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Painted images of Tepsej I rock art site and some questions on their chronology

Abstract

The paper is dedicated to the painted images of Tepsej mountain, which is one of the spacious petroglyphic complexes of Minusinsk basin. Some painted images of very rare type are found on the riverside cliffs at Tepsej I site. The images are hard to see because of their preservation status which is far from being good. Due to the overlapping of the painted images with ancient pecked ones we are able to suggest relative dating of some of the figures. Similar overlapping situations is as unique in the Minusinsk basin, as in South Siberia. Stylistics analysis along with analysis of pigment maps also gives some basis for a relative chronology of the paintings. We consider the findings presented to be an evidence of a wide use of painting techniques in antiquity and to widen the source base of the pre-written history of the South Siberia people.

Key words: rock art; Minusinsk basin; Tepsej, painted rock art images; the pigment maps method, the earliest petroglyphic stratum of Minusa basin; chronology of rock art.

Introduction

All known techniques are presented in the rock art of the Minusinsk basin, but till the recent decade, interest of the scientist was mainly focused on the pecked images. In South Siberia pecking is the dominating technique: we know many thousands of pecked images and just a few sites with paintings or their remnants. It is obvious, that pecked images are more visible and easier to document, whereas the study of thin engravings, polished and painted images requires a more thorough approach, wide investigation experience and high technical skills. In the last decade the interest in those "thin" strata of rock art has become more detailed: thanks to the technical evolution we have new means for research, and those materials of different periods and territories of South Siberia demonstrate that there were no preferences for image creating techniques, at least as far as we used to think about it previously, and that the predominance of pecking contemporary to us is caused by the vulnerability of the "thin" decorative strata to some destroying factors. A good example of that approach can be found in the archaeological complex of Tepsej mountain in Minusinsk basin, where we can find co-existence of different styles, techniques and subjects on some panels.

Tepsej mountain is situated on the east bank of the Enisej river where the Tuba river flows into the Enisej (see map). The slopes of Tepsej rise up from the water to about 300 m height and extend for a distance of over 10 km. In the cliffs opening to the water of the Krasnoyarskoe reservoir and in the inner ravines there are hundreds of panels with thousands of images of different historical periods, from at least 3500 BC to approximately 1000 AD. The study of this huge site has started at the end of the XIX century and continues up to today. Tepsej became a testing area for the development and perfection of the methods of documenting rock art in Siberia: famous researches, such as A. V. Adrianov, J. A. Sher and many others worked here in their time. Tepsej is also famous for having a good archaeological context, as there is an immense burial ground on the terraces under the mount. Some of the graves were excavated by

Map of Tepsej area

Map of Tepsej area

M. P. Griaznov and others and gave rich findings, most famous of which are the Tashtyk death masks, which are exhibited in the Hermitage museum.

First mentions about painted images in Minusinsk basin relate to the XVII century [Kyzlasov, Leont`ev, 1980 p. 8]. The ochre paintings are attributed to different chronological and cultural strata, most representative of which is the Okunevo decorative layer from the Bronze age [Leont`ev, 1969; Leont`ev, 1976; Piatkin, Martynov, 1985, ill. . 6; 7; 8; 47, 56, 64, 68, 89 and others]. Up to now there is only one known site attributed to the Tes' period (app. 200 BC – 200 AD): Kavkazskaya pisanitsa [Leont`ev, Bokovenko, 1985; Miklashevitch, Solodeynikov, 2013]. Also, there are some painted images documented from ethnographical times [Kyzlasov, Leont`ev, 1980, p. 185]. Known pre-Okunevo paintings are few in number and are documented in Shalabolino [Piatkin, Martynov, 1985, p. 25; ill. 90], Sukhanikha [Miclashevich, 2015, p. 70], Oglakhty [Sher et al., 1994, ill. 41.3; 10, color. ill. 7], Tepsej [Sovetova et. al., 2012, color ill. 1] and Turan [Miclashevich, 2018, p. 23]: we know no more than 10 pre-Okunevo images in the region. The Pre-Okunevo stratum, which is meant to be totally pecked in the territory, usually is attributed to the Minusinsk and Angara decorative traditions: both of them cannot be ascribed to any of the archeological cultures [Podolskii, 1973; Sovetova, Miclashevich, 1999, p. 53-55]. Also there is a heterogeneous group of images which show characteristics of both traditions [Miclashevich, 2015, p. 67]. In this paper we name all of the pre-Okunevo remains as "the most ancient rock art images of the Minusinsk basin" [Miclashevich, 2015].

