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On the early metal objects and early Metal Age in Tibet

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Abstract

The studies on the issue of the early making and using of the metal objects in Tibet have long been relying on the textual materials completed in later times, but could not be supported by the archaeologically obtained physical materials. This paper systematically trimmed the results of the Tibetan archaeology in recent years and pointed out that the earliest date of the making of metal objects in Tibet could be as early as 4000 BP or earlier. In 2500–2000 BP, the early Metal Age in Tibet showed a complicated feature; iron wares might have been introduced into the Tibetan Plateau, and the compound objects composed of iron, copper and bronze parts became popular, showing that the people had some knowledge on these metals. The people living in Ngari Plateau in western Tibet and Yarlung Tsangpo Valley in southern Tibet had known to use or make iron weapons and ornaments; the discovery of the large quantity of iron arrowheads proved that the iron production at that time reached a rather high level. It could also be observed from the early metal objects unearthed in Tibet that their making probably referred to the various features of the manufacturing and decorating of the early metal objects in the surrounding areas, and some special metal objects might have been introduced into Tibet through multiple possible approaches.

A description of finds of early metallurgy in Tibet and a history of research

When does the Stone Age end on the Tibetan Plateau? When does bronze production begin on the Plateau? When is iron object introduced into the Plateau? For a long time, research on the Tibetan Plateau has not yet provided satisfactory answers to these questions. In Tibetan Prehistory, a number of metallic objects that may date to early periods have been discovered however these objects have mostly been handed down over generations or are collected objects. They have also not been unearthed from systematic excavations and as a result their provenience is not only unclear, but this has resulted in them being studied by non-professionals. Thus, the archaeologist Enzheng Tong (1985) was only able to conclude that a metal age may have characterized the prehistory of Tibet, however he was not able to establish its upper and lower limits. He argued that it is possible that this age began at around 1000 BCE and ended roughly around the 6th century CE, before the Tubo Dynasty began. This idea roughly overlapped the Bronze and Iron Ages as described in other areas of the world. This was a popular working hypothesis among archaeologists working in the Central Asian Desert Steppe, a model that was later followed by Chinese archaeologists and one that was promulgated across the entire Eurasian Steppe (Wuenyuesitu 2007). This article expands on these ideas temporally and spatially.

Foreign archaeologists were the first to start research on early metallurgy in Tibet. Guiseppe Tucci, the famous Italian Tibetologist, already noted in his book entitled *Transhimalaya* (1973) that in the early historic literature of the Central Plains, Tibetans were described as having artisans that engaged in the production of a wide number of metal products. Before scientific archaeology began in Tibet, small metal objects called "Ton Ti" by Tibetans were collected and passed down. "Ton Ti" means an object that has been dropped from the sky. Pastoralists believed that these bronze objects were not made by men but rather were sacred objects and they warded off evil when worn. Most of these objects were found by locals when tilling the soil or were purchased through markets and as no precise locales were recorded for their discovery, there is no background material available on these pieces. During the Central Asian Expedition in 1925–1928, N. Roerich (1930) discovered a series stone graves with cairns and unearthed some bronze three-sided arrowheads, and leaf-shaped iron arrowheads. In summary, although there were impressions about early metallurgy in Tibet from historical documents and from a few objects, systematic archaeological excavations that could shed light on this material were lacking.

Recent discoveries of early metal objects in Tibet

In recent years, archaeological discoveries of early metal objects in Tibet have included: a bronze arrowhead at the Chugong Site in Lhasa and a bronze mirror with an iron handle (Figure 1), a bronze sword and iron objects from the Phiyang Dungkar Site in Ngari (Figure 2), bronze objects collected in the Gebusailu (Gad-pa-ser-po) Cemetery in Zanda, metal objects from the Chaggya Gou Cemetery in Nagarzê County, Lhoka (Shannan) Prefecture (Figures 3 and 4), bronze objects unearthed from stone cist tombs at Gyanbê Site, Konjo County and metal objects from the stone cist tombs to the north of the seat of Konjo County (Figure 5), and Rag-ti-lung in Qamdo. From stone cist tombs in northern Tibet metal

