

RECONSTRUCTION OF A SCYTHIAN SADDLE FROM PAZYRYK BARROW № 3

Elena V. Stepanova

State Hermitage Museum

St. Petersburg, Russia

The reconstruction of a Scythian saddle was undertaken in the State Hermitage Museum in 2013. Previously the author of this article had measured saddles from the museum's Pazyryk Collection, studied how they were made, and prepared a project for their reconstruction. The project came to fruition with the making of a replica bridle and saddle from Pazyryk Barrow № 3 for the exhibition, "The World of the Nomads" in Vyborg. The goal was that the replica should use where feasible authentic materials and techniques to recreate a saddle that would be as close as possible to the original. This then not only would bring the exhibit to life but would enable testing the performance qualities of the saddle and resolving disputed questions concerning certain functional parts and elements of its decoration. Then one might compare the replica with depictions of ancient saddles made in various materials and dimensions in order to classify them.

Pazyryk saddles are a variant of soft saddles of the Scythian type which were widely used in the ancient world from the 7th century BCE through the 2nd century CE. Over that expanse of time they preserved their structural features and exterior appearance: the saddle pillows (panels) had wing-shaped projections on the sides and semicircular support elements front and back. The saddle chute (gullet) was located between the panels. There was no saddle tree and thus no pommel nor cantle. The most common and conservative (but not obligatory) elements of Scythian saddles were the saddle arches (support arches) of bone and wood, located on the sides of the support elements (four to a saddle) which served to strengthen and decorate them. Moreover, the remaining saddle fittings (buckles, components of the breast straps) gradually were perfected and changed all across the Great Steppe practically at the same moment, which shows the continuity between early Scythian and Hunno-Sarmatian times.

In the early Scythian period, saddles were the property only of the nomads and thus had decoration

appropriate to them. Later, starting in the 5th-4th centuries BCE, saddles of the Scythian type spread far and wide beyond the boundaries of the steppe, as evidenced in numerous images from various regions, from Greece to China. In that period, the decoration of saddles acquires distinct regional characteristics.

Usually only the hard parts of the saddles themselves have survived—the characteristic accessories (the support arches, the girth fasteners, the spreaders for the breast straps) and the decorations made of bone, wood and metal. Whole saddles and their fragments with all the accessories have been preserved only in a few sites on the territory of the Altai and Xinjiang.¹

Some time ago I proposed that Pazyryk saddles be considered the standard Scythian type, on account of the unique preservation of all their elements which provides a full understanding about the external appearance and construction of Scythian saddles (Stepanova 2004, p. 233).

The Pazyryk Collection of the State Hermitage contains more than 70 saddle sets from the elite barrows of the Shibe, Bashadar, Tuekta and Pazyryk cemeteries which reflect the evolution of saddles over some three centuries of the existence of the given culture.² Dendrochronological data show that the large barrows of the Pazyryk cemetery were erected one after the other over about 50 years, and Tuekta Barrow № 1 was erected 130 years prior to Pazyryk Barrow № 2 (Rudenko 1960; Marsadolov 1988, 2003). At present, the most probable time span of the existence of Pazyryk culture is deemed to be the 5th-3rd centuries BCE. Consequently, the large Pazyryk barrows were constructed approximately in the period of 300–250 BCE, the Tuekta Barrow № 1 in the second half of the 5th century BCE, and Bashadar Barrow № 2, in all probability, at the beginning of the 5th century BCE or at the turn of the 6th-5th centuries BCE (Alekseev et al. 2005, pp. 165-69; Stepanova 2006). Given these chronological boundaries, the Pazyryk saddles may be connected and interpreted with finds both from early Scythian and Hunno-Sarmatian times.

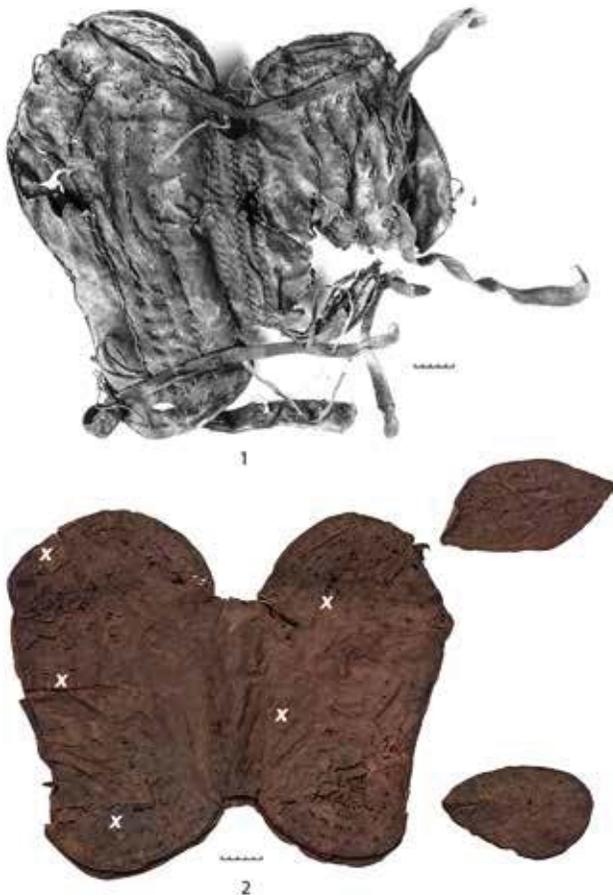
Sergei I. Rudenko (1953, 1960 and 1970) provides significant information about Pazyryk horse harness. Rudenko 1970 (esp. pp. 129 ff and passim [in English]) contains much on the saddles, with very helpful detailed drawings. But he does not describe in detail all the saddles. Current research has provided additional detail and some new interpretations which may differ from those of Rudenko.

Distinctive Features of the Pazyryk Saddles

Preservation

The unique preservation of objects made of organic materials in the Pazyryk sites was a result of the natural conditions in the Altai, the specific features of the burial rituals (the piling up of stones atop earthen mounds; the filling of deep pits with stones) and the size of the barrows. The size of the mound was critical for the formation of a protective layer of permafrost. Permafrost formed in ordinary graves only in regions with the most severe climatic conditions, for example on the Ukok plateau.

Fig. 1. Saddles from Tuekta Barrow № 1: 1) Saddle inv. № 2179/945 prior to restoration, the stuffing removed; 2) Saddle Inv. № 2179/948-1, pieces of the leather sheath of saddle panels – the top integument, the front and rear lens-shaped insets of the right panel (exterior sides). The Xes indicate places where repairs had been made.

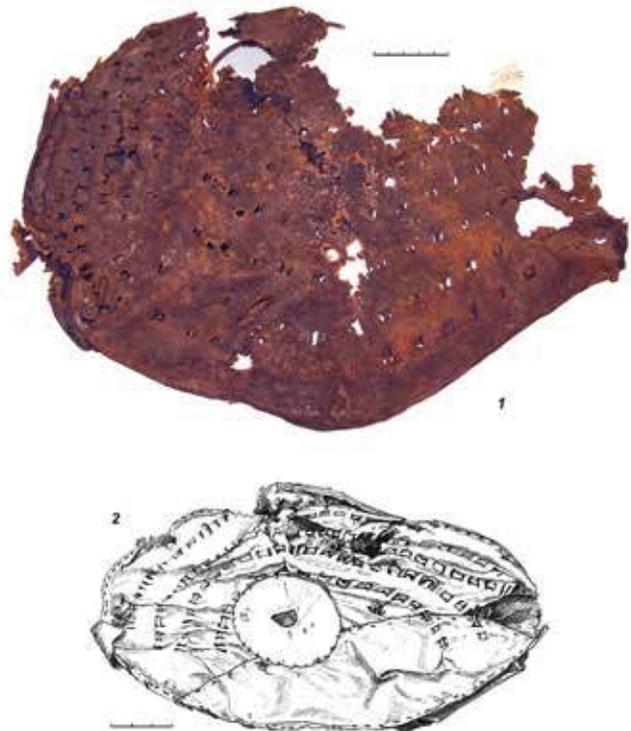


The preservation of saddles from the Pazyryk Collection of the State Hermitage varies. From the saddles of Pazyryk Barrows 4 and 6, we have only the complete set of the bone accessories. In the looted horse burial of the Shibe Barrow, only some separate, but very representative, bone and wooden components of the accessories and decoration have been preserved.

In Tuekta Barrows 1 and 2 leather has been well preserved – sheathes for the panels, the thongs used to quilt the panels tightly, fragments of straps and saddle-strings [Figs. 1–2]. Only small fragments remain from the sweat-cloths and felt elements of decoration (covers, lens-shaped medallions); the panel stuffing is missing. However, we can visualize the saddle as though from the inside: how the quilting was done, how the saddle straps and saddle-strings were attached. The surviving loops of the quilting make it possible to reconstruct the thickness of the stuffing. The seams created with sinew threads reveal how the parts of the case were fastened together.

