filling of more rubble. A small window was then made through the wooden wall, and more rubble taken out; but its removal quickly revealed the face of a second inner wall of wood only 30 cm. inside the first. Here the wood had been squared into beams with flat faces which were closely fitted together. Borings through the inner wall showed no rubble on the other side; the tomb was evidently intact with its roof unbroken.

Doors were then cut through outer and inner walls to gain access to the interior.

The tomb chamber measures 6.20 m. in length by 5.15 in width, with a north to south orientation. The walls, varying from ten to eleven beams in height, measure 3.25 m. from the floor to the beginning of the roof. The wood, probably of pine, was most carefully fitted and joined, and excellently finished on its inside face; the tooling, barely visible, suggests a finishing with the adze before sanding. In several places imperfections in the wood had been cut out and the cavities filled by carefully fitted blocks.

The chamber is covered by a double-sloped roof supported at either end and at the center by triangular gables, the central gable resting on crossbeams which span the room and are mortised at their ends to the outer tombwall. The roof is double, with an outer layer of round logs overlying the inner layer of squared timbers. The central cross-beams supporting the roof had cracked under the pressure of the stone and clay above, and it was necessary to insert strong wooden props beneath them. Examination of the northwest corner of the structure showed that the ends of the timbers of the shorter walls are set into mortises in the faces of the beams of the long walls, and that the ends of the latter are in turn mortised to the faces of the logs of the outer structure. The logs of the outer walls are in no way fastened together at the corner-their ends in some cases do not even meet. The round logs, piled one on top of the other, thus have no support to hold them in place other than the rubble piled in at either side, and this gives us a clue as to the constructional methods employed. The enclosing stone wall and the inner wooden wall must have been built first, either to their full height, or more probably course by course before the logs of the outer shell were laid. The latter, laid one log-course at a time, must have been packed with rubble to either side as it rose, course by course, since the

round logs with nothing to hold them in place would have rolled out of position. In this way the double tomb-chamber must have been built up to roof-level, and without a door or means of access other than from above, until the time for burial came. At the same time the base of the tumulus was made in order to relieve the outward pressure of the rubble against the stone enclosure wall, which is only one course in thickness - about 80 cm. The clay outside the stone wall to the level of its top was certainly already in place when the tomb was closed, since the outer perimeter of the stone-pile rests on it. An attempt was made to relieve, or rather to spread, the downward pressure of the stone mass by laying a series of long parallel logs in the rubble immediately above the ridge of the tomb-roof, at right angles to it and to its entire length. Above these the stones were piled to a depth of almost three meters, assuming the shallow dome-shaped mass natural to such pile of loose stone. Over this again the clay of the tumulus was piled to a height of nearly forty meters. In the course of more than two and a half millennia the clay has packed down and hardened into a natural dome, moulded on the original surface of the stone mass. During the excavation about one third (calculated roughly at 250 cubic meters) of the rubble was withdrawn; the part of the clay dome exposed above holds up by itself. The problem of the clearing and preservation of the wooden tomb is a somewhat delicate and complicated one. The removal of all the rubble stone will relieve the pressure against the sides and roof of the chamber, but it will be necessary somehow to support the outer walls of round logs piled one on top of the other and presently held in place only by the packing to either side. At the same time the removal of the rubble will expose the full span - something between eleven and twelve meters - of the overlying clay dome, and take all support from under it. The solution would seem to be the making of a strong

supporting dome immediately beneath the clay, ideally in sections as the rubble is removed and the clay dome exposed. The outside of the wooden tomb will then be relieved of all pressure and become accessible for closer examination and for the treatment and preservation of the wood. Since a wooden structure of this sort from antiquity is quite unique and unparalleled, its proper clearance and preservation is of the first importance.

Our tomb conforms to the type of tumulus burial of Phrygian times already known from other examples, in which there was no entrance to the burial chamber. The body and the offerings were put in from above before the tomb was covered by its roof; the pile of stones heaped over the made entrance impossible, and the huge clay mass of the tumulus served as a protection, keeping out water, and at the same time as a conspicuous monument. Our tomb differs from those explored hitherto in that the wooden structure was made above the level of the hardpan, rather than set down into a pit made to receive it. The stone enclosure wall thus took the place of the vertical walls of such a pit, and was necessary to retain the rubble packing outside the tomb walls. The floor of our tomb is of long wooden beams approximately 33 cm. in thickness laid on a bedding of rubble; the wooden structure was thus embedded on all sides in stone which could not easily be dug through by burrowing animals.

