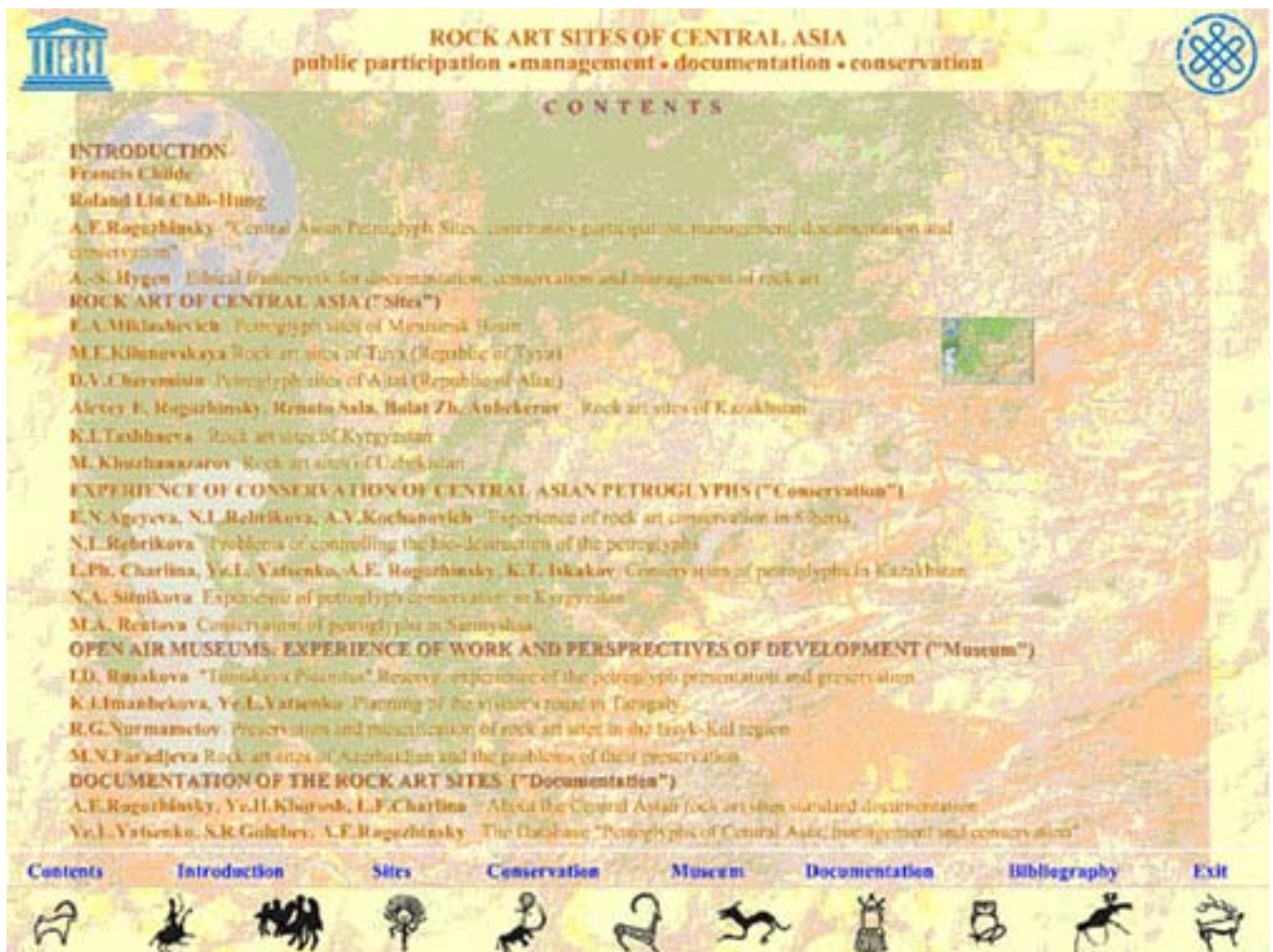


ROCK ART SITES OF CENTRAL ASIA: DOCUMENTATION, CONSERVATION, MANAGEMENT, COMMUNITY PARTICIPATION

*Rogozhinsky, A. (ed) (2004) Almaty, NIPI PMK (in Russian and English)
(photos by Sala, R.)*



ROCK ART SITES OF CENTRAL ASIA
public participation • management • documentation • conservation

CONTENTS

INTRODUCTION
Francis Childs
Roland Lit Chih-Hung
A.E.Rogozhinsky "Central Asian Petroglyph Sites: community participation, management, documentation and conservation"
A.-S.Hygen "Ethical framework for documentation, conservation and management of rock art"

ROCK ART OF CENTRAL ASIA ("Sites")
E.A.Mikhailovskiy "Petroglyph sites of Muzartsk. Basin"
M.E.Kibinuskaya "Rock art sites of Tuva (Republic of Tuva)"
D.V.Charyshnik "Petroglyph sites of Altai (Republic of Altai)"
Alexey E. Rogozhinsky, Renata Sala, Bulat Zh. Aulbekerov "Rock art sites of Kazakhstan"
K.I.Tashbaeva "Rock art sites of Kyrgyzstan"
M. Khuzhanazarov "Rock art sites of Uzbekistan"

EXPERIENCE OF CONSERVATION OF CENTRAL ASIAN PETROGLYPHS ("Conservation")
E.N.Agyeyva, N.I.Rebrikova, A.V.Kochanovskiy "Experience of rock art conservation in Siberia"
N.I.Rebrikova "Problems of controlling the bio-destruction of the petroglyphs"
L.Ph. Charlina, Ye.L.Yatsenko, A.E. Rogozhinsky, K.T. Iskakov "Conservation of petroglyphs in Kazakhstan"
N.A. Sitnikova "Experience of petroglyph conservation in Kyrgyzstan"
M.A. Reutava "Conservation of petroglyphs in Samarkand"

OPEN AIR MUSEUMS: EXPERIENCE OF WORK AND PERSPECTIVES OF DEVELOPMENT ("Museum")
I.D. Buzakova "Tumukaya Paganite": Reserve: experience of the petroglyph presentation and preservation
K.I.Imanbekova, Ye.L.Yatsenko "Planning of the visitor's route in Taragaly"
R.G.Nurmagmetov "Preservation and museification of rock art sites in the Tark-Kul region"
M.N.Paradjeva "Rock art sites of Azerbaijan and the problems of their preservation"

DOCUMENTATION OF THE ROCK ART SITES ("Documentation")
A.E.Rogozhinsky, Ye.H.Kharsok, L.F.Charlina "About the Central Asian rock art sites standard documentation"
Ye.L.Yatsenko, S.R.Gulibek, A.E.Rogozhinsky "The Database "Petroglyphs of Central Asia: investigation and conservation"

Contents Introduction Sites Conservation Museum Documentation Bibliography Exit

EXTRACTS FROM THE BOOK

Rock art monuments of Kazakhstan
Tamgaly (Chu-Ili mountains)
Kuljabasy (Chu-Ili mountains)

ROCK ART MONUMENTS OF KAZAKHSTAN

Kazakhstan, by surface territory, is the biggest among the countries of Central Asia. Vast steppes, deserts, and semi-deserts of the central part of the country are limited on the west by the Caspian and Ural lakes, on the north by the forest-steppe of West Siberia, on the east and south by the mountain ranges of the Altai, Tarbagatai, Djungarian Alatau and Northern Tianshan. The geographical position, the richness of mineral resources and the variety of landscape and regional climates, all these factors determined, today as in past times, the special significance of this territory in the history of many populations of Eurasia. In fact this large mountain-steppe territory played from ancient time an historical and cultural context role as contact zone between the civilizations of Anterior and East Asia, Siberia and East Europe.

Rock art monuments represent, together with the other historical written and archival documents, a unique material for understanding the processes of cultural development and interaction of peoples of Kazakhstan and neighboring countries during ancient times and Medieval Ages. Today rock images are found practically on the whole territory of the country, but some particular zones excel by their exceptional concentration of rock art monuments: East Kazakhstan (South-West Altai and Tarbagatai regions); South (Djungarian range, Northern Tianshan, Chu-Ili and Karatau regions) and Central (Pre-Balkhash and Ulytau regions). From the cultural point of view the eastern and southern zones have wider boundaries than those fixed in the modern political maps of the region: in fact the monuments of the Kazakhstan Altai are indivisible from Sayan-Altai rock art area, and the monuments of the Talas range from the whole West Tianshan region.

The most significant and biggest petroglyph sites are concentrated in South Kazakhstan: in the Djungarian Alatau, in the Chu-Ili mountains and in the Pre-Syrdarya Karatau. They are also the most studied and the 3 most important of them are potential objects of the world cultural heritage and already quoted in the Tentative List of the Worldwide Heritage UNESCO from Kazakhstan: Tamgaly, Eshkiolmes and Arpauzen.

In the frame of the “UNESCO Project 2003” concerning the mentioned monuments together with some other representative sites of South Kazakhstan, field work has been implemented for the study, documentation and conservation of petroglyphs. Geo-archaeological research was executed by a group of specialists under the management of Alexei E. Rogozhinsky (NIPI PMK, Inst for Study and Conservation of Monuments of Material Culture of the Ministry of Culture of KZ), Bolat Z. Aubekero (Institute of Geological Sciences, ACD K), Renato Sala and Jean-Marc Deom (research group of the INTAS project 2000-0699). The main results of this research are reported in the present article.

Alexey Rogozhinsky
TAMGALY (CHU-ILI MOUNTAINS)

1. Discovery, study, conservation

The discovery and study of the Tamgaly monument – the first big petroglyph site discovered in the territory of Kazakhstan is connected to the name of A.G. Maximova. It is under her direction that, in the autumn 1957, the Semirechie division of the *IIAE AN Kaz SSR* (South-Kazakhstan Archeological Expedition) implemented surveys and excavations of monuments in the south-east part of Chu-Ili mountains, approximately 40 km north of the Kopa station. Here, during the excavations of the Bronze Age cemetery of Karakuduk II, the photographer A.A. Popov accidentally found some petroglyphs on the rocks of the nearest gorge called by local population Tanbaly (Tamgaly). During the first survey of the monument Maximova and Popov made photos of the petroglyphs, which still today remain a valuable scientific document. In the following year Maximova, inspired by the research made by A.N. Bernshtam in Saimaly-Tash (Kyrgyzstan), proposed for the Tamgaly petroglyphs a chronological attribution and a division into periods, individuating images of Pre-Saka, Saka and Turkic periods (Maximova, 1958, p. 109-110). These were the first steps of the half-centurial history of the study and conservation of the Tamgaly monument.

During the years 1970-80 scientific work in Tamgaly was continued by geologists and archeologists; but, apart from episodic field work, the distinctive feature of this period is the lack of coordination between natural and archeological research regarding the monument.

In 1975 A.G. Medoev and B.Zh. Aubekeroev fulfilled geological and geo-morphological research and composed a geo-morphological map of the gorge. Some conclusions and observations of Medoev also have great significance (1979, p. 5-32), concerning the topography of the monument, the principles of composition of figures, and the spatial organization of the primitive sanctuary in the landscape.

The archeological study of the monument went on with the individuation and fixation of new petroglyph sites in the area. In 1977-78 A.N. Maryashev, A.S. Yermolayeva and U.A. Motov (NIPM 'Kazrestoration'), with the participation of Maximova, made the entire survey of the boundary territory, drew schemes for the main petroglyph concentrations, indexed the figures, described more than 2000 petroglyphs of the I-VI groups and of some peripheral sites, and copied tens of formerly unknown images. During the same time excavations were continued of the cemetery Tamgaly I, where for the first time in burial mounds of the early Iron epoch have been found fragments of stones engraved with petroglyphs. The important results of this work have been the documentation of the different petroglyph groups of Tamgaly and the registration of the site under state protection.

In 1982 A.N. Maryashev began archeological excavations of the Bronze Age cemeteries Tamgaly I, II, VI, discovered in the mountain and piedmont zones of the valley of the river Tamgaly. New finds of petroglyph images engraved on stones of the funeral constructions of the cemetery Tamgaly II and Karakuduk II, allowed the dating of the Bronze epoch petroglyphs (Maryashev, Rogozhinskiy, 1987, p.58).

During the second half of 80's archeological research on Bronze Age petroglyphs and cemeteries was continued in Tamgaly under the direction of A.N. Maryashev (1982-1987) and A.E. Rogozhinskiy (1988-1990). On the basis of the collected data the idea gradually formed of the presence of an archeological complex, with petroglyphs representing the most bright and important component. By the end of the 80's the rock images of Tamgaly acquired a wide fame and began to attract the attention of native and foreign specialists.

With the beginning of the 1990's, a new stage of research started that unified the problems of study of the Tamgaly monument together with those of its conservation. This important qualitative changing of character of scientific research happened in the context of 2 projects:

‘Conservation of rock figures of the gorge Tamgaly’ (1990-92) and ‘Preparation of scientific documentation for the creation of a museum-reserve in the Tamgaly gorge’ (1993-94), of which both coordinator and executor was the Institute ‘Kaz-Project-Restoration’ (today NIPI PMK).

The questions of the conservation and museification of the Tamgaly complex promoted a multi-disciplinary character in scientific research. In 1990-92 was implemented the geological-geochemical research necessary for the individuation of methods for the conservation of the petroglyphs; and experimental works on petroglyph conservation were executed for the first time in Kazakhstan by the restorers L.F. Charlina, N.N. Taipina and the architect Å.N. Ripinskaya. In 1992-93 a complex of works was executed on the petroglyphs of group II (by S.B. Shchigorez, St. Petersburg; Å.N. Ripinskaya, Å.L. Yazenko, Å.Å. Rogozhinskiy), including conservation of cracks, removing of modern inscriptions and gluing back of fragments with figures found during the clearing of the slopes.

During that new phase of research (1990-94) the study of the archeological monuments of Tamgaly was also implemented through interdisciplinary expeditions. They saw the participation of the Institute of Archeology (Rogozhinskiy), of the Institute of Geological Sciences (Aubekerov) and of specialists of the Institute of Geography and the Institute of Botany of the ACD of KZ. The collaboration with geologists allowed the introduction of new methods of research that improved the techniques of excavation and documentation of archeological objects.

First of all, the territory of the gorge has been fully surveyed; all monuments of the archeological complex have been individuated; archaeological, geomorphological, geological, neo-tectonic and other specific maps have been prepared. During excavations of burials much attention was paid to the study and documentation of the geomorphology and stratigraphy of the monuments, and samples were collected for palinological, paleontological and anthropological analyses. For the first time in Kazakhstan an archeological complex has been provided with a big series of absolute dates (C14 and EPR) and of the reconstruction of regional paleo-climate for an interval going from the Bronze Age to the late Medieval Ages.