In Bashadar Barrow 2 and Pazyryk Barrows 1 and 2, the leather of the panels has almost entirely rotted away, but all the elements of felt and cloth are well represented, among them the lens-shaped medallions and covers. In Pazyryk Barrows 1 and 2, the saddle straps have been preserved; in Bashadar

Fig. 2. Fragments of the leather sheathes of saddle panels from Tuekta Barrow № 1: 1) the front part of the saddle panel (inv. № 2179/952) with the slits which are aligned for quilting on the upper and lower integuments; 2) the rear lens-shaped piece (inv. № 2179/953) with the basting seam which has been preserved on the lower part.



Barrow 2 they are represented by small but revealing fragments. In Pazyryk Barrows 1 and 2, part of the stuffing was preserved. However, in the preparation for the exhibition of the saddles from Barrow № 1 in the 1950s, it was supplemented with modern materials and covered with cloth; the result was significant distortion of the shape of the saddle and its being rendered difficult to access for study. A new restoration is a matter of time.

In Pazyryk Barrow 3, leather and felt have been poorly preserved, but the quilted stuffing is well preserved, which means that the saddles have retained their shape. All the features of the quilting using cords of wool and horse hair are clearly visible [Fig. 3]. The saddle straps, felt and cloth medallions, covers and sweat-cloths are partially, but adequately, preserved.

The best preserved are saddles from Pazyryk Barrow 5, which have only minor deformation and losses [Figs. 4-5, next page]. Their panels have been quilted with cords made of horse hair, and the internal seams that confine the stuffed parts sewn with thongs.

In Tuekta Barrow 1 and Pazyryk Barrows 1 and 2 are wooden support arches; in Pazyryk Barrows 3 and 4 and at Shibe there are also ones of bone; in Pazyryk Barrow 5, ones of thick leather. In Bashadar Barrow 2 and in Pazyryk Barrows 3-6 are plates on the outside of the supports made of wood, bone and thick leather. Likewise, in Pazyryk Barrows 1-4, attached to the supports were decorative plates in the shape of a half horseshoe, made of leather with openwork appliqué of thin leather covered with gold foil.

Bone and bronze buckles and loops of two-part girth fasteners were found in Bashadar Barrow 2 and Tuekta Barrows 1 and 2; buckles of one-piece fasteners in Tuekta Barrow 2 and Pazyryk Barrows 2, 3 and 4;

and bone plates on the loops for two-part fasteners in Pazyryk Barrows 3 and 6 (Stepanova 2006, Figs. 4-7, 9, 13).

Features of construction

All the saddles are full size, of quality construction, and many bear traces of long use. For example, in Tuekta Barrow 1, almost half of the saddles have obvious signs of wear – patches have been sewn over tears [Fig. 1:2].³

The outer coverings of the panels were made of comparatively thick (1.5-2 mm) but supple leather, probably from cattle hides. So far no special study of the leather has been done; the techniques of its preparation can be assessed only in a preliminary way, based on visual examination (Rudenko 1960, p. 217).



Fig. 3. Saddles from Pazyryk Barrow № 3: 1) girth buckle, inv. № 1685/280; 2) saddle, view from front, left front support missing, inv. № 1685/358; 3, 4) rear supports of saddle № 1685/358, view from side and rear; 5) front part of right panel, view from rear, saddle inv. № 1685/363; 7) front right support, view from front, saddle inv. № 1685/363; 6) front support of saddle № 1685/371; 8) rear part of right panel of saddle 1685/371, showing seams connecting pieces of the leather sheath; 9) trapezoidal-shaped pieces of the adjustable crupper-strap with shield-shaped plaques, inv. № 1685/244-245.

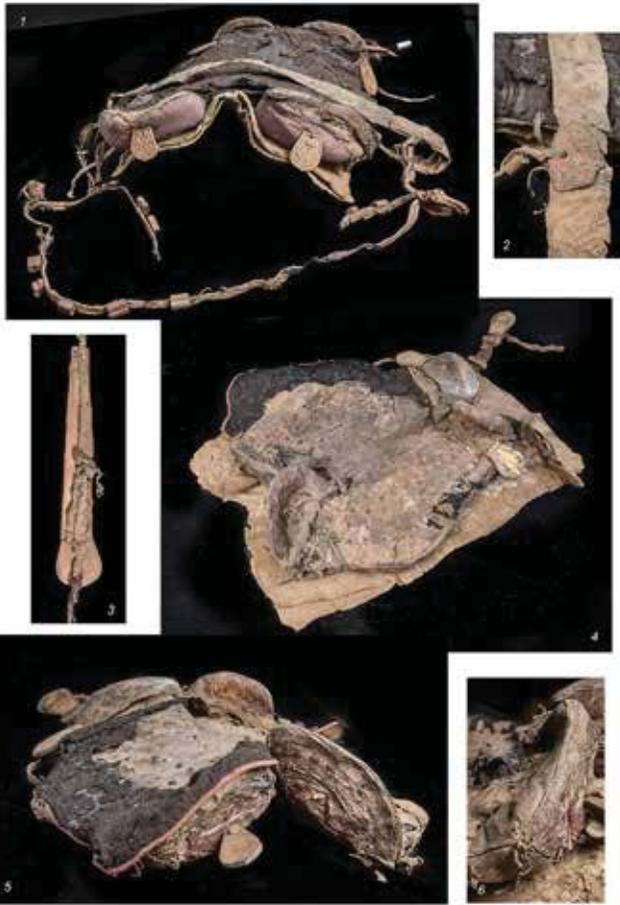


Fig. 4 (above). Saddles from Pazyryk Barrow № 5: 1) saddle, view from the front; 2) attachment of the breast-strap to the girth-strap; 3) adjustable crupper-strap with trapezoidal-shaped plate and shield-shaped plaque (view of the underside); 4) saddle, view from above; 5) saddle, view from front; 6) seams connecting the pieces of the leather sheath of saddle panels. 1, 2, 3 – saddle inv. № 1687/166-169; 4, 5, 6 – saddle inv. № 1687/107.



Fig. 5 (right). Saddles from Pazyryk Barrow № 5: 1) saddle inv. № 1687/166-169, view from above; 2) saddle inv. № 1687/120, view from front.

The patterns for the cases of the panels included two identical details of butterfly shape—the upper and lower integuments—and four lens-shaped insets, the front ones 1–3 cm wider and longer than the rear ones. The upper and lower integuments were laid out from a single template, as can be clearly seen in the materials of Tuekta Barrow 1; in some instances, even the slits under the quilting align, apparently having been made at the time when the cases were cut out [Figs. 1:2; 2:1]. The upper and lower integuments could be in one piece or consist of two (left and right) symmetrical pieces. In the latter instance, the un-filled parts of the left and right panels were sewn together with a thong at the join along the center of the saddle chute only after the cushions had been filled (one example from Pazyryk Barrow 5 is a variant sewn using a sinew thread). Saddles sewn together of two halves are the norm. Both variants are represented in Tuekta Barrow

1 [Fig. 1:1, 2] as well as in the later barrows. For example, in Pazyryk Barrow 5 all five saddles have upper and lower integuments with seams [Figs. 4, 5]. In Pazyryk Barrow 2 at least one saddle has single-piece integuments, one is sewn along the join through the center of the gullet, and on another the unstuffed parts of the panels were sewn along the center with a thong, but with stitching across the entire width of the saddle chute, not along the join (there are 4 layers of leather, not the normal two).⁴

A required element of the construction of the Pazyryk saddle was a cut-out at the withers along the entire width of the front part of the gullet, made at the time of the cutting out of the upper and lower integuments [Figs. 1, 4]. The cut-out made it possible to move the saddle forward and ensure that the rider be seated directly behind the horse's withers, the position best suited for riding without stirrups. A shallower cut

was also made at the rear part of the gullet between the corners of the supports.⁵ It is interesting that the sweat-cloths and covers of felt did not have such a cut [Figs. 4, 5], since that soft and elastic material readily conformed to the contours of the horse's body.⁶

An important characteristic of Pazyryk saddles was the angle of the spread of the front supports vis-à-vis the axis of the saddle, approximately 55–60°, whereas the rear supports were perpendicular to the axis. The angle formed by the front supports and the axis of the saddle corresponded most closely to the position of the thigh of the rider, who sat in the saddle without stirrups. In contrast, on Roman saddles, the front and back conical support elements were both perpendicular to the axis of the saddle.⁷

The sheathes of the saddle panels were fastened together by a visible running stitch 2–3 mm from the edge of the piece using coarse sinew thread with very fine (1–2 mm long), strong and careful stitches [Figs. 1:1; 2:2; 4:6; 3:8]. The upper and lower integuments were sewn along the edge of the front and back cuts of the saddle chute in the same way. Using thongs or thick sinew threads in larger stitches (5–7 mm), one-to-two running-stitch seams were sewn lengthwise through the gullet in order to separate it from the stuffed parts of the panels.

