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HUYGE D., VAN NOTEN F. SWINNE D. (Guest Eds.), *The Signs of Which Times? Chronological and Palaeoenvironmental Issues in the Rock Art of Northern Africa*, Royal Academy for Overseas Sciences, Brussels, 2012, pp. 377, text and figures. ISBN: 978-90-756-5251-2.

This volume presents the proceedings of the international colloquium “*The Signs of Which Times?*”, held at the Royal Academy for Overseas Sciences in Brussels from 3<sup>rd</sup> to 5<sup>th</sup> June 2010 and focussed on chronological and palaeoenvironmental studies in Northern Africa. Edited by D. Huyge, F. Van Noten and D. Swinne, the book contains seventeen papers, plus an introduction by Van Noten and a postscript by Dirk Huyge.

From a geographic viewpoint, Egypt and Libya are much represented, even if the contributions also focus – to a lesser degree – on other countries, such as Morocco, Algeria, Mali and Western Sahara. This is not surprising, however, given the history of studies in these areas and, especially, the focus on Saharan contexts, always of particular relevance in the North African scenario.

Despite the title of the conference was devoted to the chronological and environmental assessment of the studied art contexts, most of the contributions here assembled focussed on stylistic aspects, and only a few ones on other issues – particularly C14 and OSL dates. Again, this is not surprising: dating North African rock art, and especially those artworks located in open-air contexts, is particularly difficult, and only rarely – despite a quite long history of studies – researchers have been able to provide firm chronological indications. Among them, I am pleased to recall here the late Fabrizio Mori, who was among the first to combine rock art studies and archaeological investigations, obtaining *termini antel/post quem* for some rock art paintings, all based on radiocarbon determinations in the Tadrart Acacus mountains in South-West Libya (e.g., Mori 1965).

Going back to these Proceedings, after an history of studies by P. Bahn, J. Soler I Subils focuses on stylistic aspects of Western Sahara rock art, mostly on the basis of the analysis on the superimpositions between artworks and then trying to date the different styles on the basis of the represented objects, mostly weapons, alphabetic signs and fauna. However, as the same Author recalls, “*the dating of the Western-Saharan prehistoric rock art is still a confusing exercise*” and the chronological indications are still too vague (as many other cases in Northern Africa, I may add). As an example, the age of the Bovine Prehistoric group “*varies between 5000 and 1000 BC*” – which is a no-date indeed. Soler is very pessimistic about the possibility to increase the resolution of age assessment, stating “*it seems unlikely that we could get them [the ages] in a nearby future*”.

C. Dupuy presents the chronological analysis of the engravings from the Malian region of the Adrar des Iforas adopting a three-fold approach, based on themes, styles and superimpositions of artworks. Also in this case these elements are connected to environmental features, focusing on the rainfall required to sustain specific animals, such as big wild game. Despite recent palaeoenvironmental and archaeological studies are not fully implemented and some references are out-dated, the Author is able to define at least three main different phases overlapping the whole Holocene. The engravings of Adrar des Iforas provide, according to Dupuy, a vivid insight on the cultural processes

in the region, underling – among others - the relevance of social aspects ‘visible’ in the artworks, in particular the increasing inequality of the 1<sup>st</sup> millennium BC.

