KEYWORDS: *Côa sites – Siega Verde – Cosmogenic radiation – Fariseu – Portugal – Spain*

NEW EVIDENCE FROM THE CÔA VALLEY, PORTUGAL

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Abstract. This paper summarises very briefly the developments since 1995, concerning the controversial petroglyph corpus in the lower Côa valley in north-eastern Portugal. New dating evidence is presented and discussed. Archaeological research results and geomorphological models from the Côa valley are considered, including the excavations of several occupation floors, the results of a series of cosmogenic analyses, lichenometric data, new evidence about sediment terrace formations at Penascosa, and the archaeometric deductions to be drawn from this growing body of evidence. The problems of the newly discovered site at Fariseu are considered. Finally, the nearby but Spanish petroglyph site Siega Verde is compared, because of its distinctive similarities with both the rock art and the geomorphology of the Côa sites.

Introduction

In 1995, the rock art of the Côa valley in northern Portugal became the battleground in one of the hardest fought campaigns of saving rock art, led by IFRAO against the then Portuguese Institute of the Architectural and Archaeological Heritage (Bednarik 1994, 1995a). It resulted in the preservation of the Côa rock art, the dissolution of the Institute, and the appointment of Professor Vítor Oliveira Jorge to oversee the reconstruction of Portuguese public archaeology. But the traditional establishment soon regained the upper hand and less than a year after his appointment Jorge was removed from office. The Côa rock art was safe for the time being, but the dam builders, who had already begun looking for alternative sites in early 1995, selected another tributary valley of the Douro valley, the Sabor valley. Having learnt from their defeat in the Côa valley, they now ensured the systematic exclusion from the Sabor project of any personnel not answerable to their organisation (cf. Swartz 1997a, b).

Meanwhile, in the nearby Côa valley, a massive campaign was undertaken to scrub all petroglyph panels in order to remove any accretionary mineral deposits, lichen and loose rock flakes, combined with numerous poorly conducted excavations at many sites. This resulted in glossy but vague publications and well-orchestrated media announcements reporting that occupation deposits of the Gravettian (c. 28 000 to 20 000 years BP) had been located at the site Cardina 1 and of the Magdalenian (c. 17 000 to 11 000 years BP) at Quinta da Barca (Carvalho et al. 1996; Zilhão et al. 1997). The published profiles, however, give a very different picture. They show that the upper two thirds of the deposit at Cardina 1 was rich in pottery as well as microliths, while the latter continued into the lower third, apparently without pottery (Fig. 1). Since no radiometric or other credible dating evidence has been presented from this site, or from any of the other 61 sites investigated in the course of this project, there is not the slightest strati-

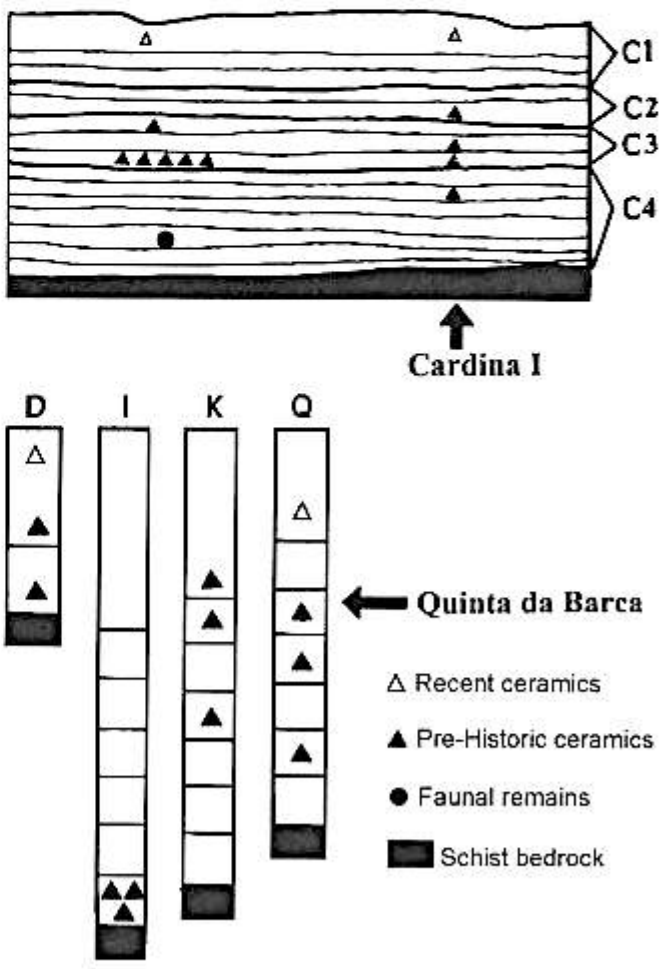

Figure 1. Profile of Cardina 1 with four sediment strata (C1–4) and four excavation sequences from Quinta da Barca (D, I, K and Q), lower Côa valley. (Adapted from Carvalho et al. 1996.)

