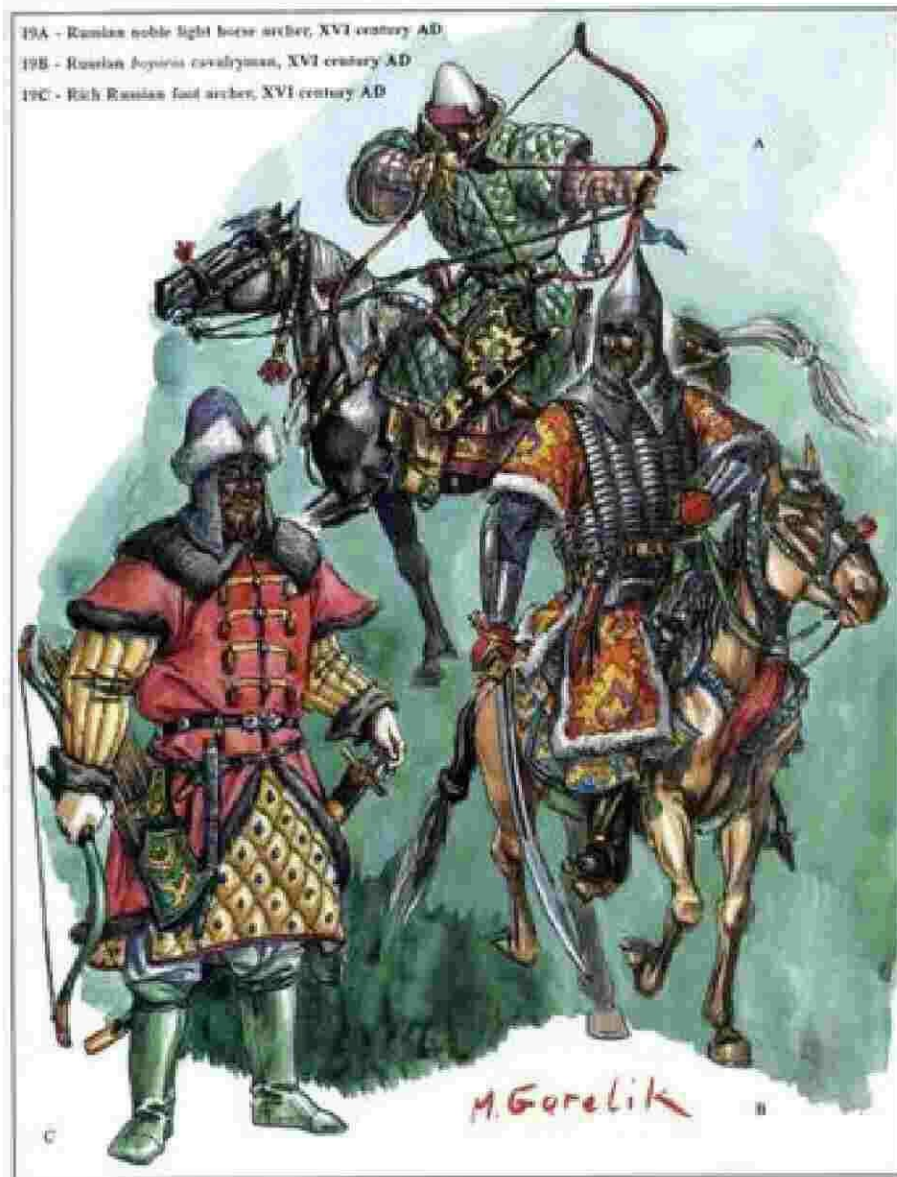


Russian Armor in the Time of Ivan the Terrible

An overview of the types of armor used during the reign of Ivan Grozny from the times 1555 - 1583. It will also cover modern merchants who sell items, and construction techniques. It will cover both heavy and fencing armor.

CREDITS: ASIDE FROM CONSTRUCTION DISCUSSIONS, INFORMATION AND PHOTOS COME LARGELY FROM THE WORK OF JOHN SLOAN AT XENEPHON GROUP LTD., AND ORLICKI'S POLISH LIGHT ARTILLERY GROUP.

Plate 19 – THE MUSCOVITE HORSE OF THE 16th CENTURY



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ABOVE IMAGE FROM MIKHAIL M. GORELIK, ARMIES OF THE EASTERN STEPPES.

Armor Overview:

Dospekhi - the generic term for personal body armor made of plates and/or scales.

In ancient Russia personal armor was called *bronya*. Ancient armor was made from square or rectangular metal plates with openings along the edges. Leather straps were passed through these openings, with which the plates were tightly fastened to one another. From the 11th century other designs of armor appeared — scale armor. The plates of this armor were fastened with a fabric or leather straps on one side and secured in the center. The greater part of scale armor found by archeologists in Novgorod, Smolensk and other places, dates to the 13th and 14th centuries.

