



RAR DEBATE

Resolution: photography and the human eye

By MICHAEL EASTHAM

The article by R. G. Gunn, C. L. Ogleby, D. Lee and R. L. Whear (*RAR* 27: 131–5) is an excellent and concise exposition of methods of documenting and interpreting superimposed pigment motifs using recently devised computer programs to enhance colour discrimination in digital photography. Nawarla Gabarnmung, like other sites in the Jawoyn country in central Arnhem Land plateau is not nearly so accessible as the rock art sites in the country of the Gunjeibme-speaking people to the west of the plateau in the catchment of the three Alligator Rivers or those in the country of the Wardaman further west in the Victoria River's catchment area. In the circumstances the authors and those assisting them are to be congratulated on the lengths they have gone in order to validate what they believe they have seen in a brief, but doubtless expensive visit that others will necessarily have difficulty in repeating if adequate scientific practice is to be fulfilled.

Nawarla Gabarnmung is clearly a shelter that must not only have been particularly difficult to photograph but also a shelter that presented difficulties to viewing. Even with the active assistance of the Jawoyn Association, a helicopter seems to have been absolutely necessary to get research personnel and equipment to the site. Once there, the curvature of the panel providing the support for the painting combined with the size of the painted area and its limited height above the ground clearly presented further practical and technical difficulties. The article provides an admirable description and discussion of the utility for motif discrimination of various computer programs that have become available in the last decade for differentiating between the extent of different coloured marks and other patches of colour recorded by the camera. It demonstrates their application and to some extent their effectiveness in the recording of two complex panels on the ceiling of what appears to be a typical Kombolgie formation sandstone pseudo-karst rockshelter.

In several places, however, caveats are entered that query the results they are apparently asserting. For instance, at the end of the article John Clegg is quoted as recognising the inherent problems of relying on photographs in the discussion of Australian rock art

in an article published as long ago as 1991. Robert Bégouën is also quoted as saying in 1987 that 'no cave with wall art can ever be entirely known'. Doubtless he said it because 73 years after his father and two younger brothers discovered the Volp Caverns many things were still being discovered in the complex of passages carved out by the river. Indeed some of the discoveries made in the last few years by him and by colleagues in the Tuc are very elegantly recorded in the publication, *Le Sanctuaire secret des Bisons* (2009).¹ At the recent IFRAO congress at Tarascon when a participant during a questions session remarked in heavily anglicised French on the damage done to our understanding of the art of painted and engraved caves by people who undertook a 'scientific' examination lasting only a few hours, Robert Bégouën surprised everyone by clapping. Rock art, he afterwards remarked, was designed to be detected by the human eye and provided the eye looks long enough and is guided by both persistence and memory it remains the best mechanism for detection and discrimination.

In particular it is possible to be critical of the article's affirmations of the Harris matrix. In 2000 I was able to make digital photographs of the three major panels at Anbangbang thanks to the ease of access to the site provided by the road system of the Kakadu National Park. Because of the Park regulations I had to take all the photographs of the largest panel from the small podium provided for tourists but a combination of lenses enabled me to take both details that could be built into a mosaic and a wider angled image with a standard lens which could be used to ensure their correct positioning but whose resolution was inadequate for anything more. It was possible to get closer to the two panels at each end of the frieze but the eight panels inside the tunnel inevitably passed unseen and as far as I am aware, with one exception, have seldom been recorded.

The photographs I was able to take I processed with the most recent version of Photoshop then available to me. Concentrating on the famous large main panel, the second from the end at the left of the frieze, I was able to produce layers in the manner advocated in the article by Gunn and his associates though doubtless not with the same facility. In a Harris matrix derived from them I arrived at seven layers but immediately

¹ During a 2010 visit of Les Trois Frères, the *RAR* editor was shown a significant new, but as yet unreported discovery right among the cave's main panels. Ed.

realised that in this I was wrong. David Attenborough had been kind enough to give me full plate copies of 35 millimetre colour photographs he had taken of the main panel when preparing in 1962 for a BBC Television program and had subsequently published in monochrome (1981). Penny Tweedie had also given me a very high-resolution digital copy of a transparency of the panel photographed with a high-quality standard lens and a sensitive film that she had taken in 1978 after Njambolmi and his colleagues had repainted the panel in the Wet of 1963 to 1964. She published it later with an odd colour cast (1998: 45).

Comparing these two images with what I had done there was clear evidence of error in what I had achieved. Quite large areas of painted marks, visible in the 1978 photograph, were not present in either my own or the 1962 photograph. Painted marks that were visible in the 1962 photograph had disappeared in both of the later photographs. Finally areas covered with pigment that had clearly been painted that were visible in my photographs taken in 2000 were not visible in either the 1962 or the 1978 photographs and were partially overlaid by evidence of marks that were both visible and more extensive in the earlier photographs. These observations made nonsense of any attempt to discriminate between superimpositions at Anbangbang on the basis of any of the three parameters of colour.

I also made a count of the depictions in the photographs; the shapes in the photographs I had obtained whose intention was recognisable. I arrived at a figure of about nineteen or twenty-one as two human depictions had been added between 1962 and 1978. I did not count all visible motifs because it seemed to me at the time that it is not possible to distinguish in a photograph between a shape which was a random discolouration of the rock surface generated by accident, displacement of applied pigments or pigmentation out of the rock itself and shapes that were the badly eroded.

A visit arranged with the assistance of Christopher Chippindale for continued study of the site during the daylight hours of three weeks of September of 2003 was intended to discover if sitting and drawing the visible detail could reconcile the discrepancies. Despite the active participation of Laurie Nelson, a member of the Aboriginal community appointed by the Park's officials to act as a minder, we were unable to achieve this completely, even for the main panel. He clearly knew a great deal about what ought to be visible but was puzzled about some aspects of what he found depicted and until he had worked out their implications spent his time trying to establish which element belonged to each depiction. He was a considerable draughtsman and I suspected was the person deputed by the group of Traditional Owners of the site to follow Njambolmi and his predecessor Barak as its custodian and maintenance painter, provided this could be reconciled with what the National Parks Authorities required of its assumed custodianship and its Aboriginal employees.

In 2003 sixty-six depictions were identified by sitting

and looking at the panel but only a maximum of four layers of superimposition could be seen and in some places this layering appeared to be so contradictory that only three layers were certain.

I realised on reflecting on the results that could be obtained from the drawings and the photographs that because of the karst-like processes that obtain in the sandstone hydrology and frequent and repeated attempts to repair changes they make to painted surfaces, a Harris matrix could not be made. At Anbangbang extensive repairs and complete replacement of depictions probably had to be made about every forty years. Njambolmi had undertaken major repainting at least once since he had taken over from his predecessor as custodian when the latter was killed in a dispute.

Three conditions are brought about in limestone karst by the movement of water and these are present to a varying extent in the rock of the Arnhem Land plateau. The northern Australia deluge of rainwater falling in the summer months on the upper surfaces of the sandstone and the changes in temperature on the rock surfaces that occur at the same time enhance the effects of these processes in ways that do not occur in temperate limestone karsts. The Anbangbang frieze is protected by a huge overhang of rock jutting out above it and is orientated in such a way that sun can only strike across part of the surface of the main panel for a short time near sunset. The rock, a sandstone composed of silica sand bonded by a matrix that is rich in ferric iron, exudes what quarrymen elsewhere in the world call 'quarry sap'. It is a fluid mixture of various substances present in the rock and others formed by the decomposition of such vegetation as grows on top. Rainwater dilutes this 'sap' in the Wet and causes it to flow more freely but its exudation affects the surfaces with paint on them to varying degrees throughout the year.