graphic or archaeometric reason to assume that the deposit extends beyond the Holocene. If the absence of pottery in the lowest part of the deposit is a correct cultural reflection, this deposit would most likely be of the mid to late Mesolithic period, and thus in the order of 7000–6000 years old. These dates are precisely the same as suggested previously for the age of the earliest rock art in the valley and without the benefit of excavation, as estimated by microerosion analysis (Bednarik 1995b).

This pattern of spurious age claims is repeated at other Côa sites, such as Quinta da Barca, where Pleistocene rock art is claimed to occur (there is no rock art at Cardina 1). Yet, the published excavation profiles show that the ceramics extend undeniably down to bedrock (Fig. 1). If this occupation evidence were of the Magdalenian, it would be the only Magdalenian with pottery in the world. While it is true that decorated pottery was produced by 12 000 BP, none is known from Europe until well into the Holocene. Therefore these deposits cannot possibly be older than mid-Holocene. Moreover, the stone tools depicted in the publications are mostly microliths of the type commonly found in the Neolithic and late Mesolithic of Portugal (Arnaud 1990; Lubell and Jackes 1985; Silva and Soares 1987; Straus et al. 1990), and any specimens over 15 mm length are quite undiagnostic (Bednarik 2003: Fig. 3). Therefore, no evidence suggestive of the presence of a Palaeolithic industry has been presented from any of the Côa sites so far. Finally, the earlier claim that the great fluvial terrace at Penascosa was of Pleistocene age was withdrawn when the research team extracted a radiocarbon date from charcoal of about 1000 BP (Zilhão et al. 1997), thus confirming Watchman's (1995) earlier TL dating of feldspar from the same deposit.

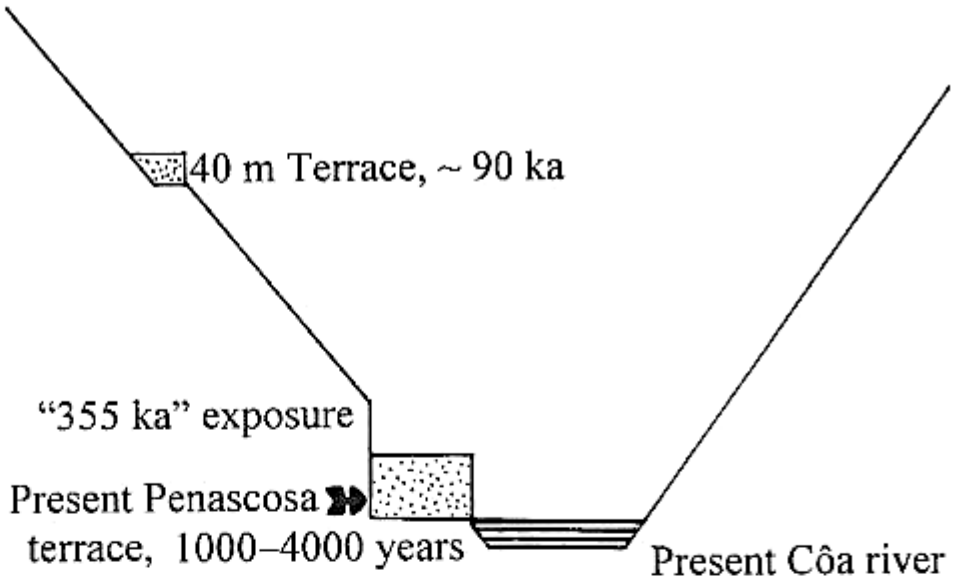

Figure 2. Schematic relationship of the Late Pleistocene terrace residue found by Zilhão et al., the CR exposure 'age' of Phillips et al. and the Côa river at the Penascosa petroglyph site.

Conversely, even if Palaeolithic occupation evidence was presented from the Côa valley, it would not by itself demonstrate the Pleistocene age of the rock art, it would merely show that humans were present then. But so far, no proof of a Palaeolithic occupation has been provided, the numerous excavations have only yielded Holocene evidence. In fact, most sediments of the lower Côa valley as reported by the excavators seem to be of the late or final Holocene, as Watchman (1995) and I (Bednarik 1995b) had initially predicted.