The contribution by Malika Hachid and colleagues is of particular interest, given the study area – the Tassili mountains and surroundings in SE Algeria, one of the key areas of Saharan rock art – and the inter-disciplinary approach adopted by the Algerian-French team, principally focussed on the direct dating of the pigments and the study of some archaeological deposits. The Authors first focus on the problem of the binder used in the paintings, starting from the review of the analysis carried out in the neighbouring Tadrart Acacus in SW Libya in the last decades. Besides some minor errors in their review, Hachid *et alii* are very doubtful about the rightness of the identification of the binder used (organic matter, possibly casein) and, subsequently, the radiocarbon dates are questionable as well. It is curious that the Authors do not mention a recent *Antiquity* paper (di Lernia, Gallinaro 2010), focussed on age and context of Saharan rock art, where the problems raised by Mori’s analysis were already discussed, and his results rejected. As di Lernia and Gallinaro (2010: 957-958) say about the sampling, processing, and dating of Acacus artworks undertaken by Mori and associates “*the poor state of preservation of the sampled paintings indicates intense weathering processes (...). These aspects, taken together with the limited sample size, might have seriously compromised the reliability of the results (...). It is worth mentioning that a further four dates run in the same project and published by Ponti and Sinibaldi (2005) were not included in the subsequent paper (Mori et al. 2006): the dates obtained were, in this case, not considered reliable and were therefore rejected*”. The contamination of artworks, often located in rock shelters or shallow caves, is due to several agents, including anthropic-related ones: the organic matter found in the sampled paintings might belong to many and different elements, and its dating might be quite often useless. The absence of binder in the Algerian sites, as indicated by Hachid’s *et alii* is of the utmost importance and the Authors are right when they emphasize the need of a greater care when sampling and processing such contexts. The second part of their paper concentrates on the dating of archaeological deposits where some artworks are present. Among the sites excavated and dated by Henri Lhote and colleagues, the earliest is  $7400 \pm 300$  uncal BP, with the next being around 2000 years younger and most of the dates cluster between around 5000 and 4500 uncal BP. The picture does not change with important sites (Séfar, Ta-n-Zumaitak C, Ti-n-Tazarift) sounded and dated more recently, all fallen in the range from around 6000 and 4800 uncal BP, but for a few exceptions. This evidence soundly clashes against the information gathered in the neighbouring Tadrart Acacus, where hundreds of radiocarbon dates show a full occupation of the area since the very Early Holocene (e.g., Cremaschi, di Lernia 1999). The dating of archaeological contexts and the nature of the paintings from Algerian sites rise, according to the Authors, the question of the emergence of pastoralism in the area. Hachid, underlining the Acacus evidence, favours a ‘long’ chronology, whereas Le Quellec supports a ‘short’ one, given that the existence of a pastoral economy – according to his interpretation – cannot be “*plus haute que la fin di VIe etlou le début di Ve millènaire CalBC*”.

Three other papers discuss the rock art of central Sahara, with focus on SW Libya: M. Guagnin and A. and A.-M. Van Albada discuss the engravings of the Messak plateau,

whereas A. Zerboni explores the geoarchaeological and palaeoenvironmental contexts of paintings from the Tadrart Acacus and engravings from both Messak and Acacus.

Guagnin's approach is rather classic: she analysed in a palaeoenvironmental perspective the different styles, based on the rationale that specific animals require specific habitats. This approach combined with the use of the patina (desert varnish) as a relative chronological indicator should allow, according the Author, a better understanding of Holocene rock art.

The contribution by Axel and Anne-Michelle Van Albada is focussed on the analysis of specific stylistic themes. Their approach is here based on a certain degree of scepticism to finely assess age and duration of specific cultures. Therefore they try to "*essayer de mener une approche du patrimoine du Messak sous cet angle de vue, et sans aucun a priori*". In their view, the longevity of specific graphic symbols within Saharan rock art is of outstanding relevance and explains why most engravings should be considered a sort of "*restaurations sur un fond plus anciens*". Of course, this affirmation has deep implications on the chronology of Messak's rock art. Based on excavations of ceremonial monuments containing cattle burials, we now know that most of the so-called "Messak school" largely falls between ca. 6100 and 5200 uncal BP (di Lernia, Gallinaro 2010): if we should follow Van Albada's interpretation, this would imply that the earliest rock art in the area should date back to the Early Holocene – a (still) very disputed matter.

Andrea Zerboni explores the geoarchaeological and palaeoenvironmental context of the rock art from SW Libya. After a synthesis of the most recent environmental data, the Author proposes some indications on the engravings from the Acacus (in particular, the hotly disputed panel of Ti-n-Ashig: see Bahn 2009:126, *ivi* references), not only assessing the nature of rock varnish but – more importantly – the state of preservation of the furrows. Combining the two, independent lines of analysis, Zerboni proposes again a possible Early Holocene age for the oldest engravings, labelled as "Wild Fauna" style. The next corpus of data pertains to a few paintings sampled in the Acacus and radiocarbon dated: also in this case, it is a pity that the Author does not indicate the nature of the organic matter, in order to establish what he actually dated. Not surprisingly, the results are not satisfactory at all, being all much more recent than what expected on the basis of stylistic consideration. Surprisingly enough, Zerboni suggests instead that the results should be related to the "*onset of aridity and overlap the most recent dating obtained from cave sequences*": as a matter of fact, the same graph in Fig. 9 shows as the results from the radiocarbon dates of Acacus paintings are virtually continuously distributed all along the Middle-Late Holocene, from  $6145 \pm 70$  to  $1665 \pm 160$  uncal BP. It seems also captious to claim the 'overlap' with the most recent dates from the archaeological contexts. There is no a cut-off/ threshold effect in the data presented and the very high standard deviation (6 out of 11 dates show a sigma greater than 100 years) clearly shows as these dates, again, have no value: not only as far as rock art is concerned, but also for the presumed palaeoenvironmental context. In any case, as also the same Zerboni states, a serious chemical study is mandatory to understand nature and meaning of the organic matter present in the paintings, in order to fully understand if it is binder, or not.

