



BRIEF REPORTS

Palaeolithic caves of northern Spain: World Heritage Site

By MARCOS GARCÍA DIEZ

On 10 July 2008, at the 32nd meeting of the UNESCO World Heritage Committee, held in Quebec (Canada), seventeen caves with Palaeolithic art (c. 30 000–11 000 years BP) were registered on the List of World Heritage Sites. The caves (El Castillo, Las Monedas, Las Chimeneas, La Pasiega, La Garma, Covalanas, El Pendo, Hornos de la Peña and Chufín in Cantabria, Tito Bustillo, La Peña de Candamo, Llonín, Covaciella and El Pindal in Asturias, with Ekain, Altxerri and Santimamiñe in the Basque Country) join the select group of forty Spanish sites declared as World Heritage, which includes such important archaeological caves as Atapuerca and Altamira.

The proposal, co-ordinated by the Regional Department of Culture, Tourism and Sports of Cantabria, presented through the Ministry of Culture in conjunction with the Principality of Asturias and the Basque Regional Government, is entitled *Palaeolithic cave art of northern Spain*, involving an extension of the candidature for Altamira, presented and accepted in 1985.

Prior to registering *Palaeolithic cave art in the Cantabrian Cornice* as World Heritage, there were twenty-one sites with rock art in the world declared as World Heritage: seven in Africa, four in the Americas, two in Asia, one in Oceania and seven in Europe (Valle de Vézère in France, Valcamonica in Italy, Altamira and the art of the Mediterranean Arc in Spain, Alta in Norway, Tanum in Sweden and Foz Côa in Portugal).

An exceptional witness of the early creative mind

Palaeolithic cave art is one of the most relevant cultural expressions found in the history of humanity. Apart from its aesthetic qualities as such, from a historical point of view, the importance of this phenomenon derives from its representative nature of a crucial period in human evolution marked by the development of *Homo sapiens*. For this reason, we are dealing with a cultural asset of the first order, true masterpieces of human creative genius that are also exceptional witnesses of the

history of civilisation, since they are one of the first artistic expressions of the human species. So this art has universal value and meaning, being closely linked with the progress of culture and of society.

Such values, already acknowledged since 1985 in the case of the Altamira Cave, are now applied to a further series of Palaeolithic cave art sites located on the Cantabrian 'Cornice' which, in common with El Castillo, Las Chimeneas (Fig. 1), La Pasiega, Las Monedas, La Garma, Covalanas, El Pendo, Chufín and Hornos de la Peña in Cantabria, Tito Bustillo, La Peña de Candamo, Llonín, Covaciella and El Pindal in Asturias, and Ekain, Altxerri and Santimamiñe in the Basque Country, draw together excellent conditions on a par with those found in the Vispieres cave.

For the number and density of painted caves — in an excellent state of conservation — for the wealth of iconographic repertoire contained in them, for the diversity of techniques and styles documented, for the remote antiquity of the artistic cycle developed and for their ability to have lasted over the millennia, the Cantabrian 'Cornice' stands out as an essential centre of human creativity in the field of universal history; one of the places in which Palaeolithic art came to light.

Palaeolithic cave art on the Cantabrian 'Cornice': complementary sites

At the time of its discovery, Altamira was an exceptional example of the universal value of Palaeolithic

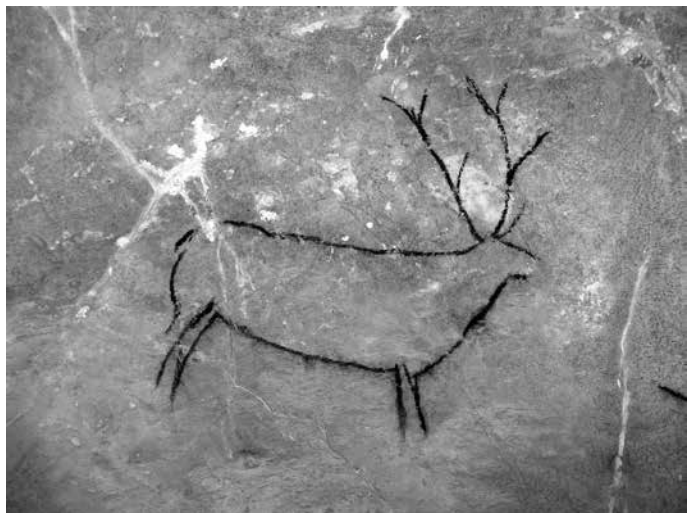


Figure 1. Las Chimeneas cave, Cantabria.



Figure 2. *El Castillo, Cantabria.*

cave art due to the fact that it was a cave forming part of a complete artistic sequence, covering the Upper Palaeolithic (38 000–11 000 BP), with an exceptional sample of Magdalenian art on its polychrome ceiling, known worldwide. Over 100 years later, Altamira continues to be a reference point at scientific and social levels. Nonetheless, based on the discoveries occurring later and that continue to be made, Altamira may only be understood from a contextual viewpoint, as part of a global phenomenon in itself of the hunting-gathering-fishing communities that used to inhabit SW Europe during the Upper Palaeolithic period.

The universal and exceptional value of Altamira, acknowledged by the UNESCO in 1985, is based on criteria such as it being a masterpiece of human creative genius and a unique or, at least, exceptional witness, of a cultural tradition or of a living or vanished civilisation. The elements underpinning this universal, exceptional value have been acknowledged by the UNESCO for a series of other Palaeolithic cave art sites found on the Cantabrian 'Cornice'. So, Altamira, the indisputable masterpiece of universal art of all time, is an exceptional, but not unique witness of a civilisation that no longer exists, and can only be understood within the context of a broader cultural phenomenon that explains its origin and in which it finds its true meaning: the Palaeolithic cave art of the Cantabrian 'Cornice'.

The series of caves of El Castillo (Fig. 2) and La Garma in Cantabria, and Tito Bustillo (see front cover of this issue) and Llonín in Asturias, add to this exceptional nature, since each one of these caves entails a 'monograph' on Palaeolithic artistic symbolism. These four, together with Altamira, contain motifs made over almost 25 000 years, showing all the diversity of themes and techniques known in Palaeolithic art. A substantial part of the importance of this quintet of sites lies in the fact that they are geographically scattered, demonstrating that the Cantabrian 'Cornice' was during the Upper Palaeolithic a territorial and cultural unit.

The other series registered on the list of the UNESCO World Heritage Sites should be understood as 'monograph chapters', since they were executed at specific moments and certain artistic aspects appearing in the 'larger series' (El Castillo, La Garma, Altamira, Tito Bustillo and Llonín) were emphatically developed.

Apart from the specific nature of each of these series, they are interesting for their complementary nature as they make it possible to understand the variability of cultural behaviour in the human settlers inhabiting Europe between around 35 000 and 11 000 years ago.

In conclusion, the series of caves registered on the UNESCO List of World Heritage Sites increases the importance of Altamira and introduces new elements for an understanding of the universal, exceptional value of this Palaeolithic artistic phenomenon and, furthermore, for an appreciation of the idiosyncrasy and specific nature of human groups, demonstrating cultural diversity and the high degree of social integration present in SW Europe during the final throes of the last Ice Age.

Universality

The caves with Palaeolithic art registered on the List of World Heritage Sites show, in line with the criterion established by the UNESCO, universal values that make them representative of human culture, namely:

They represent a work of art of human creative genius. Palaeolithic cave art is unanimously considered as a work of art of human creative genius. From the viewpoint of the various disciplines that have knowledge of this and the various theoretical-methodological paradigms that have headed these studies (history, anthropology, archaeology, art history, fine arts and applied arts), this artistic cycle is valued for the original nature in itself: it involves one of the first examples of art known in the history of humanity. In this context, it stands out for the high degree of technical perfection and the formidable expressive capacity noted.

They provide a unique or, at least, an exceptional witness, of cultural tradition or of a living or vanished civilisation. Palaeolithic art is an exceptional, unique witness of a vanished civilisation. As in few other elements of heritage, this artistic expression provides the most vivid evidence of cultural and social forms of a by-gone civilisation: communities of hunters-gatherers from the end of the last Ice Age. From an anthropological viewpoint, this artistic cycle is directly linked to the appearance of a new human subspecies — our own — and the development of knowledge and social organisation that go along with it.

They are an eminently representative example of a type of construction or architectural or technological grouping, or of a landscape that illustrates one or several significant periods in human history. Palaeolithic cave art is a characteristic aspect of the behaviour of the communities

of hunter-gatherers from the end of the Pleistocene. It includes ways of living and, more particularly, ways in which communities formed settlements towards the end of the last Ice Age: decorated caves are an essential part of the general system of occupancy and use of territory during the Palaeolithic period.

In the case of the region of Cantabria, Palaeolithic cave art bears a direct witness to cave habitation. Also, the birth of Palaeolithic cave art entails the appearance of a series of techniques specifically developed for expressing certain concepts. Palaeolithic cave art is, therefore, an eminently representative example of a type of habitat and of a technological series that was significant in one of the most representative periods of human history, occurring in the final throes of the last Ice Age.

Integrity and authenticity

The guarantees of authenticity of this asset are more than covered, thanks to the long tradition of pre-Historic studies in Cantabria. Since the final quarter of the 19th century, leading researchers worldwide have focused their efforts on analysing this cultural expression, the result being numerous field and laboratory research projects as well as countless publications of their work.

The asset put forward to join the List of World Heritage Sites fully complies with the conditions of integrity, in view of the unitary, intact nature of the same and of its attributes. In fact, (a) although only a small part of this type of art that once existed is actually known, the excellent sample preserved encompasses all the elements required to express its exceptional, universal value; (b) it also has the appropriate dimensions to allow for the full representation of the characteristics and processes, able to convey the importance of this asset; and (c), finally, it can be stated that, at present, registration of this asset, subject to the close surveillance and supervision of the conditions of preservation, does not entail any negative effect on the application of care.

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New megalithic art at the Neolithic chambered monument of Dyffryn Ardudwy, north Wales

By GEORGE NASH and ADAM STANFORD

Introduction

In early 2008 the authors recorded a series of faint grooved, pecked lines and a number of small, regularly spaced notches on the northern face of the southern upright of the western chamber at Dyffryn Ardudwy (MER 3), near Harlech, north Wales. Dyffryn Ardudwy (NGR SH 5887 2294) is one of three Neolithic burial/ritual monuments known within the locality, all occupying the gentle west-facing slopes of Moelfre in south-western Snowdonia (Fig. 1). This monument, excavated by T. G. E. Powell in the early 1960s, is multi-phased, with significant construction activity attributed to the early Neolithic (dating is partly based on the pottery sequence — see Lynch 1969a: 149–56; Peterson 2004: 59; see also Bradley 2007). However, this discovery of megalithic rock art is strongly considered to be characteristically late Neolithic or even early Bronze Age in date (i.e. Shee-Twohig 1981; O'Kelly 1982; Eogan 1986). The question arises, why are these symbols being inscribed onto such an early monument? Is it possible that Dyffryn Ardudwy was in use throughout this period and beyond and that the megalithic rock art represents a clear phase within the monuments' potentially long history.

The re-discovery of rock art at Dyffryn Ardudwy is one of a number of finds made by the authors in recent years in and around prominent Neolithic burial monuments in north Wales and in Anglesey (Nash 2006; Nash et al. 2005; Nash and Stanford 2007; Nash et al. 2007; Fenn et al. 2007).

It is becoming increasingly clear that there is a link between Neolithic burial-ritual monuments and megalithic art and rock art (i.e. cupules) (see Table 1). However, it is not clear if this link is contemporary with monument building and early use. It was generally considered, based on radiocarbon dating on Irish passage graves, that megalithic art within the Irish sea province was a late Neolithic phenomenon. O'Kelly (1982) provides for the construction phase of Newgrange a date of c. 3200 B.C.E. The two passage graves in Anglesey, Barclodiad y Gawres (ANG 4) and Bryn Celli Ddu (ANG 7), as well as the probable destroyed Calderstones passage grave in Liverpool each contain significant megalithic art and rock art which has purported stylistic associations with the passage grave tradition in central Ireland (Daniel 1950; Forde-Johnson 1956; Lynch 1969b; Shee-Twohig 1981; Cowell 2008). Recent megalithic art discoveries at Barclodiad y Gawres by Davidson and Davidson in 2001 reaffirm the link between the passage grave tradition and megalithic art within the Irish sea province (Nash et al. 2005; Nash and Stanford 2007).

