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FERENC VARGA
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THESES

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During my exploration I have set myself a goal to meet all of bow creator who live in Mongolia in order to collect data about their bow making culture and preserve them the posterity. My work as much as I wanted to not succeeded perfectly. Just the famous but mostly the recognized bow creators I have met. I could not take stock with the beginner craftsmen who hid on the seemingly endless mongolian prairies and towns. Unintentionally remained work for the generations who coming from me.

Many parts of my thesis tell my fieldwork results,namely the bow creators whose knowledge helped me to comes to life the archaeological objects. The explorations's results were to succeed manifested a continuity which exploration has not carried on by previous researchers.

In the history, firearms more widely spread and it is led to the bows' marginalization. Even though, many age-olds traditions can be found nowadays in Mongolia the centre of Central-Asia but creating bows was draw back and only a few people have been produced bows.

In Mongolia, not just check-bow but so-called simple-bow (*xawčāxai*) also in use. Within the country, the Buryat *xawčāxai* (*burriad xawčāxai*) and *xawčāxai* (*urianxai xawčāxai*) were linked the simplebow.

I chronologically summarised the themes about mongolian bows, as 1.past, 2.present, 3.future. This triad not only in the Central-Asian culture it is important but it also covers the topic of bows. The topics is growing linearly with the size of the amount of parts, of course. Most of the data the „past” have, therefore that become the longest part in my job. We can separate the „present” and the „future” with a very thin border. Often blends of the two and almost impossible to say where is the end of the one and where another begins. I tried the best to make it clear that the Centre-Asian bows' past, present and future's possibility.

Presentation of the bow-makers are included in the dissertation

I presenting the bow-makers on the basis of the discussion at the meeting. On the recording (mainly old people's) the life story is incomplete. The reason is that I discovered, if I had asked them slowly for their lifes they get tired before we have to talk about the bow-making. So the method I was choosen to I turned the bow-making after the main personal data. I considered important to present the more accurate description of the residence because of the process context. So readers can get further clues for the researched topic's broader

correlations as the bow-makers' material world and wider or narrower social and natural environment.

Mongolian language literature related to the topic

The Mongols specifically see the bows' past which used by themselves. Only the 1950's researches give data about these but we had to be wait until 1970 when the most comprehensive, academic writing was borned. Only the present time or in the recent past dealt with in the published work. A serious summary which fully discussed this theme published in 2000. The listed mongolian literature is hard to reach in Europe. I am trying to help the researchers whose are coming after me. I give a critical evaluation of the Mongol's archery and bow-making habits for the literature which is discussed this topic.

Grouping bow developmental events

Nowadays, grouping the Central-Asian bows' forces is a serious question. Explorers examine the topic according to many point of view. The proposed typologies have their deficiencies what are true for my bow developmental steps. The positions (what are needed to the scientific studies) are examining the question in several ways. The main difference between my created system and the national status is that in the approach. Bows separates mainly according to their shape and their construction by other researchers. I categorise them on the basis of the changes in the structural elements.

The previously developed evolution system of bows are not capable to systematize the bow types which are well-distinct in ages between different nations. During my research I experienced that the Central Asian bows' evolutionary steps can be determined more accurately if we examine some of the components. Accordingly not the name of the nation-who are using the device or the disappearance of the devices determines the level of the progression, only items' change in shape and size or disappearance and appearance of particular items. I missed this view of the mongolian bows' exploration,thus I was created my own developmental classification which only apply to the Central Asian bows.

1. **Simple stick bow:** the bow is bented once,horn wrap and tendon were not glued onto the low limb and the upper limb,the string hanger spline and the gouge helped hooking in the string.

