

THE POST HOLE

Issue 29

Romantic ruins and
crumbling castles

Bosnian archaeological heritage: The valley of Visoko
Calendrical glyphs and their use in the Olmec-style cave
paintings of Oxtotitlan

Acknowledgements

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Visočica hill from the River Bosna in Visoko, Bosnia and Herzegovina (Creative Commons: <http://goo.gl/R8E5o>)

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Editorial: Developing ‘Integrated Archaeology’

Welcome back to another issue of *The Post Hole*! Sorry to keep you waiting over the last two months. The team have had dissertations and essays to complete for our courses at York. As well as feeling relieved to have completed those assessments, we are excited to release three more issues of *The Post Hole* before the summer!

In this issue, **Arnaud Lambert** provides a very interesting interpretation of the use of calendrical glyphs in Olmec-style paintings inside Oxtotitlán cave, Guerrero, Mexico. It is an area of study in archaeology which we feel is of considerable importance to the understanding of interpersonal relations in Mesoamerica during this period and should have greater awareness by researchers internationally.

Internationalisation of archaeological research is something that is discussed by **James Preece** in this issue. Preece raises a number of important questions concerning the objectivity of archaeologists in interpreting the past and different cultures. These questions are central to archaeological practice yet Preece may be correct to suggest that they are not discussed frequently or in-depth enough across the archaeological community. Most importantly, Preece identifies that how we deal with the inevitability of archaeological interpretations never being fully removed from subjectivity is an even more basic question that still needs answering before any discussion surrounding the nature of such subjectivity in interpretations.

Fabián Fernández informs us of a promising initiative by the Italian Archaetypes International Research (AIR) association. The AIR aims to encourage an integrated collaboration between international researchers and local residents towards documenting and better understanding the archaeology of the Visoko valley in Bosnia and Herzegovina. At a time of increasingly encouraged community participation in archaeological research, what makes this project particularly notable, as explained by Fernández, is that it is actively seeking to progress the protection of largely destroyed cultural heritage in Bosnia and Herzegovina despite continuing, and arguably hasty, arguments between different groups of archaeologists, authorities and locals surrounding the Bosnian pyramids.

As a bioarchaeology student, I will be unashamedly subjective in revealing my pleasure in integrating a bit of science into this issue of *The Post Hole*! **Jessica Hendy, Sophy Charlton and Anita Radini**, three PhD students of the University of York BioArCh (Biology, Archaeology and Chemistry) group, introduce us to their exciting research using dental calculus to identify diseases and illnesses not otherwise observed in individuals through osteoarchaeological analysis alone. Their area of research will undoubtedly make an increasingly demanded contribution to archaeology in future years and we look forward to hearing more about the results from their work and its shifting position within the discipline.

Finally, **James Metcalf** explains why contemporary literature from the 18th century should be used far more by buildings archaeologists to capture a sense of the views of individuals during this period of time. Metcalf postulates that archaeologists are discouraged from using this type of evidence in their work because of the romantic nature of its language. Metcalf is quite insightful in suggesting that there has always been a romantic element in most interpretations of castles, whether by 18th century antiquarians or 20th and even 21st century archaeologists. As concluded by Metcalf, provided evidence is never taken for granted and is utilised, as it should, for discussion of interpretations, 18th century literature has a contribution to make in this area of archaeology.

That is Issue 29! All of the articles in this issue demonstrate the value of integrated archaeology to the understanding of the past. It is also positive that *The Post Hole* continues to attract a diverse demographic of readers and writers, with this issue alone containing the research and views of one undergraduate student, one Masters student, one Masters graduate, three PhD students and one assistant professor.

However, we are aware that it is still quite rare within academia for the opportunity to be so freely offered for integrated voices of people with such diverse backgrounds. That is why Navid Tomlinson, Taryk Rawlins-Welburn and I have established the **Annual Student Archaeology (ASA) Conferences**. This will be an annual conference where students will be given the opportunity to platform their research and views on the past to each other and to all other members of the academic discipline.

The 1st Annual Student Archaeology Conference will be held this year at the **University of York** on the **19-20th June**. We have already received an impressive variety of interesting abstracts from students across the UK and even abroad. 27 abstracts have been accepted and we are currently advertising our **call for posters** which will conclude on the **31st May**. We hope our call for posters will allow students from anywhere in the world to contribute their research and views to the debate at ASA1 because we will print and display these for free if they are emailed to us as PDF files before the deadline date above.

We have a number of other exciting initiatives planned for ASA1, including videoing the presentations and offering presenters the opportunity to have their work published in a special conference edition of *The Post Hole* this summer. The videos will be freely available to anyone, including the public, online shortly following the conference, and the special edition of *The Post Hole* will be open-access like all other existing content of the journal.

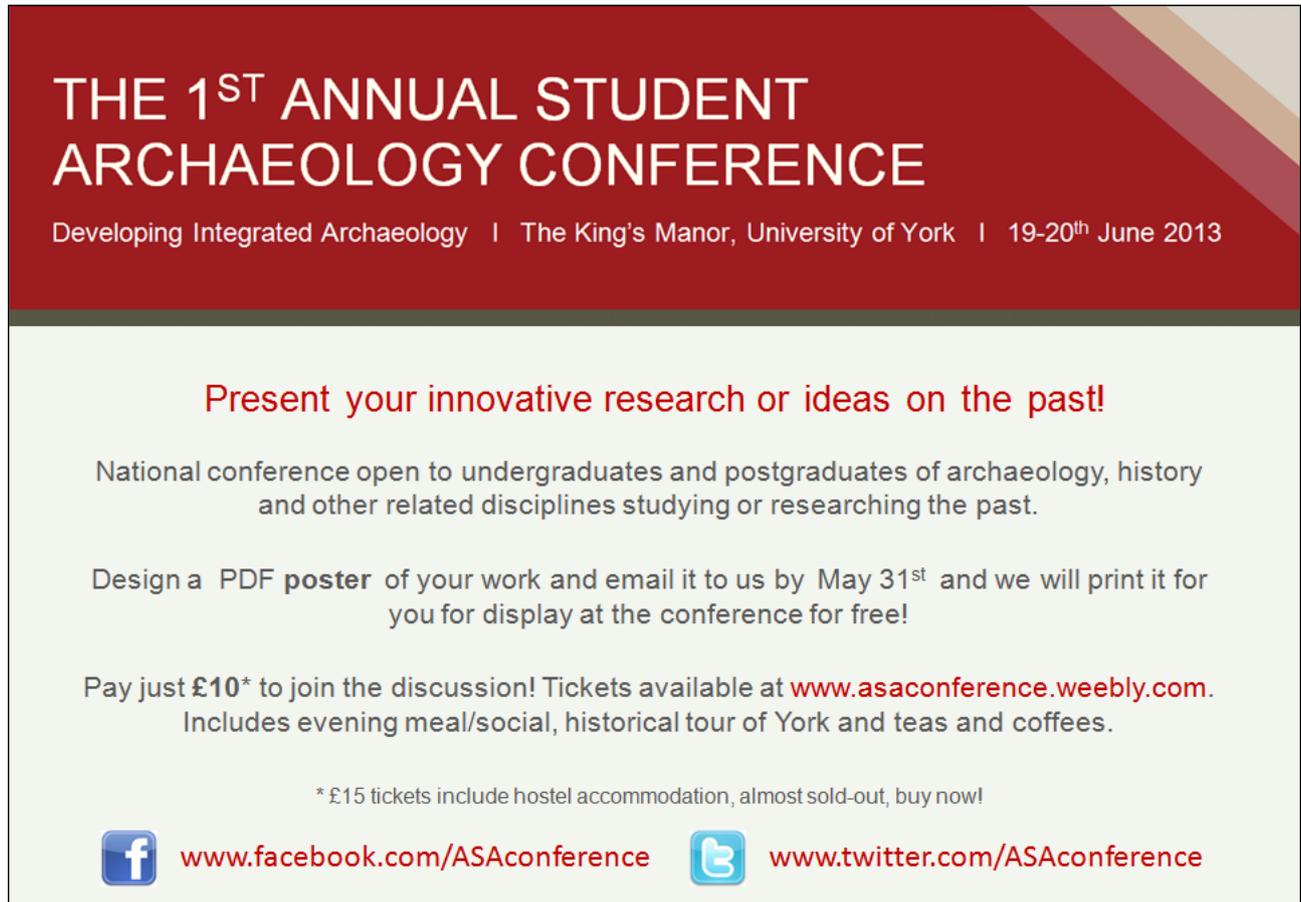
Navid, Taryk and I are very excited about the potential for the Annual Student Archaeology Conferences to further allow a truly Integrated Archaeology to exist for absolutely anyone with an interest in the past. We hope you are just as excited as we are! You can find the latest news about ASA1 on the official conference website and on Facebook and Twitter, at:

Website: www.asaconference.weebly.com

Facebook: www.facebook.com/ASAconference

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Please email contact.asaconference@gmail.com if you would like any further information about this exciting initiative or if you would like to get involved with its future organisation... And remember, you have **less than three weeks left** to submit a poster, if you would like us to print and display it for free!



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If you are not presenting a paper at the conference, you can still share your research and views on the past with *The Post Hole* in one of our ordinary issues! Now is the perfect time for students to publish their completed dissertation research with us, and lecturers, post-doctorate researchers and others are equally welcome to share their work – in fact, we already have one submission from each of these ‘types’ of people for our next issue, so don’t delay, send us your articles to submissions@theposthole.org today!