Depending upon the hydraulic pressure behind the paint in various parts of the surface and the quantity of waterproofing ferric oxide in the paint filling the pores in the rock the rate at which 'sap' exudes from the surface varies enormously. In places where because of the stratification of the rock there is a rapid flow, the water descending across the surface of the paint will wash away the pigment and any supporting medium. At the other extreme where the flow is slow enough, the water content evaporates, leaving a crystal structure primarily composed of silica that binds the granules of pigment to the support. In areas where the sun strikes and the paint is impermeable, heating of the surface will vaporise the water in the sap and increase the pressure on the impermeable layer to such an extent that large areas of the surface supporting the paint exfoliate and fall away. All three processes are evident in the main panel at Anbangbang but despite breeze that passes through the tunnel only a little crystallisation of silica and depositions of some sodium and calcium compounds are visible there.

In the lower parts of the main panel the 'sap' has

built up a structure of silica and has carried with it and incorporated ferrous ions from the sandstone matrix in the structure. This has completely obliterated most things that might once have been painted on the rock surface. Several photographs were taken at night in 2003 using intense oblique white light thrown across the surfaces in areas where some painted marks could be seen. In an area below the left hand group in the main panel that depicts a 'man' between three 'women', several rings, the result of slight undulations in the surface, became visible. In normally lit photographs of the area there is a small 'male' person placed at an angle to the vertical human depictions that is just visible, and one or two other marks. In oblique light the rings can be seen to be about the same size as the 'halo of hair' round the figure's head. They imply that the position of the depiction has been moved about in relation to the depictions above by more than its total height altering its implications. The build-up of silica in the various paint films makes it impossible to determine any sequence of superimposition and therefore any sequence of orientation or relationship to adjacent depictions.

At the top of the panel where the sun strikes across it at the end of the day, there are also indications that the anthropomorphs with animal features referred to as Barrginj, Namondjok and Namarrgon have also been displaced. They seem to have been completely absent when Attenborough took his photographs but to the left of the fish-like head of Namondjok there are at least two other similar faint fish shapes on part of the surface that has not exfoliated because it is always shaded by the overhang and then by the western promontory of Burungui, a larger sandstone outlier, as the sun sets behind it. Any superimposition there may once have been has been lost in the exfoliation.

Though much of what was painted on the rock surface at Anbangbang was effectively incomprehensible in the photographs that were the best that could be achieved and taken away from three rapid visits to the site by three different observers, further details of what had been painted and was visible at the time emerged as a result of the more prolonged study undertaken in 2003. I hoped to arrange a further visit to Anbangbang to resolve some of the discrepancies between the identification of depictions that were recorded in the drawings and the unidentified distributions of colour that the camera had recorded from the same portions of the rock surface. This has not proved possible and in any case I anticipate that with the lapse of seven years since the study was begun there will have been changes to the rock surface and the pigment layers that are likely to be at least as great in proportion as those identifiable between, say, Penny Tweedie's 1978 photograph, the photographs taken by George Chaloupka in 1979 and the photographs I was able to take in 2000.

To summarise, computer programs, particularly the neural network programs, are excellent for determining the size and distance between patches of

colour of the same hue, saturation and intensity of light reflectance once these parameters have been digitised with some accuracy but this is not the same thing as determining the intention of a motif. They cannot be used to determine whether the marks are a depiction or not. This determination at present has to rely on the human visual perception processes. Photography, even the finest grained silver halide-based photography, is only a sophisticated and sometimes partial method of drawing what has already been perceived and identified. It is the nature of the visible clues that enable this process of identification that demand extensive examination, not the wholly alluring technical and largely electronic processes that can sometimes confirm they exist.

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Reply to Eastham

By R. G. GUNN

On behalf of my co-authors, I thank Eastham for highlighting points of our paper that have led to his, and probably others', misunderstandings. Our aim was simply to introduce one extra method for assisting in the analysis of superimposition. This method was in no way intended to replace or purport to be superior to other recording or analysing techniques, and we acknowledged that this method may not be appropriate at all sites. Certainly, we do not see the technique as shedding light on 'the intention of the motif', as this can only be derived from informed, rather than formal methods (Chippindale and Taçon 1998). Regarding the use of colour, the Nawarla Gabarnmang example was presented as colour separation was clearly apparent there and it happened to be the site at which we developed the technique. We did not mean to imply that such clear colour separation would be universal. However, we hold that a Harris matrix can be produced for any panel with superimpositioning. Also, in any recording, we can only record what is there at the time; it is taken for granted that erosion will have removed some motifs and that, generally, this deterioration will be more common in the earlier layers. The matrix should not be seen as some magical box that reveals the full and true history of a panel and in some cases will produce a discordant array of individual or groups of motifs that cannot be sorted. For instance, for a panel of three motifs of dissimilar types and techniques (motifs 1-3) that do not overlap the matrix will consist of the three numbers with no connecting lines. If motif 1 overlaps motif 2, then they will be connected by a line that shows

1 over 2, and motif three will exist unconnected on its own. Again, we refer readers to the original article (Loubser 1997). We further reiterate our conclusion from the paper that no site can ever be considered to be fully recorded as different recorders will see different things, and the same recorder may well see different things under different circumstances.

Our study at the site was undertaken over ten days with funding supplied by the George Chaloupka Fellowship and the Jawoyn Association. As was mentioned in the paper, the Nawarla Gabarnmang has a horizontal ceiling two metres above the floor and hence, apart from lying on a charcoal-rich deposit and leaving looking like coalminers, presented few difficulties in photographing. Further recording at the site is expected to be undertaken next year. In addition, a team led by Bruno David of Monash University has undertaken preliminary excavations of the floor deposits (Geneste et al. 2010) and they will also return next year. As Eastham mentions, the site is very isolated but the Jawoyn Association controls visitation to their very significant site with the expectation that once on-going excavations and recordings are complete, the site will be developed for its tourist potential.

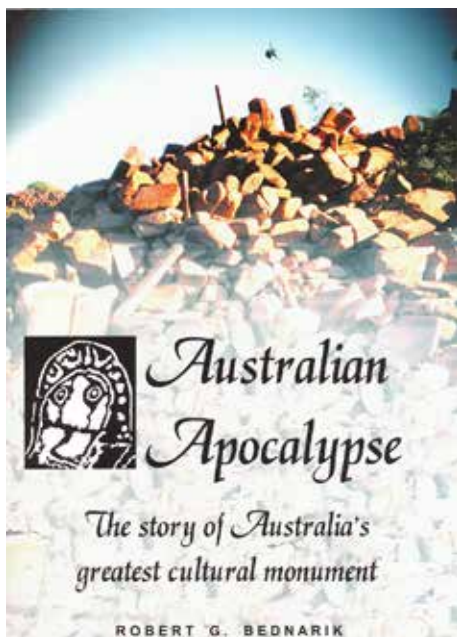
With regard to the term 'pseudo-karst', Wray (2003) suggested a change in terminology whereby karst is a formation process and not one restricted to carbonate solution. As a consequence, Nawarla Gabarnmang should be viewed as a karst and not a pseudo-karst.