Cosmogenic radiation 'dating'

However, desperate situations call for desperate measures. So in 1997, a new approach involved the presentation of a series of Pleistocene exposure ages for rock surfaces in the Côa valley. If this technique were valid, the measurements would provide maximum ages of the rock art (Phillips et al. 1997). The method uses analysis of cosmogenic radiation (CR) products, and in this case the isotopes ^{35}Cl and ^{36}Cl were chosen as a measure of age. This was indeed a desperate measure, because the chlorides are the most soluble and thus most mobile cations in a highly permeable rock such as the schist of the Côa region. Therefore, it is to be expected that the surface samples would be greatly enriched with chlorides that had migrated from the rock's interior, and would thus be comparatively ^{36}Cl free. This means that the ages to be obtained would be substantially greater than the true exposure age of the panel sampled. The results of this project are indeed age estimates in the order of hundreds of thousands of years, which are clearly incompatible with the geological evidence that the valley is very young. The credibility of the CR results is well illustrated by the claimed exposure age of rocks at the Penascosa petroglyph site, of 355 ka BP (Phillips et al. 1997). Yet at the same site, Zilhão located a Late Pleistocene terrace residue high up on the valley slope, which demonstrated that at the time of its formation, the river was still 40 m above its present elevation. It is a physical impossibility that the rocks near the present river elevation could have been exposed hundreds of millennia before the river had cut down to that level (Fig. 2).

These simple observations show already that the CR results are essentially random numbers that lack any significance for estimating exposure ages. However, there are many other reasons why the cosmogenic radiation results from the Côa sites need to be ignored entirely, one being that to arrive at any such estimates the method demands the assumption that the rate of a rock surface retreat is by gradual erosion. But irrespective of what that rate might be, there can have been no erosion rate if the petroglyphs were of the Pleistocene, because even a retreat of only 1 mm per millennium would have obliterated the petroglyphs.

Figure 3. Typical "Pleistocene" Côa valley petroglyphs, showing negligible weathering. This example is from Penascosa.

It is clear that the erosion actually experienced by the Côa petroglyphs is negligible (Fig. 3). In fact it is often far less than the erosion of engraved dates of the 17th and 18th centuries on the same panels, which are so eroded that they are barely decipherable. Phillips et al. (1997), while at pains to maintain that no erosion took place for the past 20 or 30 ka, in their calculations assume a retreat of 2 mm per millennium, and they also suggest a rate of 10–15 mm per 1000 years in the very same paper. Their article is rendered even less credible by its use of panel 'ages' based on zero erosion to estimate erosion rates.

Finally, their paper reports results that are at significant odds with the fundamentally important assumption that a freshly exposed rock surface is free from earlier radiation products. For instance, a sample from 16 m below the Côa river, which had never been exposed, showed an exposure age of several thousand years; while a sample from the Castelo Melhor, a few centuries old, gave an exposure age of 30 ka. Clearly radiation products have begun to accumulate in a rock surface layer long before it became exposed, and since the method advocated by Phillips et al. (1997) offers no means of deducting from the present content of radiation products that component which was already present at the time of exposure, the entire method is simply not applicable: it cannot be used to determine the age of a rock surface, unless the freshly exposed rock had been under many metres of rock and is free of previous radiation products. Phillips et al. appreciate that the cosmogenic nuclide regime is determined by successive 'slabbing events' (the periodic exfoliation of rock layers or 'slabs'), but they fail to realise that this defeats their method. In Figure 4, their method would yield an apparent age of C + D + E after slabbing event 2, when in fact the true age of the geomorphic exposure would be C; none of the three values can be determined. Consequently, CR dating is only appropriate for exposures such as those caused by massive impact of a meteor, major tectonic events, or perhaps large-scale human quarrying activities (Watchman and Twidale 2002: 33–5). Most certainly this method lacks the capabilities ascribed to it by Phillips and colleagues (Bednarik 1998).