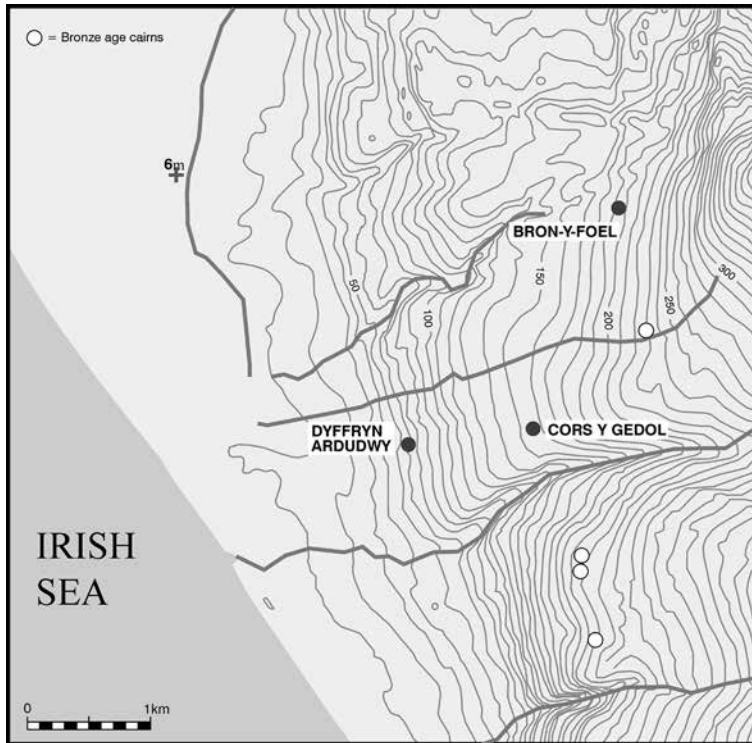


Figure 1. Location of Dyffryn Ardudwy and neighbouring burial-ritual monuments.

Apart from megalithic art, the repertoire of symbols used on these sites also includes cupules. The appearance of cupules, arguably the most numerous carved pre-Historic motif either on or around presumed Neolithic monuments are recognised on a number of sites within north Wales, such as Bachwen (CRN 7), Cae-Dyni (CRN 14), Cist Cerrig (CRN 10) and Cromlech Farm (ANG 15) (interestingly, Hemp [1938: 201] mentions Bachwen and Cist Cerrig as being the only two cupule-marked monuments in north Wales and considers them rare; Nash 2006; Fenn et al. 2007). Indeed, a clear single cupule is present on the north-eastern upright within the entrance area of

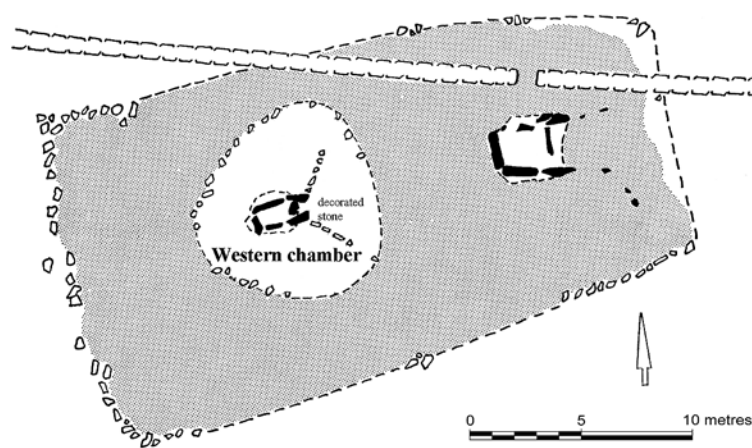


Figure 2. Plan of Dyffryn Ardudwy showing original line of a historic boundary (after Lynch 1969b).

the western chamber at Dyffryn Ardudwy and faces the recent rock art discovery. The dating of the cupule is near impossible to predict. However, Waddington et al. (2005) have suggested that this most numerous of all British rock art symbols could be an early Neolithic phenomenon.

Monument architecture

Dyffryn Ardudwy, lying within the village of the same name, is one of the largest Neolithic ritual burial monuments in north Wales. The site, standing on a 50 m high-contoured west-facing slope overlooking the sea, was excavated between 1961 and 1962 by Powell (1963; 1973). The monument comprises two east-west orientated, portal dolmen-type chambers that open up-slope to the east. The chambers are set within a well-defined phased cairn, which is roughly trapezoidal in shape and aligned SW-NE (Fig. 2). Approximately 1.8 km to the west and clearly visible is the sea. The forecourts belonging to the two chambers are oriented eastwards towards the uplands of Merionethshire. Powell recognised two clear construction phases, each phase

comprising a chamber and associated cairn (1963). He also deduced that the earliest section of the monument was the western chamber, probably originally a portal dolmen incorporated into an oval or round cairn mound, similar in morphology to nearby Gwern Einion (Fig. 3).

At Dyffryn Ardudwy, the first monument phase – the western chamber – comprises a rectangular stone chamber 2.5 m × 1 m which is closed-off with a blocking slab (forming a distinctive H-plan setting). Both the chamber and the forecourt area were enclosed by an oval cairn measuring c. 8.5 m × 9 m. East of the blocking slab are the remains of a well-defined V-shaped forecourt that contained what seems to have been a shallow pit. Within the pit were found Neolithic shards belonging to several vessels (Petersen 2004: 57–60).

To accompany the earlier western chamber was a larger eastern chamber, located around 10 m to the north-east. A large trapezoidal cairn constructed of rounded boulders made from water-lain local Palaeogene and Neogene rocks (referred to as the Cambrian grits) and measuring 28 m × 15 m, encloses both chambers and the original western oval cairn (Powell 1973).

Discovery of megalithic rock art

The discovery of megalithic art at Dyffryn Ardudwy was made by a chance visit in November 2007. The authors, using several low-wattage lamps explored both chambers



Figure 3. The western chamber at Dyffryn Ardudwy, looking west.



Figure 4. Digital image of the inner face of the south-eastern entrance upright.

in darkness hours and recognised several faint carved lines on the inside face of the southern upright within the entrance area of the western chamber. Although no clear design morphology was recognised during this initial visit, the carved lines appeared to indicate the presence of possible megalithic art, possibly the lines forming several chevrons and a series of five small notches or cupules at the base of the upright. However, some 5000 years of weathering has severely eroded the surface of the stone.

A second visit to the site was undertaken in January 2008 during darkness hours. The stone was digitally photographed using two 500 W halogen lamps, powered by a 230 V portable generator (Fig. 3). Drawing film was placed over the face of the southern upright and the halogen lamps were angled in such a way to create oblique shadows across the stone. The oblique shadows cast resulted in the discovery of more lightly pecked imagery (Fig. 4). The tracing undertaken in cramped conditions revealed a series of pecked motifs synonymous with the megalithic art tradition and included mainly rectilinear designs; similar to those found on stones L8 and C16 within the passage grave monument of Barclodiad y Gawres in Anglesey (ANG 1).

The southern upright, measuring 1.06 m in height and 0.52 m in width has its base surrounded by loose rounded cairn stones, probably placed during the restoration of the monument, following excavation. Pecking occurs only on the inward-facing (northern) surface and also includes natural striations and probable excavation damage. Pecked on the western section of the face are two chevrons, the upper one pecked above a possible lozenge; each of the lines of the chevron converges to form an inverted 'V' motif. Within the upper western section are a series of seven small notches forming a small arc or crescent, the largest

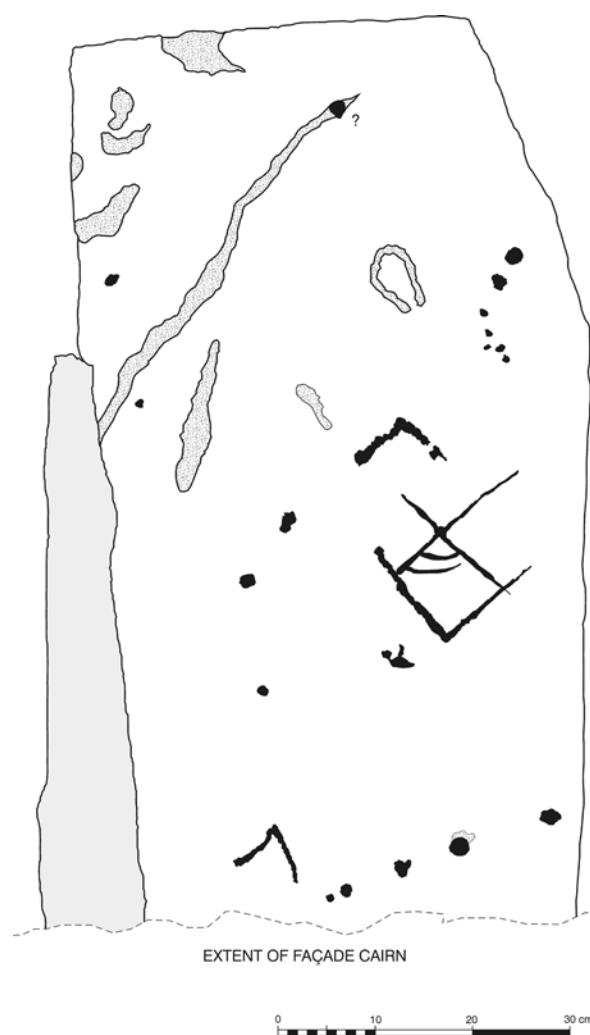


Figure 5. Tracing showing the distribution of the megalithic art (traced by the authors and digitally enhanced by Abby George).

Site	Grid ref.	Art	Location of art	References
Bachwen, Caernarvonshire	SH 407 495	Cupules	Capstone	Hemp 1926; Daniel 1950; Lynch 1969b
Barclodiad y Gawres, Anglesey	SH 329 707	Spirals, zigzags, lines, lozenges, cupule	Chamber	Powell and Daniel 1956; Lynch 1969b, 1970; Shee-Twohig 1981; Nash et al. 2005
Bryn Celli Ddu, Anglesey	SH 508 702	Serpentine, spiral, cupules	Chamber, rock outcropping	Hemp 1930; Daniel 1950; Lynch 1969b, 1970; Shee-Twohig 1981; Nash et al. 2005
Calderstones, Liverpool	SJ 405 875	Concentric circles, cupules, footprints, lines/grooves, spirals, 'dagger'	Chamber uprights (destroyed passage grave)	Daniel 1950; Forde-Johnson 1956; Shee-Twohig 1981; Nash 2006; Cowell 2008; Nash and Stanford in press
Cromlech Farm, Anglesey	SH 360 920	Cupules, 'horse-shoe' carving	Monument architecture and rock outcropping	Nash et al. 2005
Cist Cerrig, Caernarvonshire ¹	SH 543 384	Cupules	Rock outcropping	Hemp 1938; Lynch 1969b; Nash 2006; Fenn et al. 2007
Cae Dyni, Caernarvonshire	SH 511 382	Cupules	Located on a chamber upright	Nash et al. 2005
Dyffryn Ardudwy, Merioneth	SH 588 229	Cupule, chevrons and a lozenge	North and south façade portals of the western chamber	Phillips 1936
Llannerch,	SH 559 379	Cupules	Remains of chambered tomb?	Sharkey 2004
Ty Newydd, Anglesey	SH 617 112	Cupules	Capstone	Daniel 1950; Sharkey 2004

Table 1. Neolithic chambered monuments in north Wales with rock art. Footnote 1: also known as Treflys.

notch measuring 2 cm in diameter. Pecked on to the upper section at the eastern section of the face is a possible cupule, measuring 3 cm in diameter. Below this are several damaged areas represented by irregular diagonal scratches. At the base of the stone are possibly five notches arranged as a diagonal linear group which extend right of the lower chevron. Other notch-like peckings are located within the central section of the face, east of the chevron and lozenge designs.

Discussion

Art as a ritual device

Based on the authors' field research in Anglesey and north Wales and the 19th and 20th century discoveries at Bachwen, Barclodiad y Gawres and Bryn Celli Ddu we suggest that the megalithic art phenomenon in this area was extensive, albeit confined to Neolithic burial-ritual monuments along the coastal environs of Anglesey and north Wales (Table 1). The recent discovery of megalithic art at Dyffryn Ardudwy contains a set of geometric designs that include chevrons, lines (?), a lozenge and several groups of small cupules (or notches).

The single cupule, present on the northern upright within the entrance, is also found elsewhere, usually

as a multiple design phenomenon such as that at Bachwen on the Llyn Peninsula where the capstone is completely covered with around 110 cupules, and Ty Newydd (ANG 3) in Anglesey where up to seven faint cupules are recorded on the capstone. Single cupules are also carved onto stones incorporated into the chamber and passage architecture and on the capstone of Barclodiad y Gawres and Cromlech Farm; and maybe on to a capstone belonging to the Calderstones monument in Liverpool (Nash and Henderson in press). The Caldstones comprise six highly decorated stones that once formed a passage grave.

