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The region of Iran known as Luristan, consists of the upper valleys of the Zagros Mountain chain, bordered by Iraq to the west, by Burudjerd and Nahavand to the east, by Khuzestan (ancient Elam) to the south, and Kermanshah to the north. The Zagros Chain is composed of a number of smaller ranges running parallel in a northwest to southeast direction. As the most important river of the region, the Saimarrah divides Luristan into two areas: the Pish i Kuh (lying directly East of the Kabir Kuh) and the Pusht i Kuh. Luristan is an area of open plains which intersects with the treeless highlands of the Zagros mountains. Luristan was more extensively settled in ancient times than it is today and used to be home to farming lands, which presently are no longer cultivated.

Even today, local tribesmen inhabit Luristan. One can observe settlement patterns very similar to those that most likely existed in previous eras. Today, the local tribes use two different areas as winter and summer pasturages: a) Garmsir, which is the warm, low-lying area to the west used as the winter pasture land, and b) Sardsir, which was the location of the summer settlements. There are two different types of settlements. The highland region of eastern Luristan has relatively small ancient sites, probably villages or tented encampments, that seasonally clustered around small citadels. The other settlements, in the lower western plains of Luristan, were both larger and more permanent. The main metal workshops were probably located in these larger settlements since, in the bronze and iron ages, metal industries were closely supervised and centrally controlled. Due to the established pattern of life in Luristan, these products would have been carried regularly into the eastern highlands.

It is believed that a small minority among

Animal motifs are typical of Luristan bronze and as well in the form of engravings on blades and handles. Bronze artifacts unearthed from this area demonstrate extraordinary craftsmanship. Some of the artifacts are engraved, and specifically the castings of horse trappings, harness ornaments, weapons, and standards are of a very high quality. The elaborate cheek pieces of horse harnesses are sometimes decorated with ordinary animal figures, such as horses or goats, and even with imaginary animals, such as winged, human-faced bulls. An interesting feature of decoration on axe heads is a lion's head motif. The opened jaws of the lion form the base of the axe head to which the blade is attached; the symbol of the lion is certainly there to lend the weapon the strength of the most powerful of beasts. The earliest bronzes, particularly daggers, axes, and adzes, exhibit certain parallels in shape to Mesopotamian artifacts of the third millennium B.C..

One of the characteristics of the Iron Age I period is that all utilitarian metal articles were made of bronze, whereas iron was only used for a few ornaments. As many of bronze weapons in museums and private collections stem from lootings rather than controlled archeological excavations, an exact dating of these pieces is very difficult if not impossible to achieve. Thanks to the existence of inscriptions with Babylonian and Elamite rulers' names, some weapons can be dated accordingly and be placed in the last two centuries of the second millennium B.C..

**WEAPON TYPOLOGY**

Due to an influence from the West around the 14<sup>th</sup> century B.C., smiths from Luristan began to manufacture blades with hilts that were cast together in one mold. In these examples, the hilts were flanged so that they could take inlaid scales of wood, bone, or metal. Bone inlays were often cut in a way so that the hilt had a winged or "ear-shaped" pommel. Later, these inlaid hilts were exactly copied in bronze with the hilt made separately and, then, cast onto the blade. Beginning in the 10<sup>th</sup> century B.C., bronze hilts were cast onto iron blades

the ruling class supported most metal industries in the bronze and iron ages, especially those industries that produced very elaborate artifacts. The affluent ruling group seems to have consisted of warrior horsemen who had been buried with their weapons and harness-trappings. The art of Luristan can be characterized as the art of herdsmen or horsemen constantly in movement. This nomadism led to the making of objects that were small and portable, such as arms, bridle bits, harness rings and other utensils, all of which were finely decorated. The manufacturing of these objects date to a period between 2500 B.C. and 650 B.C. It is interesting to note that both men and women were buried with grave offerings, whereas the graves of men also specifically contained bronze daggers. It is not certain that the entire collection of Luristan art has a nomadic character as formerly proposed and assumed by many scholars since ancient historical texts mention conflicts between nomads and farmers. It is theorized that the craftsmen and smiths probably lived in the towns from which the nomads fetched their provisions.

The Luristan tribesmen seem to have been influenced by trade, migration, and brigandage. The tribesmen who inhabited Luristan were illiterate. Hence their history may only be reconstructed from the written records of their powerful southern neighbors. The records of the Elamites of Khuzistan with their capital at Susa, and the Babylonians in southern Iraq provide a historical account. These two powerful urban civilizations were in constant conflict with each other, and, at times, they used the Luristan tribesmen from the Zagros mountains as their mercenaries. Luristan was never an ethnic and political entity at any time throughout the last three millennia B.C.. Through trade and warfare, the inhabitants had relationships with the neighboring civilizations, such as the Sumerians, Assyrians, Babylonians and Elamites in the period from 3000 to 2000 B.C.. From the 8<sup>th</sup> to 7<sup>th</sup> century B.C., the Scythians (a nomadic pastoralist group of Aryan tribes) moved into the region as well.