However, the main objective of the work has been the study of petroglyphs. The most important result has been the elaboration of field methods for the documentation of petroglyphs in the context of the archeological complex. Such documentation included four levels: figure, stone surface, local area (monument, group, conglomeration of petroglyphs) and archeological complex. On this basis began the creation of the package of documents concerning the petroglyphs of Tamgaly: archeological map of the complex, topographical planes and indexed photo-panoramas of the main petroglyphic sites, photos and copies of surfaces, formalized description of more than 3000 images. At the same time has been elaborated the typological classification of the Tamgaly petroglyphs and the detailed stylistic analysis of the Bronze Age images. In 1993 an experiment with micalent copies was carried out on groups II-V, with the aim of defining the visual perception effects of the localization of the Bronze epoch petroglyphs.

The systematization of the new information allowed the dating of the main petroglyph periods, their correlation with wide historical events, the definition of the phases of development of the complex and the reconstruction of its history.

By 1994 the individuation of the archeological complex and the definition of its boundaries had been accomplished; however the lack of financing did not allow the conclusion of the preparation of materials and the documentation for the creation of a museum-reserve.

During the following years 1995-2001 the popularization by mass media of the results of the fruitful works provided to the monument a popularity that caused an uncontrolled flow of tourists and created a real threat of destruction of the most valuable representations. That critical situation has been aggravated by the deterioration of the pre-perestroika organized state mechanisms for management and guarding of monuments.

Only in 1998 geo-archeological research on the site restarted under an INTAS Project and resulted in the production of the stratigraphic study of the settlement Tamgaly I, of the reconstruction of paleo-climatic features and of the aerial documentation of the complex (Rogozhinskiy, Aubekerov, Sala, Deom). In the same year also restarted research work strictly

connected with the tasks of protection and conservation of the Tamgaly complex. The NIPI PMK (À.K. Khorosh, À.À. Rogozhinskiy, B.Z. Àubekerov) prepared the documentation of the cultural significance of the Tamgaly complex for its inclusion in the Tentative List of the Worldwide Heritage of UNESCO, together with the work-program for the study, protection, conservation and museification of the Tamgaly complex.

Since this period UNESCO took active participation in the life of Tamgaly, supporting the measures for the conservation of the monument. In 2000-2001, with assistance of UNESCO, was prepared the international project “Management, conservation and presentation of Tamgaly petroglyphs”, which saw the partnership of local specialists together with some Norwegian colleagues under the direction of A.S. Higen. In summer 2001, thanks to UNESCO assistance, was established the protection of Tamgaly petroglyphs together with measures for controlling the tourist visits of the site. In 2002-2003, in collaboration with Norwegian colleagues, began work on the documentation of damage to the petroglyphs, on the basis of the standard methods prepared by Scandinavian conservators specialists and adapted to the specific conditions of the monument. An experimental polygon has been especially organized for experimenting new conservation materials and technologies. Simultaneously NIPI PMK began the creation of a database for management and conservation of the Tamgaly monument. Finally, in 2002-2003, with assistance of the Worldwide Heritage Center, the specialists of the NIPI PMK prepared the dossier of nomination for the inclusion of the Tamgaly archeological complex in the Worldwide Heritage List of UNESCO.

During the last years the Government of Kazakhstan has taken some important measures to provide the juridical and physical protection of the monument: on the 5th October 2001 by the special Decree of the Government of Kazakhstan the archeological complex of Tamgaly received the status of a monument of national importance, and 14th October 2003 was instituted the “State historical-cultural and natural reserve of Tamgaly”.

These purposeful measures executed on the national and international level constitute the basis for the further study, conservation and popularization of this prominent monument of the ancient peoples of Central Asia, represented by the archeological complex of Tamgaly.

2. Physical-geographical characters

The gorge Tamgaly is situated in the southeast part of the Chu-Ili mountains, which are located between the basins of the Lake Balkhash and the river Chu, and constitute part of the plain-foothill of Northern Tianshan with dry steppes and desert landscapes. The Chu-Ili mountains extend for about 200 km (averaging 1000-1500 m asl) as a northwest protrusion of the Northern Tianshan, with which share a similar geological development but differ by lesser activity of tectonic movement, making their rising gradients significantly less than the Tianshan ones.

Neo-tectonic movements formed the Chu-Ili mountains as a system of low mountains and hills divided by tectonic hollows. The hills nearer to tectonic breaks have tectonic ledges well expressed in the relief.

The Tamgaly modern relief formed during the Quaternary period, from the end of the early Pleistocene up to the whole Holocene. The region is seismically active till today and affected by earthquakes with a force of up to 5-6 of the 12 degrees scale.

The **Relief** of the Tamgaly region is represented with low-hills and foothill valleys (Fig 1). The low-hill relief is shaped by the succession of neo-tectonic movements and of erosion processes of the original surface. The original surface is an ancient Mesozoic peneplain, the remains of which are conserved on water-sheds or buried on grabens under friable deposits. The peneplain platform located at the south of the neo-tectonic break called Anrakhai has been raised acquiring the morphology of low-hills; and also split forming the valley of the Tamgaly river. The altitude of the highest hills tops is of 950-980 m asl, with the highest mountain Tamgaly at 982.9 m. Hills and steep slopes are grouped in a series of massifs with rocky slopes and tops. Two types of low-hills can be individuated by their

interval above the plain: medium (50-100 m) and low (25-50 m). The denudation-accumulative plain is situated between 850 and 900 m asl, mildly sloping towards the northeast.

The valleys of the Tamgaly and Ashisu rivers are crossed by the tectonic ledge in northeast direction. They have a characteristic V-like profile with steep slopes, and by points acquire the form of canyon and gorge (Shoshkaly) with the whole width occupied by the river. The valley of the Tamgaly river is morphologically well expressed in the middle and lower parts, where big rock outcrops emerge, densely covered with black desert sunburn.

The hydro-graphical network of the Tamgaly region is quite developed with (Ashisu and Tamgaly) as main rivers (Fig 2), but permanent streams are absent. During the spring snow melting, ephemeral streams flow along most of the ravines and river beds. During summer springs and river beds dry out; a weak permanent flow is observed only in connection with a few springs generally salted. Groundwater tables are quite deep; zones of outpouring are situated in foothills along breaks of cones of deposits.

Climate is sharply continental, slightly softened by the closeness of the Tianshan. It is characterized by big amplitudes of seasonal and daily air temperatures (max annual amplitude of 83°N), mid-annual value of atmospheric precipitation of 351 mm heterogeneously distributed along the year, frequent strong winds. Soils and vegetations belong to the desert-steppe zone. The botanical and animal world is very diverse.

Geology. The region Tamgaly has a complicated geological construction, with different rock complexes formed during the period going from the lower Proterozoic to today.

The oldest formations are situated north of the Tamgaly gorge and south of it in the region of the ancient settlement of Tamgaly I. They are composed of mica slates, conglomerates and intrusive quartz veins with copper mineralization. Through the tectonic contacts they are in connection with younger Devonian rocks.

Devonian deposits occupy a significant part of the territory: composed of sandstone, aleurolite and slate, oriented with a corner of more than 40° , they constitute the rock surfaces of the petroglyph groups I-V.

In the zone of the main concentration of petroglyphs neo-tectonic movements favored the enlargement of fissures and the decomposition of the rock substrate. Cracks represent a fatal danger, as long as their presence can destroy in very short time rock massifs and surfaces engraved with petroglyphs. The cleavage system, having a northeast and sub-meridian orientation, has been renewed in the antecedent zone (canyon Tamgaly) so that here the destruction of blocks with petroglyphs happens significantly faster than out of its limits. At the same time the cracks produce abundant shattered material, which in ancient times procured the large tiles necessary for the construction of houses and burials.

3. The Archeological complex

The archaeological complex of the Tamgaly gorge consists of is constituted by about one hundred monuments of different epochs - settlements, tombs, ancient stone-mines, petroglyphs and cult structures (sacrificial places) dated to a wide interval of time going from the middle of the 14th-13th century BC up to the boundary between the 19th and 20th centuries AD (Fig 3).

Settlements are mostly situated in the hilly reliefreliefs of the mountainous part of the gorge. They occupy small platforms with an area between 300 and 1200 sq. m. where some geomorphological conditions are given: either wide parts of valleys, or flat slopes of small gorges (sai), or raised sites of so called "hanging" valleys. In spite of these topographical differences all platforms have a southern, south-western or south-eastern exposition. Places of ancient settlements can be recognised in the landscape by the presence of the following features: remains of one or two dwellings and of housekeeping structures (like enclosures for cattle) made out of natural stones; a cultural layer with fragments of utensils (in ceramic, stone, metal, bones) and fragments of animal bones; the characteristics of soils and vegetation (for example, only near the settlements the presence of overgrowths of hemp are noted). The permanent character of the construction remains

of villages and the specific features of their localisation suggest their long-term seasonal (mainly winter) use by the ancient Tamgaly cattle-breeders. However, together with stationary settlements, another kind of monument is found characterised by a small platform with remains of a stone enclosure, without the signs of construction typical for a permanent dwelling, with an insignificant cultural layer constituted mainly of the bones of domestic animals. Such monuments are classified as temporary dwellings or as camping areas, possibly used in the context of spring-autumn transumances by nomadic peoples during recent ethnographic times.

Many of the presently known Tamgaly settlements are multileveled monuments containing the cultural remains of several historical epochs. Partial excavations have been carried out only on two of them: Tamgaly I and Tamgaly V. The most important stratigraphic information has been collected from the settlement Tamgaly I, where the cultural layers of four historical periods have been revealed. At the depth of 2.8-3.2 m have been found the stone bases of the walls of a dwelling dated to the late bronze period (6th-5th c. Bronze Period (11th-10th c. BC) in an excellent state of conservation, with an hearth in the centre and the ritual burial of a sheep under the room floor. Above that level have been revealed stone structures of the early iron epoch Iron Epoch (4th-1st century BC), late middle ages (16th Middle Ages (15th-17th c. AD) and ethnographic period (at the transition between the 19th and 20th c.). 10th centuries). More than ten dating analyses by radiocarbon ^{14}C and EPR methods have been done on samples from different layers of the dwelling. By analyses of samples from 2 stratigraphic trenches, one in Tamgaly I and the other in the valley of the Tamgaly stream, the curve of the paleoclimatic changes in the region has been reconstructed for the period going from the Bronze epoch up to the present times. In the cultural layers of the all 4 periods during which the dwelling was inhabited, stones have been found which carry petroglyphs with representations of different animals (wild goats, camels) and of a man with a bow.

Ancient burials represent one of the basic elements of the Tamgaly complex. They are characterised by individual tombs incorporated into groups, located on the hilly parts as well as on the flat parts of the gorge. Referring to their shape, two types of burial monuments can be recognised: stone henge with boxes and cists (provided with a lay out of the tomb's walls made by parallel lines of stone slabs); and mounds (kurgans) consisting of stone-and-earth embankments built above the tomb.

The most ancient burial places are represented by the monuments of the first type, attributed to the middle and late stages of the Bronze Epoch. Kurgans can largely differ by design of the tomb and by parameters of the embankment, representing in that way one of the most characteristic features of each historical period going from early iron epoch till the present time.

At present the monuments of the Bronze Epoch are those that have been investigated the most. On the territory of Tamgaly seven cemeteries have been studied: Tamgaly I, II, IV, V, VI, VII and Karakuduk II, all grouped along the main valley, on the right and left banks of the stream. The cemeteries of Tamgaly I, II and Karakuduk II are located in the foothill plain where they occupy some elevated areas of the relief (such as alluvial cones or hills slopes), sedimented by an alluvial layer of 10-15 cm so that they can hardly be seen at the surface. The quantity of tombs present in Tamgaly I, IV, V, VII and the area occupied by them are relatively insignificant: 15-20 tombs each on an area of 250-400 sq m. The larger cemeteries of Tamgaly II, VI and Karakuduk II count 30-50 tombs, each group covering an area of 500-1500 sq.m.

Several years of excavations dedicated to the Bronze Epoch cemeteries (though their methods have been quite different) and the accumulated information including the definitions of absolute dating allowed the cultural and chronological systematisation of the monuments.

All the tombs of the Bronze Epoch pertain to the class of monuments of the cultural-historical group called Andronovo, which during the 2nd millennium BC diffused from the Urals to the lower course of the Syrdarya, Southern Siberia and Western China (Xing Xian) on the Sintashtan in most of Central Asia including the all territory of modern Kazakhstan. The ethno-cultural features of the Andronovo pastoral tribes still represent a debatable question, but a significant number of researchers support the thesis of their Indo-Iranian origin. Typologically the monuments of Tamgaly are related to the Central-Kazakhstan (Atasu) and Semirechie cultural-

chronological variant of the Andronovo group, suggesting the migrational-diffusional character of the formation of the Southeast Kazakhstan population during the late Bronze Epoch.

The most ancient monuments of the archaeological complex are the cemeteries of Tamgaly I, V, and VI that functioned synchronously during the second half of the 14th-13th c. B.C. The characteristic features of these monuments are the burial of the dead person with the body on the side in a ritual foetal position, in large stone boxes inside a round or square fence made of vertical stone plates. The burial furniture is represented by gracefully ornamented hand made pottery and bronze adornment.

The cemeteries of Tamgaly II, IV and Karakuduk II were built at the boundaries of the 13th-12th c. BC and are classified as monuments of Semirechie type (or Semirechie culture) of the late Bronze Epoch. Characteristic features of these cemeteries are the co-existence in contiguous stone boxes of the rite of burial of the corpse and of the rite of cremation; rough handmade ceramics without any ornaments; peculiar sets of bronze adornment and objects. On some stones of the cists of 3 tombs of the cemeteries of Tamgaly II and Karakuduk II have been found petroglyphs with anthropomorphic and animals figure, executed with the style of the most ancient Tamgaly rock representations.

The latest burial places of the Bronze Epoch have been found on the periphery of the cemeteries Tamgaly I and Tamgaly VII, and have been attributed to the 11th-10th c. B.C.