Chronological implications

Chevrons, lozenges and to some extent cupules form part of the megalithic repertoire of symbols and are usually associated with the passage grave tradition of north-western Europe. However, it is clear that Dyffryn Ardudwy does not have within its architecture any passage grave traits. Indeed, the morphology of the monument is clearly multi-phased with its origins firmly embedded in the portal dolmen tradition of the early Neolithic. At sometime during the latter part of the Neolithic the users and builders of the monument embarked on an enlargement program

and constructed an eastern chamber, and incorporated both chambers into a large cairn mound.

The rock art on the two uprights within the entrance area of the western chamber possibly indicates that at least the western chamber was in use during the latter part of the Neolithic. It is probable that the art was pecked onto the erected stones rather than as part of the construction phase of the monument. This being the case the artist would have had to work in very cramped conditions. The stones that form the entrance to the western chamber show signs of slumping with the shortest width between the two stones measuring 41 cm. However, at the base the width is 51 cm in width. The speculative dating of rock art though is in contrast to the pottery of possibly two or three carinated bowls that were recovered from a pit located within the nearby facade area (Peterson 2004: 52). Recovered from inside the chamber though was a single decorated beaker shard indicating late Neolithic/early Bronze Age use (Lynch 1969a: 153). Could it be that the western chamber was in use, albeit periodically, throughout the Neolithic? Despite the absence of chronometric dates from the majority of Welsh monuments, Peterson (2004) has clearly shown from his analysis on pottery from this and other Welsh burial-ritual monuments that many were in use, albeit periodically during the Neolithic and early Bronze Age.

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RAR REVIEW

Discovering North American rock art, edited by LAWRENCE L. LOENDORF, CHRISTOPHER CHIPPINDALE and DAVIDS. WHITLEY. 2005. University of Arizona Press, Tucson, 334 pages. Hardcover, ISBN 13-978-0-8165-2483-9.

This publication, heir to those by Garrick Mallery and Klaus Wellmann, offers a synthesis of rock art scholarship in North America. This new volume offers all the expected features of a scholarly work, including a list 'About the contributors' and an index. Lamentably, all of the images are in black and white, detracting from an otherwise excellent publication. Many of the essays were originally offered at Society for American Archaeology meetings.

In their introduction, the editors discuss several contemporary issues with rock art research: (1) the imperative need for native voice in the discourse, (2) how and why rock art research is returning from the 'margins' of professional scholarship, and (3) the need for formal academic training in rock art research here in the U.S. Just before their synopsis of each essay in the text, the authors candidly admit the geographic limitations of their text:

Publication costs make it nearly impossible to produce a marketable book about such a diverse subject, and although this book is titled *Discovering North American rock art*, it is not a book about the whole of the Americas. We present nothing about the rich rock art traditions of Central and South America, very little on the Plains states, nothing about northeastern states, and only one account discussing the rock art of Canada (Loendorf, Chippindale and Whitley 2005: 8).

The body of the book is divided into two parts: Part 1, entitled *Discovering the images and how we look at them*, including six essays, and Part 2, entitled *Working with the images today*, comprised of four essays.

Michael Klassen's chapter, 'Aísínai'pi (Writing-on-Stone) in traditional, anthropological, and popular thought', interweaves the recent history of the site, historiography, and cultural resource management (CRM) methodology. It is so refreshing to read about rock art where the native names are used, and where native voice is heard in the discourse.

Todd Bostwick's chapter, 'Rock art research in the American Southwest', is essentially a historiography, referring to over 500 publications in its 41 pages. He strikes a defensive tone, however, when he comments on the major role played by 'avocational' parties in

Southwestern research.

The first of three chapters addressing rock art east of the Mississippi River, Jan Simek's and Alan Cressler's chapter, 'Images in darkness: prehistoric cave art in southeastern North America', offers a most important contribution to the discourse in its discussion of American dark-zone art. I have some issues with their use and definition of style, particularly when it comes to dating or interpretation, but these are academic quibbles. The second, Carol Diaz-Granados and Jim Duncan's chapter, 'Rock art of the central Mississippi River valley: an overview and discussion', comments on a spatial analysis of rock art sites, possibly alluding to a gendered use of the landscape on the Mississippi River. The third, Jannie Loubser's chapter, 'In small cupules forgotten: rock markings, archaeology, and ethnography in the Deep South', offers an overall survey of cupule sites, although it is in essence a report on a single site on the Yellow River. As his title alludes, Loubser does cite various historical ethnographic sources, but none of recent origin.

David Whitley's and Jean Clottes' chapter, 'In steward's shadow: histories of research in the Far West and western Europe', is a neat summary for the newcomer to the discourse, offering a historiography of the western United States and France. The most interesting part of the chapter, a discussion of the differences in rock art scholarship between France and the United States, could have benefited from a greater length.

Julie Francis' chapter, 'Pictographs, petroglyphs, and paradigms: rock art in North American archaeology', addresses why rock art is marginalised in American scholarship. The most interesting part of this chapter is her comments about the drawbacks to the Eurocentric view — which she seems to equate to the continuing debate about the role of style analysis — held by most scholars in the field. To counter the Eurocentric view, she considers the model of neuropsychology by David Lewis-Williams.

Kelley Hays-Gilpin's chapter, 'From fertility shrines to sacred landscapes: a critical review of gendered rock art research in the western United States', offers a feminist critique. Of all the authors of this text, Hays-Gilpin does the best job of supporting her points with images, albeit black-and-white photographs and drawings.

James D. Keyser's chapter, 'Leader of the pack: government sponsorship of rock art research', is

essentially a call to arms. He acknowledges the gradually increasing role of government funding for rock art research in the United States, while calling for more. He is one of the few authors to touch on the obvious lack of a formal academic program of rock art study in the United States, despite American scholarly participation world-wide.

Bill Hyder's and Larry Loendorf's chapter, 'The role of avocational archaeologists in rock art research', is the one chapter that addresses with respect contributions made by researchers who are not archaeologists. In addressing the state of the field now, the authors write,

Thus, today, we have a large group of rock art researchers from the avocational community and a growing number of professional archaeologists who are seriously studying rock art. We are concerned about the *potential* for competition between these two groups, which almost certainly would have a detrimental effect on rock art research. ... (Loendorf, Chippindale and Whitley 2005: 233; emphasis mine)

I have news for these gentlemen, there is nothing potential about such tension; it is reality. I and others have repeatedly called for teamwork in rock art scholarship because artists, art historians and other serious students can offer valuable and unique information archaeologists, frankly, are not trained to see.

Marvin Rowe's chapter, 'Dating studies of prehistoric pictographs in North America', offers a surprisingly readable account of radiocarbon dating in recent rock art research. This bedrock chapter, in my opinion, should have been at the front of the book rather than the end as all the other authors offer chronological arguments based ultimately on the work of Rowe and his team.

Overall, I find this book to be a nice synopsis of rock art in the United States, with one chapter addressing Canadian sites. It will serve students or scholars unfamiliar with American rock art, but for those experienced in the region, there is really nothing new here. The editors defined their goals narrowly, were quite candid about their limitations, and they delivered.

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RAR 26-911

Cave art, by JEAN CLOTTES. 2008. Phaidon Press, London and New York, 326 pages, 247 photographs in colour, 6 maps and plans.

It is about a century since a meeting at Les Eyzies was called to discuss the antiquity of parietal paintings and engravings discovered a few years previously in the caves of south-west France and northern Spain. The

archaeologists assembled agreed that the similarity between the parietal art and stratified engravings on bone in Upper Palaeolithic deposits indicated that they were of a similar age. It is about half a century since the Abbé Henri Breuil, who had attended the meeting as a young man, wrote in *Quatre cent siècles d'art pariétal. Les cavernes ornées de l'âge de renne*, translated as *Four hundred centuries of cave art*, a summary of the implications of the agreement fifty years earlier. With the publication of *Cave art* Jean Clottes and the Phaidon Press are to be congratulated on having produced a magnificent successor to Breuil's presentation of the first half century of cave art exploration

It is a successor because it presents the art of the Upper Palaeolithic, and the paintings and engravings of the Franco-Iberian caves in particular, as pictures rather than as the endless verbal arguments of the volumes on the subject printed since Breuil's time. There is some text. *Cave art* is published as two large-format books, one with a French text and the other with a text in English. The double page, single page and half page colour photographs are the same in each book, and carry the burden of the argument. The texts are, as it were, merely illustration. Jean Clottes has written both texts without the help of a translator and has carefully kept words completely subordinate to the pictures.

Cave art does not attempt to be a comprehensive publication of all known west European or even Franco-Iberian cave sites. It could not, there are too many. Jean Clottes has been rigorously selective in the reproductions he has chosen and anyone who is even moderately acquainted with the corpus of images now known from limestone caves in England, France, the Urals, southern Italy and the Iberian Peninsula will regret the absence of something. What has been assembled is a summary with a distinguishable purpose. The beautifully printed pages explore the common characteristics of what is to be seen in the caves. Images, even whole caves of images, cherished by individual pre-historians as illuminating of the nature of Palaeolithic cave art, have had to be left out in favour of those that are relevant to Jean Clottes' purpose.

The discovery in December 1994 of the images in the Grotte de Chauvet at the top end of the Ardèche gorge, and the surprisingly early radiocarbon dates provided by charcoal used in drawing some of them, has enabled him to demonstrate the amazing consistency of Upper Palaeolithic parietal paintings and parietal and portable engravings. The reproductions are selected to explore their shared common characteristics. He concludes his Introduction with the remark that 'the end of the ice age ... drew to a close the longest artistic tradition humankind has ever known' (p. 27).

The introduction rehearses the main theories that have been proposed about the intentions of the artists ending up with shamanism, the theory that Jean

Clottes makes it clear he currently accepts as the best of a bad bunch of theories about the causation of the art, based on ethnographic comparisons or western European aesthetic preconceptions. The core of the book comprises three chronologically selected groups of Upper Palaeolithic images. The first group, dating between 32 000 and 22 000 years BP, he calls 'The age of Chauvet'. The reproductions of images produced between 22 000 and 17 000 BP he names 'The age of Lascaux'; and lastly 17 000 to 11 000 BP is the 'The end of the Ice Age'. Niaux, Combarelles, Font de Gaume, Rouffignac, Le Portel, Altamira, Trois Frères and the Tuc d'Audoubert are all too important for one to be esteemed above the others.

The final picture section, post-Ice Age rock art, comprises paintings and engravings from rockshelters and other exterior but protected surfaces of more or less certain Holocene date. They are selected to demonstrate changes in image making with the change to temperate conditions. Only one of the examples presented comes from an area in which 'Ice Age art' was also present but this is perhaps unimportant. Different areas would have been more responsive to human exploitation after the environmental amelioration.

It is possible that the tenor of the book is a little over-emphatic about the change in pictorial style that occurred. Images with Franco-Iberian Upper Palaeolithic characteristics and consequent attribution could well have been produced some time after the environment changed but Clottes does not allow that possibility. The pecked depictions of animals on the schist exposures at Canada do Inferno and Penascosa in the lower Côa valley in northern Portugal that he illustrates, the fish painted in red iron oxide paint as though hung up to dry from the cave of Nerja in southern Spain and the finger paintings generally supposed to be mammoths in La Baume Latrone in southern France that he also reproduces are all attributed in *Cave art* to the late Pleistocene, but have been assigned dates in the Holocene by others, some dates being quite recent. The questions of the identity of sites like Penascosa, Nerja and Baume Latrone notwithstanding, the essential unity and differentiation from subsequent styles of Franco-Iberian cave art that Jean Clottes postulates is demonstrably validated. Something must have instigated the uniformity of style. He specifically denies the possibility that anything so nebulous as social structure could have this result. By declaring that shamanism is a ubiquitous phenomenon and evidence of shamanic practices such as trance and other out-of-body experience can be discerned in Upper Palaeolithic images as readily as in the images of the Drakensberg San Bushmen or the Amerindians of Baja California, Jean Clottes rules it out as the cause or purpose of the consistency of style. If the way the images depicting these practices had been determined by the behavioural characteristics of shamans during the twenty to twenty five thousand

years of the Upper Palaeolithic then no alternative style would have evolved when the climate changed.