Armor, made of scales (plates), in contrast to the "*[kol'chuga](#)*" (that is made of metal rings) was called "*doshchatimi*" in so far as its plates were reminiscent of embossed planks. In the course of the 14th century the term "*bronya*" as in "*broni doshchati*" gradually was changed into the word "*dospekh*". In the 15th century a new term was used to designate plate armor, "*[pantsir](#)*", taken from the Greek language. All details of *pantsiri* were made by craftsmen — blacksmiths. Archeologists, working in ancient Russian towns, have found parts of *dospekhi* and blacksmith tools such as ancient anvils, hammers, pounding instruments of the smithy, and pliers that the blacksmith held to turn the object on the anvil. The tools were used to create *dospekhi*.

The *pantsir* introduced at the start of the 14th century in Russia combined several types of armor. The armor might be made of scales on the lower front part and plates or rings, on the chest and back. The warrior's chest was half protected by large tongue-shaped plates that were worn over the *dospekh*. Later, in the 16th century, these received the name "*zertsala*" (mirror), since their smooth metal plates were specially polished to a high shine, and sometimes covered with gold, silver and engravings. Fine *dospekh* were extremely expensive, beyond the means of private warriors. They might be worn on the battle field only by princes, *voevode*, and first rank boyars. In the 16th cent despite the rapid development of firearms, protective armor remained. Russian warriors still wore *bakhterets*, *kolontar*, *zertsalo*, and even *kol'chuga*.

Some Russian armor of the 16th century has its own interesting history. There is a *kol'chuga* (in the Moscow kremlin armory) with a small copper plate, on which is stamped the following inscription: "Belongs to prince Peter Ivanovich Shuyski." Boyar and *voievode* Peter Ivanovich Shuyski was killed in 1564 during the Livonian War. That very *kol'chuga* is believed to have been granted to Yermak (the conqueror of Siberia) by Tsar Ivan the Terrible. Perhaps it was because of that *kol'chuga* that Yermak drowned in the river Irtysh in the summer of 1584, when his detachment was defeated by the troops of the Tatar Kutchum-Khan. In 1646 that *kol'chuga*, which outlived both of its two owners, was discovered in one of the Siberian towns and returned to the tsar's arsenal.

In the 16th century a considerable part of Russian armor was still manufactured in Moscow, where, in accordance with government laws, many armorers were moved. Herbertstein wrote that a number of houses of blacksmiths and other artisans "who worked with fire" stretched along the outskirts of Moscow. Blacksmiths' works and the manufacture of arms were concentrated at that time in the area of Kuznetsky Most (bridge), contemporary Bronniy Street, and Staraya Kuznetskaya Sloboda in the region of Kotelniki, where, during recent excavations, builders found a tombstone which belonged to a certain "Grigory Dmitrievich" — "son of an armorer". Because of that discovery, it became known that in approximately the second half of the 16th century, hauberk (*kol'chuga*) production was separate from armor production as a whole. Some armorers began to specialize in the manufacture of mail exclusively. The Russian army finally refrained from using that type of armor only at the close of the 17th century, not long before the time of Peter I.

Construction Notes:

I have to be honest, Russian style helmets are only occasionally available online, but my best success has been on eBay. I fight in a style called a yerithonka, with no brasswork, engraving or cutouts but I found it online for just over \$125 by typing in "polish helmet". If I ever feel the need to fancy up my gear I'll purchase a file, tin snips at the hardware/hobby store and circuit board eraser at Radio Shack. Permanent markers act as a good resist for a light coat of eraser for a short time (1 hour), according to a friend of mine.

Zertsalo: As for body armor, I have made the Zertsalo style out of 16 guage aluminum and highly recommend that gauge and style for heavy combat. Using a Beverly shear and a grinder I cut out all the pieces in one night, including the paper piece I made first to get the dimensions right! I spent another evening or two with a handheld whitner punch putting holes around h eedges of the pieces. I chose the Turkish style of the second picture in that section. I connected the plates with chainmail and padded the inside of each plate with a double thickness of camping mattress pad. I bought at Walmarts and attached it to the plates with double sided tape for each of replacement and so I could wear it over a light caftan at Pennsic. I plan to add a row of 6' x 6' plates to the bottom for lower abdomen and hip protection this winter.

Bakhterets: I have also made and worn this style of armor at Pennsic. You will need either padding or a heavy cloth as this armor, as I constructed it, is flexible as chainmail but as many of the blow distribution aspects of plate armor, though not all. I scrounged metal brick palate wrappers at a residential construction site for my scales as they are made of spring steel and were free of charge. This is a time consuming armor to make but very close fitting and extremely comfortable to wear because of these various properties!

