



**Figure 5.** Night image of the Heysham labyrinth, taken in June 2008 (photograph G. H. Nash).

over its southern section; see Fig. 5). The photograph that appeared in the *Morecambe Visitor* in 1995 shows the labyrinth to be cleanly pecked with clearly defined lines. However, inspection in May 2008 shows the curvilinear pecked lines to be smooth and their edges not clearly defined (Fig. 5).

The two labyrinths at Rocky Valley in northern Cornwall (SX 073 893), discovered in 1948, are located some way inland and are carved, possibly using a metal implement onto a vertical rock-face near the ruin of Trewethett Mill. Debate concerning their date and interpretation has been recently discussed by Abigail Seward (2001). Nash has concluded that one of the labyrinths is constructed in two phases; the first phase is pecked whilst the second is carved (2007: 186–8). Seward is of the opinion that the date of these pecked images is still inconclusive, whereas Nash has concluded that one of the labyrinths may date to the Bronze Age or Iron Age. Although no direct dating is available, the proposed age of this labyrinth is tentatively based on the pecking technique and on the style of similar features found elsewhere in Europe.

The accelerated rate of denudation suggests that the Heysham image is not pre-Historic but possibly 18th or 19th century in date, probably pecked at the same time as the secondary treatment phase of the eastern Rocky Valley labyrinth. The earliest pecked phase underlying the carved secondary phase may possibly date to the Bronze Age. Haddingham (1974:99)

has proposed an early Christian date, the labyrinths being associated with a nearby retreat belonging to St Nectan). The eroded lines of the Heysham labyrinth, alas, offer no indication of primary pecking.

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RAR 25-888

### *Rock art heritage of Macusani-Corani in the Carabaya Province of Peru, under increased threat of destruction*

By RAINER HOSTNIG

Until 2001, most of the ancient rock art sites and peculiar rock formations (Fig. 1) of the districts of Macusani and Corani in the department of Puno in south-eastern Peru were only known to local camelid herders who permanently live in the area or use it for periodic grazing of their herds and for cultivation of high-altitude crops. In 2002, the University of Puno (UNA) published a first article about rock paintings of the Isivilla Community in Corani, focusing on



Figure 1. Unusual tuff formations in the Corani district known as 'Forest of Rocks', Peru.

the description and interpretation of the numerous geometric compositions, a motif type locally known as *mantas* (textiles). Between 2000 and 2004, while co-directing a EU-financed Conservation Project (PROMANU) in the Manu Biosphere Reserve, I used my free time to explore systematically a considerable part of the Macusani and Corani districts, registering more than 100 rock art sites (rock paintings and petroglyphs; Figs 2 and 3, and see colour plates on front and back covers) belonging to different culture periods, from hunter and gatherer societies 5000 to 6000 years ago (probably a rather conservative estimate) until colonial times. Academic circles, which had access to the publications of the preliminary results of my research (SIARB-Bolivia, IRD-France and many others), were in agreement about the importance of the findings for the widening of our knowledge with regard to pre-Historic societies of the high Andes.

Early in 2005, I received information about extensive concessions having been awarded by the Ministry of Energy and Mining to several Canadian mining companies for uranium exploration in the districts of Macusani and Corani during 2004. When checking the location maps of these concessions, I stated with concern that there was a 100% superposition on the numerous rock art sites and unique natural rock formations registered during my explorations. In joint venture with Frontier Pacific Mining Corporation<sup>1</sup>,

the Solex company<sup>2</sup> was awarded 76 concessions in the Macusani district, totalling 47820 hectares with an additional 42500 hectares owned exclusively by Solex in the same district. The project area of Vena Resources Inc. comprises 15500 hectares of '100% controlled land'.<sup>3</sup> The biggest 'land owner' is Yellowcake with 210 square kilometres.<sup>4</sup> Altogether, the uranium exploration concessions cover already more than 1000 km<sup>2</sup>, almost the total extension of the Macusani Plateau.

In October 2005, alarmed by this threat to the heritage values, I sent a dossier with detailed information about the rock art sites of Macusani-Corani to the National Institute of Culture (INC) in Lima, recommending their immediate inclusion in the National Cultural Heritage List. In December of 2005, the government newspaper *El Peruano* published the corresponding resolution, signed by the national INC director Luis Lumbreras. The resolution included the instruction for the regional branch of the INC in Puno to implement the official registration and delimitation of the sites and to prohibit all kind of interventions in the area which could harm this cultural heritage.