Most especially, CR analysis can never provide actual age estimations of rock art. The nuclides available for measurement by this method are ^{3}He, ^{10}Be, ^{14}C, ^{21}Ne, ^{26}Al, ^{36}Cl and ^{41}Ca, using accelerator mass spectrometry and noble gas mass spectrometry. Among the key qualifications is the need to be certain the sample comes from a closed system, and the production rates of the various nuclides need to be better calibrated than they are at present. There is a preference for using more than one radionuclide in tandem, and in particular the pair ^{10}Be and ^{26}Al is thought to give good results from quartz (Nishiizumi et al. 1989). Their half-lives are suitable for Quaternary deposits (1.5 Ma and 725 ka respectively), contamination can be dealt with effectively (Brown et al. 1991), and their production ratio of about six is not thought to be much affected by altitude and latitude. Another pair used is ^{3}He and ^{21}Ne, which is suitable for older surfaces, but helium data from radiocarbon-dated Hawaiian lava flows imply very coarse precision (Kurz et al. 1990; Rubin et al. 1987).

The production rates of the radionuclides in the substrate that result from cosmogenic radiation are variable according to topographic exposure, altitude, latitude, oscillations in radiation, overburden and time. Even past fluctuations in the earth's magnetic field may effect variations (Kurz et al. 1990). It is of concern that the method, which is almost as old as radiocarbon dating (Davis and Schaeffer 1955; Lal et al. 1958; Lal and Peters 1967), remains poorly calibrated (Lal 1991; Yokoyama et al. 1977), and its only two applications to archaeology, at Stonehenge (Williams-Thorpe et al. 1995) and Côa valley (Phillips et al. 1997), both produced apparently false results (Bednarik 1998). It has been difficult securing data from rock surfaces of known ages (Cerling 1990; Kurz et al. 1990; Nishiizumi et al. 1989; Phillips et al. 1986; Zreda et al. 1991), and the well-estab-

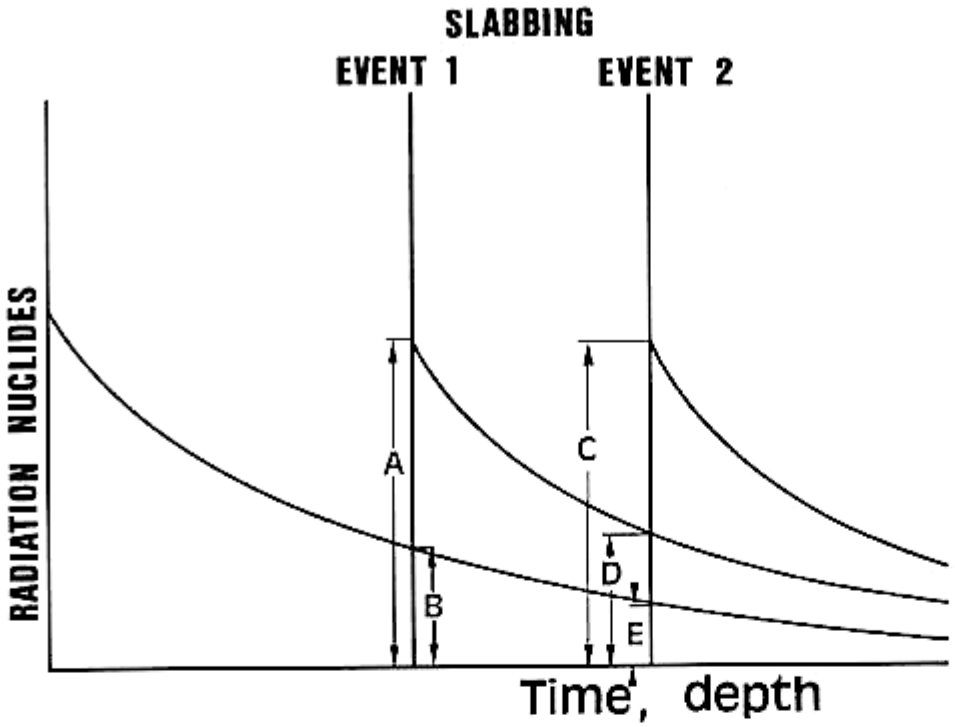

Figure 4. Schematic depiction of effects of 'slabbing events'. Nuclide concentrations are a function of rock depth, gamma radiation penetrates far into the rock. At slabbing event 1, the new surface already has nuclides (B), to which new ones are now added (A). After slabbing event 2, three cumulative concentrations of nuclides are present (C + D + E), and their relative proportions cannot be known. Only the component accumulated since the last slabbing event (C) would be relevant to dating the present exposure, but it cannot be known.

lished ages of lava flows are generally very young, usually of the Holocene (Poreda and Cerling 1992), which permits only the three nuclides with the shortest half-lives to be considered. Thus the ^{36}Cl method is unsuitable for rock art dating.