We hope this clarifies the issues somewhat and we look forward to seeing the results of Eastham's work at Anbangbang.

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REFERENCES

- ATTENBOROUGH, D. 1981. *Quest under Capricorn*. Lutterworth Press, Guildford. [ME]
- BÉGOUËN, R. et al. 2009. *Le Sanctuaire secret des Bisons*. Somogy éditions d'art, Paris. [ME]
- CHALOUKKA, G. n.d. *Burrunguy Nourlangie Rock*. National Library of Australia, Northart. [ME]
- CHIPPINDALE, C. and P. S. C. TAÇON 1998. An archaeology of rock-art through informed methods and formal methods. In C. Chippindale and P. S. C. Taçon (eds), *The archaeology of rock-art*, pp: 1–10. Cambridge University Press, Cambridge. [RGG]
- GENESTE, J.-M., B. DAVID, H. PLISSON, C. CLARKSON, J.-J. DELANNOY, F. PETCHEY and R. WHEAR 2010. Earliest evidence for ground-edge axes: 35,400 ± 410 cal BP from Jawoyn Country, Arnhem Land. *Australian Archaeology* 71: 66–69. [RGG]
- LOUBSER, J. H. N. 1997. The use of Harris diagrams in recording, conservation and interpreting rock paintings. *International Newsletter on Rock Art* 18: 14–21. [RGG]
- TWEEDIE, P. 1998. *Aboriginal Australians: spirit of Arnhem Land*. New Holland Publishers (UK) Ltd, London. [ME]
- WRAY, R. A. L. 2003. Quartzite dissolution: karst or pseudo-karst. *Speleogenesis and Evolution of Karst Aquifers* 2: 1–9. The Virtual Scientific Journal at www.speleogenesis.info. [RGG]



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All money recouped from the sale of this volume is directed into the Rock Art Preservation Fund of the International Federation of Rock Art Organisations, which meets the cost of the campaign to save the rock art of Dampier Archipelago.



RAR REVIEW

Carabaya. Paisajes y cultura milenaria, by RAINER HOSTNIG. 2010. Publication sponsored by the Provincial Municipality of Carabaya (Puno, Peru) and the Government of the State of Vorarlberg, Austria. Cusco, Peru, 325 pages, 32.5 × 25 cm; 572 colour photos, 41 b/w photos, 29 maps and plans, 154 drawings, 4 charts. ISBN 978-612-00-0339-8.

This book offers an introduction to the geography, history and culture of a province in the northwest of Puno department, southern Peru, which features a variety of beautiful landscapes, situated between the Eastern Andean mountain ranges (Cordillera Oriental) and the Amazon lowlands. A wide variety of topics are presented including the biological heritage (plants and animals), traditional agricultural techniques, sacred mountains, archaeology and rock art, economy (mines and gold washing), and tourist information, among others. It is an almost encyclopaedic work written by the author *ad honores* on the request of the government of the provincial municipality of Carabaya.

Rainer Hostnig is a pioneer of rock art research in Peru. He published the first comprehensive inventory of rock art sites in Peru in 2003, and organised that country's first national rock art symposium in 2004. A special focus of his research has been the region of Macusani and Corani, in the Carabaya Cordillera, which has one of the largest concentrations of Peruvian rock art. In the last ten years some 300 sites have been registered by different researchers. Thanks to Hostnig's personal efforts, these sites were declared National Monuments by Peru's National Institute of Culture. However, their preservation is threatened by mining concessions (see Hostnig's article in *RAR*, Vol. 25: 229–233).

Several preliminary introductions to Macusani rock art were published by Hostnig between 2004 and 2008. As the inventory of sites and their representations have increased, a new synthesis is presented in 66 pages of this book.

Rock art production in this region spans several thousand years and developed different traditions that can be distinguished by stylistic trends, themes and iconography. Among supposed Archaic rock paintings, similar to those existing in the well-known Peruvian sites Toquepala and Sumbay, are representations of wild camelids and deer, as well as

hunting barriers constructed to lead animals to specific areas where the hunters would ambush them, armed with spear throwers. As can be observed in many other sites throughout the Andes, human figures of that epoch are represented in very schematic form compared to the dynamic figures of the animals that are shown in movement. However, Hostnig also ascribes abstract designs to the Archaic period. Later rock art of agricultural and pastoral societies present representations of domesticated camelids, but there are also other traditions. Hostnig assumes that complex abstract compositions belong to the Middle Horizon, frequently combining two colours; they are sometimes called *mantas* (textile pieces); however the great majority clearly cannot be identified as textiles. Late Intermediate Period rock art features anthropomorphic figures represented with axes and shields, interpreted by the author as 'persons of high rank ... equipped with symbols of power and prestige', as well as 'llama' or 'alpaca' figures. Rock art of the Amazonian lowlands is represented by the exceptional site Boca Chaquimayo that has rocks engraved with a high concentration of figures. Colonial and Republican rock art is present at some twenty sites, introducing drastic changes in the iconography of images, their meaning and function. Representations of churches occur, as well as lines of armed soldiers, which reflect the pattern that Hostnig also found in Espinar province of Cusco department and which SIARB investigators F. Taboada and M. Strecker recorded in the region of Lake Titicaca. Finally, the author deals briefly with current threats to the rock art and initiatives to protect this cultural heritage.

The book is lavishly illustrated with numerous colour photos of excellent quality, which make it very attractive. The author uses inset photographs to combine views of rock art sites with details of panels with paintings or engravings to show the context of the art. He also investigated Historic archives and has included a number of ancient maps and black and white photos of the early 20th century.

Hostnig's book will be welcomed by historians, archaeologists, students of rock art, and the general public as a contribution to the understanding of a little-known region of southern Peru.

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RAR 28-1002

Burrup rock art: ancient Aboriginal rock art of Burrup Peninsula and Dampier Archipelago, by MIKE DONALDSON. 2009. Wildrocks Publications, Mt Lawley, Western Australia, profusely illustrated throughout with more than 600 colour plates, 515 pages, 28 × 28 cm, 3.4 kg, with short bibliography, \$A150.00 plus postage, hardcover, ISBN 978-0-9805890-1-6.

Readers of *RAR* need no introduction to the immense wealth of rock art in the Dampier Archipelago, reputed to be the world's largest concentration of petroglyphs. Several papers in this journal have already addressed this topic and the unnecessary threats to the rock art by development. In garnering public support for its protection it is of great importance to convey its significance effectively and widely, which involves defining its incredible diversity and heritage values through images rather than words. In this, Mike Donaldson's substantial volume is an invaluable contribution. It is not a scholarly book, nor is it intended to be one; it is a personal testament by a photographer and writer who has fallen under the spell of this monumental palaeoart gallery on a group of rugged and rocky islands just off the coast of north-western Australia.

