

IFRAO Report No. 27

International Union for Prehistoric and Protohistoric Sciences motion for the Guadiana rock art in Portugal

The battle over the Guadiana rock art is in progress. In a recent development, the UISPP has at its Liège congress adopted the following motion.

MOTION

Lors de la réunion du Conseil Permanent du vendredi 7 septembre 2001, réunie à Liège (Belgique), la motion suivante a été proposée et acceptée. Par la suite, elle a été présentée lors de l'Assemblée générale de l'UISPP, tenue à Bruxelles le samedi 8 septembre.

L'U.I.S.P.P. a été informée par le réseau EuroPreArt (lors du colloque 8.1. du XIV^{ème} congrès de l'UISPP) du fait que plus de 600 roches gravées ont été trouvées dans la vallée de la Guadiana, dans une zone qui sera noyée par les eaux du barrage d'Alqueva. L'U.I.S.P.P. estime que tout doit être fait pour que les gravures soient exhaustivement inventoriées et que leur étude systématique ait lieu avant que le barrage ne puisse finalement être mis en fonction.

L'U.I.S.P.P. estime que le complexe rupestre de la Guadiana, par la quantité de roches déjà trouvées, par leur diversité stylistique et chronologique (comprenant des gravures du Paléolithique supérieur, du Néolithique et du Chalcolithique) constitue un ensemble d'importance majeure, et ouvre de nouvelles voies pour la compréhension de l'anthropisation du territoire, notamment par le fait d'élargir la vision de l'art paléolithique en plein air, de souligner la continuité de l'occupation de certains espaces sacrés, ou de mettre en évidence l'association de l'art à l'expansion de l'agro-pastoralisme.

L'U.I.S.P.P. estime que les équipes travaillant dans la vallée de la Guadiana, pour le sauvetage de cet important patrimoine préhistorique européen, doivent recevoir tous les moyens pour mener leur tâche à bon terme. En particulier, l'U.I.S.P.P. considère qu'une solide coordination du travail scientifique des deux côtés de la frontière entre le Portugal et l'Espagne, avec une définition des méthodes d'enregistrement, est fondamentale pour garantir les futures opérations et publications. L'U.I.S.P.P. estime aussi que la diffusion de l'information sur ce complexe d'art préhistorique doit être menée dès à présent. Enfin, l'U.I.S.P.P. se met à la disposition des équipes travaillant sur le terrain pour les aider dans la mesure de ses propres ressources et compétences. En particulier, l'U.I.S.P.P. accepte l'invitation d'EuroPreArt pour qu'une Commission Internationale se déplace à la Guadiana. Cette Commission sera composée de messieurs Jean Bourgeois, Marcel Otte et Muiris O'Sullivan.

Motion lue et approuvée en Assemblée générale à Bruxelles, à l'occasion du XIV^{ème} congrès mondial de

l'U.I.S.P.P., le samedi 8 septembre 2001.

English abstract

The UISPP (International Union of Prehistoric and Proto-historic Sciences), during its last congress at Liège (Belgium), asked for a complete and exhaustive study of the Guadiana rock art complex before the flooding of the area by the Alqueva dam. This complex is judged as being of a primary importance for understanding the Palaeolithic open air rock art and the association between the art and the extension of the Neolithic agro-pastoralism. The UISPP asks for a close coordination and for a definition of a common recording method regarding both the Portuguese and the Spanish side. Finally the UISPP establishes an International Commission for the Guadiana rock art. The commission is formed by Jean Bourgeois, Marcel Otte and Muiris O'Sullivan.

Below is the response to this motion by the Director of the IPA, whose organisation has since 1996 failed to take any interest in the Guadiana valley rock art and has approved its destruction:

Response by the Director of the Instituto Português de Arqueologia

It is clear that the UISPP is 'intervening', and that the Commission has an inspective nature. Given that this is its mandate, it becomes relevant to discuss the process through which it came into being. Here are the facts:

- (1) The UISPP decided that its intervention was necessary in a given country, without first conferring with the colleagues from that country who were members of the Permanent Council at the time of the decision. I have since resigned, but I was a member of the Council then, and I was present in the Liège conference. Apparently, however, no one in the directive bodies of the UISPP thought that it was a good idea to discuss the topic with me before deciding anything, in spite of the fact that I had alerted the UISPP President himself to the need for following proper procedure.
- (2) The UISPP decided that its intervention was necessary in a given country, without first asking that country's archaeological authorities for information on the matters relating to the intervention. This is in spite of the fact that the person most responsible for that country's archaeology was a member of the Permanent Council, and that he had already made himself available to provide any information the UISPP might require.
- (3) The UISPP decided to send an inspective commission to a given country, without first asking that country's professional associations and administrative authorities whether they agreed that such an inspection was necessary or welcome.
- (4) The UISPP decided that such a commission would

visit archaeological sites in the country without first asking the colleagues in charge of research at those sites whether they agreed to the visit and authorised it.

