

The Copper Mine at Mess Aynak

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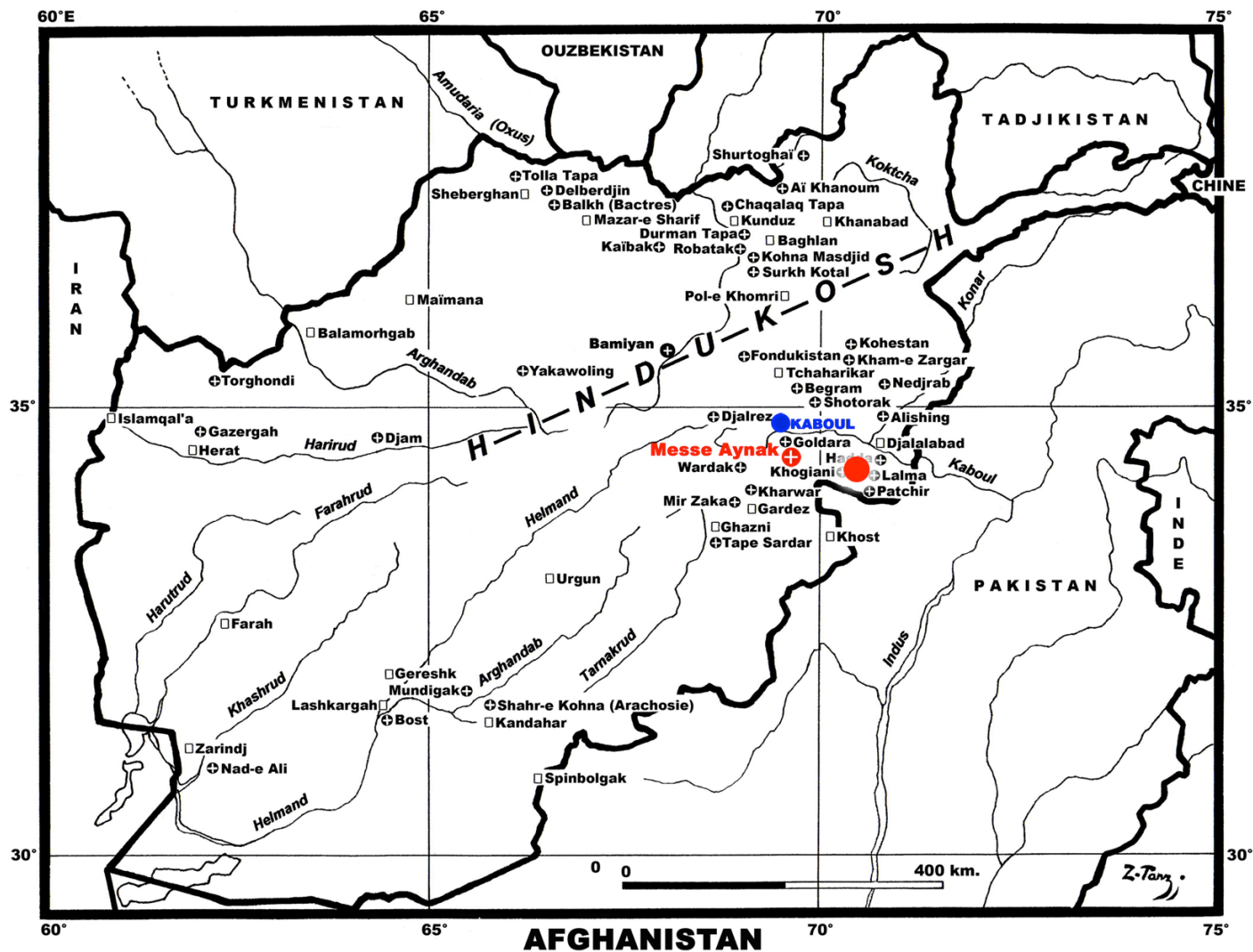


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For more than two years now the international press has been sporadically focusing on the copper mine of Aynak, located in the Afghan province of Logar, south of Kabul, the capital.

This coverage began in 2008 when the Afghan Government called for international bids to exploit the copper mine at Mess Aynak. Interest was only heightened when the **China Metallurgical Group Corporation** entered the bidding and won the contract. China already supports Afghanistan militarily and economically and this hugely important project has now become a focus of intense international attention. There is also another side to this issue: namely a legitimate concern for cultural preservation.