So far, most of the documented rock art repertoire of Tepsej is in pecking, but there are also lots of engravings, which have only attracted the attention of researchers in the last five years. The painted images are fewer in number. Some of them were reported in the XIX century, some of them, from the Okunevo culture period (3500 BC), were published by J. A. Sher in 1995 [Blednova et. al., 1995]. This paper is dedicated to the lowest stratum of painted images, discovered in

the late 1990-s and studied in 2016-2018 by the authors working as a part of the Tepsej group of Kemerovo State University archeological department under guidance of prof. O. S. Sovetova. This paintings were reported only a few years ago [Sovetova et. al, 2017] and can with certainty be ascribed to the pre-Okunevo cultures.

The relationship between painted and pecked images in South Siberia

In context of the relationship between painted and pecked images all the ochre paintings can be separated into three groups. To the first group we ascribe the separated pictures, painted just with ochre [Piatkin, Martynov, 1985, ill. 90; Miclashevich, 2015, color ill. 7.2; Sovetova et. al., 2012, color ill. 1]. Samples of this kind are found in South Siberia outside the Minusinsk basin, e. g. on Tomskaya Pisanitsa [Rusakova, 2015, p. 82-84]. The second group consist of images made with a "mixed technique": those are pecked images touched up with ochre [Sher et al., 1994, pl. 41.3;, Miclashevich, 2015, color ill. 7.3}. In Shalabolino we have samples of this group in combination with polishing [Piatkin, Martynov, 1985, p. 25]. In this case it is obvious that the pecked image is older than the painting, but we cannot tell how much older: they could be made in a short period of time as a stylistic trait, or we can suppose them to be relicts of a " renewal of" the pecked images with ochre some considerable amount of time later. The pecked images made on top of the painted ones could be ascribed to the third group [Miclashevich, 2015, p. 70, color ill.. 7.1; 17, p. 46; Miclashevich, 2018, p. 23].

The only known "independent" ochre images overlapped with the pre-Okunevo pecked ones in South Siberia are found on some panels of Tepsj I site (fig. 1.1). A tracing of some of the pecked images from one of these panels was made in 1960-s and first published in 1995 in «Repertoire des Pétroglyphes d'Asie Centrale» [Blednova et. al., 1995, pl. 3], with the notification that there are some relicts of

Figure 1.1: Tepsej I. General view of the large panel.

red ochre paintings [Ibid., p. 15]. At that time the researchers (under guidance of J. A. Sher) had no means to document the relicts. In 2012, after Tepsej investigation made by the archeological group of the Kemerovo State University under supervision of O. S. Sovetova, a photograph of this panel was published [Sovetova et. al., 2012, color ill. 1]. However, a few years later a more detailed analysis became possible with the help of up-to-date methods to study the painted images, particularly the Pigment Maps method [Solodeynikov, 2005; Solodeynikov, 2010; Sovetova et. al., 2017, p. 9].

Pigment map method

The pigment map method was firstly applied by one of the authors in 2002 in the Kapova cave to visualize some non-visible ochre paintings [Solodeynikov, 2005]. The use of the method made it possible to increase the repertoire of Kapova from about 50 to about 200 images [Solodeynikov, 2011]. It is an easy to use and cheap method of laboratory investigation, which is based on the separation of the visual information into brightness and color parts, which can easily be achieved by using Lab or HSB/HSL color modes in Photoshop. Choosing one of the color channels, which contains the "target" colors of interest (in our case of red ochre paintings this is a channel of the Lab color space), and applying some tone correction (increasing contrast of the needed areas) we are able to visualize some very thin color differences.