Most of this certainly substantial and truly handsome book consists of photographs and their captions, leaving only a few pages for text. The context of the book's subject is provided mainly by the four Appendices, especially on the known history of the archipelago, its geology and its industrial development. The Introduction is concerned with the islands' geology, the rock art and its age, and concerning the latter Donaldson seems to embrace the sensible short-range chronology. There is an odd contradiction between his view that the limestones of Legendre Island and some smaller islands formed in a *coastal* environment in the last 90 000 years of the Pleistocene (506), having rightly observed that during most of this period the coast was far out to sea (19). He correctly defines the rock art as petroglyphs and explains that these are not engravings (16), but then often uses the term engravings to refer to them. He is ambivalent about the nature of the rocks' weathering rind, sometimes stating that it formed along joints tens to hundreds of metres, or even 5 km, below the surface (508); or alternatively that many of the rocks 'remain fresh at today's surface', with very little weathering. He believes that faster weathering rates of mafic rocks formed many valleys, but then contradicts this by noting the often very high inland dykes (509). Similarly, Donaldson defines granophyre, a felsic rock dominated by large quartz and feldspar crystals, as the principal host of Dampier rock art, but describes it as 'very fine grained' (504) and then illustrates a sectioned block of a mafic rock (i.e. one characterised by pyroxenes, amphiboles and olivine), even correctly mentioning the reduction of pyroxenes and amphiboles (508). This rock contains no quartz and is in all probability either

a gabbro or dolerite. It seems that Donaldson could be confusing mafic and felsic rocks, since he compares his 'granophyre' with the Giants Causeway of Ireland (which is of course basaltic).

The book's production has been significantly underwritten by Rio Tinto, the mining company responsible for the first wave of rock art destruction on Murujuga (incorrectly named 'Burrup Peninsula'; an artificial causeway is not an isthmus, which is what defines a peninsula; moreover, the Burrup usage is attributable to a misunderstanding: the name refers only to the northern part of Murujuga, north of the King Bay isthmus, which is indeed a peninsula of an island, whereas Murujuga as such remains an island) as well as several subsequent ones. Although it is true that the destruction wreaked by the later petrochemical industry has been greater, this does not justify Donaldson's exoneration of his partner in this book through stating that the portion of rock art remaining in 'pristine condition' in 'probably more than 95%' (512). He states that the area of Murujuga set aside for conservation is 46% of the island's land area. Since most of the rock art has been compromised in the other 54% of land, and all of it has been destroyed in at least 14% of it, his estimate is obviously unrealistic. Moreover, he was not there in the 1960s to see the extent of the rock art at the time, and his pandering to the resources companies is no more credible than that of those working for them. A detailed discussion of the relevant numbers has been provided in this journal in 2007, and it should be noted that even just the extent of rock art destruction through the widespread pilfering and visitor vandalism amounts to several percent. It is continuing because there is simply no protection in place even today, despite the Heritage Listing I secured for part of the archipelago. Protection of Dampier rock art has always been a farce and remains so, and this should not be painted over in a book specifically aimed at the general public.

Having gotten this off my chest, I can say unreservedly that more than 95% of the book is a pure pleasure to read, or rather to look at. The rock art simply speaks for itself and the brilliant colours of the Pilbara rocks have been done full justice. The vistas of this stark and timeless landscape are lovingly woven into the visual feast the author has prepared for the reader. To view this immense outdoor gallery, the largest art gallery in the world, in the comfort of one's home belies the hardships the author would have had to contend with to collect the stunning imagery he has assembled. The archipelago is not as one might be inclined to think from the pictures a place for pleasant strolls among the rocks; it is a rugged terrain and many parts of it remain of quite difficult access, though not as difficult as it was in the 1960s. Readers of this book need to be aware that most of this corpus of hundreds of thousands of petroglyphs is not as easy to locate among the rock piles of Murujuga as one might easily be tempted to think. It is true that there are sites that are so richly endowed

with the palaeoart that they literally resemble outdoor galleries, but many of the others are surprisingly hard to find in the less than 300 km² of this archipelago. One has to have searched for rock art in this rugged landscape to appreciate how much work has gone into this volume.

Donaldson has divided the result of his labour of love into two main parts: one dealing with Murujuga, sectioned into eleven major concentrations according to geography; while the second part takes the reader to several of the other islands. These are Dolphin, North Gidley, West Intercourse, Angel, East Lewis, Tozer and Rosemary Islands. This second part renders the book particularly valuable, because most previous reports of Dampier rock art either dealt purely with Murujuga, or only in the most cursory fashion with any of the other islands. Particularly Donaldson's coverage of Dolphin Island is most impressive, featuring several parts of that island and presenting a corpus that is no less spectacular than that of Murujuga.

The most outstanding characteristic of Dampier rock art is without question its incredible stylistic and formal variety. Rock art complexes elsewhere in Australia, and throughout the world, have a tendency of being dominated by specific conventions, styles or motifs. Indeed, much of stylistic rhetoric one finds in the literature hinges on this aspect. At Dampier, the diversity seems simply inexhaustible, and this is well captured by Donaldson. He has skilfully accented this characteristic of Dampier rock art by avoiding thematic groupings, which would in any case have led him down the slippery slope of claiming to know what the motifs depict. Instead he has assembled the imagery much as it presents itself on site: as a seemingly infinite historical treasure, inexhaustible in its bounty. It is perhaps precisely that apparent abundance that is seen as justifying the rapine perpetrated by the resource companies for almost half a century: there seemed to be so much of this rock art that the loss of a few thousand images here and there could be justified. Bearing in mind that there is no economic resource whatsoever in the archipelago, which Donaldson fails to mention, there is also no justification for what we have allowed to happen to this incredible legacy left by the first Australians, after we exterminated them — at least in the case of Dampier. All of the installations by Rio Tinto and the other juggernauts operating on Murujuga could have been located elsewhere along this long and largely unoccupied coast.

There are good reasons to acquire this book: its shelf price is subsidised so it is a bargain as small-circulation rock art books go; and the rock art it presents is under imminent threat of destruction. Some 95 000 of the Dampier petroglyphs have already been senselessly sacrificed, simply because those managing the country's cultural heritage have failed abysmally. By the end of this century, the world's largest rock art corpus will be in a sorry state, and this book may be the best testament to its existence. Seen in that perspective this book can

only appreciate in value, recording as it does a doomed monument.

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RAR 28-1003

Tassili. Rock art in the Western and Southern Tassilis, Algeria, by JÖRG W. HANSEN. 2009. Somogy editions d'art, Paris, profusely illustrated throughout with many hundreds of colour plates, 572 pages, 35 × 24 cm, 4.0 kg, bibliography and enclosed CD, hardcover, ISBN 978-2-7572-0251-7.

The entire contents of this massive tome are provided in four languages, French, English, German and Italian. There is a good reason for this opulent presentation: nearly all of the work on north African rock art has appeared in these languages, and they remain those in which the papers of the journal *Sahara* are published. Historically there have been significant contributions by German researchers to this field (e.g. Frobenius in the past, today by Berger and Striedter), as well as by French (Lhote and Muzzolini, and today Le Quellec and Soleilhavoup), Italian (Mori, today Negro) and British workers (such as Judd). There are numerous major volumes on Saharan rock art, but as far as I can see, Hansen's — weighing in at 4 kg — seems to top them all. (All the more incentive for Mike Donaldson to break the 5-kg-barrier with his forthcoming Kimberley volume?) This trend towards bulky catalogue-style rock art books has been accelerating since Leroi-Gourhan's and Anati's contributions to it, and it bodes well for rock art: it has become a measure of the strength of the discipline.

