

Reviews and Reports

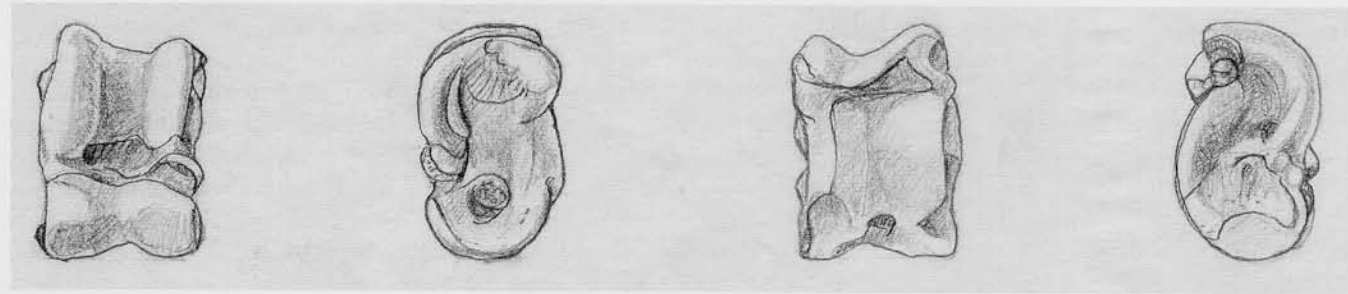
Astragali, the Ubiquitous Gaming Pieces



FIG. 1. Sheep grazing near the banks of the Sakarya River at Gordion; a burial mound is visible in the distance.

Photo courtesy of the Gordion Archives

The astragalus, or talus, is a uniquely shaped, compact bone (Fig. 2) found in virtually every mammal including humans. It is part of the hind leg in four-footed mammals and part of the heel complex in two-legged mammals (Fig. 3). In the Bovid family, the six-sided rectangular shape of the astragalus makes it well suited as a throwing or shooting piece. The astragalus in sheep, goats, and most deer is about twice the size of modern dice and of the “shooter” I used in my tenure as a marble player. It is the perfect size and

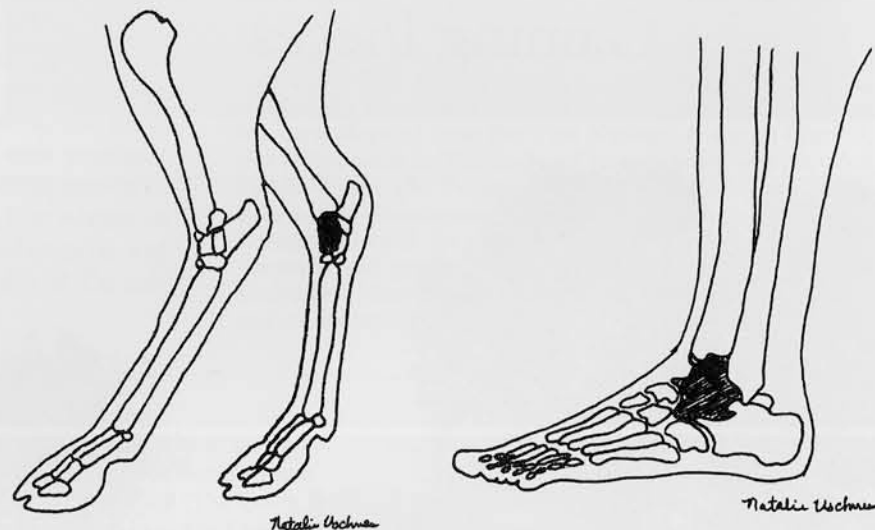


▲ FIG. 2A-D. Dorsal, medial, plantar, and lateral views of astragali. A knuckle is the rounded knob at the end of a joint, hence the term "knucklebones" to describe games played with astragali.

Drawn by Natalie Uechner

▶ FIG. 3A, B. The astragalus is part of the hind leg in four-footed mammals and part of the heel complex in two-legged mammals. (a) sheep; (b) human.