Such tombs were obviously intended for use only once. After the dead had been put in, the roof constructed, and the stones and clay heaped over it, the tomb became inaccessible and could not be entered to make later burials. The scale of this tomb and of the mound over it as well as the richness of the offerings placed in it attest the importance of the single individual for whom it was made - presumably a Phrygian king of the most flourishing time of the Phrygian power. His skeleton lay on a great four - poster bed at the north-

west corner of the tomb chamber. The body had been laid on its back, head toward the east, the legs extended and the arms along the sides. It had been dressed in a leather skirt with a band of bronze - studded decoration along the hem, and an upper garment of cloth fastened at shoulders, elbows, and wrists by bronze fibulae. Mere shreds of this garment had survived and its original form was impossible to determine. The collapse of the the bed had jarred the skeleton somewhat out of position and scattered the bronze fibulae which must have fastened its clothing - a total of 30 of these was found on the bed, of which the original position of only a few could be guessed. The skeleton was that of a male over sixty years of age and of small stature, his height in life estimated at 1.59 m.

The bed, set against the north wall with its foot against the west wall of the room, rested on four large corner blocks of squared wood. Its outer dimensions were 1.90 by 2.90 m. Shallow round cuttings on upper faces of the corner blocks had served as beddings for vertical corner posts. Head - and foot - boards, convex in profile and scrolled at either side, had stood at the ends, supported on horizontal bars of iron laid between the corner blocks. The bed itself was a platform of wooden planks laid lengthwise and apparently supported at their ends on these same iron bars. Its width was only that of the space between the corner blocks; it seems to have been supported along the sides by planks stood on edge to close the space beneath. It was evidently enclosed on top by light rails of contrasting dark and light wood running along the sides. The bed was overlaid by a coverlet of up to twenty layers of cloth, linen and wool in various colors. In the course of time the whole had collapsed; the planks of the bed - platform lay on the floor of the tomb, the head - and foot - boards had fallen outward, and the dowels holding the corner posts had given way.

The other furniture of the tomb consisted of nine three - legged tables of wood

and two inlaid wooden screens. A mass of badly warped and broken fragments which lay in the northeast corner were perhaps parts of three low tables or stools. One plain three - legged table had stood against the north wall at the head of the bed; five more had occupied the open central part of the room, and an additional two had stood against the south wall near the southeast corner. The ninth wooden table, a much more elaborate structure, carved and inlaid, had stood against the east wall just to the south of center. The two screens leaned against the east wall at its center. The space in front of the western half of the south wall was occupied by three large bronze cauldrons set upon iron ring - stands. Rows of iron nails had been driven into the south wall and the east and west wall to about two - thirds of their length from the south corners, and from these had been hung bronze vessels and other ornaments. The tables had been piled high with bronze bowls and other offerings. In the course of time the tables had collapsed and fallen to the floor, and the iron nails had rusted through. The floor of the tomb was thus found covered by bronze vessels which had fallen from the tables and the walls, to a total (including the three cauldrons) of 169. These were mostly in excellent condition, though one more (the 170th) which had rested on a corner - post of the bed was too corroded and broken to save.

The inventory of bronze vessels follows:

BRONZE VESSELS

| | |
|---------------------------------|----|
| Large cauldrons on iron stands | 3 |
| Round-bodied trefoil jugs | 10 |
| Smaller trefoil jugs | 19 |
| Spouted jugs | 2 |
| Situlae | 2 |
| Deep bowls with ring handles | 6 |
| Deep bowls with bucket handles | 4 |
| Shallow bowls with ring handles | 16 |
| Rim - handled basins | 3 |

| | |
|-----------------------------|----|
| Spouted one - handled bowls | 2 |
| Ladles | 2 |
| Plain hemispherical bowls | 2 |
| Ribbed omphalos bowls | 7 |
| Plain omphalos bowls | 37 |
| Petalled omphalos bowls | 54 |