Nevertheless, there are considerable differences in the coverage of this trend, with Europe, especially Franco-Cantabrian palaeoart leading the field, clearly followed by the Sahara, and then perhaps by Australia, China and North America. Several very major rock art regions of the world, such as India or Arabia, remain significantly under-represented. In fact in the case of the latter region, as Paul Bahn remarks wryly in his Preface/Vorwort/Prefazione/Préface of this volume, the four (not three!) most influential books were provided by 'someone who had never set foot there'. Moreover, they only deal with a very small part of the vast Arabian rock art corpus.

Hansen's labour of love, by contrast, is the result of an intimate first-hand familiarity with the southern and western Tassili regions of southernmost Algeria. His book is mercifully free of the interpretational waffle that mars so many otherwise wonderful rock art books, except for the occasional lapse and the ubiquitous iconocentric labelling of images. The balance of his coverage is also admirable, in the sense

that he endeavours to present a representative cross-section rather than the customary focus on the most spectacular, the most iconographically detailed motifs. Finally, as Hansen himself states, each new discovery in the poorly known region 'topples old theories', and yet he resists 'proposing any new ones'. Indeed, the sparse texts sprinkled throughout the wealth of colour photographs are restrained and impeccably informed. For instance Hansen correctly states that scientific dating of any Saharan rock art remains elusive, except in one case from Libya. He has an opinion of the rock art's chronology, which he offers together with the other principal models, but concedes that in the end they are all provisional.

In that sense Arabia is in a slightly better position; even though there is no comprehensive chronology, a rough timeframe is available. Bearing in mind that a substantial portion of the world's rock art is located in areas governed by Islam-inspired states, which have traditionally eschewed rock art because of clerical disapproval of depiction, it is important to note that the Tassili National Park was one of the first rock art monuments to be World Heritage listed, and now Saudi Arabia has one of the best rock art protection programs. In that sense, any international attention given to the widespread rock art of Muslim countries needs to be welcomed, and Hansen's contribution sets a good example. It provides a balanced, apparently representative sample from some sixty-two site complexes distributed over several hundred kilometres, featuring both petroglyphs and pictograms. The book's artwork is lovingly crafted and many of the photographs are accompanied by black and white recordings, particularly where discrimination of detail is difficult. The occasional Tifinar inscriptions, so reminiscent of the Thamudic inscriptions in Arabia, could well become important to the eventual scientific age estimation of Saharan rock art. But it is clear enough from the marvellous pictorial contents of this tome that countless traditions are represented, and it is to be expected that direct dating of this corpus will be more difficult than in, for instance, Arabia. This is not necessarily because the technical conditions are more demanding; it is primarily because in the Sahara there is a long-established archaeological school that will react strongly and defiantly if scientific age estimates clash with its dogmas. That factor is much weaker in a good number of other world regions. Judging from the smorgasbord of images in this book, it is clear that the sandstones of the southern Tassili sites, although often well consolidated and case-hardened, suffer from both weathering and the impact of the frequent sandstorms. That does not bode well for the long-range chronologies and, along with other factors, seems to favour Muzzolini's chronology. But let us follow Hansen's example and leave this issue open for the time being.

As if the wealth of photographs of this truly substantial book were not enough, it also contains a

CD-ROM on which 1030 additional images are conveniently recorded in the form of a bookmarked PDF file of 55.6 MB. They are again annotated in the four languages, and here again the 'interpretations' of what the images depict need to be ignored by the serious scholar. The inclusion of the compact disk increases considerably the value of the book as a source for the researcher, particularly in gaining an insight into the technology and weathering of petroglyphs.

The landscape format, i.e. the book's horizontal orientation, is a little cumbersome in view of its weight, but it seems to be intended to facilitate savouring the imagery, especially of the more elongated photographs and the glorious landscape vistas provided for each site. Hansen's book is thus of value to both the rock art connoisseur and to the researcher unable to match the author's stamina in recording that many sites.

Robert G. Bednarik

Melbourne Australia

RAR 28-1004

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). Recent issues include these research articles:

Number 57 (2010):

GUILLOU, Y. LE, A. DU FAYET, S. DU FAYET and F. MAKSUD: The François Rouzaud Gallery at Fois-sac: a decorated Palaeolithic cave with original themes.

BESESEK, M., V. A. RADU, V. T. LACU and B. GÉLY: Discovery of a new decorated Palaeolithic cave (Pestera Coliboaia) in Roumania [sic], Bihor Department.

CROCHET, J.-Y., P.-O. ANTOINE, L. MARIVAUX, G. METAIS and J.-L. WELCOMME: The first descriptions of rock paintings and engravings in Baluchistan (Pakistan).

SOGNNES, K., G. DE ANDA ALANIS and M. E. JASINSKI: Cave art in Yucatán cenotes, Mexico.

VINAS, R.: The Los Músicos Shelter, Sierra de San Francisco, B.C.S., Mexico: an interpretative suggestion.

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 21 (2010):

HACHID, M., J.-L. LE QUELLEC, S. AGSOUS, A.

- AMARA et al.: Premiers résultats du projet algéro-français de datation directe et indirecte des images rupestres dans la Tassili-n-Ajjer.
- LERNIA, S. DI, M. GALLINARO and A. ZERBONI: UNESCO World Heritage Site vandalised. Report on damages to Acacus rock art (SW Libya).
- CAMPBELL, A. and D. COULSON: Big Hippo Site, Oued Afar, Algeria.
- WALDOCK, V.: The Taleschout hippos: an enigmatic site in the Messak Settafet, southwest Libya.
- RODRIGUE, A.: Le domaine rupestre de Taghijit (Maroc).
- BOCCAZZI, A., D. CALATI and A. SCARPA FALCE: Tcherughé, un sito rappresentativo dell'arte rupestre pastorale del Tibesti nord-orientale.
- GIANNELLI, G. and F. MAESTRUCCI: Cacciatori di elefanti: il riparo di Ihetsen (Tassili-n-Ajjer settentrionale, Algeria).
- FOILLEUX, B., M. MACHAR and S. MACHAR: Quelques images inédites de la Tassili-n-Ajjer. Traits culturels de la population 'tête ronde': défenses de phacochères et bovidés masques.
- FOILLEUX, B.: Ub animal énigmatique chez les 'têtes rondes' (Tassili-n-Ajjer, Algérie).
- GAMBIERI, F. and M. E. PEROSCHI: Report on new rock art sites in the area of Jebel Uweinat, eastern Sahara.
- WALDOCK, V., M. A. SULIMAN and P. P. ROSSI: Horse, hartebeest or hybrid? A puzzling engraving in the Acacus.
- ZBORAY, A. and M. BORDA: Some recent results of the survey of Jebel Uweinat.
- BORDA, M.: Observations concerning new rock art sites at Gebel Arkenu and comparisons with Uweinat.
- PICHLER, W.: The Latino-Canarian rock inscriptions – a short review of the latest history of research and interpretation.
- JUDD, T.: 'Lancer' petroglyphs at Egyptian temples and in the Eastern Desert.
- LE QUELLEC, J.-L.: Fac quod dico, non quod facio.
- ACHRATI, A.: Womanhood without the bull: Venus of Laussel, Inanna, and the Lady of Tin Tilizaghen.
- BERGER, F.: A paradise off rules? A different view.