Drawn by Natalie Uechner



weight to be handled by men and boys in the numerous games which developed over the millennia. According to my sources, credited at the end of this article, women and girls almost never play games with these pieces.

I call these astragali gaming pieces ubiquitous because they occur over a wide spatial and temporal continuum. For example, Patty Jo Watson (1979) says that they are found in sites in northern Iraq as early as 7000 years ago and that astragali games are still being played in Iran. R. Barry Lewis (1988) discusses their appearance in the New World in the 2nd millennium A.D. at sites in the Ohio and Mississippi river valleys and their use today by the Papago Indians in Arizona.

Most, if not all, of the astragali recovered in the Near East and used for gaming pieces came from domestic sheep or goat, while those in the U.S. came primarily from deer and, less frequently, from elk and bison. These are the animals one would expect, given the disparate geographic locations and time periods. Lewis mentions the association of astragali with burials, primarily of children and adolescents; the pieces have been found inside bowls and jars in graves. The astragali found in children's graves came from smaller animals (which I can only assume means smaller deer rather than other small species). Both Watson and Lewis comment on the grinding and modification of many of the bones. Many of those found at the site of Gordion in Turkey (see below and box on the Gordion Project) were also modified (Fig. 4).

In his article on games from Turkey (1960), Brewster mentions two that are played by boys using astragali. One of these is also played in Europe using the astragali of sheep. He also refers to lead-filled astragali used as

throwing pieces. Musa Baran (1974) refers to depictions of astragali as playing pieces in an 8th century B.C.E. relief found at Carchemish in Turkey.

ASTRAGALI AT GORDION

At Gordion we have found astragali throughout the site and in all time periods. Many of these, however, were simply associated with animals used as food or for other purposes. I identified astragali as gaming pieces or ornamentation when they met one or more of the following criteria: modification, appearance in groupings larger than those of astragali in food remains, appearance with human remains in what appeared to be ceremonial graves or other burials, or presence in quantities not associated with the bones of other mammals including man. The more technical details of my findings, any cultural implications of modification, and the use of astragali as ornamentation must wait until I have more time to complete an analysis.

Astragali gaming pieces were discovered from Late Bronze Age Gordion through the Medieval period. The bulk came from the Early Iron Age (circa 1100-950 B.C.) through the Late Phrygian period (circa 500-300 B.C.). During the first 25 years of the modern excavations, several caches of astragali were uncovered. Five hundred and six were found in Tumulus P, which was a burial mound for a child (DeVries 1980; Young 1981). Many of these were painted or dyed red and pierced; they may have been used for ornamentation. DeVries also refers to 15 or 16 found in a mug on the floor of Megaron 3. Four hundred and ninety-four astragali were found in a pot on the floor of Megaron 1, others in a pot on the floor of Megaron 2 (Sams 1994). These floors belong to Gordion's destruction level (circa 700 B.C.); most of the astragali found there were burned, but not to a very high temperature since they were black, not white.

Since the excavation has been under Mary Voigt's direction, some small groupings and many modified single astragali bones have been found, a total of 107 astragali altogether. I believe the majority of these, drilled and either ground or filled with a metal (Fig. 5a, b), were used as gaming pieces. My informants tell me that today in the Gordion area people still grind and drill the astragali and fill them with lead to make them heavier and more accurate as "shooters" (*saka* in Turkish).