#### THE PEOPLE OF LURISTAN

Regarding the origin of the Luristan tribes, different races inhabited Luristan throughout its history. First, Gutis and Lullubis, who were Asiatic mountain peoples, settled in Luristan during the third millennium B.C.. Akkadian texts also mention the presence of Kassites, who were of Asiatic origin, in Luristan from the beginning of the second millennium B.C.. Various other tribes settled there at the end of the second

and, interestingly, the standard shapes of bronze daggers were faithfully copied in iron. However, there are definite examples of *iron* swords from Luristan which were made some time during the 9<sup>th</sup> to 8<sup>th</sup> centuries B.C. in a closely related group of workshops. These iron swords derive, stylistically and morphologically, directly from their bronze prototypes. Although a variance of bronze edged weapons from Luristan exist, one can generally classify them the following three categories:

A) FLANGED HILT daggers, dirks, and swords: These were made with the grip and the blade cast together as a single piece. Many flanged hilted daggers and dirks from Luristan have lost their handle inlays. The inlays would have been made of wood. There are also examples with inlays of limestone or bone. Some of the examples have partially kept their limestone or bone inlay in the area of the hilt close to the blade. Some of these examples with intact inlays have an ear-lobed pommel made of bone or limestone. Another sort of dagger or dirk from this category has a heavy penannular rib.

B) EAR-LOBE BRONZE POMMEL daggers, dirks, and swords: The pommel on this type is ear-lobed and made of bronze. The close relationship between this type and the former with an ear-lobed pommel made of bone or limestone is very evident. The bronze ear-lobed pommels are clearly direct imitations, constructed entirely of bronze, of earlier composite-construction flange-hilted daggers and hilts that had their bone hilt-plates in place and secured by a combination of rivets and flanges.

B) CAST-ON HILT daggers, dirks, and swords: To make this type, the blades were cast first and then the handle was cast later, onto the blade. Cast-on-hilted daggers, dirks, and swords can be further divided into different groups based on their appearance and style.

#### MANUFACTURING TECHNOLOGY

The techniques of bronze weapon manufacture into two categories: CASTING and HAMMER FORGING. Casting is a method used for making flanged, hilted dirks and daggers. For manufacturing blades, weapon-makers first required a mold, shaped like the item that they desired to make, in which to cast the liquid metal. The mold could be made of sandstone, clay or bronze. After melting the alloyed metal, they poured it into the mold. After the metal cooled and solidified, they broke the mold and retrieved the rough-cast



millennium, and at the beginning of the first millennium B.C., these were followed by other tribes. The Assyrians commenced their military campaigns into the Zagros region beginning in the 9<sup>th</sup> century B.C. The Cimmerians and Scythians invaded the region in the 8<sup>th</sup> and 7<sup>th</sup> centuries B.C., following a route running south of Lake Urumieh. Another wave of Iranian tribes occupied the area later. Among them were the Medians, who settled near Malayer at Nush-i-Jan Tepe, a citadel that flourished from 725-550 B.C., and adjacent sites. Within this period, the most characteristic artifacts date to the 12<sup>th</sup> century B.C., while the richest period of manufacturing was from the 9<sup>th</sup> to the 7<sup>th</sup> century B.C.

At the end of the eighth century B.C., Iranian tribes intruded into Luristan from the north or north-east. The tribes influenced the whole region and absorbed most of the local tribes of the region over the next fifty years. The excavations at a shrine in Dum Surkh reveal iconography on some bronzes. The artifacts show that there was a short-lived revival of Elamite influence at least in southern Luristan from 725 to 700 B.C.. However, this period was short-lived since the armies of Assyria crushed Elam in the middle of the next century. They were defeated by the combined assault of the Babylonians and Medes a little over a generation later. This situation created a vacuum of power that was filled by Iranians who entered Luristan from the south and west. After the Medes and their associates created a capital in Hamadan and gained increasing Iranian political unity, Luristan's local tribal aristocracy lost its political authority, meaning that the smiths lost their rich local patrons and access to raw materials. In spite of the scarcity of the bronze and iron artifacts that are known from the Achaemenian period, there is enough evidence to prove that these objects share little or no legacy with the workshops of Luristan. Luristan's metal industry underwent a major crisis sometime in the 7<sup>th</sup> century B.C. from which it did not recover, resulting in the death of its independence and originality.

#### METAL ARTIFACTS FROM LURISTAN



Clandestine excavations carried out by the local population make an exact dating and classification of the bronze objects problematic. None of the tombs from which many typical bronzes originated had been excavated in a proper,

weapon. Further stock reduction, filing, and polishing the unfinished casting lent the weapon its final shape. *Rikhtegari* (casting) involves manufacturing metal objects (such as weapons) by pouring metal into a mold of baked clay or stone. Three methods of casting were employed.