The Fariseu panel

In 1999 the Institute of Portuguese Archaeology reported a major breakthrough in its dedicated search for evidence of Pleistocene occupation of the Côa valley. A new petroglyph panel had been discovered and excavated at the site Fariseu, under the direction of Thierry Aubry (Anonymous 2000). This vertical panel was covered by sediment of sterile fluviatile material and colluvial layers, which was reported to contain stone tools of the Magdalenian and Gravettian. Illustrations of these purported artefacts are not available. A colluvium is a deposit that was formed by gravity, essentially from loose rock that rolled down or was washed down from the steep slope above the site. All components of such a deposit are older than the time of its formation, be they stone tools, charcoal, clasts or sediment. None of these components has any bearing on the age of the petroglyphs they cover — except that in the broadest sense they must be older than the art (Abreu and Bednarik 2000). Since the debris originated from somewhere up the slope, it would be more productive, and archaeologically more relevant, to search for the primary sediment these purported stone tools originate from, by examining the slope above the site. If the tools really were of the Gravettian, we might in this way discover the elevation of the Côa River at that time by tracing the tools to their point of derivation, which may well be the residue of a river terrace of the Pleistocene.

It follows that any radiocarbon date from the Fariseu colluvium is irrelevant, and even a TL or OSL date is not necessarily valid because the colluvial matter might have been washed out and descended at night time. Thus, no form of archaeological dating of the rock art has been achieved. But there are other concerns about the claims made in relation to this art. The engraved grooves lack any patina, they look very fresh indeed (Zilhão 2003: Fig. 4; Abreu and Bednarik 2000: Fig. 1; Bednarik 2003: Fig. 2), and their style and method of execution are quite different from authentic engravings of the European Palaeolithic. The latter are usually drawn in single, fine lines, whereas the Fariseu figures are either percussion petroglyphs or were carved by repeated abrasive application of a broad tool or blade. Moreover, if we look closely at the uppermost horse-like figure, we see a distinct groove running across the muzzle, just where the bit of a bridle would be located (Bednarik 2003: Fig. 2). It seems that this indicates a domesticated horse, and so far there is no acceptance of horse domestication in the Pleistocene (*contra* Bahn 1980, 1981). The depiction of apparently harnessed horses was first noted many years ago, when Andrade (1940), the first to mention the Côa petroglyphs, reported finding '*uma cabeça de cavalo arreado*'. The available faunal evidence suggests that domesticated horses existed in Portugal only during the late Holocene.

No scientific evidence has been presented for a Pleistocene age of the Fariseu sediments and petroglyphs. Numerous dating samples were collected, but no results have been announced. It is stated that the stratigraphy is one of sterile fluviatile sediments alternating with colluvial deposits (Anonymous 2000). The upper part of the sequence is described as recent lake-bottom silts, which must be under eighteen years old, yet they are reported to contain a Final Magdalenian of the 'Carneira type'. The site is also said to have yielded a flat schist pebble engraved with geometric stylised animal motifs resembling Azilian material from France. This pattern of reporting is similar to that from the other Côa sites: cultures of greatly varying ages are perceived in a sequence of undefined stratigraphy, with Magdalenian and Gravettian reportedly occurring together with ceramics, and finds of various other technocomplexes