2. **Bows made of one timber:** string hanger spline stood in the string groove which changed depending on the curvature of string groove so it was round or square, horn and tendon were glued on total length of the limbs, in the grips - it defines the bow's bending - (šarxamar) is demonstrably was in the bow.
3. **Long-boned bows:** separate to the bow-body, made another timber string grooves were tapping in the bow-body (if the string groove and the bow-body were formed one stuff, then of course compilation occurred without tapping), the string groove's external side (away from the archer) were the string hanger grooves, limbs were covered horn and tendons with its total length, bone plates were glued on the grip and the string grooves both side and total length, onto the string grooves and this protective brick bark almost reached the string hanger groove, the handle-bones and the string groove-bones were rather big (which implies that the non canting parts were rather big and the canting parts were rather short) because of these the bow shoulder was bended a small section which is influenced by the bow's shape, the inner side of the grip the bone trisect (gurawč) was found. To this two flattened ends the horn plates are reach, the grip-bones and the string grooves due to the steady support of tendons were often tied around.
4. **Short-boned bows:** the grip-bones were becoming shorter, the bones of the string grooves just on the final 10-15cm were bone tabs, with the bones the string grooves and the grip were shorter, the shape of the bow has been influenced to the gurawč end has not been flattened, in turn the horn plates did not reach to the two ends.
5. **Bow-end suffix bows:** the string hanger groove was fixed on the bow end tag, the bows disappeared from the string grooves and the grip's two side, on the grip the gurawč remained, but but has not reached the end of the horn plate yet.
6. **String stool bows:** the root of string groove has a trapezoidal string stool due to the change of the angle between the string groove and the bow-body, the gurawč only in rare cases bone, mostly it was horn, bow end suffix was horn instead of the bone.
7. **String bridge bows:** the string stool's shape changed, lost trapezoidal shape, instead of this it was rounded, beady, next to this the string bridge appeared, the string groove lost like these bows.

Historical overview of the development of the bow sections, their properties change

The bow's length

Those bow-bone artefacts' help where has not been found in other parts of bow, relatively difficult to define. For those bows which used before the great nomadic realm we just guess the length of bows. We can compare bows and arrow with the illustrated Archers' body size it is not exact but shows the approximate value. On the basis of data they were 150 cm or bigger simple bows. It was between the VI. and the III. BC century.

The bow's shape

In Central-Asia the bows' assymetry had several reasons and throughout history we experienced a major change on this issue. Science has known for more left whole Scythian bow's shape sometimes differ from eachother. Presumably there are many reasons, but basically due to location and mutual co-existence with neighboring peoples, it may be responsible for.

The bow's shoulder

Shoulder part of the bow structure, closely related partly to the shape of the bow, you could say the shaping element. The bow-shoulder is called where the limbs are bending. To the degree of bending depends on the angle of the bow, the limbs's material, the grip and the bow-body's relations, the string groove's curvature and the making process.

The angles of the bow

We can find the angle measured on the bow between the grip, the limbs and the string grooves. In Mongolia, archeologists were observed better the artifacts only in recent decades, therefore those locations in the graves, we have not much data. Furthermore, if appropriate drawing, sizing, or photographs taken during the excavation, then we can only give correct answer about the bow's angle (which was in the grave) if we done many studies on the object, but this require practical archeology methods .

The bow's power

The „bow's power” the type property of the bow, what none of the archaeological research can say exactly, only can refer to it. We can read or see accurate data only use bows or composition the authentic records. So, not at all sure to the next part will be free from the guess or opened questions or deliberately open-ended questions. These all have due to little opportunity to practice archeology and the relevant topic, the lack of specialized highly experienced bow-makers.

Body

The timber body has multiple roles. First and foremost task is to provide an adequate basis for the later fixed horn plates and tendons. When braced or stretching the bow, the bow-body always bends, necessary for the proper xylem to resist the generated bending forces.

Brick bark

The ornament is everywhere imaginable on the bow. Even so nowadays mostly have ornaments on the limbs and the string grooves. The decoration is not only paintings and carving, but the glued birch bark and bone are too.

Horn plate

The appearance of check bow and its continuous development, the horn has become important. The most common element in the check bows is the horn plate glued on the internal part. Due to the rarity of archaeological finds from the horn bows sized plates found little evidence before the creation of the Central-Asian great nomadic empires.

Create a Mongolian bow

Bow-makers can perform faithfully the creation of the mongolian check bows. For us, the past and the often-mentioned "old things" really is not as old as we always say. Today the tradition of bow-making, despite its roots in earlier centuries habits related, is fairly modern.

Nowadays there are many methods appeared what are already non-traditional, or just think newer. The development does not stop at among the artisans. In the middle of the XX. century, developed the bow-making which is based on the Manchu's traditions what is forming further with the modern equipments and technologies.

I am trying to publish the bow-makers's message as been said during my collections. The interview subjects often deviated from the question during the conversation, therefore it often become confusing statement, if I had not been them in order. Now, we have transparent and clear descriptions. Other bow maker or previous conversations provided a basis for the footnotes and additions.