- (5) The UISPP decided on the dates upon which the inspection would take place without first conferring with the colleagues and institutions concerned whether they would be available in those dates in case the commission decided that it needed to consult with them.
- (6) The UISPP decided to send a commission to inspect on a rock art situation, but the commission itself is composed of colleagues with no known experience in rock art studies and from countries where rock art is virtually non-existent.

I must also note that the UISPP apparently does not know the meaning of the word 'invitation'. An individual or an institution can only be invited to Portugal if some Portuguese person or Portuguese institution with jurisdiction asks them to come. In this context, a 'network' of whatever nature and composition does not qualify as a host. The 'International Commission' may travel freely in Portugal, as stipulated by the Schengen agreements, but it will not be able to state that it was invited.

I will stop here. I believe this is sufficient to define the extremely dangerous precedents that are being set. I can only explain the behaviour of the UISPP under the assumption that its directive bodies believe that they have some kind of God-given right to go around the world spreading the Gospel of what they think is the right thing to do. Personally, on the merits of the Alqueva situation alone, I would have ignored the UISPP Commission, given that its scientific credentials are nil. But the precedent should worry us all, and I feel that it is my duty to explain to all those concerned by the Alqueva or the activities of the UISPP why such 'International Commissions' should not be tolerated. Watch out, you could be next.

This turn of events is very unfortunate for two other reasons. First, at the national level, because it only serves to create confusion, and boost a rejection of archaeology by the media and the public – 'those folks who never know what exactly it is they want and are always fighting each other anyway'. The first elements of such a rejection are already there, and this only serves to undermine the authority of the IPA and other heritage agencies to implement the kinds of procedures dictated by the Malta convention with regard to rescue archaeology. Second, at the international level, because archaeological heritage is not properly looked after in most parts of the world (just to give an example, Belgium, the country of origin of two of the members of the UISPP Commission, is probably the only country in Europe that lacks proper and specific legislation for the protection of archaeological heritage), and because conflicts such as those created by the situation in the Côa valley in 1994-95 may arise again, in Portugal or elsewhere. That is bound to happen, and international action by the profession is bound to be necessary again. These kinds of 'International Commissions' only serve to undermine the potential

success of such future initiatives.

Portugal is a very open country, where archaeologists from different nationalities have always been welcome and where many research projects are conducted by foreigners with no restrictions whatsoever. At our invitation, or at their request, many colleagues from different countries have already visited the Alqueva, or worked there. The year 2000 Annual Meeting of the European Association of Archaeologists, held in Lisbon, offered participants the opportunity of a pre-Conference excursion to the Alqueva, so that the work carried out there could be presented and discussed. All colleagues who wish to come and see with their own eyes what is being done will be welcome. But we will not accept 'inspections' by 'Commissions' that lack any legitimacy and that are constituted on the basis of a shocking ignorance of the basic rules of courtesy, not to mention those of professional ethics.

To conclude, I hope I have been able to clarify my point of view concerning the situation at Alqueva, the reasons why I find the behaviour of the UISPP in this affair unacceptable, and the reasons why I resigned from its Permanent Council. In some aspects, those who claim that the Alqueva is a second Côa do have a point. But, as a great nineteenth century social scientist put it, when history repeats itself, the first time it's a tragedy, the second time it's a comedy.

Lisbon, 19 September 2001

João Zilhão

We see nothing comical about the proposed destruction of the Guadiana rock art, but it is true that the people and taxpayers of Portugal have paid dearly before, in 1995, for the ineptness of their state archaeological agencies. The Portuguese Institute of Archaeology has since then presided over the secrecy concerning the rock art in the Sabor valley, where another dam is being built, over the destruction of the scientific potential of the Côa rock art, and over the bungled Guadiana valley project. Now that the circumstances of this and the reportedly poor quality of the rushed recording efforts of recent months are being examined, the above writer objects vigorously to such outside interference. His main-objection is that the UISPP commission was not 'invited' (i.e. not paid from the funds he controls), that it is genuinely independent. The destruction of the Guadiana rock art is not an internal issue of Portugal; it is an assault on the cultural heritage of the world, largely funded by the European Union in this case, and international accountability applies. We applaud the decision of the UISPP to take responsible action concerning the proposed complete destruction of the more than 600 Guadiana rock art sites, which together constitute one of the three largest known European rock art concentrations. It is important to note that the amount of rock art on the Guadiana is many times that on the Côa, yet the IPA defends its approval of its destruction by claiming that the Côa rock art is much more important. Their argument that only Pleistocene rock art is worthy of preservation (they have, conversely, not so far demonstrated a Pleistocene age of either complex) is, we believe, unacceptable to all rock art specialists.

