

SAFEGUARD AND CONSERVATION OF THE ROCK ART AT THE SERRA DA CAPIVARA NATIONAL PARK

The 4th article of the Restoration Charter produced in Italy in 1972, which sets the basis for the ethics in interventions around the world, makes a differentiation between safeguard and restoration:

It is understood by safeguard whatever measure of conservation which does not imply in direct intervention on the piece; it is understood as restoration whatever intervention with a view to maintain in progress, to facilitate the reading and to transmit entirely into the future the works and objects defined in the preceding articles.

On this same document the article number 7 remarks that:

The presentation of archaeological heritage to the public is a means to make the latter ascend to the knowledge of the origins and development of modern societies. At the same time, it presents itself as the most important means to make the public understand the need to protect such heritage.

In 1980, the Burra Charter in its 8th article affirms:

Conservation requires the maintenance of an appropriate visual setting: e.g., form, scale, colour, texture and materials. No new construction, demolition or modification which would adversely affect the setting should be allowed. Environmental intrusions which adversely affect appreciation or enjoyment of the place should be excluded.

To safeguard the cultural heritage while presenting it to the public can sometimes be in itself very much paradoxical. Conditions must be created for both visiting and protecting the site simultaneously, considering the impact caused by the public. The walkway platforms for visitation are built considering the least possible pile foundations and the best possible safety for the visitors. The walkways prevent the visitors from touching the rock walls but at the same time facilitate the reading of the rock art records by placing the visitors at an ideal height for visualization, providing a proper angle for photography and filming. The iron or wood structure itself is also built with a concern to harmonically mingle itself with the aesthetics of the site. The trails leading to the sites wind through the parks caatinga, preventing the elimination of the indigenous vegetation. Explanatory signs lead the visitor and name the local flora species. The identification sign for each site is placed away from the rock art itself, with a view to not only inform the tourist but also not to interfere with the appreciation of the monument.

VISITATION OF THE ROCK ART SITES AND THE ISSUES REGARDING CONSERVATION

In spite of the caution regarding visitation, the shelters at The Serra da Capivara National Park reveal conservation problems of natural origin. The constitution of the rocks themselves – support for the paintings, a very friable sandstone, cemented, presenting an easily degradable feldspathic matrix. Besides, such region was a sea bed billions of years ago, so today the inside of the rocks presents significant amount of

various salts (nitrites, nitrates, sulfates...) and aluminum and calcium oxides, among others. The rocky cement is naturally attacked either by the action of microorganisms or by the rainfalls that infiltrate the interstices or pour down upon the painted surface, especially during flash floods, dissolving its soluble salts or dragging the insoluble. Upon evaporation, such salts are deposited either on the rock surface or inside the rock, causing the sheeting process and consequently destroying the pre-historic panels.

Another relevant agent in the acceleration of the rock art sites degradation is the direct incidence of sunlight on the painted walls, causing the rock to overheat (temperature ranges of 30°C in some cases) causing thermal shock between the rock temperature and the air temperature through the evaporation of interstitial water, mainly at night when the temperature falls as low as 12°C at some times of the year.

Such are the main agents causing vertical and horizontal cracks of various depths which, upon the passing of time, tend to augment since those usually lodge plants, insects or small animals.

CONSERVATION INTERVENTIONS

According to the 1st Article of the Burra Charter – 1980,

Conservation means all the processes of looking after a place so as to retain its cultural significance. It includes maintenance and may according to circumstance include preservation, restoration, reconstruction and adaptation and will be commonly a combination of more than one of these.

Maintenance means the continuous protective care of the fabric, contents and setting of a place, and is to be distinguished from repair. Repair involves restoration or reconstruction and it should be treated accordingly.

Preservation means maintaining the fabric of a place in its existing state and retarding deterioration.

Restoration means returning the EXISTING fabric of a place to a known earlier state by removing accretions or by reassembling existing components without the introduction of new material.

The conservation interventions that took place at The Serra da Capivara National Park since 1991 did strictly observe the standards lay down by the aforementioned charters (Venice, Burra, etc). The main objective has always been the deceleration of the degradation process at sites presenting pre-historic paintings.

With a view to undertake the aforementioned interventions, FUMDHAM/UFPI held three training courses at The Serra da Capivara National Park, comprising 150 hours of both theoretical and field classes.