Kurgan burials are found everywhere in the gorge, consisting of several types differentiated by the structure of the burial construction:

- kurgans with an earthen embankment of diameter 15-20m, height 1.0-2.0m;
- kurgans with an earthen embankment of diameter 4-10m, height 0.1-0.4m, with a ring encircling the basis, an oval stone above the tumulus, a tomb walled by vertical stones and covered by plates;
- kurgans of the same sizes of type 2, but with a line of stones as 'armor' of the earthen embankment.

The largest kurgans are found in the foothill plains, 1km from the mountain massif, by groups of 20-30 structures marking the east and northeast borders of the Tamgaly site (cultural landscape). As a rule they are disposed in parallel lines, with the largest kurgans surrounded by small stone-and-earth structures. Especially remarkable are the so-called kurgans "with moustaches", one of which was partially excavated in 1957.

In the cemetery of Karakuduk II three ritual stone henges have been investigated and in one of them has been found a "deer stone": a stone stele with images of weapons (bow and battle axe) dated to the 5th-4th c. BC.

The kurgans located in the mountain part of the gorge are clustered in small groups (from 2 to 5-6 structures) and occupy various forms of the relief: raised areas of valleys, deposition cones, hill tops, watersheds, etc. In most cases they neighbor ancient settlements.

The study by excavations of Tamgaly kurgans was mainly made during the year 1957 and provided a rather small quantity of findings and information, therefore the cultural-chronological attribution of the majority of the Tamgaly kurgans remains unclear. The investigations of the year 1957 classify them as monuments of the early Iron Epoch and A.G. Makhimova date them between the 3rd and 1st c. centuries BC.

Medieval burial places of the Turkic period in Tamgaly have not been clearly individuated. Probably, they constitute part of the stone barrows and ritual fences located at the tops of hills and on low mountain passes. However no excavations have been made of such kinds of monuments.

Kazakh Muslim burial places are characterised by having a mound quite small, 0.2-0.5m in height, made by stones and located usually near the ruins of stationary settlements.

Ancient stone-quarries in Tamgaly have been found close to the Bronze Epoch cemeteries of Tamgaly I, II, VI, for the construction of which wide stone slabs have been widely used recovered from rock blocks tectonically disturbed. In such stone-quarries are evident traces of deep excavations (up to 0.5m) partially filled with alluvial sediments and surrounded by fragments of slabs of different size. Excavation or other studies of these monuments have not yet been done.

Cult structures (sacrificial places) are a very rare and important monument and their use up to the beginning of the 20th century indicates the persistence, in the traditional Kazakh culture, of the sacral importance of places with petroglyphs. In the gorge of Tamgaly cult structures consist of stone henges located near rocks with petroglyphs, functioning as places for sacrificial offerings.

Stone fences are met at the top of some rocks or on flat slopes of dominant hills near permanent Kazakh villages. The cultural layer is usually insignificant; on the surface inside such fences scattered animals bones are found together with fragments of utensils or of metal objects. Fences with a diameter going from 3-5 up to 10 m are made by large stones that are well aligned, with an aperture on the east or south-east side. The side opposite to the door is constituted by a natural rock wall; petroglyphs can be found on individual stones of the structure, with images including some specific subjects such as cauldrons and Kazakh inscriptions in Arabic script.

A sacrificial place with fragments of a large iron cauldron accurately and deliberately buried under flat stones has been found near the petroglyphs of IVà Group. In Tamgaly excavations of cult monuments have not been done.

Petroglyphs represent the kind of monument that is the most valuable and most abundant in the gorge of Tamgaly. All the Tamgaly rock images are made on unsheltered rocks by pecking techniques, and more rarely engraved with the help of metal or stone tools. No painted images have been found in the site.

In the Tamgaly complex the number of petroglyph sites found up to now reaches the number of 48. Five of them are the most important (I, II, III, IV, V groups) numbering together about 3000 representations; 22 sites of secondary importance number from 50 up to 100 representations each. Smaller sites numbering between 1 and 50 figures each are practically distributed all over the territory of the gorge. That means that in In the Tamgaly complex the total number of petroglyphs is around 5000.

By the kind of periodization and localisation 3 types of petroglyph sites can be individuated:

- the main sites represented by the I-II-III-IV-V groups, including representations of various epochs, located on the picturesque rocks of the small canyon called Tamgaly
- sites with petroglyphs of 1 or 2 historical periods, usually located near ancient settlements or tombs on the mountain zone peripheral to the gorge;
- small sites including images of 1 or 2 periods, located far away from the other monuments of the complex, on the slopes or tops of hills along traditional walking or horse-riding tracks.

4. Classification of petroglyphs (repertory, performance, periodization)

The petroglyphs of Tamgaly pertain to several historical epochs and cover a chronological interval going from the second half of the 2nd millennium BC till to the beginning of the 20th c. century, divided into the following periods as follows: middle: Middle Bronze (Tamgaly type petroglyphs), late Late Bronze, transitional period, early Early Iron (Scythian and Wusun), Middle Ages (ancient Turks) and modern times (Djungarian and Kazakh).

Petroglyphs of the Middle Bronze epoch (Fig 4-8). In Tamgaly the greatest aesthetic and cultural value is represented by the petroglyphs of the Middle Bronze Period, which created the most ancient and most expressive set of rock images. They are endowed with specific features, which allow us to define them as petroglyphs of 'Tamgaly' type (Fig 4).

- Images of large size prevail, averaging about 25-30 cm, with exceptional images reaching 0.7-1.0 m.
- The technique of pecking is dominant, with an engraving depth of 3-5 mm.
- The image reproduces a bright naturalistic allure.
- The repertory of the images is very rich and includes many rare and unique anthropomorphic, zoomorphic and syncretic subjects: solar gods ('sun-heads'), 'shamans', men with club, archers with wolf masks, 'worshippers', warriors with weapons, scenes of animal and human sacrifice,

- erotic scenes, birthing women, chariots, footprints, 'lattices', points and other marks, images of bulls, wild asses, horses, camels, wild boar, wolves, deer etc.
- The iconography of the main images and subjects is steady.
- The arrangement of petroglyph compositions on the rocky substratum is done in close interrelation with the landscape, which constitutes the frame of the whole illustrative-narrative construction and representational patterns.

The petroglyphs of Òamgaly type are dated to an interval between the second half of the 14th and the 13th centuries BC on the basis of stratigraphic analyses, subjects and similarities with the dated figures found in the tombs of Tamgaly II, Karakuduk II and in the settlement of Tamgaly I.

The majority of the petroglyphs of the Middle Bronze period consist of images of wild animals, including some species that are today extinct: the wild bull (tur or auroch), bactrian camel, wild ass (kulan), horse, deer, goat, wild boar, wolf. Images of horses and bulls prevail; those of camels, deer, and wild boars are scarce. The main themes of the petroglyphs in this period are those of animals chased by predators and of men hunting wild animals; scenes of pastoral activities are practically absent. Most of the zoomorphic and anthropomorphic images witness the performance of a highly skilled master by accuracy by which allegorical meanings are transferred to natural creatures. An example of special artistic skill is represented by the images of the calf inside a cow (group III) where the calf is made in high-relief on the background of the silhouette of the cow (**Fig 5**). Unique are the images of the anthropomorphic solar deity standing on a bull (group III) (**Fig 6**), of a mysterious one-legged being (group III), of the archer with a wolf mask (**Fig 7**), of zoo-anthropomorphic subjects 'dressed in furs', and of some other figures.

A very special place in the repertory of the Tamgaly petroglyphs is covered by the images of the fantastic anthropomorphic subject with 'sun-heads'. A total of 30 'sun-head' images are found in Tamgaly, of which 26 still conserved today. All of them are dated to the middle and late Bronze periods and the greatest expressiveness pertains to the most ancient of them: they are figures of significant height (0.4-0.75 m), in static poses, with intricate 'halos' (auras) drawn by various combinations of circles, circumferences, beams and points. Among all the 'sun-head' images 6 steady iconographic types can be individuated.

A masterpiece of primitive rock art is represented by the vertical panel (group IV, surface 118) (**Fig 8**) which shows the images of 6-7 divine subjects, ten dancing men holding weapons, a birthing woman, an erotic scene, and some 'worshippers'. A hierarchy between three groups of subjects is underlined by their composition: the highest level is occupied by solar deities; worshippers are in the lower part of the picture; and between them are represented in series the dancers and the birthing woman.

The importance of the 'sun-head' subjects is underlined by the size of the figures. All images convey the general qualities of deities in anthropomorphic appearance. But, with the help of iconographic means (such as localisation, height and serial arrangement of the figures, orientation, form of their 'halo', gestures) some specific characters for each of them are expressed, reflecting nuances in their individual semantics. Isolated 'sun-head' images can be seen in other places of the Tamgaly complex (II, III, IV, V groups), however only the composition of the vertical surface of group IV shows various deities incorporated in one composition, allowing them to be considered as the representation of a pantheon. Moreover the structure of the composition, which shows a strict hierarchy between 'sun-head' figures and other anthropomorphic images, suggests the presence of an attempt of drawing the picture of the whole world and makes the composition an important document of the mythological conceptions of the Bronze Epoch.

The petroglyphs of Òamgaly type are distributed throughout the whole territory of the gorge in a non-uniform way: they are located mainly on the rock surfaces of groups I, II, III, IV, V and IVa, where they are more than 1000 in number. Isolated images can also be found on several peripheral sites of the complex. Everywhere they occupy the most wide, smooth and visible surfaces; never superimposed on other images but on the contrary often covered by images of other periods, proving in that way their most ancient age.

The archaeological study and documentation of the rock images of the main 5 groups revealed a special regularity in the arrangement of the petroglyphs of Tamgaly type: they occupy surfaces characterised by a very similar orientation that, together with the large sizes of the figures, allows them to be seen from a distance of 20-30-50 m. With the help of special measurements, calculations and experiments, near each of the rocky blocks carrying Tamgaly type petroglyphs some focus-points of optimal vision have been determined, i.e. from where is possible to see simultaneously all the images of Tamgaly type. Such regularity has not been found in the distribution of the petroglyphs of late Bronze and later periods.

The petroglyphs of Tamgaly type, by the constancy of their characteristics, of their interrelations, of the dynamics of the subjects, represent a system of steady iconographic images juxtaposed in compositions that play the role of narrative texts. The contents of such a pictographic text, by the features of some fantastic anthropomorphic and zoo-anthropomorphic images, seem to refer to mythological subjects of the indo-iranian cosmogony.

The petroglyphs of Tamgaly type represent a special cultural phenomenon which spread on a narrow geographical territory. At the present state of knowledge, it looks limited to the southern part of the Chu-Ili mountains and the foothills of Zailiski Alatau, where some sites with few Tamgaly type images have been found.

Petroglyphs of the Late Bronze and transitional periods. The petroglyph repertory of the Late Bronze period loses a significant number of subjects of the precedent time, and also differs from the former period by technical performance, style and localisation in the area of the Tamgaly complex. The treatment of images shows less concern for the representation of the natural shape of the animals and a schematic representation of anthropomorphic figures. The performance technique is that of pecking by small points to a depth of 1-2 mm, with details sometimes done by engraving. The mean dimension of the images does not exceed 0-15 cm.

The subject repertory looks poorer. Complex images become rare, syncretic images very rare, and the few 'sun-head' figures left are just the reminiscence of one of the iconographic variants of the earlier solar deities. The central place in the repertory is still covered by images of horses, bulls and wild animals, but the theme of the hunter is accompanied with new scenes of pastoral life filled with elements emphasizing dynamics and conflicts.

On the surfaces of the main groups the Late Bronze petroglyphs are superimposed on former figures or located in the spaces between them, increasing in that way the composition created before. Small sets of petroglyphs of this period are found not far from settlements and tombs at the periphery of the complex.

As a whole the Late Bronze Age petroglyphs reflect significant changes in the social life and ideology among the steppe tribes roaming the territory of Kazakhstan and Central Asia at the transition between the 2nd and 1st millennium BC. These changes are due to the rise of nomadic cattle breeding activities, to the increasing mobility of large human groups and to the expansion of geographical communications. Rock art repertory, style and techniques become analogous on a very large territory, so that the Tamgaly Late Bronze petroglyphs find similarities with many sites going from Western Mongolia and Altai to Western Tienshan.

A special set of Tamgaly petroglyphs represents the transition from Bronze to early Iron age dated around the beginning of the 1st millennium BC. It is not so numerous and is characterized by quite specific features of style and iconography. The most expressive compositions are located in the 4th and 5th Tamgaly groups IV and V.

Their repertory completely excludes anthropomorphic images and privileges stylized images of different kinds of animals: deer, wild goats and predators (wolves, wild boars and panthers). Scenes of hunting and scenes of the chase of herbivorous animals by predators become the main themes of the rock art creativity. Moreover the choice of stele-like vertical surfaces, atypical in the rock art performance, makes it possible to relate these petroglyphs with the pictographic tradition of the so-called 'deer stones' of Western Mongolia and Altai.

On the Tamgaly surfaces figures in 'deer stone' style are quite often roughly superimposed

on ancient images, underlining the absence of continuity and the cultural originality of the petroglyphs of this style. In Tamgaly, as and even more than the petroglyphs of the Late Bronze Age, the petroglyphs of the transitive period are evidence of a wider circulation of new aesthetic ideas and of the start, among the ancient nomads of Central Asia, of an epoch of formation of military-political unions and of large regional expansions and migrations.

Petroglyphs of the Early Iron epoch. The images of the Early Iron epoch constitute in Tamgaly the most numerous set of petroglyphs. They are located on the rocks of the larger 5 sites (mainly in groups); and at the periphery of the complex near the settlements, kurgans, tombs and on hilltops, when surfaces have metallic black surfaces.

The petroglyphs of that time are not homogenous in style, quality and subjects. They have been created by different peoples and tribes (Saka, Wusun, Yueche, Huns) that eventually together Semirechie during the end of the 1st millennium BC and the first half of the 1st millennium AD within the process of massive movements and military campaigns of nomadic confederations.

The brightest petroglyph set of this epoch is represented by the images in Saka 'animal style', related to the animalistic artistic tradition that characterizes Central Asia during the 6th-4th c. centuries BC. The hunt of wild animals and the chase of deer and goats by predators still remain the main themes of the rock art, supplemented by individual and serial images of camels. The images of a man riding a horse or a walking warrior are sporadically found and play a complementary role with the animalistic compositions. The images of wild animals appear in different graceful attitudes; and sometimes the contours of the figures are filled by decorative elements such as spirals, lines etc.

