# THE FIFTH *FIELDS OF CONFLICT* CONFERENCE ON BATTLEFIELD AND CONFLICT ARCHAEOLOGY

## HOTEL MONASTERIUM POORTACKERE GHENT, BELGIUM

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# ABSTRACTS

*Session 1: Battlefield studies*

***When Kingdoms fall: Presenting the Battle of Hittin Archaeological Project***
**Rafael Lewis, University of Haifa**

*"A year after the end of this decisive battle, the Hill of Hittin and its plain were still marked by the defeat. In every step made, human bones where crushed. Even today, after many hundreds of years, I was told by the people of Hittin* (the village) *that the blade of their plough often cuts through human bones that originate, no doubt, in the terrible massacre that occurred in these planes, cursed in Christian memory"* (V.Guérin 1880).

This is how the French traveler Victor Guérin completed his description of the Battle of Hittin, after visiting the "Lubiya Plain" on June 1875. Guérin was followed by many explorers and researchers who were intrigued by this campaign. Most of the studies relating to the Battle of Hittin made from an historical perspective focus naturally on the written evidence. But since the 1960s, papers published on the battle have used a more multi disciplinary approach employing field surveys, aerial photography, environmental perspectives and some archaeological finds. Today this multi - disciplinary approach should be taken one step further.

Since March 2007, a licensed archaeological field survey and excavations are being conducted at the "Lubia Plain" which is at the foot of a volcanic hill known as the "Horns of Hittin". This is the place where, apparently on the 4th of July 1187 A.D. the battle between the Christian Frankish army and the Moslem Ayyubid army came to its ultimate end.

The aim of this study, which is part of a doctoral dissertation, is to apply the approach and methods of "Archaeology of Conflict" to warfare in the Latin East, as a whole, and to the decisive stage of the Battle of Hittin in particular. It may sound ironic, but this is the first time that a project of Archaeology of Conflict is being undertaken in Israel/ Palestine, a land which has seen numerous bloody conflicts over thousands of years. It appears that the area where the final stage of the battle took place has remained virtually intact and largely unchanged by modern development. Consequently, it is possible to add to the extensive written evidence about the battle, by making a comprehensive examination of all that remains hidden beneath and above the soil. The survey of the battlefield has already contributed a great deal to our understanding of this campaign. The research and its results to this point will be presented during the lecture.

***"...ein weidlich Gehetz": a preliminary historical-archaeological assessment of the Peasants' War battle of Königshofen, 2 June 1525***
**Michael Bletzer, Southern Methodist University, USA**

The Peasants' War of 1524-26 ranks among the bloodiest conflicts in the pre-modern German-speaking world. Up to 100,000 persons on the "Peasant" side are estimated to have perished either in battle, the repressions that followed, or from famine and disease. In June 1525, the battles of Königshofen and Ingolstadt marked the end of the war in the region of Franconia. At Königshofen on June 2, the army of the Swabian League annihilated up to 7,000 rebels. Two days later at Ingolstadt, the League destroyed a 6,000-strong relief force. Reconstructions of the Königshofen battle tend to rely on post-conflict chroniclers who are largely contemptuous of the rebels'

military performance. On the other hand, a few brief eyewitness accounts (also from the victors' point of view) indicate there was no quick rout. The battlefield's Inselberg-location, isolated surface finds, and preliminary field walking suggest archaeological research can help clarify the events of 2 June 1525. The potential finds spectrum ranges from traces of a 300-wagon laager and dozens of artillery pieces to personal equipment. As the rebel army seems to have been more diverse than the label "peasant" suggests (some local communities lost more than 95% of all men capable of bearing arms), weapons/tools and accoutrements may reflect some of this diversity, which in turn might throw some light on the reach of rebel recruitment and the larger socio-economic impact of this tragic event.

***The battle of Lützen 1632: Survey of the Imperial Left Wing***
**André Schürger, Germany**
In 2006 a project was started to investigate the battlefield of Lützen. Fortunately, the exact location of the battlefield is well known, as is the place where the dead king of Sweden, Gustav II Adolf, was found.
To shed some light on the attack of the Swedish Right Wing which led to the death of the king, 30 ha have been investigated until now. The survey produced 647 bullets, many buckles and buttons (not all identified yet), and some other items probably related to Wallenstein's camp. The area was systematically searched with metal-detectors and all items mapped with GPS, however, an insufficient area has been searched to recognize every action of this wing.
It does show the last stand and defeat of the "Swedish Brigade", the relief attack of the "Smaland Cavalry Regiment" personally commanded by Gustav II Adolf, which is possibly the place where the king was shot down.
In 2007, a small excavation was executed on the place where the Imperial Left Wing was stationed. Wallenstein reportedly had fortified his position with a two-trench system along the road to Leipzig. The old road was found as was one of the road ditches. The latter was dated clearly by ceramic finds from 16th to 17th century but no digging activities by Wallenstein's soldiers could be specified.