There are a few incomprehensible groups of marks reproduced in *Cave art*: dots, dashes, squiggles and some geometrical shapes. There are also a small number of rather static depictions of the whole body or of body parts of men and women. The rest of Jean Clottes' selection, the greater part, concentrates on representations of animals that are moving or poised for movement. Though his point of view remains unstated it is clear he is insisting that the considerations necessary for communication of this information about mobility is the chief determinant of the way things are drawn by Upper Palaeolithic artists. Any other information that the pictures are able to convey is dependant upon the potential of the marks used, their ability to represent animal activity. Predominantly, though not exclusively, the description is of the activity of big animals. Often they are drawn quite small as though they are at a distance from the viewer. The balance of every shape reproduced is what is important. It describes the initiation or completion of movement. Even the dots and squiggles are graphic indications of movement accomplished. By assembling the pictures he has published and ordering them in the sequence he has imposed, Clottes has demonstrated very clearly that it is movement that is the determining intention of the nature of Upper Palaeolithic art.

This is a major work by Jean Clottes about a subject to which, like the Abbé Breuil, he has given a lifetime of study. He does not set out to produce a catalogue of French parietal art like the Ministry of Culture's 1984 publication *L'art des cavernes*. The photographs he has selected explain a great deal about the intentions of the cave artists. They do not explain everything. They do not provide an explanation of the sometimes curious way paintings, engravings and reliefs are distributed in the caves, for instance. What they do explain they explain well.

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RAR 26-912

Aesthetics and Rock Art III Symposium, edited by THOMAS HEYD and JOHN CLEGG. BAR International Series 1818. 2008. Archaeopress, Oxford, 102 pages.

For those of you who have invested in the expensive volume *Aesthetics and rock art* edited by Clegg and Heyd, this small BAR publication is a worthy addendum. Organised into five sections, this work provides a colourful spectrum of contributions stretching our understanding of aesthetics beyond its Baumgartian definition (see Heyd). The definitional elasticity of a word like 'aesthetics' provides the contributors with,

for example, an opportunity to challenge orthodoxy (see Chazine and Novell), or a wild ride on the slippery slope of analogic reasoning (see Clegg). Overall, this eclectic mosaic of contributions manages to generate some critical questions and therefore has its place on the bookshelf of any serious rock art student.

ROCK ART: Even swiftly putting aside the definitional conundrum inherent to the way we have labelled our investigations, we are still faced with a paralysing addiction to a potent misnomer: art. Whoever formulates the rhetorical validation for a healthy departure from the Eurocentric construction that is 'art', will help our efforts to reach the status of a genuine discipline. By mislabelling our dissections of the anthropic processes involved in the manufacture of images on lithic surfaces, we provide an open forum for an eclecticism that at best muddles our investigations and at worst contaminates them by injecting undesirable universals.

PARADOX: 'We need to move away from essentialist approaches that assume that art and the response to it are human universals' (101) writes April Nowell at the end of an eclectic collection of papers — and, eclectic, according to John Clegg (97), is the signature of worthy and successful basic investigations about universals in aesthetic trends worldwide. While I fully endorse Nowell's statement, I reject Clegg's. Stretching analogies to the point of universals between distinct cultures is probably the most hegemonic form of appropriation scholarship can generate — in contradiction with an ethic of cultural autonomy.

Rock art and integrity

A. P. Batarda Fernandes formulates the following fundamental question: '... should aesthetic or ethical values be sacrificed at any cost — to the goal of preservation?' (85). Using the Holocene material on schist in the Côa valley in Portugal as his case study, Fernandes effectively demonstrates the problematic of conservation versus aesthetic integrity. For Fernandes, 'The most basic question for a conservator is what is the object to be conserved?' — in other words, what should be the target for the conservation efforts: a declared iconocentrism where the motif is to be salvaged no matter what sort of interventions may be needed, or should it follow a more holistic approach based on a variety of collected information such as, for example, the importance of fractures associated to motifs (86). But whatever the answer to this question might be, the intervention itself presents another level of problematics. Furthermore, should the intervention be made with a material that reveals the extent of the operation or should it 'emulate original tones and textures' (89). In either case, the intervention will contaminate the original and irreversible loss of (pre)historical integrity will follow. One interesting omission in Fernandes' investigation about the loss of authenticity of rock art through conservation efforts is the concept of duplication (facsimile, simulacrum).

Perhaps, a possible way out of the explicitly stated dilemma is to create a facsimile where reconstructed breakages and filled-in fractures could be presented in their natural texture while a zero intervention policy be enforced on the original. Fernandes concludes by stating that conservation work is artificial and will 'cause loss of authenticity to the art object' (91). Are we to leave taphonomic processes run their course in the name of integrity or do we need to intervene so that future generations can enjoy in situ experience?

Rock art as simulacra

Thomas Heyd writes that '... transculturation to be generative or productive in a deep way requires that the encounter between cultures be guided by an etiquette of respect founded on the pursuit of understanding of the other' (80). If we are to follow Heyd's definitional preference where transculturation is defined by Malinowski as: '... an exchange between two cultures, both of them active ... from which a new reality emerges, transformed and complex' (77), then we would not expect a direct engagement between the makers of these iconographical manifestations and the consumers. We must therefore be content with cultural interactions between custodians and consumers. 'In order to speak of transculturation in the case of the encounter with rock art we need to be aware of the fact that, although much rock art is prehistoric and without clear links to any contemporary populations, there remains many images on rock which are either under the custody of particular indigenous peoples or which have traditional significance for them' (81). In other words, despite the absence of the image-maker, we can in rare instances witness the cultural exchanges inherent to transculturation in the forms of commodified simulacra of original motifs. Enculturation in the context of rock art is about engagement with curated and consumed cultural artefacts by collectives which have either limited or no connection with the manufacturers. While this contribution forfeits the possibility for an unmediated access to the aesthetic motivations of the image maker, it presents the readers with a relevant and very Baudrillardian question: what is the cultural significance of simulacra?

Rock art as performance

Writing about ten thousand-year-old handprints in Borneo, Jean-Michel Chazine provides a thought-provoking proposal where the biomechanical dynamics are to be approached as a fundamental agent in the manufacture of the motif. By connecting functionality and potential aesthetic motivations, Chazine offers an effective hermeneutic composite. While acknowledging the probable multifunctional nature of any given motif, the author cleverly steps out of the orthodox hermeneutic circle and tests the feasibility of an analysis based on the gestural and technical processes. From this perspective, Chazine

introduces a new agency: performativity. For him, '... the display of these negative hands prints put together like a dance, express undeniable aesthetic concerns'. (73). The scenography inherent to the spatial layout of the motifs (handprints in this context) is perceived as a well thought-out *mise-en-scène*. Obviously the intentional nature of a *mise-en-scène* warrants his analysis to be projected within a framework of specific kinetic motivations. In other words, the simple dyad of observer/observed is controlled by a precise vocabulary of recognisable aesthetics choices (signs, complex motifs, salient features, locations etc.). As in any pedagogical processes, the simpler the description of the task, the more effective its manifestation (performance). Thus, Chazine argues, these palaeo-performances present a genuine point of entry in the empirical analysis of rock art iconography. Brilliant!

I have discussed only a selection of articles that present interesting perspectives. In lieu of a conclusion, I will leave the readers with the following unresolved question: can we empirically investigate the relationship between aesthetics and rock art without engaging in cultural appropriation?

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RAR 26-913

'Bubalin' und 'Bovidien' in Südmarokko. Kontext, Klassifikation und Chronologie der Felsbilder im mittleren Draa-Tal, by RENATE HECKENDORF. 2008. Deutsches Archäologisches Institut, Kommission für Archäologie Außereuropäischer Kulturen, Band 6. Reichert Verlag, Wiesbaden, Germany, 331 pages, 29 × 19 cm, 105 b/w and 2 coloured figures, with CD, hardcover, ISBN 978-3-89500-646-3, € 69.00.

This book is the result of a dissertation at the University of Tübingen, Germany, presented in 2005. Attached to it is a CD with supporting material and details, including a catalogue of the rock art.

The rock art of Morocco is usually subdivided into three main periods. In the most recent period weapons and geometric forms are depicted. The second period covers the 'Libyco-Berber' motifs and the 'Libyan' inscriptions. The third period includes two complexes, the Pecked Cattle or Bovidian complex (also called Moroccan Pseudo-Bovidian), and the Tazina complex which is part of the Bubaline.

The working area of the author is defined by the coordinates 29 – 30° N and 7 – 9° W. This is about 250 km south of Marrakech in SW-Morocco. The area includes, from north to south, the southern flank of the western part of the Anti-Atlas (1500 m), the western part of Jebel Bani (1000 m), and the middle part of

Wadi Draa (500 m). They run more or less parallel from NE to SW. Unfortunately her map of Morocco is too general, for example it does not show Jebel Bani. On the satellite map of the study area only the rock art sites, but no other place names and geographical names, are indicated. This makes it impossible to study the book without outside support. In the study area several *wadis* drain the Anti-Atlas, flowing in general to SE. They cut through Jebel Bani with narrow gorges and join Wadi Draa.

The limit of the Sahara is normally defined by the line of 100 ± 50 mm average rainfall per year. In Morocco the situation is more differentiated because of the influences of the Mediterranean, of the Atlantic and the high elevation of the mountains. The author has investigated the literature about the flora and fauna of her study area as well as about the past climate development. She comes to the conclusion that about 5500 BP, in the southern fringes of the western Anti-Atlas, the climate was semi-arid with an average rainfall of 200 – 300 mm per year. There are no indications for earlier desertification processes caused by climatic effects or human action. She refutes therefore the assumption of earlier rock art researchers, that overgrazing by cattle herders caused the desertification of the area. Still today this remains a transition area between the Mediterranean and the Sahara, now with some oases and herds of goats and camels in the semi-desert.

In the study area 134 locations with rock art are known from archives, publications and other sources. Forty-one of them were recorded in detail during her fieldwork in 1995 – 1998, and 18 others were visited. Geographically the locations are situated in the valleys of the Anti-Atlas (Zone 1; 28 locations), in the so-called Feijas, the sediment areas upstream of the gorges in Jebel Bani (Zone 2; 45 locations), in the so-called Rich, the sediment fans downstream of the gorges (Zone 3; 57 locations), and in the Draa valley (Zone 4; 4 locations). Wadi Draa represents the border region to Algeria, where research is restricted. This orographical definition of Zones allows Heckendorf to evaluate the rock art statistically with respect to its relative position to the ridge of Jebel Bani. Besides, and superimposed over the Zones, the author uses a grid of topographic maps with a quadrant size of 10' (about 16 × 18 km). The rock art sites are named after the quadrants with a number attached. Normally there are few sites per quadrant; the maximum is 22.

A rock art site is defined as a geo-morphological relief (*abri*, terrace, top of mountain etc.). It has at least one petroglyph and may have a diameter from few metres up to more than 2000 m. Twenty of the 41 recorded rock art sites were analysed in detail. They include 1881 petroglyphs on 919 panels. For each site the geology was recorded, and also the vegetation and fauna in the neighbourhood, the land use and the archaeological context. The rock art only consists of petroglyphs.

The rock art sites, the individual pictures and the groups of pictures were recorded and analysed. For the characterisation of individual petroglyphs the author uses three groups of criteria. The contour may be multi-linear (open contour), mono-linear (closed contour), linear-filled, 'flat' (without boundary line) or geometric. The perspective may be parallel, distorted or unspecific. For the techniques of producing petroglyphs she distinguishes fine incision, engraving, abrasion, pecking, polishing and engraving with pecking. Thus a class of petroglyphs can be characterised by a triple set of criteria. (Note: The German term '*geschliffen*' is here translated 'abraded', the German '*poliert*' is set 'polished'; in her English summary the author, however, sets '*geschliffen*' = 'polished').

With these criteria, with the geographical grid and with other aspects, numerous statistical analyses were carried out. Pecked and abraded petroglyphs represent the majorities; the other techniques only play a minor role. Normally a rock art site contains pictures made in several techniques, but here again either the pecked or the abraded petroglyphs represent a higher content.

Per definition, the Tazina school of the Bubaline style only includes pictures of subject matter. The group of abraded petroglyphs includes these Tazina pictures, but also others, which would be called unclassified. If the latter are included, the abraded pictures of the so-extended Tazina school are to be found mainly south of Jebel Bani. Heckendorf was able to distinguish two variants of the Tazina school, the Tiggâne group and the Meskâou group. The Tiggâne group is abraded; it has multi-linear contours and parallel or distorted perspective. The content includes many types of antelope and 'gazelle, cattle, daggers, horses, bows, giraffe, rhinoceros, elephant and lion'. The Meskâou group is abraded with mono-linear contours and parallel or distorted perspectives. Presented are many 'ostriches and rhinoceros', but only few 'antelopes and gazelles'. Besides that there are 'cattle', two types of 'daggers' and 'horses'. In one case a bovine is associated with a Libyco-Berber inscription.