Moving to Morocco, the paper by Susan Searight-Martinet presents a few case-studies, emphasizing the difficulty to get reliable dating: in addition, the scarcity of archaeological

data capable to provide an adequate chronological/cultural context is another obstacle. Her chronology is therefore based mostly on climatic data, waiting for further information to be obtained through the study of varnish of the engravings, still ongoing.

Another example of international and multi-disciplinary research is provided by the Moroccan-Italian work presented by Ahmed Skounti *et alii*. The project encompasses archaeological and ethnographic survey of the region of Tafraout-n-Taska, together with a more detailed study – including radiocarbon dating of some samples – of the paintings from a few shelters near wadi Taska. In particular, 5 samples have been taken from three different shelters: the analysis through X-Ray fluorescence shows the presence of iron, calcium and manganese. Three samples have been therefore processed to extract the organic matter (possibly the binder) to be dated and then dated by AMS. It is a shame that the Authors say that the chemical identification of the organic matter “*is on its way*” and I wonder what has actually been dated. As rightly demonstrated by the paper by Hachid *et alii* in the same volume, it seems senseless to date something we do not know: this seems the case of the sampled paintings from Ifran-n-Taska, despite the warning the same authors make a few lines before: “*the main problem is represented by the contamination of the organic matter in the pigments*”.

J. Raymaeker and F. Van Noten report on a decorated stele from the Ténéré of Tafassasset in Niger, stored at Royal Museum for Central Africa in Tervuren in Belgium since 1977, when it was bought from a Belgian tourist. Another, similar piece is also presented, this from the Adrar Bous (from a private collection) and compared with the decorated grindstone from Areshima, now in the Museum of Niamey. These are all masterpieces of the Saharan portable art: a fragile, dramatically endangered segment of the once incredibly rich surface record of these regions, now – also due to uncontrolled picking, looting and illegal sale – nearly ‘sterilized’ (*sensu* Keenan 2007).

Among the most interesting new data, Egyptian contexts play a special role. In particular, the spectacular ‘Cave of Beasts’ in the Gilf Kebir, studied by the Institute of Prehistoric Archaeology of the University of Cologne. The approach followed by Förster *et alii* focuses on a “*contextual landscape archaeology as a means to determine the general chronological and cultural setting of rock art in arid regions*”. The article is of the utmost interest, for both theoretical and methodological approaches, not to mention the rigorous fieldwork in the area and in the sites in particular. I also appreciate the warning by Förster *et alii* against the “*highly speculative*” attempts made by several researchers to link these paintings “*with ancient Egyptian mythological and religious concepts*” and to the birth of Egyptian civilisation. Too many times Saharan rock art is misused through approaches that too often degrade into poor mythologies, where the involved chronological aspects – sometimes thousands of years separate the examined contexts – are simply ignored. In this direction, I found very appropriate the rigorous theoretical approach followed by the German colleagues, based on archaeological fieldwork and analysis of hard data. The survey undertaken in recent years around the rock art contexts, in this sense, led the Authors to identify a major human occupation during the Gilf B phase, dated to around 6500-4400 calBC, whereas only meagre findings refer to the Gilf C (around 4400-3500 calBC). Rightly, the Authors do not simplistically equate the survey data to the chronology of rock art, which is instead tested using the stylistic sequence elaborated by