The distinctive external appearance of the panels of Scythian saddles was obtained thanks to the firm filling quilted in a particular way. The filling in the majority of cases consisted of plucked deer hair (Rudenko 1953, pp. 161, 243).⁸ In Pazyryk Barrow 2, the filling of the panels also included an admixture of wool from other animals, and two saddles were filled with grass. At sites in Xinjiang dating from the 3rd to 5th centuries, the fill of saddle panels with grass has been noted in examples of semi-hard saddles (Stepanova 2014, pp. 237–40). But, neither in their measurements nor in the quality of their manufacture are Pazyryk saddles with grass fill any different from those filled with wool. We note that remains of straw have been found also in the panel outer covering of the Roman saddle from Newstead (Driel-Murray et al. 2004, p. 10). Thick straw mats formed the underpinnings of archaic Greek and Bulgarian pack saddles which replaced saddle bars. There is ethnographic evidence that bags filled with grass were used when hard saddles were not available. One can suppose that grass filling could be and was used in the making of saddles in antiquity as the least expensive and most accessible filling even if in its qualities it was inferior to wool.

The presence in the saddle panels in Tuekta Barrow 1 and Pazyryk Barrow 5 of basting stitches [Fig. 2:2] allows one to establish the sequence of operations in the making of the panels. First, all pieces of the sheath

were sewn together with small, precise stitches, with the exception of the seams which joined the lower half of the lens-shaped pieces to the lower integuments. Then, the thick stuffing was inserted through these unstitched openings to approximate the shape of the saddle, after which they were sewn shut along the edge in order to contain the elasticity of the filling. Then along the edges of the pieces that had thus been joined the final seams were made with a small running stitch. But since it was more complicated to stitch right along the edge of a filled panel, such seams were less even and precise.

The final shaping of the saddle was achieved by quilting its filled panels. The stitching of the saddles from the Tuekta Barrows 1 and 2 was done with narrow thongs and in those of the Pazyryk barrows using cords made of horse hair and wool. The thickness of the cords and density of the stitching varies among the saddles even from a single barrow. The densest stitching is found in Tuekta Barrows 1 and 2. The seats usually were quilted lengthwise with four seams in bunches which matched the bends of the “wings,” and the distance between the seams is less than from the edge of the saddle or the saddle chute. Some saddles have five rows of quilting, in which case the distance between them is more uniform. The seams on the supports were arc-shaped, parallel to the edge of the support. Their number, usually ranging from 3 to 5, depended on the height of the support. The quilting on the supports was always denser (the distance between seams and the length of the stitches were less than on the seat). When the pattern was being cut, crosswise paired slits about 0.5 cm long were made along the line of the quilting on the leather sheaths at small intervals. The distance between the slits on the seats of the panels was 0.5–1 cm, and between each pair of cuts 1–3 cm; on the supports the distances were 0.5–1 cm and 0.5–1.5 cm [Figs. 1–5]. In Tuekta Barrow 1, the slits were made simultaneously on the upper and lower integuments and align when the two are placed together [Fig. 2:1]. In the quilting of the panels, the cords or thongs were fastened in various ways on the inside or exterior of the panel, and then a short stitch along the surface of the panel was made through the paired slits, the cord drawn out through the opposite (!) side of the panel, where it formed a short stitch before being brought back through to the first side. The quilting of the supports was done in an analogous way. The lower halves of the lens-shaped pieces and front and back semicircular protrusions of the lower panel which corresponded to them were not quilted. The quilting prevented the fill from being compressed and allowed all parts of the saddle to retain their shape well.

Requisite parts of Pazyryk saddles were felt sweat-

cloths, usually in the same shape and dimensions as the saddle panels but without the cut at the withers. These sweat-cloths were needed to absorb the horse's sweat and soften the pressure of the saddle on the animal's body. Sweat-cloths of the Pazyryk saddles usually were made of thin (2–3 mm), quality, undyed felt, generally white; occasionally they are two- or three-layered. They were attached to the saddle panels with thin thongs, unlike modern saddle cloths which are separate pieces of horse harness. In Pazyryk Barrow 5, the sweat-cloths are slightly larger in size – that is, they extend several centimeters beyond the edge of the saddle and have somewhat pointed ends.⁹

The decorative saddle-covers had the same shape as the sweat-cloths (without the cut at the withers) and confirmed precisely in their contours to the upper integument of the saddle panel. They were made most commonly of felt, but also in some cases of leather and fur. They could be made from a single felt integument, from several large pieces, or sewn out of smaller ones. They were piped with narrow strips of leather or felt around the edge. The decoration of the covers depended on the fashion at the specific time when they were made. They could be uniform in color or decorated in the technique of appliqué or layered designs made from small cutouts. Appliqués could be attached either by sewing or by gluing. Glued appliqué were definitely not functional and apparently were made specifically for burial (part of the covers from Pazyryk Barrows 1, 2, 3, and 5). Sometimes the covers had a figured edge—scallops that dangled from the sides of the saddle or several pendants. The material used to make the appliqué and shape the pendants included felt, leather, fur, fabric, gold and tin foil, horse hair and small wooden plaques. The covers could be placed over the saddle straps, in which case the latter, like the quilting of the panels, would not be visible. In such an arrangement, the covers were attached by thin thongs in several places along the outside of the supports and along the side seams and secured as well by the arches of the supports (or by the strips of leather or felt that substituted for them). In the late Pazyryk barrows felt covers with a leather fringe along the lower edge

were common. In addition to their decorative function the leather fringes served to attach the cover firmly to the saddle. When such covers were used, the saddle straps usually were placed over them. Apparently the covers were not always used on a day-to-day basis – on many depictions of saddles of the Scythian type one can see both quilting and saddle straps (for example, on the plaques with resting horsemen from the Siberian collection of Peter I, etc.).

Fig. 6. Fringes: 1) cover with fringe from Pazyryk Barrow No. 2 (inv. № 1684/139); 2) fragment of fringe, saddle from Pazyryk Barrow № 5 (inv. № 1687/120); 3) fragment of fringe, saddle from Pazyryk Barrow № 3 (inv. № 1685/414); 4) replica of saddle from Pazyryk Barrow № 3, cover with fringe.



The Pazyryk saddles had two main means of attaching the fringe [Fig. 6:1-3; Color Pl. I]. In Pazyryk Barrows 1 and 2 narrow straps of the fringe were attached first to the cord that had been pulled through the small slits in the upper integument of the panels. Then fringe straps were threaded through the panels near their edge. Hanging ends of the narrow straps formed the fringe. This method permitted the relatively easy removal of the cover from the saddle. The other method, observed in Barrows 3 and 5 did not involve the use of the cord, and narrow straps were threaded through the panels. Also, a few more stitches were made over the covers on the inside of the supports, picking up the upper integument and the stuffing.

The decorative lens-shaped medallions which covered the exterior of the supports were made of felt, red cloth or thin leather. In their shape and size they coincided precisely with the lens-shaped pieces of the saddle panel sheathes (textile medallions usually had a slight margin for folding). The decorative medallions were attached with stitching through the edge directly to the seams along the perimeter of these pieces. The felt medallions could be decorated with felt appliqués sewn on them. On top of the decorative medallions at the points of attachment to the rear supports of the crupper-strap and to the front supports of the shield-shaped pendant plaques were placed escutcheons (with holes), usually round, rarely square or quadripetaled, of thick leather, bone or wood which covered the opening for the fastener. Atop the fabric medallions in similar fashion could be placed facings in the form of half horse-shoes made of wood, bone or leather with cut-outs, or lens-shaped ones of the same materials. On the lens-shaped facings which covered the exterior of the supports almost entirely, round escutcheons with holes were imitated in relief. Thus, when there were sweat-cloths and all the decorative pieces (covers, medallions), the sheathes of the saddle panels were enclosed on all sides.

Another obligatory feature of Pazyryk saddles was the transverse straps of thick leather 2–4 cm wide located on the inner side of the supports. They served to strengthen the construction of the saddle and the fastening to it of additional elements – saddle-strings, crupper-straps, straps for tying of the front supports (with a shield-shaped pendant). These leather pieces, threaded through slits in the strap and body of the saddle panel, simultaneously attached the transverse straps to the saddle. Decorative elements could be attached to the ends of the transverse straps – leather, wooden or bone pendant-plaques, bunches of cords or straps with pendants. The straps themselves in burial sets sometimes were decorated with appliqués of thin leather and gold foil [Figs. 1, 4, 5].

The saddle was secured to the horse by what might be termed a “double” girth band. The girths (which went under the horse’s belly) and girth straps (which went over the saddle) were made of thick, well tanned leather. A wide strap, placed across the saddle panels in the area of its “wings” served as the girth strap and was attached to the panels with thin straps in two places near the edge [Figs. 1, 4, 5]. The width of these straps was 3.5–7 cm, the width of the girths 5–7 cm. The ends of the girth straps, visible from under the covers, and also the ends of the girths might be encased in thin leather. The pointing of the ends of the girths and girth straps, necessary so they could be threaded into the the openings of the buckles and loops, was achieved by slicing the strap at an angle only from one side. The same technique was employed to form a pointed end on all the other straps. That is, it was not the practice to use two cuts to form a symmetrical point.