Best wishes,

David Altoft

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Calendrical glyphs and their use in the Olmec-style cave paintings of Oxtotitlán

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A set of six cave paintings from Oxtotitlán in Guerrero, Mexico are re-interpreted as calendrical glyphs associated with the 260-day sacred Calendar Round. An examination of their imagery and their placement within Oxtotitlán cave suggests that these rock paintings were used to denote the calendrical names of local rulers or their divine ancestors.

This paper presents comparative iconographic data indicating that a series of six Olmec-style rock paintings from Oxtotitlán cave in Guerrero, Mexico, represented day names found in the sacred 260-day Calendar Round (*tonalpohualli* in Nahuatl; *piye* in Zapotec). The importance of such divinatory calendars among the pre-Hispanic peoples of Central Mexico is well documented. The use of the 20 day names and 13 numerical coefficients associated with the 260-day calendar has been observed in Zapotec inscriptions from Monte Albán I through Monte Albán III (100 BC - AD 800) contexts in the Valley of Oaxaca and may date back to the Middle-to-Late Formative period at San Jose Mogote (500-300 BC) (Marcus 1992, 35-37). Similar calendrical dates may have been used in the related Middle Classic period (AD 400 - 900) Ñuiñe script of the Mixteca Baja (Moser 1977, 151-168; Rodríguez Cano 1999, 31).

At Teotihuacán, a number of glyphs with numbers have been identified as possible day names (Caso 1966, 140-141; Taube 2000, 6). By the Late Postclassic period, both Mixtec and Mexica scribes transcribed divinatory day names into various codices in order to forecast the fates of people born on particular dates (for example, Sahagún 1989, 23-24) or to trace the genealogy of various rulers (Caso 1965a, 955-956; Marcus 1992, 234-237). Despite its great antiquity and widespread use in Central Mexico, there has been relatively little information on whether the 260-day divinatory calendar was present among the Early-to-Middle Formative period peoples of the region and associated with Olmec-style art.

To address this question, some scholars have attempted to reconstruct the day names used by Formative period peoples by creating an 'Olmec' sacred calendar using ideal types for the day signs reconstructed from Olmec, early Classic Maya and early Zapotec (Monte Albán I) monuments found in many different parts of Mesoamerica (for example, Edmonson 1986, 81). Besides this attempt, a few examples of calendrical inscriptions using the Maya long count system have been documented in the southern Gulf Coast lowlands and Chiapas but occur primarily in association with the Epi-Olmec or Isthmian script of the Late Formative period (Coe 1957, 1976; Pahl 1981; Piña Chan 1993).

Evidence for the 260-day calendar has also been found on the Gulf Coast at the site of San Andrés, located a few kilometers to the northeast of La Venta in Tabasco, Mexico. Consisting of a cylinder seal and a greenstone plaque dated to the Middle Formative period (c. 650 BC), the San Andrés artefacts seem to bear evidence for the day-sign *ahau* or 'lord' (Pohl *et al.* 2002, 1985-1986). Although these researchers emphasised its close affinity to later Classic Maya day names, Oaxacan cognates for the Olmec glyphs were found as well.

David Grove (1970a, 46-48; 1970b, 19-20) also asserted that Painting 3 from Oxtotitlán cave in Guerrero, Mexico may represent the day name *cipactli* or 'alligator' based on its general reptilian appearance and the presence of numbers rendered as dots. In the absence of any further evidence, however, he was not able to confirm the identity of this possible calendrical glyph or determine its use at Oxtotitlán.

Fortunately, recent examinations of the corpus of Olmec-style rock paintings from Oxtotitlán cave permit the re-assessment of this cave painting and its neighbours as calendrical inscriptions and the interpretation of their potential use, based on Late Formative and Classic period analogies drawn from the Zapotec *piye* and its Ñuiñe counterpart, as calendrical names for rulers or royal ancestors.

Given the geographic proximity of Oaxaca and Guerrero and the relative antiquity of the Zapotec use of day names (Urcid 2001, 278), such a diachronic comparison with Oaxacan glyphs seems to offer the best chance of finding meaningful correspondences. I begin by detailing the setting of the rock paintings within Oxtotitlán cave.

Oxtotitlán is one of three cave sites in eastern and central Guerrero with Olmec-style rock paintings (Gay 1967; Grove 1970b; Gutiérrez and Pye 2008; Villela 1989). Overlooking the Río Atentli valley in the Sierra Madre del Sur, the cave appears to have been a ceremonial site attached to Middle Formative period (900-500 BC) settlements located a few hundred metres away on Cerro Quiotepec (Schmidt 2003, 2005) (Figure 1).



Figure 1: Photograph of Cerro Quiotepec and the Río Atentli Valley (Image Copyright: Arnaud F. Lambert)

Oxtotitlán is a shallow travertine cave and its entrance consists of two large grottos (Figure 2). The north grotto contains fourteen black and black-and-red paintings. These compositions contain many themes (including, for example, jaguar and serpent imagery) and images (such as human figures with physiognomic features like almond-shaped eyes, faces in profile view and bodies in frontal view) which correspond to examples of Olmec-style art from other parts of Mesoamerica and can therefore be traced to the Middle Formative period, 900-500 BC (Grove 1970a, 1970b; Lambert 2012).

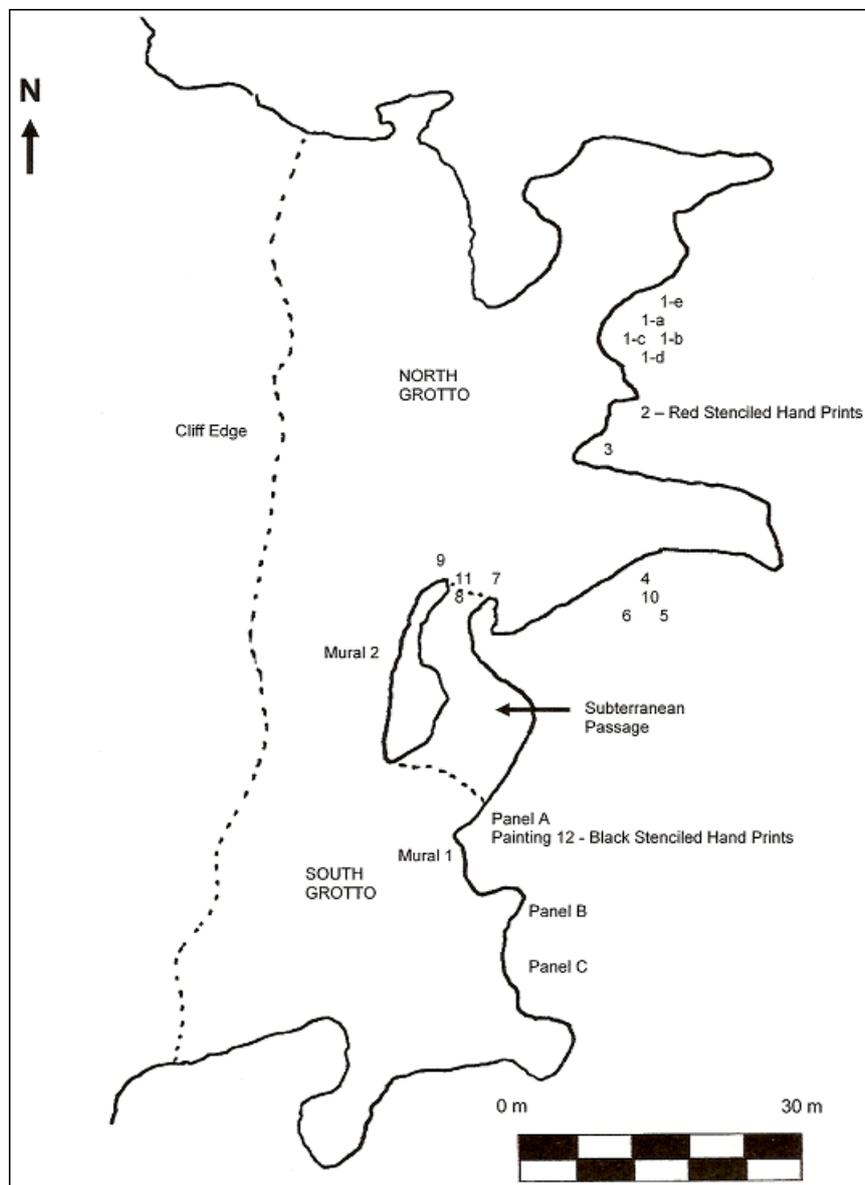


Figure 2: Map of Oxtotitlán cave, showing the location of the different grottoes and various rock paintings
(Image Copyright: Arnaud F. Lambert)

The two polychromatic murals situated on the cliff face between and above the grottoes are also depicted in the same style (Figure 3). Although some of the red paintings from the south grotto, such as Painting A-3, are reminiscent of Classic and Postclassic period depictions of rain gods (Grove 1970b, 26), the majority of the rock paintings in the south grotto form geometric designs and are more difficult to date. Only one of these red cave paintings, Painting A-1, appears to date to the Middle Formative period and may be a toponymic glyph (Lambert 2013).



Figure 3: *Photograph of Oxtotitlán Mural 1* (Image Copyright: Arnaud F. Lambert)

The six cave paintings under consideration in this paper are all found on a rock outcrop facing the southern wall of the north grotto and consist of five small black paintings which make up the Painting 1 cluster as well as Painting 3 (Figures 4 and 5). They provide evidence for the use of a Middle Formative period variant of the 260-day sacred Calendar Round on the basis of comparisons with both Late Formative period and Classic period Oaxacan conventions regarding the imagery of the day-signs and the depiction of their associated numerical coefficients.