Andras Zboray. Furthermore, the Wadi Sura project includes – besides the detailed mapping of the paintings, 3D scanning, analysis of state of preservation and high-resolution photographic documentation – the drillings of the sand fill to evaluate its depth and a test excavation. Archaeological data from the site's surrounding, stylistic analysis and study of the superimpositions between different styles convey to suggest the Gilf B phase as “*the time frame for the ‘Wadi Sura style’*.” According to Förster *et alii*, the painters of the Wadi Sura style culturally were hunter-gatherers, or ‘pastro-foragers’: they probably had a few livestock – goats and possibly cattle – but they were not pastoralists. The discovery, quoted in the Addendum to the paper, of a few possibly domestic cattle close to wild animals around 1.2 m below the original surface does not change the picture, as also the material culture seems to show. Even if further research on the site and hopefully direct dating of the paintings may change the scenario, and eventually change the final interpretation of the context, the project is exemplary for the organization, scientific rigor and intellectual honesty.

Andràs Zboray presents a synthesis of the rock art in the central Libyan Desert, an area encompassing SE Libya, SW Egypt and NW Sudan (a map could have been useful to non-Africanists scholars). Diversity, abundance and richness of the rock art of the massifs of Jebel Uweinat, Jebel Arkenu and Gilf Kebir make this region one of the most important in the Sahara. After a brief and useful historical introduction of the research in the area, the Author summarizes the main styles of engraved and painted artworks, highlighting taphonomic and preservation issues, which, for example, make unreliable the use of patination for the understanding of the relative age of the engravings – a method largely used elsewhere. To establish a relative chronology, Zboray focuses on the superimpositions of the different (and clearly defined) styles (and their weathering), taking into consideration also their geographical distribution. For example, figures of the ‘Wadi Sora style’ are partially covered by cattle pastoralist scenes. In a specific, and still isolated case (Site EH 33), the Author is able to notice as the “Uweinat Roundheads” is superimposed on “Elongated Roundheads”. The analysis of paintings allows, according to Zboray, to reveal “*a succession of four hunter-gatherer societies centred on Jebel Uweinat (emphasis mine)*”. There is a certain tendency – not new in the Saharan history of rock art studies – to equate a specific artistic style to a specific culture. I find it hard to isolate 4 distinct archaeological entities, and even harder to postulate, as the Author says, a subsequent “*homogeneous culture of cattle pastoralism*”. If this approach were true, diversity of rock art styles should reflect different cultures and, possibly, groups: unfortunately, this does not appear to be mirrored (yet) in the archaeological record.

Dirk Huyge and associates provide the first hard evidence for a Pleistocene age of North African rock art. The engravings from Qurta, in Egypt, have been indirectly dated through OSL analysis of the aeolian sand partially covering the petroglyphs. Already published on *Antiquity* (Huyge et al. 2011), the paper here does not add relevant information: the Authors should be in any case congratulated for their great discovery built up on a solid theoretical and methodological framework, coupled to a painstaking and scrupulous field activity to discover the most suitable sites for OSL dating. The existence of other, stylistically similar sites opens the debate about a rather diffuse rock art at the end of the Pleistocene, probably around 19.000-17.000 calBP. The Authors

also recall a stylistic similarity and chronological proximity with European rock art, whose implications are incredibly attractive, claiming for further research.

A further paper on Egypt is that by L. Lippiello and M. Gatto in the Wadi Abu Subeira area, based on palaeoenvironmental study and intrasite analysis of artworks of Predynastic age, where style is still the best way, according to the Authors, to date rock art. Their analysis examines the site of Khor Abu Subeira South 1 (KASS 1), not far from Aswan, on the Nile's East bank, in particular proposing the typology of boats, humans and animals. The description and interpretation of patination in one case deserves a comment: I would be much more prudent to adopt, in the Nile Valley, as a paradigm, the nature and mechanisms of rock varnish formation as identified in the central Sahara. I would be even more prudent and I would avoid rather simplistic affirmation such as "*the patination visible at location 5, panel 7 requires a developing time of approximately 1,000 years*", without providing any analytical data and citing as a "source" a personal communication.

The last papers of the book discuss rock art contexts of more recent age, such as the article by S. Hendrickx *et alii* on the late Predynastic – Early Dynastic sites of Nag el-Hamdulab near Aswan. The Authors investigate the meaning of the different locations of the specific rock art contexts, possibly mirroring a conceptualization of the landscape. In this direction, they consider this area of crucial importance to open new avenues of interpretation of Predynastic rock art, not only in the vicinity of the Nile but also more faraway.