Every Pazyryk saddle had only one girth and one buckle, attached on the left side. The buckle of a two-part fastening was located close to the left end on the girth, and the loop on the end of the left girth strap. The buckle of a one-part fastener was located on the left end of the girth strap (Stepanova 2006, Fig. 12). So far the question about a fastener on the right is not entirely clear. On early Scythian saddles in the standard selection of bronze accoutrements was a left two-part fastener, which included a loop and buckle, and a right fastener of a stud or button type. Such fasteners were not to be found on even the early Pazyryk saddles. Unfortunately, the seat straps for the most part have been separated from the saddles, torn off and lost. In the later barrows, a ritual of damaging the harness was practiced: the girths as a rule are missing, and the end of the girth-straps often have been cut off. Apparently there were several different ways to attach the girth to the saddle on the right. Two saddles from Pazyryk Barrow 1 have knotted fasteners: into the openings on the right girth-straps have been threaded straps with cylindrical button-knots on the ends. Also practiced was a variant where the end of the girth was threaded into a leather loop on the right end of the girth-strap and tied (this variant is to be found too on a saddle from Subashi).¹⁰ Finally, one cannot exclude a variant using a one-piece girth.

The breast-bands and crupper-straps (those which went under the tail) could be made of flat or conical (tubular) strips [Fig. 4]. Flat breast straps are found in Bashadar Barrow 2, Tuekta Barrows 1 and 2 and Pazyryk Barrows 1–5; tubular ones in Pazyryk Barrow 5. Typical for Scythian saddles are breast bands with wither-straps. The ends of the transverse breast band were fastened to the girth-straps in the same way as

contemporary breast straps of similar construction. On the early Scythian saddles, judging from their accessories, tubular straps were more common, wither-straps might be fastened to conical bronze tubes, and breast straps drawn through openings on the girth-straps and attached by means of special fastener-plaques (Shul'ga 2008, Figs. 58, 59). On Pazyryk saddles the ends of the breast band were threaded through openings on the girth-strap and tied or fastened by straps which attached the plaques closest to the girth-strap (for example, on the saddle from Pazyryk Barrow 5; Rudenko 1953, Fig. 104; 1970, Fig. 69). Possibly the latter variant was used only in burial sets. All of the well-preserved breast bands which are not attached to saddles have pointed tips intended for threading into openings on the girth-strap and tying there. The wither-straps, as on the early Scythian saddles, were tied or fastened using round or hoof-shaped fastenings. The decoration of Pazyryk breast straps always coincided with the decoration of the bridles which formed part of the set with the saddle. However, the plaques on the breast straps could be somewhat larger than those on the bridle.

There are no crupper-straps in Bashadar Barrow 2. Fragments of them are preserved in Tuekta Barrows 1 and 2 and also the openings on the rear supports and escutcheons with holes which covered them [Figs. 1:1; 2:2]. The presence of openings on the fragments of the crupper-straps from Tuekta No. 1 suggests that the length of the cruppers could be adjusted. In Pazyryk Barrows 1 and 2 the crupper-straps were not adjustable and made of flat straps covered with thin leather, fastened to the rear supports. In the later Barrows 3, 4 and 5, the cruppers were adjustable in length; fastened to the rear supports are trapezoidal-

shaped pieces through whose slits the ends of the crupper-straps themselves were threaded and tied [Figs. 4:3, 4; 3:9; 7:5].

The size of the saddles varies. As today, in early times the parameters of a saddle were determined by the dimensions of horse and rider and also by the preferences of the latter. The length of Pazyryk saddles varies from 50–65 cm. However, it is interesting that the absolute largest size of the support elements and their distribution is to be found in the early barrows and the smallest in the later ones. For example, the height of the front supports as determined by measurement of the lens-shaped pieces in Bashadar Barrow 2 and Tuekta Barrow 1 is 10–20 cm; in Pazyryk № № 1 and 2, 10–15 cm; and in Pazyryk № № 3–5, 10–13 cm.

Comparisons of the saddles from early and later barrows of the Pazyryk culture demonstrate that they differ primarily in their decoration and accessories, which changed, yet at the same time retained some continuity. The construction of the saddle panels themselves (the patterns, features of the filling and quilting, sequence of manufacture), the selection and fastening of the saddle straps, the shape of the sweat-cloths and covers all remained unchanged over the entire period of Pazyryk culture. Thus all of the saddles we possess are identical in construction, and their characteristics fail to support the conclusion of Sergei I. Rudenko that there were two types of Pazyryk saddles (Rudenko 1953, pp. 161-65, 344; 1970, pp. 129-34).¹¹

One can delineate from the distinctive features of the accessories and decoration of the sets of horse harness three chronological groups: early (tending toward early Scythian times), late (with analogies to Hunno-Sarmatian times) and intermediate (Stepanova 2006).



Fig. 7. Decorative elements of saddle set from Pazyryk Barrow № 3: 1) shield-shaped pendant plaques from the transverse straps inv. № 1685/231-234 (1685/233 is on a fragment of the strap); 2) trapezoidal-shaped piece of an adjustable crupper-strap with a shield-shaped wooden plaque and plaque from the matching piece (inv. № 1685/235-236); 3) pendant plaque for the front support (inv. № 1685/237); 4) plates of gold foil on a leather appliqué (decoration of saddle support) and on leather round escutcheon with hole (inv. № 1685/417); 5-6) wooden rosettes and leather ring, covered with Chinese lacquer – decorations of the breast-strap (inv. № 1685/64, 65); 7) semicircular plates on the girth-strap (inv. № 1685/204, 220).

Distinctive features of the saddles from Pazyryk Barrow № 3

In choosing a saddle to reconstruct, we were guided by two principles: authenticity and simplicity in manufacture. The best preserved were the saddles from Pazyryk Barrows 5 and 3 which belong to the late chronological group and consequently are very close in size, even minor details of construction, and in decoration.

In Barrow 5, the ends of all the girth straps had been cut off and no buckles remained, but there was one girth. In Barrow 3, the ends of the girth straps also had been cut off, but one buckle remained [Fig. 3:1]. Two analogous buckles were in Barrows 2 and 4. Taken together, the materials from Barrows 2, 3, 4 and 5 served as the basis for the graphic reconstruction of the fastening of the buckles of one-piece fasteners on Pazyryk saddles (Stepanova 2006, Figs. 11; 12:4).¹²

The typical late Pazyryk decoration of saddles included shield shaped pendants on the transverse straps, crupper-straps and front supports, plates on the supports and girth straps, and also plaques in the places where the straps of the breast band came together. In Barrow 3, some of the sets had very simple decoration. Moreover, in Barrow 5, all the saddles were quilted using cords of horse hair while in Barrow 3, only two were of horse-hair, the others using wool cords of varying thickness and degree of twisting.

Hence, after some uncertainty, the decision was made to base the reconstruction on saddles from Pazyryk Barrow 3. Saddles from other barrows, principally from Pazyryk Barrow 5, were drawn on for details of some parts.

Nine of the ten saddles placed in the horse pit of Barrow 3 are typical Pazyryk ones [Fig. 3]; the other possibly a “Chinese” import (Stepanova 2012, Fig. 1:2; pp. 449-51). The length of the panels of that one is about 57 cm, the maximum width 16.5 cm without the saddle chute; the height of the supports is about 6 cm. It is stuffed with reindeer hair, quilted using thin woolen cords (the stitching is in a checkerboard pattern, the panels having four lengthwise seams and the supports two). In its proportions and structural features it is similar to the saddles on the terracotta Qin horses and on the saddle from Subashi: the flat panels with only slightly articulated wings, the even and widely-spaced quilting, the low supports with oval plates covered in Chinese lacquer,¹³ the presence of additional openings for pendants on the rear supports, in addition to the openings for fastening the crupper-strap. The rear pendants are typical for northern Chinese saddles; they were not used in the Pazyryk ones. The “Chinese” saddle from Barrow 3 was redesigned in accord with Pazyryk norms: the

extra pendants were removed and the openings from them, covered by leather round escutcheons with holes with gold foil, were smoothed over (masked) with additional rings glued on the exterior of the supports.

The remaining nine saddles are characterized by a high degree of uniformity in all their parts. The original length of the saddle panels is 55–60 cm; the maximum width of the filled part (“wings”) is 19–23 cm, and at the narrow part, the width is 16–19 cm. The front supports on eight of the saddles are 10–11 cm high and 20–21 cm wide; the rear ones 8–9 cm high and 17–18 cm wide. The reindeer-wool filling in them is well preserved but highly compressed. The saddles are ripped apart and deformed. Only one saddle, which has almost completely lost its leather but which preserves nearly the original volume and resilience of the filling, has a somewhat more pronounced height of the supports (13 and 10 cm respectively), thickness of the supports and the panels themselves, at the same time that the horizontal measurements (the length of the panels and supports) are similar to those of the other saddles [Fig. 3:5–7]. For comparison, in Pazyryk Barrow 5, the length of the saddles is 50–60 cm, the height of the front supports 10–13 cm and the rear ones 8–11 cm.

The seats are quilted in the lengthwise direction; all saddles have four seams in bunches and replicate the external contours of the panel with its wing-shaped projections, i.e., have a marked bend in the area of the wing. The supports have been stitched crosswise as arches. Since the supports are of medium height, they each have three rows of quilting. The saddle chute (the unstuffed part of the saddle between the panels) has not been preserved on any of the saddles in Barrow 3, but its width is easy to reconstruct from the measurements of the central part of the saddle spacers which all of the saddles have. The spacers are original features of Pazyryk saddles and are documented only in the late barrows, in Pazyryk Barrows 3 and 5 and at Shibe. The spacers, two to a saddle, are small boards about 0.5 cm thick, with projecting tongues on the narrow ends. They are located under the front and back transverse straps; some have a pair of openings for fastening them to the straps. The tongues extended into the stuffing of the panels along the sides of the saddle chute.¹⁴ The front spacer was usually somewhat longer than the back one. The spacers indicate that the seat on eight of the saddles in Barrow 3 had a width of 9–7 cm and two 7–5 cm.