The petroglyphs in Saka 'animal style' in Tamgaly are rather few, but are diffused a little bit everywhere, on the rocks of the main groups as well as on the periphery. Their appearance is connected with a massive reworking of the Bronze Age petroglyphs of the groups III, IV and V, where Saka images are quite often roughly drawn on top of ancient ones. Also the practice appears of adding elements to earlier compositions, using Bronze Epoch images as a 'precondition' for new creations: for example figures of horses or bulls are often remade into images of goats. The striking evidence of the antagonism of the Saka "animal style" against the Bronze Epoch rock art is witnessed by the palimpsest of group IV where the 'sun-head' images are roughly superimposed by Saka representations of a rider, a wild boar and other animal figures.

Together with Saka petroglyphs there are on the Tamgaly rock surfaces a lot of representations created in the same epoch in different styles by other tribes and peoples. It is not always possible to determine precisely their age and their cultural belonging, being that they mainly consist of homogenous images of animals (for the most part goats) very schematic and rather rough in performance. Anyway there are some exceptional images of very high quality representing wild animals, domestic animals and some anthropomorphic subjects in scenes of hunting or of defending the herd against the attack of predators.

On the rocks of the main sites (especially of groups IV and V) simple representations of these subjects are done on small surfaces that, due to because of their unusual exposition, are free of previous petroglyphs. At the contrary of the Saka images, they do not disturb the lines of the Bronze Epoch petroglyphs, but are just juxtaposed to them according to new aesthetic norms. In general these petroglyphs are located not far from stationary settlements where are found handmade ceramics of Wusun type and stone constructions holding petroglyphs of the same style and technique: facts that allow us to see in such simple petroglyphs the product of the native inhabitants of Semirechie.

A special category of petroglyphs is represented by the so-called 'tamga', symbols of tribal belonging and clan property. Most often they are found on rocks near ancient settlements; but one image is found in group. Some of these symbols are related to Yueche and Sarmatian tribes and can be seen on the whole extension of the Eurasian steppes, marking the historical ways of the ancient Central Asian nomads.

In that way the petroglyphs of the Early Iron Age represent some complex processes of cultural interaction between ancient Central Asian tribes; and show as a main characteristic the tendency to continue the petroglyphic extraordinary tradition inherited from the Bronze Age but

continuing it with lesser impulse and minor innovations.

Petroglyphs of the Middle Ages and modern times (Fig 9-11). The petroglyphs of the Middle Ages, like the petroglyphs of the Early Iron Age, are found everywhere in Tamgaly, though their total quantity doesn't exceed the 300 images. Most of them are deposited on the rocks of groups IV and V, but the best samples are found in a few peripheral sites located along roads and mountain paths.

Medieval petroglyphs differ from the petroglyphs of all the former historical epochs by the special repertory and artistic originality of the nomadic rock art of the Turkic time (6th-12th centuries AD) It is the epoch of the appearance of huge steppe empires and the main characters of the rock compositions become the standard-bearer rider, the archer, and the warrior with heavy weapons (**Fig 9**). New figurative scenes are: scenes of duels between a warrior on horse and a non mounted warrior; collective total hunting, and nomadic displacements. The hunting scenes, always present in the petroglyph history of the petroglyphs, now get a new meaning: if for the ancient artists in the hunting scene the most relevant image was the one of the animals, now the accent is laid on the anthropomorphic hero and on his military attributes: banner, weapons, horse equipment. In general the themes of the Turkic rock art reflect, together with representations of the life of a rich cattle breeding society, the rise of the epic creativity and the establishment of an aristocratic military aesthetic.

The technique of Medieval petroglyphs differs essentially from the techniques of the former epochs. The choice of the quality and exposition of the surfaces is obviously not designed for a wide display of figures. Even the most imposing compositions, in spite of opportunities for better choices, frequently occupy unprofitable positions: surfaces out of view, narrow, rough or non metallic. Apart from rare exceptions, the figures are engraved quite superficially, patina layers are removed from the silhouette unequally; a lot of images are just scratched with the help of a sharp metal tool or knife. Especially popular became the renewal of the ancient drawings intended to change the original contents of the image by the addition of new details. A clear example is represented by the image of a Bronze Epoch bull (group III, surface 23) changed into the figure of a rider-warrior (**Fig 10**). On the surfaces of the main sites, generally already covered by compositions of the Bronze Epoch, the possibilities of the medieval artists were limited to the adding of one or two new figures by carefully renewing and correcting ancient figures. On the groups most of the ancient figures suffered from the Medieval renewing/medieval renewal, including many 'sun-head' images.

There are some Medieval petroglyphs in Tamgaly that constitute unique samples in the Central Asian rock art repertory. These are the large image of an elephant with rider, located near the settlement of Tamgaly I (**Fig 11**); and the figure of a sitting anthropomorphic deity (?) in group, of which an analogy is found in Western Mongolia (on the secondary usage during Turkic times of a deer stone from Temeni Khuzu in Bayankhongorski Aimag). A rare monument in south Kazakhstan is represented by the ancient Turkic epigraphy of 6 letters of the runic alphabet found in group IV (surface 13). By the preliminary analysis of S.G. Klyashtorny (St.Petersburg, Russia), the writing quotes a man's name and is dated to the 8th c. century AD.

Thus, since the medieval period, the creation of new petroglyphs in Tamgaly, as well as on the majority of the other rock art monuments of Central Asia, is gradually replaced by the practice of renewing and adding elements to ancient compositions. Further on, with the strengthening of central governments, the development of writing and the spread of Islam, the creation of petroglyphs will definitely stop functioning.

The centuries that followed the Mongolian conquest (13th-16th c. AD) represent a 'dark age' in the history of Tamgaly and the events of this epoch didn't find any appreciable reflection in the petroglyphs of the site. Not earlier than the 17th c. AD a Buddhist prayer was inscribed in the Mongolian alphabet on the surface of group IV, together with a small series of rather schematic anthropomorphic images and animals, that can be connected with the establishment in Semirechie of Djungarian (Oirat) political control.

Popular Kazakh figures are executed during the 19th and the early 20th centurycenturies, some of which excel in elegance and represent the last burst of rock art creativity. Their repertory is extremely limited with just images of goats, horses, and riders. The figures show different techniques and different levels of quality: most of them are schematic figures roughly pecked with the help of a stone or softly scratched with a metal tool; but, less often, quite accurate performances are done of single images or of whole compositions. A significant number of the Kazakh petroglyphs are located near stationary settlements and some of them on isolated stones of dwelling constructions. On the surfaces of the main groups they occur as single figures which generally occupy surfaces untouched by former petroglyphs. Together with images of people and animals, there are images of patrimonial marks (tamga) of the Kazakh tribes 'Dulat' and 'Alban'.

5. Historical reconstruction: formation of the complex and development of the cultural context.

The monuments of the Tamgaly gorge are an aggregate of archeological objects of different types (settlements, graves, petroglyphs, sacrifices and others) functionally connected with geographical elements to form a cultural landscape. This unique complex of cultural and natural elements (Klein, 1991, p. 373,375) shows deposited signs of the most important social and cultural aspects of the life of the local habitants during a period going from the Bronze epoch to the beginning of the 20th century. The interpretation and chronological reconstruction of such a complex must be based on the collection of natural, archeological, ethnographical data and on historical sources.

As a whole, the picturesque relief of the gorge and its specific environment conditioned the history of the local inhabitants for several periods and, though a feedback of landscape culturalization, reflected the evolution of the social-cultural life and world conceptions of the ancient and modern population of the territory. The cultural-historical phenomena of the Tamgaly complex was also determined by its geographic position on one of the most important ancient communication roads of Central Asia running along the Northern Tianshan piedmonts.

Located in the wide arid zone of the central part of Chu-Ili mountains, almost deprived of fresh-water sources and of convenient settlement habitats, the gorge Tamgaly is notable for presenting favorable conditions for a settled life: abundance of springs, rich grass pastures, a relief with ravines and valleys protected from wind and suitable for settlements. For these reasons the landscape of the Tamgaly gorge represents a perfect habitat for the traditional nomadic societies of the arid zones of Central Asia.

The spatial organization of the archeological complex shows the distribution of synchronic monuments by functional-typological laws that stay more or less similar during different historical stages.

The canyon, where are concentrated the 5 main petroglyph sites of Tamgaly (groups I-V), constituted the center of the complex during all times. In it there are no remains of dwellings and economical constructions, but in its northwestern borders, on the foothill valley surrounding a natural mound, are concentrated the ancient graves and cultic constructions of the biggest necropolis of the complex (the graves of Tamgaly I and II). In the first mountain slopes south of the necropolis are situated a few clusters of monuments consisting of settlements, burials and small concentrations of petroglyphs. The topographic distribution of monuments reflects the functional division of the complex in a *cult* and a *settlement* zone, isolated from each other by neutral "buffer" spaces empty of cultural remains.

The main element of the cult zone and the semantic center of the whole complex is the canyon with its petroglyphs.

Significant geomorphological features of the region are the steep rocks of the canyon with expressive outlines and sculptural forms and wide rocks covered with patina making a homogeneous glossy-black background. These rocks have been extensively used by the authors of the most ancient petroglyphs. Excellent and unique images of the Bronze Age period are organized

as a rock gallery transmitting the mythological contents and artistic value: their style is called 'Tamgaly classic'. They are mainly concentrated on the canyon rocks, marking the space of an ancient *sanctuary* or *open air temple*, with a variety of spaces devoted to ritual actions and ceremonies.

The petroglyph group IV forms the compositional center of whole ensemble. Here, on a pronounced 'S' turn of the valley, the rocks are strictly around the spectators, creating the illusion of a closed space provided with acoustic and optical effects. Some rocks hanging over the narrow valley call the attention towards the upper layers of the massif where the composition with solar personages is situated (pl.118).

The formation of the complex is attributed to the end of Middle Bronze Age (mid 14th-13th c. BC), when its main structural components were formed: the sanctuary with petroglyphs and necropolis (cult zone) in the canyon and settlements in the mountains. During following historical stages the borders of the functional zones partly changed: the role of the cultic zone decreases and the economical zone extends with the cultivation of the southern periphery of the gorge.

During the late Bronze period is observed a wider distribution of petroglyphs is observed on the territory of the complex and the appearance of new burials both inside the cult zone and in its periphery. On the rocks of the sanctuary appeared a series of relatively small petroglyphs, which by repertory and iconography represent just a partial succession of the most ancient petroglyphs of Tamgaly. Some innovative characters are introduced during the transitional period: the executions of the end of the 2nd – -beginning of the 1st millenniums BC reflect significant influences from different groups of population mainly related to eastern regions: East Semirechie, Altai, South Siberia and, obviously, some regions of Central Asia.

During the early Iron Age an abrupt extension of the economical zone happened with the cultivation of all the potentially productive steppes at the periphery of Tamgaly and near the Shoshkaly and Besshal gorges. But the stage doesn't change the topography of monuments in the cult zone and in the necropolis the burial mounds occupy free spaces in proximity to the Bronze Age burials. At the borders of the cult zone, in the mountain part, a whole series of monument clusters appear constituted by stationary settlements, burial mounds and small petroglyph sanctuaries.

These new galleries, excluding rare cases, have quite a monotonous repertory. However the architectonic distribution partly reproduces the Bronze Epoch sanctuary with a clearly expressed center surrounded by clusters of compositions. Together with preferred animal representations, also some single archaic images and motives are executed: the woman in childbirth, warriors at ritual dancing and a few others. On the rocks of the canyon the images of the period are very few, but at the same time a massive renovation of Bronze Epoch petroglyphs happened on the surfaces of groups IV and V that can be interpreted as act of renovation and 'restoration' of darkened ancient gravures. By that the rock art of the aboriginal-nomads of Semirechie reflects, around the middle of the 1st millennium BC, an uninterrupted line of perception of the importance of the Tamgaly gorge as a cultural sacral center.

At the same time, in the cult zone and particularly at its peripheries, it is observed the formation of palimpsests, destruction, distortion of Bronze Age pictures and whole compositions by petroglyphs of a Saka predator style (6th-4th c. BC). On the foothill valley are built isolated groups of 'Tsar' burial mounds of members of the nomadic elite. During the second half of the 1st mil. BC some of the Bronze Age burials were exposed to repeated digging and robbing, and the settlements Tamgaly I and V present layers of hard fires related to the same period. These phenomena could be evidence of external political shocks and military and ideological collisions that violated the traditional tenor of life of the Tamgaly inhabitants.

As a whole, the early Iron Age should be interpreted as a period of active economical exploitation of the Tamgaly territory and also of conservation of the cult importance of the monument in spite of essential changes in the socio-economical and ideological spheres.

Information about the Middle Age history of Tamgaly is very scanty and fragmentary. Settlements occupy areas already cultivated during the previous period, but their number is significantly decreased. Small series of petroglyphs of the Turkic period appear on rocks of peripheral sites and on the main sanctuary; the average executions consist of the renovation of

ancient figures together with the addition of one-two new personages. Like the Saka petroglyphs, the Middle Age pictures quite often cover the Bronze Epoch images and renew them in accordance with other ideological norms. The content of the Middle Age rock creations is epic, based on a militaristic ethic. It signals the end of the ritual-mythic contents of the former periods and of their social-communicative functions.

An important place for their number is covered by the monuments of the late historical period, going from the 19th century up to 1930. Many Kazakh winter-settlements of the end of the 20th century occupy areas used during the early Iron and Middle Age, but at the same time also new zones were cultivated in Tamgaly and neighboring gorges. Settlement patterns are comparable with the system of the patronymic settlement, documented by Russian and European researchers, that during the middle of the 19th and the beginning of the 20th centuries diffused among nomadic and semi-settled populations of Kazakhstan, Middle Asia and Siberia: Kazakhs, Kyrgyz, Turkmens, Altaics and others. The periphery of the gorge fell into a chain of settlements closely approaching the territory of the ancient cult zone. Near some of the new big settlements a small series of schematic and rather monotonous petroglyphs appear, also Kazakh clan signs and inscriptions made with the Arabic alphabet.

Probably in that period the sacral center of the gorge obtained its modern denomination 'Tanbaly', still given special importance by the new inhabitants, with a decreasing frequency of beating and renovation practices and the performance of sacrifices at certain engraved rocks. The necropolis of the cult zone ceases its function and the new burial places for illustrious dead switched to another part of the sanctuary: the foothill of group IV.

The narrowing of borders of the sacral zone and the decreasing number of execution of pictures on the surfaces of groups I-V are evidence of a total loss of understanding of the ancient functions and significance of the site and of the social importance of the rock creativity.