It is evident that the hemispherical and omphalos bowls, without handles, could not have been hung from the walls and were therefore laid - probably in stacks - on the tables. Most of them were found on and around the collapsed tables; in some cases the table - tops bore the imprints of the omphalos bowls which had rested on them. Almost all of the handled vessels, on the other hand, must have hung from the nails in the walls. They were found along the wall - bases below the nails, some with traces of iron rust on the under side of their handles. The north end of the tomb, where there were no nails in the wall, was entirely free of bronze vessels. The total of handled vessels of bronze, as may be seen, was 66. The total number of nails in the walls was 70, but of these ten on the west side served to hang ornaments of another sort. Thus six of the bronze vessels with handles must have been placed with the bowls on the tables. The nails in the west wall were in two rows of ten each, and one of these rows was not used for hanging bronze vessels, as we have noted. The other row, on the other hand, must have served to support the ten large round - bodied trefoil jugs which were all found (and without other bronze vessels among them) on the floor along the base of the west wall. The bronze hung from the nails in the east wall had broken the back - pieces of the wooden screens as they fell, causing the screens to tip backward to lean against the wall.

The ring - handled bowls, both deep and shallow, the omphalos bowls, the ladles, and the rim - handled basins are of Phrygian types already known from Koertes' Tumulus III and IV, from the tumulus (P) dug in 1956, and from tombs in Ankara.

The ring - handled bowls with bronze bands reinforcing the rim on the outside are certainly of Phrygian origin, though they seem to have had a fairly wide distribution: examples are cited from Cyprus in the Cesnola collection, and one is shown in the hand of an ivory statuette from Ephesus. The spouted jugs and the round - bodied trefoil jugs find close parallels at Gordion among the pottery vessels found in the destruction level on the hüyük, of the early seventh century. All of the above bronze vessels were probably local products and we have direct evidence for a local bronze - working industry at Gordion as early as the middle of the seventh century in the form of fragments of coarse clay crucibles from which molten bronze has been poured. These last suggest by implication that Gordion may well have been producing its own bronzes already in the eighth century. The great numbers in which they are found - and this is especially so in the case of the bronze fibulae - and their concentration in the Phrygian area would indicate that they were a Phrygian product, while the direct evidence for a bronze - working industry would indicate Gordion as a center of their manufacture.

Of the more elaborate bronzes from the tomb the origin is less certain. These are five: the three cauldrons, and the two situlae.

The first of the cauldrons, measuring 51½ cm. in height by 78 cm. in diameter, is adorned with four handle attachments in the form of sirens or human - headed birds. The outspread bird wings and tails, applied against the wall of the cauldron below the rim, are fastened in place by bronze rivets; the human shoulders project above the rim, the arms spread along the upper edges of the wings, and the heads face inward. Two of the heads, facing each other across the top of the cauldron, were probably intended as female; the other two are male, wearing square - cut beards of Assyrian type. Such details as the hair, the embroidered neck and sleeve borders of the

dress, and the feathers of the bird wings and tails, are rendered by copious engraving on the surface. From a ring - socket set vertically at the back of each figure is suspended a ring - handle by which the cauldron could be lifted. The second cauldron is of the same type, but with four unbearded heads, probably female. These vary slightly in type, and small variations in their measurements show that each was cast in a different mould. This cauldron seems to have seen considerable use before being placed in the tomb, since all of the ringhandles are missing and two of the bird tails have lost their lower ends. The third cauldron, somewhat smaller than the others, has only two handle attachments, in the form of bull heads facing outward. These also bear ringsockets on top, into which are set ring - handles. In many details the Gordion bull - head attachments differ from the well-known Urartian ones: they are made in one piece with their T-shaped plates, rather than brazed to larger birdprofile plates; the forelocks of the bulls are triangular rather than square-ended with rows of ringlets; there are no bands of engraved decoration at the base of the horns; and the ring - attachments on top are lacking on all the known Urartian examples. It therefore seems highly likely that the bull - headed cauldron is a product of the local bronze - working industry, made at Gordion. The question of the origin of the other two cauldrons needs further study. Siren attachments from similar cauldrons have been found in the region of Lake Van and are of Urartian fabric. It is possible that our siren cauldrons may be imports from Urartu; it is also possible that the cauldrons themselves were made at Gordion and only the attachments imported. The finding of another cauldron of the same type in the Bernardini Tomb at Palestrina in Etruria, however, suggests that the transportation of such bulky objects was not as difficult as it might seem.