Some of the saddles retained the transverse straps and fragments of the girth straps and girths of thick leather. The width of the transverse straps was ca. 3.5 cm, that of the girth straps (girths) 5–7 cm. Three of the saddles retained parts of the cruppers – the

trapezoidal parts and fragments of the straps [Figs. 3:9; 7:5].

Part of a breast band made with a flat strap 1.5 cm wide was preserved, its transverse and wither straps sewn with sinew threads. Such breast bands were well represented in the Tuekta and Pazyryk barrows, which meant that it was not difficult to reconstruct the breast band from Pazyryk Barrow 3. The decoration on the breast band was the same as on the bridles: large plaques were attached with narrow thongs at the point of intersection of the straps, small plaques were distributed between them, or, alternatively, there was no decoration at all. The decorations of the breast bands on nine the saddles were made of wood, and on the last one – of bone. Under the wooden plaques which had been covered with gold foil on two of the saddles were round and three-petaled leather plates covered in Chinese lacquer (Novikova et al. 2013, pp. 115-16, Figs 1, 3, 4).

Three of the saddles had sets of bone accessories including shield-shaped plaque pendants, flat round escutcheons with holes, and plates on the supports and girth straps. Two of the saddles, without ornamented details, also had bone arches of the supports, the third set with carved decoration did not have arches. All the parts of the carved bone set were covered with Chinese lacquer in the hollows of the ornament. Under the plates on the supports were placed lens-shaped medallions of red fabric. The rest of saddle sets had wooden shield-shaped plaque pendants (including the “Chinese” saddle) and round escutcheons with holes of the thick leather. The “Chinese” saddle had decorative medallions of patent leather (Novikova et al. 2013, pp. 117, 120, 122, Fig. 1:9), one other saddle had saddle medallions of thin leather, painted in red, with leather appliques covered with gold foil. On the rest of the saddles over the medallions of red fabric or felt were attached the plates in the form of half-hooves (with paired elk heads) and leather with appliques. All saddles without arches on the edges of the supports were decorated with leather bands sewn on them and covered with gold foil, and the saddle with wooden plates

was also decorated with wooden protomes of tigers, alternating in their decoration between red paint or a covering in gold and tin foil.

The covers of eight saddles were single-layered, of thin, finely processed felt, seven of them originally red, one yellow, and all with leather fringe of narrow straps. Two of the saddle covers of coarser felt, originally of a dark red (?) color, were sewn with sinew thread in a fine running stitch (in parallel lines and in lines forming squares). These covers had no fringe. The cover with quilted squares was the thickest (three-layered) and belonged to the “Chinese” saddle (with the thinnest panels), and the cover with the parallel lines was for the saddle with carved bone decoration.

One should note that part of the elements of decoration of the saddles in Barrow 3 was made specifically for burial: two identical sets of wooden plates for the girth straps lacked openings for attaching the breast straps and three had identical sets of shield-shaped pendants.

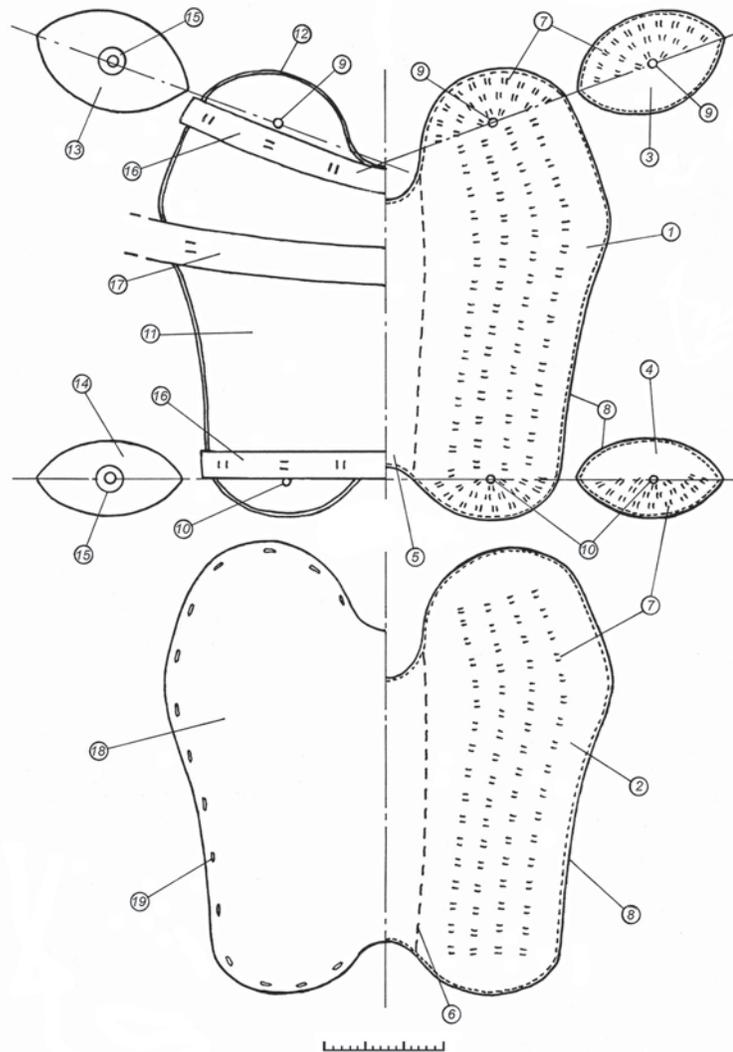


Fig. 8. Pattern of the sheaths of saddle panels, cover and sweat-cloth: 1) upper integument of the panel; 2) lower integument of the panel; 3) front lens-shaped inset; 4) rear lens-shaped inset; 5) saddle chute; 6) seam enclosing the saddle chute; 7) slits for the quilting; 8) seams connecting pieces of the panel sheath; 9) opening for thong with pendant attached to the support; 10) opening for the crupper-strap; 11) cover; 12) piping of the cover; 13) front decorative medallion; 14) rear decorative medallion; 15) round escutcheons with holes; 16) transverse saddle straps; 17) girth-strap; 18) sweat-cloth; 19) attachment of the sweat-cloth with thongs.

In determining the composition of saddle sets, we relied on Sergei I. Rudenko's evidence. However, in studying the saddles, we managed to obtain additional information, in particular so as to clarify the design of the leather and felt appliqués.

The reconstruction of the saddle set from Pazyryk Barrow № 3

We selected the set with the plainest decoration for our reconstruction. We prepared patterns and drawings of all parts of the selected set and carefully analyzed its techniques of manufacture. The saddle panels were made by the harness-maker Sergei Ryzhkov. The bone buckle, and wooden and leather elements of decoration were made by the restorers of the State Hermitage's Department of Scientific Restoration and Conservation, Andrei V. Kashcheev, Elena A. Chekhova and Marina V. Michri following the drawings by the author.

The sheathes for the panels of the Pazyryk saddles had been cut out of rather thick (1.5–2 mm) but flexible leather. After examining the surviving sheathes prior to the making of the replica, Sergei Ryzhkov concluded that probably the panel sheathes had been made of cattle hide. Since we did not set as one of our tasks

the replication of Pazyryk leather-working technology but rather only the recreation of the external appearance and functional qualities of the saddle, for the panel sheathes we used a prepared cattle leather of appropriate quality. Instead of twisted sinew threads, we used kapron fiber ones of equivalent thickness, but all seams on the sheathes and the felt pieces were made following precisely Pazyryk methods.

In creating the pattern [Fig. 8] we used the median measurements from 9 saddles (taking into account the volume parameters of the least compressed of the saddles). The length of the replica saddle in its final form is 57–58 cm., the height of the front supports about 13 cm, their length 20 cm, and for the rear supports about 10 and 18 cm respectively. The width of the central (unquilted) part of the saddle (saddle chute) is 7–9 cm. The width of the stuffed parts of the panels at the wing is about 23 cm and in the narrow part 18 cm. (in its finished form). The maximum transverse width of the saddle is ca. 55 cm. The thickness of the seat is 5–6 cm, the thickness along the edge of the supports ca. 2 cm and at the base of the supports 4–5 cm.

Fig. 9. (left). Reconstructed saddle from Pazyryk Barrow № 3 (view from side and above, without the cover).

Fig. 10. (below). Reconstructed saddle from Pazyryk Barrow № 3 (view from rear and front, without the cover).



The measurements of the pattern were corrected using what was learned from the making of the first (unsuccessful) model. By experiment it became clear that to cut slits in already filled panels was difficult; and to attempt to sew without first making the slits and by simply pricking the leather sheathes resulted in tears in the sheathes and an imperfect external appearance. The quilting of the panel for our second, successful attempt was done through slits already in place [Figs. 9, 10; Color Pl. I].