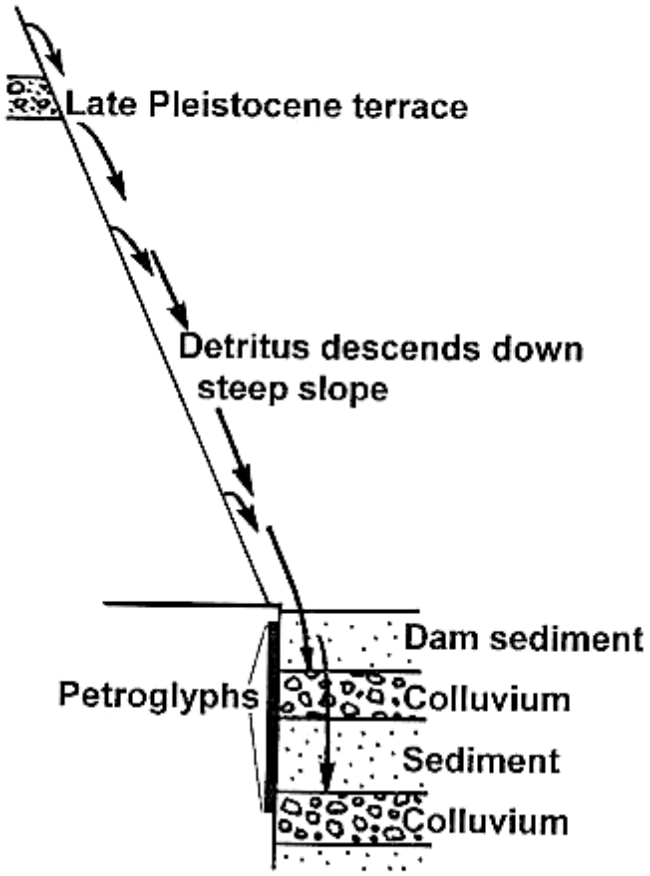

Figure 5. Schematic depiction of the most likely derivation of the Fariseu sediments.

of the European Late Pleistocene and Holocene. Yet in no case is there any radiometric or other archaeometric dating. Sedimentary data and stratigraphic profiles are only presented in rough schematic detail. Moreover, the few stone tools so far illustrated from the Côa valley are typologically identical to Neolithic microliths from sites along the northern coast of Portugal.

Concerning the sedimentation at Fariseu it should be noted that the site has been inundated by the Pocinho dam for about twenty years. In that time, several metres of silt has been deposited even further downstream, at Canada do Inferno, so there is no reason to assume that the same should not have happened upstream (i.e. closer to the inflow), at Fariseu. The most likely correct interpretation of the sedimentary deposit is as depicted schematically in Figure 5. On the basis of the evidence currently available it appears that the premature claims regarding this site are without any basis. In particular it should be of concern that Anonymous (2000) reports that dating samples have been collected in the Fariseu excavation, yet no results have been reported.

Alternative dating information

On this basis it can be summarised that, despite huge research efforts and expenditures of millions of dollars, the Institute of Portuguese Archaeology has not presented credible evidence that any of the various types of rock art in the Côa valley could be of more than Neolithic, or perhaps final Mesolithic, age. This does not prove the complete absence of Pleistocene age rock art in the valley, but it does mean that the probability that such antiquity will be demonstrated has become very remote indeed. It needs to be emphasised that this desire to demonstrate the art's Pleistocene age has no rational basis. Holocene rock art is often of greater scientific or heritage significance than Pleistocene, and as Gonçalves (1998) has observed, 'the political nature of the archaeologists' strategy influenced their scientific discourse' in the case of the Côa petroglyphs: they believed rock art is only worthy of preservation if it is Palaeolithic.

Another concern with Côa rock art is the presence of lichens related to engraved grooves. Lichen thalli have been observed both over petroglyph grooves and dissected by grooves. A thallus that has formed over an engraved groove must be younger than the rock art. A thallus that has been dissected by a petroglyph must predate the rock art. Therefore lichenometry offers an excellent potential to estimate the age of these petroglyphs quite reliably and reasonably precisely (Bednarik 2000). However, the managers of the Côa sites have decided to scrub all lichens from the panels — and indeed anything else that was not securely attached.

Fortunately, we have quite a number of photographs that were taken before the lichens were scrubbed off 'using wooden tools and river water' (Zilhão 1996). We can measure thallus sizes from this archival material, and my examination of some images suggests that, if we were to use Scandinavian lichenometric calibration curves (as there are none available for Portugal), the so-called Palaeolithic petroglyphs at Côa would be about 200 to 400 years old. While it is not justified to use Scandinavian comparisons indiscriminately, it is not to be expected that Portuguese curves would be of an entirely different magnitude. It also seems more than a coincidence that most of the dates and inscriptions found carved among the semi-naturalistic Côa zoomorphs are of precisely that very same age, ranging mostly from about A.D. 1620 to A.D. 1800. This confirms the findings of Watchman (1995, 1996) that the relatively naturalistic figures of horses and cattle — the latter resembling Spanish fighting bulls rather than aurochs — are only a few centuries old.

Another relevant development of recent years is the establishment in 1998 of a microerosion calibration curve at Vila Real, northern Portugal. While this locality is about 60 km distance from the lower Côa sites, it is still close enough to consider in its light the preliminary microerosion data secured from two Côa sites, Canada do Inferno and Penascosa (Bednarik 1995b). The Vila Real curve was secured from granite at two sites: a Roman bridge in the centre of Vila Real, and a Roman inscription at the famous pre-Roman sanctuary of Panóias, just north of Vila Real. The granite at the two sites showed identical micro-wane development (Bednarik 1993), and a series of secure values from these localities confirms that it was justified to use the Lake Onega curve in 1995, because the Vila Real curve falls within the rather broadly defined range of the Karelian conditions (Bednarik 1993).