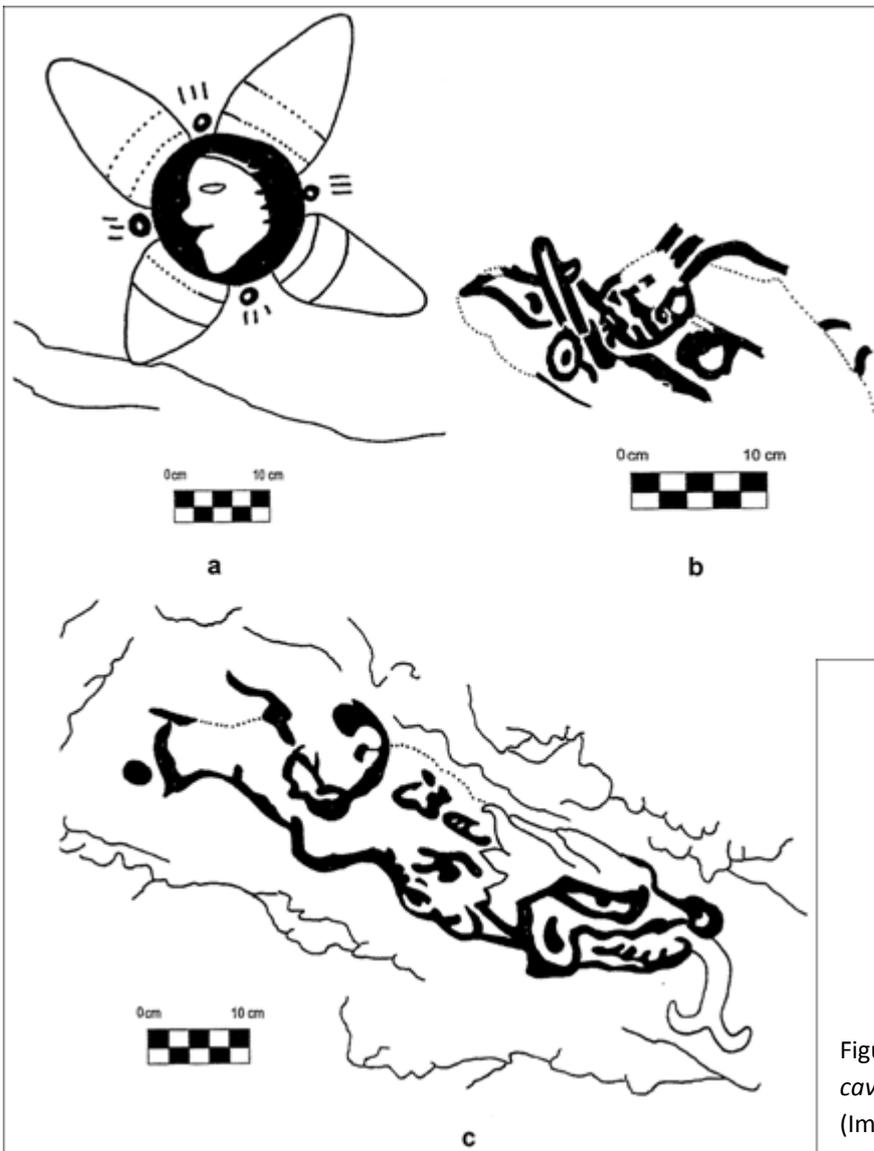


Figure 4: Scale drawings of the Oxtotitlán cave Painting 1-a (a), 1-b (b) and 1-c (c) (Image Copyright: Arnaud F. Lambert)

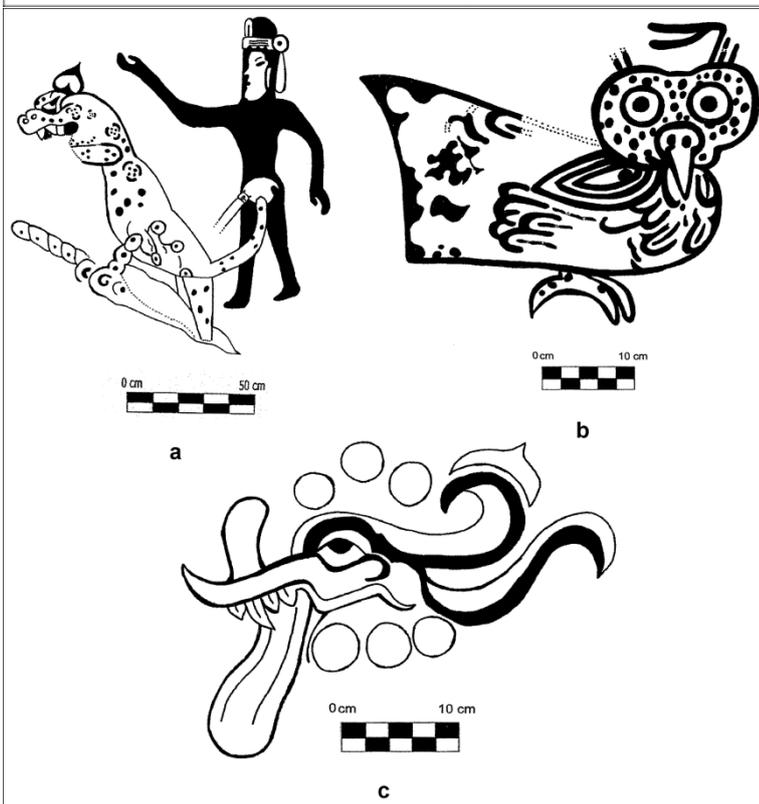


Figure 5: Scale drawings of the Oxtotitlán cave Painting 1-d (a), 1-e (b) and 3 (c) (Redrawn after Figure 15 in Grove 1970b, 19) (Image Copyright: Arnaud F. Lambert)

In addition to the use of ethnohistoric and archaeological analogies, the presence of numerals has historically played a major role in the identification of day names in various Mesoamerican scripts (see Caso 1965b; Marcus 1992; Moser 1977; Taube 2000; Urcid 2001) although there are sculptural contexts in which day signs can occur without numbers (for example, Figure 5 in Caso 1965b, 932-934).

At Oxtotitlán, numerals are present on at least four of the six cave paintings. The four punctate circles in Painting 1-a (Figure 4a) are similar to the dots used to indicate single digits in both the Classic Zapotec and Ñuiñe scripts (Figure 4.18 in Marcus 1992,128; Figure 71c in Moser 1977, 154). Although an exact tally is difficult because of their similarity to the spotted pelage of the jaguar depicted in Painting 1-d (Figure 5a), the punctate circles in this cave painting may represent the numbers seven or eight. A complicating issue with this composition is whether the set of punctate elements near the base of the jaguar corresponds to a bar design, a conventional symbol for representing the number five in early Oaxacan scripts (Marcus 1992, 96).

Painting 1-c (Figure 4c) by contrast is accompanied by a single solid circle near its tail. This figure may denote the number one. As mentioned previously, David Grove first noted that the number six was represented by six outlined circles or dots in Painting 3 (Figure 5c).

A diachronic examination of the imagery associated with each of the cave paintings in relation to the day signs used in the reconstructed ‘Olmec’ calendar (Edmonson 1986), Early and Classic Zapotec scripts (Urcid 2001), the Middle Classic period Ñuiñe script (Moser 1977; Rivera Guzmán 2008; Rodríguez Cano 1999) and the Mexica *tonapohualli* (Caso 1971) also supports their interpretation as day names (Figure 6).

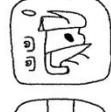
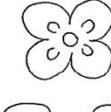
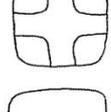
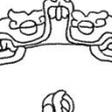
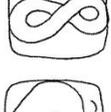
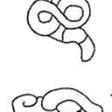
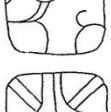
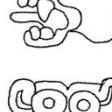
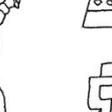
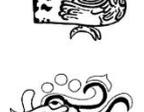
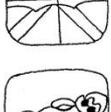
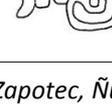
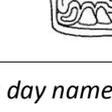
Oxtotitlán Paintings	“Olmec” (Edmonson 1986)	Early Zapotec (Urcid 2001)	Classic Zapotec (Urcid 2001)	Ñuiñe (Moser 1977)	Ñuiñe (Rivera Guzmán 2008)	Mexica (Caso 1971)	English Translation
900-500 BC	600-200 BC	500-100 BC	AD 400-800	AD 400-900	AD 400-900	AD 1350-1550	
							Lord / Flower
							Alligator
							Serpent
							Jaguar
							Night / House
							Lightning / Wind

Figure 6: Comparison between ‘Olmec’, Zapotec, Ñuiñe and Mexica day names and the cave paintings of Oxtotitlán (Image Copyright: Arnaud F. Lambert)

Painting 1-a (Figure 4a; Figure 7), for instance, consists of a circular area painted in black in the centre of which is silhouetted the profiled face of a human figure. Around this circular area, four 'petals' radiate outwards in a manner similar to the petaloid design on an Early Formative period sello from Tlatilco (Figure 2a in Kelley 1966, 745). As noted earlier, this cave painting is accompanied by four small punctate circles located between each of these petals.