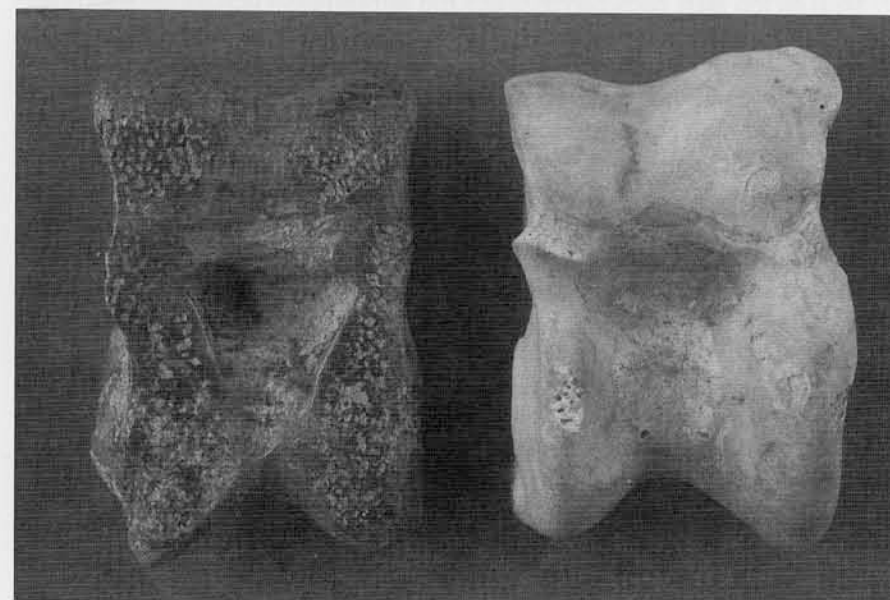


FIG. 4. Ground and unground surfaces of astragali from the current excavations at Gordion. Hundreds of astragali have been uncovered in the excavations to date. Some were used, then as now, as gaming pieces. In the early days of the Project, they were such a common find and so popular among the villagers of Yassihöyük that Director Rodney Young noted that his workmen "usually . . . pocket them and give them to their children, who value them" (Young 1962).

Photo courtesy of the Gordion Project

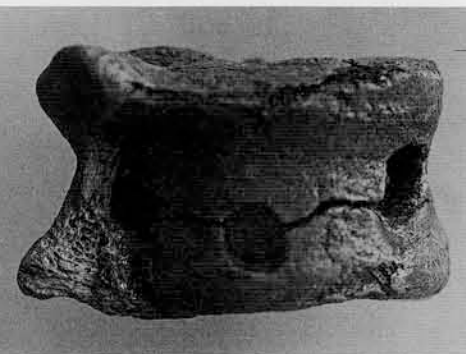
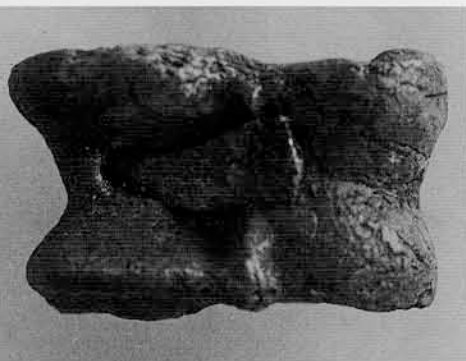


FIG. 5A, B. Dorsal and plantar views of a drilled astragalus. While some astragali undoubtedly were drilled in order to make ornaments, others were drilled and filled with metal (in this case lead), which suggests they were gaming pieces, weighted for precision shooting.

Photo courtesy of the Gordion Archives; object no. 9099 BI 495

FIG. 6. Astragali from Gordion with the inscriptions "Nike" and "Ni." References to the Goddess of Victory would be appropriate for gaming pieces.

Photo courtesy of the Gordion Archives; object nos. 3182 BI 236 and 3133 BI 231



Some of Gordion's astragali are inscribed. Lynn Roller (1987) mentions two with the inscriptions "Nike" and "Ni" which she presumes refer to the goddess Nike and a wish for victory (Fig. 6). That would be appropriate for a gaming piece. She also refers to others with heroic references or personal names which again seem appropriate for prized (*şaka*. Rodney Young (1962) mentions astragali with the inscriptions "Hector" and "Achilles" (Fig. 8a), and a more recent find (1988) has the inscription "Hera" (Fig. 8b).

LET'S PLAY

Now that we have the archaeological background under our belts, let's get to the games. I will describe four. The first is primarily a children's game, and the remainder are played by both men and boys. I have tried my hand at each of them.