I twisted 12 coils of 16 gauge stainless steel wire using a drill fitted with a metal rod in the desired diameter. After you remove the coils, use a dremel tool with a cutting attachment to saw the length of the coils.

I spent two weekends and each night of the week between, 2 hours each day, using a Beverly shear and a ruler taped at 3" as a cutting jig to cut my plates, 800 of them. That took two hours. The next night I ground off the sharp edges of each plate where I had cut them, another two hours on a grinder. The next 8 days were spent with a table mounted whitney punch putting three evenly spaced holes down each short side of each plate. The plates overlap each other so that each chainmail link is going through three plates, like playing cards spread across a card table when shuffling. This is the source of the strength and flexibility of the bakhterets armor, as well as its expense in period and time expense today! Each constructed strip of plates is then connected by a link of chainmail.

I made 4 of the strips the length of my torso, from shoulder to hips, and connected them at the top with plated facing down to avoid catching rattan sword edges. I made the three strips placed between them, front and back, measured from hem to bottom of my neck where my collarbones attach. I measured two for under each armpit, front and back, so I had two rows overlapping over my ribs, and connected both sides with ties. On reflection, I will be altering my design so that the top 5 inches of the two shoulder strips is removed and turned perpendicular to run from neck to just past the shoulder joint, as shown in the armored Turkish horseman picture below in the HORSE ARMOR section. I will also sew a strip of leather or heavy canvas over the opened edges of the strips at neck, arms and hem for stability.

The bakhterets construction method can also be utilized in the Yushman armor type's construction (see that section, last page of photos)

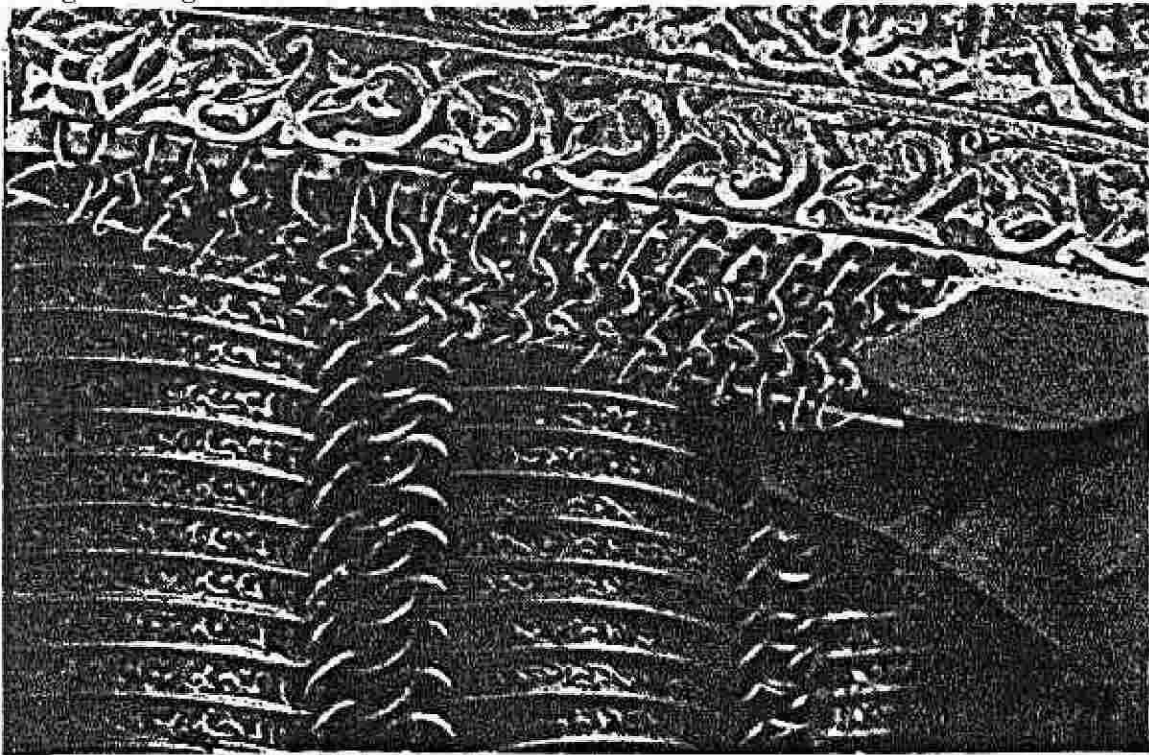
***Tyegilyai:* My next armor project will be this type of armor, basically a quilted gambeson with the option of plates of metal, plastic or horn in between the layers of padding as was also done in period. According to a curator at the Armory Museum*, the artifacts have layers of thin padding with layers of thin metal, which he described as "medieval Kevlar" for stopping piercing weapons like arrows, spikes and maces. Only the poorest had only padding. He said parts and pieces of other artifacts had survived the Russian revolution and the aftermath of communist rule. Most of artifacts had 2-5 layers of horn plates, copper plates, tin plates and/or iron plates. All the plates were very thin, 1-2 mm (20-22 gauge) and were on average "5-7 cm squares from point to point", 2-3 layers between padding with 2-3x the padding thickness on outer and inner layers of the coat. He said the inner 2-3 layers were almost always felt squares. 2 artifacts fragments had layers of plates sandwiched in silk as additional protection. The back, the chest and the collar had the thickest padding and plates, the rest had thinner plates. Silk-hemp and linen-hemp thread was used as quilting thread.**