The pecked petroglyphs are to be found mainly north of Jebel Bani. The Bovidian pictures have a 'flat' contour or a mono-linear contour with parallel or distorted perspective. There are, in addition, other unclassified pecked figures with multi-linear contour and parallel or distorted perspective. The author incorporates those, thus extending also the definition of the Bovidian. For the extended Bovidian she found three variants. The Moumersal group contains pecked petroglyphs with multi-linear contour and parallel or distorted perspective, including many pictures of Barbary sheep, pictures of several types of 'antelope', of 'cattle, daggers, horse (?), dog, rhinoceros, elephant, lion and birds'. The Taheouast group is pecked with multi-linear contour and parallel or distorted

perspective. A high number of 'cattle, ostriches and archers' are depicted. Additionally 'axe', two types of 'daggers, horse, rhinoceros, elephant, lion and oryx' are present. The Imâoun group has pecked petroglyphs with 'flat' contour and parallel or distorted perspective. Many bovines and ostriches are depicted, additionally 'axe, bow, dog, goat, giraffe, rhinoceros, elephant, lion' and one type of 'gazelle'.

The author assumes that the 'Bovidian people' exercised transhumance, spending the summer months in the mountains and the winter months in the areas north and south of Jebel Bani. For the 'Tazina people' she suggests a migration between the Sahara-Atlas (Algeria) in the north-east and Rio de Oro (ex-Spanish Sahara) in the south-west.

The author recorded the patina of each petroglyph. In comparison to the colour of the rock surface one can distinguish neutral, darker and brighter patina, and in the extreme case a very bright patina. It is possible, that the development of patina depends on the technique of the production of the petroglyph. Therefore a relative dating of petroglyphs is only possible for petroglyphs on the same surface, which were produced with the same technique.

For the dating of the petroglyphs the introduction of cattle (3rd millennium B.C.E.), of certain weapons (2nd millennium B.C.E.) and of the horse (mid 2nd millennium B.C.E.), and the lack of dromedary (around 0 C.E.) are used as criteria. Especially because of the weapons both the Tazina (Bubaline) and Bovidian are assigned to the Bronze Age and the Iron Age. Until relatively recent times many types of the wild animals lived in parts of Morocco.

The book is concluded with three pages of summaries in German, French, English and Arabic plus half a page in the Berber language with Tifinagh script, a list of abbreviations and a reference list. An index is missing. A short version of the work was published in French and English (Heckendorf 2008).

Heckendorf used a systematic approach with several technical criteria to analyse and classify the petroglyphs of her working area. Such a time-consuming method is rarely applied in the study of rock art. The petroglyphs had been earlier classified by other researchers, e.g. by Muzzolini (1995: 101–113, 166, 374–376) as 'L'école de Tazina (Bubalin schématique)' and as 'Le pseudo-Bovidien marocain'. Heckendorf extended both groups of petroglyphs by incorporating similar, but unclassified pictures. This is a legitimate approach. However, strictly speaking, the title '*Bubalin' und 'Bovidien' in Südmarokko* is therefore slightly misleading — partly because of the incorporation of the otherwise unclassified petroglyphs she was able to define two sub-groups for the Tazina and three for the Bovidian.

In the petroglyphs of both techniques, wild and domestic animals are depicted. The author therefore rightly concludes that there is no time sequence of hunters' petroglyphs followed by petroglyphs of



Figure 1. Tazina Style (technomorph ?), west of Dakhla, Egypt (photograph by F. Berger).

pastoralists. The petroglyphs were executed in the two techniques in the same timeframe. The author claims that she was the first to recognise the simultaneity of the two styles and their content of both wild and domestic animals. However, others, e.g. Searight (2004: 136–7) came to the same conclusion at the same time.

Heckendorf reports some Neolithic artefacts from her working area. She does not comment on the possibility of an earlier non-iconic tradition, if the rock art started as late as the Bronze Age. Searight was confronted with the same question and arbitrarily set the beginning of rock art to about 2500 B.C.E.

Heckendorf suggests that the 'Bovidian people' might have practised transhumance. This seems to be plausible. The 'Tazina people' in her working area apparently did not, as their pictures are not found at higher elevations in the north. This discrepancy is strange, but it cannot be solved in isolation in the study area. While the Bovidian is restricted to the south of Morocco, the Tazina School is known in a vast region, from northern Algeria (Tazina proper) to Rio de Oro in the west, over Taoudenni (Mali) and Djado to Fezzan (Muzzolini 1995: 104). These are distances of several thousands of kilometres. While annual migration over some hundreds of kilometres is understandable, it is unlikely for thousands. As two separate Tazina-groups were distinguished by Heckendorf, this could be an argument for the other

explanation of Tazina, namely that it is a technomorph (Le Quellec 1998: 158–61). In that case one should find examples also at completely different locations of the Sahara. The petroglyph from the west of Dakhla, Egypt (Fig. 1) may be such an example.

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RAR 26-914

RECENT ROCK ART JOURNALS

International Newsletter of Rock Art. Newsletter of the Association pour Rayonnement de l'Art Pariétal Européen (ARAPE). Edited by JEAN CLOTTE. Bilingual newsletter (French and English). A recent issue includes these research articles:

Number 52 (2008):

- AZÉMA, M. and J. CLOTTE: Traces of finger marks and drawings in the Chauvet Cave (Salle du Fond).
- LEMAÎTRE, S. and P.-L. VAN BERG: The engraved rock sites of Hemma (Syria): previous research.
- SIMONIS, R. and A. SCARPA FALCE: The originality of the rock art of Chad and some common traits shared with other Saharan regions.
- CHEREMISIN, D. V.: New information concerning chariot images in the Altai.
- MASSON, J.: A Swaziland rock painting.

Purakala. Journal of the Rock Art Society of India (RASI). Edited by GIRIRAJ KUMAR. The most recent issue contains these research and review papers:

Volume 18 (2008):

- RAJAN, K.: Rock art in south India — a status report.
- KUMAR, G. and A. PRADHAN: Study of the rock art of Chaturbhujnath nala in Chambal valley.
- KUMAR, G. and P. K. BHAT: Study of creative traditions of present pastorals around Chaturbhujnath nala to understand the continuity of rock art traditions.

- WAKANKAR, V. S.: Indian prehistory as revealed by excavations, explorations and rock art study at Bhimbetka and in the adjoining regions.
- BEDNARIK, R. G.: The eternal scholar.
- MATHPAL, Y.: Passion for rock art study.
- BADAM, G. L., R. K. PANCHOLI and R. S. THAKUR: Further note on the fossil site at Lotkhri, Madhya Pradesh.
- SHARMA, M. L., M. L. MEENA, K. K. SAINI and V. GODHAL: Dadikar-Hajipur rock art sites in Alwar district in northeast Rajasthan.
- GARNAYAK, D. B.: New rock art sites discovered in Cuttak district, Orissa.
- MATHPAL, Y.: Maharu-Udyar: a newly discovered painted rock shelter at Dhakdhaki, district Almora in Uttarakhand.
- SRIVASTAVA, M. C. and T. K. GUPTA: Khando: a special rock shelter group (in Hindi).
- SHARMA, S.: Decorations in rock art (in Hindi).
- SHARMA, A. K.: Emotive figures in rock art (in Hindi).

SIARB Boletín. Journal of the Sociedad de Investigación del Arte Rupestre de Bolivia (SIARB). Edited by MATTHIAS STRECKER. The most recent issue includes the following papers:

- Volume 22 (2008):
- TABOADA, F.: El arte rupestre de la Cueva de Paja Colorada, Municipio de Moro Moro, Depto. de Santa Cruz.
- WAINWRIGHT, I. N. M. and M. RAUDSEPP: Identificación de pigmentos de pinturas rupestres de Paja Colorada, Prov. Valleggrande, Depto. de Santa Cruz.
- HOSTNIG, R.: El patrimonio rupestre de Macusani-Corani en la Provincia de Carabaya, Puno, no está salvo. Campaña en curso para evitar su destrucción.
- HOSTNIG, R.: Una nueva mirada de las pinturas rupestres de Quellkata en el Departamento de Puno, Perú.
- SEPÚLVEDA, M.: Pinturas rupestres de la Precordillera de Arica (norte de Chile). Re-evaluación a 40 años de la obra pionera de Hans Niemeyer.
- STRECKER, M., C. METHFESSEL and L. METHFESSEL: Las representaciones de animales felínicos en el arte rupestre del sur de Bolivia.

TARA Newsletter. The newsletter of the Trust for African Rock Art. Edited by DAVID COULSON. The most recent issue includes these articles:

- Number 10 (2008):
- CAMPBELL, A.: Diversity of Africa's rock art.
- DEACON, J.: Removing graffiti from rock paintings

in the Drakensberg.

ESRARA Newsletter. Quarterly of the Eastern States Rock Art Research Association. Managing Editor CAROL DIAZ-GRANADOS. The most recent issues include these articles:

- Volume 13, Issue 2 (Summer 2008):
- WAGNER, M. J.: The ceremonial mace motif in Illinois rock art.
- HUDSON, T.: Dick's Ridge serpentine stone wall.
- Volume 13, Issue 3-4 (Fall/Winter 2008-09):
- HEDDEN, M.: News from Machias Bay, Maine - 2008.
- STEINBRING, J.: An experiment in lichen removal.
- MULLER, N.: An unusual ledge outcrop in Hopkinton, RI.

Sahara. International journal of pre-History and History of the Sahara, with a strong emphasis on the region's rock art. Edited by D. CALATI, G. NEGRO, A. RAVENNA and R. SIMONIS. The most recent issue includes these articles:

- Volume 19 (2008):
- LE QUELLEC, J.-L.: À propos des molettes zoomorphes du Sahara central.
- STOREMYR, P.: Prehistoric geometric rock art at Gharb Aswan, Upper Egypt.
- BELHOUCHE, L.: Les gravures sur coquilles d'œufs d'autruche en Afrique du Nord: interprétation des décors géométriques.
- MILBURN, M.: National heritage: some problems & tragedies in the Sahara and north-west Europe including Britain.
- MENARDI NOGUERA, A. and M. SOFFIANTINI: The rock art sites of the upper Wadi Waddan (Jebel Uweinat, Libya).
- CLAYTON, J., A. DE TRAFFORD and M. BORDA: A hieroglyphic inscription found at Jebel Uweinat mentioning Yam and Tekhebet.
- MAESTRUCI, F. and G. GIANNELLI: Rappresentazione del territorio: alcune ipotetiche mappe nel Tadrart Acacus (Libia).
- BÖCKLI, H. and M. MARAI: Rock art and vertical transhumance at Jebel Uweinat.
- BORDA, M.: A remarkable rock art shelter between Gilf Kebir and Uweinat.
- ZBORAY, A.: Some further rock art finds at Jebel Uweinat and the Gilf Kebir.
- STOREMYR, P., A. KELANY, M. A. NEGM and A. TOHAMI: More 'Lascaux along the Nile'? Possible Palaeolithic rock art in Wadi Abu Subeira, Upper Egypt.
- SCARPA FALCE, A.: Enneri Borou (Tibesti orientale, conca di Ouri, Ciad).

- FOUILLEUX, B.: Couloir 'tête ronde' dans le secteur de Ouan Bender (Tassili-n-Ajjer, Algérie).
- FALESCHINI, G.: Oued Sirik (Tadrart, Algérie).
- LE QUELLEC, J.-L.: Du neuf avec de l'ancien: à propos des gravures et inscriptions du monument d'Abalessa.
- PICHLER, W.: The Libyco-Berber inscriptions of Fom Chenna/Morocco.
- SOLEILHAVOUP, F.: De la fidélité dans de relevé graphique des images rupestres. Exemples au Tassili-n-Ajjer (Algérie).
- SEARIGHT-MARTINET, S.: Confusion au sujet des sites rupestres d'Ain Semaiera et d'Ain Enbeibiga (Sud marocain)?
- RODRIGUE, A.: La station rupestre du Glab es Sghrir (Maroc).