As widespread coverage in the press has already indicated, the situation is extremely complex. On the one hand Afghanistan is in dire need of a boost to its economy and the exploitation of this copper deposit, the second largest in the world, could very well provide just that. On the other hand, a dozen ancient Buddhist monasteries built precisely on top of this enormous copper deposit, are now threatened with destruction.



● MAIN ARCHAEOLOGICAL SITES — □ MAIN TOWNS — © Z. TARZI

The laws that are already in place in Afghanistan, as well as elsewhere in the world, in regards to the protection of cultural heritage cannot be ignored; equally, the present precarious position of the economy of Afghanistan does not allow the Afghan authorities to rule out mining activities altogether. In other words, compromises must be sought that will satisfy, as far as possible, the need for economic development and cultural preservation.

A very limited period of three years has been given to international and Afghan archaeological teams to excavate at the site of Mess Aynak. But, this is in fact far from being sufficient to meet the needs of the case.

In the estimation of a number of experienced archaeologists, the site would ideally require at least as much as 30 years for detailed archaeological exploration. Furthermore, the materials that will be unearthed will include fragile clay statues that will have to be restored and preserved on site and exhibited in situ.

The same concern applies to monumental statues of the Buddha that will have to be left in situ. In other words, the proposed plan for a three-year program of emergency excavation is bound to be extremely challenging; and, as the work proceeds, it will raise many important and difficult issues of restoration and preservation.

In all these circumstances APAA is launching an appeal to ask UNESCO to include the archaeological site of Mess Aynak on its List of Endangered Sites. To-date the petition has over 11,000 signatures. The petition asks UNESCO to include Mess Aynak on its “List of Endangered Sites” and assist in finding solutions to the competing needs of copper extraction and scientific excavations in ways that could preserve, if at all possible, a limited core area of the archaeological site.



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Protect Afghan Archaeological Sites, the case of Mess Aynak

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overview **petition**

Target: UNESCO
Sponsored by: Assoc. for the Protection of Afghan Archaeology

After 30 years of armed conflicts, Afghanistan has suffered the loss and desecration of thousands of archeological objects and hundreds of ancient sites, such as the city of Ai Khanum and Bamiyan, which endured vandalism and irreparable destruction in 2001.

Archaeological sites are like open books, revealing to us the story of an era, a civilization, of trades and relationships between nations. These are the stories of our humanity and the roots of a nation's cultural identity. They must be preserved.

Let us ACT now for the Heritage of Afghanistan and protect Mess Aynak, an ancient and vast Buddhist monastic ensemble under threat from a proposed copper mine. While economical development is necessary through the mining of precious minerals, it cannot become an additional tool for cultural destruction.

Help protect Mess Aynak's treasures--please ask UNESCO to include Mess Aynak, Afghanistan on the List of Endangered Sites and the World Heritage List.

signatures: 11,018

deadline: May 19, 2011

signature goal: 10,000

✓ **Michael, You signed on November 23, 2010.**
Your signature has been delivered to:
UNESCO

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In greater detail, what do we know of Mess Aynak?

As a former Director of Archaeology and Conservation for the Historical Monuments and the Archaeology Institute of Afghanistan, who himself conducted surveys at Mess Aynak during the 1970s, and who has also participated in more recent excavations in Afghanistan, Professor Zmaryalai Tarzi has contributed the following observations.