Another paper studies the rock art in the vicinity of Hierakonpolis, where rock cliffs and shelters host a variegated series of artworks. F. Hardtke concentrates his analysis on animals and boats, which hold also here a particular relevance. I found interesting the analysis of the distribution of and the relationships between rock art contexts and occupation sites. The Author also underlines the special significance of such an exceptional context, since rock art is very close to the cemetery and he also assesses the social implications of the absence of Predynastic art, in contrast to the elite burials there present. It is likely that some areas – for example the one surrounding HK11 – may have held a special ritual significance, possibly given the nature of the landscape.

Francis Lankester, in his paper "Dating the petroglyphs of Egypt's central eastern desert", underlines the many obstacles to obtain a reliable chronology of rock art contexts: in particular, he challenged the use of using "*archaeological context and scientific methods*": it seems extremely naïve, however, to blame, as the Author does "*the lack of finance, institutional support and official permission*". It seems also very strange the analysis he does on the patination (arguing that an exposition to the sun would result in a darker patina), simply ignoring the relevant and abundant literature also supported by experimental data on the role played by bacterial activity in the rock varnish formation. Lankester then concentrates his analysis on the stylistic study of the petroglyphs belonging to different cultural contexts.

The Postscript by Dirk Huyge is a synthesis of the papers presented at the conference and calls for a sequel of the meeting in a next future. This is a very welcome hope: the meeting in Bruxelles was able to convey several researchers from different countries and provided a great venue to discuss and share many important aspects of rock art research

in North Africa; the Convenors must be congratulated for this. The Editors should be also congratulated for their efforts to publish in a relatively short time the Proceedings of the Meeting; although the book shows uneven levels – as always in these cases – it has the merit to provide an updated state of the art of rock art studies in North Africa. Much is to be done, of course, but the volume should be recommended to anyone interested in rock art and, in particular, to archaeologists and scientists of North African prehistory and protohistory. As a whole, the book is nicely made, despite a not very coherent editing of the illustrations (some within the article, others at the end) and sold at a reasonable price.

I have to say, however, that much of the contributions still rely on stylistic principles alone, and the few attempts to date the artworks ‘directly’ or ‘indirectly’ are still insufficient. The use of rock varnish is still too vague and chronological scale is – whatever or not accurate – too approximate, therefore of limited use for the understanding of cultural aspects. It is a pity that researchers still use rock varnish as a ‘dating’ method, rather than trying to understand the local variability of varnish due to specific micro-topographical features. In several papers the scale of approximation is still unacceptable, giving “millennia” as a scale to bracket a specific style. It is a shame that both in Morocco and in Libya radiocarbon datings on processed samples of paintings were run *without* a reliable chemical assessment: in this sense, the absence of organic matter highlighted by Hachid *et alii* forces us to ponder on the serious sin- and post-depositional processes that affected the artworks. It would be much better if researchers, with less anxiety to recover ‘sexy’ radiocarbon dates, rather devoted themselves to a more careful analysis of the processes of degradation and to the identification of organic compounds, as evidenced by the Algerian-French team, and not simply quoting them. The absence of binder from the Tassili area is striking when compared to the Acacus contexts, where it was found already in the 1960s by Mori, and found again by Sinibaldi and associates decades later. It is therefore necessary a new season of chemical study, in order to unequivocally assess this issue and to definitively confirm or reject the old results.

There is no doubt, however, that the most provoking results come from Huyge’s *et alii* paper. The very existence of a rock art of Pleistocene age is probably one of the longest and hottest disputes in North African studies: the secured dates from Qurta open new perspectives – also for the understanding of nature and age of the earliest art in the central Sahara – and we should probably look with fresh eyes to archaeological data from areas other than Egypt, and check other, independent lines of research, such as the genetics of populations (e.g., Pereira *et alii* 2010). These could shed light on the population dynamics in Northern Africa wherever archaeological data are unfortunately scarce, also due to specific geographical and environmental characteristics.

To conclude, Northern Africa, and more in general the south-eastern Mediterranean Sea is still shaken by the long wave of the Arab spring, not to mention the civil war in Syria. It will be difficult in a next future to resume field activities in many countries and in this sense these Proceedings are dramatically timely, offering the possibility to keep North Africa rock art alive, at least on paper.

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*Savino di Lernia*