Game One: Aşık Oyunu (*The Knucklebone Game*)

This children's game was taught to me by Mevhibe Hocaoğlu. It requires four or more players and is supposed to demonstrate a hierarchical social system. Each of the four sides of the astragalus is given a name. The dorsal is the slave or the lowest rank, the plantar is the servant or the next lowest, the medial is the vizier (chief advisor to the Sultan), and the lateral is the King or Sultan. Supposedly these rankings correlate with how frequently each side comes up (most to least frequent) when the astragalus is thrown randomly.

At the start each player tosses the astragalus to determine which personage he will be—as designated by the side that faces upward. He then takes a pre-designated token (usually a pebble, stick, or something else near at hand) representing that personage. The game cannot begin until there is a Sultan or King, a Vizier, and at least one slave. At the start the last person to throw and get the King side up becomes the King. The same is true for the Vizier since there can be only one of each of these in the game. There can be as many servants and slaves as there are players, minus two.

Once all the players have taken a token representing one of the sides, the game can begin. The Vizier holds a ruler or similar instrument to inflict punishment. The King decrees the punishment. Servants do not receive punishment, only slaves do. The King and the Vizier do not roll the bones while they hold those positions. To begin, the person whose turn was next rolls the astragalus and becomes whatever the side facing upward indicates. If it is a slave, the King tells the Vizier what punishment to give out: a slap with the flat side of the ruler to the hand or other extremity, a slap with the edge, a hard slap, a soft slap, etc. It is up to the imagination of the current king to devise the stroke and its placement. However, if the roll comes up King or Vizier, the



roller replaces the current incumbent. If the roll represents a servant, the roller is absolved of punishment. In any event the turn passes to the next in line.

The game stops at a predetermined time, whenever all the players chose to stop, or whenever there are less than four players remaining. Players can drop out at any time along the way.

Game Two: Çizgili (*Marked With Lines, Ruled*)

In this game the *şaka* are highly prized and very personal. Each person has one or more favorites which may be polished and/or drilled and filled with metal and/or ground with soft stone or fired brick, generally on the plantar and dorsal sides. Each side of the piece is given a name. The dorsal is *çik* (the hollow side of the knucklebone), the plantar is *tök* (meaning lost), the medial is *tala* (taking all of it), and the lateral is *kazak* (a Cossack or a despotic husband). *Şaka* are used in this and the remainder of the games described. The order of play and the names for the four sides are the same in all.

Any number of players can participate, with as many astragali as they wish. A circle is drawn in the dirt large enough to hold all of the astragali, which are stood on end (not on one of the four sides) in a straight line through a diameter of the circle (Fig. 9). A space, perhaps 10 centimeters or so, must exist between each end of the line of astragali and the perimeter of the circle. A line is drawn about 100–120 centimeters outside the circle and parallel to the line of the astragali. A similar line is drawn on the opposite side of the circle. Only the plantar and dorsal sides of the pieces count in this game. In order to determine who goes first, each player throws his *şaka* to see which side lands face up. After all players have thrown, the last one to tie the previous throw goes first, with the rest following in rotation. If only two are playing and there is no tie, the first one throwing either the plantar or dorsal side up begins the game.



FIG. 7. A line-up of modern astragali. In the games described here, at least one piece in the line-up would be stood on end.

Photo by Sean Gaukroger

FIG. 8A. Astragalus inscribed with the name "Achilles." Like calling on the goddess Nike, heroic references seem appropriate to prized gaming pieces.

Photo courtesy of the Gordion Archives; object no. 6821 I 247

FIG. 8B. Astragalus inscribed with the name "Hera."