We would not tolerate the destruction of the rock art corpora of Mount Bego or Valcamonica, which are of very similar sizes and content. Similarly, the wilful destruction of the Guadiana rock art which the IPA advocates or condones is an unspeakable act of cultural vandalism, exceeding in magnitude

the recent destruction of monumental art in Afghanistan. Ed.

To help IFRAO save the Guadiana rock art, please sign the Alqueva petition online:

<http://www.PetitionOnline.com/Alqueva/petition.html>

Read more about Guadiana rock art and Alqueva dam:

<http://rupestre.net/tracce/13>

Reach the Guadiana rock art forum:

<http://www.voy.com/28087/>

IFRAO CONGRESS VENUE COMMISSION

This commission, first mandated at the 2000 Congress in Alice Springs, Australia, is responsible to assess national and organisational venues for IFRAO congresses. It is proposed that this commission become a permanent one under a revised IFRAO constitution to ensure that site venues meet a high standard. Assessments, when required by the IFRAO Council, will be made on site at least one year prior to the conduct of the proposed congress and will be at the full expense of the host organisation. This commission will operate under the following guidelines:

1. The **inspection team** must be comprised of at least three internationally recognised experts in the field of rock art research. They must be volunteers and can accept expenses only, to be provided by the convening organisation. Governments may not engage or remunerate the inspection teams, but may provide specifically dedicated grants to the organisation(s) conducting the congress. All expenses to include special taxes, assessment materials and administration will be met by the applicant.
2. **Facilities** for the congress must be deemed adequate, and an adequate staff and the necessary resources must be in place. Conditions to be assessed include (but are not limited to) space, housing and food, air and ground transport (both internationally and local), translation (where required), audio-visual equipment and any other relevant needs established by the commission.
3. **Security** for congresses must be provided by the host nation and must be of the highest possible level as suited to meetings of like type. If doubt arises as to the adequacy of congress security, the congress may be cancelled or an alternative site selected.
4. **Official designations** (names and titles) must be in accord with United Nations practice.
5. **National or other political influence** on the conduct of IFRAO congresses will not be tolerated. IFRAO is a completely independent federation of scientific associations. It must be assured that the government of the host country does not use the event for political

purposes. Furthermore, it can not appear to do so. Publicity must always identify IFRAO as the convening authority. Support by the host country can and will be identified and fully acknowledged by IFRAO. The host country will in no way influence the selection and presentation of sessional material. This is exclusively the responsibility and right of the sessional chairpersons.

6. **Publicity** for the congress is welcomed, but may not be focused on national or regional political promotion. Publicity must reflect the findings and debates of the congress and the nature they have to the advancement of science.
7. **Languages.** The only language mandatory in the conduct of meetings is English. Any other languages deemed appropriate to the venue are admissible. Internationally widely used languages such as French, Spanish, German, Portuguese, Chinese and Japanese are strongly encouraged.
8. **Field trips.** It is standard for host organisations to establish field trips to rock art sites from the congress venues. These trips may be assessed by the Congress Venue Commission in advance of the congress to assure their appropriateness, authenticity and quality.
9. **Publications.** The host organisation may publish the congress proceedings under the editorial venue of the IFRAO. Such publications must be free of political interference or influence, and must reflect a high international scientific standard.

(Formulated by Jack Steinbring,
Immediate Past President, IFRAO)

RAR- 18-593

New IFRAO members

Associação Brasileira de Arte Rupestre (ABAR). The Brazilian Rock Art Association was not formed in Brazil, but in Vila Real, Portugal, on the occasion of the 1998 IFRAO Congress held there. The numerous Brazilian delegates met and decided to form this association on 8 September 1998. It was admitted as an affiliate of IFRAO by election at the Ripon IFRAO Congress in May 1999. ABAR held its first official meeting in São Raimundo Nonato, Piauí, Brazil, 30 October to 3 November 2000. Professor Niéde Guidon was elected as the first President of ABAR, Professor Oldemar Blasi as the Vice-President, Professor Edithe da Silva Pereira became General Secretary, and Professor Dorath Pinto Uchúa the Treasurer. The official address of ABAR is:
Professor Edithe da Silva Pereira
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Brazil

Deutsche Gesellschaft für Petroikonologie e.V. (DGP). The German Society for Petroiconology was founded in

late 1998, initially by about thirty rock art researchers. The DGP was registered in the German state of Hessen on 7 October 1999, and has adopted a detailed democratic constitution. It produces a newsletter for its members and intends to launch a journal in due course. It was elected for affiliation with IFRAO by postal ballot. The official address of the DGP is that of its President:

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Fezzan, Libya: conflict between oil field development and rock art

FRIEDRICH BERGER

The mountain ranges of Messak Settafet and Messak Mellet in the Fezzan, SW-Libya, contain several thousand petroglyphs on sandstone. Several art periods can be distinguished, estimated to range in age range from 10 000 – 2000 years BP (no direct dating is available). The two mountain ranges represent the northern and western rim of the Murzuk basin, the centre of which is covered by the Murzuk sand sea. The mountains are cut by numerous *wadis* (dry river beds). The rock art is to be found on the *wadi* walls and on loose stone slabs. The surface of the mountains is relatively flat, but mostly rocky and hard to drive on by car. There are also several ancient stone arrangements and monuments.