Almogaren. Journal of the Institutum Canarium. Edited by HANS-JOACHIM ULBRICH. The most recent issue includes these articles:

Volume 39 (2008):

- RODRIGUE, A.: Les chars gravés du Jbel Aoufilal (Taouz, Maroc).
- BEDNARIK, R. G.: Die Kranichberger Petroglyphen bei Gloggnitz, Niederösterreich.
- PICHLER, W.: Bericht über den aktuellen Stand der Erforschung und Erhaltung der libysch-berberischen Felsinschriften auf den Kanarischen Inseln.
- SÁENZ DE BURUAGA, A.: Nota sobre un panel con grabados de équidos en el abrigo rupestre de Galabt El Jeil 2 (Tiris, Sahara Occidental).
- CUENCA, J., M. GARCÍA, L. GONZÁLEZ, M. GARCÍA, J. MONTELONGO and P. RAMOS: El culto a las cuevas entre los aborígenes canarios: el almogaren de Risco Caído (Gran Canaria).
- PICHLER, W.: The rock art sites in the region of Igherm/Anti-Atlas (S-Morocco).
- STEINER, H.-E.: Die Jungfrauen-Höhle auf der Osterinsel 'Ana O Keke' auf Poike/Rapa Nui, Polynesien.

RECENT BOOKS OF INTEREST

Cave art, by JEAN CLOTTES. 2008. Phaidon, London, 352 pages, 240 illustrations, hardcover, US\$85.00, ISBN 978-0-7148-4592-0.

L'art rupestre dans les Caraïbes / Rock art in the Caribbean / Arte rupestre en el Caribe, edited by NURIA SANZ. 2008. World Heritage Papers 24, World Heritage Centre, UNESCO, Paris, 372 pages, profusely illustrated.

Тропю Тысячелетий, edited by Д. Г. САВИНОВ and О. С. СОБЕТОВА. 2008. With seventeen contributions by twenty authors, in honour of M. A. Devlet. Авторы статей and Саипи, Кемерово, 188 pages, hardcover, ISBN 5-202-00183-5.

RECENT PAPERS OF INTEREST

New find of Levantine paintings in the Barranco Falon near Dos Aguas, by BJARNE STIG HANSEN. 2005. *Adoranten*, Volume 2005, pp. 116–117.

Expresiones simbólicas, cosmovisión y territorialidad en los cazadores-recolectores pampeanos, by RAFAEL PEDRO CURTONI. 2006. *Relaciones de la Sociedad Argentina de Antropología*, Volume 31, pp. 133–160.

The Late Pleistocene cultural shift in Europe, by ROBERT G. BEDNARIK. 2007. *Anthropos*, Volume 102, Number 2, pp. 347–370.

Erste Datierung von Felskunst in der Sahara, by ROBERT G. BEDNARIK. 2007. *IC-Nachrichten*, Volume 89, p. 23.

Cave art and perceived abilities of the ancients, by ROBERT G. BEDNARIK. 2007. *Cave Art Research*, Volume 7, pp. 1–5.

The early cave art of central Europe, by ROBERT G. BEDNARIK. 2007. *Cave Art Research*, Volume 7, pp. 6–15.

The trouble with cupules, by ROBERT G. BEDNARIK. 2007. In G. Nash et al. (eds), *Landscape enquiries*, pp. 73–79. Monograph 8, The Clifton Antiquarian Club, Clifton.

Views from a Swaziland cave, by JOHN MASSON. 2008. *The Digging Stick*, Vol. 25, Number 1, pp. 1–4.

The rock art of the Southern Cape, by HUGO LEGGATT. 2008. *The Digging Stick*, Volume 25, Number 1, pp. 13–16.

A 'Venus' and 'man-bison' in Upper Palaeolithic art at Chauvet Cave, by J. FRANCIS THACKERAY. 2008. *The Digging Stick*, Volume 25, Number 1, pp. 1–4.

Why caves should not be 'cleaned', by JAN F. SIMEK and ALAN CRESSLER. 2008. *NSS News*, November 2008, pp. 8–12.

MSA research at Diepkloof Shelter, west coast, by YVONNE VILJOEN. 2008. *The Digging Stick*, Volume 25, Number 2, pp. 1–4.



ORIENTATION

AURA Inter-Congress Symposium 2009

17–18 October, Broken Hill, News South Wales

R. G. GUNN

As reported in *RAR* 25: 239, the 2009 AURA Inter-Congress Symposium, celebrating AURA's first quarter of a century, will be held in Broken Hill on the 17–18 October 2009.

Broken Hill

Broken Hill is located in far western NSW, in proximity to the rock art precincts of Mutawintji, Euriowie, Olary and, further west, the Flinders Ranges. The National Parks of Mungo, Kinchega and Sturt are all within three hours drive. Broken Hill itself is an historic town, which at one time led the world in silver, lead and zinc production and boasted 60 hotels, many of which still stand as accommodation houses.

Broken Hill is a major tourist centre with comprehensive facilities.

In October, during the Symposium, the temperature should be around the mid 20s during the day and 12 at night (Celsius) and humidity low (c. 40%). Rain can occur at any time of the year, but heavy road-closing storms are unlikely.

Barrier Social Democratic Club

The Barrier Social Democratic Club is in the main street of the town (Argent Street), one block west of the Post Office and opposite the National Parks office. The venue is well suited for the Symposium, which will consist of a single academic session in the Conference Room (max. seating capacity of 100). The conference room also has a bar and can be used for the Symposium dinner, as it is adjacent to the club's restaurant.

Academic sessions

As the Symposium is celebrating 25 years of AURA, authors are requested to consider what has happened over the past 25 years in relation to their present research. Comparisons of field and theoretical developments from the early 1980s and now are encouraged.

A second, and timely, request is for papers on

the impact of fire on rock art. Over the past 20 years many of us have had firsthand experiences of the impact of fire on rock art site. Descriptions of the types of damage, causes, and recommendations are particularly invited so that an Australian-wide synopsis can be collated. The presentation of other studies of fire behaviour in relation to rock art sites is also encouraged.

Other than these, there will be no prescribed thematic preferences and any subject connected with rock art may be addressed.

For those unable to attend in October, a summary of their work can be posted to the convener at the address below for inclusion.

It is anticipated that all suitable papers will be included in a celebratory monograph.

Presenters will have the choice of using either a digital projector (preferably PowerPoint presentations) or a traditional slide projector. Whiteboard/blackboard and overhead projector will also be available. All presentations will be followed by questions and debates.

Current research posters

As well as the academic papers, we would like to get an overview of ALL rock art studies being undertaken in Australia in 2008–2009 (ongoing or proposed). A 'where, what, and with which Community' tally will be mapped out during the session. While papers would be preferred to describe completed research, posters or casual discussions of on-going research would also be of interest. It is envisaged that a summary of all work will be compiled for inclusion into the celebratory monograph.

Titles and abstracts for inclusion in the symposium program (50 to 100 words long) must be sent before 31 July 2009 to:

R.G. ('ben') Gunn
329 Mt Dryden Rd
Lake Lonsdale, VIC 3381
Australia
E-mail: gunnb@activ8.net.au

Accommodation

There are numerous motels, accommodation houses, and B&B's within the city, and a caravan park on the highways at the western (Adelaide) and eastern (Sydney) edge of the town. (The third caravan park is not recommended).

Fieldtrips

Fieldtrips to Mutawintji, Sturts Meadows and Euriovie are being negotiated for Monday 19 October 2009. Other tours are planned for the Yunta-Olary region to the west (including such sites as Panaramitee) and are likely to range as far as the Flinders Ranges rock art region and extend for some days, depending on interest and, in some cases, access.

Registration

To register for the AURA Inter-Congress Symposium in Broken Hill, please use the registration form provided.

Registration fees are \$A130.00 for members of AURA, \$A60.00 for student and retiree members of AURA, and \$A180.00 for non-members. Membership with AURA can be obtained at the registration desk. Registration covers a conference satchel and contents; coffee, tea, orange juice, biscuits and cakes during session breaks; refreshing buffet luncheons; conference dinner on Sunday evening; and field trip participation and literature. It excludes Saturday dinner, transport and accommodation. The Registration Desk will be open on Saturday morning from 8 am. Academic sessions will run from 9 a.m. to 6 p.m. on Saturday and Sunday.

Please direct any queries to:

AURA
P.O. Box 216
Caulfield South, VIC 3162
Australia,
or to auraweb@hotmail.com

Please consult the conference web page at <http://mc2.vicnet.net.au/home/congress/web/cairns.html> for any updates.

RAR 26-915

Murujuga rock art at AAA 2008

The Annual Conference of the Australian Archaeological Association of 2008, held at Noosaville, on the Sunshine Coast of Queensland from 3 to 6 December 2008, included a session dedicated to the rock art protection issues at Dampier Archipelago, Western Australia. Organised and chaired by AURA President Ken Mulvaney and Dampier archaeologist Sue Smalldon, this short session was a highlight of the event, primarily through the colourful presentation by Dampier Traditional Custodians Robyne Churnside and Tootsie Daniel. Ken opened the proceedings by presenting his model of 'The antiquity of Murujuga rock art', now the subject of his PhD thesis. It is based essentially on his identifications of subjects in the rock art's iconography, which he relates to changing ecological and biodiversity patterns through time as presumably reflected in faunal elements. It was followed by a report

by two consultants, Sarah Lewis and Donald Lantzke, 'Dividing up heritage: maintaining archaeological integrity in the Dampier Archipelago'. They reported the results of surveys at King Bay and on the eastern part of West Intercourse Island, which, despite being listed on the National Heritage, is apparently still eyed as a possible site for an industrial harbour.

Robin Chapple, representing the Friends of Australian Rock Art Inc. (FARA), provided a summary of that organisation's activities of the past two years in support of the campaign to save the Dampier rock art. These activities have been focused very much on Murujuga (which was given the colonialist name Burrup Peninsula in 1979, although it is in fact an island). Then followed the session's 'main event', in which Robyne and Tootsie presented a role play: Tootsie acted as the Aboriginal custodian being approached by a white anthropological consultant, flamboyantly played by Robyne. Though light-hearted, the performance presented a caricaturised characterisation of the complex relationships between the two sides, and the very serious consequences of the inequities involved. The mocking dialogue contained some magnificent gems, for instance when the 'consultant' declared, she has a GPS and other gadgets, 'and lots of money from the government'; and the 'custodian' responded, she does not need a GPS, she knows precisely where she is and where she wants to go. The metaphysical parables were as palpable as the irony.

The following presentation continued the exposure of the systemic issues plaguing the Murujuga Cultural Precinct, but it lacked the light touch of irony. Robert G. Bednarik addressed the 'Falsification of ("pre")history at Dampier', arguing that most of the information publicly available about the Precinct is in fact spin, and that falsification is rife not only in the history of the issues, in quantification, archaeology and rock art studies, but even in the geography and geology of the monument. Finally, Sue Smalldon rounded off the proceedings neatly with her paper 'Industry and heritage can co-exist, just not on the same land: the story of cultural heritage protection on Murujuga'. She spelt out clearly what certain sections of the Western Australian public service still cannot comprehend: that it is perverse, especially in a thinly populated state such as this one, to enforce the establishment of the largest industrial complex of the Australia-Pacific region in precisely the same locality as the greatest cultural monument of Australia. Nor is it acceptable that professional archaeologists are paid millions of dollars for facilitating the destruction of petroglyph and stone arrangements sites, as they have been on Murujuga.

That message was loud and clear in this session, which ended with a public demonstration in the form of a 'stand-up', with the participation of members of the audience.

Robert G. Bednarik

RAR 26-916

AURA rock art consultants register: first notice

Recent experiences, especially in relation to the massive rock art concentration of Dampier, Western Australia, have indicated significant flaws in the ways antiquated cultural heritage laws pertaining to indigenous monuments are implemented in Australia, and in the current system of advising government and industry concerning the significance or preservation of immovable cultural materials. If a country's largest monument — the world's largest concentration of rock art, in this case — is subjected to more than four decades of *wilful and fully avoidable destruction*, while many millions of dollars are spent on archaeological consultancies in facilitating this destruction, it is obvious that there must be inherent and very fundamental defects in the system supposedly designed to protect this heritage. These defects are now so well known they should not need to be defined, and they are deeply ingrained. In Australia, only NGOs seem to have the will to effect the protection or preservation of rock art, by mobilising public pressure. Thus the fate of Australian rock art is in the hands of the few organisations dedicated to its preservation, and of the Aboriginal people who rightly own it.

Many archaeological consultants advising on the management of rock art in Australia have little or no knowledge of rock art, its conservation or preservation, and lack the skills of working with the indigenous people. Much better equipped and predisposed scholars would be available, but preference is given to those who are perceived to best serve the interests of proponents (developers). This is a corrupt system and should be eliminated (see Editorial in this issue of RAR).

The most expedient remedy would be to establish a register of specialists in rock art studies, of people who have a deep understanding of rock art, of its management and conservation, and a commitment to its preservation, along with a high ability to work

with indigenous communities and leaders. To create such a register, which should be under the aegis of an independent body such as AURA, it is essential to form a selection board whose role will be to assess candidates for the register, on the basis of their qualifications, knowledge and previous work. The register should clearly record the specific areas of expertise of each candidate, and should be made available to any potential client.