Photo courtesy of the Gordion Project; object no. YH 23596

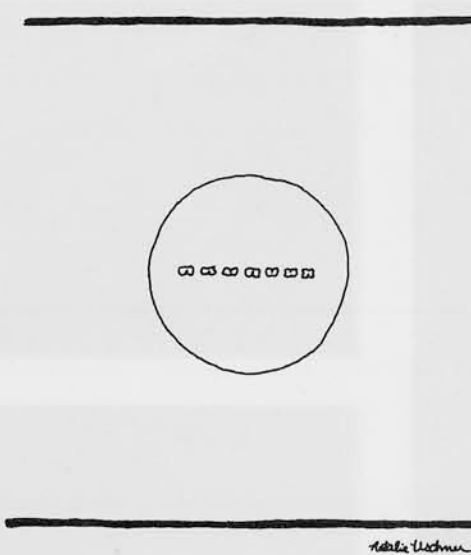


FIG. 9. Layout of astragali, circle, and lines for Game 2, *Çizgili* ("marked with lines").

Drawn by Natalie Uschner

FIG. 10. Game 2.

Remzi throws at the line of astragali from outside his line as Ayşe points to the target.

Photo by Sean Gaukroger



The player positions himself just outside one of the lines. Standing on one foot, he leans in as far as he can towards the circle and, holding his *şaka* between thumb and first finger, throws or shoots it at the line of standing astragali (Fig. 10). The aim is to knock one or more of these out of the circle and take the piece. If none are knocked out of the circle, the astragali moved are set back in place and the play rotates. If one or more are knocked out of the circle, the player continues to shoot or throw from where one of them landed. He again stands on one foot and leans as close as he can toward the line of remaining pieces. The player continues until he knocks no more out or until all are knocked out. The game is over when no more astragali remain in the circle. The winner is the one with the greatest number of astragali in his possession.

Game Three: Uzun Tala (Long Distance Throw to Take All of It)

This game is played mostly by boys and any number may play. There is no circle but the astragali (any number) are placed in a line, each standing on end. The thrower or shooter stands behind a line drawn in the dirt 1 to 2 meters from the line of astragali and parallel to it. The distance depends upon the age of the boys playing the game. The older the boys the further they stand from the line of astragali.

There are two stages in this game. In stage one the thrower shoots his *şaka* at the astragali and tries to hit one or more and knock them over. If he knocks any over and his *şaka* lands *tala* (medial) side up, he takes all the pieces. If he misses or his *şaka* lands with any of the other three sides up, he loses and the next player tries his luck. When one player has all the pieces, stage two begins.

In stage two the player with all the astragali throws them and his *şaka* up in the air as you would throw jacks. He takes all of those that land with the



FIG. 11. Game 3.

After tossing astragali in the air, Ekrem picks up those that landed with the same side up as his own *şaka*, or shooter. Isak and Ayşe watch.

Photo by Sean Gaukroger

same side up as his *şaka* (Fig. 11). If his *şaka* lands *tala* or *kazak* side up, he loses his turn. If and when none of the astragali land with the same side up as his *şaka* he also loses his turn. When all the astragali are off the playing surface, i.e. in the players' possession, the player with the fewest astragali places his back in the original line and the other player(s) place the same number in the original line and play continues until (1) one player has possession of all the astragali, (2) an agreed upon ending time, or (3) forever.

Game Four: Humbali (Lost)

As in Games Two and Three, any number can play. The second parallel line is drawn the same distance from the line of the astragali as in Game Three. It should be noted that the players, by mutual consent, can change any of the distances mentioned in Games Two through Four.

Any odd number of astragali are placed in a line with the middle one (generally a larger one of the same species and called the Humbali) placed on end. The others are placed with either their medial or lateral side up, but they must be all placed the same way. The thrower tries to hit the middle astragalus and knock it at least five feet (using his feet as the measurement). If he is successful, he takes all of the astragali and wins the game. If he is not, he must add one of his own astragali to the line and continue. Astragali must be added alternately to each side to keep the line relatively balanced. If he hits the middle astragalus but doesn't knock it at least five feet, the turn passes to the next thrower.

In this game, as well as some of the others, it may be customary for the winner to keep permanently all of the astragali that he accumulates in a game. This can and has caused some hard feelings, according to my informants.