During 2006, under the new government headed by President Alan Garcia, the National Institute of Culture did not undertake any steps in this direction

<sup>2</sup> <http://www.solexresources.com/s/FactSheet.asp>

<sup>3</sup> <http://www.venaresources.com>

<sup>4</sup> <http://www.macusanijellowcake.com>

<sup>1</sup> [www.frontierpacific.com/macusani.php](http://www.frontierpacific.com/macusani.php)



**Figure 2.** Camelid paintings in black and red, Oqhoruni shelter at 4450 m altitude, Isivilla community, Corani district, Peru.



**Figure 3.** Camelid representations in bas relief, Titulmachay cave, 4600 m altitude, Minaskunka sector, Corani district, Peru.

and the mining companies continued and expanded their explorations in the area, trying to gain the cooperation of the communities with small financial gifts and by employing locals for certain activities. At the beginning of 2007, worried about the inertia of the INC, I began to seek support from national and international organisations and rock art specialists from different parts of the world with respect to the nomination of the sites for the 2008 Watch List of the World Monuments Fund (WMF). Thanks to the collaboration of SIARB Secretary Matthias Strecker, IFRAO Convener Robert G. Bednarik, IRD member Jean Guffroy, deans of the UNSAAC and Andino universities of Cusco and several others whose support letters enriched the nomination request, the threatened heritage sites were included in the 2008 Watch List, together with Machu Picchu, the Historical Centre of Lima and four other Peruvian sites. The official announcement was made in June 2007. By the same time, the state-run Energy Company of San Gaban, Carabaya, published an updated version of my preliminary analysis and overview of the rock art expressions of the area, which turned out to be very helpful, not only for the dissemination of the research results, but also for motivating people to join the ongoing preservation campaign.

Until then, the majority of Peruvians had never heard about Macusani and Corani and they knew less about the existence of the rock art galleries of this region, and that these sites had been declared National Cultural Heritage the year before. The nomination resulted in a large number of support letters by individuals and institutions, among them several deans and professors of the San Marcos University in Lima, who expressed their concern and recommendation to undertake urgent actions for the conservation of the sites, in an open letter addressed to the National Institute of Culture and the Ministry of Energy and Mining.

Between July and September of 2007, I travelled several times to Macusani and the department capital Puno in order to hold conferences and give

interviews for local media. The Lima newspaper *La República* dedicated two pages to the heritage preservation dilemma of Macusani-Corani and several newspapers of Puno reported for the first time about the archaeological and geological jewels and scenic treasures of the Carabaya province, now threatened by future uranium mining.

In September, the regional government of Puno, together with the provincial government of Carabaya, sponsored a final rock art exploration<sup>5</sup> in the Corani and Macusani area in order to locate and register sites in areas not covered by my previous surveys. In only five days of intensive survey, we managed to add eighteen new sites to the inventory, which helped me to design a delimitation proposal, which I handed over to the INC-Puno shortly after the exploration. In order to speed up the official site registration and delimitation, the provincial government of Carabaya offered the INC-Puno its collaboration with local professionals and logistic. But the year 2007 passed by and again no actions were taken.<sup>6</sup>

Through contacts in Canada I managed in January 2008 to secure critical two-page coverage of the heritage situation of Macusani-Corani in the distinguished newspaper *Le Devoir*<sup>7</sup>. The Canadian mining companies involved in the uranium exploration activities in the two districts, whose chairmen were interviewed for the article, explained that everything is under control and that they operate with the permission of the Peruvian government. In February, the Canadian company Vena Resources informed the public, via their web-page, that they have received permission from the Peruvian mining ministry for initiating a multi-phase drilling program<sup>8</sup> with several drilling platforms to be established in the Tantamaco community of Macusani,

5 <http://www.pachamamaradio.org.pe/disponotis.php?numnt=3056>

6 <http://www.pachamamaradio.org.pe/disponotis.php?numnt=3077>

7 <http://www.ledevoir.com/2008/01/19/172454.html>

8 <http://www.stockhouse.com/news/news.asp?tick=VEM&newsid=6328842>

which happens to be one of the two 'core' zones with the biggest concentration of rock art sites, besides Isivilla in Corani.