The Libyan government has granted several licences for the exploration and production of hydrocarbons in the Murzuk basin. Normally several oil companies form a consortium, with one company acting as operator, in order to apply for such licences. Licence Block NC 174 was awarded to a group led by the British company LASMO plc (33 $\frac{1}{3}$ %) along with AGIP-ENI from Italy (33 $\frac{1}{3}$ %) and five South Korean companies. Early in 2001 ENI acquired most of the shares of LASMO plc, thus controlling effectively two-thirds of Block NC 174 now.

In Libya the oil companies do not acquire a right to the underground reserves. Under their licence agreement they work as a kind of general contractor for NOC, the National Oil Company of Libya. They propose work programs and carry them out after approval by the state agencies and/or NOC. The oil companies supply investment and operating costs which are repaid with a profit element typically from the value of less than 50% of the crude oil production in kind.

Exploration for oil and gas normally starts with geological and geophysical surveys. The first seismic surveys in the Murzuk basin were carried out in the 1980s (Anonymous 1999: 12). In 1991 LASMO, as operator, obtained an exploration licence and resumed seismic activities. In the initial years little harm was done to the environment (Lutz 1995: 24). This changed drastically after

LASMO discovered crude oil in 1997. A 3D seismic program was carried out and four appraisal wells were drilled. In connection with the close grid spacing of the seismic lines, tracks were bulldozed which completely destroyed the landscape, *wadi* flanks were cut by machines, water points (*gueltas*) filled up and rubble piled up against rock faces with petroglyphs (Anonymous 1999; 2001; Liverani et al. 2000). In scale, this damage is comparable to the work of the Taliban who destroyed an ancient statue in Afghanistan—albeit fully intentionally, which presumably was not the case in Messak. It was done, however, in the name of European companies who are fully responsible for all actions of their employees, sub-contractors and agents.

LASMO have since acknowledged the damage and their responsibility for it (Coulson 2000; 2001). They have funded archaeological surveys by an Italian and a British team who have been working in this area for many years. UNESCO is also being consulted.

In addition, the rock art of Messak Settafet and Messak Mellet and also that of the Tadrart Acacus mountains in the west is endangered by tourism. Upon invitation by the Department of Antiquities of Libya and on behalf of the Italo-Libyan Joint Mission for Prehistory and History in the Fezzan, Liverani et al. (2000) have prepared a pro-proposal for an 'Archaeological Park' for Tadrart Acacus and Messak Settafet. If this were accepted and implemented, tourism would no longer be a danger to rock art and environment. The Libyan authorities can channel tourism through visa policy and travelling restrictions. For future seismic activities alternative procedures are being considered which would cause less damage to the landscape than previous work.

None of the proposals mention, however, the development of the existing oil discovery as an oil field, and the exploration drilling and further oil field developments which potentially will follow the anticipated seismic work, subject to the approval by the Libyan authorities. The Elephant Field, so called not because of its size, but after a petroglyph near the discovery well, contains 560 million barrels of oil reserves and is planned to produce 150 000 barrels/day from some 30 producing wells supported by 20 water injection wells as necessary (1 barrel = 159 l). The consumers, the oil companies and the Libyan government need to put these figures into perspective. Neither the oil companies nor governments use the oil, it is the public which uses oil and gas, the energy generated from them, and the chemical products manufactured from these hydrocarbons. The oil companies are our 'agents' for the production and the governments set the rules.

If we compare the anticipated rate of 150 000 barrels/day with the world production of 77 – 78 million barrels/day the consumers would hardly notice any effect if the Elephant field were not developed.

The total production of Libya in 1999 – 2001 was around 1.4 million barrels/day, more or less in line with the OPEC (Organisation of the Petroleum Exporting Countries) quota. Libya would like to increase the production capacity to 2.0 million barrels/day. A major increase of the OPEC quota seems, however, unlikely and there may be potential

in other areas of Libya for production increases. The Elephant field is certainly not a small field by reserves, it may be the largest in the Fezzan area. On the other hand it is not a huge field either. With 560 million barrels reserves it compares to twelve Libyan fields with 1 billion barrels or more, and to total known Libyan reserves of 29.5 billion barrels at the end of 1999, after 26.9 billion barrels in 1998.

ENI has announced a record production level of 1 371 000 barrels/day for the first quarter 2001. If they extracted 50 000 barrels/day or less from the Elephant field, it would be a contribution of much less than 5%. For the public, the consumers of crude oil and its products, the Elephant field is relatively unimportant. For the Libyan government and for the specific oil companies involved, the field is technically and commercially important. But its value is not so important to rule out a balance with the intellectual value of the landscape, the rock art, and the ancient monuments endangered by further exploration, development and production activities in the area. It is therefore recommended that the Libyan government should not approve the development and the production of the Elephant field and should restrict the further exploration activities to areas where only minor harm can be caused to the environment.