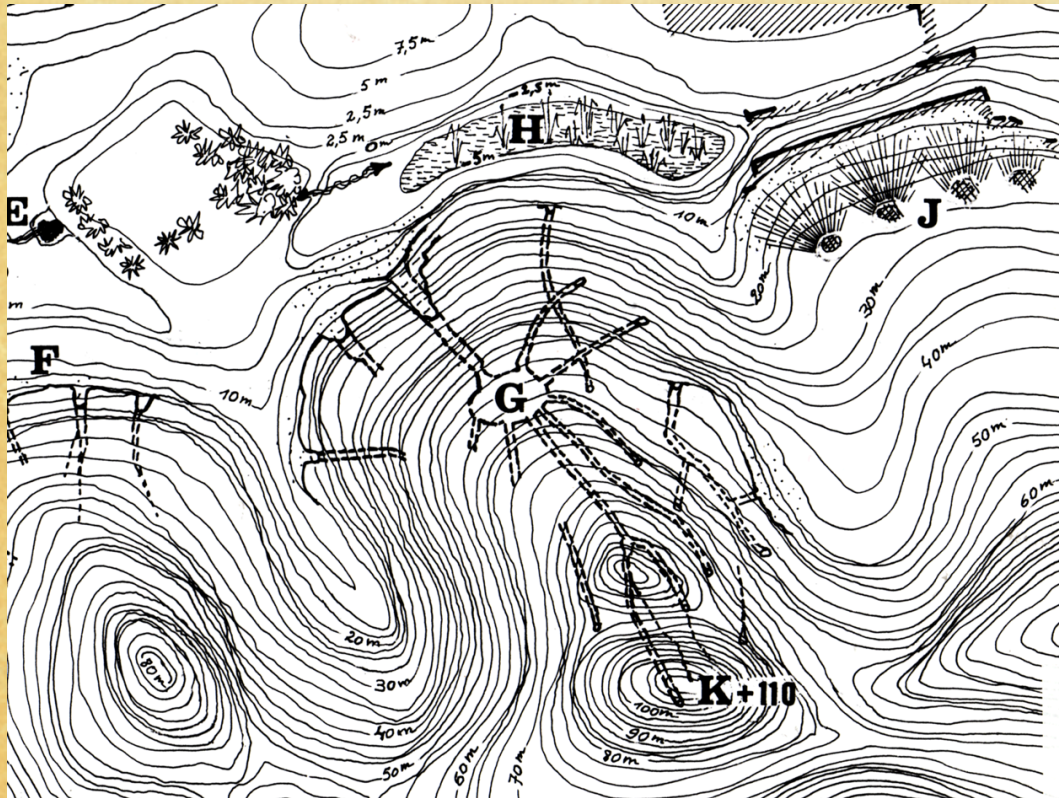


A. 001 – Aynak. Kafariah Tapa: a paxsa -rotunda (local adobe) built with successive bases.

Before proceeding to review many other aspects of this highly significant site, it is important to remember that Mess Aynak has been exploited for its copper since antiquity.

Everywhere traces of metallurgy are visible on the surface: the remains of mining constructions, workshops, blast furnaces, significant quantities of cupreous slag, extraction sites and galleries, all make the copper mine at Mess Aynak one of the most intriguing ancient mining sites in Central Asia, if not in the world.

A portion of the ancient mine should therefore, be preserved for future generations.



The Aynak Copper Mine

The Aynak copper mine is located in central Afghanistan, about 30 km south of Kabul. It stands in a presently mountainous region on ancient trade routes that used to link Kabul to Gardez and Khord to Kabul.

It extends across undulating ground for hundreds of hectares without a well-defined border.

Based on archaeological data, we know that the copper mine of Aynak was exploited from at least the Indo-Greek period (in the 2nd century B.C.) until the time of the arrival of the Arab armies (in the 7th to 9th centuries A.D.) The first scholar to suspect the presence of a copper mine in this location was the Soviet archaeologist, Professor V. M. Masson.

After World War II Marc Le Berre, the architect of the *Délégation Archéologique Française en Afghanistan* (DAFA) made a brief survey of the area .

The first thorough archaeological survey of the site was subsequently undertaken by Z. Tarzi in 1975.

This survey was carried out prior to modern alterations that were first introduced at the site by Soviet experts who, in the late 1970s, were engaged in a far smaller and more discreet exploitation of Mess Aynak's copper resources than that which is in prospect today.

Tarzi was able to visit four sites that had been exploited in antiquity. He also explored dozens of ancient galleries, wells, shafts and tunnels. In certain places this conjunction of tunnels can be seen to have created vast grottos or carved rooms, where air and light were available thanks to the presence of multiple tunnels that led to the surface and through which the copper ore could also be lifted to the surface.

The narrowness of some of the tunnels and galleries would unfortunately seem to point to the use of child labor. With further excavations it would almost certainly be possible to document continuous mining operations over a period of many centuries.





A. 007 – Aynak. A view of the Kafariah Tapa excavations; the exposed parts are protected by canvas for the moment.

The walls of these cavities still bare the marks of metallic pointed instruments, such as chisels, picks and other pointed instruments.