On the other hand, after three years of intensive uranium exploration in the area, the companies seem to have gathered sufficient information to assure that the results are highly promising for investors eager to participate with their shares in the exploitation phase. Since there are no doubts that they will be awarded the respective concessions from the Ministry of Energy and Mining, it is to fear that within two years from now, the whole area will be 'fenced up' by the mining companies and that the herder families living permanently in the small hamlets of the communities will be relocated as already practiced in other mining areas in Peru. In their press releases, Solex and Macusani Yellowcake Inc. (an Ontario company) inform that the technology to be applied will be 'large scale, open pit, heap leach uranium mining'<sup>9</sup>, which means that all surface rocks and superficial rock formations will be crushed and milled for uranium extraction. Their argument that they will respect the rock art sites is ironic, since they know perfectly well that the INC has not yet officially established the locations of these sites. But even if they will be finally obliged to preserve some of the visually outstanding sites, to imagine those islets with paintings or petroglyphs in a devastated landscape is a rather gruesome perspective. To help imagination, I recommend the readers to have a look at pictures published in the web about open-pit uranium mining in Wyoming<sup>10</sup> or other places on the planet.

Up to now, actions taken by the National Institute of Culture (Lima) have been limited to the authorisation given for a project presented by a Peruvian archaeologist who was hired by the Frontier Pacific company in 2007 in order to carry out a rock art inventory in their concession lots. INC officials did not hesitate to furnish her with the dossier (containing detailed site information) I had handed over to the INC-Lima in 2005.

This investigator expresses in a newspaper article (published on 11 May 2008 in *El Comercio* de Lima<sup>11</sup>) that she employed a group of students of different universities and, during six months 'combed' an area of 70 000 ha in the districts of Corani y Macusani achieving a register of 200 rock art sites. Unfortunately, the results of her survey are not available to the scientific community as the mining company — that recently passed on its concessions to the company Eldorado Gold Corporation — obviously is not interested in making these data available as this would affect the

business interests of this company and its partner Solex. Since we do not have detailed information about the new site inventory, we cannot say which of the registered sites coincide with the previous inventory (which I passed on to the INC Lima in 2005 and to the INC-Puno in September 2007) and how many sites were registered for the first time. Although the archaeologist hired by the company Frontier Pacific avoids mentioning the previous investigations in the area, at least she confirms the high importance of the regional rock art sites.

Before starting mining exploration, the companies must obtain an official certificate that no archaeological remains exist in the area. This document, called CIRA<sup>12</sup>, must be issued by INC. The question is if INC will take official notice of the site inventory realised by the archaeologist who was employed by the mining company Frontier Pacific, as well as the previous inventory, or if it will prefer to ignore the existing evidence in order not to hamper the future mining activities in the area. There is also the impending danger that local people who are paid by the mining companies destroy rock art sites so that these areas may be included in the mining activities.

Anxious about the pale results of my national and international awareness raising campaign, I decided to change my strategy and to collaborate more closely with the provincial government of Carabaya since its mayor, Nancy Rosell, and the council members seemed to be highly motivated to conserve part of this cultural heritage and of the surrounding landscape, if not for their intrinsic value, at least regarding their potential for future tourism activities. Together with a geologist friend from Cusco, Raúl Carreño, we proposed to them the establishment of a geopark, a natural area category promoted by UNESCO for the protection of geological heritage sites and which does not need the approval from INC, but could be implemented on the basis of a local government resolution. Another alternative suggested is the creation of a Municipal Conservation Area, which would need the approval of the National Institute for Natural Resources, INRENA. A prerequisite for either of the two alternatives is to achieve the understanding of the rural communities of the districts of Macusani and Corani about the intrinsic value of these sites and of the importance of saving at least part of the archaeological heritage and outstanding landscape for future generations. They should come to understand that tourism could eventually be an alternative income source in a few years from now, when the interoceanic road will be finished, facilitating access to the region.