A) OPEN MOLD (one piece) "*ghalebe baz*": This is the simplest and earliest form of casting where the mold is provided with a cover during casting. This method is also called one-piece mold. One-piece molding involved casting bronze in simple molds of clay or stone. This method was used to make flanged daggers and swords. After casting the metal object, hammering and annealing (the process of reheating to make the metal soft and malleable and altering the physical properties of the metal) followed.

B) CLOSED MOLD (two piece) "*ghalebe baste*" or "*do kafe*": In this process, two halves were attached together to make a mold. These were equipped with one or more channels for introducing the molten metal into the mold. This type of casting was used for making axes, adzes, spearheads, and other types of weapons with sockets. To make the shaft hole, a solid core was placed inside the mold. When molten bronze was poured into the mold, it solidified around the solid core to form a cavity in the cooled weapon for the shaft. Undecorated tools and weapons, more particularly the axes, adzes, and picks, were made in simple two-part molds of clay or stone with a core inserted into the mold to form a cavity for the weapon handle.

C) LOST WAX CASTING "*ghalebgi ba mum* or *mum gomshode*": The model of the object was sculpted in wax, and, occasionally, a clay or sand core was placed in the wax to provide a shaft hole in the finished casting. The mold was then baked to harden the clay. The molten metal was, then, poured into the hardened mold, causing the wax to melt away. The clay mold was then broken away to reveal the casting. In the another type of lost wax casting, the method involved modeling the figure in wax. Next, the wax figure was covered with clay. When the clay hardened, the wax was heated, melted and poured out. Then the molten bronze was poured into the clay mold thus left hollow by the melted wax figure. After the bronze solidified, the clay was broken and the bronze figure retrieved. It is not known for certain whether or not the lost wax method was used for making the whole weapon; probably it was used for making the more intricate part of the handle. It

scientific manner. It was by means of a chance discovery by the indigenous people that the ancient bronze from Luristan first became famous in 1928 A.D.. Unfortunately, many illegal excavations and considerable pillaging took place after the initial discovery in the eastern part of Luristan in Iran, and many pieces were sold on the art markets. The majority of bronze objects which are known as Luristan bronze in the West actually came from illegal excavations. Therefore, the true origin of these objects was most often disguised by the diggers, and fanciful, inaccurate location names are given for the origin of these objects, such as Nihavand, Luristan, Amlash, Talish, and Adharbaidja (today's Azerbaijan). These descriptions are not always completely incorrect, but they tend to oversimplify.

There are two major mistakes in identifying the provenance of the artifacts which need to be taken into consideration.

First, ancient Luristan, Amlash, and Talish encompassed much greater areas than do modern Luristan, the area of insignificant Amlash, or the mountain of Iranian Talish. Second, since the name "Luristan" was known to the Western collectors, many bronze objects from other locations have been incorrectly marketed as Luristan bronze. The first scientific excavations took place in the decades after the initial discovery, providing satisfying information about a fascinating culture. The western part of Luristan, which was isolated until shortly before the Second World War, was later discovered by pillagers in the 1950s. Thus, the Belgian Archeological Commission was able to do proper excavations based on a reliable chronology from 1965 to 1979. These excavations revealed that the so-called Luristan bronze items do not stem from one period alone, but belong to different stylistic groups and adds that the dating of the excavated items excavated by Vanden Berghes range from 2600 BC up to 700 BC..

is most likely that this was a method by which the handle was cast on the blade. The cast-on method embodied a more advanced technique of weapon construction and involved making the blades in a mold and then making the grip in a separate mold that was cast onto the tang of the blade. Regarding the cast-on method, the blade was made first. The blades were typically made of bronze and, sometimes, of iron. In the second step, the hilt was made and shaped to fit over the tang of the blade, gripping its shoulders. The grips were normally cast separately and required an extra mold. Often, the grips were cast directly on the blade (cast-on method) Smiths from Luristan excelled in the lost-wax process technique. These skilled metal workers also engraved rich detailing on or into the wax model before casting.

#### D) HAMMER FORGING "*Chaokoshkari*":

Objects made by this technique were shaped from sheets of metal by hitting them with a hammer and periodically annealing. Annealing is the process of heating the metal to restore pliability. Of course, the hammering method was also used at the final stage of making bronze weapons when the edges of the blade were heated and hammered or "work hardened" to obtain harder edges for the weapons. The smiths made sheet metal objects by hammering and annealing them from large cast sheets of copper and bronze.

As for decorative embellishment to metal objects, there were two techniques employed on sheet metal, these being repoussé (worked from the back of the visible surface) and tracing (worked from the front of the visible surface).

In the entirety of their history, the smiths in Luristan created a rich variety of bronze and iron objects that were deposited in the region's cemeteries of Luristan from about 2600 to 650 B.C.

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