The Elephant field was declared commercial by the operator LASMO in February 1999. Probably a development plan was submitted to the Libyan authorities for approval. The references and sources unfortunately do not give precise information about the locations of the existing five wells and the area of the oil field in relation to the rock art sites. It is in the central Messak Settafet (Liverani et al. 2000: 135). If the Elephant field is to be developed, several drilling sites will be required for the anticipated fifty production and injection wells, even if directional drilling is considered from cluster locations. Roads, pipelines and power lines will be necessary to these sites. It may be possible to locate the central production facilities, camp and other auxiliary facilities sufficiently away from the areas with rock art.

If the exploration work in the Murzuk basin is to continue the worst scenario is still to come after the first oil field development. Normally geological basins do not

contain a single oil field, but several, and normally the oil fields are located at the flanks of the basin. That means the whole areas of Messak Settafet and Messak Mellet may be prospective for oil production. If there is no general concept developed to safeguard the environment and the antiquities we may end up with seismic lines all over the rock art region and with a few remaining petroglyphs scattered between numerous oil field developments.

Governments and oil companies have easy means to express their opinion about these kind of matters. For the general public it is more difficult. It is recommended that IFRAO, the International Federation of Rock Art Organisations, an independent non-government body, become involved in the conflict between oil field development and rock art in the Fezzan in order to represent the views of the concerned public.

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RAR 18-594

IFRAO Standard Scale reprinted

ROBERT G. BEDNARIK

The IFRAO (International Federation of Rock Art Organisations) Standard Scale was first proposed in *IFRAO Report No. 6* (Bednarik 1991). Consultation of researchers and various specialists in the following years has led to progressive evolution of the design (cf. *Rock Art Research* 8: 156) until it was finalised in 1993, and the first edition was produced in May 1994. In December 2001 the IFRAO Standard Scale was reprinted with the support of the Australian Institute of Aboriginal and Torres Strait Islander Studies in Canberra. We have produced another 25 000 copies of the Scale for distribution, after exhausting the first edition of 21 000 copies. The worldwide distribution of the Scale is continuing.

Purpose of the Scale

We know that there are many millions of photographs and colour transparencies of rock art in existence worldwide: in my estimation at least twenty millions. Many archives have in the order of hundreds of thousands of images, while thousands of individual researchers each possess collections of many thousands of colour slides or photographs. We also know that this enormous collective record is irreplaceable, and yet it is doomed to eventual destruction. No known photographic dye is fade-proof, and we still lack any form of fully permanent photographic or digitised storage of imagery (Dickman 1984). In short, this enormous effort of creating a visual record of world rock art is ultimately in vain. Even with rapid rock art deterioration it will be survived by most rock art, fortunately. But there is a simple way of rendering this

massive record permanently useful: digitised colour reconstitution or reconstruction.

In scientific photography it is essential to know the size of an image, and for this purpose, Taylor et al. (1979) designed a simple ten-centimetre scale for rock art recording. A scale has other roles too. It serves as a general indication of a photograph's sharpness, by showing how well it was focused and processed. Manual focusing is often difficult with rock art, because of the typical lack of straight or well-defined lines, and the operation of a camera with viewfinder focusing is much easier by selecting one of the lines on a scale.

More important than the black and white scale markings are the colour chips. The colour properties of an object are always distorted in a photograph, by such factors as optics, film type, paper type, temperature and, most particularly, lighting conditions. Therefore a colour photograph cannot be expected to be a true record of chroma, value and hue. However, by checking the colour distortion on a scale photographed with the rock art we can obtain an indication of its severity. Some rock art researchers (a very tiny minority) have been using a variety of colour scales, including the Munsell Soil Colour Chart, the Kodak Colour Separation Guide, the Letraset Pantone colour chart and a variety of others. These colour standard charts are all expensive, they are all different, and standardisation would obviously be desirable here.

The main reason for needing a standard photographic scale, however, is its function as a COLOUR CALIBRATION DEVICE for a variety of computer-supported uses. Electronic colour enhancement methods have been used in rock art studies for many years (Rip 1983). In 1994, electronic colour re-constitution of rock art images was achieved at the National Museum of Man in Bhopal, India, calibrated with the IFRAO Standard Scale as the profile device (Bednarik and Seshadri 1995). This has led to the development of colour-reconstitution software at the Museum.