***a brief email conversation with E. I. Lamonov, State Armory Museum, St Petersburg, Russia, 1998.**

Body Armor

Bakhterets

One type of *Bakhterets* is shown on the right. This was a type of *pantsir* or *kol'chuga* — mixed scale or *plate* (lame) armor— 16th century. Another style of bakhterets is shown "bakhterets" or "bekhterets" (from the Mongol word "bekter" which denotes a type of armor). "Bakhterets" were assembled of narrow oblong horizontal and slightly curved iron plates, (lame) arranged in vertical rows. It could contain 1500 narrow lames in 12 to 21 rows. [Here](#) is a detail from a photo of a bakhterets in a Russian museum. Note the decoration on the iron plates. The long sides of the lame overlapped. The short lateral sides of these plates were fastened together with rings. This provided exceptional flexibility with tripple strength armor protection. It could be worn over a *kol'chuga*. The assembled sections of this kind of armor were clasped or fastened at the wearer's left side and shoulders by metal-tipped straps. A shirt and sometimes sleeves and a collar were attached to the "bakhterets." In this case the combination looks like a *kol'chuga* with chest section replaced by plates instead of rings. The average weight of such armor was 10-12 kg, and its length was about 66 cm. Examples in the state armory are elaborately embossed in filagre of silver and gold designs.

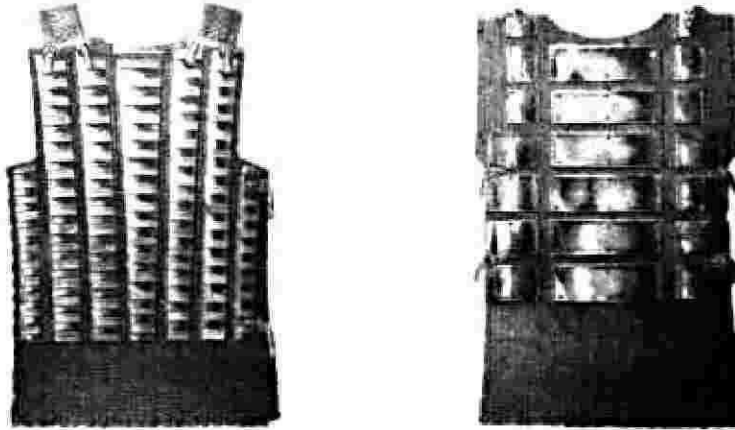




Kalantar' - plate armor

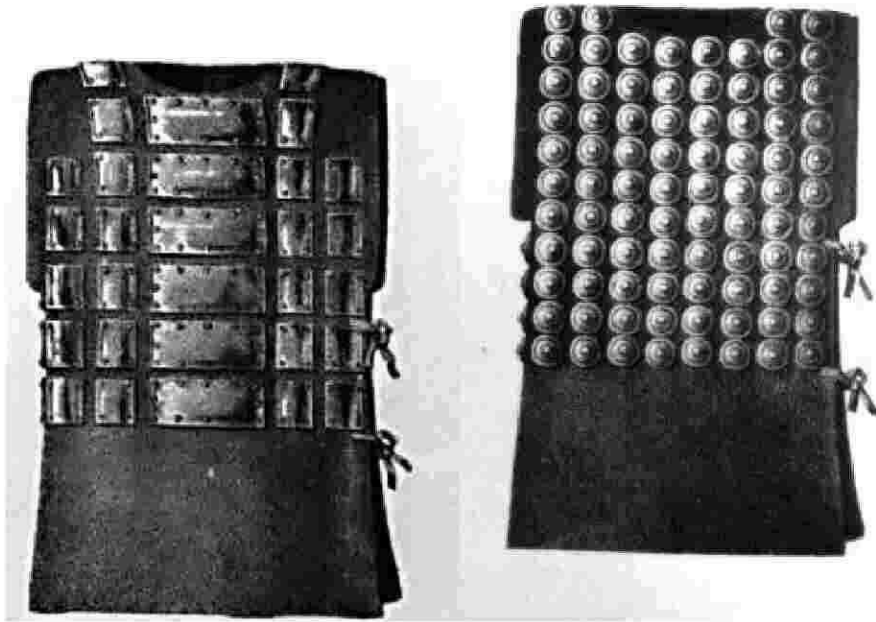
The *kalantar'* was used at Kulikovo in the 1380's. The armor was made in two halves, front and rear, like a vest without sleeves, which were clasped together on the warrior's shoulders and sides. Each half, from the neck to the waist, consisted of a number of metallic plates arranged horizontally and fastened together by a ringed mesh (*kolchuga*). These plates were larger than the ones used in making the *bakhterets*. The so called "skirt", which was mail ending at the knees, was attached at the waist. The *kolontar's* rear plates were thinner and smaller than the front ones. When the *kalantar'* was used as part of ceremonial armor, and was decorated with