Figure 7: Photograph of Oxtotitlán Painting 1-a (Image Copyright: Arnaud F. Lambert)

In both Zapotec and Núiñe writing, the day name 'lord/flower' is depicted with a day sign consisting of either a flower or a human head (Moser 1977, 168; Figure 8 in Rivera Guzmán 2008, 124; Urcid 2001, 225) although over time there appears to have been a general trend towards favouring the use of the flower day sign, especially in the Postclassic Mexica codices. A similar image is found in the reconstructed 'Olmec' calendar but has its origin in Monte Albán II glyphs from Oaxaca (Figure 1t in Edmonson 1986, 82). Oxtotitlán Painting 1-a can therefore be interpreted as representing both meanings of this day name in a single symbol.

Painting 1-b (Figure 4b; Figure 8) may depict a highly stylised zoomorphic face. It consists of a linear upper jaw with two fangs shown in profile. Above the mouth area, a crescent-shaped eye can be discerned topped by a circular motif containing a cross-band and three tassels. These correspond most closely to Central Mexican depictions of the 'alligator' day name as seen in the Zapotec glyph V (Urcid 2001, 218-220), Núiñe glyphs R3 or R23 (Figure 8 in Rivera Guzmán 2008, 123; Figure 10 in Rodríguez Cano 1999, 25) and the Mexica *tonalpohualli* (Figure 1a in Caso 1971, 334).



Figure 8: *Photograph of Oxtotitlán Painting 1-b* (Image Copyright: Arnaud F. Lambert)

By comparison, the closest cognate in the idealised ‘Olmec’ calendar is a cruciform symbol (Figure 1d in Edmonson 1986, 82) which appears to have been based solely on the modern Tequistlatec (Chontal) word for ‘lizard’ (not ‘alligator’) although the author does not provide empirical support for the linkage of this word with the symbol other than noting its occurrence in Olmec art.

Occasionally referred to as a ‘dragon’ (Joralemon 1976; Niederberger 2002), Painting 1-c (Figure 4c) depicts a composite creature with serpentine, saurian and avian attributes. These iconographic elements include feathers, a bifid tongue, flame eyebrows and a multi-fanged mouth. In addition, a single black circle is visible behind the painting. Analogous features are also seen in the Zapotec glyph Y (Urcid 2001:253), Ñuiñe glyph R8 (Figure 8 in Rivera Guzmán 2008, 123; Figure 10 in Rodríguez Cano 1999, 25) and Mexica (Figure 1e in Caso 1971, 334) representations of the ‘serpent’ day name.

While this day name is often shown in its emblematic form as a disembodied head in Ñuiñe art (Moser 1977, 167), there are variants of Zapotec glyph Y which depict the entire body of the serpent (Urcid 2001, 226). Not surprisingly, because it too is based on Oaxacan prototypes, the idealised ‘Olmec’ symbol for the ‘serpent’ day name closely parallels those found in Zapotec art (see Figure 1e in Edmonson 1986, 82).

Painting 1-d (Figure 5a; Figure 9) represents a human figure standing behind a feline zoomorph. The standing figure is painted completely in black except the face, certain elements of the headdress and the groin area. While the figure’s torso is depicted in frontal view its limbs and head are shown in profile. The figure’s face is executed in a manner reminiscent of Painting 1-a and consists of a small slit-like eye and downturned mouth.



Figure 9: *Photograph of Oxtotitlán Painting 1-d* (Image Copyright: Arnaud F. Lambert)

The feline, possibly a jaguar, is shown in a standing position with its right hind leg resting on a series of diagonally-oriented scroll-like designs. The entire jaguar is shown in profile and its body is decorated with spots, some of which arranged in a pattern of four dots and three arcs. The jaguar's head consists of a rounded snout, triangular eye, heart-shaped ear and an open mouth containing three teeth.

Some researchers have posited that there is a sexual connection between the jaguar and the standing figure (Brady 1988, 51; Grove 1973, 134), recalling Stirling's provocative hypothesis (1955) that similar images reflected Formative period creation myths depicting the copulation of human elites and jaguars. Although such mythological origins are suggested by the linear element which seems to emanate from the standing figure's groin, it is equally likely that the jaguar may represent the animal alter-ego of an elite personage

(Foster 1944; Gutiérrez and Pye 2010). From this perspective, the linear element stretching from the human figure towards the jaguar may simply be a graphic device to show a connection between the two beings.

A third alternative, not entirely exclusive of the second, is that the jaguar represents the figure's calendrical name and that the linear element was intended to link the day name to the human figure in a manner reminiscent of the Postclassic Mixtec codices (for example, Figure 7.9 in Marcus 1992, 203). Certainly, the use of a feline head to represent the day name 'jaguar' was common throughout Central Mexico (see Figure 6) but full-bodied representations are limited to rare variants of Zapotec glyph B from the Monte Albán IIIa phase (AD 200-450) (Urcid 2001, 160) and to some Ñuiñe representations of glyph R15 (Figure 8 in Rivera Guzmán 2008, 124). It is therefore likely that Painting 1-d exemplifies a relatively uncommon way to depict the 'jaguar' day name.

Painting 1-e (Figure 5b) is comprised of a naturalistic depiction of an avian zoomorph, possibly an owl. Parts of the body, especially its tail, are difficult to discern but its major features are clear. The head of the zoomorph is shown in frontal view; while the body is rendered in profile. The head is cocked at a slight angle and has two feathered horns. Similar representations of avians occur in Olmec-style sculptures, such as Tak'alik Ab'aj Monument 9 (Orrego Corzo 1990, 85) and Tres Zapotes Monument H (Stirling 1943, Plate 11a).

This cave painting is particularly close to Central Mexican depictions of the day name 'night'. Although sometimes conflated with the day sign for 'house' (for example, Figure 1c in Caso 1971, 334; Figure 1c in Edmonson 1986, 82; Moser 1977, 167), in Oaxaca the day signs for 'night' are most frequently portrayed as owls shown in frontal view. Examples include Zapotec glyph F (Urcid 2001, 176) and Ñuiñe glyph R5 (Figure 8 in Rivera Guzmán 2008, 123; Figure 10 in Rodríguez Cano 1999, 25).

Originally located on the ceiling of the north grotto, Painting 3 (Figure 5c) was subsequently removed and is currently located at the regional *National Institute of Anthropology and History* (INAH) centre in Chilpancingo, Guerrero. This cave painting shows the profile head of a composite creature with a long pointed snout, sharp teeth, a large tongue, an elongated eye and scroll-like designs on the back of its head. Above the head, there is a series of three circles which mirror another set of three circles underneath the head. These circular elements may represent numerals. Although he originally interpreted the cave painting as an example of the *cipactli* or 'alligator' day sign, Grove later suggested a link with Classic period depictions of Quetzalcoatl in Teotihuacán (1970b, 19) but stopped short of a more definitive interpretation.

I believe his second hypothesis was essentially correct. Based on its physiognomic features, it seems that Painting 3 most closely resembles Central Mexican representations of the 'lightning' day name. Often pictured in the form of glyph M (Urcid 2001, 191) and Ñuiñe glyph R4 (Rivera Guzmán 2008, 123), these images detail a zoomorphic face with an oversized maxilla, large fangs and a large nasal stub that points back towards the eyes of the figure. Furthermore, there appears to be a historical relationship between the features of Zapotec glyph M and the buccal mask used to represent *Ehecatl* (an aspect of Quetzalcoatl), the Mexica symbol for the day name 'wind' (Figure 1b in Caso 1971, 334; Urcid 2001, 138, and Figure 4.41 in 144).

Given their overall similarity to Late Formative and Early Classic period Zapotec depictions of day names, it seems reasonable to search the central valley of Oaxaca for archaeological and ethnohistoric analogies regarding the use of these calendrical glyphs. Among Oto-Manguéan speakers, particularly the Zapotecs and Mixtecs, calendrical glyphs for day names and their associated numerals had two separate functions (Urcid 2001, 79). In some contexts, they served as chronological symbols, making reference to a conventional system of time-reckoning like the 260-day sacred calendar (*piye*) or the 365-day solar calendar (*yzā*) (Marcus 1992, 127).

As demonstrated by Monte Albán Stelae 12 and 13, these chronological notations are frequently encountered with short inscriptions and/or year-bearers (Caso 1965b, 933; Marcus and Flannery 1996, 161). In other instances, calendrical glyphs had a nominative value, referring to individuals and/or their ancestors based on their birth date according to the 260-day calendar (Marcus 1992, 125-126; Marcus and Flannery 1996, 214-215). Often calendrical names are found alone or in the context of human figures representing the person being named in the inscription, such as the mural from Tomb 105 in Monte Albán (Figure 7.11 in Marcus 1992, 208).

In addition to the nominative character of the jaguar image in Painting 1-d (Figure 5a; Figure 9), the setting of the cave paintings at Oxtotitlán provides a number of contextual clues regarding their probable function at the site. All of the cave paintings are small, ranging in size from 25 to 40 cm (Grove 1970b, 13-20) and were produced by brushing the designs onto the travertine rock surface of the cave. Although they were produced within the same general area, there were no observed instances of superimposition in this cluster of rock paintings such that an unmarked section of the cave appears to have been selected each time a new composition was added to the rock wall.

The favoured locations for the paintings were either near-vertical surfaces that face west or south toward the entrance of the cave, or the ceiling of the cave. Thus, both the size of the cave paintings and their isolated locations indicates that access to them was restricted to a privileged few.

In addition, each of the cave paintings seems to be self-contained and does not appear to have been part of a larger mural or text, further suggesting that they were not intended to be viewed by large audiences. Taken together, these characteristics of the rock paintings suggest that they were used as calendrical names, possibly referring to either local rulers from the communities on Cerro Quiotepec or, given the sacred locality of the cave, their divine ancestors.