Tarzi undertook three additional missions including one in late 1977. Following Tarzi's last excavation, a team from France, led by T. T. Berthoud, R. Besenval, J. P. Carbonnel, F. Cresbron and J. Lisak-Hours, initiated a new research project.

This enterprise was a cooperative endeavor, undertaken under the joint hospices of various national organizations in France, including the « Recherche Cooperative sur Programme #422 Comisariat de l'Energie Atomique -laboratoire de Recherches des Musées de France (URA #7) and of the CNRS (Centre National de Recherches Scientifiques) » in a project that was given the title: « The Ancient Mines of Afghanistan ».

Based on the results of a radiocarbon determination, released by the French team, the exploitation of the mines at Mess Aynak dates back to at least the beginning of the 1st century B.C.

According to both the French and Soviet missions that worked at Mess Aynak, the cupriferous zone at Mess Aynak occurs in a large geological structure that is usually attributed to the Proterozoic. Native copper is detectable in a scattered form and includes an abundance of various copper elements such as malachite, azurite and cuprite.

The presence of immense deposits of slag, some of which reach ten meters in height, indicates that the ore was worked at the site itself. In certain cases the slag covers entire mountain sides.

The blackish-purple color of the slag reveals a copper smelting industry -- and such slag, which can also be amethyst in color, often still contains measurable amounts of copper.

Archaeological Considerations

As has already been indicated, any archaeological examination of Mess Aynak presents complicated challenges.

First of all, any comprehensive study must focus on the mine itself: its ancient exploitation (over the course of many centuries) and on the approximate amount of ore that was extracted, as well as the uses to which it was put. Thanks to information obtained by Professor Tarzi, we know that Aynak very possibly minted its own coinage. Indeed, in the 1970s several copper coins struck on only one side were found. These were late Kushan coins of the Vasudeva type.

We do not know for certain if the minting, using both copper and pewter, was actually done on the site or if the copper was taken to other locations that already had functioning mints. Generally speaking, we have a fair knowledge of the copper mines of Afghanistan, yet we know very little about any pewter mines despite the fact there is some information that suggests that as early as the first millennium B.C., pewter came from today's Afghanistan.

In keeping with the richness of the copper mines at Aynak, there are also other sites, such as the site at Darband (about 5.5 km to the east of Aynak) and still others of lesser significance in the immediate vicinity of Kabul (ancient Kabulistan), which make it easy for us to explain the abundance of copper/pewter numismatic finds, dating from the period of the Great Kushans and the later Kushans, stretching, in all, from the 1st to the 9th centuries A.D.

Indeed, the British explorer, Charles Masson, found 30,000 late Kushan coins on the bare ground in the 1830s; and the French archaeologist, A. Foucher, also wrote about the richness of Kushan coinage, apparently in reference to mines in north India that are similar to those at Mess Aynak. He noted especially that, until the end of the 19th century and the beginning of the 20th century, local commercial transactions were still conducted using Kushan coins.

The vast industrial metallurgical landscape at Mess Aynak, with its big kilns and blast furnaces, which was largely managed by the Imperial Kushans can be seen to have continued on a more modest scale as evinced by small hearths, melting pots and other such material traces -- traces which support the notion that small industrial enterprises continued to flourish throughout the last pre-Islamic centuries.



A. 008- Excavation of an Aynak site at the foot of the Baba Wali Mountain. Here we may note the remains of such items as both hearths and crucibles.

Today, however, the Mess Aynak sites stand under various threats. Indeed, a few years ago, the Institute of Afghan Archaeology (IAA) was informed of illicit activities undertaken by villagers who were working for several locally prominent individuals who, for the most part, still control the area of Logar today.

During a recent emergency survey a team from the IAA archaeological delegation, led by Mr. Nader Rasouli, noted that at least two Buddhist sites had been extensively damaged by illegal excavations. The clandestine diggers, apparently assisted by “restorers” from Pershawar, are known to have removed clay statues and to have destroyed many precious artifacts in the process.

What Now?

The need for rescue excavations is particularly urgent in the case of the Buddhist monasteries at Mess Aynak in so far as the monasteries are extensively adorned with clay sculptures.

These monuments have become a particular priority for the Afghan Ministry of Culture who have sought funding and requested international archaeological assistance and support.