The two bronze situlas, one ending in

a ram's head and the other in a lion's, are unique. Each has a bucket handle and a rounded inner bottom, so that the heads in which they end are hollow. The eyes of lion and ram were inlaid in white paste, with black stone pupils. Surface details were rendered by the finest engraving. In general they are in good condition, though both show spots of bronze disease. It is imperative that they be cleaned, for the sake of their preservation; but cleaning will do a certain amount of damage, especially to the eyes which will have to be taken out and replaced. It is most urgently recommended that, if it can be arranged, they be sent to the British Museum for cleaning and restoration. The lion situla finds parallels in the sculptured reliefs of the palace of Sargon II at Khorsabad, where servants are shown dipping wine from cauldrons with similar cups. A bronze weight in the form of a lion, now in the Louvre, is strikingly similar in style. Our situlas may well be imports from Assyria; in any case they suggest a date for our tomb in the time of Sargon II, or the last quarter of the eighth century.

The objects which hung from the second row of nails in the west wall of the tomb, found fallen to the floor along the west wall, were ten flaps of leather and bronze of which we do not know the use. The oblong flaps are about 20 cm. wide by 50 cm. long, made of at least six layers of leather. The upper surface of each is decorated with studs of bronze laid on in varying patterns to form squares, usually three to each flap. The uppermost of these squares was covered by a flat disc of bronze, open at the center and with flanges at two sides which were bent under to hold together the thicknesses of leather beneath. The discs are ribbed and decorated with studs of various sizes; the openings at their centers are filled by what we take to be round mats of fancily woven or tatted cloth, decorated also with small bronze studs. Similar mats underlie each of the studs of the flaps below the bronze discs.

Samples have been taken to America for analysis. None of the suggestions made as to the use of these bronze - and - leather objects seems satisfactory, since it is difficult to see how they could have been used as belts, armor, or horse - trappings.

On the floor beside the table which had stood at the head of the bed lay a sack of linen cloth containing bronze fibulae. A number had spilled out and lay scattered on the floor; evidently the bag containing all the fibulae had been laid on the table, and fallen when the latter collapsed. Altogether there were 145 fibulae in this group, which is in addition to the 30 found on the bed. Ten of these have double pins with removable flat bronze shields or safety catches which can be slid off, decorated in various ways. The rest divide into four main types; those with studded flat arcs, those with faceted arcs, plain, bulging at the center, or with central reel; those with arcs round in section and decorated with reels, and those with plain arcs oblong in section. Most are in excellent condition, and all conform to Blinkenberg's Asia Minor types (XII) most of which we have good reason to believe were made at Gordion.

Such pottery as was offered in the tomb was placed inside the three large bronze cauldrons. All the vases were of plain black - polished Phrygian ware; there was no painted. The shapes were only two: neck-amphorae, and round-bodied deep bowls shaped like dinoi. All of these vessels had evidently been filled with offerings of food at the time they were put in the tomb. All were found in very bad condition, perhaps due to the chemical action of their contents; in any case the clay has split and either the outer or the inner surface flaked off, leaving a shell so thin as to be impossible to reconstruct. The siren cauldron contained five "dinoi" and one neck-amphora; the bull cauldron the same; the "beards and sirens" cauldron two "dinoi" and four neck - amphorae. There were evidently also other vessels of

pottery which had disintegrated almost completely. Samples of the contents of each vessel were taken to America for analysis. On the surface of two of these vessels were graffiti. One of these was merely herringbone with a central spine, like a conventionalized palm - branch; the second an inscription in alphabetical writing running from left to right. It is incomplete; the beginning is preserved but the end lost, and there is a brief gap between the first six and the last three letters preserved. The alphabet appears to be fairly well developed Greco - Phrygian; the use of a *sigma* with five bars seems to be characteristically Phrygian.

This was not the only inscription found in the tomb. On three of the ring-handled bronze bowls the end of the rim beside one handle was smeared with beeswax, and alphabetical inscriptions were scratched in the wax. These were necessarily brief, since the wax covers only the part of the rim between the lip above and the applied bronze strip below, the handle and the first vertical lug on the outer face of the rim. All of the inscriptions read from left to right; two are of only three letters each, while the third includes a five - barred *sigma* and the sign \uparrow , characteristic of the Asia Minor alphabets but up to the present lacking among the known Greek epichoric alphabets. These brief inscriptions cannot be read as yet; but they show at least that alphabetic writing had reached Phrygia by the last quarter of the eighth century.