The original colour values of colour-distorted and even faded rock art photographs can now be automatically re-constituted almost in an instant. The only precondition is that the photograph must bear a colour standard against which the computer can calibrate. The greatest advantage is that the computer does not recover the colour properties of the original photograph, before it faded, but goes beyond that — all the way back to the true colour of the rock art image at the moment it was photographed! It re-constitutes the actual colour properties of the subject at the time, even if this was several decades earlier. Colour reconstitution thus compensates for photographic distortion as well as for the subsequent fading of dyes.

This technology opens enormous possibilities in research, recording, documentation storage, computerised image manipulation, publishing and conservation studies. For instance, such techniques can facilitate mathematically precise monitoring of deterioration of rock art pigment or patinae over any period of time (Pager 1992; Ward and Maggs 1994). They permit the recovery of objective colour information, free of the 'technical subjectivity' of conventional photography. They facilitate the

digitisation of real colour information, which can then be used in many ways. It can be permanently stored, it can be used as the basis of enhancement procedures (Rip 1989), or it can be cross-checked in intra- and inter-site studies for various purposes by engaging computer search functions. Such information can also be used in conservation, retouch, graffiti and lacunae repair, comparative pigment studies, sourcing studies, dating work, recovery of very faint images, printing of colour plates and so forth. It provides a reliable and standardised base for numerous applications, and while many of the technologies required may not yet have been developed, it is most reasonable to expect that they will be available within a few years. **All that is required at this stage is that every photograph taken of rock art for scientific purposes must bear the same colour calibration standard scale.**

The long-term effect of the use of the IFRAO Standard Scale will be a standardisation of the photographic record of world rock art. Our archival record will become a permanent record by virtue of its retrievability. The greatest fear of all rock art students, that the art will deteriorate beyond archival recovery, can be met by the knowledge that the susceptibility of our photographic record to colour calibration will lead to an 'ultimate conservation method'. We will have the means of preserving rock art in pristine condition forever, at least in our archives.

Use of the IFRAO Standard Scale

The IFRAO Standard Scale bears the printing date and will be periodically reprinted to guard against it fading. It should be stored in a dark, dry and cool place when not in use. It includes a grey scale for comparing tone values. The patches correspond with reflection densities of 0.0, 0.70 and 1.60 respectively.

The Scale must never be placed over rock art, or very close to a motif. Preferably it should not be attached to the rock face. In vertical or overhead locations, the Scale should be handheld. Only where definitely undecorated and structurally sound rock surface is available may the use of small double-sided adhesive pads be considered, or the insertion of small metal pins through the Scale to affix it to soft rock surfaces (e.g. in limestone caves); but this is to be avoided whenever possible.

The Scale should be positioned parallel to the predominant plane of the rock art motif and the same distance from the camera lens. Ensure that the lighting source is not directly reflected by the Scale. One Scale should be used for distances of up to 1.5 m. Between 1.5 and 4.5 m, two Scales are required. The Scale cannot be used with precision at distances exceeding 4.5 m, using lenses of standard focal length. Best results will be achieved at distances of under 1 m. Where artificial lighting is required, place the Scale on upper left corner and light the image from same direction. However, natural lighting is preferred to artificial. The small scale on the left-hand end of the IFRAO Scale is intended for close-up photographs. For best digital results, slides or negatives are preferred to prints.

The IFRAO Standard Scale is distributed free to all rock art researchers of the world (the members of the thirty IFRAO-affiliated organisations). In addition, it is rapidly being adopted by specialists in various other fields. Specimens of the Scale are available from the IFRAO Convener's office (P.O. Box 216, Caulfield South, Vic. 3162, Australia). The sale of the IFRAO Scale for profit is not permitted. The Scale is not subject to copyright within IFRAO and may be reproduced by any organisation affiliated with IFRAO—but again, not for profit.

Acknowledgments

I express my gratitude to the sponsor who underwrote the printing costs of the IFRAO Standard Scale, the Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra, Australia.

Robert G. Bednarik
IFRAO Convener

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Progress report of the EIP Project— November 2001

R. G. BEDNARIK

Introduction

The Early Indian Petroglyphs (EIP) Project is a joint venture by the Rock Art Society of India (RASI) and the Australian Rock Art Research Association (AURA) under the aegis of IFRAO. It includes scientific analyses and dating at four central Indian petroglyph sites as detailed below, and of rock paintings at Bhimbetka and Chaturbhujnath Nala.

During November 2001 I travelled in central India to help with preparations for the main field campaign of the EIP Project in 2002. This involved numerous site visits as well as meetings in Delhi, Bhopal and Agra. The work also included the production of a TV documentary film for Prasar Bharati (Broadcasting Corporation of India), chiefly at two site complexes. As a result of the extensive co-ordination efforts as well as the tireless work of my project co-director, Dr Giriraj Kumar, the project has not only gained further momentum in India, it also has been

significantly enlarged in its overall scope. Perhaps the most important new development is in the expansion of the excavation program. It will now include the largest ever Pleistocene excavation in India, to be conducted together with the EIP project by the Bhopal office of the Archaeological Survey of India (ASI). It will also include an excavation by the Directorate of Archaeology, Government of Madhya Pradesh.