gold inlay, deep decorative patterns and engravings, its price rose to almost 1000 roubles - an astronomical amount for the 17th century. A Russian armor of the *kalantar*' type was highly regarded by the royalty of the time including neighbors of the Muscovite state.



Kuyak

Armor made of metal plates (usually round, but possibly rectangular) not connected to each other by rings as a *kalantar*, but fixed, each separately, to the leather or cloth base, was called a "*kuyak*". The '*kuyak*' was therefor different from the much earlier type of armor in which the individual metal plates were attached to each other by thongs or rivets. *Kuyaki* were manufactured with or without sleeves. They could have flaps, like a caftan. The *kuyak* was frequently worn over the *kol'chuga*. *Kuyaki* could be strengthened on the breast and back by large armor plates "shields". This type of armor existed in Russia from the 13th to the 17th century and had close analogs in the West called a brigantine, but the brigantine had the metal plates inside (under) the leather coat. The term *kuyak* itself, from Turkic term, appeared only in the 16th century. It was frequently lined along the edges at armpit, neck and waist with fur lining to preserve body heat. The Chinese had a similar type of armor.



Tyegilyai — quilted coat — 16th Century.

In the inventory of Ivan the Terrible's property, a [*teghily*](#) with gold and Venetian velvet, and several elaborate buttons and buttonholes is mentioned. The *teghily* was a kind of *kaftan* with short sleeves and a high collar. It resembled the western gambeson. Due to its protective characteristics this garment was used by poor warriors instead of armor. The *teghily* was made of wadding or hemp and quilted through. In this case *teghily* were made of thick cotton fabric with metallic rings or plates sewn on the breast. Sometimes parts of animals were used, by being boiled and painted into a mesh of animal tissue. This was cooled and dried hard.

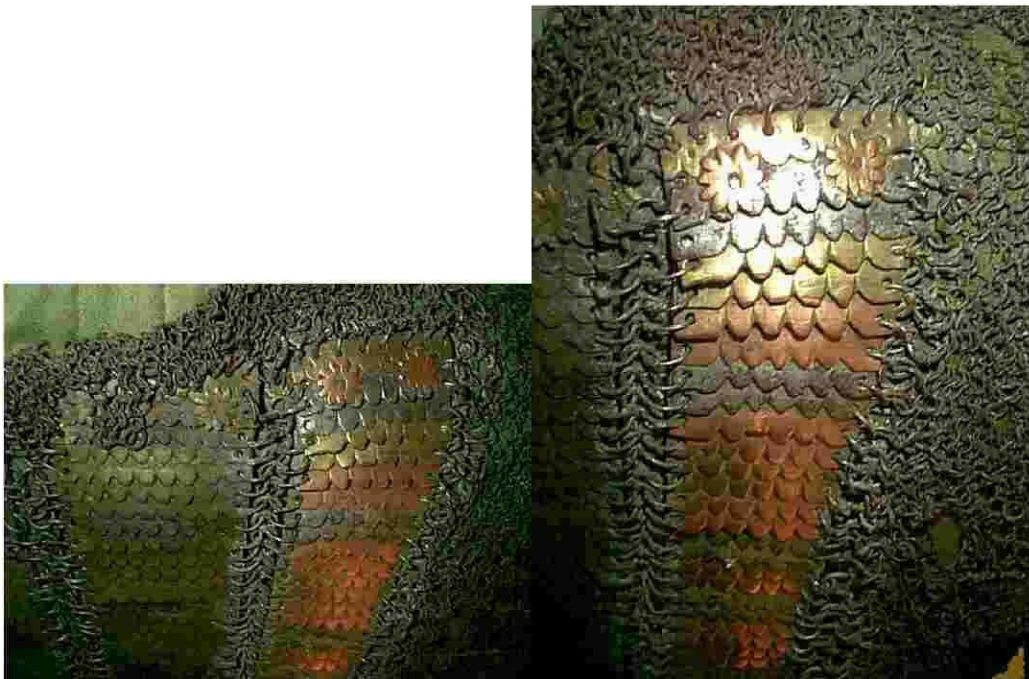


Yushman — 16th Century.