***Sodra Staket 1719: Archaeological investigation of a Swedish battlefield***
**Tomas Englund, Swedish National Heritage Board**
On the 13th of August 1719, during the end of the Great Nordic War, six Russian battalions made an landing operation near Stockholm, Sweden. In their attempt to capture two earthworks, infantry and gunfire from galleys where used on both sides. The written sources are full of contradictions which makes it difficult to interpret the actual course of events. By tradition the battle has been known as a Swedish victory, but a new interpretation of the literature sources questions if this was really the right outcome of the battle. The aim with the Sodra Staket Battlefield Archaeological Project is to investigate the battlefield and a Russian mass grave that was discovered by chance thirty years ago. Also the aim is to establish whether Russian galleys got sunk during the battle as information from the Swedish archives asserts. This paper will report the result from the battlefield investigation seasons 2004-2008.

***Survey at the battlefield of Komárom, 11th July 1849***
**Norbert Stencinger, University of National Defence, Hungary**
One of the greatest battles of the Hungarian Freedom Fight took place in Komárom (Hungary) in 1849, July 11. From the town - besieged by the Austrian Imperial Army, - the surrounded Hungarian troops tried to break out in many directions. One of the

directions, west from the city was the Posta Út (Post Road) leading through the forest of Ács. The territory is a forest at present, without any changes in extension. During the last 150 years it was almost continuously used as military training area. The latest user was the Soviet Army, temporarily garrisoned in Hungary. We started the field survey on the territory in 2003 and with the help of artifacts we successfully defined a part of the clash of the infantry. The artifact pattern we can see there collided with a contemporary drawing of the battle. The territory is covered with thick vegetation so we used GPS which helped the efficiency of our work a great deal.

***Archaeology Of The Great War In The Ypres Salient: New Results, New Challenges***

**Matthieu de Meyer, F. Demeyere, M. Dewilde, W. Lammens, P. Pype and F. Wyffels, Flemish Heritage Institute, Belgium**

In 2002, the "A19-project" was one of the first important examples of a more professional approach to World War Archaeology in Flanders. Within this project, the Flemish Heritage Institute (VIOE) examined German and British frontlines near Ypres, in an area threatened by the extension of the A19-highway. In the end, the Flemish Government decided not to build the highway through the battlefield; a decision in which the archaeological research (alongside with environmental studies) played a major role.

The research on four excavated "A19 sites" has already been presented to the Third Fields of Conflict Conference in Nashville (2004). Since then, new excavations on three A19 sites were conducted by the Flemish Heritage Institute in co-operation with the Association for World War Archaeology and the British No Man's Land Team: these sites are Forward Cottage (British Frontline 1915 - 1917), and two sites near Bikschote (Allied and German frontlines, 1914 -1915).

Another important excavation took place near a location called 'Caesar's Nose', a name assigned to a piece of German frontline by British soldiers (frontline 1915 - 1917). This was necessary because of the expansion of a nearby industrial estate. Both German and British frontlines were examined; several types of trenches, lots of artefacts and the remains of several soldiers were excavated.

The archaeological inventory of the known World War remains of the Ypres Salient, based on aerial photographs and trenchmaps, played an important role in the selection of the excavated sites and also in the interpretation and study of the uncovered structures. The possibilities in the future are manifold: the system is not only used as a source for the research of archaeological heritage but also helps with the reconstruction of the war landscape and the historical research.

***The pattern of the Hussar Attack***

**Lajos Négyesi, Head of Military Archaeology Department, Hungarian Military Museum**

During WWI, Hungarian troops (part of the Austro-Hungarian Army) fought only out of the existing Hungarian territory. Although trench warfare was typical during the War, there are some places where the fight was very short and dynamic.

In autumn 1916, the 7th Hussar Regiment pursued the Rumanian troops. In the valley of the River Úz, the Rumanian defence was very strong, and the commander of the 1st Austro-Hungarian Cavalry Division decided, with two hussar squadrons to outflank the Rumanian defence. The battle group marched for two days, and then routed the Rumanian flank protection forces at the mountain and participated in the battle down in the valley.