By the summer of 2010, Afghan archaeologists had undertaken excavations at various separate points at Mess Aynak.



N.16- Aynak. Kafariah Tapa: two archaeologists of the Institute of Afghan Archaeology, Mr. Anwar Fayeze and Mr. Ketab Khan, who are engaged in the Institute program of conservation.

AYNAK.P.001



P. 001- Aynak. Kafariah Tapa: in the niches and chapels the sculptures and moldings are often accompanied by murals. Here we see the rather faded remains of a representation of donors of the Hephthalite type.

The first excavated site, Gol Hamid, was a monastery: it was largely leveled due to modern constructions erected by villagers from Aynak following their displacement when a Soviet mining company began commercial operation at the end the 1970s. This particular site nevertheless yielded the remains of a significant monastery, endowed with clay sculptures and with important polychrome murals.

For example, parts of a Parinirvana scene (connected with the ultimate phase of Buddha's life prior to his death) were discovered. Excavations are also ongoing at other sites, such as at the Kafariah Tapa monastery and at the Baba Wali archaeological site.

These sites are all located directly above the copper deposit that will be exploited within three years' time. In this area, several dozens of other sites also deserve to be excavated. But in the absence of adequate time, the opportunity to work on them may never come.

Unfortunately, therefore, we will never know why these Buddhist monasteries came to be built on top of the copper deposit and so very close to intense mining activities.

The monasteries have not yet been excavated in their entirety so that we can begin to understand the relationship between the public and private areas of these establishments: in other words, between the sanctuaries -- composed of chapels, courtyards and corridors, adorned with cult images for ceremonies for the partial benefit of the pilgrims -- and the monastery itself, with its assembly hall, living quarters, or Viharas for the monks.

The Kafariah Tapa monastery at Mess Aynak demonstrates the complexity of the situation.

When the stupas, statues and murals were re-exposed to the open air, new problems at once arose.

On this site, the arrangement of the various architectural structures, the increasing number of votive stupas surrounding the great stupa and the tight placement of statues along the walls, all point to a long period of monastic life stretching over several centuries that seems to have included several phases of important restorations and extensions.

The first monuments had a foundation that consisted of masonry and fine thin strips of schist delicately joined together.



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S. 006- Aynak. Kafariah Tapa: stupa D is a small monument that is quite different from all the other Aynak stupas and all others in the region of Kabul.

It is almost completely built with limestone masonry following the example of a group of stupas in Hadda and Bamiyan, a very old Hellenistic tradition that would continue on until the 9th century A.D.



S. 007- Aynak. Kafariah Tapa: stupa E is built with schist strips, slabs and blocks.

All of these elements are rather poorly assembled. The clay mortar is applied thickly which makes the ensemble vulnerable to the elements.

The large schist blocks are often green and contain large amounts of copper.



S. 002- Aynak. Kafariah Tapa: a view of a courtyard with stupas.

As with all Buddhist monasteries in the general region of northwest India, the votive stupas of smaller size (A-E) are articulated around the greater stupa (M). This is also the case at Aynak.

The most ancient stupa (here M in the back on the right) is sober, its architectonic elements are closer to Hellenistic art. On the other hand the later stupas are built slightly differently in that we see a superposition and the increasing use of a trapeziform niche



For the middle and later periods the use of unfired bricks was common and the use of adobe was prevalent.

For those who are familiar with the art and archaeology of Hadda (situated in the east of Afghanistan), the study of these different masonry techniques for the construction of the Aynak stupas is very informative.

A. 005 – Aynak. Kafariah Tapa: a retaining wall made of a variegated masonry: rubble stone masonry and fine thin strips of schist delicately joined.



AYNAK.S.003

S. 003- Aynak. Kafariah Tapa: stupa A, of cubic form, built with blocs and thin strips of schist and an irregular variegated masonry; the pilasters are topped with a cut pediment.



AYNAK.S.004

S. 004 Aynak, Kafariah Tapa: these views represent two sides of stupa B.

It is representative of a later but rather particular phase regarding the evolution of the variegated masonry, in which perfectly square rubble is combined with layers of thin schist strips, the whole creating a design of a checkerboard.

This technique is a combination of schist strips and blocs of schist, sandstone or limestone as we can also see it on the great stupas of Duranta and of Tepe Kalan in Hadda.