Still another type of armor combining rings and scales or plates was called a *yushman*. The first literary mention is from 1548, but it was surely developed earlier. Here is a gorgeous *yushman* in the collection of the Artillery Museum in St. Petersburg. Note also the *berdish*, *chekan*, *bulava* and *rogatina* in the display case. The *yushman* or *Yumshan*, (from the Persian word "*dyawshan*", was a mail shirt with a number of horizontal plates, interlaced with its front and back parts. It differed from the *kolantar* in having smaller plates. The *yushman* weighed 12-15 kgs. It was assembled of around 100 plates, fixed one upon the other with small gaps. The *yushman* could be worn over the *kol'chuga*. It had a longitudinal section from the neck to the skirt, was put on by the sleeves, like a *kaftan*, and clasped by means of a *kjurka* (a buckle) and loops. The *yushman's* scales (plates) sometimes were covered with gold or silver. Such armor was very expensive. The arms of warriors who wore a *yushman*, or other types of such armor, were protected from the shoulder to the wrist by *narutchi* (vambrace).



FIG. 10.—PANZERHEMD DES MAMLÜKENSULTANS KAITBAY, ÄGYPTEN XV JAHRH.
ISTANBUL, TOPKAPU SARAYI MÜZESİ



Zertsalo - plate armor — 17th Century.

To strengthen the mail coat (*[kol'chuga](#)* or *pantsir*), Russian warriors of the 16th - 17th centuries wore additional, partial armor (*dospekh*), put on over the main armor. It consisted usually of four plates, front, back, and sides. The plates, which

very seldom weighed more than two kg, were fastened together and put on the shoulders and sides by means of straps with clasps (such straps were called *naplechniki* or *naramniki*. The *Zertstalo*, was ground and polished to a mirror like shine (from which comes the name of the armor), often gilded, engraved, and chased, had practically only decorative significance by the 17th century. The style originated in Nepal or Persia, where it was called char-aina ("four mirrors") and was widely used also from India to Turkey. The Russian style was developed from that used in Turkey.

A splendid impression is given by the sight of the precious armament, which could have only belonged to Tsars and *voivodes*. Ceremonial armor was decorated with silver, gold, jewels, and was distinguished by filigree engravings. By the end of the century the *Zertsalo* had completely lost its significance, together with other types of protective armor. In the exhibit of the Kremlin armory, there are well preserved, complete *zertsalo* with helmet, *naruchi* (arm guards) and *ponozhi* (greaves).



Helmets:

Kolpak

A [helmet](#) consisting of a lower part, *beneto*, made of a cylindrical ring 2 or 3 inches wide and a smooth conical upper part, the *nabershye*. It looks like a funnel sitting on a tin can.

Misyurka

The *Misyurka* was an iron skull cap, with an attached [barmitsa](#) and ear flaps. The term, *shapka misurski*, is also encountered. The term originates from the Arabian word "*misr*" or *misraim*, which means Egypt. Perhaps it could be said that this was the most unpretentious helmet —protecting only the crown of the warrior's head. In this it is different from the *kolpak* or *shishak*. In Russia, *misyurka* is mentioned from the 14th century. There were two styles, one called a [napleshnik](#) covered the sides and neck. And the other, a [prilbits](#), was a veil over the face. These may be seen in museums in Moscow today. In Western Europe a somewhat similar head covering of mail, but without the iron skull cap, was called a *coif*.



Prilbits

A style of the *barmitsa* worn with a *misyurka*. Or, if this mail was attached directly to the helmet instead of to a skull cap, then it was a type of *barmitsa*. This one covered the front of the face like a Moslem woman's veil. It had narrow slits for the eyes. The lower part was called a *bentsa* and the upper part the *cherepa*.



Shapka

One variety of protective headgear was called the *shapka bumazhnaya*,, "paper cap". It was manufactured of cotton and silk fabrics covering a interior wadding of cloth or paper and sometimes was strengthened by a mail net fastened inside. It was frequently strengthened with the attachment of an iron nose guard and ear and neck guards. It was used on a large scale in the 16th century, especially by poorer warriors.



Another helmet was the *shapka medlenaya*, a copper cap, which is frequently shown with elaborate decorations. The man on the left is wearing a *kolantar* and the man on the right has on a *kuyak*.