Xawčāxai

The *xawčāxai*'s data on past can be found only in people's memory, but memo can be found in some publications. Buryat folklore, the following interesting story can be found in: „When Genghis Khan was a small child he learned the archery such a *xawčāxa bow*. He shot the stones and trees which rolling down the hillside. He practiced this way. So he became archer hero and war-lord.”

The Mongolians „inherited” an advanced check-bow from the nomadic people who lived in Central-Asia. But check bow (who lived and live in forested parts of Mongolia) used in the forest peoples, only a few was found. The simple bow is the traditional one. So the fishing-hunting people's lifestyle own genesis and different development of check bow, changed to nowadays. It is worth highlighting the fact that simple bows presumably survived the centuries without much change.

Urianhai xawčāxai

As I have stated several times, the urianhai *xawčāxai*'s investigate is difficult because of its situation. In books which are presenting the urjánhaj archery is mentioned in passing, what reinforces my statement so this is a rare special bow. Mostly verbal communications, we can find informations about it on the basis of Archers memory. Only accidentally find an informant who have used this bow or sometimes there is a hidden item of an archery.

Buryat *xawčāxai*

As I have stated several times, but I highlighting again, similarly to the urianhai bow, the buryat *xawčāxai* is difficult to investigate too. Nowadays, the bow is used by some archers and really good bow-maker is rare in Mongolia. The buryat simple bow also developed, changed during the centuries. Definitely the latter-day, animal tendon fiber reinforced version developed due to the needs. Presumably, the *xawčāxai*'s oldest form made of only wood. I have to agree with Cerendorj that in the taped bows with tendon fibers, what are made by Junduidagwa, follows the old buryat *xawčāxai*'s form, but anticipates a little new. On the archehy competitions, we need the tendon cover for the strength of the bow.

About the string catches

As specific elements may be noticed on the mongolian nations' bow, than it can provide specific details of the technical analysis of the string catching. In Mongolia, the method of string catching is related to the bow and the arrow what used by the archers. The string material, the type of bow and arrow design, the shape of the structural components are all related and not separable from the others. It is not about to one of the tapering method can not shoot many bows or some arrows not firing multiple string catch method, but what is saying the customary. Generally, we have to use a bow and the associated things according to the expectations of society (arrow,string catching, archery competition's rules, clothes, quiver...).

Archery competitions

Definitely, the archery competitions' age is the same as the invention time of the bow. The human nature, in social (and military) ranks' progress among the nomadic peoples are given the opportunity to settle the archery competitions.

Archery competitions according to the informants

As so often, also in this case via the public data treatment be first-hand the contemporary, may inquire about the recent archery competitions. The archers and bow makers in memory highlights many old things, but not to forget giving them the fact that old rarely goes back

earlier than 50-100 years. Nevertheless valuable and important data can share with us the Mongolian bow makers.

Bow and arrow in folklore

Mongolian folklore almost every genre amply explore the wisdom of her visitors. You should watch this deep fountain of few tiny drops, what is the thesis of meager ability to show the possibility of this. I did not strive to be comprehensive. I give mostly excerpts in this theme. My main goal is to draw attention to these science. From ancient times the bow and the arrow won the role in Mongolian folklore can be found in several places.

Animal marking with bow

Since there are thieves, certainly has the marking of livestock. We often see horses on the well-known rock paintings which have a mark on their neck or thigh. These signs, symbols, inherited inside the family, so little exaggeration, it can be centuries-old traditions. Among a wide range of branded produce known animal mark with bow which is not other than the indication that it is burned into the skin of the animal. (it is a draw of the bow)

Summary

Perhaps, I could provide sufficient image for the world of the mongolian bow, past and present status of bows. One thing not mentioned: the future! If it were up to me, being retained in the past's wonderful fighting tool and great-great grandchild of the Mongols, they could take their ancestral weapon. However, in this context I have rather gloomy picture of the future. Very difficult to answer that the world can survive long wintry wake of the bow and the archer actuator. Anyway the habit, quality are getting decline, reduced the number of good bow makers. Replacing them, the new ones coming who are no longer caring about the tradition, the unwritten rules, that should be considered in the preparation of a bow, the mass produced items are coming.