The pigment maps method is quite similar to the DStretch method and uses the same principles, but it gives some possibilities for analysis, which is hard to achieve when using DStretch. It is due to the open philosophy of the method of pigments maps, that we are able to realize differences in colors and, comparing signals in the different color channels, distinguish different types of ochre. Differences in correlation between signals in color channels (a and b, for example, in Lab mode) lead us to the following interpretation. We think that as long as ochre owes its color to iron components, which, being hydro-oxides, are yellowish in color and being dehydrated, are reddish in colors, we have the opportunity to talk about different strata of the painting when the traces in different channels appear to have different distributions of pigment. Different periods of making of such paintings is just one of the possible explanations, as the different conditions on neighboring areas of the panel, possibly (or obviously), can give the same results. But in some cases, where no other explanation can be found, some ideas of a relative chronology of producing the paintings can be suggested. Along with stylistic analysis, or any other possible reason, this can be a base for historical analysis.

Findings in Tepsej 1 location

The main panel with painted images in Tepsej I is 160×60 cm. The painted images are only in a few spots overlapped with the pecked ones : the painted images are located in the center of the panel, which, together with the overlapping, can indicate that they were created first. The pecked images are concentrated around the painted ones "with respect", which allows us to suppose that the ochre was good visible at the time the ancient-style peckings were made. In the very center of the panel there is an ochre painted image of a deer (ill. 1.2). The corpus of the animal and the upwards turned head are lined. The length of the picture is a little over 50 cm. The ochre has quite a good integrity, excluding few areas of natural desquamation and the pecked figure on the back part of the ochre figure. In the lower part of the panel there is a figure of an ox (?), comparable to the previous deer figure in dimensions and style: the corpus of the animal is also lined. The integrity of the image is poorer than of the previous one. The image is more faded than the deer image, in some areas it is overlapped with the pecking. Besides the two painted figures there are some lines and ochre remnants which need to be studied more accurately, but the remnants of the

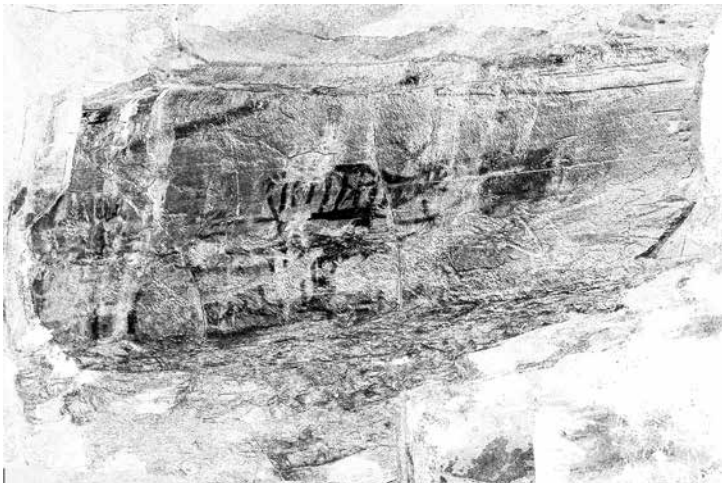


Figure 1.2: Tepsej I. Pigment map of the large panel.