As Sergei Ryzhkov had determined, even today reindeer wool is considered the best material for stuffing saddle panels and is used in making expensive saddles. However, since we were unable to obtain plucked reindeer wool in sufficient quantities, we substituted sheep's wool, which is used for stuffing today.¹⁵

The wool cords for quilting were twisted by hand from undyed sheep wool. Some 17 cords were used on the saddle.

The decorative medallions were cut from thin red felt and attached with finely stitched seams through the edge along the perimeter of the lens-shaped pieces of the sheathes. The saddle-cover also was cut from red, somewhat thicker felt and piped along the edge with felt. The front and rear edge of the saddle cover were laid over the side supports, extending slightly over the decorative medallions and then sewn to them.

The fringe was made of thin leather, cut with strips about 1 cm wide. In making the replica we used the technique for attaching the fringe that was documented in Pazyryk Barrows 3 and 5 [Fig. 6:2]. However, since it was very difficult to remove the cover from the saddle when it was fastened in that way, and we wanted to have several variants for the presentation of the saddle, only a few narrow thongs were threaded through the thickness of the panels and the rest inserted only onto the inside of the cover. But even using such a less substantial means of attaching it, the cover was sufficiently firmly secured to the saddle [Fig. 6:4].

Since there was no evidence of the presence of right-side fasteners in Barrow 3, we cut out of thick bull hide a complete saddle girth (surcingle) and fastened it over the cover to the saddle panels in two places using narrow thongs. Somewhat below the edges of the saddle panels, oval openings were cut in it for the attachment of the breast strap. A bone buckle, a precise copy of the buckle from Barrow 3 [Fig. 3:1], was attached on the left, pointed end. The other end of the girth also was pointed by a single, diagonal cut, and on it were made openings for the buckle pin. The transverse straps were cut from the same leather [Figs. 6:4, 9].

Each panel of Pazyryk saddles had two saddle-strings both front and back. Several variants for attaching these have been noted. For the replica we used the variant from Barrow 3 (Inv. No. 1685/216) – the thongs were threaded through a transverse strap, then the lower part of the saddle panel and back through each other [Figs. 9, 10].

Breast straps and crupper-strap were cut out of well tanned raw hide leather.

The trapezoidal-shaped parts of the crupper-strap were decorated on the exterior with red felt—the pieces of felt were attached along the edge and sewn in the longitudinal direction with short stitches which caught the upper layer of leather. On the broad ends of the pieces were cut rounded openings ca. 1 cm in diameter, through which were threaded the main narrow strap of the crupper [Figs. 9, 11]

The sweat-cloth was cut from white, undyed felt and attached in several places along the edge of the panels.

The saddle set which we chose had a number of decorative elements of wood and leather [Fig. 7]. The original rosette plaques, the shield-shaped plaques and semicircular plates on the girth strap were carved from cedar. The projecting parts of the carving were covered with gold foil and in the hollows were painted with red paint (cinnabar was used as the pigment). In addition, on the shield-shaped plaques there were hollows without any gilding and paint. Judging from Pazyryk tradition, one can certainly posit that these parts were covered in tin foil. Gold, tin and red paint were basic materials which the Pazyryks used in decorating wooden plaques, but the tin foil is the least well preserved of these. The large shield-shaped plaques were attached with thin thongs to the transverse straps and trapezoidal-shaped parts of the crupper. The small ones were suspended on narrow straps of thick leather ca. 1 cm wide which were used to quilt the supports and which attached the front transverse strap to the panels.

The rosette plaques at the intersection of the straps of the breast band were covered in gold foil, and under them were suspended small circles of thick leather covered with Chinese lacquer that had a red upper layer. The rosette plaques had a single attachment opening each on the outside. In this opening, which was somewhat wider at the top was wedged the knot of a thin strap, which was threaded through a leather ring, covered with lacquer, [Fig. 7:5-6] sewn to the straps of the breast band, and tied.

For decorating the supports, half-horse-shoe crescents were cut from leather colored red, and on them were glued appliqués of thin leather covered with gold foil. The round escutcheons with holes

of thick leather which covered the openings on the supports for fastening the crupper-strap and shield-shaped plaques, and the leather strips which were attached along the sides of the supports over the covers (sewn at several places) were covered with gold foil. The wooden and leather parts of the decoration were made to the measurements of the originals and in an analogous way were put in place and fastened on the copy of the saddle [Figs. 6:4, 9-10]. Brass was used to imitate the gold and tin foil.

Fig. 11. Scythian saddle on a horse: 1) replica saddle and bridle from Pazyryk Barrow № 3 on a mannequin (display in exhibition “Nomads of Eurasia” in Vyborg); 2) the replica saddle on a horse, the bridle a modern one.



Two spacers were cut as well for the saddle but not fastened to it. We decided first to test the saddle without spacers (the universal variant of the Scythian saddle), and then for comparison insert them.

Testing of the replica saddle

The saddle replica was tested on saddle horses to evaluate its functional qualities. Of course we wanted to assess the virtues and inadequacies of the saddle during exercises with bow, spear, javelin and blades. However, problems arose not with the riders but with finding horses of short stature trained for such activities. The saddles and all the measurements of the saddle straps correspond to the parameters of

the archaeological saddles that were designed for horses of 135–145 cm. in height. The reconstructed harness stretched only with difficulty on a mannequin with a height at the withers of 155 cm. Hence it was necessary to limit the first stage of testing simply to riding at different gaits (walk, trot, gallop) in the riding hall. The saddle was tested twice, on different horses, by the equestrian Evgenii M. Lenchik and equestrian reenactor Sergei V. Rakhmievich. They rode once with the cover and crupper-strap and a second time without the cover and crupper-strap [Figs. 11:2; 12-13].

Doubts had been expressed by archaeologist colleagues and horsemen present during the experiments regarding the rather low position of the crupper-strap, as shown, for example, on the belt plaques from the Siberian collection, on the Ordos plaques showing the cavalry battles or on the plaque with two horsemen from Murzi sum (Hentai aimaq, Mongolia). It turned out that the position was correct, as the crupper-strap did not slip either on a trot or a gallop and thus presented no discomfort for the horse [Figs. 11:2, 12].

We were not permitted to use the crupper-strap with one of the horses, since it was young and only recently broken. Nonetheless, the saddle performed beautifully, even when, spooked by a dog, the horse reared up with its rider.



Fig. 12. Testing of the saddle (with the cover and crupper-strap).

The general opinion was positive: the saddle was comfortable for rider and horse, “adapted” to them; riding without stirrups on it was easier than with a hard saddle and was much more comfortable than with no saddle at all. The horses were calm and displayed no dissatisfaction with the unaccustomed harness. The decorative elements did not interfere with the rider, even the plaques on the girth-strap, and did not suffer any damage during the experiments.

However, the testing confirmed that the plaques on the surcingle-strap without slits were non-functional. To regulate the length of the breast strap with such plaques was practically impossible. That is, as Rudenko had suggested, these plaques were for funeral decoration.

The experiments showed the vital necessity of fastening the sweat cloth to the saddle, on account of its shape, small measurements and thickness. The unfastened sweat cloth could not be properly positioned even on the mannequin. A properly secured sweat cloth following Pazyryk tradition did not shift and substantially speeded up saddling the horse.



Fig. 13. Testing of the saddle (the cover and crupper-strap removed).

The bone girth buckle functioned very well, with one qualification: on account of the significant width of the girth strap but with a comparatively small opening of the buckle, it was necessary to adjust specially the length of the girth for any specific horse – not only the cutting out of the opening for the pin of the buckle but also the sharpening of the end of the girth strap itself. When the harness had been adjusted, only half a minute was required to saddle the horse.

The testing of the saddle will continue, including with the addition of the spreaders.

The replica of the saddle and bridle from Pazyryk Barrow 3 were used as visual materials in the design of the temporary exhibition “The World of the Nomads” in Vyborg (November 2013-April 2014) [Fig. 11:1]. In the future it is planned to exhibit them both permanently and in other temporary exhibitions.

Comparisons and conclusion

It is very interesting to compare replicas of Pazyryk saddles from various barrows. In 2013 was published a reconstruction of a saddle from Berel Cemetery Barrow 11 (Eastern Kazakhstan) (Akhmetzhan and Akhmetzhanova 2013). Berel Barrow 11 is close in

date to Pazyryk Barrows 1 and 2. The horse harness from these sites is quite similar and typical for the second (intermediate) chronological group. The preservation and parameters of the saddles are similar to those in Pazyryk Barrows 1 and 2. The height of the front supports is 13 cm as in our replica. In creating the pattern, the authors of the reconstruction used descriptions and drawings by Sergei I. Rudenko, but in re-creating the exterior appearance of the panels for some reason they referred instead to northern Chinese saddles with flat panels and low supports. The quilting was done superficially; on the front supports there was only one row of stitches, as on the saddle from Subashi (the decorative medallions were not copied; the parameters of the stitching not explained), the rear supports were not even mounted (in the original they were pushed back and flattened into one plane with the seat). Considerable attention was devoted to reproducing the decoration, especially the decorative cover with sewn-on appliqué showing a predation scene. This was the most reliable element of the reconstruction.