Figure 6. Typical Siega Verde petroglyph, Agueda valley, Spain, showing negligible weathering, very little patination and no fluvial wear.

The recent Siega Verde rock art

One more relevant factor to consider here is the status of the very similar petroglyph site Siega Verde in Spain. Only about 50 km from the Côa sites, it is located in the valley of another southern tributary of the Douro River, the Agueda. The Agueda River, like the Côa, also begins its shallow course in a granite region and then drops into the much softer schist facies further north. The extremely sharp angular quartz detritus washed down from the granite facilitates the rapid erosion of the valley where it has been cut into the schist, just as on the Côa. The Siega Verde petroglyphs are all less than 6 m above the river and they are still flooded annually. The soft rock recedes up to 30 mm per century (as determined on the schist pylon-pedestal of a stone bridge right in the site) under the fluvial bombardment of coarse quartz sand, yet all petroglyphs are entirely undamaged and they show no macroscopic signs of weathering. Most of them have remained almost unpatinated, which renders it highly unlikely that they could be more than some centuries old (Fig. 6). These petroglyphs, too, have been claimed to be of the Palaeolithic, even though few if any exhibit a typical Palaeolithic style. They consist of apparent horse and bull figures, clumsily chipped and entirely lacking the fluidity and iconic competence of authentic cave engravings across Franco-Cantabria. In view of their location on geomorphologically very young surfaces that cannot be more than a few centuries old these claims, which are not based on any form of archaeological evidence, appear to be false. Local residents have reported that the art was produced by 'shepherds whiling away the time', and 'they had had a good laugh when archaeologists told them that the art was Palaeolithic' (Hansen 1997). Moreover, my examination of the site in 1998 indicated that it was covered by a very large fluvial deposit of coarse cobble-size grains, small remnants of which can be located among the deep recesses all over the site. This deposit indicates the former presence of a substantial fluvial terrace that must predate the rock art. The deposition as well as the eventual removal of this sediment, which consisted of very coarse and angular quartz detritus, would have obliterated any petroglyphs. Indeed, it would have reshaped the valley and planed every rock exposure in the path of this flow of tens of thousands of tons of extremely hard and abrasive sediment, bearing in mind the relative softness of the local schist.

In considering the abrasive action of such quartz grains it is useful to review the precise conditions of the process. If a small grain were simply washed across a rock panel it would result in negligible if any damage. However, the conditions are quite different during the flooding of a narrow valley. The cobbles and sands are transported near the riverbed, they do not float higher up in the water. If the depth of the water is, say, five metres, the pressure of the water weight alone is 50 kg per dm^2, a force that renders the grain much more effective in scoring the soft rock surface. Depending on the location, orientation and the shape of the rock panel, as well as various other factors (water velocity, amount of sediment being moved etc.), the number of sand grains being forced across an area of just one square centimetre of rock may easily run into the thousands in a single hour. Each grain may score the surface, however slightly. On a soft surface, such as a slate, phyllite or schist, cumulative wear would be rapid. At this site a retreat of 30 mm/100 years has been measured, as mentioned above.

In checking residues of this former terrace, I located a large, water-worn red pottery shard, which has been suggested to be of Roman age (pers. comm. M. S. de Abreu). This provides an absolute maximum age for the rock art of Siega Verde of perhaps 1800 years, but other indicators suggest a significantly lesser age. It appears that the Siega Verde petroglyphs are perhaps of the same age as the similar animal figures on the Côa. Just as there are many remains of mill buildings of recent centuries on the Côa, there is also a large ruined water mill at the Siega Verde site. In view of the former terrace deposit, the rock art's purported Pleistocene age is entirely impossible to maintain, nor is there any credible evidence in its favour. Once again, archaeologists have been misled by their eagerness to perceive a relatively recent open-air petroglyph corpus as Pleistocene, a problem encountered at hundreds of other European and Asian rock art sites (Bednarik 1999), and occasionally even in Australia (Fullagar et al. 1996; Roberts et al. 1998).