Since 1996 all field work is fully performed by the team who took the training courses. Such team is responsible for systematically cleaning the sites; installing the troughs to divert the rain water; consolidating the plates with paintings and covering the recent graffiti.

The lab work is performed by researchers and students from NAP and from The Department of Chemistry of the UFPI, also by students from the *Laboratoire de Recherche des Monuments Historiques* – France. Such work is basically comprised of examinations and chemical analyses needed to direct the conservation works (studies on the change deposits, the pre-historic pigments and the rock substratum).

Both the field work and the laboratory work is supervised by one of the authors and it also counts on the collaboration of students; scholarship students from I.C., or

masters degree students from the Chemistry Department at UFPI along with masters/doctorate degree students from the Archaeology department of UFPE.

Following the 4th article of the Burra Charter, which determines the employment of traditional techniques before modern ones, the cleansing techniques used are mainly of mechanical nature, using surgical dental instruments (spatulas, scalpels, brushes). In some cases it might be necessary to use diluted solutions of previously tested and approved of products.

Wherever the rock stratum shows signs of sheeting, the consolidation interventions are necessary. Utilizing sediment from the rock itself, we develop a mortar-like substance which allows a seamless harmonic appearance while not disguising the intervention.

It is important to remark that even before the International Charters, all work developed at The Serra da Capivara National Park has been always associated with a social purpose, intensely involving the local community in the programs and actions promoted by the Park. For instance, the conservation technical team is entirely comprised of youngsters from the surrounding municipalities, who shall within the framework of this meeting present the work carried by them at the sites.

FINAL REMARKS

In spite of the intense works held at The Serra da Capivara National Park and of the growing international relevance of such research and its results, there are still many administrative and financial issues to be dealt with. Foremost, there is the budgetary deficiency experienced with regards to the conservation of the paintings and to the payroll for the technicians who help us keep the sites from further deprecation, also with regards to the Parks self sustainability; it is necessary to provide better access conditions to The Park, the wretched situation the surrounding municipal roads are in and the lack of an airport reflect as a lower tourist afflux than what we would expect, given the Parks characteristics.

It is also important to remark the interdependency between the cultural heritage conservation and the preservation of nature. Any aggressions to the natural heritage directly affect the archaeological sites. Whenever there is an imbalance in the population of termite predators (ant-eaters and armadillos), there shall inevitably be a broader incidence of the termite populations on the rock walls; whenever there are fires on the surroundings of The Nation Park the fire and smoke shall reach the paintings on the rock walls causing them to overheat and accelerating the cracking process; whenever there is clearing of the vegetation surrounding the sites there shall be an imbalance in the sites' microenvironment, modifying important factors for the sites' equilibrium (evapotranspiration, rain water drainage, etc.) which shall consequently have an effect on the paintings themselves.

Dealing with direct anthropic issues like graffiti could be easier than having to deal with the indirect anthropic or naturally occurring issues that affect the sites. Some examples might be found at the Entrada do Pajaú shelter.

Water has shown to be a great enemy of the rock art sites. It could cause flow stains on the painted wall, humidity spots and fostering of microorganisms, stains caused by the rock salts that crop out of the rock surface. The BPF, for instance, shows the three aforementioned problems in different areas of the site. Nevertheless, intervention in such cases requires more complex and lengthy works involving the participation of an interdisciplinary team with a view to elaborating an exhaustive

diagnosis that shall take into account the rock body as a whole and not only the sheltered area where the paintings are.

It is clear that it is only through more studies, and through a substantial investment policy that we can stop such problems, or at least lessen them. A recent interdisciplinary study has proposed a bold project for The Entrada do Pajaú Shelter, aiming at protecting the rock body as a whole (Lage *et al.*, 2002). It seems unfeasible though, on such a site like Entrada do Pajaú, where the rock body is immense.

The rocks have, in a certain sense, a 'life' cycle. Sometime millions of years ago they were 'born', and have been deteriorating since then, becoming dust and sediments. How many tons of sediments are there deposited at the shelters' ground? How much of the rock wall where the paintings are has been lost, how much of it has already died? To completely stop the deterioration process is still not a possibility at this time; it is nevertheless possible to retard it. Through further studies and counting on the determination of professionals from around the globe, we believe the Brazilian Rock Art might be able to live for a few thousand years more.

1. Bibliografia

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