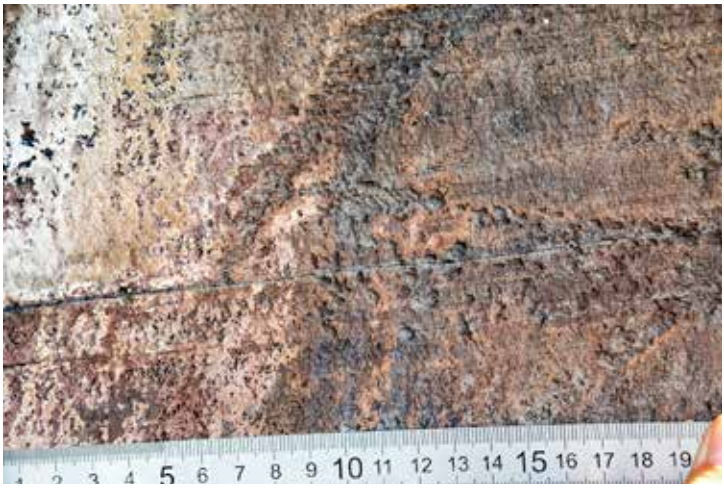
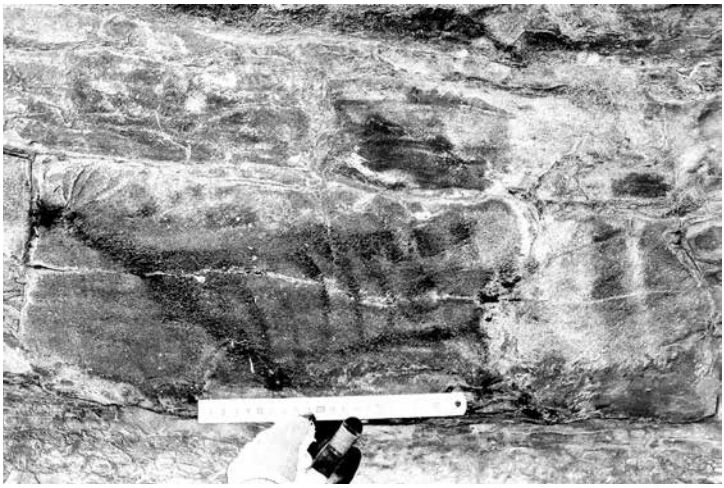


Figure 1.3: Tepsej I, large panel, fragment. Area where the pecked image is overlapping the painted one.

painting proof that there once were more paintings on this panel, then we have at present. Nevertheless the ochre painted images we have, are the oldest samples of rock art in South Siberia we know off due to stratigraphy of the panel and overlapping of the paintings with pecked figures, which are attributed to the Minusinsk style [ill. 1.3] – the most ancient known rock art stratum in the region. We do not have any evidence which archeological culture images can be ascribed to the "Minusinsk style" and "Angara style", but relatively those images are preceded by the Okunevo stratum, which is of the Bronze age and dates back to approx. 3500 BC. Stylistically the two painted figures on Tepsej I panel can be attributed to the same type of rock art as the overlapping pecked images: which can also be determined based on their dimensions, disposition on the panel and stylistic characteristics [Sovetova, Miclashevich, 1999, p. 53-55]. Very similar ochre figure were discovered in 2017 on the rocks of the part of Oglakhty complex which is right oppo-

Figure 2.1: Oglakhty I. The painted image found in 2017.

Figure 2.2.: Oglakhty I. The painted image found in 2017. Pigment map.



site to Tepsej mount across the Enisej river [ill. 2.1, 2.2].

The images being discussed proof that we have a challenge to determine different art traditions in the oldest rock art stratum [Podolskii, 1973; Sher, 1980; Rusakova, 2005; Esin, 2010, pp. 187-190; Miclashevich, 2015].

In 2015-2017 during an all-round inspection of rocks in Tepsej I location and with the use of the Pigment Maps method we found some more previously unknown painted images. All of them are situated nearby the large panel described above. There are two more panels with entire paintings and one more panel with a pecked and colored figure of an animal. Remnants of the ochre are found on three more panels. On one of the three we can tell about pecking upon the painting. The murals are made with a red paint of different tints, which, provided the images are in the similar weathering conditions, can be the result of differences in the technology of ochre making and can be interpreted as a possible marker of different periods of making the pictures. We have not analyzed the paint, but believe

Figure 3.1: Tepsej I. The panel with images of bull (?) and bowman (?).