AURA invites proposals from suitable rock art scholars to join a 'selection board' assessing applications from prospective rock art consultants. Members of this selection board should be:

1. Highly accomplished rock art researchers, from any country, preferably but not necessarily experienced in Australian rock art.
2. Determined to be objective and fair in assessing candidates for the register, and in ensuring the best-possible outcome for Australian rock art.
3. Committed to excluding themselves from this register.

This selection board will also include Aboriginal representatives, because one of the purposes of the proposed register is to prepare the administrative structures eventually needed when indigenous communities will fully manage their heritage sites. One of the principal objectives of AURA has always been to 'promote Aboriginal custodianship of sites externalising traditional Australian culture'.

Please submit your proposal to join the selection board for the future rock art consultants register of the Australian Rock Art Research Association Inc. to:

AURA
P.O. Box 216
Caulfield South, VIC 3162
Australia
E-mail: auraweb@hotmail.com

R. G. Bednarik

RAR 26-917

Please visit the Save the Dampier Rock Art site at
<http://mc2.vicnet.net.au/home/dampier/web/index.html>
and sign the Dampier Petition. Thank you!

LASCAUX ET LA CONSERVATION: EN MILIEU SOUTERRAIN

Impressions of an important symposium

Lascaux: adapting vs eradicating

YANN-PIERRE MONTELLE

On the 26th and 27th of February 2009, a milestone symposium on the cave of Lascaux and related preservation issues in subterranean environments was held at the Auditorium Colbert in Paris. The symposium opened with a series of thoughtful comments by the Minister of Culture, Madame Albanel. Speaking to a concerned and knowledgeable audience, she promoted transparency and pledged her full support to the implementation of a new scientific committee for the conservation of Lascaux. Unlike the former committees, which were intrinsically bound by bureaucratic exigencies, this new committee will benefit from a fully funded scientific autonomy. Next, Jean Clottes reminded us that vigilance does not have to equate with panic. This was strategically followed by Jean-Michel Geneste transparent exposé on the present-day situation in the Lascaux cave. The rest of the two-day symposium provided the scientific community with a forum to present and discuss current methodologies and problems.

As expected, no miracle solutions were found; instead the complexity of these fungal and microbial populations was clearly exposed and a quasi-unanimous understanding of the urgency to maintain

the status quo while allowing microbiologists to investigate further these endemic and introduced fungal and bacterial populations was reached. That the cave of Lascaux is hosting some unexpected microbial biofilms and fungal populations is undeniable. That this chronic resurgence of micro-organisms presents us with a 'crisis' is incorrect. Following the symposium I visited Lascaux with the curator, Jean-Michel Geneste, and quickly realised that the hype created around the cave was yet another journalistic misinformation (Fig. 1). Rather than delving deeper into these useless polemics, I wish to discuss some innovative approaches presented in the symposium and currently under development for the conservation of Lascaux.

The ecology of micro-organisms in the Lascaux cave is complex. For the assiduous readers I have put together a collection of four PDFs that will decant some of the complexities involved in these microbial and fungal populations:

<http://www.caves.org/pub/journal/PDF/V68/v68n2-Barton.pdf>

<http://www.caves.org/pub/journal/PDF/v69/cave-69-01-163.pdf>

[http://www.ij.speleo.it/pdf/70.580.38\(1\)_Bastian.Alabouvette.pdf](http://www.ij.speleo.it/pdf/70.580.38(1)_Bastian.Alabouvette.pdf)

[http://www.ij.speleo.it/pdf/70.583.38\(1\)_Sanchez.et.al.pdf](http://www.ij.speleo.it/pdf/70.583.38(1)_Sanchez.et.al.pdf)

In one of these articles I found the following opening quote which I will argue addresses a critical question in regards to the conservation of Lascaux:

Life on Earth has been microscopic for much of its 3.7 billion year history [...]. Nonetheless, the metabolic activity of these organisms has left its mark on every conceivable planetary structure, from isotopic fractionation of ore deposits in the deep subsurface to the oxygenation of the atmosphere [...]. Such metabolic activities continue to be critically important in the maintenance of the biosphere, where micro-organisms sustain higher forms of life through primary production, nitrogen fixation and organic carbon mineralization. Despite the planetary evolution of our bio- and geospheres,



Figure 1. The author preparing to visit the Lascaux cave in February 2009 (photograph by Jean-Michel Geneste).

historically researchers tended to ignore microbial activity in geological environments due to an ability to explain many geochemical reactions through purely inorganic chemistries and the inability to culture micro-organisms from these sites [...]. Eventually these limitations were removed with the development of molecular-scale geochemistry, while molecular biology allowed investigators to examine such environments without the need for cultivation [...]. Such techniques, and their resultant findings, also facilitated the interactions of microbiologists and geologists to understand the natural history of life processes and biogenic changes identified under geologic conditions [...]. This scientific revolution at the boundary of geology and biology, which became known as geomicrobiology, extended into all arenas of geology and revealed processes occurring under previously unrecognized physical and chemical conditions [...]. Historically, as investigators began to examine cave environments in closer detail, they identified unusual structures that hinted at the important role that microbial species might play in these systems [...] (Barton and Northup 2007: 163).

What the quote does not say is that this scientific 'revolution' is barely twenty years old. It has already successfully replaced the limited cultivations in Petri plates with the 16SrRNA sequences. The molecular phylogenetics approach uses the polymerase chain reaction to clone a single strand of DNA into millions of copies. 'Rather than generating a tree of lineage from a handful of organisms that could be grown in the laboratory, this new technique allowed entire microbial ecosystems to be examined at once without the limitations of cultivation' (Barton 2006: 46). Ex-situ cultivations has shown its limitations and armed with new weapons such as the 16SrRNA, we can now proceed towards the next phase — the experimental phase. Rather than using delicate environments such as Lascaux as laboratory, French researchers under the leadership of Jean-Michel Geneste have decided to duplicate the subterranean environments conducive to the growth and stabilisation of known microbial and fungal populations in what will be called 'Grottes Laboratoires'. In these controlled underground labs, the researchers will be able to emulate natural phenomena such as deprivation of photosynthesis in order to understand the scavenging responses and behavioural models adopted by adapting populations. Thus the non-culturability of a majority of these microbial and fungal populations will cease to become a setback, and microbiology in karstic environments will soon be able to adequately respond

to future conservation issues worldwide.

As the lengthy quote above clearly postulates, the success of molecular phylogenetics is dictated by the level of interactions between at least two disciplines. Interdisciplinary approaches are the key to progress. This, however, does not come without cost. In this particular case, I am referring to the necessary loss of a detrimental archaism from a handful of individuals with a stated and stubborn reluctance to let technology and new ideas guide future directions in conservation. This archaism was best exemplified in a series of negative interventions in regards to the 'Projet Simulateur Lascaux' [http://thetis.enscpb.fr/autres_pages/lascaux.php]. As defined by the researchers involved in this project, the Lascaux Simulator is a virtual tool that allows non-destructive investigations about potentially destructive processes to take place in virtual space. This cutting-edge tool provides critical information for a variety of applications. Modelling has reached a level of effectiveness that, in some instances, provides results that are superior to humanly generated results. This simulator can be used to study the impact of a variety of phenomena without repeated presence in the cave. In a sensitive time of corroborated efforts to maintain the equilibrium at all costs, this model offers a low-cost solution. It should be welcomed as the most adequate investigative tool so far and the critics should rethink their positions.

In summary, future research will draw from the strengths of the field of geomicrobiology and the very effective virtual modelling techniques being developed. These can provide conservators with the tools that will contribute to the stabilisation of Lascaux and will undoubtedly help predict future possible



Figure 2. Treating black stains in the Nave, Lascaux (photograph by CNP/ Ministère de la Culture et de la Communication).

anthropic contaminations in karstic environments worldwide. What this symposium really emphasised is what Darwin always predicted: adaptation. We can, through observation, precisely describe how things change, but, and more to the point, we will soon be able to explain why they do so. This is critical for maintaining the fragile equilibrium in Lascaux.

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RAR 26-918

Lascaux matters

ROBERT G. BEDNARIK

The international symposium 'Lascaux and its conservation: a subterranean environment' was held on 26 and 27 February 2009 in the auditorium of the Institut national du patrimoine, Paris. Attended by over 300 people, it was opened by the Minister for Culture, Mme Christine Albanel, and ably presided over by the President of IFRAO, Jean Clottes. Its organisation was truly impeccable in every possible respect and all those responsible for planning and execution of the event are to be congratulated. The symposium comprised the presentation of ten research papers, each session was followed by extensive panel discussions (all with instantaneous translations), and there were many opportunities for members of the public to intervene and to challenge policies or request clarifications. Discussions were lively throughout the sessions and different perspectives were amply and effectively aired. Not only were there many statements made by members of such groups as the International Committee for the Preservation of Lascaux and others concerned about the continuing conservation problems in the cave; even members of the Scientific Committee of Lascaux Cave made several scientific comments contradicting specific management policies, as did a number of the specialist commentators, particularly the microbiologists.

To place the ongoing problems with Lascaux into context it must be remembered that this site has always been the guinea pig of cave art management. Soon after its discovery in 1940, it became the first of the decorated caves to be subjected to massive intervention, which changed its climate and environment irreversibly (and destroyed most of its research potential). In 1948 it was opened to the public and became the first cave to be subjected to well over a million visitors, rendering the first use of an air management system necessary. The devastating effects on the delicate speleo-environment led to the interventions in the early 1960s, when

Lascaux became the first cave art site to be subjected to massive application of antibiotics. A new air regulation system was installed between 1965 and 1967. The next experiment (1983) with this site was much more benign and has been a major success: the facsimile of Lascaux was the first to be made on such a large scale, yet its great cost was recovered within a few years. The detection in 1998 of lichen, in addition to algae, led to the installation of a third air regulation system, in 2000/2001. A new outbreak of *Fusarium solani* followed, which was treated by applying abundant amounts of fungicides and antibiotics, as well as cleaning the rock surfaces. More than 1.5 t of quicklime had been applied to the floor, in an effort to reduce the trophic substrate deriving from the formaldehyde treatment of 1963, which further compounded conservation problems. Finally, in November 2005, cladiospora (including an *Ulocladium* species, transmitted by air rather than water, as the *Fusarium*) were first detected, and presently the expansion of the melanised fungi is perhaps the most acute threat to the cave art. Fourteen of the 800 or so painted zoomorphs of Lascaux have so far been compromised to some extent by this infestation.

The effects on global conservation practices, of the various experiences in the battle to secure the Lascaux rock art, have been truly profound: today's rock art conservation policies in almost all countries have benefited significantly, and the very considerable sacrifices made at that one site need to be seen in that perspective. The knowledge gathered in the Lascaux effort has been instrumental — and not just in our ideas of cave art conservation; it has also revolutionised rock art management ideology generally, and it is reflected in today's prescriptive instruments (e.g., in Australia, the *Burra Charter*). It is unfortunate that this knowledge has come at a price — still being paid by Lascaux — but it is imperative to perceive the inherent issues. A cave is not a sterile room; a surface deprived of its microbiological equilibrium becomes potentially available for colonisation by species of higher tolerance to biocides. It appears that the massive formaldehyde treatment in the 1960s, which despite low concentrations (reportedly 0.8 cm³/l in aqueous solution) resulted in the deposition of hundreds of kilograms of organic deposits, effected significant destruction of the microbiotic ecology. This created ecological niches for new communities, perhaps of more virulent species. Innumerable species and subspecies of microbiota inhabit the walls and substrate of every cave naturally, and their regime is inevitably the outcome of a long history that created equilibria for specific climatic and hydrological conditions of the past. For instance, the competition between bacteria and fungi may involve a suppression of the latter by the former (some bacteria produce antibiotics), a point incorporated by the management team of Altamira in its policies (of course the Altamira team had the benefit of avoiding the early mistakes made at Lascaux). Disturbance

of any natural balance in the micro-organisms in a cave inevitably leads to the establishment of a new community, and today's conditions are undeniably the outcome of the actions taken in the first three decades following discovery. Taphonomic logic shows that the sole reason for the rock art's survival is that *it has existed in environmental conditions that permitted such survival* – in contrast to the presumably huge but unknown corpus of similar rock art that has perished over the millennia. Indeed, the Lascaux studies have shown that areas that have been treated with biocides now show a greater diversity of microbiological species than untreated surfaces.