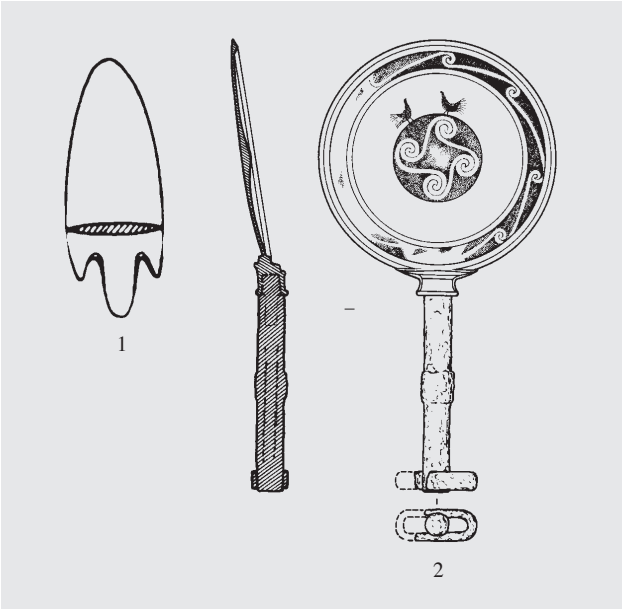

Figure 1 Metal objects unearthed at the Chugong Site in Lhasa.
1. Bronze arrowhead (H12:33); 2. Bronze mirror with iron handle (M203:2).

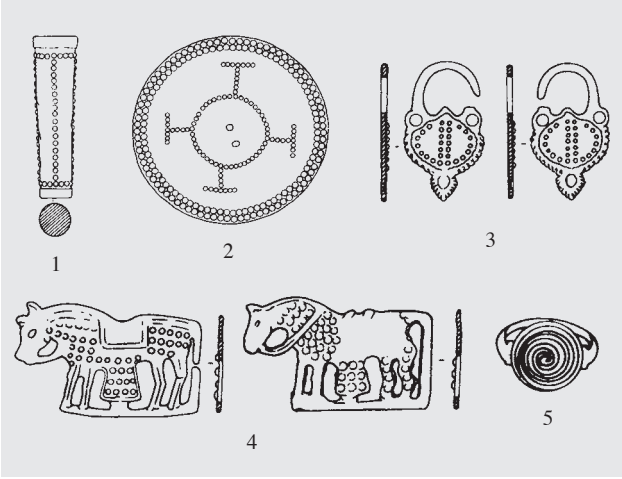

Figure 3 Metal objects from the Chaggya Gou Cemetery in Nagarzê.
1. Cylindrical gold ornament (LCM1:7); 2. Circular gold helmet ornament (LCM1:6); 3.Gold earrings (LCM1:8 and LCM1:9); 4.Gold horse-shaped plaques (LCM1:5 and LCM1:10); 5. Gold ring (LCM1:17).

objects have also been unearthed and bronze horse fittings as well as bronze knives have also been collected. At the Ngalung Cemetery in Rutog County metal objects have been discovered. At the Gurugyam Cemetery in Moincêr Township, Gar County, metal objects have also been found. In Zanda, at the Chuvthag Cemetery in Tholing Village, a gold mask has been unearthed (Figure 6) along with bronze and iron objects.