Figure 3.2: Tepsej I. The panel with images of bull (?) and bowman (?). Pigment map.

it to be ochre – a mineral-based paint containing iron oxides and hydroxides. The panels with ochre have some features which differs them from many others. Firstly, they have quite a thin calcite crust above the areas with paintings. On the one hand the crust prevents the visibility and documentation of the images, and on the other hand keeps the paint from being washed away with water that comes from the inside of the rock and on to the surface. Also, presence of the calcite crust gives us an opportunity to date it with the uranium-thorium method. Finally, the paintings are found only on panels which are protected from above with some kind of rock peaks, which avoids the surface to be washed by the surface water runs. All of that gives reason to suggest that there were a lot more paintings at this site in ancient times, but that they were lost over time and due to weathering.

One of the panels where the painting was found [Sovetova et. al., 2017, ill. 8] is located on a small boulder with dimensions 35×32 cm (ill. 3.1 – 3.3). There is a bull depicted with its head turned to the right. The most part of the corpus of the

animal is probably lost due to the loss of a large fragment of the rock. To the right of the bull there is an anthropomorphic figure (?) painted with its knees bend and holding a bow (?) in his hands directed to the bull. The bow is one of the "straight" ones, not of the "Scythian" kind in its shape, comparable in size to the "bowmen" figure, with the string strained and an arrow put in. The string is tensed being held for the upper third, which defies some doubts in the figures interpretation. Nevertheless if the interpretation is thought to be correct, we have a reason to attribute the image to the pre-Scythian period considering the shape of the bow and the relative size of the bow to the human body: it's known that the "straight" bows as large as a human body were ousted from South Siberia along with the appearance of the Skythian cultures [Letvinskii, 1966, p. 51; Gorelik, 1993, p. 68; Shokarev, 2001, p. 11]. The corpus of the human (?) and the bow (?) are made with visually similar width of the lines: if the mural was made with a finger, then the difference in width of the lines is something to be ignored. Attribution of the bull figure is not that easy as most of the corpus depiction is lost, but the way of depicting supposes an early time of creation. It is possible that some areas of the bull image are pecked (ill. 3.3), but the character of the traces does not allow us to be certain of that. It is also important to mention that the horn of the animal is made with a thinner line in comparison to the bowstring line, which can be an argument to different periods of the creation of the images. Technical details with respect of instruments used to create the image is a matter of discussion.

Another reason to suggest that the images on the panel are of different periods is the tint of the paint: the human figure is a bit lighter, brighter and of better integrity. There is another paint spot above the horn of the ox which we could not interpret. Considering the Pigment Map analysis it is contemporary with the "bowman" figure and they were part of the whole picture. The Pigment Map analysis also shows different approaches to the creating of the images on the panel, but, putting aside the stylistic reasoning, we cannot be sure of the sequence of it .

The next panel appears as a narrow frieze with its dimensions 90×20 cm (ill. 4.1). The paintings cannot be seen with the naked eye due to low integrity and quite thick calcite crust. Two small (5×4 cm) ambiguous ungulated animals are depicted here (ill. 4.2). One of them is intact: it has four legs and a slack belly. Similarities to this pair of small but pecked figures were found on a nearby panel (ill. 5). To

Figure 3.3: Tepsej I. The panel with images of bull (?) and bowman (?). Fragment.

Figure 4.1: Tepsej I. The panel with small painted zoomorphic images.

Figure 4.2: Tepsej I. The panel with small painted zoomorphic images. Fragment. Pigment map.

the left from these painted images there is another painting under a thick calcite crust, part of which is lost along with a part of the rock (ill. 4.3). The tints of ochre on these paintings are quite different. Dating of the pictures are uncertain, but, perhaps, the paintings of different colors are chronologically heterogeneous.

There is one more image of a mixed technique on one of the nearby panels: a hardly weathered pecked figure of an animal with ochre remnants inside the pecking (ill. 6.1 6.3). Figures arrangement on the panel and the pecking characteristics suggests that the images can be attributed to the "the most ancient stratum". Obviously, the paint survived due to the calcite crust. We cannot tell for sure if the painting was contemporary to the pecking. Here, possibly, the painting could be interpreted as renewal (renovating) of a patinized pecked figure, but we do not have enough data to exclude the use of mixed techniques simultaneously.