The furniture in the tomb was in varying states of preservation in accordance with the amount of moisture to which it had been exposed and the kinds of wood of which it was made. The eight plain tables were all alike, with slight variations in their dimensions. The tops, oblong in shape but with rounded corners, were slightly hollowed at the surface, leaving a low raised rim around the edge. They were all made from a very soft dark brown wood (pine?) which had suffered badly

from the moisture, cracking and warping and shredding; what remained was of a soft pulplike consistency. The legs, on the other hand, of a much harder wood and lighter in color (boxwood?) were mostly in excellent preservation. In every case a table had three legs only. These are outward-curved, ending in plain feet on the bottom to rest on the floor. Since the wood is nowhere cut diagonally across the grain (which runs up and down) the curved shape of the legs must be the result of some process of bending, either by water or by steam. The plane of the bottoms of the feet shows that the curved profile of the legs was original and intentional, not the result of later warping. At their tops the legs end in long dowels which fitted through holes cut in the table - tops; the ends of these were visible in the surfaces of the tables. The dowels are much longer than the thickness of the table - tops. Beneath the last the legs were crowned, over the lower part of the dowels, by fairly large drums of wood. These drums gave a greater bearing surface for the table - tops, and no doubt also served to minimize any wobbling which might have tended to split the wood of the table - tops along the grain. In the absence of any cross tie - pieces or traces of tongues or sockets, it seems likely that each table top was cut from a single piece of wood (the dimensions were on the average about 75 cm. in length by 62 cm. in width, and 3 to 4 cm. in thickness).

The ninth table, also made with three legs, was much more elaborate. Its top had almost entirely disintegrated, but enough was preserved to show that it had been similar to those of the other tables and of the same kind of wood, with the exception that all around its edge there were small dowel - holes on the under side. The table had a lower frame from which wooden finial - like pieces, dowelled to its upper edge, extended upward, ending at the top in small dowels which must have been fitted

to the holes in the under side of the table top. There were fourteen of these finials, four to each of the short sides and three to each of the long sides of the frame. The long sides were completed at either end by curved handles by which the table might be lifted. The frame - which was oblong - was fastened by horizontal dowels to the legs, two running out from each leg. Since the frame had four sides and there were only three legs, the lengths of the dowels had to be precisely adjusted. The table quite definitely had a front face: that which was fastened by two dowels to the same leg. From the other legs the dowels spanned the corners, one dowel running from the leg to a side of the frame, the other to the back - piece. The frame was further supported by struts running up from the outward - curved faces of the legs just above the feet. Two of these struts were identical; the third, from the front, was double - two struts near the ends, running down to the ends of a rocker - shaped piece doweled across the front leg. The frame itself, of four pieces doweled together at the corners, was of square medallions joined by two parallel strips, one above the other; but each side of the frame was cut from a single piece of wood. The whole - legs, medallions, finials, rocker, and struts - was made of hard wood light in color (box?) and elaborately inlaid with darker wood (yew?) in geometric designs. The effect is somewhat rococo, but, alas, the pieces all exist and their dowels, cuttings, and breaks tell us exactly how they should be fitted together, though the shrinkage and warping preclude an actual reconstruction. It has been done on paper.

The two screens are of the same type as the one found in 1956 in Tumulus P, and throw considerable light on its proper reconstruction. Hitherto it has been called a throne- back, although it has been obvious that the back had been made separately from the seat, which was in no

way attached and was removable at will. The screens found in 1957 (in all but the slightest details identical the one with the other) measure about 95 cm. high by 80 cm. wide. Each is made up of a number of pieces fastened together by tongues fitted into sockets, with pegs run through to hold the tongues in place. The material used was the hard light wood, probably box. After the pieces had been joined - and mostly so cunningly that the presence of the joints was detectable only from the positions of the ends of the pegs holding the tongues - the whole surface was inlaid with a darker wood in geometric designs, the inlay - strips passing right across the joints between the component parts. The inlay was done with the utmost precision and delicacy. The upper parts of the screens were laid out in rows of square panels each filled by an elaborate swastika design; of these there were 112 (eight rows of fourteen), no two exactly alike. The space between the swastikas was filled by tiny inlaid lozenges and triangles of dark wood in rows, done with such pious conscientiousness that in a number of places these were inlaid even into the ends of the pegs. The lower half of each screen contained a central round medallion, filled with curvilinear inlay designs. Below the medallion two curved pieces of wood, resembling the curved table- legs, were inset, running down to the corner at either side and ending in scroll feet.