Fortunately, we have a detailed reminiscence and sketch about the battle and battlefield. So I decided to find the traces of the fight, because I went hiking in to the Eastern-Carpathian and our camp was in the Valley of Úz. At home I downloaded the GPS coordinates of the Battlefield. It was a great help to find the place, because there was a real jungle among the mountains. I finally arrived at the battlefield and surveyed with my metal detector. I found two different types of cartridge cases. The location of different types of cartridge cases showed the pattern of the battle well.

***Footprints of the Legion on Makivka and Lysonia: History, Archaeology and Preservation of two WWI Eastern Front Battlefields***

**Adrian Mandzy, Morehead State University, USA**

To augment the monarchy's military forces and balance the growing Polish nationalist movement in Galicia, in 1914 the Austrian administration supported the formation of a Ukrainian military unit, the k. k. ukrainischen Schützenregiment No 1. Referred to in Ukrainian lore as the Ukrainian Riflemen of Sich (USS), or as simply the Legion, the regiment saw extensive action between 1914 and 1917 and formed the basis of the Ukrainian National Army in the 1918 failed bid for independence. Considered enemies of the state by subsequent Polish, German, and Soviet regimes, the Legion's battlefields remained a point of contention between the indigenous population and occupying powers. Since 1991, the Makivka and Lysonia battlefields are considered historical shrines. In 2007, a joint American-Ukrainian team began an archaeological and architectural survey which strives to document the extensive remains of trenches and earthworks.

***Tracing an attack during the Hungarian war of independence in 1956***

**David Ferenc, University of Pécs, Hungary**

The fights of the Hungarian revolution and war of independence in 1956 are the most recent events in Hungarian war history. Fifty years after the events, numerous eyewitnesses are still alive to assist the work of the historians, and we could believe that there are only a few unsettled questions, but the whirl of the fight and the effect of the spiritual pressure make the eyewitnesses' reports contradictory. In this situation military archeology makes a research to clear up the questionable points of the testimonies.

In November 1956, when the Hungarian War of Independence was defeated by superior force, a large group of freedom fighters, about 340 people, decided to continue the fight in the Mecsek Hills. One of the most significant centres of resistance was established in Vágotpuszta, situated on a hilltop. The freedom fighters carried out their enterprise with more or less success until the location was detected. On 12th November, after a fifteen-minute mortar barrage, an unknown number of Soviet troops and Hungarian police forces entered the village and put the insurgents to flight.

In the spring of 2006, the Pécs Branch of Military Archeology decided to explore the scene of the fights that took place in a hilly, forested terrain, far from inhabited areas, which was most untypical of the 1956 war of independence. The methods used contribute to the knowledge of the events of the 1956 Revolution and War of Independence.

*Session 2: Contested meanings, commemoration and remembrance*

***Three papers on the Oudenaarde 1708 project:***

**John Carman, University of Birmingham, UK**

**Glenn Foard, University of Leeds, UK**

**William Derde, Ename Center, Belgium**

***'Of Coins, Crests and Kings: contested symbols of identity in the occupied Channel Islands'***

**Gilly Carr, University of Cambridge, UK**

During the German occupation of the Channel Islands, the Islands' crests were repeatedly appropriated and incorporated into trench art made by German soldiers. Although one of the most popular items made was the carved wooden bowl, complete with the crest in the centre, many soldiers also souvenired Island coins, which had the image of the crest on the reverse, and utilised these in the design of their ash-trays and cigarette lighters. It is clear that Islanders were aware of this appropriation, as they began to fight back by making badges and finger rings out of these same coins that showed the crest. As these items were worn on the body, unlike the German items, they were thus easily hidden, and Islanders were able to silently resist this appropriation at a time when the death penalty was in force for offending German troops. They also made cigarette lighters to sell to or barter with their occupiers, but rather than embellishing them with coins that portrayed the crest, they used coins which showed Britannia or King's head (most especially George V, which fed into the wartime V-for-victory campaign) as a symbol of their patriotism and loyalty to Britain. After the occupation, when German soldiers were held in the Islands as POWs to clear the mines, there is evidence that they continued to make artefacts depicting the crest, but this time, these items were intended as gifts to Islanders, thus returning this potent symbol of identity back to its rightful owners.