The turning-point to the newest history of Tamgaly were the 30's-40's of the 20th century. As a result of the violent Soviet collectivization, part of the local population left the region and Tamgaly became depopulated. Only in 1956 did Tamgaly gorge become again affected by human activities, this time as virgin land territory of the 'sovkhos Roslavlskiy'. The formation of sovkhos had sharply changed the demographic situation, expelling people and introducing immigrants from Ukraine, Russia and later, some Kazakhs from East Turkestan (SUAR, China). These migrations caused the 'cultural assimilation' of the small native population that remained somehow the traditional guardians of the Tamgaly sanctuary.

The traditional functional topography of Tamgaly became totally violated. A vehicle road was constructed through the canyon and functioned until the summer of 2001. The consequences were the acceleration of the disintegration of rocks, together with the start of a tradition of hammering modern signatures and pictures over ancient petroglyphs, mainly on the rocks of groups IV-V. Dwellings and farms have been built on the area of the Bronze Age cemeteries Tamgaly V and VI, using for their constructions engraved stones collected in nearby sites.

Meanwhile, the veneration of Tamgaly as a sanctuary, connected with the cult of the tombs of the ancestors, is still alive today in the patriarchal society of the local population. In spring and summer time collective celebrations are held in the area of the complex with horse competitions (kokpar). On the branches of the spiny bushes (shengel) of the canyon and group IV pilgrims tie rags of clothes, holding prayers and rituals. Among the local Kazakh population some few legends circulate talking about the 'heavenly punishment' that descends upon and strikes the defilers of the sacral zone near the petroglyph group IV. However these ritual actions and the sacralization of the place have lost any connection with petroglyphs, the existence of which for many local inhabitants became a discovery learned from the enlightening activity of the mass media or from the acquaintance with the scientific works on Tamgaly of the last years.

Figures:

Tamgaly:

Fig 1 – Aerial view of the gorge of Tamgaly, showing the low-hill relief

Fig 2 – Aerial view of the gorge of Tamgaly, with river Tamgaly active

Fig 3 – Geo-archaeological map of the Tamgaly complex

Fig 4 – Middle Bronze Age ‘Tamgaly type’ goats

Fig 5 – Middle Bronze Age calf in high-relief depicted inside a cow executed in low-relief (group III)

Fig 6 – Middle Bronze Age anthropomorphic solar deity standing on a bull (group III)

Fig 7 – Middle Bronze Age archer with a wolf mask

Fig 8 – ‘Pantheon’ of solar-headed deities (group IV, surface 118)

Fig 9 – Turkic warrior-standard bearers

Fig 10 – Bronze Age bull changed into the figure of a rider-warrior in the Medieval period (group III, surface 23)

Fig 11 – Turkic elephant with rider

Renato Sala
KULJABASY (CHU-ILI MOUNTAINS)

1 - Discovery, study, conservation

Discovery. In contrast to all the other petroglyphs monuments of South Kazakhstan, of which the discovery and the study is connected with the names of researchers of the 19th century or of archaeologists of the Soviet time, the petroglyphs of Kuljabasy existed unnoticed until our days. The circumstances of the discovery of this remarkable monument are quite unusual to the present practice of petroglyph study and deserve a special explanation.

All the main petroglyph sites of Kazakhstan and Central Asia have been discovered and documented after information about their existence came from the local population or from geologists and naturalists or, at best, as a result of a more or less casual survey of the district. In that way more than one century ago the existence of Bayanjurek was indicated to explorers like Valikanov and Pantusov; and that of Saimaly-Tash to Kludov. In the 50's-60's the existence of Tamgaly, Koybagar and Arpa-Uzen was communicated respectively to A.G Maximova, M.K Kadyrbaev and A.N Maryashev; in the 80's that of Eshkiolmes to Mariashev and A.E Rogozhinskiy.

In 1961 a local entomologist P.Y Marikovsky informed about the presence of few irrelevant petroglyphs in a valley of the Kuljabasy range, beyond the eastern periphery of the newly discovered complex, information that didn't promote further exploration. The discovery of the large petroglyph and archaeological complex of Kuljabasy happened only in 2001, by 2 researchers, Renato Sala and Jean-Marc Deom, working in the context of an INTAS project. It was the fruit of deliberate explorations anticipated by geo-archaeological considerations and analyses that draw attention to the area.

In the years 1999-2001, during the implementation of the INTAS project 97-2220 devoted to the study of the transitional stages from Bronze to Early Iron ages in three landscapes zones of Semirechie: (dry steppes of the Chu-Ili mountains; piedmonts of the Djungarian range; mountain plateaus of the Ili-Tianshan), a multi-disciplinary geo-archaeological approach was adopted for the study of the system of distribution of monuments in ecological habitats. The research suggested some laws of geographical distribution of human land-use, habitats and monuments, together with their switches through climatic changes and cultural phases. The presence of a huge quantity of petroglyphs dated from Bronze epochs to the ethnographic period revealed to be an important indicator of the cultural development of the landscape.

Research in several areas of Semirechie has shown that mix-farming pastoralism constituted the main type of economical activity in semi-deserts, piedmonts and mountain meadows starting from the Bronze age until ethnographic period. The use of natural resources consisted of annual exploitation by mix-farming pastoralist activities of two or more complementary environments through seasonal migrations and multi-residential housing. Privileged *ecological niches* were areas with summer and winter pastures near enough to be at few hours walk; and most probably they represented the earliest habitats. The simplest case is represented by valleys where, under favorable climatic conditions and limited population number, summer and winter pastures can be respectively constituted by the northern and southern slopes. Such ecological conditions can be found mountain meadows, piedmonts, desert oases, river canyons.

In these areas remains of ancient houses are found in both summer and winter pastures, near water facilities, on terraces protected from northern winds; cemeteries on dry hilltops or positive forms of the landscape. Besides villages and cemeteries, a dense process of landscape culturalization is manifested through remains of cairns, henges, cup-marks, steles, and, where good rock material is provided, by petroglyphs.

A significant fact has been noted: in Semirechie, wherever good rock material is present in the surroundings of ecological niches of the kind described above, there petroglyphs have been engraved. *Good rock material*, (i.e. surfaces with some special characteristics such as smoothness,

metallic patina, convenient dimension, impressive natural insertion) is not present everywhere. Not in the Tianshan and Djungarian mountains where tectonic breaks lifted gigantic igneous granite blocks. It is present in a band 50-100 km wide of northern piedmonts where tectonic events just faulted the flat peneplain and exposed metamorphic rocks of sandstone and slate, which are the favorite materials of the petroglyphic performance. In the case of South Kazakhstan this means a band going from the Karatau Mountains in the west to the Chu-Ili mountains in the center, until the north-western spurs of the Djungarian range in the east.

It is on the intersection between this well defined geological zone and the ecological habitats mentioned above that the main *petroglyph sites* of south Kazakhstan are located (**Fig 1**). Arpauzen, in the Karatau range, is located in a piedmont winter pasture at 800 m, with summer pastures at 1700 meters in the Bessas (five meadows) plateaus few hours away. The Kuljabasy range (1183), in the Chu-Ili mountains, is characterized by dry warm valleys that can provide winter refuges, complementary with the Kendyktas plateau (1500 m) 35 km on the south, which, wet and snowy, provides rich spring and summer pastures. Tamgaly is located in the southern part of the Anrakhai range (eastern Chu-Ili mountains): like the Kendyktas plateau, the area is a relict peneplain exceptionally characterized by mountain chestnut soil on hilly borders between steppes and desert, which can respectively play as summer and winter destinations. At the end of the Koksuy river valley, in the NW spurs of the Djungarian range (where the Eshkiolmes petroglyph complex is located) by winter can be exploited the southern slopes of some low mountain ranges and by summer the wide contiguous alluvial plains or the rich meadows of the high mountains. The habitats of the valley of the upper Bien river (80 km north-east, where the Bayanjurek and Tasbas petroglyphs sites are located) and the mountain plateau of Turgen-Assy (an exceptional geological relict and archaeological complex located at 2500 m in the Ili-Tianshan range, where poor sedimentary rock surfaces are covered by simple but numerous petroglyph performances) provide the simplest conditions, i.e. the possibility of exploiting by winter the southern slopes of the valley and by summer the northern ones.

Reconnaissance surveys of ancient human habitats guided by ecological considerations brought about the discovery of tens of petroglyph sites formerly unknown. Most of them are of medium/small size and significance, but in some cases they turned out to be petroglyph sites of primary importance. In particular this has been the case of the petroglyph site of *Kuljabasy*, located in the central part of the Chu-Ili mountains. By number, antiquity, quality of the performance, significance of the subjects and authenticity, it ranges among the most relevant petroglyph sites of South Kazakhstan, the others being Arpauzen in the Karatau range, Tamgaly in the Chu-Ili range, Eshkiolmes and Bayanjurek in the Djungarian mountains.

The late discovery of the archaeological complex of Kuljabasy can be explained by the absence of modern roads and human land-use in the area; and suggests the possibility of the existence of other main sites in prehistorically crowded and presently deserted areas

Study. In *summer 2002* the site of Kuljabasy was the object of a research expedition devoted to the archaeological study of monuments of Bronze and Early Iron epochs directed by A. Maryashev, (Institute of Archaeology, ACD KZ); and to the geo-archaeological surveys and petroglyph documentation directed by R. Sala, (paleo-climatologist) with the participation of B. Aubekerov (Lab of Geo-archaeology, Inst of Geology ACD KZ) and Deom JM (GIS specialist). Trial trenches revealed Bronze age and Early Iron ceramics in Valley 1, V2, and V5. A Bronze age cemetery with more than 25 tombs has been discovered on the alluvial fan of V3 and 1 enclosure with 6 tombs has been excavated. The burials show strict similarities with those of Oi-Jailau on the Kendyktas plateau (Maryachev, Goryachev 1992, p.9): they are attributed to the Alakol culture and approximately dated around the 14th-13th century BC. GIS fixation of the main geographical features of the site, of some archaeological monuments and of the distribution of some of the petroglyphs groups allowed the production of the first map of the territory.

The investigation of Kuljabasy had a significant improvement with the work of *summer 2003*, which saw the cooperation of 2 teams: the team of the INTAS project 2000-0699 (Sala, Aubekerov, Deom) devoted to the study of land and water use of early epochs in Kazakhstan; and

the team of NIPI PMK (Rogozhinskiy) within the framework of a project UNESCO devoted to the geo-archaeological documentation of 4 main petroglyph complexes of South Kazakhstan. The site has been investigated as cultural landscape. First of all have been analyzed the present geological, geomorphological, hydrological and environmental features, and samples have been collected for the paleo-environmental and paleo-climatic reconstruction. The set of archaeological data consistently increased due to the detailed documentation of all traces of cultural activity and influence on the landscape: surface distribution of ceramics, settlements, funerary monuments, water management devices and other anthropogenic elements such as oba, cairns, stone circles, cup-marks and petroglyphs. Archaeological excavations have been carried out selectively following the archaeological ethics implemented earlier on the Tamgaly site: a minimum of destruction of monuments and landscape with a maximum of scientific information, thanks to a preliminary geo-archaeological study and documentation of the object. In that way have been opened and investigated a Bronze Age settlement at the top of V5 and 2 burial grounds on the fans of V5 and V6. The documentation of the petroglyph complex of Kuljabasy consisted of the collection of basic data (fixing of groups by GPS, indexing of group views, photo and copying of engraved surfaces), the manufacturing of models for traceological analyses and the definition of the basic damages menacing the site.

Conservation. The main scientific results of the multidisciplinary research of the monument consist of the detailed understanding of the geo-archaeological complex and in the definition of its geographical borders and internal structure. They suggest for the site an area covering the large territory of 10x3 km going from V1 to V14.

This first data base allows the undertaking of measures for the organization of the legal physical protection of Kuljabasy and of its inclusion, alongside with Tamgaly, Eshkiolmes and Arpauzen, in the List of Monuments of Kazakhstan of republican value and in the Tentative List of the World Heritage of UNESCO.

2. Physical-geographical features

Geography. The Kuljabasy range represents the very center of the Chu-Ili mountains, between the Kenduktas plateau on the south and southwest, the Khantau mountains on the northwest, the Anrakhai mountains on the north and northeast. From this central position the range discharges waters in three directions through intermittent streams: to the east by the Kopa river, to the west by the Shokpar river, to the north by the Shinzildy and the Kopalysai.

The climate is classified as boreal continental semiarid: average yearly $T^{\circ} +7.6$ (January -5.9 , July 25.1), precipitation 400 mm (max April 40mm, min August 8mm), annual continentality index 31, annual aridity index 2.2 (summer 10-17).

The landscape is pre-mountain desert and semidesert; predominant soils are northern serozem (aridisol); dominant vegetation *Artemisia* and Graminae. A few areas around springs are characterized by chestnut chernozem soil, with meadow vegetation (*Libida*, *Chenopodiaceae*) and desert willows.

Several kinds of wild animals have been spotted: ram, deer, wolf, fox, wild cat, ground squirrel, eagle and other predatory and migratory birds, snakes and desert insects.

Geology. Kulja basy in Kazakh language means “sheep-vertebrae top”, as if the chain is popularly seen as the emerging back of the gigantic buried skeleton of a sheep.

The range formed along the main Kopinsky anticline structure, a tectonic fault of primary importance that during the early Pleistocene produced a 200 m lift of Cambrian deposits and Ordovician and Devonian structures.

The mountain relief is the result of the erosion of neo-tectonic blocks running NW-SE for 40 km. The northern part is constituted by a dry flat plateau; the southern one by slopes where several parallel comb valleys 2-3 km long are cut by erosion. The chain is clearly divided into a western and eastern part by a depression, the western part being higher and reaching the max height of 1183 m asl from piedmonts at 1000 m, with more springs and better rock material (**Fig 2**).

Geomorphology. The geomorphological features of the area of Kuljabasy consist of 2 types of relief: a) erosion-tectonic low-hills; b) inclined foothill plains of the Kopinsky tectonic depression.

a) - Low-hills are of erosive-tectonic nature, generated by the erosive activity of valleys cut in the tectonic terrace. By form they are oval-ridge type and, more rarely, maned type. The valleys' slopes are quite abrupt and expose many rock outcrops of patinated material.

The basic materials consist of interstratified layers of slates and sandstones of Devonian and Ordovician genesis; and, closer to the watershed, of effusive formations (porphyrite). Slates and sandstones expose large patinated surfaces significant from the archaeological point of view because on them petroglyphs have been engraved.