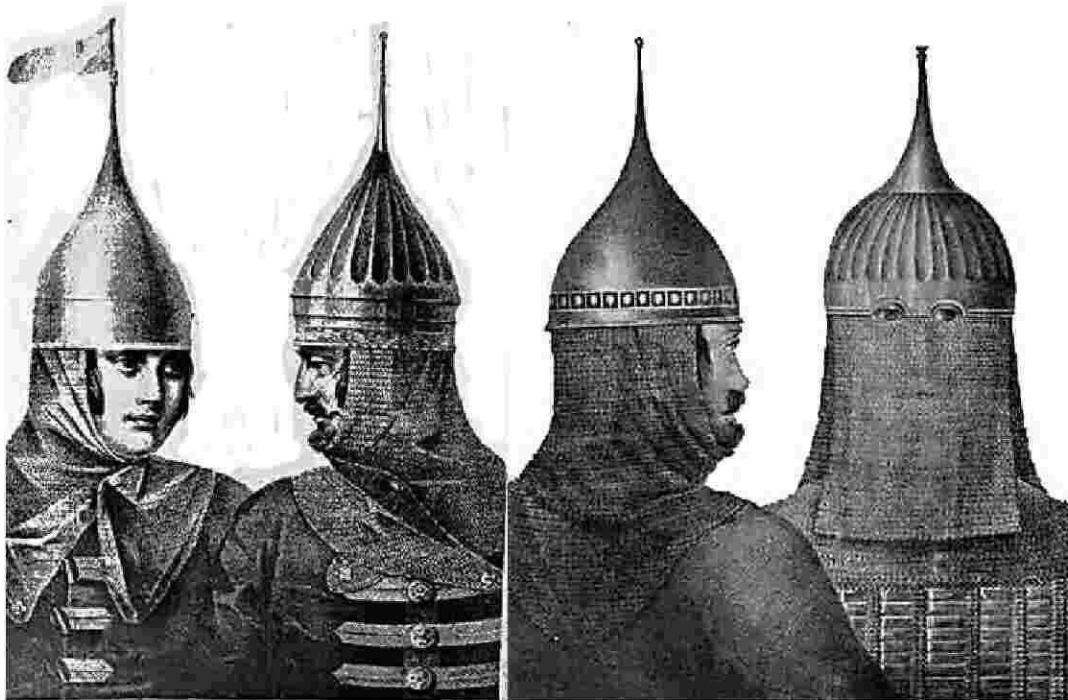


And the third was the *shapka zhel'eznaya*, a very simple, cheap, iron [cap](#). They are wearing the padded cloth *tel'yagi*. One of them looks almost like a helmet from World War One. All these were relatively simple and generally worn by lower ranks or foot soldiers. All military headgear had a leather skullcap inside to protect the wearer from chafing.



Shishak

In the 14th century we see for the first time, in original written sources, records of headgear called *shishak* (a conical helmet with a knob on top). This the helmet has also a *prilibitz* and the warrior is wearing a *bakhterets*. According to the opinions of archeologists, this kind of protective head gear spread all over Russia during the 12th- 14th centuries. It was introduced from Turkey, but may have had already a Hellenistic origin. The western term is *zischagge*. It differed from the *shelom* and the *kolpak* by having a very long pointed top (shish), which ended in a sharp point. In some the transitional section between the cylindrical lower ring and the narrow spike was hemispherical and ribbed or fluted. In others this section was more conical in form. A *barmitsa* (veil of mail) was frequently attached to the lower edge



Yerikhonka

The *Yerikhonka* or shapka *yerikhonka* appeared in the 14- 17th centuries. It was a tall, (but not as tall as a *shishak*) Mongolian-appearing helmet with a cylindrical *venetz* (lower edge of the crown) and very high conical *naversheniye* (upper edge of the crown), with *repye* (metallic decoration often of copper). The ear flaps, peak, and rear section were attached to the *venetz* of the *yerikhonka*. The "nose" with *shyurupt* passed through the peak on a kind of slide with set screw to lock it in place. Usually only rich and noble warriors wore such helmets, and decorated them with

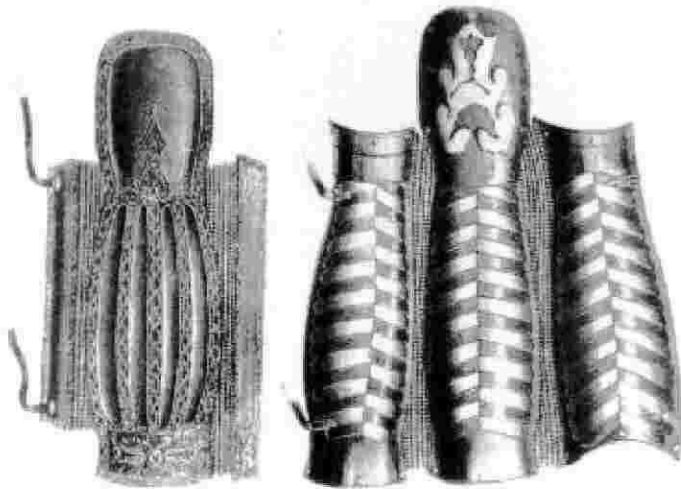
gold, silver, and jewels. All the protective head gear mentioned was worn over a cap or a thick cloth lining to protect the head.