*today in the
Gordion area
people still
grind and
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and more
accurate as
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I came away from this archaeological and ethnographic research with two thoughts reinforced. The first is my belief, gained through 30 years of traveling this world, that there are more similarities than differences among people today, and between people of today and yesterday, expressed in both their material culture and their ethos. The second is that the mundane, often overlooked, things we find around us can provide as much, or more, pleasure than the newest manufactured delight.

Not only do archaeologists get to play in the dirt, they can dig up free games and play them. Can life get any better than this?

Jeremiah Dandoy

Jeremiah Dandoy spent the past two summers (1994, 1995) at Gordion, Turkey, working on the faunal material. He currently works with the Colonial Williamsburg Foundation in Zooarchaeology and Archaeobotany.

ACKNOWLEDGMENTS

An article by Rodney S. Young (1962) aroused my curiosity about astragali (*aşik* in Turkish) as gaming pieces and dice. Heartfelt thanks go to my friends and informants Mevhibe Hocaoğlu, Ekrem Belker, Isak Kocadağ, and Remzi Yilmaz, and to ethnographer and translator Ayşe Gürsan-Salzman.

The Gordion Archaeological Project

Gordion is located in the central Anatolian highlands about 80 kilometers southwest of Ankara. The site consists of a large flat-topped mound which forms the center of a larger low-lying settlement that extended over an area of more than 1 square kilometer in some periods. Gordion has long been identified as the capital of the Phrygian Empire and the home of King Midas. Its earliest known occupation, however, dates to the mid 3rd millennium B.C.E. Dr. Mary Voigt has established a stratigraphic sequence (YHSS) for the major occupational periods on the Citadel Mound that begins around 1500 B.C.E. in the Middle Bronze Age and continues through the Phrygian periods (circa 950–330 B.C.E.), the Hellenistic period (circa 330–189 B.C.E.), and on to the Roman and Medieval periods.

Since its initiation in 1950 by Rodney S. Young, the Gordion Archaeological Project has been under the auspices of the University of Pennsylvania Museum. Since 1988 the Project has been under the general direction of G. Kenneth Sams, University of North Carolina at Chapel Hill. Mary M. Voigt, College of William and Mary, is Associate Project Director, in charge of excavation and surface survey.

BIBLIOGRAPHY

Brewster, Paul G.

1960. "A Sampling of Games from Turkey." *East and West* 2(1): 15–20.

Baran, Musa

1974. "Children's Games." *Expedition* 17(1): 21–23.

DeVries, Keith

1980. "Greeks and Phrygians in the Early Iron Age." In *From Athens to Gordion*, ed. Keith DeVries, pp. 33–49. University Museum Papers 1, University Museum, University of Pennsylvania. Philadelphia.

Lewis, R. Barry

1988. "Old World Dice in the Protohistoric Southern United

States." *Current Anthropology* 29:759–68.

Roller, Lynn

1987. "Hellenistic Epigraphic Texts from Gordion." *Anatolian Studies*, Vol. 37, pp. 103–33. British Institute of Archaeology at Ankara.

Sams, G. Kenneth

1994. *The Early Phrygian Pottery*. University Museum Monograph 79, The University Museum, University of Pennsylvania. Philadelphia.

Voigt, Mary M.

1996. "Gordion." In *Encyclopedia of Near Eastern Archaeology*. Oxford University Press. In press.

Watson, Patty Jo

1979. *Archaeological Ethnography in Western Iran*. Tucson: University of Arizona Press.

Young, Rodney S.

1957. "Gordion 1956: Preliminary Report." *American Journal of Anthropology* 61:319–31.

1962. "The 1961 Campaign at Gordion." *American Journal of Anthropology* 66:153–68.

1981. *Three Great Early Tumuli*. The Gordion Excavations Final Reports Vol. 1. University Museum Monograph 43, The University Museum, University of Pennsylvania. Philadelphia.