Summary

It is significant that, despite a highly focused six-year

campaign by the Institute of Portuguese Archaeology to locate evidence for Pleistocene human occupation of the lower Côa valley, such evidence has remained elusive. Instead, all credible evidence currently available seems to indicate an absence of Pleistocene sediments along the entire base of the valley, with rare earlier sediments probably limited to small pockets high up on the valley's slopes. If this perception were valid, there would be no prospects of finding Palaeolithic occupation remains near rock art panels. While this does not exclude the possibility that Pleistocene rock art is present, it does eliminate the possibility of dating it by archaeological excavation.

A second fundamental issue is that the valley's present morphology is the result of Holocene erosion. Hence, it is likely that most rock exposures, especially those near the river's level, are of the Holocene era. Surviving Pleistocene exposures will be restricted mostly to the higher slopes, especially those that are of low angle and thus more stable. Zilhão et al. (1997) have themselves shown that in the Late Pleistocene, the Côa river was still at a significantly higher elevation. It must be remembered that, as admitted by Zilhão et al., the Côa valley is geologically very young, having begun to be formed on the Plio-Pleistocene planation surface (Bednarik 1995b) not much more than a million years ago, and it has since been carved several hundred metres into the plateau.

The use of questionable dating methods such as ^{36}Cl analysis of rock exposures or attempts to date colluvium via presumed stone artefacts, combined with erratic data presentation and concealment of scientific dating results question the reliability of the claims by the Institute of Portuguese Archaeology. In six years, many radiocarbon and TL dating samples have been secured, but only one result has ever been published (a date of about 1000 years for the Penascosa terrace; Zilhão et al 1997).

The findings of previous scientific dating endeavours are confirmed by preliminary lichenometric observations and by the provision of a microerosion calibration curve for northern Portugal. Of particular relevance is the finding that the petroglyphs at another, very similar site, Siega Verde, certainly postdate Roman times. These figures, too, had been claimed to be of the Palaeolithic, but they are evidently only a few centuries old. That also seems to be the antiquity of most of the Côa rock art, although it is also clear that there is a very small component that is significantly earlier, dating possibly from the Neolithic or even the late Mesolithic (Bednarik 1995b). However, these few figures are certainly not of a style resembling authentic Palaeolithic art. Those motifs said to be of Palaeolithic style are without exception significantly more recent, and all available evidence of credible veracity seems to favour ages in the order of 200–400 years for these 'Palaeolithic' horse and bull motifs.

I emphasise that none of the above suggests that there cannot be rock art of Pleistocene age at open air sites of the region. I merely note that the evidence so far presented for this does not stand up to any scrutiny. It is based entirely on claims that certain zoomorphs are of Palaeolithic style. For instance some bovid figures from Côa sites have been suggested to resemble bovids in Lascaux Cave, France. But the Lascaux bovids in question are apparently not of the Palaeolithic period (Bahn 1994), so if the similarity were significant it would only imply that the Côa bovids *are not Palaeolithic*. Indeed, now that the Palaeolithic status even of the Escoural Cave art has been questioned (Lejeune 1997), there is not a single confirmed Palaeolithic rock art site in Portugal.

Finally, the desire of some researchers to prove that rock art at certain sites is of Palaeolithic age is a topic that needs to be subjected to sociopolitical analysis (cf. Gonçalves 1998). Freeman (1994) has noted the amazing similarities in the processes of validating Palaeolithic art 'sanctuaries', and authenticating Roman Catholic or other religious shrines. He compares usurpation by ecclesiastical authority and appropriation of rock art sites by archaeologists. This line of research is far more productive than a search dedicated to a strongly stated desire to find Palaeolithic art. I have attempted an analysis of this desire (Bednarik 1999) and arrived at the conclusion that it reflects a value system of a limited number of archaeologists in quite specific parts of the world. These coincide geographically with the areas where Palaeolithic art fakes occur. It is to be noted that Pleistocene art is extremely common in, for instance, Russia and Australia, yet not a single fake has ever been reported there, whereas in specific regions of south-western Europe we recognise the existence of thousands of fakes purporting to be of the Pleistocene era. It is therefore apparent that the desire to locate Pleistocene art and the practice of creating fakes are attributable to the same impetus, a specific value system of relative significance. This is confirmed by the observation that when a Holocene dating is revised to a Pleistocene age, there is no controversy and no opposition, but when a Pleistocene dating is revised to a Holocene age, academic mayhem ensues in each and every instance, and the researchers advocating the revision are subjected to threats, character assassination and professional persecution. These factors all seem to indicate a strong inherent bias, which combined with the factors so well enunciated by Gonçalves (1989) and several Portuguese archaeologists (e.g. Raposo 1995) may adequately explain the structural reasons for the Côa controversy.

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