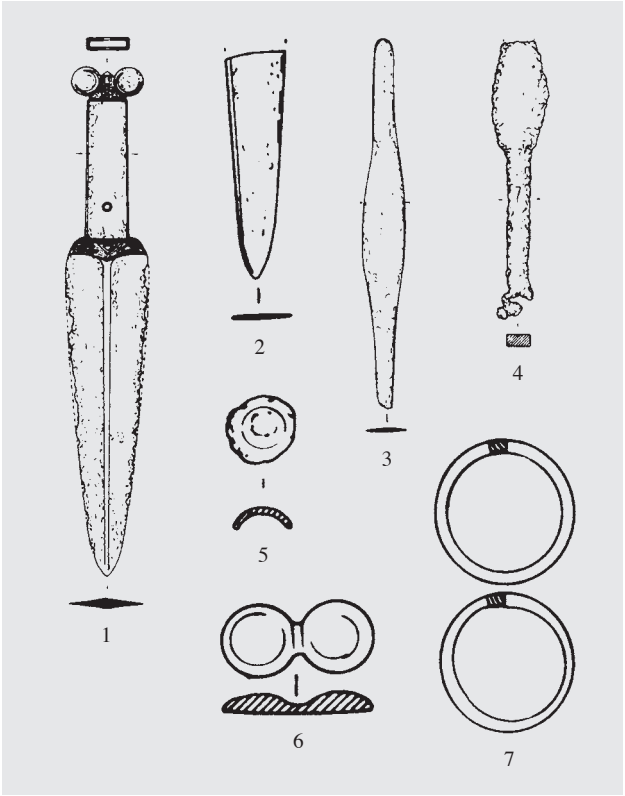

Figure 2 Metal objects unearthed from the site of Phiyang Dungkar in Zanda County.
1. Bronze dagger (PGM6:4); 2. Bronze sword (PSM4:1); 3. Flake-shaped bronze object (PGM5:3); 4. Iron sword (? PGM1:1); 5. Bronze bubble-shaped ornament (PGM2:1); 6. Bronze button-shaped ornament (PGM5:5); 7. Bronze rings (PSM6:1).

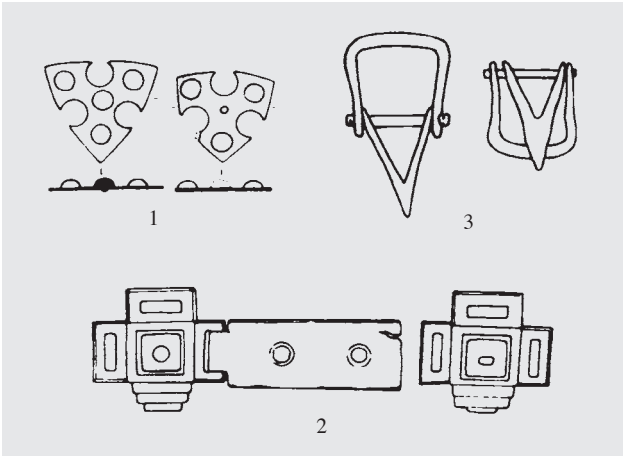

Figure 4 Bronze objects from the Chaggya Gou Cemetery in Nagarzê.
1. Trefoil-shaped ornaments (LCM1:18 and LCM1:19); 2.Cross-shaped belt buckle (LCM1:20); 3. Triangular-pinned belt buckles (LCM1:21 and LCM1:22).

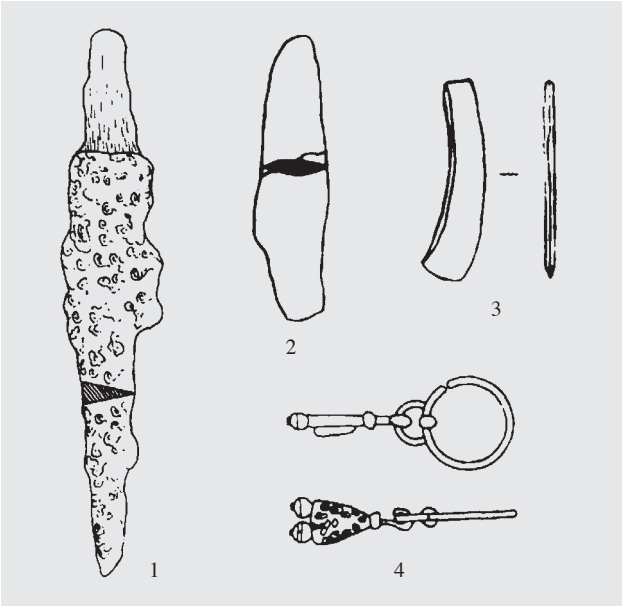

Figure 5 Metal objects unearthed from stone cist tombs in Konjo County.
1. Iron knife unearthed from the stone cist tombs to the north of the seat of Konjo County (86GXM1: ③); 2. Bronze knife unearthed from the Gyanbê Site (M4:3); 3. Bronze cutter from the Gyanbê Site; (M5:1); 4. Bronze earring from the stone cist tombs to the north of the seat of Konjo County (86GXM1: ②).

Figure 6 Gold mask unearthed from the Chuvthag Cemetery in Zanda.

The basic characteristics of early metal objects in Tibet

We can preliminarily outline a set of characteristics about early metal objects in Tibet from these archaeological materials. First, in terms of metallurgical techniques, these metal objects were made of copper, bronze, iron and gold. Copper is a naturally occurring metal that is reddish brown in color and is soft in texture, and is not suited for manufacturing large objects but rather only small tools and ornaments, and is a type of metal that humans have known and exploited from a relatively early time. Early periods of metal exploitation in Tibet appear to have gone through a similar process of development. There was a period of use of copper and then of use of cooper and bronze. This process appears to have gone on for a long time, even after iron appears, the use of copper continues.