The identification of the six Olmec-style cave paintings from Oxtotitlán as calendrical glyphs in this paper was based primarily on similarities with later Central Mexican writing systems, particularly the Late Formative and Early Classic period Zapotec script. The calendrical glyphs found at the cave include: 4 Lord/Flower (Oxtotitlán Painting 1-a), ?? Alligator (Oxtotitlán Painting 1-b), 1 Serpent (Oxtotitlán Painting 1-c), 7 or 8 Jaguar (Oxtotitlán Painting 1-d), ?? Night (Oxtotitlán Painting 1-e) and 6 Lightning (Oxtotitlán Painting 3).

Although not all of the cave paintings had numerical coefficients, their imagery closely resembled day signs associated with day names in the Zapotec 260-day calendar, suggesting that the cave paintings of Oxtotitlán came from a separate but related Middle Formative period (900-500 BC) iteration of the 260-day sacred Calendar Round.

An examination of the cave context of the rock paintings also bore a number of correspondences to ethnohistoric and archaeological uses of such glyphs as calendrical names in the Zapotec script. These findings implies that the use of calendrics in privileged locations such as caves was one of the means by which Middle Formative period rulers in Central Mexico asserted their social status in the community.

Whether these strategies were analogous to later Classic period practices in which Zapotec rulers referred to their divine ancestors or used calendrical names as part of rituals of royal accession (Marcus 1992, 325-328) has yet to be determined but such intriguing possibilities offer many new areas of research into the relationship between Olmec art, writing and governance.

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Ancient dental plaque: An unexpected journey into the past

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Dental plaque is not the first (or the most glamorous) thing that comes to mind when you think of archaeology. So why would students like us spend a whole MSc or even a PhD studying it? In this article we outline the unexpected value of dental calculus, also called tartar, as a reservoir for information about the past, and how studying this material could give us enormous insight into ancient diseases, health and diet. We will then introduce how we are using calculus to understand health and disease in the transatlantic slave trade, by studying a population who died on board slave ships and were buried on Saint Helena, a remote island in the South Atlantic Ocean.

What is dental calculus?

Dental calculus (Figure 1) is formed by the mineralisation of dental plaque (Jin and Yip 2002). Dental plaque itself is formed by the build-up of bacteria which form a biofilm on the tooth surface. In the presence of calcium and phosphate minerals found in saliva, and in the absence of regular tooth brushing, the biofilm begins to mineralise. This means that the microbes present in the mouth become preserved in this mineralised 'deposit'. At the same time, debris from food or inhalation also becomes entrapped in this mineral matrix. Thus, dental calculus is a unique deposit on teeth which consists of a stable mineral matrix which traps both microscopic particles and biomolecules like DNA and proteins.

How can dental calculus be of use to archaeologists?

Three main reasons make dental calculus a novel and valuable material for archaeologists. Firstly, calculus can survive very well because it is densely mineralised, preserving biomolecules and micro-debris over a long period of time. This means we can use the material to study many different populations, from Neanderthals (Hardy *et al.* 2012) to Victorians (Charlton 2012). For the first time, we can study disease biomolecules without requiring exceptionally well preserved samples. Secondly, calculus deposits on teeth are very common in past populations, before the advent of modern oral hygiene practices, making its presence archaeologically almost ubiquitous. Thirdly, calculus forms quickly during an individual's life making it an in-situ and undisturbed reservoir of information about past diet and health. Therefore, dental calculus is an exceptional material for the preservation of bioarchaeological information through different times and locations.



Figure 1: *Calculus adhering to the teeth of an Iron Age individual* (Image Copyright: Authors)

The presence of microscopic food debris preserved in dental calculus has been well documented in a variety of populations in different times and places, from Syria to Peru, and from Neanderthal to Medieval groups (for example, Henry and Piperno 2008; Piperno and Dillehay 2008; Hardy *et al.* 2009 and 2012). Starch granules, for example, not only indicate what kinds of plants were consumed but can also indicate cooking and processing methods by patterns of degradation (for example, Henry *et al.* 2009).

Although plant remains have been the main focus of past studies, other microscopic finds have been recorded. These include fungal spores (Charlier *et al.* 2010), microbial remains (Arensburg 1996; Preus *et al.* 2011) and diatoms from aquatic environments (Dudgeon and Tromp 2012). It may also be a potential material for carbon and nitrogen dietary studies (Scott and Poulson 2012). This preserved dietary evidence has been used to answer questions about long-distance interactions (Blatt *et al.* 2011) and environmental change, subsistence patterns and migrations (Dudgeon and Tromp 2012).

More recently, it has been established that we can access the DNA and proteins of ancient pathogens which inhabit the mouth and respiratory systems through dental calculus (Charlton 2012; Adler *et al.* 2013). Because dental calculus is abundant in the past, and does not require exceptional preservation to survive, we have the ability to discover the DNA and proteins of a number of ancient pathogens, many of which continue to make humans ill today. This could have real value in modern medicine, where it is important to understand how quickly pathogens can evolve, why certain pathogens are particularly virulent, and how pathogens manifest and spread in populations. By extracting pathogen biomolecules from dental calculus, we may begin to answer some of these questions.

How can we unlock the evidence?

After removing calculus from the tooth with a dental pick, we can unlock the microscopic and biomolecular evidence in three different ways. To uncover microscopic debris we breakdown the mineral matrix and liberate the embedded particles. After taking precautions for contamination from soil and the laboratory we break up the calculus in acid. Then the micro-debris can be removed from the solution and mounted on a glass slide for observation under the microscope. The identification of the debris is a huge part of our work as it is the morphological criteria of the particles and their optical properties which are used to characterise and identify the tiny particles. We also use a reference collection for comparative purposes.

To uncover ancient proteins we can use modern, proteomic technology (Charlton 2012). First, we chemically break up the calculus mineral, and then recover the ancient proteins by filtration. After breaking up the proteins into smaller segments, called peptides, we examine these using a technique called protein mass spectroscopy, which identifies all these peptides and assigns them to a particular protein of a particular species. We can uncover proteins from the human individual, like proteins involved in the immune system, as well as bacterial proteins associated with diseases. In protein form, we can see how the pathogen is attacking the host, and how the individual's immune system responds.

It is also possible to identify which bacterial species are present by targeting the 16S rRNA gene, a region of mitochondrial DNA known to vary between different taxa (Adler *et al.* 2013). Firstly, bacterial DNA is extracted and amplified. These DNA fragments are then sequenced, and the resulting data assigned to particular species. Here it is possible to identify not only bacteria that cause dental diseases, such as *Streptococcus mutans*, but also important bacteria that live commensally in the mouth.

Dental calculus and the slave trade

Using these methods, dental calculus is being used to improve our understanding of diet and health among enslaved Africans buried from the mid-19th century. Studying health, diet and disease in this period sheds light on the lives of the enslaved. But more broadly, if we can identify biomolecular evidence of particular diseases, it can help us understand how these pathogens spread and proliferated in Africa, Europe and the New World, and the legacy of that movement today.

In 2007 and 2008, excavations on Saint Helena (Figure 2) uncovered a graveyard associated with the mid-19th century slave trade (Pearson *et al.* 2011). Saint Helena played a crucial role in the post-abolition period, acting as a station of the vice-admiralty court as part of the British programme of abolition. The West African Squadron, part of the British Navy, captured slaving ships of nations who were still active in the slave trade. The slaves on board were removed from the ships and stationed on Saint Helena at the 'Liberated African Establishment', in operation between 1840 and 1872, for recuperation, medical treatment and subsequent emigration.



Figure 2: *Location of Saint Helena within the South Atlantic Ocean* (Adapted from Google Maps)

The graveyard excavated in association with this settlement uncovered the remains of over 300 individuals. This assemblage represents individuals, captured in West Africa, who died on board the slave ship or died shortly after landing in Saint Helena. This is a rare opportunity to study a unique population of people who experienced the Middle Passage, but did not reach the New World, and people who have died as a result of the conditions of their enslavement.

Preliminary results from the analysis of three individuals have revealed an abundance of plant remains, where plant tissues and fibre, including possible cotton fibres, are very abundant. A range of phytoliths and starches were also found (Figure 3). A reference collection is being compiled to identify the debris, comprised of the most common West African food sources, and known foods from slave ships. We hope the analysis will allow us to combine and compare the results with historical documents, giving us new details about the diet of the enslaved in the 19th century.

While we can use microscopy to analyse dietary remains, a proteomic and genomic study will give us details about the pathogens afflicting these individuals. This will help us understand, firstly, the pattern of diseases amongst the enslaved, the health status of these individuals. This will help us better understand how diseases spread to the New World, and perhaps give insights into how the same diseases present today continue to make us sick.