The recreation of the remaining elements of the decoration evokes a number of objections. The textile decorative medallions (unlike the felt ones) were not piped with cords. In all probability, the remains of twisted cords in the upper part of the medallions belong to the cover, the edges of which were folded onto the edges of the supports and somewhat onto their front face. Arches were fastened on top. Round escutcheons with holes and leather appliqué, which were covered with gold foil, were never piped with cords. There are no examples in the Hermitage collection, and the materials of the given saddle from Barrow 11 provide no basis for such suppositions. The most significant objection concerns the wish to supplement the saddle with shield-shaped pendant plaques, which are characteristic only for the late chronological group of horse harness of the Pazyryk culture. There are none in Berel Barrow 11, nor should there be. The assertion that they were but that they disappeared without trace, at the same time that wooden parts of the bridles and breast straps were satisfactorily preserved in their entirety, is improbable.

The experimental example of a saddle of Scythian type opens additional possibilities for interpreting a number of visual sources from Scythian and Hunno-Sarmatian times.

For instance, many hypotheses have been put forth about Bosphoran saddles shown on funeral reliefs of the 1st and 2nd centuries, frescoes, and terracottas (Stepanova 2004, pp. 239-45). They have been presented as a special type of hard saddle, Roman "horn" or Parthian saddles. However, saddles of the Scythian type correspond by far best in all their parameters to the Bosphoran saddles on these depictions, which include ones in high relief [Fig. 14]. Their decoration, of course, was different from that on the Pazyryk saddles. But all the structural features are the same: the wings, the semicircular supports (the rear ones perpendicular to the axis the saddle, the front ones with open angles), the sweat-cloths and covers

Fig. 14. Depiction of soft saddles of the Scythian type on Bosphoran reliefs: 1) the stele of Cleon, son of Cleon; 2) the stele of Daphno, son of Psicharion; 3) the stele of Julius Patius, son of Demetrius; 4-6) replica of the Scythian saddle from Pazyryk Barrow № 3. (№№ 1-2 – after: Davydova 1990: Kat. 46, 48; № 3 – after: Desiatchikov 1972, Fig. 4).



similar in shape to the panels. Covers can be posited on all the reliefs, since nowhere are quilting or saddle straps visible. On some reliefs can be seen arches or decorative strips along the edge of the supports. On the paintings in the Stasov sarcophagus, the covers are in color with appliqués. A bunch of saddle-strings in the rear of the saddle is a characteristic feature of Bosphoran saddles; on some reliefs they served for tying on round, flat flasks (as in Pazyryk Barrow 1) or quivers. The front saddle-strings of a standing or walking horse align with the rider's leg and thus do not stand out [Fig. 12:1]; so they are not shown on reliefs with horsemen. The front saddle-strings may be shown on saddles where there is no rider (for example, on the horses on the grave of Fallon, son of Pof [Vainshtein 1991, Fig. 96:4]).

Saddles analogous to the Bosphoran ones probably are shown on some Rhine stelae of the 1st and 2nd centuries. (Moreover, on other reliefs from that region we see what are unquestionably Roman saddles that have a different pattern and consequent external appearance and configuration.) A saddle of Scythian type is shown as well on a late (Eastern) Han bronze horse from the Rietberg museum in Zurich (Inv.-Nr. RCH 13A). Thus, although saddle bows appear at the beginning of the Common Era, Scythian type saddles continued to be used at least until the 2nd century CE.

In sum, I would emphasize that reconstructions are an important part of cognitive activity, the materializing embodiment of our knowledge about objects which at one time were both practical and beautiful but now have for all intents and purposes been lost. There is as well another function of reconstructions—the communicative one, the transmission of acquired knowledge. For no kind of written description is a substitute for the visual impression of an object.

ABOUT THE AUTHOR

Elena Vladimirovna Stepanova, a specialist on ancient horse equipment, is a research fellow and curator of the Pazyryk Collection of The State Hermitage Museum. E-mail: <stepalena@yandex.ru>.

REFERENCES

- Akhmetzhan and Akhmetzhanova 2013
 Kaliolla S. Akhmetzhan and Rayimkul A. Akhmetzhanova. "Opyt rekonstruktsii sedla iz kurgana No. 11 mogil'nika Berel" [An attempt at a reconstruction of the saddle from Barrow No. 11 of the Berel Cemetery]. In: A. Ongar, ed. *Trudy filiala Instituta arkhologii im. A. Kh. Marglana v g. Astana*. Vol. 2. Astana: Izdatel'skaia gruppa FIA im. A. Kh. Margulana v g. Astana, 2013: 186-95.
- Alekseev et al. 2005
 Andrei Iu. Alekseev, Nikolai A. Bokovenko, Sergei S. Vasil'ev et al. *Evraziia v skifskuiu epokhu: radiouglerodnaia i arkheologicheskaiia khronologiia* [Eurasia in the Scythian Epoch: radiocarbon and archaeological chronology]. Sankt-Peterburg: Teza, 2005.
- Connolly and van Driel-Murray 1991
 Peter Connolly and Carol van Driel-Murray. "The Roman Cavalry Saddle." *Britannia* 22 (1991): 33-50.
- Darzha 2003
 Viacheslav Darzha. *Loshad' v traditsionnoi praktike tuvintsevo-kochevnikov* [The horse in traditional practice of the Tuvinian nomads]. Kyzyl: TuvIKOPR SO RAN, 2003.
- Davydova 1990
 Liudmila I. Davydova. *Bosporskie nadgrobnnye rel'efy V v. do n.e.-III v. n.e. Katalog vystavki* [Bosphorian funerary reliefs 5th century BCE-3rd century CE. Exhibition catalog]. Leningrad, 1990.
- Desiatchikov 1972
 Iurii M. Desiatchikov. "Katafraktarii na nadgrobnii Afeniia" [Cataphracts on the funerary stele of Afenie]. *Sovetskaiia arkheologiia*, 1972/4: 68-77.
- van Driel-Murray et al. 2004
 Carol van Driel-Murray, Peter Connolly, and John Duckham. "Roman Saddles: Archaeology and Experiment 20 Years On." In: *In the Saddle. An Exploration of the Saddle through History*. Lauren Gilmour, ed. London: Archetype, 2004: 1-19.
- Keller and Schorta 2001
 Dominik Keller and Regula Schorta, eds. *Fabulous Creatures from the Desert Sands. Central Asian Woolen Textiles from the Second Century BC to the Second Century AD*. Riggisberger Berichte 10. Riggisberg: Abegg-Stiftung, 2001.
- Kulikov et al. in press
 Vadim F. Kulikov, Elena Iu. Mednikova, Sergei S. Miniaev, Elena V. Stepanova, "Opyt issledovaniia shersti i tkanei iz Tret'etgo Pazyrykского kurgana metodom polipolarizatsii" [An experiment in the study of wool and textiles from Pazyryk Barrow No. 3 using the method of polypolarization], in press.
- Liu 2002
 Liu Yonghua 刘永华. *Zhongguo gudai che yu maju* 中国古代车舆马具 [Horse harness and chariots in ancient China]. Shanghai: Shanghai cishu chubanshe, 2002.
- Marsadolov 1988
 Leonid S. Marsadolov. "Dendrokhnologiia bol'shikh kurganov Saiano-Altai 1 tys. do n. e." [Dendrochronology of the large barrows of the Saian-Altai of the 1st millennium BCE]. *Arkheologicheskii sbornik Gosudarstvennogo Ermitazha* 29 (1988): 65-81.
- Marsadolov 2003
 _____. "Esche raz o posledovatel'nosti sooruzheniia payzyrykskikh i bertekskikh kurganov" [Once again concerning the evolutionary lineage of the construction

of the Pazyryk and Bertek barrows]. In: *Stepi Evrazii v drevnosti i srednevekov'e*. Bk. 2. Sankt-Peterburg: Izd-vo. Gos. Ermitazha, 2003: 93-103.

Novikova et al. 2013

Ol'ga G. Novikova, Elena V. Stepanova, and Sergei V. Khavrin. "Izdeliia s kitaiskim lakom iz Pazyrykskoi kollektzii Gosudarstvennogo Ermitazha" [Wares with Chinese lacquer from the Pazyryk Collection of the State Hermitage]. In: *Teoriia i praktika arkheologicheskikh issledovaniï* 1(7) (2013). Barnaul: Izd-vo. Altaiskogo gos. universiteta, 2013: 112-24.

Rudenko 1953

Sergei I. Rudenko. *Kul'tura naseleniia Gornogo Altaia v skifskoe vremia* [The culture of the population of the Mountain Altai in Scythian times]. Moskva-Leningrad: Izd-vo. AN SSSR, 1953. [Rev. ed. in English, Rudenko 1970].

Rudenko 1960

_____. *Kul'tura naseleniia Tsentral'nogo Altaia v skifskoe vremia* [The culture of the population of the Central Altai in Scythian times]. Moskva-Leningrad: Izd-vo. AN SSSR, 1960.

Rudenko 1962

_____. *Sibirskaiia kollektzii Petra I* [The Siberian collection of Peter I]. Svod arkheologicheskikh istochnikov D3-9. Moskva-Leningrad: Izd-vo. AN SSSR, 1962.