At 4000 BP (during the Xia and Shang Dynasties in the Central Plains), in the central Tibetan Plateau, the inhabitants of the Chugong Site had already entered the Bronze Age. The excavators have already noticed that the bronze arrowheads from the Chugong Site are that of an initial style imitating bone arrowheads and jade arrowheads from the same site. This indicates that it was likely that this type of arrowhead was locally made. The alloy ratio from the arrowhead was within reasonable limits of standard tin bronze and its making method was casting rather than hammer forging, indicating that the inhabitants of this area were already well skilled in metallurgy. It is thus likely that the history of metalworking on the Tibetan Plateau may date to earlier than this arrowhead. In addition, given that arrowheads are consumables that are required to be replaced at a relatively rapid rate, using bronze to manufacture these, would have not only guaranteed that the quantity would be kept high but also indicates that it is likely that the metal working industry during this period was already of a rather large scale.

Between 2500–2000 BP (The Qin/Han Dynasties in the Central Plains), metallurgy in Tibet appears to have become more sophisticated. On one hand, it is during this period of time that iron first seems to have appeared on the Tibetan Plateau and objects composed of both iron and bronze parts start to become popular. This indicates that the inhabitants of this area during this period of time already had a certain degree of knowledge about iron and bronze production: the bronze mirror with an iron handle found at Chugong shows that this was the case. Iron has been unearthed at the rGya-gling-thang Cemetery in Phiyang, Zanda County, the Gurugyam Cemetery in Gar County and Chaggya Gou Cemetery in Nagarzê County, indicating that during this period of time iron objects were spread over a wide area of Tibet and that the inhabitants of the western highlands and southern Tibetan valleys had already learned how to create or use ornaments and weapons made out of iron. The large numbers of consumable items like iron arrowheads indicate that this industry had already developed to a rather high level.

The bronze smelting and casting industry development

and introduction of iron products likely had a revolutionary impact on the metal culture in Tibet. Even though we have not yet discovered any yet, it is likely that the inhabitants of this area also manufactured agricultural or other types of production tools out of bronze and iron. On the other hand, the development of metallurgy in Tibet was not even. The above-mentioned discoveries indicate that traditions combining copper and bronze are present in the eastern Tibet along the valley of Lhasa River, the western Tibet and northern Tibet: some metal objects are even made of both of these elements combined together: for example at the stone cist burials of Gyanbê in Qamdo County, small knives made out of copper and bronze parts were unearthed. In northern Tibet, horse harnesses and daggers made of copper have been discovered. In western Tibet, in the Gurugyam Cemetery, items made of copper and high tin bronze were discovered together. In each case, these were forged rather than cast, indicating that their knowledge of metal production was still in a low level of development.

The discoveries of early metal objects in Tibet reveal another very interesting pattern: there is another category of objects made of gold appearing in these metal objects. As with other Eurasian nomads, gold, as a status symbol that implies both position in society and wealth, has likely become popular with early Tibetans. From Ngari in the Sutlej River valley in western Tibet to Nagarzê in central southern Tibet, a number of gold cast or hammered luxury items have been found. These include gold masks, jewelry, ornaments and animal-shaped plaques etc. Even though the manner in which these items were produced is not particularly advanced, they nonetheless have a luxurious air about them. These finds corroborate ancient texts that describe the status and importance attributed to gold by ancient Tibetan tribes.

Finally, compared to the so-called "Ton Ti" that have been handed down over the generations in Tibet, the religious connotations of the metal objects found in archaeological excavations are not immediately apparent. There are very few items that fall into the category of amulet, religious keepsake, totem, or clan emblems and most are utilitarian items. These include swords, arrowheads, knives, spearheads, horse riding gear (such as mouthpieces, bits, or small bronze elements used to adorn the horse), ornaments and utilitarian objects (such as copper mirrors, copper cups, bronze cauldrons, bowls, cups with ring-shaped handles, shovel-shaped pans with wooden handles, golden belt buckles and decorative foils, etc.).