Because the key element of the EIP project is the secure dating of the Bhimbetka petroglyphs, it had always been intended to open up a small trench somewhere in the vicinity of Chief's Rock in Auditorium Cave. This prompted the decision of the ASI to come to our aid and immediately commence a large-scale dig, involving two major trenches in Auditorium Cave. Numerous methods are to be employed in this three-year project, such as flotation analysis, studies of microfossils, pollen, phytoliths, microwear and residues on stone implement edges, detailed sedimentology etc. I have proposed that this site might contain the entire sequence of the human occupation on the Indian subcontinent. In its lower strata it contains a layer of Oldowan pebble tools, which amazingly have received almost no attention so far. It must be borne in mind that the entire region between

southern/eastern Africa and Levant in the west and Java and China in the east remains profoundly neglected, in terms of its hominid history. Yet we have no realistic choice but to assume that India was occupied for at least 1.9 million years. There are no credible Middle or Lower Palaeolithic dates available from India, and few questionable ones from the Upper Palaeolithic. It is a reasonable expectation that this project will in a single stroke supply a skeleton chronological framework for Indian Pleistocene archaeology. Suffice it to say that this in itself will be a massive achievement.

I have with Dr S. B. Ota, Superintending Archaeologist of the ASI in Bhopal, and Dr N. Tahir from the same office determined the proposed excavation strategy and area in Auditorium Cave. A geophysical survey is being conducted as I write this report, using ultrasound, to determine the bedrock morphology below the sediment and the presence of any large boulders beforehand. Excavation will commence during late December 2001 and it is expected to involve the removal of more than 120 m³ of very 'difficult' cave sediment (extensive submerged roof falls are present). Both trenches must reach the lowest bedrock. Dating will at least initially focus on the OSL analyses by Dr B. Roberts.

Dr G. Kumar and I have also accepted a proposal of collaboration by the Directorate of Archaeology, Government of Madhya Pradesh. Their excavation of the important Daraki-Chattan cave near Bhanpura will involve archaeologists seconded by Dr O. P. Misra. This authority will also provide substantial supplementary funding for the EIP project. The excavations at the two Bajanibhat sites in Rajasthan will be conducted by our own teams.

Preliminary fieldwork

Various preparatory works have been conducted at the four EIP sites from April to August 2001. Apart from literature research, funding applications and administrative work, preliminary studies were conducted as follows:

- Bajanibhat in Alwar district and Cupule Rocks 1 and 2 in Ajmer district, Rajasthan (by Giriraj Kumar, M. L. Sharma, M. L. Meena, Shri Suryani, Chhajuram Tanwar).
- Daraki-Chattan and Chaturbhujnath Nala in Mandaur district, Madhya Pradesh (Giriraj Kumar, Pradyum Kumar Bhatt, Ramesh Kumar Pancholi, Aniruddha Kumar Bhatt, Gagan Kumar Modi, Kailash Rathore, Ashutosh Bhatt).
- Bhimbetka in Raisen district, Madhya Pradesh (Giriraj Kumar, G. L. Badam, Joseph Manuel, Deepak Chaudhary, Praveen Narad).

This fieldwork included the preparation of site plans at all sites; the preparation of contour maps of the first-named three sites; field surveys of Bajanibhat and Daraki-Chattan; the location of suitable calibration sites for microerosion analysis at an ancient temple on the River Rewa near Daraki-Chattan, an unfinished sculpture and two inscriptions at Bhanpura; and the identification of

three rockshelters for proposed attempts to date pictograms. Dr Kumar and Dr Badam also had planning meetings with Dr S. B. Ota, Dr Narayan Vyas and other ASI officers in Bhopal.

Support

A principal purpose of my visit of India was to shore up financial support of the project as required by the significantly expanded terms of reference and work volume. For this purpose, Dr Kumar (who is making all applications for funding in India) and I had numerous meetings and also lobbied many potential supporters in positions of influence. In Delhi we had meetings with the Director General of the ASI (Ms Kasturi Gupta Menon, IAS), the agency that remains our principal supporter even with the greatly enlarged version of the project. The ASI is a huge body, with a workforce exceeding in size that of any Australian corporation, and it now regards this project as a high priority. Dr R. S. Bisht, Director of Excavation and Exploration, has been appointed to supervise the project for the ASI, and he has been fully briefed about it. The DG guaranteed funding 'as required'. Further financial support has now been pledged by two other agencies, the Indian Council of Historical Research, with whose Chairman, Professor M. G. S. Narayanan, we have had most cordial and detailed discussions; and by the Directorate of Archaeology, Government of Madhya Pradesh. We also had separate meetings with Dr R. C. Agrawal, Member Secretary of the ICHR, who once had himself worked at Bhimbetka; and the Chairman of the Archaeological Society of India, Dr S. P. Gupta (who is most sceptical that rock art can be dated, but who nevertheless supports our project enthusiastically). It should be noted that several further applications for supplementary funding are still pending, at least one of which is thought will be successful. It is to be emphasised that the substantial funds we will thus secure only relate to the EIP project, the excavation costs will be borne by the respective authorities collaborating with us.