Rudenko 1970

_____. *Frozen Tombs of Siberia: the Pazyryk Burials of Iron Age Horsemen*. M. W. Thompson, tr. Berkeley and Los Angeles: Univ. of California Pr., 1970. [tr. with revisions of Rudenko 1953].

Stepanova 2004

Elena V. Stepanova. "Bosphorian saddles." In: V. Iu. Zuev, ed. *Bosporskii fenomen: Problemy khronologii i datirovki pamiatnikov. Materialy mezhdunarodnoi nauchnoi konferentsii*. Pt. 1. Sankt-Peterburg: Izd-vo. Gos. Ermitazha, 2004: 231-46.

Stepanova 2006

_____. "Evoliutsiia konskogo snariazheniia i otnositel'naia khronologiia pamiatnikov Pazyrykskoi kul'tury" [The evolution of horse harness and relative chronology of the monuments of Pazyryk culture]. *Arkheologicheskie vesti* 13 (2006): 102-50.

Stepanova 2012

_____. "Sedla iz Tre't'ego Pazyrykskogo kurgana" [Saddles from the Third Pazyryk Barrow]. In: *Kul'tury stepnoi Evrazii i ikh vzaimodeistvie s drevnimi tsivilizatsiiami*. Bk. 2. Sankt-Peterburg: Institut istorii material'noi kul'tury RAN; "Periferiia", 2012: 446-54.

Stepanova 2014

_____. "Kitaiskie sedla III v. do n.e.-III v. n.e." [Chinese saddles of the 3rd century BCE-3rd century CE]. In: *Trudy IV (XX) Vserossiiskogo arkheologicheskogo s'ezda v Kazani*. Vol. 2. Kazan': Otechestvo, 2014: 235-40.

Shul'ga 2008

Petr I. Shul'ga. *Snariazhenie verkhovoi loshadi i voïnskie poiasa*

na Altae. Ch. 1. Ranneskijskoe vremia [Saddle horse harness and warrior belts in the Altai. Pt. 1. The Early Scythian Period]. Barnaul: Azbuka, 2008.

Shul'ga 2010

_____. *Sin'tsian v VIII-III vv. do n.e. (Pogrebal'nye komplekxy. Khronologiia i periodizatsiia)* [Xinjiang in the 8th-3rd centuries BCE (Burial complexes. Chronology and periodization)]. Barnaul: Izd-vo. Altaiskogi gos. tekhnologicheskogo universiteta, 2010.

Vainshtein 1991

Sev'ian I. Vainshtein. *Mir kochevnikov tsentra Azii* [The world of the nomads of the center of Asia]. Moskva: Nauka, 1991.

NOTES

1. Saddle from Subashi-1, grave M 10 (Shul'ga 2010, Fig. 70:2); saddle from Shanpula-1, horse pit 2 (Keller and Schorta 2001, Fig. 38).

2. Shibe—excavation by M. P. Griaznoi 1927; Pazyryk Barrow 1, excavation by M. P. Griaznoi 1929; Pazyryk Barrows 2-8, excavations by S. I. Rudenko 1947-49; Bashadar Nos. 1, 2, excavations of S. I. Rudenko 1950; Tuekta Nos. 1, 2, excavations by S. I. Rudenko 1954.

3. In Tuekta Barrow 1 were no fewer than 18 saddles on 8 horses, a very rare occurrence, since usually the harness sets are the same in number or fewer than the buried horses. One has the impression that all the old saddles used on a daily basis had been placed in the grave.

4. The leather of the saddle chute is lost on the remaining saddles in Pazyryk Barrow 2.

5. I managed to examine the saddle from Subashi in the Museum of the Xinjiang Institute of Cultural Heritage and Archaeology in Urumqi. Its panels were sewn down the center of the saddle chute, it had a cut at the withers, and a patch was sewn to the right panel. In the area of the front supports the leather was partly missing. In its restoration, the missing parts were added and the corners of the supports sewn together! Thus, in some publications the lens-shaped parts look to be connected, for example in Liu Yonghua (2002, Fig. 154). Furthermore, behind the sewn-up section there remained a "mysterious" hole cut out across the whole width of the saddle chute. However, on the schematic drawing from the materials of the excavations of the cemetery of Subashi, the front cut at the withers and the rear cut on the saddle chute are nonetheless visible (Shul'ga 2010, Fig. 70:2).

6. The sweat-cloths which cover the withers of the horse, for example, are shown as well on the horses of the terracotta army of Qin Shi Huang 秦始皇, while the saddles themselves are positioned just behind the withers.

7. See, for example, the panel sheathes of Roman saddles from Valkenburg, Vechten (Netherlands), Castleford, Carlisle and Vindolanda (England), Newstead (Scotland) (Connolly and van Driel-Murray 1991, Fig. 4:7, pl. VI; van Driel-Murray et al. 2004, Fig. 4: 6) and their depictions on the reliefs of the mausoleum of the Julii at Saint-Rémy, on the arch in Orange, on the relief from Mantua, on the columns of Trajan and Marcus Aurelius or on reliefs with scenes of the

wars of Trajan with the Dacians on the Arch of Constantine in Rome, etc.).

8. This conclusion has been confirmed in a recent study (Kulikov et al., in press).

9. The sweat-cloths of Scythian-type saddles were almost invisible; so most depictions do not show them. Only on the most detailed images can we see them barely peeking out beyond the edge of the saddle panels (for example on the Chertomlyk silver amphora). Some slightly enlarged sweat-cloths are visible on paired belt plaques with resting horsemen and boar hunting from the Siberian collection of Peter I, on the Ordos plaque-fastenings with battling riders. Much larger, almost rectangular objects with slightly pointed ends are shown on the horses of the terracotta army of Qin Shi Huang. Sweat-cloths, which extend prominently beyond the edges of saddles are shown on ceramic statuettes from the Former Han period. But enlarged sweat-cloths must then be protected from bad weather. A leather sweat-cloth cover or cheprack, whose shape and size are very close to those of the sweat-cloths from Pazyryk Barrow 5, is known from Noyon uul Barrow 6. It is the earliest prototype of sweat-cloth covers for cavalry saddles and of leather chepraks of the nomads. It is possible that in later Pazyryk barrows we see the start of a tendency to enlarge the dimensions of the sweat-cloths and transform them into independent objects of horse harness not attached to the saddle.

10. On Tuva saddles the right ends of the girths to this day are tied to strap fasteners (with a knot analogous to the Pazyryk one), attached to the saddle frames in the form of loops and acting as girth straps (Darzha 2003, Fig. 40: 3a,b).

11. The thesis about two kinds of Pazyryk saddles has been very popular in the specialized literature. However, Sergei I. Rudenko stresses that “saddles of the Pazyryk barrows belong to one and the same type of Scythian saddle, which had been developed in detail and apparently was widespread.” When speaking of “types of Pazyryk saddles,” he cited in the first instance difference in decoration and

accessories of the saddles of Pazyryk Barrows 1–2 and 3–6, at the same time as “measurements, shape and technique of workmanship of saddle panels in these latter barrows were the same as in the former two” (Rudenko 1953, pp. 161, 164). The remark about the height of the supports is based on a misunderstanding. Rudenko specifies the height of the supports (“arches”) for the later saddles (height ca. 10, width ca. 20 cm), but does not indicate the size of the early ones! In Barrows 1 and 2, the saddles are less well preserved, the supports have disintegrated; i.e., the conclusion about their low height was made, apparently, purely on the basis of a visual impression. The measurements of the lens-shaped parts of the panel sheathes, of the decorative medallions and arches of the supports in Barrows 1 and 2 shows that some of those saddles had the same height of the supports as in the later saddles, but some were higher.

12. In the Pazyryk cemetery for 50 saddle horses were found only 3 (!) buckles for single-part fasteners, one each in Barrows 2, 3 and 4. The given phenomenon can be explained by the destruction of horse harness as one of the characteristics of the burial ritual in the middle and later stages of Pazyryk culture (Stepanova 2006, Fig. 9, pp. 141–44).

13. In 2012–2013 a multi-disciplinary study of all the lacquer from the Pazyryk Collection was carried out in the Department of Scientific-Technical Expertise of the State Hermitage (Novikova et al 2013).

14. In Pazyryk Barrow 3, one spacer was preserved, attached to the saddle strap; two saddles had one spacer each in the saddle panels; in Pazyryk Barrow 5, the spacers were preserved in two saddles. The remaining spacers are preserved separately; pairs of them differ in individual external features.

15. Peter Connolly also used sheep’s wool for stuffing in reconstructions of Roman saddles, while he admitted the possibility of straw or deer-wool filling (Driel-Murray et al, 2004, p. 10).

– *Translated by Daniel C. Waugh*

Plate I

Stepanova, "Reconstruction," pp. 6, 11, 15.



(above) Reconstructed saddle from Pazyryk Barrow № 3 (view from side, without the cover).



(right) Reconstructed saddle from Pazyryk Barrow № 3 with cover, on a horse.

(below) Saddle cover with fringe from Pazyryk Barrow № 2 (inv. № 1684/139).