Cultural connections between early metal finds in Tibet and surrounding cultures

Finds of early metal in Tibet further serve to illustrate that the Tibetan plateau was not a isolated in prehistory and rather it maintained very close connections to the areas that surrounded it. In areas surrounding Tibet such as Gansu, Qinghai, Xinjiang and western Henan on the middle yellow river, archaeological discoveries of relatively early metal have taken place. In some of the items unearthed from Tibet, we can see very clear cultural connections with these areas. There are three key examples that illustrate early metallurgical practices in Tibet were closely connected to those from other regions: the first, the bronze mirror with iron handle found at Chugong (Figure 1:2); the second, the bronze dagger with double ring-shaped pommel found at Phiyang Dungkar in Ngari (Figure 2:1) and the third, the gold face masks from Chaggya Gou in Nagarzê and Chuvthag in Ngari (Figure 6).

There is little disagreement about the age of the mirror found at the Chugong Site in Lhasa and most scholars feel comfortable with situating its age somewhere between the Warring-States Period and the Han Dynasty. However many scholars disagree about where this mirror was produced, its art historical affiliations and the sources of influence that lead to its production and use. To date, scholars have been divided into three main camps of thought. The first is that it came to Tibet from South Asia. For example Humin Zhao argued that this piece shares close similarities with other handled mirrors in northern South Asia. A second opinion is that this particular piece comes from Central Asia. The author of this paper has argued that especially when comparing material from the Central Asian steppe with that in Xinjiang, Sichuan and Yunnan, there appears to be a zone of diffusion for these handled mirrors from Central Asia to Xinjiang and Tibet, and then eastward into the Hengduan Mountains to the east of the Tibetan Plateau. The third point of view is that this mirror was locally manufactured but was influenced by the Han Chinese style. For instance, Tao Tong, compared the decoration on the back of the mirror to that of the bronzes of the Dian Culture in Yunnan. He noticed that the *goulianwen* 勾连纹 (interlaced pattern), stylized interlaced pattern, *woyunwen* 涡云纹 (swirl cloud pattern), braided line pattern and bird design, as well as the tradition of combining iron and copper parts together share similarities with those features on the handled mirrors in the Dian Culture. This lead him to believe that the handled mirrors found in the valley of Lhasa River "contain Han elements" but also have some particularities that are peculiar to the Dian Culture in nature and that the Tibetan mirror was influenced by some characteristics of the Dian Culture. He eliminated the possibility that this mirror may have been locally made and that this mirror belonged to a larger Central Asian Steppe sphere of influence. However, the way in which this mirror is decorated must have gone through a complicated series of exchanges as there are many elements of different influence in it: it is likely that these different elements were transformed in the hands of a Tibetan artisan.

It is likely that the bronze dagger unearthed at the rGya-gling-thang Cemetery in Phiyang was transmitted to this area via trade with the Jinsha River valley in southwest China: this represents a long distance exchange. Its pommel was decorated with symmetrical rings: this is a characteristic that is present in many objects of the Bronze Age and early Iron Age in the Northern Steppe

area of China. The rounded bulbs at the top of the pommel may have been a simplified representation of some kind of animal motif, and share some similarities with the bronze daggers with antenna-shaped pommels in these areas.

In the ancient tombs in Nagarzê and Chuvthag in Ngari a number of gold artifacts potentially belonging to the early Metal Age have been uncovered that reveal patterns about exchanges between Tibet and its neighbors during this period of time. The nomads of the northwestern and northern steppes of China had a particular interest in gold objects. They frequently used gold objects as costume ornaments, body adornments and in horse riding gear. The gold elements unearthed in Tibet likely share a similar date to the gold pieces of the Xianbei and Xiongnu in the Northern Steppe. This observation also dovetails with textual records that describe gold as being considered precious by people that inhabited the Qinghai Tibetan Plateau.

Another key element that must be considered when discussing early metallurgy in Tibet are the newly discovered gold masks unearthed at the Chuvthag site in Zanda, Ngari in western Tibet and their relationship to surrounding cultures. The gold masks were manufactured via hammering. The top part of mask is the crown in rectangular shape and the bottom half is composed of a human face and the full length is 13.5cm. Three sets of patterns decorate the crown of the mask: stupa designs, confronting birds, wheat ears and animal figures (deer or sheep). From the picture of the mask released to date, it appears that the mask was originally attached to fabric of which several small pieces were left even after most of the fabric decomposed (Figure 6). This type of mask has also been uncovered in regions bordering western Tibet. In the Malari cave burials bordering Tibet on the Indian side of the Himalayas, a numbers of well preserved pottery wares have been unearthed along with a hammered gold mask that measures 8cm high, 7cm wide at the widest part, 0.091mm thick and weights 5.23g. The facial features on the mask are painted (Figure 7). Nearby in Mustang of northern Nepal, similar hammered gold masks have been unearthed which are slightly more rectangular in shape (Figure 8). One can thus see that across the western Tibet and the Himalayas, burial traditions that involved a gold mask were a popular form of burial ritual.