***Past Battle, Present Conflict: Scottish battlefields as contested spaces and their continuing influence***

**Shirley Ann Watson, Glasgow University, UK**

Scottish battlefields are becoming increasingly popular in terms of both tourism and research. The focus of this interest tends to be the battle itself, on the history of the site. However, battlefields are more than a footnote in history and more than a tourist attraction. Despite the increased interest in such sites, little research has been done in terms of how these cultural landscapes influence groups and individuals. While the history and archaeology of these sites are important, the ethnological aspects should not be overlooked.

By looking at the different groups, it is possible to demonstrate how a battlefield continues to have significance for these groups, their traditions and their identities. It is not about dealing with facts or the absolute truth, but with versions and beliefs. As a result, these sites remain fiercely contested by the various groups that have or believe they have a connection to the site. This in turn raises questions over issues such as

reconstruction and authenticity, presentation and representation. This paper will consider several Scottish battlefields as contested spaces and the significance they hold for particular groups.

***The Ephemerality of Public War Memorials and the Commemoration of Conflict***
**Samuel Walls, University of Exeter, UK**
War Memorials of the 19th and 20th century may appear to be very permanent elements of the landscape, but they are often much more ephemeral than they seem. Although commemorative monuments attempted to arrest the passage of time through their scale and choice of materials, they failed to ensure permanence. This paper will explore the intentional and unintentional ephemeral nature of war memorials in the 19th and 20th centuries. Examples of memorials that have been moved, destroyed or changed since their erection will be discussed. The ephemeral ceremonies and material culture (wreaths, flowers, etc.) which become associated with memorials are also addressed. These ephemeral commemorative events are vital in understanding the intentions of these monuments as well as their continual renewal as commemorative foci over time. Both the potential ephemerality of memorials themselves and their designed ephemeral components have influenced the changing commemorative efficacy of the materiality, biographies and landscape contexts of war memorials.

Session 3: *Oudenaarde 1708*

**Battlefield tour and exhibition**

*Session 4: War at the larger scale: wider landscapes of conflict*

***In the footsteps of General Ginkel: the archaeology of a campaign, 1691***
**Damian Shiels, Headland Archaeology, Ireland**
When General Godert de Ginkel, Commander of the Williamite Army in Ireland, left Dublin on the 29th May 1691 he set in motion the decisive campaign of the War of the Two Kings (1688- 91) in Ireland. Throughout the coming months he would fight a number of siege actions at locations such as Ballymore, Athlone and Limerick. In addition he would lead his troops to victory at Aughrim, the scene of the bloodiest battle ever fought on the island. His eventual victory at Limerick led to the creation of the 'Wild Geese', the exiled Irish soldiers who fought in the service of European monarchs, principally those of France, Spain and Austria. The traces of this campaign can still be seen through the survival of archaeological sites on the ground, as well as the recovery of important artefactual assemblages, most notably at Ballymore, Athlone, Aughrim and Limerick. This paper will explore the archaeology of the campaign through this material, which offers a unique insight into this monumental period in Irish history.

***The Roanoke River Basin as a Battlefield, 1862-1865***
**Lawrence E. Babits, Nathan Richards, Adam Friedman and Brian D. Dively, East Carolina University, USA**
During the American Civil War, Union forces tried repeatedly to interdict a major Confederate supply route connecting the Army of North Virginia with its upper south provisions and imported supply bases. At the same time, Confederate forces tried to limit Federal encroachment and raids based on water routes leading into the interior of North Carolina from the Albemarle and Pamlico Sounds. The end result was a series

of engagements ranging from minor skirmishes to short sieges and naval battles along the Roanoke River corridor. This paper reports on the archaeological residue, fortifications and sunken vessels of that three year period.

***Geoarchaeology of the Battle of the Bulge: WW2 field fortifications in the Ardennes forests of Belgium***

**David G Passmore, Newcastle University and Stephan Harrison, University of Exeter, UK**

Temporary field fortifications associated with mobile WW2 battles in Western Europe have rarely survived post-war agricultural or other disturbance. Exceptionally, however, forested landscapes that have escaped intensive post-war management may still preserve visible earthworks and these offer a uniquely detailed insight into troop dispositions and their relationship to terrain and the course of battle. This paper describes a reconnaissance survey of earthworks associated with the 1944 'Battle of the Bulge' in the Belgian Ardennes woodlands near St.Vith. Here, survey of the location, elevation, (unexcavated) dimensions and orientation of earthworks over a total area of c.0.5km$^2$ has recorded 116 discrete and well-preserved dug features (including slit trenches, fox holes and larger emplacements) with a long-axis range of 9.4 – 1m and an unexcavated depth range of 1.8 – 0.2m. The form and disposition of these remains are considered in the context of field fortification doctrine, documented accounts of combat in the area and the terrain and landscape setting. However, the survey has also recorded extensive local disturbance of forest floors within an area of battlefield remains near St. Vith by recent (2007) mechanised clear felling. It is concluded that there is an urgent need to fully establish the scale and character of this archaeological resource before it is further disturbed or permanently lost.