RECENT BOOKS OF INTEREST

Rock art glossary: a multilingual dictionary, edited by R. G. BEDNARIK, A. ACHRATI, M. CONSENS, F. COIMBRA, G. DIMITRIADIS, T. HUIHENG, A. MUZZOLINI, D. SEGLIE and Y. A. SHER. 2010. Second edition, Occasional AURA Publication 16, Australian Rock Art Research Association, Inc., Melbourne, 274 pages. Softcover, ISBN 978-0-646-53471-8.

Global Rock Art, proceedings of the IFRAO Congress,

Parque Nacional Serra da Capivara, Piauí, Brazil, edited by NIÉDE GUIDON, CRIS BOCO and MILA SIMÕES ABREU. 2010. Volume 1 of abstracts, with DVD of papers, FUMDHAMENTOS 9, Fundação Museu do Homem Americano, São Raimundo Nonato, Brazil, 124 pages with DVD, softcover.

Bornéo: la mémoire des grottes, by LUC-HENRI FAGE and JEAN-MICHEL CHAZINE (Foreword by Jean Clottes). 2009. FAGE editions, Lyon, 176 pages, profusely illustrated throughout, bibliography, 32 × 25 cm, hardcover, ISBN 978-2-84975-147-3.

RECENT PAPERS OF INTEREST

Rock art and perception: the greatest bio-cultural experiments of humanity, by DARIO SEGLIE. *Praehistoria*, Volume 3, pp. 309–313.

Pleistocene palaeoart of the world: introduction and summary, by R. G. BEDNARIK. 2008. In R. G. Bednarik and D. Hodgson (eds), *Pleistocene palaeoart of the world*, pp. 1–2. Proceedings of the XVth UISPP World Congress, Lisbon 2006, BAR International Series 1804, BAR International Series 1804, Archaeopress, Oxford.

Statue-menhirs, human remains and mana at the Ossimo 'Anvòia' ceremonial site, Val Camonica, by FRANCESCO FEDELE. 2008. *Journal of Mediterranean Archaeology*, Volume 21, Number 1, pp. 57–79.

More on rock art removal, by R. G. BEDNARIK. 2008. *South African Archaeological Bulletin*, Volume 63, Number 187, pp. 82–84.

The eternal scholar, by R. G. BEDNARIK. 2008. *Purakala*, Volume 18, pp. 73–74.

Die Kranichberger Petroglyphen bei Glocknitz, Niederösterreich, by R. G. BEDNARIK. 2008. *Almogaren*, Volume 39, pp. 19–26.

The domestication of humans, by R. G. BEDNARIK. 2008. *Anthropologie*, Volume 46, Number 1, pp. 1–17.

The origins of symboling, by R. G. BEDNARIK. 2008. *Signs*, Volume 2, pp. 82–113.

Pitture rupestri del Pinerolese nelle Alpi Occidentali. Repertorio e museologia, by DARIO SEGLIE, MAURO CINQUETTI, PIERO RICCHIARDI, FILIPPO MARIA GAMBARI and ROSINA CHIURAZZI. 2009. *CeSMAP news*, Volume 2, Number 3, pp. 31–36.

The Dampier Rock Art Precinct, Western Australia, by R. G. BEDNARIK. 2009. In *L'art pariétal: conservation mise en valeur communication*, pp. 187–198. Edited by the Société des Amis du Musée National de Préhistoire et de la Recherche Archéologique (SAMRA), Lez Eyzies, France.



ORIENTATION

Pleistocene Art of the World Tarascon-sur-Ariège 2010

For the first time the IFRAO Congress has been held in France, the country that has shown such great leadership in the study and preservation of rock art. Most appropriately it took place in one of the two main concentrations of Upper Palaeolithic cave art, in the Ariège, and it was chaired by none other than Jean Clottes. This was the first conference ever conducted on the specific subject of global Ice Age palaeoart, prompted initially by a suggestion to me by Giriraj Kumar. His teacher, the late V. S. Wakankar, had tried to secure greater interest for extra-European rock art in the early 1980s, promoting the idea that Pleistocene rock art was not limited to Europe. It has fallen to this generation to begin exploring the global distribution of very early palaeoart, and in this endeavour, the Tarascon congress was indisputably a landmark.

Anyone who had thought that Pleistocene palaeoart is endemic to Europe would have been surprised to discover that most of this phenomenon occurs actually outside of Europe. Among the 180 papers presented at this event were many from Australia and the Americas, and more modest numbers from Asia and Africa. Most of this worldwide corpus is severely under-explored, nearly all of it is essentially undated (except in the broadest sense), but the tantalising glimpses offered at the congress may in due course become the impetus for more comprehensive and focused studies. It comprised a total of nine symposia, five of them summarising continent-wide evidence, two exploring scientific aspects (age estimation, taphonomy and forensics of rock art); one was dedicated to portable palaeoart of the Pleistocene, and one to the 'meanings' of ancient 'art'. Together these subjects provided a rich tapestry of information, but by the same token the congress also showed how little we really do know about this phenomenon. To me, that is summed up by the observation that there were only five papers about Africa, three of them by the same two authors. There are just over a dozen known sites of Pleistocene palaeoart in all of Africa, of which only one or two are widely known by archaeologists. Obviously we have not yet scratched the surface in this vast continent, and much the same applies to Asia. Leaving aside two or three specific regions, the rest of most of Asia remains blank

on the world map of Ice Age palaeoart. We know that there are significant numbers of Pleistocene rock art sites in Australia, certainly far more than in Europe, but detail about this massive corpus remains very sketchy, because until recently we have employed a false stylistic model in this country to define such material.

In these circumstances a conference about this topic was long overdue, and my proposal was enthusiastically accepted by Jean Clottes. With the help of the venue, the Parc de la Préhistoire, he turned it into a magnificent and most memorable event. Just the setting of the Congress was such that none of those fortunate enough to attend are likely to forget it: the Parc is surrounded by imposing limestone cliffs, forested mountains and deep valleys, arguably the most dramatic setting of any IFRAO congress so far. The gastronomical delights of the Ariège need hardly be emphasised, it is arguably one of France's best regions in that respect as well, and that was amply reflected in the sumptuous cuisine of our lunches and dinners. The distinctive nature of this Pyrenean region was also reflected in a folk dance group whose performance we enjoyed during the closing celebrations, and a Cathar fortification on one of the mountain peaks overlooking the venue reminded me of the distinctive history of the Foix county.