Affixed to the backs of the screens at the top were oblong wooden frames set horizontally. The open spans framed by these were filled by panels of carved openwork, circles tangent or joined by struts. From the center of the back-piece of each frame a long wooden leg ran downward to the floor, ending in a foot similar to those at the lower corners of the screens in front. The legs were steadied by two struts at each side, running diagonally upward to the back of the frame, to which they were secured by tongues set into sockets. Again

the reconstruction is certain on the evidence of tongues, sockets, and breaks. The bronze vessels hanging from the east wall above the screens broke and knocked out the back frames as they fell, but one side-piece remained in its proper position to show how the whole should be reconstructed. The screens were thus flat vertical wooden panels, meant to be seen from the front and from above; a concealed leg at the back gave them stability and prevented forward or backward tipping.

These pieces of furniture must have been completely portable items which could be set up wherever desired. Since we know from 1956 that the seat of the "throne" was also an independent and portable piece, it may well be that the screens, as we now call them, could also have been used on occasion as backs to lean against when seated, simply by placing the portable seat in front. The back leg would prevent tipping over backward; one hopes that the seat would have been high enough so that the raised rim around the central medallion did not catch the sitter in the small of the back. Portable furniture of this sort may suggest to some a nomadic background or tradition.

The treatment of wood is always a very difficult technical problem. The conditions in our tomb were bad for wood, the atmosphere very moist (in part due to our own drilling; but there was clear evidence of moist conditions long before that). Ideally the wood should be allowed to dry with extreme slowness, and when dry subjected to a Paraffin treatment to refill the cells from which moisture has evaporated, and so prevent shrinkage, splitting, and warping. If the wooden furniture could have been left indefinitely in place to dry with the tomb in a more or less controlled atmosphere, all might have been well; and this was our intention. But after about six weeks there began to appear a green mould on the surface, which attacked the inlay; and more drastic methods had to be

undertaken. Drying was done in a bath of alcohol—each piece remained in the bath for at least a week, until all the moisture was driven out. The wood was then put into a bath of benzine (the colorless kind was hard to find) in which beeswax had been dissolved to saturation, and so remained for another week or more. The results were not entirely satisfactory, partly due to the unevenness of the wet to which the screens had been exposed (in the drilling, presumably). Each screen is framed at the sides by a long vertical piece, dowelled and pegged to the ends of the several horizontal cross-pieces. Of the latter the uppermost and lowermost had been exposed to the greatest amount of wet; hence their tendency to shrink was greater than that of the pieces between. The framing pieces were thus subjected to pulling-in at top and bottom, while at the center the cross-pieces held them apart. The strain naturally produced a tendency to crack or break the framing pieces, or to pull out the pegs holding the tongues. The results were unfortunate; and the wax-bath somewhat changed the color of the wood. But with time, a controlled temperature and atmosphere, and more refined methods and implements than those available in the field, the wood should be stabilized and rendered capable of repairs at the Museum in Ankara, and a proper treatment of the surface should restore the original colors.

SAMPLES TAKEN TO AMERICA FOR ANALYSIS

Wood: Pieces from inner and outer walls of tomb, and from one of the plain tables, for radiocarbon analysis, identification of wood as to species, and tree-ring analysis. For the last, three complete sections of the logs of the outer tomb wall were taken. These logs have up to 650 rings, at a rough estimate, and can be dated to the quarter century 725-700 B. C. If wood can be found of Hittite times at Boghazköy or Kültepe, and if the clima-

tic variation between the Sakarya valley and that of the Halys is not too great, it may be possible to set up a floating relative dendrochronology for Anatolia by which the amount of time elapsed between specimens can be estimated to a year. Our specimens should carry the dendrochronological scheme back into the fourteenth century.

Cloth: Samples from the coverlet of the bed and the upper part of the dress of the skeleton. These may be established as to *material* (cotton, linen, wool), type of spinning and weaving, and possibly analysis of dyes.

Food: Samples of the contents of the vases found in the bronze cauldrons, for chemical analysis and identification.