Valleys have a simple structure. Their average length is 2 km, with a maximum of 2.5; the width of the valley bottom varies between 40-50 and 120-150 meters. Their longitudinal profile shows steps in coincidence with materials erosion-resistant and with terraces of tectonic breaks. They are often zones with active springs. The valley's profile shows a flood-land and 2 alluvial terraces. Terraces are significant from the archaeological point of view being the location of ancient and ethnographic settlements, their size depending from the area of the terraces. In proximity of settlements some valleys show remains of water management: dams, basins and cisterns in the bottom; lines of stones for filtering the run-off of sediments on the slopes.

b) – The piedmont plain is constituted by two elements: the Kopinsky tectonic depression filled by Neogene-Quaternary sediments; and a narrow band of proluvial trains at the estuary of the valleys. The proluvial zone is significant from the archeological point of view being the location of funerary monuments of every epoch.

Lithology. The material, orientation and dimension of the rock formations are of the main importance in determining the presence and the distribution of petroglyphs.

The main material, from the entrance almost up to the watershed of the valleys (where porphyrite prevails), is mainly slate and partly sandstone, sometimes crossed by quartz veins. Both, slate and sandstone, represent an excellent substratum for petroglyph performances. The tectonic structures and layers of slates and sandstones are sub-latitudinal and cross perpendicularly the mid-valley, exposing on the slopes many rocks outputs with large surfaces covered by metallic patina. The distribution of rock outcrops on the slopes of the hills are determined by the morphological feature of different areas and by different combinations of slate, sandstone and quartz veins.

The orientation of the rock surfaces depends on the characteristic of a fault, which in Kuljabasy West can manifest by 2-4 systems. The first is a sub-latitudinal system of cracks normally connected with strata of slate. The others, also connected with strata, show the typical features of zones of stretching or compression of folded materials: they are generally oriented south-north with falling on the east and south; or are oriented east-west with falling on the west and southwest. The parameters of the slate strata are not favorable to the formation of surfaces larger than 1-2 sq.m.

The localization of the largest petroglyph groups in the mid-valley is connected with the valleys' morphological features: in that part mountain tops are higher, slopes more abrupt and rock outcrops in bigger quantity. This doesn't happen at the bottom and at the top of the valleys, which are characterized by other modes of erosive activity: the end consists of slightly-sloping hills without rock outcrops (apart a few down near the stream); the top has slopes covered by deluvial gravel and taluses exposing very few rock outputs.

Topography of valleys and of rock formations. The Kuljabasy mountains start in the west with a small range 7-km long, sometimes called *Kostobe*. In its southern slopes are cut 6 valleys of which 3 (from west to east Kostobe V1, V2, V5) are provided with sources, patinated rock surfaces of poor quality, petroglyphs of lesser importance. Together they constitute the western periphery of the main petroglyphic complex.

The chain continues in the east with the range called Kuljabasy that runs for more than 30 km and is divided in a West and East part. Rock formations of slate material emerge all along the southern slopes of the 40 km long Kuljabasy chain, but it is along *Kuljabasy West* that mountain tops are more elevated and slates exposed in bigger number and with better patina. It is in that area that springs are concentrated and, with them, houses, cemeteries and traces of foddering activities of all epochs, together with one of the most impressive landscape culturalization and petroglyph exhibitions of all Central Asia. This western part develops for 10 km with 14 valleys (1-2.5 km long) and constitutes the center of the Kuljabasy petroglyph complex (**Fig 2**). Most of the patinated rock outcrops are located along 2 bands related to 2 neo-tectonic faults that, at an average height of 1090-1140 m asl, respectively cross 2 clusters of valleys: valleys V1-V6 and V11-V14. Between them, the short valleys V7-11 present poorer rock material, less water and very few petroglyphs.

The most relevant rock outcrops are around 40, with at least 3000 good metallic rock surfaces, of which 600 are engraved with petroglyphs of very high quality. The highest concentration of excellent performances goes together with the excellence of the rock material (V1-V6, V12, V14) with max density in valley 3, groups 2-3-4 (V3G2-3-4).

In connection with the neo-tectonic faults, together with rocks also water pours out of the ground with seasonal or perennial activity. Today seasonal springs are active in all the Kuljabasy valleys from V1 to V14; perennial springs are limited to V3, V5, V12; very scanty seasonal waters in the shortest valleys V8, V9, V10, V11.

Surface remains of houses and tombs of ethnographic and Turkic periods are found in all the 14 valleys; signs of water management and foddering activities in 8 of them, the most rich in water.

Further east of the main complex, beyond V14, a depression with 3 flat long valleys (V15,16,17) indicates the border between Kuljabasy West and *Kuljabasy East*. Valley V16 is the only one where a kind of small stream flows all the summer long and moreover, long and flat, represents the best road across the range. But from this point eastward the valleys' slopes become less steep, waters and rock surfaces become more rare and so quantity and quality of the petroglyphs. Anyway the presence of a restricted area going east from Valley 17 to the end of the range (10 km north-east of the town of Otar) impedes a more precise survey and documentation.

Ecology. The arid climate and environment of the region makes that an accurate use of water and vegetal resources though a mobile life is an absolute precondition of human habitats. From this ecological point of view the mountainous Kuljabasy valleys on one side and, 35 km south, the summer prairies of the *Kendykta*s plateau (1500 m asl) constitute together a compact area with complementary ecological zones. The historical importance of this ecological interconnection between the 2 regions is confirmed by ethnographical accounts and by the strict similarity of archaeological remains of all epochs: same prehistoric and historical ceramics and housings, cemeteries, water management devices.

The Kendykta plateau and the long valleys cut in its southwestern slopes have a higher abundance of water, precipitation and settling facilities. With the problem of the winter snow-cover easily solved through foraging activities and short displacements, and because of the abundant copper deposits of the southwestern valleys, the area represents the economical and demographic center of a large region. In Kuljabasy waters and people are scarcer, but anyway the mountain range provides few valleys that represent good winter settlements provided with few springs, sheltered from winds, well exposed to sunshine, characterized by dry conditions that allow on the southern slopes winter grazing facilities.

But where Kendykta has very bad rock material and shows only few scattered poor petroglyphs, Kuljabasy hosts rock surfaces of the quality requested by the petroglyph performance, a fact that ended up with the accumulation of an excellent collection of unique documents of past cultures. Moreover the Kuljabasy range is situated at the very center of 2 important alignment of oases and natural roads: one runs west-east along the depression of the Shokpar and Kopa valleys; the other one runs southeast-northwest along the line of springs and mini-oases bounded by deserts that is provided by the Chu-Ili range. In that way Kuljabasy, as a crossroad between cultural areas, has seen during history the transition of several peoples and cultures. The presence of metallic

surfaces, little but elegant habitats and natural roads makes of Kuljabasy (surely today from the archaeological point of view but obviously also for the most curious of our ancestors) the cultural memorial center of a wide region during more than 3500 years.

3. The archaeological complex

The cultural landscape of **Kuljabasy West** consists of a geo-archaeological complex covering a rectangular area of 10x3 km, divided into 2 bands (**Fig 3**). The first band, on the south, is an area of 10x1 km represented by semi-desertic piedmonts and alluvial fans hosting funerary monuments of all the epochs. The second band, north of it, is an area of 10x2 km constituted by a mountain zone with 14 valleys, hosting waters, metallic rock surfaces, and all the other kinds of monuments (houses, water devices, paths, petroglyphs and cup-marks, oba and cairns and stone-henges).

More precisely, burial monuments of all epochs are located on the first band, at the valleys outputs (plus few kurgans on mountain passes); settlements and dwellings are located in the internal part of the valleys where terraces are well pronounced and sources active; petroglyphs too are in the mountain zone, on rock outcrops of inter-valley watershed areas.

Settlements. Ceramic findings and trial trenches show that the terraces chosen for the earliest settlements (Bronze Age) have been then continuously inhabited during all the following historical periods, clearly showing their quality as most suitable places. No traces of archaic (early than Bronze) camps or tombs have been found. In the middle and top part of the most wet and sheltered of the 14 valleys (which means V1(?), V2, V3, V5, V14) have been found 6 deposits of Bronze age ceramics, sometimes together with related stone constructions (V2, V5).

The wider geographical diffusion of settlements of successive epochs witnesses a process of progressive colonization of the territory of the complex. Saka and Wusun ceramic deposits double in number (14 are found), located in the same valleys of the Bronze age settlements (plus V12), on the same terraces as well as on neighboring drier terraces.

The medieval period sees a major increase in the use of the territory, with the number of remains of medieval houses expanded to 22, located in the same valleys of the former periods as well as spread in all the other drier valleys of the complex.

The ethnographic period saw the building of at least 50 houses, reaching in that way the full exploitation of the sheltering and grazing possibilities of the territory. The most crowded areas have always been V1,2,3,5,12,14; the less hospitable V8,9,10,11,13.

The density of monuments in V12 can be partly explained by the special function of this longest valley as best *path* from plains to plateau across Kuljabasy West.

Water Management. Water use devices of 4 kinds have been individuated: small dams, basins, cisterns, and stone enclosures. Dams and basins are located in the wet valleys V2,3,5,14, intended for keeping waters and ground-waters within the valley and enhancing the springs for a all year around activity. Cisterns are located in the most dry valleys V7,8,9,10. Stone enclosures few km long are found in V5 and V10, evidently intended to protect foraging areas from sediments running off from the slopes. At the actual state of knowledge, all these devices are attributed to the ethnographic period and the present name of the valley that shows the largest investment of hydraulic works, V5, “Karbuz-sai” (watermelon place), eventually refers to the past agricultural use of the place. Samples from geological trenches are presently under pedological and palinological analysis and will eventually give information about ancient agricultural practices in the region.

Cemeteries. Funeral monuments of every epoch are all located in the piedmont band of alluvial fans at the southern estuary of the valleys. They consist of Bronze age stone-henges with cist tombs, Saka-Wusun-Turkic kurgans, Kazakh cemeteries and mausoleums.

In spite of petroglyphic evidence of an archaic use of the territory, the earliest burials found in the area are dated to the Middle-Late Bronze ages. Further reconnaissance surveys must be implemented but it is not excluded that in Kuljabasy it is within the Middle-Late Bronze age that the landscape starts to be signed by monumental burials. An exceptional number of 25 Bronze Age

tombs have been found at the entrance of V3, clusters of few tombs on the alluvial fans of V2,5,6,12. They consist of stone-henges with cist tombs attributed to the Bronze age Alakol culture and dated to the 14th-12th c. BC. They are located as 'door guardians' of the richest valleys and their historical appearance could point to an early phase of social structuring and land reclamation.

Kurgans are present at the door of all the valleys as alignments of 3-8 constructions, with an exceptional concentration of 20-25 mounds at the door of V2 and of the dry valley V8 (!). The principles of their localization are quite different from the burial grounds of the Bronze age. The last ones are grouped in clusters at the entrance of the best valleys; kurgans are grouped by lines as projection towards the plains of the sides of all the valleys. The bad conditions of the kurgans' stone cover are caused by intensive removal of stones for building purposes: of burial grounds during the ethnographic period and of farms during the Soviet period. Medieval kurgans and a Turkic stele engraved with some petroglyphs are located at the estuary of V2; a medieval memorial fencing at the estuary of V6.

Kazakh cemeteries with stone fencing are located at the door of V2,3,5,6,12; clay dome mausoleums at the doors of V5, V12 (and V16). They occupy the same topographical location of the Bronze age cemeteries (see par 5.3).

All along history, from Bronze to ethnographic periods, the favored location for funerary monuments are the entrances of the valleys, in particular of V2,3,5,6,12, which are 5 of the 8 most wet valleys, the most inhabited and richest in petroglyph executions. The anomalous absence of surface remains on the fans of V1 and V14 could be attributed to the thick sediment deposits; and of V4 to floods.

Petroglyphs in the topographical context. In the valleys of Kuljabasy West human habitats coexisted all along history with rock surfaces of good quality. The time came, possibly during the Neolithic epoch, but surely within the Early Bronze age (2nd millennium BC) when petroglyphs of high performance started to be engraved on all the best rock outcrops and surfaces.

In the complex as a whole 14 valleys exist, perpendicularly crossed by 2 bands of rock formations in coincidence with 2 neo-tectonic faults (V1-V6, V12-V14). A total of 40 rock outcrops are endowed of good rock surfaces (good smoothness, patina and dimension) and each has at least few surfaces engraved. Of the total 3000 rock surfaces, around 600 have been engraved with a total of 3000 significant drawings.

It is possible to make per each valley and each of the 40 rock outcrops an approximate estimation of the possibilities offered by the rock substratum, of the number of petroglyph executions and of the rate of use of the surfaces. The valleys that host the highest number and quality of rock surfaces, the best petroglyph groups and almost all the petroglyphs of the complex are the 8 valleys with the best rock material and water facilities: V1-6, V12 and V14. All together they host 30 petroglyph groups, among which all the 18 groups of primary importance by quantity, performance, antiquity, scientific significance and artistic beauty. The highest concentration of petroglyphs is found in V3 G2-3-4; the highest rate of use of disposable material in V3 and V5.

Referring to the remnant 6 valleys and 10 groups: V7 has very poor rock material; V8,9,10,11,13 are valleys just 1 km long and steep, quite dry and very poor in rock material, 3 factors that explain the decreasing density of representations and their total absence in valley V10.

Oba and cairns. Vertical piles of stones (oba) are built practically on every hilltop and are counted by hundreds. From each of them at least 20 others can be seen. Their height goes from 1 to 3 m. They stand mostly by one and exceptionally in groups of 2-4, in the last cases without or with walls. Done and repaired several times along the millennia, the date of their first appearance is totally obscure. Large stone mounds shaped like kurgans (and sometimes real kurgans) are built by groups of 1 or 2 practically on every mountain pass and, in the case of V2 and V3, also along the northern watershed of the valleys. Often they constitute the bases of oba.

Today, all together, these monuments have a complementary topological impact on the semiotic landscape. Cemeteries sign the southern entrance of the valleys; villages and water devices sign living areas all along their bottom; petroglyphs decorate the rock surfaces that cross perpendicularly the slopes at mid valley; oba and cairns started or completed the process of

landscape culturalization by totally encircling the territory of each single valley by cultural signs built on the watersheds (hilltops and passes).

The relative social importance of these different monumental expressions changed during history, but their durability makes that all together played at every stage as evident accumulation of ancestral acts of landscape culturalization.