The surrounding countryside bristles with caves, and many of these have long been famous cave art sites, the names of which most rock art researchers are familiar with. Some of them were visited during the congress field trips, such as Niaux, Bèdeilhac, Gargas and Mas d'Azil (no rock art in the latter), but some of us availed ourselves of this unique opportunity to see others as well. In my case I managed to see these only during nights, returning to my hotel rather muddled at 3 o'clock in the morning. But who needs sleep with such opportunities to see classical sites and to meet so many hundreds of wonderful colleagues. The academic program of the Congress was packed throughout the four presentation days, and it had to be spread over four parallel sessions. My only regret about this congress is that I could not stay longer in this wonderful part of France, with so much to see, so much to do, and so many kind people to meet. Not surprisingly the closing session ended with a standing ovation for the architect of this event, Jean Clottes, resembling the kind of reception usually reserved for rock stars.

I would like to record my gratitude to, and admiration for, the Bégouëns, and my thanks to the team from Chauvet. I thank Jean Clottes, Giriraj Kumar,

Yann-Pierre Montelle and John Campbell for co-chairing symposia with me, and all the participants of this memorable landmark event for their contributions. But I reserve my special gratitude for its star: thank you, Jean, for giving us all this opportunity.

Robert G. Bednarik

RAR 28-1005

Jean Clottes honoured

In June 2010 Dr Jean Clottes was honoured to receive the Grande Médaille d'Or avec Plaque d'Honneur (Great Gold Medal with Special Honours) for the Sciences from Arts-Sciences-Lettres. This academic society has been in existence since 1915. Each year it awards one such medal for Arts, one for Letters and one for Sciences. It is the first time a rock art specialist has received this medal and it is only the second time that it goes to a prehistorian (the first prehistorian to receive it was Yves Coppens some years ago). It is significant in the sense that this is an 'official' recognition of rock art studies as a science.

In an additional development Dr Clottes has also been asked to meet the President of the Republic, in recognition of his distinguished services to the pre-History of France, and most specifically his outstanding work for to the cave art of France as well as for rock art globally.

Letter

To Lynley Wallis
President of the Australian Archaeological
Association

As an artist with an interest in rock art and Indigenous culture extending over forty years I am writing to protest your submission to the Australian Research Council demanding the ranking of *RAR* be downgraded to B rating.

In its 27-year existence AURA and its journal *RAR* have done more to put the study of rock art on a scientific footing than any previous academic journals. Its papers are scrupulously refereed and the journal is widely recognised within the international rock art community as the leading publication in its field. Virtually all of the leading Australian, and most international, rock art researchers have had papers published in *RAR* and it continues to break new ground in the discipline.

Furthermore *RAR* has an exemplary record for its advocacy for the rights of Indigenous peoples, the most important stakeholders in the management and

conservation of rock art.

I am curious to know your reasons for demanding this downgrading.

I am also puzzled as to why the editor of your journal, *Australian Archaeology*, saw fit to allow the Tasmanian researchers, Jo Field and Peter McIntosh, to attempt a refutation of a paper published in *RAR* in your journal rather than advising them to submit the paper to the journal in which the original paper was published. This raises serious questions about the objectivity of your editor. The forensic demolition of the Field and McIntosh arguments in the current issue of *RAR*, and their failure to respond to the editor's invitation to submit a refutation of his response to their paper, is telling. The poor record of the forestry industry in Tasmania in protecting Indigenous heritage in the forests, and the fact that Field and McIntosh are associated with that industry, casts further doubt on whether the editor of your journal acted in good faith.

Sincerely,
Tony Convey

RAR 28-1006

Advertising

RAR accepts relevant advertising material. Rates for advertising in *RAR* are very competitive, currently at \$A350.00 per full page, \$A200.00 per half page.

Forthcoming events

Rock Art in Modern Society, Kemerovo, Siberia, Russia, 22–26 August 2011. For details see IFRAO Report No. 45, p. 271.

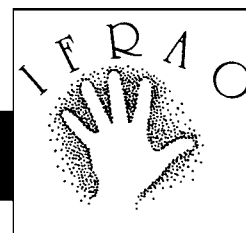
Archaeology and Rock Art — 25 years SIARB. IFRAO Congress to be held in La Paz, Bolivia, in June 2012. For details see p. 140.

ARARA-IFRAO Congress 2013: to be held at Albuquerque, New Mexico, U.S.A. Details to be advised.

First International Rock Art and Ethnography Conference, to be held in 2014 in Cochabamba, Bolivia, organised by AEARC (Bolivia), APAR (Peru) and the Anthropological Museum of the University of San Francisco Xavier of Sucre.

Fourth AURA Congress: to be held in Australia in either 2015 or 2016.

IFRAO Report No. 46



Minutes of the 2010 IFRAO Business Meeting

Parc de la Préhistoire, Tarascon-sur-Ariège,
France, 9 September 2010

Organisations present: American Rock Art Research Association (ARARA), represented by Donna Gilette (U.S.A.); Asociación Cultural 'Colectivo Barbaón' (ACCB), represented by B. Hipólito Collado Giraldo (Spain); Asociación Peruana de Arte Rupestre (APAR), represented by Robert G. Bednarik by proxy; Associação Brasileira de Arte Rupestre (ABAR), represented by Mila Simões de Abreu by proxy; Associação Portuguesa de Arte e Arqueologia Rupestre (APAAR), represented by Mila Simões de Abreu (Portugal); Association pour le Rayonnement de l'Art Pariétal Européen (ARAPE), represented by Jean Clottes (France); Australian Rock Art Research Association (AURA), represented by Robert G. Bednarik (Australia); Cave Art Research Association (CARA), represented by Robert G. Bednarik (Australia); Centro Europeu de Investigação da Pré-História do Alto Ribatejo (CEIPHAR), represented by Mila Simões de Abreu by proxy; Centro Studi e Museo d'Arte Preistorica (CeSMAP), represented by Dario Seglie (Italy); Hellenic Rock Art Centre (HERAC), represented by Enrico Comba by proxy; Le Orme dell'Uomo, represented by Ludwig Jaffe (Italy); Rock Art Society of India (RASI), represented by Giriraj Kumar (India); Société Préhistorique Ariège-Pyrénées (SPAP), represented by Jean Clottes (France); Welsh Rock Art Organisation (WRAO), represented by Ludwig Jaffe by proxy.

The meeting was held in the auditorium of the Jean Clottes Centre, Parc de la Préhistoire, Banat near Tarascon-sur-Ariège, near Foix, France, on 9 September 2010, and it commenced at 6.45 p.m. In the absence of the President, Niède Guidon of ABAR, her representative Mila Simões de Abreu chaired the meeting. The minutes were recorded by the Con- vener, Robert G. Bednarik.

1. *Apologies and declaration of proxies.* There were no apologies, and five proxies were declared as listed above.

2. *Confirmation of previous minutes.* The minutes of the previous IFRAO Business Meeting (Saõ Raimundo Nonato, Piauí, Brazil, 1 July 2009) have been published in *Rock Art Research* 26(2): 244–247. They were accepted unanimously.

3. *Matters arising from these minutes.* No matters arising from the previous meeting were discussed.

4. *Report of the IFRAO President.* The cost of the 2009 IFRAO congress in Brazil was about 2 million euros. This does not include the government's related up- grading of local facilities, including the construction of an airport. Therefore the event has had a great impact on the remote local community, and it will be necessary to consider the factor of its economic effects on remote regions in the siting of future IFRAO congresses. The papers presented at the Brazilian event are now out on DVD and the abstracts have been printed. The full versions of the papers, totalling about 1400 pages, will be printed in due course.