In Agra we had a meeting with Professor P. S. Satsangi, the Director of the university there, and I gave the inaugural lecture of a series introduced by the new Director of the ASI, Dr. K. K. Mohammad. It was no coincidence that the Chairman of the ICHR, Professor M. G. S. Narayanan, chaired this event. It not only facilitated that agency's support of the EIP project, it also led to an unusually productive and animated debate about the introduction of new policies of site protection. The Director Superintending Archaeologist of the ASI, Dr I. D. Dwivedi, suggested that a set of recommendations be produced by IFRAO as a matter of some urgency, and a new system of 'local site custodians' was discussed intensively.

Timing

It was initially envisaged that the fieldwork of the project's main stage would commence in late January 2002, and would be completed within several weeks. Whilst the above-detailed preliminary fieldwork was conducted and completed as per original time plan, the

substantial enlargement of the second stage seems to render it impossible to maintain this time table for the rest of the project. In particular, the OSL samples can only be collected after all relevant sections have become exposed. This means that the pace of the EIP project will be set by the ASI team under Dr Ota. This part of the related work, attached to the EIP Project by the ASI, is now playing a crucial role not only in the overall objectives, but also in the timing of the more flexible components of what has become a very complex project. The rock art dating work can be conducted independently, but project logistics would become difficult if we were to split the Australian team. The following critical path was agreed to present the best solution under the circumstances.

ASI Bhopal will notify me at least four weeks before their sections become available. Two weeks later I will travel with Dr Kumar and teams to the Bajanibhat sites and establish the excavation teams there. At that point, Dr Misra's team from the Directorate of Archaeology, Government of Madhya Pradesh, commences the Daraki-Chattan excavation. After a further two weeks we will receive the remaining Australians in Bhopal and the EIP work of several days commences there. In Bhopal, accommodation is no problem. We then travel together to Daraki-Chattan by minibus, staying in Bhanpura in a comfortable engineer's guesthouse of the Gandhi Sagar dam. After completion of work there, we travel on to the Bajanibhat sites where we will stay in tents and have supplies ferried in. The work of Drs Watchman and Roberts could perhaps be completed within two to three weeks.

Concerning actual dates, the middle part of the year is out of the question, due to the unbearable heat. So unless the work can be completed before May 2002, we would need to wait for the late part of the year. This aspect is entirely in the hands of the Bhimbetka excavation team under Dr S. B. Ota and Dr N. Tahir.

Discussion

It is clear from the aforesaid that this project depends much on the effectiveness of programming, and it is essential that any unforeseen variations be communicated to all project partners. Bearing in mind that the project involves the collaboration of well over a hundred persons it is obvious that good communication is essential. IFRAO as the international agency overseeing the EIP project has agreed with the two principal research partners (ASI Bhopal and M.P. State Archaeologist) that all scientific

publications, including the major monographs to be produced, will be co-authored by the principal scholars of the three partners, except in cases of papers addressing only specific technical aspects of the work. It is expected that numerous publications will ensue, and the project will, because of its outstanding significance, use any additional means to promote its results widely. For instance there are discussions under way concerning the possible production of a TV documentary series on the project, and *National Geographic* is being considered as a venue of promotion and support.

To appreciate the significance of the project, it must be considered that its current terms of reference can realistically be expected to lead to the following main achievements:

1. The presentation of the first scientific rock art dating evidence from India, from both petroglyphs and pictograms.
2. The clarification of the claims that Indian petroglyphs represent the oldest rock art currently known in the world, dating back to the Acheulian period.
3. The presentation of the first comprehensive chronological framework from the entire duration of the human presence on the Indian subcontinent.
4. The first assessment and dating of the Oldowan pebble tool industry in India.
5. The introduction and international transfer of rock art dating technology.

On the basis of these principal objectives alone it is entirely reasonable to describe this project as the finest archaeological project ever undertaken in India. We intend to convey this message very effectively not only to the academic community, but also to the public of the world. India possesses one of the most important Pleistocene archaeologies in the world, rivalling Africa, south-western Europe and eastern Asia, but until now this has been entirely neglected. Southern Asia was perhaps the original centre of hominid cognitive evolution during the Early Pleistocene, an aspect that has been completely overshadowed by the east African evidence of physical evolution. We will correct this imbalance. I feel truly privileged to be associated with this project.

Robert G. Bednarik

Co-Director, EIP Project
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K. Seshadri at Chief's Rock, Auditorium Cave, Bhimbetka, the primary focus of the EIP Project. Some of the presumed Acheulian cupules are visible.