Legs and Arms:

Buturlik

This was a kind of [ponozhi](#), protection for the calf or shins. There were three kinds of such shin and calf protection armor. This was also called a *burulik*. The word is of Turkic origin and the armor was used by Mongols and Tatars. One type was made of three long pieces connected with metal rings so that the assembly protected the whole leg from ankle to knee. The second was composed of one, wide plate in front and two narrow plates to each side. The third was made of only one piece and protected the outside, exposed side of the calf. It was held in place by leather straps around the leg. In Western Europe such armor was known from ancient times under the term, greaves.



Naruch - western vambrace

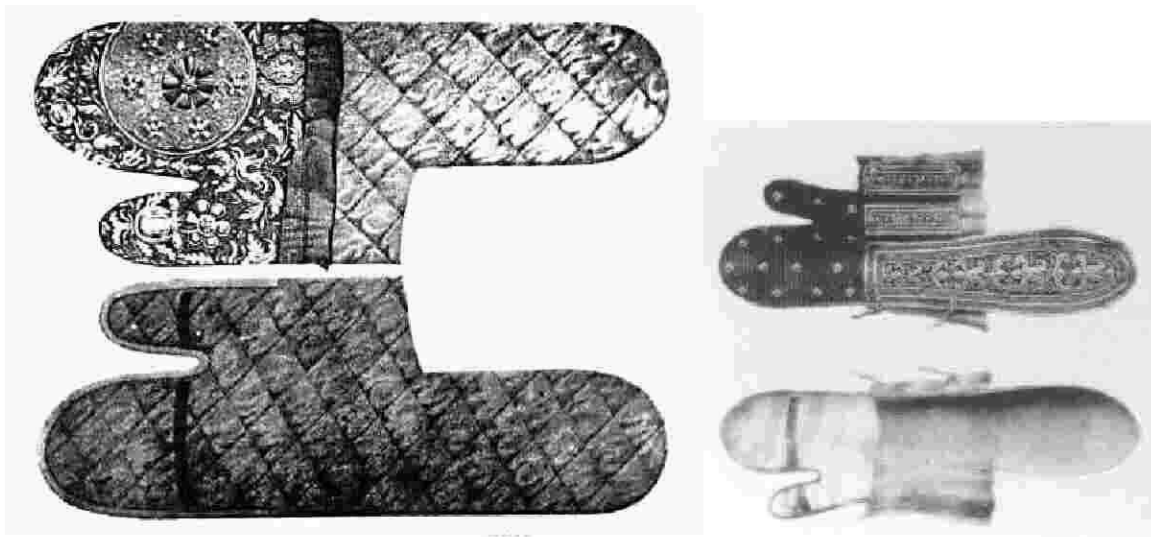
It resembled the Persian *bazuband* more than the western *vambrace*. In Poland it was called a *karwasz*. This was worn to protect the forearm, especially by warriors whose *kol'chuga* did not have sleeves. *Naruchi* consisted of a convex main plate to cover the outer side of the arm, with the elbow end frequently rounded. This was fastened to *chrevtsi* (rectangular plates) bound at the wrist and fixed to the arm by means of small straps. The main plate in some *naruchi* extended well past the elbow ending in a semi-circular fashion. Often the *naruch* was attached directly to the

rukavitsa, mail or scale gauntlet. Wealthy warriors might have highly decorated *naruchi*.



Rukavitsa

Were gauntlets or mittens to protect the hand. They were made of leather or quilted padding, with a metal fishnet or series of flexible plates on the upperside. As can be seen here, the upper side could be elaborately decorated.



Horse Armor:

Chaldar horse armor, was similar in purpose to barding used in western Europe. The front part that protected the horse's forehead and face was called a *chamfron* or *shaffron* in the west. (See *Konskii ubor*) horse furniture.

Saddles, bridles and "*chadari*" (horse cloths composed of metallic plates, sewn on to fabric, which covered the croup, sides, and chest of a horse and served as protection) were luxuriously decorated with gold, enamels, and jewels. Both parade and combat saddles were of original designs. They rested on the horse's back only by the saddle's supports; the pommel was tall, usually inclined forward. The rear arch was lower, sloping so as not to hinder the rider when turning around. Horse cloths corresponded to armor in terms of quality relative to the wealth of the horsemen. Wealthy nobles would enrich the horses' shabraks and *artchaki* (saddle base) with decorations of pearls and jewels. The harnesses were covered with luxurious fittings, the saddles were made of golden brocade, bridles were adorned with gold and silk fringe.

Russian stirrups were mostly of two kinds: one with a narrow hoop and round base, the other kind a narrow curved band which was thinner toward the top. The design of Russian tack ideally met the demands of wars with the nomads — the principle enemies of the Muscovite state.



Note the similarity between the Muscovite armor for horse and rider (above) and that of the Turkish suites below, another major power in the East.