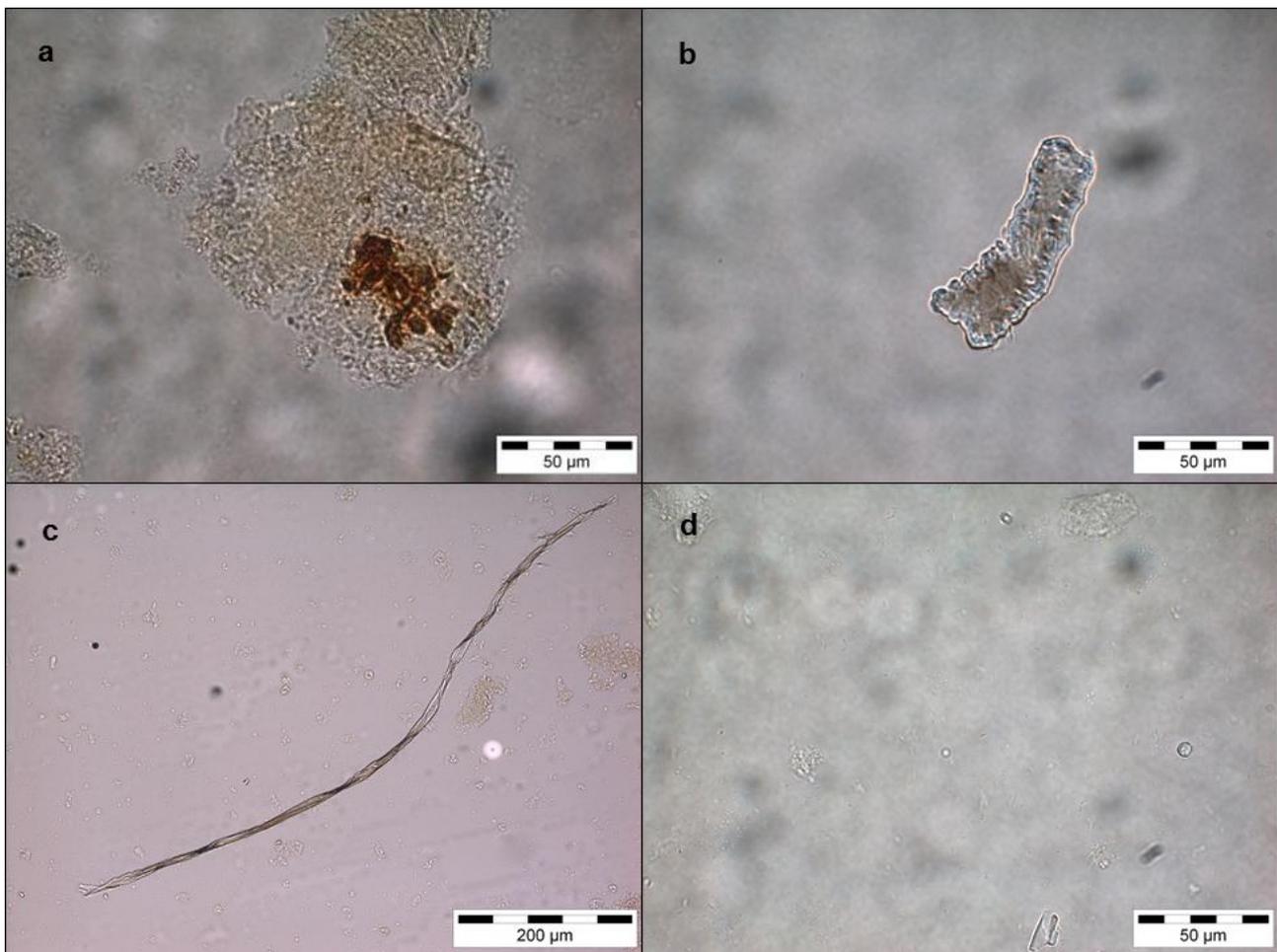


Figure 3: Selection of debris extracted from Saint Helena individuals – chewed food remains embedded in calculus (a), phytolith (b), fibre (c), starch (d) (Image Copyright: Authors)

Conclusion

Calculus is a valuable, if surprising, material that we can use to study the past. Abundant in the archaeological record, this material preserves biomolecules and food debris well back into the distant past. Through extracting this information we have, for the first time, the ability to access many diseases which are hidden osteologically, using samples which do not require exceptional preservation. Specifically, we have the chance to gain enormous insight into ancient pathogens, which can help to understand why the same diseases today continue to make us ill.

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Past political, present tense, future present?

The concept of political intrinsicity in archaeology

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The past is political

There has long been a tendency within the social sciences to claim that the object of study is ‘political’. Whole fields of thought are ensnared, and implicate in turn academic subdivisions, our methods of acquiring data, our interpretation of data, and the narratives we then fit this data into. Archaeology is no different, having in the first instance been claimed to be a useful organ for political agendas as diverse as capitalist (Chadwick 2003), authoritarian-statist (Faulkner 2000), and even Marxist (Barrett 2001, 145).

The structural frameworks of archaeology’s subdivisions have been even greater sources of deconstruction: a brief journey through the archaeological literature can inform you that the Jorvik experience is *laissez-faire* (Shanks and Tilley 1992, 88; Walsh 1992, 115), or that the Late Medieval was imbued with a sense of modernisation (Thomas 2004, 4-16), or that the legacy of Rome is being hijacked by neoliberals (Faulkner 2008).

The message is simple: everything is affected by our political subtleties, consciously or otherwise. There is no way to be neutral, not even through appeals to science and rationality. Nowhere in the archaeological world has this point been demonstrated with so much bile, and so much ink, than in the great and ongoing debates about postcolonial archaeology, where the post-processual line has depressingly insisted on relating ‘positivist’ archaeology to old colonial pseudoscience (for example, Langford 1983; Nicholas and Hollowell 2007).

While the late Edward Said’s magnum opus, *Orientalism*, never sought out a specific ‘Orientalist’ archaeology, the author was nonetheless sharp enough to link T.E. Lawrence’s ‘exotic’ military career to his excavation work in the Middle East (Said 1978, 99). It is safe to say that the very idea, if not the practice, of the innocent archaeologist free from prejudice or agenda has vanished completely. In its place is a notion we could term variously as *political resonance*, *inherent politics*, or, as I have always preferred to term it, *political intrinsicity*.

I agree that these scholars have been right to recognise the fact that politics colours everything we do, but the implications of this appear to be far less dramatic than one is led to believe – rather than discrediting the old positivist archaeologists, we have discovered that they are rather more humanist than many postcolonial thinkers.

Rather than accepting the brittle stereotype offered to them as Western or Eurocentric appropriators of other people's cultures (Gosden 2004; Lahn 1996), both the great Australian prehistorian D.J. Mulvaney and the University of York's Emeritus Professor Don Brothwell have written that indigenous groups "certainly need protecting from exploitation" (Brothwell 2004, 416) and that "treatment of Aboriginal society has been shameful" (Mulvaney 1991, 12), and have both stressed their commitment to a science that is emancipatory, inclusive and collaborative.

It is possible to agree with Laurajane Smith's (2004) critique of this position as naive, but it is surely impossible to agree that their methods are apolitical and value-anemic – a more accurate criticism would be that these approaches have neglected to *recognise* their own politics and values.

The real difference between these 'positivists' and the political-intrinsicality adherents is far more important – the acceptance among the former of an act of distancing that is the better part of professionalism. In other words, they acknowledge that while everything is intrinsically political, not everything is therefore *biased*. This, surely, is the very point of acknowledging personal interests, values and limitations anyway.

Many of their opponents effect to misunderstand this very simple distinction by adopting a relativist position, announcing that we live in 'the world of the 'post': post-modern, post-ethical, post-moral' (Walsh 1992, 2); imagining a tunnel-vision archaeology that will only 'transform relations of inequality or oppression' (Nicholas and Hollowell 2007, 62); creating an archaeology that simply serves as 'facilitators' for other interests rather than having one itself (Moser *et al.* 2002, 231).

For his part, Said conceived of political intrinsicality being more or less important in relation to "the possibility of its direct translation into economic terms" (Said 1978, 10), which gave him a workable explanation for how European culture followed European military, political and economic domination by exploiting the Orient from the 18th century to the present day.

Yet this is incomplete and ungainly: while fields like cartography have indeed become more politicised as their use in dominating territories increases over time, the trend has been to make them more accurate, physical and objective than before. The bias has instead been in *selectivity*: detailed maps of mineral-rich areas have always outnumbered the poor, and globes have tended to embellish the perfectly accurate outlines of European states because that is where globe-buying Europeans want to place themselves. *More political*, then, does not easily translate into *more biased*.

It is true, however, that political expediency may affect archaeology – and in fact it *is* affecting archaeology right now. Some of this is based on the most crass and superficial of archaeological interpretation: there are gender stereotypes being forged out of how 'cavemen' are supposed to have lived, nation myths out of what good 'stock' the Romans were, trading pacts being justified through exactly how enterprising Vikings were, *ad nauseum*.

In the United Kingdom, students are inoculated against this way of thinking every year, under the reasonable premise that facts and accuracy matter and expediency is poison. But this is not the case elsewhere in the world, and we should not pretend that political bias is a storm in a Britain-sized teacup. To illustrate how significant the effects can be, I choose here to cite the most prominent example in the world to date.

The present tense

In 1982, two Israeli archaeologists, O. Bar-Yosef and A. Mazar, published a paper in *World Archaeology* which discussed the archaeology of their country, from significant sites and projects, to the development of methodology (Bar-Yosef and Mazar 1982). Readers of this article learned that a “new stage in the history of Palestinian archaeology began with the foundation of the State of Israel in 1948” (Bar-Yosef and Mazar 1982, 313), that the discipline was galvanised by processualist methodology in the 1960s (Bar-Yosef and Mazar 1982, 314), and that archaeologists in their country had absolutely no overarching aim other than the pursuit of research questions and accuracy (Bar-Yosef and Mazar 1982, 320-322). In summing up, the two archaeologists affirmed Israel’s importance to Biblical scholars, Jews and Christians, and not least the Israeli public themselves (Bar-Yosef and Mazar 1982, 322).