The decision of the communities to support the creation of a protected area will in the end largely

12 CIRA only states that on the surface of a specific area no archaeological remains exist and does not refer to archaeological remains that might exist under ground. In cases of areas larger than 5 ha, INC requires an archaeological survey to be carried out before CIRA is granted.

9 [http://www.minesite.com/fileadmin/content/companies/1227\\_BROKER\\_0\\_022007\\_Solex\\_Resources\\_Report-small.pdf](http://www.minesite.com/fileadmin/content/companies/1227_BROKER_0_022007_Solex_Resources_Report-small.pdf);

<http://www.macusaniyellowcake.com/html/pdf/Macusani.pdf> ('The targets are large, low-grade, near-surface uranium deposits.')

10 <http://www.wma-minelife.com/uranium/mining/pits.html>

11 [http://apar\\_peru.googlegroups.com/web/Macusani%20Corani%20Puno%20El%20Comercio%2011%20mayo%20del%202008.pdf](http://apar_peru.googlegroups.com/web/Macusani%20Corani%20Puno%20El%20Comercio%2011%20mayo%20del%202008.pdf)

depend on their comprehension of the cultural importance of the rock art heritage and of the privilege to have such outstanding geological formations in their territory — a natural legacy which could easily attract national and foreign tourists, as it does in many other countries. It is clear that building consciousness among economically marginalised rural and urban populations can only be achieved with an intensive education campaign and by sensitising local leaders and school teachers, an urgent task which requires time and financial resources.

If local support for the establishment of a geological park or Municipal Conservation Area can be gained, at least the most representative rock art sites and rock formations of the region might be saved from destruction. To proceed with this proposal, the provincial government of Carabaya needs technical assistance provided by specialists in protected area planning and management.

It is clear that this initiative is not in the interest of the mining companies and that it will demand strong negotiation skills and conflict management capacities to neutralise their resistance.

In April 2008 a delegation of the WMF visited the region of Macusani-Corani and interviewed the mayor of the provincial municipality of Carabaya, who expressed support for the preservation of rock art sites. This visit coincided with a mission by members of INC-Cusco who travelled to Macusani to review the possibility of defining the limits of the area with rock art sites, according to my request. Unfortunately, the oral commitment to carry out the official registration of the sites with financial resources of INC-Cusco, as a result of this visit, has not been followed by specific actions.

A few months ago the mining companies had a serious setback in their activities when a public forum took place on 'Uranium exploitation — possibility for development or ecological disaster', organised by the municipality of Carabaya and the Institute of Research on Energy and Development (IEDES) on 22–23 May 2008. Representatives of the local community concluded that the proposed mining activities would affect negatively their quality of life as it would contaminate and destroy their natural resources.

They decided to reject the future uranium exploration unless the health of the population and the preservation of the natural environment can be guaranteed. However, on 28 June 2008, the national government issued a decree which allows mining activities to take place without the consent of the local private and communal land owners. This new legal device means that the communities are no longer able to negotiate with the mining companies and have to accept the decision of the Ministry of Energy and Mining.

So how do we stand now regarding the natural and cultural heritage of Corani-Macusani, with its outstanding rock formations and rock art? For the

moment, just one thing is very clear: if no actions are taken in the next few months, the battle to protect part of the endangered heritage sites from being turned into dust might be lost forever.

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- HOSTNIG, R. 2007. Revalorando nuestra riqueza. El arte rupestre de Carabaya. Legado histórico-cultural de trascendental valor en un paisaje de áspera belleza, 35 p., Suplemento de la Memoria Anual 2006. Empresa de Generación Eléctrica San Gabán S.A., Lima.

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Since the mining companies will soon finish the exploration phase, readers are invited to support the ongoing heritage preservation campaign by sending their comments and concerns to the following key contacts:

**Embassy of Canada / Embajada de Canadá:** Ambassador Mrs Genevieve des Rivieres, [loma@dfait-maeci.gc.ca](mailto:loma@dfait-maeci.gc.ca); Phone/ Tel.: (51) 1 444-4015

**Ministry of Energy and Mining / Ministerio de Energía y Minas (Peru):** Minister Mr Juan Valdivia Romero; [jvaldivia@minem.gob.pe](mailto:jvaldivia@minem.gob.pe); Tel. No.: (51) 1 6188700

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