S. 010- Aynak, Kafariah Tapa: these views represent two sides of stupa B.

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S. 001- Aynak. Kafariah Tapa.: stupa G is a very well built monument with small joined schist slabs and strips.

If one refers only to the use of small slabs and strips of schist and the presence of a niche of a Gandharan accolade type, then this stupa is probably one of the oldest on the site.

But if one also takes into consideration the presence of architectonic elements such as the cut pediment, one would then have to date no earlier than the 3rd century A.D.

It allows us to trace an evolution through time, while observing the development of a local tradition and seeing it enriched with other sources of influence from such places as of Kapisa, Ghazni and Jallalabad.

One can note a very similar evolution with reference to the sculptures found at Aynak. As is the case at Hadda, the most ancient statues are placed sitting in niches, on high bases, facing the spectators and the faithful.



Placed in the middle, the statues, surrounded by associates, animate iconographical scenes of the life of Buddha Sakyamuni -- as is the case of the Benares preaching.

When we take a look at the sculptural representation of the middle periods, we see that the great Buddha statues are sitting almost on the ground, still facing the spectators and the faithful, but they are now sitting towards the back of each niche leaning against the back wall or sitting on very low benches; they are surrounded by more and more associates and other Buddhas.

N. 001 – Aynak. Kafariah Tapa: the lower portion of a seated Buddha on a base, accompanied by associates and donors. The whole is molded in clay.

Finally, with reference to the latest periods an important number of standing Buddha statues are erected against the chapel walls.

They represent the Buddhas from the past, seven in all, the first being Sakyamuni himself.

It is during this last and latest period of the artistic and iconographical evolution of Aynak that various Parinirvana scenes occur.



N. 004 – Aynak. Kafariah Tapa: a clay statue representing a Buddha meditating. He is seated on a low base, surrounded by assistants; the ochre colored adhesive, used for affixing gold leaves, is visible.

As in the case of both Hadda and Bamiyan, the ochre color seen on the Aynak statues was also used as an adhesive to affix gold leaves.

N. 003- Aynak. Kafariah Tapa: another statue of a seated Buddha in mediation, this one is seated directly on the floor. Also in clay and also retaining traces of polychrome paint.

Apart from the new light that Aynak will almost certainly shed on Buddhist art, it is particularly important to try and find out why the Aynak monasteries were deliberately erected on top of the copper mines. Indeed, Buddhist writings unanimously describe with great precision the reasons for the location and establishment of a Buddhist monastery in any given local setting.

It is said, for example, that a Buddhist monastery should not be too far from, nor too close to, neighboring towns and villages.



AYNAK.N.006

N. 006- Aynak. Kafariah Tapa: a view showing standing statues of Buddha. They stand one next to the other, leaning against the wall of a chapel (caitya). Given their size and weight, they are temporarily bonded with fabric, sand filled bags and other wooden structures.

Not too far because a monk has to have time to go and come back to the monastery in order to share the food that he went to the town to beg for. And not too close to the nearest township so that the ultimate quest for religious and spiritual perfection can still be attained through quiet meditation.

Accordingly, it would be extremely valuable if the archaeologists who are currently excavating at Mess Aynak could look for the ruins of a town or a village not too far from the site. Perhaps as a result of large scale excavations they would be able to establish the nature of the relationship between the monasteries and those who were the probable owners of the mines.

With reference to still another point, it is obvious, given the enormous amounts of slag that were found that the local copper industry would have required enormous amounts of combustible material: wood, reeds, brush and tamarisk.

A paleobotanical study would no doubt shed useful light on whether such combustibles were brought from Djonubi, since the Gardez road could have made this possible, or if the combustibles were obtained locally (even if, today the region of Logar is completely deforested).

Perhaps the reeds originated from the Mosa'i or Kabul region not far from Qal'ae Hashmat Khan, about 30 km from Aynak.

If, in the next three years we do not manage to acquire adequate data on the nature of the Mess Aynak mine, it is safe to say that its industry, its urbanization, its art and its monasteries will all be effectively brushed away with explosions and massive machines.

The loss will be enormous. If little if anything is preserved for the future, there will only be regret -- and a severe lack of accountability with reference to the legitimate expectations of future generations.

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