Nowhere in Bar-Yosef and Mazar’s article could one find any reference to post-1948 Palestine, or their Palestinian inhabitants. Nowhere in the list of interested parties of archaeology and heritage could one find ‘Palestinians’ or ‘muslims’ – except perhaps in the blank space between the lines. The achievements of Palestinian archaeologists like Tawfiq Canaan or Dimitri Baramki are glaringly absent from the pre-independence section, which focuses instead on friendly European, Orientalist, excavators and graduates of the Hebrew University. Dimitri Baramki, by the way, was still alive when Bar-Yosef and Mazar’s article was published, dying just two years later.

It would be easy to dismiss the two Israeli archaeologists as ‘processualists’ using archaeological science to disinherit Palestinians from thirteen centuries of their history. Is it scientific to omit vital details of a region’s history because of a century-old political contest? Is it in fact processualist to argue that the “appeal of archaeology to the Israeli public is in its strengthening of the link between the nation and its land. People are moved by concrete remains clearly related to their direct heritage” (Bar-Yosef and Mazar 1982, 322), or is this really culture-history: the art of lashing the archaeological record until it comes into the national fold?

Putting pen to paper five years later in 1987, the Israel/Palestine-based American archaeologist, Albert Glock, disagreed with this assessment. He wrote of how the “finery of scholarly ‘objectivity’ among archaeologists reinforced colonialism, disconnecting ‘blacks, aborigines, and Native Americans from the achievements of their respective pasts” (Glock 1987, 48-49).

Yet at the same time Glock also knew that Israeli archaeology was far from scientific: he wrote of how Islamic archaeology had shrivelled since 1948, presumably because of a “strong cultural bias against the Muslim tradition” (Glock 1987, 51); how archaeological interpretation of the Late Bronze Age and Iron Age had become reliant on the Bible rather than archaeological evidence (Glock 1987, 52-54); and how all archaeology in Israel had been forced to affirm the legitimacy of the new state because of ancestral ties to the ancient one (Glock 1987, 55).

In a subsequent paper, written in 1990, Glock revealed how the myth implied by Bar-Yosef and Mazar, that Palestinians left intellectual study to foreigners and Israelis in the first half of the 20th century, was started in the first place (Glock 1990). It is true that Zionist immigrants were more engaged in heritage: having mostly come from Europe, they were generally better educated and many had graduated from Western universities, and were therefore perfectly placed to dominate scholarship at home and articulate their research abroad (Glock 1990, 74).

It was in this context that Jewish institutions like the Hebrew University and the Jewish Palestine Exploration Society flourished, and Palestinian archaeology languished. Those Palestinians who did work were in any case obliged to “drink from the well of Euro-American scholarship, assuming such to be objective reality” (Glock 1990, 77). Then, in the space of two years after 1948, “more than half of all the Arab villages in Palestine were destroyed by the Israelis” (Glock 1990, 82), as the best part of one million Palestinians were made refugees, according to UN estimates (Nairouz 2010, 128).

Glock recognised that Israeli archaeological policy had been engaged in a dual action since that time – the severing of Palestinians from their heritage through confiscation of cultural resources and the simultaneous reconnection of Israelis to the Israel of over one and a half millennia ago (Glock 1990, 79-80). Of the vacant Palestinian villages surveyed by the state, Glock found that many who declared to have ‘no antiquities’ in fact had no Christian or Jewish antiquities (Glock 1990, 81).

The Future Perfect?

Through all of this it may seem that archaeology is cursed with its associations with politics, but one ray of light may be found in the conclusion of Glock’s article, where he discusses the future of his own project, that of ‘Palestinian archaeology’ free of Biblical constraints and Zionist politics (Glock 1990, 83):

“One could claim that a ‘Palestinian archaeology’ is but the other of the coin, archaeology with an equally political intent. The claim would have merit if a Palestinian archaeology involved an effort to efface the record relating to Jews... But this is not the case. Palestinian archaeology, assuming the general veracity of written records, acknowledges the polyethnic nature of Palestinian cultural history.”

Two years after writing these words, in 1992, Albert Glock was shot dead by an unidentified assailant in the West Bank (Fox 2001). A founder of Birzeit University's Archaeology Institute, he was also an American and a Lutheran Christian, and it is to his enormous credit that neither of these things dictated his archaeological work. Instead, his archaeology was driven by truth and rigour. A critic of objectivity, he was nevertheless defined by his endless struggle to achieve it, recognising in the process the need for a self-sufficient Palestinian archaeology, the importance of outlining our limitations and prejudices, and the centrality of placing accuracy above expediency. There could be no more of an icon for modern archaeology across the world, no virtues as necessary as these.

There has long been a tendency within the social sciences to claim that the object of study is 'political', but this is not important. What is important is how we deal with that fact.

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Bosnian archaeological heritage: The valley of Visoko

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The complex ethnic composition of the Balkans was often the cause of much conflict and political weakness in the area many centuries ago. When the former Socialist Federal Republic of Yugoslavia began its long disintegration process in 1990, those ethnic rivalries arose once again, and, after a number of wars, it resulted in new successor states.

One of these new independent states is Bosnia and Herzegovina, a country where the town of Visoko and its surrounding valley in the Zenica-Doboj Canton is based (Figure 1).



Visoko was once the centre of the Bosnian Kingdom and its importance in the region dates back to the Neolithic; it features Illyrian and Roman settlements, medieval fortresses and monasteries. It was an area of great interest both under the Ottoman Empire and during the Austro-Hungarian domination.

Figure 1: *Location of Visoko valley*
(Image Copyright: Fabián Fernández)

In order to understand more about the archaeology of this country and how closely related to politics it is, I recommend reading an article from Issue 14 of *The Post Hole*, 'Nationalism, Archaeology and Yugoslavia' by Mauro Rizzetto (2010). It explains that archaeology is forced to play a significant and often different role from one region and time to another, depending on what political ideology is in power at that moment. In this region, the archaeological record was sometimes used to justify a pan-Slav reality and other times to strengthen the different national identities.

Since the Bosnian war, each community (Christian Orthodox Serbs, Roman Catholic Croats and Muslim Bosnians) in Bosnia and Herzegovina has felt the need to reinforce their identity. The municipality of Visoko lies in the mainly Muslim part of Bosnia and Herzegovina. There, the search for a new past is needed, especially following mass-destruction of Bosnian cultural heritage in the conflict of the 1990s. Everybody can remember the destruction of the well-known Bridge of Mostar for instance.

After the break-up of Yugoslavia, Bosnia and Herzegovina now has no set of laws concerning heritage protection and how it is to be dealt with; this contradicts the identity reinforcement they are attempting. Therefore, the archaeological situation within Bosnia and Herzegovina is something to worry about, with few resources available and little in the way of a legal framework to protect national heritage. To clarify this precarious situation, the National Museum of Bosnia and Herzegovina was closed just last year.

The only protection measure is in the Dayton Accords, created after the Bosnian War. Annex 8 of the Accords laid down that property could be submitted to an international commission for designation as a national monument, but it did not specify how it was to be protected (anon. 1998). There is much work to be done before the legal situation can be considered anything close to normal, thereby fulfilling the Valletta Convention (1992); requirements which most European states are integrating into their planning framework.

According to many professional archaeologists, Bosnia and Herzegovina therefore faces a big problem as a result of wishing to reinforce its national identity, which has been taken in the wrong direction. This issue is the basis of the open letter of protest the European Association of Archaeologists (EAA) addressed to the Bosnian Government against the stream of supposed discoveries of pyramids in Bosnia.

The EAA also manifest their support to the professional archaeologists in Bosnia, who hoped they would receive more support for academic research and not be pushed aside by what is considered an unusual aim – searching for a lost civilisation in Europe that nobody can demonstrate any evidence for.

They do not even consider the possibility of remarkable archaeological finds in the Visoko valley, beyond the expected remains of the Butmir, Illyrian, Roman, Medieval or later cultures and chronologies. The refusal of archaeologists to accept the pyramids as genuine infuriate the nationalist press and public and foreign supporters alike. Likewise, mainstream archaeologists cannot stand people upholding this idea. Despite this, no archaeologist will stop the earthworks around and at Visoko because the Government of Bosnia and Herzegovina supports the project and has renewed permits for the summer of 2013.

Before all this, why not let someone come and prove their claims? Only time will bring definitive evidence or lack thereof. An individual claiming provocative theories about human history, challenging all we know about our past, is nothing to be afraid of since the scientific method is about proof and refutation. Archaeology is a non-dogmatic discipline and it, therefore, uses this method.

So not everything is negative, and there are positive aspects to the pyramid issue. Tourists are visiting Visoko and bringing money into the local economy – in an area with high unemployment, in a country ranked 129th in the world in terms of GDP per capita in 2012 (Central Intelligence Agency nd.); this is good.

In the meantime, why not let locals peddle trinkets showing pyramids and other similar souvenirs for tourists (Figure 2)? Unfortunately, there is a darker side to the story. In the middle of arguments between people supporting and refuting pyramids in Bosnia and Herzegovina, most Bosnian heritage is being forsaken.



Figure 2: *Bosnian pyramid souvenirs being sold in Visoko* (Image Copyright: Fabián Fernández)

The country has already suffered significant damage to its cultural and documentary heritage since the destruction of the National Library during the Bosnian war. We cannot allow this problem to become so extensive that the archaeological heritage is abandoned to looters or the wrongful manipulation of material remains from the past. Otherwise, we will lose an important part of the material culture of a people, and we may never understand them, or pass this information onto future generations.