In the course of the symposium two factors became increasingly evident: first, the immediate concern rightly focuses on halting the spread of fungi, especially the melanine species, while other conservation issues are perhaps less urgent. Second, two opposing schools of thought have emerged: some would favour the lowering of micro-organic activity, while many microbiologists oppose radical intervention. The latter would focus on surveillance, pointing out that further precipitate interference is likely to aggravate the problems. I should admit that I side with the latter view, noting several comments made, calling for introducing irradiation to suppress biological activity. I find the recommended use of gamma radiation most precipitate, bearing in mind that some fungi have recently been reported to utilise melanin to extract energy directly from ionising radiation, in a process resembling the photosynthesis of plants: gamma radiation might enhance the growth of melanised fungi rather than destroy them (Dadachova et al. 2007). This emphasises the need for international collaboration. Another shortcoming of the microbiological work I detect at Lascaux is that the focus on smears and cultures grown in the laboratory, while of course often essential for species and subspecies identification (which may demand magnifications of 400× to 600×), refers to these in isolation rather than in a living speleo-environment. There needs to be extensive in-situ binocular microscopy, an aspect apparently neglected, to understand the ecological interaction and behaviour of species.

From the perspective of the managers of the cave, one cannot at the same time *intervene* in the microbiota and *not intervene*; thus Jean-Michel Geneste, who has the unenviable task of deciding the matter, finds himself in a catch-22 position. The solution of establishing a 'laboratory cave', made possible by the decisive support of the Minister, is a highly commendable measure, not only because it may facilitate better informed decisions about Lascaux, but – perhaps more importantly – it will substantially increase the knowledge base of the global field of rock art conservation, most especially in the field of cave art. But concerning the pressure to make immediate decisions, Geneste is not in a much better position than his predecessors several decades ago. Microbiology has progressed enormously in that time, but the

practical application of this knowledge to issues of cave art conservation has not kept pace with this development. In many ways, management decisions still need to be made blindfolded: we cannot know all implications of any course of action.

Another significant change in the management of Lascaux is that the Scientific Committee will be re-structured as a scientific core group to include outside (foreign) specialists and to facilitate greater transparency. It is also hoped that these changes will set into motion others, such as the introduction of regular public 'health reports' about the state of the conservation hazards in the cave. I find it particularly important that the relevant French authorities have shown the flexibility of taking on board concerns expressed by the International Committee for the Preservation of Lascaux and UNESCO, and most especially the resolute leadership of the Minister is inspiring. This constructive climate contrasts sharply with the operation of many agencies concerned with the protection of rock art in other countries (consider the festering sore of the Dampier rock art precinct in Australia; Bednarik 2002), and demonstrates once again the global leadership of France in the field of rock art. There is much the international discipline can learn from that country – and it is not limited to the fate of Lascaux. This symposium has been a demonstration, at every level, that constructive resolution of conflicting ideas is possible, but more than that: our French colleagues have secured a level of public care for rock art that is not equalled anywhere else on the planet. In the final analysis it is that vanguard position that helps the rest of us to haggle for a better deal for rock art elsewhere in the world. In that sense, *what happens at Lascaux matters to all of us*.

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Kevin Sharpe 1950 – 2008

If nothing else, Kevin Sharpe thought in systems. Mathematician, theologian, archaeologist and explorer, Kevin, inhabited the nexus points of his disciplines, bringing scientific rigour to his study of finger flutings in Koonalda, Rouffignac and Gargas, and bringing the sense of wonder for mysteries ever unanswerable to his theological work which focused primarily on the human desire for meaning-making.

Born in New Zealand in 1950, Kevin's combined interests in his three subjects brought him to study both mathematics and divinity at University of Canterbury in Christchurch, followed quickly by a Ph.D. in mathematics at La Trobe University, granted when Kevin was 22. It was during his time in Melbourne that he met Sandor Gallus and was employed by Gallus to work on two of his sites, one near Melbourne and the other, Koonalda Cave, in the Nullarbor. It was in Koonalda, faced with an enigmatic wall of finger flutings and boulders scratched by claws or tools, that Kevin's fascination with finger flutings and line markings began. Kevin participated in Gallus's expeditions in both 1973 and 1976 and while Kevin disagreed with Gallus's theoretical interpretations of the site, he was taken with the notion of the possibility of comprehending both purpose and structure of the flutings and engraved lines.

In 1975, while at Harvard University studying for his Master of Divinity degree, Kevin also studied under Hallam Movius, Jr. who redirected Kevin's attention towards the Franco-Cantabrian region and recommended that in the future he base his research there. It would be 25 years before Kevin was able to do so, as in the time in between he took a second Ph.D. in Religious Studies from Boston University focusing his work on the metaphysical connotations of mathematician/physicist David Bohm's work, founded *Science and Spirit* magazine, was Professor of Interdisciplinary Studies at Union Institute and University supervising scores of Ph.D. students, and held an honorary role at Harris Manchester College in Oxford where he made his home from the late 1990s until 2008.

In 2001, working now in research partnership with his wife, Leslie Van Gelder, Kevin and Leslie were able to begin a systematic study of the finger flutings in both Rouffignac and later, Gargas Caves in France. Their work focuses on the use of forensic evidence to develop means to recognise individual fluters and from there to ask more focused questions. Publications based on this work have appeared in the last three years in *Rock Art Research*, *Antiquity*, *Cambridge Archaeological Journal*, *INORA*, *Society for Primitive Technology Bulletin*, *Science News*, festschrifts to Alexander Marshack and Robert Bednarik, and will appear in forthcoming issues of *Semiotica* and the *Oxford Journal of Archaeology*. Kevin was also the author of five books in the field of Science



and Religion: *Science of God: truth in the Age of Science* (2006); *Has science displaced the soul: debating love and happiness* (2005); *Sleuthing the divine: the nexus of science and spirit* (2000); *David Bohm's world: new physics and new religion* (1993); and *From science to an adequate mythology* (1984) as well as series editor of Fortress Press's long standing Science and Theology series.

Kevin was an early supporter of AURA, *Rock Art Research* and the professionalisation of the field. He attended many of the international conferences over the years and those who heard him speak knew him to have a gentle soul, a quick smile, and the generosity of spirit to collaborate and share both research, and better still, the contagion of enthusiasm for discovery, rigour and innovation, with his many colleagues. He was grateful for the mentorship he found from Gallus, Movius, Marshack, and to the Plassard family for allowing he and Leslie to research in Rouffignac; and was ever appreciative of the collegialship and spirited discussion and debate he found among his more contemporary colleagues who are still alive and active in the field.

Kevin first showed symptoms of the cancer which would later lead to his death while on his last research trip to Rouffignac in March of 2007. After a challenging journey through cancer treatment, he died in November 2008, a few months after returning home to his native New Zealand. He is survived by his wife, Leslie, who will continue their research; his two daughters, Miriam Sharpe, a biochemist in London, and Kiri Petersen, an archaeologist in New Zealand.

Dr Leslie Van Gelder

RAR 26-920

IFRAO Report No. 42



INTERNATIONAL IFRAO CONGRESS

Global Rock Art

National Park Serra da Capivara, Piauí, Brazil

29 June to 3 July 2009

THE SCHEDULED SESSIONS

Session	Co-ordinators
1 - The rock art from the southeast of Piauí State: graphics profiles, chronology and conservation	Anne-Marie Pessis, Esther Lopez
2 - The origins of the Nordeste Tradition of rock paintings: diffusion and diaspora	Gabriela Martin, Irma Asón Vidal
3 - Rock art of Amazonia	Edithe da Silva Pereira, Kay Tarble de Scaramelli
4 - Recent trends in world rock art research	Giriraj Kumar, Robert G. Bednarik
5 - Cancelled	
6 - The non-Cartesian axes of rock art research	Mario Consens, Robert G. Bednarik
7 - Permanency of the painted form ?	Hipólito Collado Giraldo, George Nash, Aron D. Mazel
8 - History of research in rock art: origin and debate	Guillermo Munoz, Ramon Viñas, Fernando Coimbra
9 - Documenting, recording and promoting rock art	Mila Simões de Abreu, Angelo Fossati
10 - Analytical rock art research	Judith Trujillo, Robert G. Bednarik
11 - Prehistoric art: signs, symbols, myth, ideology	Dario Seglie, Luiz Oosterbeek, Marcel Otte, Laurence Remacle
12 - Aesthetics and rock art	Thomas Heyd, John Clegg
13 - Animals in rock art	Mila Simões de Abreu, Carol-Patterson
14 - Warriors in rock art: a global perspective	Mila Simões de Abreu, Angelo Fossati
15 - Interpreting rock art scenes	Mavis Greer, John Greer, Leslie Zubieta
16 - Women's business: not for women only	Mary Amanda Gorden, Peggy Grove
17 - Computer applications for rock imagery	Ludwig Jaffe, Andrea Arcá
18 - Conservation, protection and educational outgrowths of recording rock art	Jane Kolber, Cesar A. Quijada
19 - Rock art conservation in the national parks and other protected areas	Maria Conceição Soares Meneses Lage, Lorena Ferraro
20 - Valorisation and management of rock art sites	Mercedes Podestá, Matthias Strecker
21 - Quality and management of rock art sites	Maurizio Quagliuolo, Rossano Lopes Bastos, Luiz Oosterbeek, Cris Bucu
22 - Rock art and museums	Dario Seglie, Robert G. Bednarik, Giorgio Dimitriadis

23 - The rock art transitions	Hipólito Collado Giraldo, Jose Julio García Arranz, George Nash
24 - Pictures as pictures: subject, depiction, movement, composition in world rock art	Christopher Chippindale, Cris Buco
25 - Cancelled	
26 - Rock art and food producing societies. A systematic association	María Cruz Berrocal, Sidsel Millerstrom

For details see congress home-page at
<http://www.globalrockart2009.ab-arterupestre.org.br/index.html>

Registration fee (per person) paid after 30 March 2009 is 250 US\$ / 180 euros, for students 150 US\$ / 100 euros. For transfer please use the following account:

ABAR
 Banco do Brasil
 Agency 2660-3
 Account No. 20873-6

Do not forget your registration number for the correct identification of payment.

Payment could be made by sending the registration form at http://www.globalrockart2009.ab-arterupestre.org.br/ficha_inscricao_en.asp.

Payment in cash is only accepted in R\$ and on site, starting at 8.00 a.m. on 29 June 2009. Cheques are not accepted.

The registration fee includes:

- Free access to the opening and closing ceremony.
- Participation in all sessions and public events.
- Free access to the Museum of American Man.
- Documentation and certificate of participation.
- Free transport in Congress vehicles which will do the transfer between the hotels and the Museum of American Man.

Registration is confirmed upon receipt of payment with a number of confirmation. Participants should present this number at the reception desk.

During all activities of the Congress, the participants have to use their name tags. Otherwise, there will be no free access nor free transportation. In case the name tag is lost, there will be an extra charge of

US\$ 12 / 8 euros for another one.

Visas and formalities: Please contact your travel agent and/or the nearest Brazilian Consulate.

The town of *São Raimundo Nonato* is situated in the southeast of the state of Piauí, North-East of Brazil.

The *International Airport Serra da Capivara* will be inaugurated in 2009, by the Governor of Piauí, Wellington Dias.

The possibilities of *access by road* are:

Petrolina (PE), 300 km from São Raimundo Nonato
 Means of transportation Petrolina / São Raimundo Nonato / Petrolina:

- Daily bus, Gontijo Company, departure from Petrolina at 2.00 p.m. and departure from São Raimundo Nonato at 11.00 a.m.
- Taxis
- Private transfers

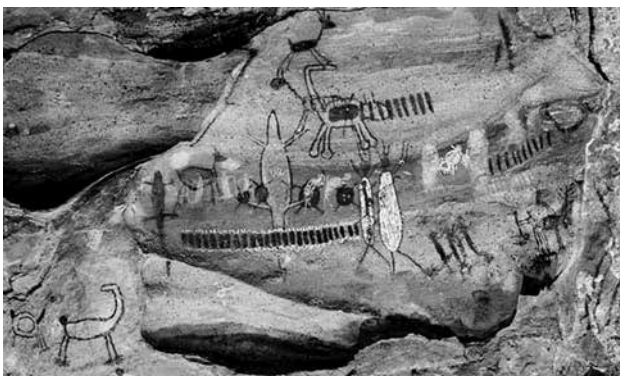
The road is in very bad condition.

There are four *fieldtrip* options:

1. Area of the Desfiladeiro da Capivara
2. Visit to Serra Branca
3. Visit to the region of Varedão and Perna
4. Hombu track and area of Pedra Furada

The packages include transport, guides and fees. The charge per day is 33.50 US\$ or 24.00 euros.

Reservations: trilhascapivara@uol.com.br



Toca do Boqueirão do Sítio da Pedra Furada



Toca da Entrada do Baixão da Vaca