There are remnants of paint on three more panels with pecked zoomorphic images of "the most ancient stratum" (ill. 7.1 – 7.6). On one of the three the paint was

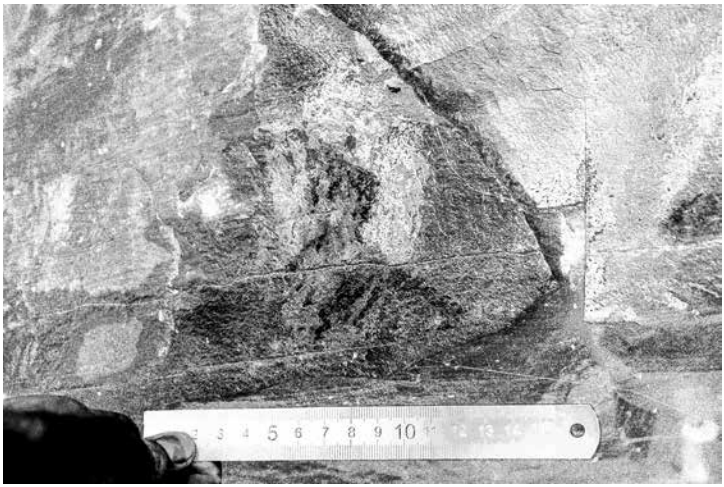


Figure 4.3: Tepsej I. The panel with small painted zoomorphic images. Fragment. Pigment map.

Figure 5: Tepsej I. The panel with small pecked zoomorphic images.

applied before the pecking (ill. 7.2), the same samples we have in others rock art sites of South Siberia [Miclashevich, 2015, p. 70; Rusakova, 2015, p. 82; Blagun, Zotkina, 2017, p. 46].

Thus, during the field work in Tepsej I rock art location we documented seven panels with painting remnants, on four of the seven panels are six images that can be interpreted. And on three of the four panels we have, besides the well-read figures, paint spots and lines for further analysis. On one of the panels here the paint is on top of the pecking. Also, there are three more panels with remnants of paint along with the pecked figures of the ancient style, and on one of them the pecking is overlapping the painting for sure. Some of the documented images can be stylistically attributed to "the most ancient stratum of Minusinsk basin", which tells about a non-occasional use of the painting technique in the region during the pre-Okunevo period. The chronology of other images is not that clear. Integrity of all the painted figures is far from ideal, the figures only painted with ochre are almost invisible for the naked eye, to find

Figure 6.1: Tepsej I. The panel with partially extant images.

Figure 6.2: Tepsej I. The panel with partially extant images. The remnants of ochre inside the pecked image. Fragment.

Figure 6.3: Tepsej I. The panel with partially extant images. Pigment map.

Figure 7.1: Tepsej I. Panel with a pecked deer figure.

Figure 7.2 above, left: Tepsej I. Panel with a pecked deer figure. Fragment. The paint remnants are outside the pecking.

Figure 7.3 above, right: Tepsej I. Panel with a pecked deer figure. Fragment. The paint remnants are outside the pecking. Pigment map.

Figure 7.4: Tepsej I. Panel with pecked images and ochre remnants.

and document them requires some special documentation techniques.

Though this paper is preliminary, the discussing material enriches our conception of the repertoire of the painted images in Minusinsk basin considerably. Especially interesting are the paintings overlapped with Minusinsk style pecking.

Figure 7.5: Tepsej I. Panel with pecked images and ochre remnants. Pigment map.

Figure 7.6: Tepsej I. Panel with a pecked animalistic image and ochre remnants.

These are important sources for chronological attribution of "the most ancient stratum in rock art of Minusinsk basin". Paint of different tints even on one panel tells, as we can see, the possibility of different approaches to the decorative activity and the use of the same rock canvas during different historical periods, which is quite typical for the whole Tepsej complex. The results presented stimulate us to discuss the variety of the art-making techniques: painting was used as an independent technique and some pecking was over-painted or renewed with ochre. Also the relationships between ochre and pecking, overlapping or supplementing each other give an interesting topic for further investigation.

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