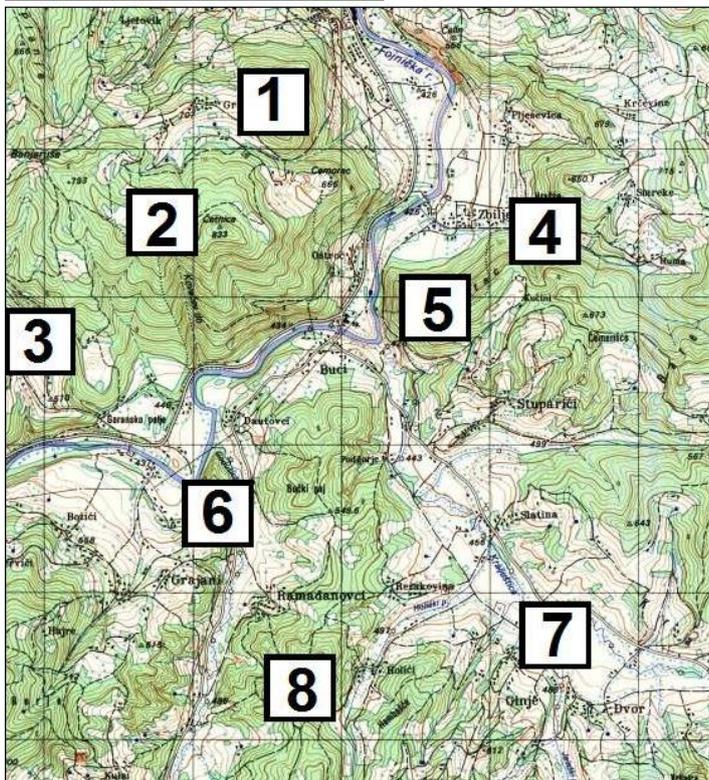
A state-level culture ministry is still lacking from the Government of Bosnia and Herzegovina two decades following the Bosnian War. If put into existence, its first policy would be to record all the known surface archaeology in the country and create an up-to-date catalogue of what is there. No such catalogue exists now and no one is certain what archaeological sites may be in the Visoko area, or anywhere else in the country.

In response to this uncertainty, the Archaetypes International Research (AIR) association was recently established. AIR is an Italian-based non-profit association organised on a multi-disciplinary level, allowing the possibility for archaeologists, historians, anthropologists, language students, geologists and photographers to work together in the same field of research to develop heritage studies in the Visoko valley. This project aims to research historical sites and record surface archaeology (started over the last few years of surveys) in the valley. Nowadays the history of the valley still unfolds its beauty and our purpose is to assemble as much information as possible to be published in one single research publication. This publication is meant finally to promote academic and touristic interest both in Bosnia and Herzegovina and in Europe.

The aims and activities of the association are inspired by principles of equal opportunities between men and women, and respect for the inviolable rights of the person. Members of the AIR team are of variable study backgrounds and are connected between many different countries: Bosnia and Herzegovina, Croatia, Italy, the Netherlands, Poland, Serbia, Slovenia, Spain, Turkey and the United Kingdom.



With the AIR, the Zavicajni Muzej of Visoko and the necessary permits with Bosnian Ministry in place, everything is ready to carry out the Visoko Valley Landscape Survey and Preservation project. The first step was to identify the uncatalogued archaeological sites. From this, nine major sites were found (Figures 3 and 4).



KEY:

- 1 - Visoko Stari Grad
- 2 - Fort of Krtnica
- 3 - Stećak area of Gorani
- 4 - Fort and settlement of Zbilje
- 5 - Settlement of Krstac
- 6 - Fort of Bedem
- 7 - Fort of Gradac / Vis
- 8 - Ginje and Dvor tumulus and stećak
- 9 - Čajangrad

Figures 3 and 4: Sites in the central basin of Visoko immediately south of the town and Čajangrad 7 km to the north
(Reproduced with kind permission of AIR)

As primary research, the focus of the project will be on carrying out the following operations:

- Epigraphic and documentary research
- GPS mapping, GIS and WebGIS
- Clearing of vegetation
- Detailed planimetry mapping
- Conservation and preservation planning
- Georadar and geomagnetic scanning
- Small probing for land survey
- Collection of surface finds
- Preparation and placing of tourist infrastructure and path signs
- Laboratory data storing and deposit at local museum
- Publication of results

At the end of the project, the results will be presented publically to the citizens of Visoko during a ten day open photographic and video exposition. After that, it will probably have an exposition at the Zemaljski Muzej in Sarajevo. All maps, photos, aerial imagery and documentation gathered will be deposited at the Zavicajni Muzej of Visoko at the end of the season. Areas of interest for further developing of research will be catalogued and all results presented to the authorities.

This summer, AIR is welcoming students from across Europe to join in this survey and landscape project, expecting to create as many contacts with European universities as possible, in order for students to gain credits by participating in the project (Archaetypes International Research 2013). At present, students that have already got involved are from the following universities:

- Mostar and Sarajevo, BiH
- Padua and Venice, Italy
- Leiden, Netherlands
- Ljubljana, Slovenia
- Barcelona, Spain
- Istanbul, Turkey
- Leeds and London, UK

Presentations at the universities collaborating on the Project will follow during the year, helping to strengthen the links created and establishing, step by step, an international co-operation between researchers, institutions and citizens in Europe and in Bosnia and Herzegovina. This way, we hope that we can all benefit from a joint collaboration and start the long process of saving the rich heritage that lies in this interesting and beautiful Balkan country.

More information about the Project by AIR is available at: archaetypes.jimdo.com/projects/the-valley-of-visoko

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Romantic ruins and crumbling castles: The debt of buildings archaeology to the Gothic fiction of the eighteenth century

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I have always had a great love of the Romantic Movement in late-eighteenth century literature. With its predictable but stirring plot motifs of fleeing virgins and avaricious, wanton patriarchs, crumbling castles and secretive ruins with many a subterranean tunnel that lead to who knows where, and the mellifluous nature of the writing itself, like a stream of panoramic landscape description in an age before cinematic camera angles, all build up to make a school of writing known as the Gothic. There were, however, facets of this vital part of the canon of literature that I had not previously considered; its impact upon antiquarian studies into medieval architecture for one, and the impact these studies had upon it for another.

Without trying to draw too complicated a picture, we might imagine the social milieu of the late-eighteenth century as a cooking pot. Into this we add the growing interest in British medieval history and its concomitant architecture, an aesthetic appreciation for natural and man-made landscapes divided into the picturesque and the sublime, the resurgence of the antiquarian order, and the growing availability of books to the new middling social class. In this pot it stands to reason that each 'ingredient' would have an impact on the other, moulding it and changing it accordingly, and that it, in turn, would experience transformations as it came into contact with other 'ingredients'.

If this metaphor is not too far-fetched, the theory that the contemporary antiquarian study of medieval ruins and castles – with its engravings of man-made structures crumbling into nature, giving rise to feelings of melancholy awe and a wondrous rapture for the heritage of these buildings, its fixation on the secretive and neglected form of ruins, and the defensive attributes of castles against the dangerous and dramatic landscape of the medieval period – shared much with the fiction of the day seems more than reasonable. Similarly, the fact that ruins and castles feature in so many Gothic romances, from Horace Walpole's *Castle of Otranto* and Ann Radcliffe's *Mysteries of Udolpho*, to Walter Scott's *Kenilworth* and Edgar Allan Poe's *Fall of the House of Usher*, makes the mutual influence of these factors undeniable.

It might seem a bit of a stretch to consider this link, yet the evidence is clear and, unfortunately, has been neglected in scholarly research. The use of contemporary fiction is a part of this research that forms a new and interesting debate on the veracity of certain written sources. While historical texts are taken explicitly as the truth, literature is not even considered, despite the fact that it reveals so many cultural themes from the time in which it was written.

Ann Radcliffe's novels are set in Europe during a time in which many middle-class intellectuals travelled abroad for the Grand Tour; she sets her characters in ruins and castles from the medieval period just as antiquarians are beginning to study these structures in earnest; and her use of victimised women in her books speaks of the new political freedoms for women in Britain at the time. These are not coincidences; they are the considered implementation of social themes into a palatable and popular format, and academics ought to consider fiction as such.

It is not only fiction that has experienced the avoidance of archaeologists, but also the eighteenth century as the birth of the discipline. Many consider the scientific, systematic school that emerged in the nineteenth century to be the beginning of archaeology as we know it, but the links between modern scholarship and antiquarian pursuits in the eighteenth century would prove otherwise.

Studies of castles from the eighteenth to the twentieth century, though clearly different in approach, are equally fixated upon the defensive attributes of these structures, implying the danger of the period and thereby establishing a link not only to eighteenth century scholarship, but also to fiction. Similarly, the modern appraisal of ruins as picturesque scenes of an unknown past has gone unchanged since this early time of Romantic appreciation.

This research is ambitious in its scope, yet it amounts to a reconsideration of the discipline of buildings archaeology in light of new approaches and new considerations. The eighteenth century cannot be written off as a time of little or no influence merely because it was a time of Romanticised views; and the use of contemporary fiction as a useful tool for cultural study ought to be taken up by historical archaeologists seeking the views and beliefs of the people who inhabited the past.

It is vitally important to take a chance on original, unique views, for in doing this we can challenge the accepted history of all of us, and make scholarship what it was always meant to be – subject to debate and opinion, and reinforced by evidence that is there to be considered, not ignored.

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Articles of any length **up to 2,500 words** are welcome, though keeping below 2,000 words is preferable.

Figures

Photographs, graphs, plans and other images are also welcome as they usually help illustrate the content of submissions. All images should be submitted separately to any documents (i.e. not embedded in text, but sent to *The Post Hole* as attachments).

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Back cover: *Visoko within the Visoko valley, Bosnia and Herzegovina* (Creative Commons: <http://goo.gl/KdVLm>)

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