4. Classification of petroglyphs (performance, repertory, periodization)

The study of the petroglyph representations of the complex of Kuljabasy West has been based on methods developed during 40 years of scientific study of the petroglyphs of South Kazakhstan. It consists of the analysis of performance (localization, technique, style), repertory (subjects, compositions), periodization (stratigraphy, patina, archaeological correlation, cultural chronological attribution of performance and repertory). Preliminary results consist of a chronological classification that distinguishes 6 successive periods: Archaic, Middle Bronze, Late Bronze, Early Iron Saka, Early Iron Wusun, Turkic.

The Archaic period, constituted by petroglyphs earlier than Bronze, makes of Kuljabasy the site the most ancient of Kazakhstan. Successive periods are constituted by a rich repertory that, by subjects and styles, apart few unique images (wolf-masks, mirrors, warriors), is basically analogous with the repertory of the other monuments of South Kazakhstan and shares similarities with more remote sites of Central Asia, Siberia and Western Mongolia.

Figure 3 indicates by spots and numbers the topographical location of 40 petroglyph groups. Groups are often composed of scattered sub-groups, so the presence of petroglyphs is marked with circles of 3 different sizes, the biggest denoting sub-groups with more than 30 engraved surfaces, the medium with 10-30 surfaces, the smallest with less than 10 surfaces.

Archaic period (3rd millennium? – 16th century BC). (**Fig 4&5**). The Archaic period encompasses all the petroglyphs that, following the criteria presently in use, cannot be classed within the Middle Bronze period and, by analogies with other ancient petroglyphs found on the Eurasian territory, are rather attributed to more ancient epochs. At the present state of knowledge it is impossible to fix any absolute chronology.

Localization and technique. Archaic petroglyphs are engraved on more than 40 surfaces distributed from V1 to V6, the richest in waters and good rock material. The highest concentrations are found in Valley 3: in rock group V3G2 where they cover around 20 surfaces and represent 80% of the petroglyphs; and in the contiguous group V3G3. Their localization privileges horizontal large surfaces facing majestic landscapes as a frame. The work is clearly done by stone tools. Cup marks and lines connecting figures and cracks emphasize the presence of the rock substratum.

Subject repertory. The Archaic period is represented by 50-60 representations of aurochs (wild bulls with long or short horns). Figures are realized in large and very large size (up to 2 x 1 m).

Styles are much differentiated, eventually due to the long span of time covered by the period. Three basic figurative ways (by contour, contour+stripes, silhouette) combined with some variants makes that 12 different styles can be individuated, of which 4 represented by just 1-2 petroglyphs. Morphological considerations (technique, style) suggest that the most ancient stylistic types of the complex are represented by 3 types of outline [schematic (**Fig 4 V4G4**), plastic (**Fig 5 V3G3.40**), geometric]. A chronological order between them is suggested by 7 cases of stratigraphic superposition of contour figures by striped figures and of striped figures by silhouettes. Each of the 3 styles show transitional steps of development from contour to stripes and from stripes to silhouette, together with an increase of realism.

The *schematic style* is characterized by around 10 figures of aurochs of huge dimensions, roughly outlined by contour+stripes, with trigonal no-pecked head, lines connecting figures with cracks. It is apparently the most ancient and it develops in a very specific way by improving plasticity and stripes texture but not using silhouette.

The *plastic style* is represented by few but excellent figures of aurochs in medium size, in contour and no-pecked head. It tends to influence the geometric styles ending up with few excellent syncretic performances (**Fig 5 V3G3.40**).

The *geometric style* is the most numerous: figures of aurochs are around 50, of medium size, pecked heads, often associated in groups of 2-4, presence of cup-marks. It shows several transitional steps between contour and stripes, with improvement of the stripes texture and of the plasticity of the contour lines, in evident syncretism with the plastic style.

The plastic and geometric styles merge completely within the transition from stripes to silhouette, which happens together with a significant increase in realism (details, plasticity). The final attainment seems to be the 3 prototypes (body-trigonal/round/massive) of the Bronze period styles of the Chu-Ili mountains.

A special series of engraving is found which is of difficult classification. It shows a larger subject repertory (cup-marks, humans with open arms, archers, goats) with figures realized in medium size (10-20 cm), thick lines, contour, always associated in elegant compositions together with cup-marks. They share analogies with the early geometric style and, waiting for better correlation, both series can be attributed to Neolithic cultures.

Middle Bronze period (XVI-XIII BC) (**Fig 6-9**). The Middle Bronze period represents the blossoming age of the petroglyph complex of Kuljabasy. Together the Middle and Late Bronze see the highest petroglyphic activity in the site, producing (in the same proportion) almost half of the total petroglyphs...and of excellent quality. Petroglyphs are densely concentrated, like the archaic ones, in the first 6 valleys (mainly V3-V4); but they also spread in the last 4 valleys (V11,12,13,14) at the eastern end of the complex where usable rock material and water manifest again.

Localization and technique. The petroglyphs of this period are engraved on horizontal as well as on vertical surfaces and show big concern for the high quality of the rock material. The execution is mainly done by metal tools; the performance is of excellent quality with deep, regular, dense pecking. The average size of the figures is of 20-30 cm.

Subject repertory and performance, by their excellence, are the most distinguishing characteristics of the Middle Bronze period. The subject repertory becomes very rich, numbering up to 20-25 subjects. The wild bull still represents the main subject, but many others appear: horses, goats, sheep, deer, predators (wolf, cheetah, bear, lion), hare, storks, anthropomorphic bird and wolf, humans in several positions and actions (men, women, weapons, wolf masks, hunting, riding goats or horses, humans rising hands, meeting and fighting), portraits, footprint, wheels and chariots, solar signs, squares, labyrinths, various symbols. Some compositions recur more frequently: processions of animals (mainly to the right), men among animals, archer and prey, human meetings, horns with solar signs. Some Middle Bronze figures are associated with Archaic large size executions: together they form diachronic compositions with different phases evidenced by different patina and different styles. This taste for compositions adding small size figures to former larger performances will characterize also the following periods.

By *style* the petroglyphs of Middle Bronze period tend all to naturalism: reality and movements are suggested by details of the silhouette (4 legs, feet, knees, hairs, face), tri-dimensionality by stratified lines, plasticity of the bodies suggested by micro-relief and partial silhouette. Stylistic differences based on the different use of these dichotomies are very relevant; and eventually individual authors can be pointed out. Transitional steps between styles can be detected: some of the Mid Bronze bulls' representations seem transitional from the Archaic period and witness local developments; cup-marks, which have been used to represent heads during the Archaic phase, are still used as syntactic element for feet, hands, heads.

Late Bronze period (XII-IX BC) (**Fig 10-11**). Petroglyphs of this period are a continuation of those of the Middle Bronze, so that a precise border between the 2 epochs is not clearly definable.

Localization and technique. Petroglyphs are executed more or less in the same quantity and in the same location of the Middle Bronze ones, more diffused down to peripheral blocks. They use the same vertical as well as smaller surfaces, adapting to them figures of lesser size (averaging 15-cm) and thinner lines. Tri-dimensional and plastic effects become rarer and the performance is of lesser quality.

The *subjects repertory* shows few variations, getting enriched with some subjects typical of the period: domesticated animals, juxtaposition of deer and snakes, bulls with elongated horns, horned horses, riders of horses or goats or camels, mirrors, mirror-heads, few types of wheels and chariots, etc. The relative frequency of different subjects also changes: figures of bulls diminish; those of goats, horses, dogs, riders, and hunters increase.

Deliberate *compositions* are very frequent: like and more than during Middle Bronze, the Late Bronze petroglyphs often surround former large petroglyphs with smaller and even miniaturized figures, without intersecting them. The whole results in the reinterpretation of former compositions with less significant associations.

Styles privilege silhouettes with elongated body shape and thin legs. Stylistic variants within the site decrease in number and show wider analogies with other sites of the Chu-Ili and Karatau mountains (but not with regions beyond the Ili river) witnessing a process of standardization together with a general development of distant interactions.

Early Iron-Saka period (8th-3rd c. BC). The early appearance and the ending of petroglyph performances of the Early-Iron Saka period both constitute very abrupt events from every point of view.

Location and technique. During the Saka period in Kuljabasy the petroglyph executions diminished by more than half, and added just 20% to the complex. They diffused in all the 14 valleys, with large concentrations in V2G6, V3G4, V5G1, V6G2, V12G3 where they are preferentially located apart from earlier petroglyphs. They privilege vertical stones in a good theatrical position and eventually horizontal stones when of easy visibility and neighboring villages. The performance is generally very accurate with high stylistic concern. The size of the figures averages 15 cm.

The *subject repertory*, like everywhere during that period in South Kazakhstan, also in Kujabasy West reduces drastically to very few subjects, mainly goats, few hunters and riders, animals executed with standardized bodies in spiral dynamic style (animal style). Goats, sheep and deer become the main subjects and they will be so until the end of the petroglyph production. Two series of inscription-like symbols are found in V4G1 and V5G1). Compositions show a taste for oppositions, symmetries, inversions between figures, witness of geometric skills. Some astonishing compositions have been found that seem to be the product of exceptional Early Iron artists: remarkable are three surfaces in V5G1 with representations of mirrors, warriors (**Fig 12, 13**) and a scene of death, motherhood and vase (**Fig 14**).

Styles privilege rounded dynamic body shapes with detailed joints; executed as silhouette or as contour with internal lines. From the Saka period on, styles don't have anymore local character and their types can be found all over the Chu-Ili mountains, South Kazakhstan, and farther until Siberia and South Central Asia. Two main stylistic classes can be individuated, one related with Semirechie's and the other with Altai's performances. The process of homogenization that characterizes this period is evidence of a major socio-economical change connected with an irreversible growth of human interaction all over the Central Asian steppes.

Early Iron-Wusun period (2nd c. BC-5th c. AD). The petroglyphs of this period are a poor appendage of the Saka production, with less careful performance and simplification of style.

Location and technique. The frequency of the executions, and so their distribution in the complex, are the same as those of the Saka times, with the exception of V5G1-2 where Wusun performances are almost absent.

They are executed on vertical and horizontal stones even when characterized by bad exposition, difficult visibility and mediocre material. The size of the figure becomes smaller averaging 10 cm and the performance is of medium-low quality.

The *repertory* is further reduced to a few subjects (goat, sheep, horse, archer, horse-rider) and the animals, by their immobility, could refer to domesticated species. *Compositions* have poor semantic content. The juxtaposition of small goats and sheep with former executions become common again, a taste that appeared in Late Bronze, disappeared with the Saka, characterize the Wusun period and will also characterize the following Turkic period.

The *style* of the simplest performances is linear, poor of denotative elements (2 legs, 1 horn, no-knees, no-hair, etc) and consequently very homogeneous. Some exceptional high quality representations consist in animals with heavy voluminous plastic bodies executed by very delicate engraving-polishing techniques.

Turkic period (6th-14th c. AD) (**Fig15**). The period in Kuljabasy West sees a further and final fall of importance of the petroglyph activity together with the introduction of some significant elements. *Location and Technique*. The number of the executions during this period decreases sharply and contributes by less than 10% to the total of the complex. They are often located in some of the groups used during the Wusun period, but absent in V1, V5, V13. With the Wusun they share also the same indifference for the quality of the rock substratum (also small and low quality surfaces are used), the same average performance of medium quality. Figures are of small size; are done by pecking with a sharp metal tools and by polishing; are generally of low standard quality, but a few excellent petroglyphs are present in V2G3, V3G4, V14G1

The *repertory* increases slightly by imitation of the Saka repertory (high frequency of deer and horses). Some innovations are introduced mainly as representations of warriors and knights that represent the best petroglyphs of the period. *Juxtapositions and palimpsests* are quite common.

Stylistic variants are very few and present analogies with all the other sites of South Kazakhstan and farther.

The Turkic represents the 6th and final period of the Kuljabasy site.

Very few petroglyphs have been found that can be attributed to the following ethnographic period (15th-19th c. AD). **Kazakh** petroglyphs are rare: a couple of authors can be recognized in V4G4 and V5G3. Djungarian inscriptions are found 30 km far at the eastern end of the range.

5. Historical reconstruction: formation of the complex and development of the cultural context

Formation of the complex. The distribution of petroglyphs along several ecologically independent makes Kuljabasy, like of Eshkiolmes, an excellent polygon for the correlation of petroglyph executions with other elements of the geo-archaeological complex. Such an approach, together with the help of statistical (spatial archaeology, site catchment analysis) and semiotic approaches would bring to the reconstruction of the process of *landscape culturalization*. In that perspective preliminary is the analysis of the physical and qualitative structure and development of the site.

Physical development of the complex. The Kuljabasy West petroglyph complex, constituted of 40 groups distributed in 14 valleys, shows a strict correspondence between quality of rock material, presence of springs, quantity and quality and antiquity of petroglyphs. The groups V3G2-3, where rock surfaces are by far the most abundant, metallic, smooth, and the landscape the most impressive, show the highest density and quality and antiquity of petroglyphs. It represents the center of the complex that has been used as first during the *archaic* period and then engraved all along history down to the medieval period. Of the 40 groups, 18 are of primary importance by quantity and quality of petroglyphs of all epochs and are all located in the 8 valleys (V1-6, V12, V14) richest by quality of rock material and waters.

Surfaces engraved during the *Archaic* period are around 50 and more than half are located in group V3G2 (where they constitute 80% of the petroglyphs) and in contiguous rocks of V3G3; the others are scattered in V1G1-2, V2G6, V4G1-2, V5G4, V6G1. In total the period concerns the first 6 valleys and a total of 9 groups.

The *Bronze* period represents the major physical development of the site with the number of executions growing and realizing almost 50% of the whole complex. The performances, on flat as

well as on vertical surfaces, are concentrated in the same first 6 valleys and diffused eastward to the last 3 (V12-13-14). The period concerns 9 valleys with 24 groups executed during the Middle Bronze and 32 during the Late Bronze.

With the following *Saka and Wusun* periods, petroglyph production decreases drastically and becomes concentrated in specific groups. It privileges small vertical surfaces of rock outcrops of valleys V2,3,5,6,12; but in the same time it diffuses farther concerning even the 5 drier valleys (V7-V11) and, at least with a few poor petroglyphs, all the 40 groups of the complex.

The *Turkic* period is poorly represented, with the exception of V2G6, V3G4, V12G3, the last one constituting the best road across the range.

As a whole the culturalization of the site sees the first 3 periods (Archaic, Middle Bronze, Late Bronze) having the tendency to an extensive culturalization of the best watered areas and rocks of the region; and the following periods, starting with the Saka, having the tendency to concentrate near houses and to spread with them.