Across the Eurasian steppe, the use of gold masks has a long history and wide area of practice. Thus in the Chuvthag Cemetery and Kardung Site, the discovery of such objects means that we should also pay attention to connections with archaeological cultures in Central Asia and in Xinjiang. In Chinese historical records a country called "Taiping State" to the south of Yutian State has been described as employing a type of funerary ritual with a gold mask: "when a chief or elite died, the people removed his brains and replaced it with gems, they removed his insides and replaced these with gold, and adorned him with golden nose and silver teeth". The so-called golden nose and silver teeth were probably a figurative description of these gold masks and can be

Figure 7 Gold mask unearthed from Malari cave burials in India (Courtesy of Prof. R. C. Bhatt from Department of History and Archaeology, HNB Garwhal University, India).

Figure 8 Gold mask unearthed at Mustang in Nepal (Reproduced with the permission of Mark Aldenderfer and Mohan Sing Lama).

linked to the gold masks of western Tibet. In 1997, in the Poma ancient cemetery in Zhaosu (Mongolküre) County, Ili Kazakh Autonomous Prefecture, Xinijiang, a gold mask with ruby inlays was unearthed. This mask was also manufactured using hammered gold and was oval in shape, the eyebrows and beard were manufactured out of gold rivets and several dozen rubies were mounted onto the mask (Figure 9). The excavators of the site estimated that it dated to between the 6–7th centuries CE,

Figure 9 Gold mask unearthed from the Poma ancient cemetery in Zhaosu County, Ili Kazakh Autonomous Prefecture, Xinijiang (Photo credit: *The Pennsylvania gazette*).

however taking into account the manner of usage of these artifacts, it is likely that a portion of the objects in the graves are earlier in date. The excavators of the site already noted that similar gold masks had been uncovered in the Vallee De Tchou, Kirghizie Frounze in Central Asia that share similar qualities in artisanship, the use of hammered gold, the eyes inlaid with rubies and in the type of grave structure and that date to the 4–5th century CE. This material is very similar in temporal and stylistic scope to the material from western Tibet. In addition, the excavation at the Yingpan Site in Xinjiang in 1995, revealed a high-ranking tomb (M15) with a wooden coffin that rested on four feet. The face of the occupant was covered with a hemp cloth on which eyes and eyebrows were vividly drawn in black; this was gold plated, and thus shares similarities to the gold plated mask from the Chuvthag Cemetery in western Tibet.

From this examination it is relatively easy to understand that western Tibet and Southern Xinjiang held maintained close ties. The Mkhar phug, Gurugyam and Chuvthag Cemeteries also all used rectangular wooden coffins. This type of "box" coffin is similar to those found in Xinjiang at the sites of Niya and Yingpan as well as those from the Khotan region. At the Gurugyam Cemetery, brocade with bird and animal designs and "*wang hou* (kings and marquises)" inscription is similar in style and inscription to those silk pieces found at the Yingpan Site in Yuli (Lopnur) and Astana Cemetery in Turpan, Xinjiang. A number of other artifacts from the Gurugyam Cemetery such as horse-shoe shaped wooden comb, wooden cup, wooden implements used to make fire as well as straw-woven implements are very similar to those from Han and Jin Dynasty cemeteries of Loulan and Yutian (Keriya) in Xinjiang. We can thus see that in its early Metal Age, strong ties linked western Tibet to southern Xinjiang. After the Han and Jin Dynasties, these relationships appear to have intensified.

In conclusion, we can very clearly see that after metal production begins and becomes popular in Tibet that it follows many of the cultural particularities and trends in surrounding regions: transformations in style took place either simultaneously or shortly after it occurred in surrounding regions. There is very little difference between the cultural traditions in these various areas. In the pre-Tubo era, gold working techniques were already relatively advanced. This lay a strong foundation for the gold and silver industry that became highly prosperous during the Tubo era.

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Postscript

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