5. *Report of the IFRAO-UNESCO Liaison Officer.* A meeting was held in February, concerning tangible and intangible cultural heritage.

6. *Reports volunteered by IFRAO Representatives:*

6.1. ARAPE is publishing *INORA* and continuing the research work in Chauvet Cave.

6.2. RASI is continuing the EIP (Early Indian Pet- roglyphs) Project and is active in rock art education. It has recently produced a film that has been first shown at this congress.

6.3. CeSMAP reports vandalism to rock paintings in the south-western Alps, and that it is continuing its research project in Morocco with IFRAO member Association Marocaine d'Art Rupestre (AMAR).

6.4. ACCB is conducting two projects in Extramadura, Spain, holding an exhibition and conducting cave site management.

6.5. ARARA has held its meeting in Idaho Falls, is producing its publications, maintaining its archives in Deer Valley, and is also conducting site conservation programs.

6.6. APAAR collaborates closely with CEIPHAR and its Maçao education program, which often recruits its students through IFRAO. APAAR is tracing the Tago River latex casts in Portugal and is scheduled to work in Angola.

6.7. AURA held its latest Inter-Congress Symposium in Broken Hill in October 2009, and is continuing its publishing program, maintaining the AURANET web-sites, and continuing the PMP (Parietal Markings Project) commenced in 1981.

7. *Election of new President.* Jean Clottes is unanimously elected as the IFRAO President for the next term, 2010 to 2012.

8. Further matters raised by delegates:

8.1. APAAR reports that it has scholarships available for bright students from developing countries, and suggests the establishment of an IFRAO global discussion list on the Internet.

8.2. ARAPE addresses the format of the present congress's proceedings. After much discussion it is decided that there will be a volume of abbreviated and improved versions of all presented papers, to be moderated and edited by the symposium chairpersons. The full versions of the papers available have been published on DVD already.

8.3. APAAR expresses concern about the increasing incidence of rock art vandalism around the world.

8.4. ARARA nominates its 2013 annual meeting, to be held in Albuquerque, New Mexico, as the IFRAO Congress of that year. After discussion of logistic and practical details the proposal is accepted unanimously.

8.5. AURA moves to recognise the efforts of Jean Clottes in conducting the successful present congress, to universal acclaim.

8.6. CeSMAP proposes the establishment of an IFRAO-ICOM Liaison Officer and offers that Dario Seglie could fill this role. This is accepted by the delegates.

9. *Adjournment.* The meeting is adjourned at 8.15 p.m.

SIARB's IFRAO Congress of 2012

The Bolivian Rock Art Research Society (SIARB) is making progress in the preparations of its international congress 'Archaeology and Rock Art — 25 Years SIARB' which will take place in La Paz in June 2012. See our web page www.siarbcongress.org

We have concluded the list of fifteen sessions:

1 - Dating and chemical analysis of rock art. Chairpersons: Marvin Rowe (Texas A&M University, U.S.A. - marvinrowe@gmail.com) and Alice Tratebas (BLM, U.S.A. - Alice_Tratebas@blm.gov).

2 - Scientific study of rock art. Chairpersons: Robert G. Bednarik (Australia - robertbednarik@hotmail.com) and Dánae Fiore (Argentina - danae_fiore@yahoo.es).

3 - Aesthetics and rock art. Chairpersons: Thomas Heyd (University of Victoria, Canada - heydt@uvic.ca), John Clegg (Australia - john.clegg@sydney.edu.au) and Chris Chippindale (Cambridge University Museum of Archaeology and Anthropology, U.K. - cc43@cam.ac.uk).

4 - Management and conservation of rock art sites. Chairpersons: Valerie Magar (INAH, Mexico - valerie.magar@gmail.com) and Freddy Taboada (Bolivia - taboadatellez@yahoo.com).

5 - Rock art and indigenous communities. Chairpersons: Pilar Lima (Bolivia - plimatbo@yahoo.es) and Patricia Ayala (payala_rocabado@hotmail.com).

6 - Archaeological context of North American and Mesoamerican rock art sites. Chairpersons: Evelyn

Billo (Rupestrian CyberServices, U.S.A. - ebillo@aol.com) and William Breen Murray (Mexico - wmurray@udem.edu.mx).

7 - Rock art and archaeological cultures in Central America. Chairpersons: Martin Künne (Germany - kuenne@zedat.fu-berlin.de) and N.N.

8 - Rock art, archaeology and the Caribbean. Chairpersons: Michele Hayward (U.S.A. - mhayward@panamconsultants.com), Racso Fernández (Cuba - itibacahubaba@yahoo.com.ar) and Franz Scaramelli (Instituto Venezolano de Investigaciones Científicas, Venezuela - fscaram@gmail.com).

9 - Archaeology and rock art of the Amazon basin (South American lowlands). Chairpersons: Edithe Pereira (Museo Paraense Emílio Goeldi, Brazil - edithepereira@museu-goeldi.br) and Kay Scaramelli (Venezuela - kfscaram@cantv.net).

10 - Archaeology and rock art in the central Andean Formative period. Chairperson: Peter Kaulicke (PUCP, Peru - pkaulic@pucp.edu.pe).

11 - Inca rock art: evaluations and possibilities. Chairpersons: José Berenguer (Museo Chileno de Arte Precolombino, Santiago - jberenguer@museoprecolombino.cl), Andrés Troncoso (Universidad de Chile, Santiago - atroncos@uchile.cl) and Rainer Hostnig (Peru - rrhostnig@speedy.com.pe).

12 - Archaeology and rock art of the Titicaca lake basin. Chairpersons: Mark Aldenderfer (University of California-Merced, U.S.A. - maldenderfer@ucmerced.edu), John Janusek (Vanderbilt University, U.S.A. - john.w.janusek@vanderbilt.edu) and Matthias Strecker (Bolivia - siarb@accelerate.com).

13 - Archaeological and rock art research in Bolivia. Chairpersons: Claudia Rivera (UMSA, Bolivia - clauri68@yahoo.com) and Sonia Alconini (University of Texas at San Antonio, U.S.A. - sonia.alconini@utsa.edu).

14 - Archaeology and rock art in desert regions. Chairpersons: Marcela Sepúlveda (Universidad de Tarapacá, Chile - marcelaasre@gmail.com), Carlos Aschero (Universidad de Tucumán, Argentina - ascherocarlos@yahoo.com.ar) and Jean-Loïc Le Quellec (CNRS, France / South Africa - rupes@neuf.fr).

15 - Round table: rock art and the tentative list of World Heritage sites in Latin America and the Antilles. Chairpersons: Nuria Sanz (UNESCO, Paris - n.sanz@unesco.org) and Mercedes Podestá (Argentina - mercedespodesta@yahoo.com).

Besides, **IFRAO** (International Federation of Rock art Organisations) will hold its annual meeting at the congress.

Workshops on computer image enhancement will be organised with a selected group of students directed by Robert Mark (Rupestrian CyberServices, Flagstaff, Arizona, U.S.A.) and Jon Harman (Pacifica, Calif., U.S.A.).

Matthias Strecker

SIARB Secretary
La Paz, Bolivia