Together with the development of the site the resources of rock material diminished progressively. The flat large surfaces privileged by the first periods became quickly exhausted in all the valleys, favoring the switch of the taste on more abundant vertical rock material and on peripheral small surfaces.

Qualitative development of the complex. The qualitative development of the site (general character of the performance on the site during 6 successive periods) can be summarized in this way: the Archaic period represents the original start of the complex, Middle Bronze the apotheosis, Late Bronze a transitional period, Early-Iron Saka represents a major change, Wusun an appendage of the Saka change, Turkic an eclectic epilogue of it.

Like by quantity so by quality the most relevant set of petroglyphs of Kuljabasy has been executed during the *Archaic and Middle Bronze* periods, which saw the rise and apotheosis of performances with high local originality and exclusiveness together with high internal stylistic diversity and interaction.

With the *Late Bronze* the stylistic differences decrease and point to analogies with other sites hundreds of km away, suggesting the start of a process of homogenization together with a growth of distant interactions. That trend will increase during the following time. The *Saka* period represents the major abrupt change in the quantitative and qualitative development of the site: the performance kept a high level but the variety of the repertory decreased drastically and large geographical stylistic analogies became definitely more relevant than local peculiarities. Within the *Wusun and Turkic* periods even the quality of the performance became very poor and a progressive loss of significance accompanied the end of the engraving activity within the beginning of the 2nd millennium AD.

As a whole the site of Kuljabasy West has been enriched of the most labor consuming, most peculiar and creative petroglyphs during its early periods Archaic and Bronze, which makes it the oldest archive of visual expression up to now discovered in South Kazakhstan and one of the oldest and most significant in Central Asia (together with the petroglyph complexes of Sarmishsai in the Nuratau region (UZ) and of Tsagaan Salaa in Western Mongolia).

Several performances have been detected in every period that can be attributed to individual authors.

Development of the cultural context. From the analysis of the petroglyph site of Kuljabasy a preliminary reconstruction of the development of the ecological and social context in the region can be induced.

The Kuljabasy range, besides the excellence of the rock material, has 2 main peculiar traits: on one side it can provide winter shelter for wild animals and humans; on the other it parallels one of the major corridors for displacements in North Central Asia. The petroglyphs of the *Archaic* period started to be done around or earlier than the 2nd millennium BC by groups of hunters and early shepherds, quite mobile with short seasonal displacements and multi-residential facilities inside the borders of a well defined ecological habitat. The high number of stylistic differences in the performance of the same subject (wild bulls) testifies from this early time the movement in the region of different tribes.

The second period shows the basic elements of the *Middle Bronze* age cultures of South Kazakhstan with representations of wild animals, archers, hand-axes and clubs, chariots, solar signs applied to animals and occasionally to humans, plans and labyrinths. The petroglyphs are evidence of a first major change: the rise in the steppes of a new culture of mix-hunting shepherds with capability of semi-settled life and eventually of farming. This change happened in the middle of the 2nd millennium BC mostly out of local evolution (as suggested by stylistic links with the archaic phase) open to external exchanges (witnessed by the large areal distribution of stylistic analogies).

The *Late Bronze* period, with its repertory and styles, points to the presence of human groups more homogeneous, endowed with higher shepherding capacities, higher mobility and social interactions. Horse riding becomes one of the main subjects; representations of domesticated animals appear; fewer bulls and more goats and sheep and horses denote changes in herd composition and improvements in mobility and pastoralist techniques. Stylistic similarities with distant regions increase.

The *Saka* petroglyphs, like the Middle Bronze petroglyphs, represent a major turn of culture witnessed by the sudden drastic contraction of the repertory of subjects and styles (a loss that will never be recovered), the rise of a theatrical visual concern absent in the Bronze Age petroglyphs, and wide homogeneity of performances on large territories and sites. The importance of the petroglyph sites in the action of landscape culturalization decreases, substituted by the overwhelming importance of funerary genealogical monuments; the esthetical attention develops, sign of the emergence of emblematic needs connected with the appearance of aristocratic clans and tribes. Goats and sheep become by far the dominant motive of the petroglyph representations as well as central elements of the funerary ritual and of golden artifacts. The suddenness of the appearance and disappearance of the Saka style witnesses the presence in the steppes of consistent movements of peoples characterized by more nomadic habits.

Wusun petroglyphs conserve without enrichments the poor repertory inherited from the Saka times and show the return to a concern for simple naturalistic subjects such as immobile heavy animal bodies, evidently domesticated. It is as if local and immigrated semi-sedentary popular classes of mix-farming shepherds, after the Saka aristocratic manipulation of the petroglyphic expression, restart to express themselves on stones as in the Late Bronze times, drawing the simple protagonists of daily life. Juxtapositions and palimpsests, as during the Late Bronze, become common again witnessing the taste for the same kind of surfaces and the search for ancestral backgrounds.

The *Turkic* time sees the development of pastoral activities, commercial transports, military aristocracies and petroglyph performances to the most distant peripheries. Petroglyphs seem to be done just to testify by marks the human presence: stone material is not important, neither is the beauty of execution or the originality of subjects: more relevant is the localization of the rock surface near a path. Juxtapositions and palimpsests are abundant like during the Wusun period but more aggressive. Intermingled with these petroglyphs that testify the existence of a wealthy pastoralist society, frequent representations of soldiers and riders show the diffusion in the society of military aesthetics and political emblems

Within the beginning of the 2nd millennium AD, after the military ideological rule of the Turks, the development of writing and the spread of Islam, in Kuljabasy the production of petroglyphs ended forever.

Interregional correlation and significance. When submitted to a comparative analysis with other main sites of South Kazakhstan, Kuljabasy shows some peculiar traits by its antiquity, subject repertory and stylistic variety, large areal correlation.

Kuljabasy evidently shows an archaic stage (Early Bronze and Neolithic) up to now not individuated in other complexes of the surrounding regions neither in other sites of Central Asia. By that Kuljabasy seems to be the site that first in South Kazakhstan reaches a blossoming and develops for the longest period of time; and the petroglyphs of its first Archaic stage up to now appear as a local exclusiveness.

Performance and repertory of the following stages are typical of the Semirechie petroglyph culture. But the higher variety of performances, styles and subject repertory witnesses in Kuljabasy

the work of very different human groups crossing the region, a fact explained by the particular position of the complex on 2 main west-east (valley of the Kopa river) and south-north (west Chu-Ili mountains) natural roads.

The subject repertory is relatively wide and, when compared with the one of other sites of South Kazakhstan, few figures are absent: juxtaposition of solar symbols and human figures are present in V2G2, anthropomorphic mirror-heads in V3G4, V4G1-2, but sun-heads are absent and only found 30 km east on the oriental side of the range. Some figures are present but rare (sexual union, marriage); some are almost exclusive (stork, tree, man with wolf-mask, spiral labyrinth); others are totally exclusive (huge aurochs, lion, hare, mirrors and mirror-heads, Saka warriors with paraphernalia, birthing woman with chauldron). The relative abundance of some subjects (of bulls during the early periods, horses during the Late Bronze, wild goats during the Saka, domesticated goats during the Wusun and deer during the Turkic) is quite the same as in the other South Kazakhstan sites.

The stylistic execution, unique and possibly just local during the Archaic period, starting from the Bronze period finds growing analogies with other sites of the Chu-Ili mountains (Tamgaly, Kantau), South Kazakhstan (Arpauzen) and, by the Late Bronze, with sites of North Altai and West Mongolia to the northeast, Sarmysh and Saimaly-Tash to the southwest. Stylistic analogies with the Djungarian sites (Eshkiolmes, Bayanjurek) are very weak and appear only with the Saka period, showing the role of the Ili river and deserts in fixing a cultural border.

It is difficult to overestimate the value of the discovery of monuments like Kuljabasy, Tamgaly, and Saimaly-Tash. They appeared and accumulated in history by the concomitance of special geographical and ecological conditions on key-points of traditional ways or on the borders between cultural-economic zones, witnessing the interaction of different cultures and peoples of Central Asia. The rich petroglyph complex of Kuljabasy includes some series of images of different epochs most significant for the cultural-chronological correlation of the major monuments of region.

One of such series is constituted by images of mirrors, which in Kuljabasy are in number of 10, distributed by 2 in groups V1G1, V4G1, V5G1, V5G3 and by 1 in V3G4, V4G2, all in association with petroglyphs of Bronze and Early Iron epochs. All mirrors are round with a handle, executed very carefully. Six of them by form and dimension probably reproduce real prototypes; 4 of them, smaller in size, constitute the head of anthropomorphic personages.

The mirror images of the Bronze epoch have short straight handle and look similar to such kind of metal wares in circulation in Anterior and Central Asia from the second millennium BC down to AD. However the most strict correlation of the Kuljabasy mirrors is with bronze mirrors found on the territory of Kyrgyzstan (Shamsh, Sykylyk, Sadavoe) in constructions dated from the 12th-9th centuries BC down to AD, and in the Fergana valley (settlements of Chust and Dalverzin). The lower dating given for the Chust and Dalverzin cultures as a whole (middle of 14th century down to AD) remains debatable (Zadneprovskiy Rusanov), but in the case of the mirrors of Kuljabasy is more reasonable a later dating, as work of Late Bronze mobile “steppe” tribes at the time of their most active interaction with farmers of the south. It is necessary to add that the styles and iconography of the petroglyphs of Kuljabasy associated with images of mirrors are identical to ones of the basic layers of the petroglyphs of Saimaly-Tash, i.e. the first geometrical rectangular style of Bernshtam’s classification. Moreover the influence of this same graphic stage of the petroglyphs of Saimaly-Tash seems to fix the iconography of the late bronze solar personages of Tamgaly.

Another series of petroglyphs associated with the Kuljabasy images of mirrors is constituted by a small but excellent collection of figures of early Iron epoch. They are located on three surfaces of the compact group V5G1: two soldiers (**Fig 13**); a running horse and a mirror with a coin-like thickening at the bottom of the handle (**Fig 12**); a complex palimpsests including the figures of a pregnant woman, a cauldron with support and vertical handles, two horses at the pole, a mirror with a long handle, etc. It is possible that the images of all three compositions, essentially different by technique and manner, are work of different masters, but within the limits of the same historical epoch. The attribution of these petroglyphs, based on subjects typology, iconography and style, point to two basic directions of cultural-historical connections: a western- northwestern direction

(Sakas of the East Pre-Aral, , Jeti-Asar monuments of the lower reaches of the Syr-Darya, Sauromatian and Sarmatian tribes of Kazakhstan, Pre-Ural and Volga region, in an interval between the VII-VI BC to AD); and a northeastern direction (Pazyryk monuments of the Altai, Tagar culture of the Minusinsk basin, in the interval 5th/4th-3rd centuries BC up to AD). It is necessary to notice, that similar compositions and the images of the birthing woman, the cauldron and the soldiers weapons, are found in Tamgaly and Eshkiolmes where their dating has been independently established between the 5th-4th c. BC down to AD.

As a whole, the bright and various archaeological complex of Kuljabasy can be the key for the solution of many debatable problems of the ancient history of Kazakhstan and adjacent countries of Central Asia.

Ethnographic reports. In some cases, as in the Kazakhs steppes with their *ethnographic context* well preserved, ethnographical accounts concerning the actual use and understanding of the cultural landscape and the recording of social memories can suggest models for regressions and paleo-ethnographic reconstruction, under the hypothesis that some customs ecologically well adapted, given the same territory and the same technology, persist in time and can be read as local behavioral laws.

Interviews with residents of the 2 villages of the plain south of the complex of Kuljabasy West provide the historical reconstruction of the process of re-colonization of the Kuljabasy West valleys that followed the end of the Djungarian wars that depopulated the region (1750). The re-population happened during the second part of the same century by the immigration of a clan from the southern valleys of the Kendyktas plateau. The first patriarchal family settled in V16, the central valley of the Kuljabasy range at the borders between east and west: the most large and windy but also the richest in water and grasses, the best road across the range. From there the following 5 descendant sons occupied the best ecological niches of Kuljabasy West: V2, V5, V6, V12, V17. At the door of these valleys and of V16 are located 6 large Kazakh cemeteries together with the mausoleums of the first settlers (it is remarkable the analogical location of Bronze Age and Kazakh cemeteries). In 3-4 generations (120 years), the territory of Kuljabasy West has been colonized in all its parts, reaching a population of 30 families, 500 persons, 6000 sheep, and seeing the construction of beautiful houses, agricultural and hydrological works, mausoleums, oba, but not of petroglyphs!

This kind of life went on until 1930 when the Stalinist regime resettled the local population around artesian wells in piedmont kolkhozes, with houses and cemeteries built with the stones of old kurgans. From that time until the end of the soviet regime the Kuljabasy West territory became just a secondary and occasional winter pasture reached by daily displacements. Today it is totally deserted.

Some young shepherds, when asked if they engraved some rocks or gathered some stones somewhere, admitted that they wrote their names lying stones on the ground and built an oba because they didn't know what else to do. Waiting for better grounded interpretation of the pragmatic function of petroglyph representations, we can notice that even a fantastic complex like Kuljabasy West, with its 600 engraved surfaces and 3000 significant petroglyphs, could eventually grow during 3 millennia to its actual dimensions just out of such a single yearly impulse. Which is not a little fact considering that nothing better than fortuity can open the doors to the oneiric world that seems to underlie the petroglyph performance.

Figures:

Kuljabasy:

Fig 1 – General map of Chu-Ili mountains showing location of petroglyph sites

Fig 2 – View of Kuljabasy West

Fig 3 – Geo-archaeological map of the Kuljabasy complex

Fig 4 – Archaic period bull, V4G4, Schematic style

Fig 5 – Archaic period bull, V3G3-40, Plastic-striped

Fig 6 – Mid-Bronze period horse, V3G3

Fig 7 – Mid-Bronze period men with wolf masks, V3G3

Fig 8 – Mid-Bronze period chariot, V3G3d

Fig 9 – Mid-Bronze period anthropomorphic sun figure and snake, V2G2

Fig 10 – Mid-Late Bronze period horse and bull, V14G2

Fig 11 – Late Bronze period archer with animals, V5G2

Fig 12 – Early Iron Saka period mirror, V5G1

Fig 13 – Early Iron Saka period warriors, V5G1

Fig 14 – Early Iron Saka period scene of motherhood, V5G1

Fig 14 – Turkic animals, V3G4b