***From the air to beneath the soil: revealing and mapping the Great War remains at Ploegsteert, Messines, Belgium***

**Peter Masters, Cranfield University, UK and Birger Stichelbaut, Ghent University, Belgium**

Millions of aerial photographs of the frontline were taken during the Great War of 1914-18. Aerial photographic evidence shows how extensive these trench systems were but little survives to mark their existence today. Most of the fields where the action took place have now returned to their pre-war ploughed fields. By using archaeological geophysical techniques in combination with the extensive aerial photographic coverage of the frontline, it has been possible to map accurately the location of these trench systems as well as record the remains of No Man's Land, previously unrecorded by such scientific investigation.

With the application of modern digital mapping technology, the conflict landscape can be georectified and digitized. Using these non-destructive techniques can offer new materials for archaeological and historical research into warfare and provide the means of effective resource management.

This paper will place these trenches into context and show how the scientific approach can add further detail to the aerial photographic coverage.

***Applying landscape theories to a Second World War defended locality in Wales***

**Jonathan Berry, Institute of Archaeology and Antiquity, University of Birmingham and Cadw, UK**

The anti-invasion defences built in Wales during the Second World War range in scale from individual sites, through inter-related defence schemes such as defended

localities or coastal batteries to entire landscapes, for example linear stop lines. Recent approaches to the subject have partly catalogued and described the defensive systems, but have not sought to interpret them in a robust manner, reflecting the lack of a rigorous methodological approach for understanding the subject from a theoretically engaged landscape and archaeological perspective.
This paper introduces the Carmarthen stop line and the small defended locality at Cynwyl Elfed, Carmarthenshire. Borrowing from prehistory and landscape archaeology, the author takes theoretical methodologies from the normative, processual and post-processual intellectual movements and applies each approach to the defended locality. Each paradigm is shown to define the landscape in its own way and emphasise particular characteristics. The various methods associated with each of these philosophical approaches, including Geographic Information Systems (GIS), are applied to the structural remains at Cynwyl Elfed and anti-invasion defences more widely. The merits are discussed with the intention of identifying a suitably robust and rigorous methodological approach to understanding the Second World War anti-invasion defences in Wales.

***The Road to Manzikert: Medieval Warfare on the GRID Project***
**Phil Murgatroyd, University of Birmingham, UK**
This project uses agent based modelling to examine the logistical challenges of transporting the Byzantine army of Romanos IV Diogenes from western Anatolia to the site of the Battle of Manzikert in 1071. This project, funded by the joint JISC/EPSRC/AHRC E-Science Programme, examines the practical aspects of transporting tens of thousands of men and animals over 700 miles in the Medieval period as well as the wider impact on the areas they passed through. It uses data from a variety of different areas including transport infrastructure, taxation, agriculture and military organisation. However, the very act of creating the models forces the archaeologist to consider many aspects of Medieval logistics previously largely ignored. This paper examines preliminary issues raised by modelling the practical aspects of land transport of Medieval troops and how the project aims to deal with them.

***Terrain Analysis And Battlefields***
**Xavi Rubio, University of Barcelona, Catalonia**
The purpose of this paper is to focus on the possibilities that Geographical Information Systems bring to the study of battlefields and other sites of conflict. At a first glance, GIS applications are useful for displaying information given by other systems like GPS, field surveys and primary textual sources. Far from these basic utilities, there exist some GIS systems designed to be used as a terrain analysis tool. Applications like GRASS or SAGA, starting with basic data like DEM (Digital Elevation Models), can be used to obtain valuable information regarding hypothetical routes, deployments and battlefield locations.
On the other hand, these analyses require other types of input in order to be helpful for the researcher. Types of data coming from different sources, like army composition, logistics and landscape archaeology can be integrated with the information provided by GIS, if we are able to understand the mechanics and algorithms that forms the core of the application.
Two studies are presented in this paper to show the possibilities of terrain analysis: the location of Caesar's encampments during the campaign of Ilerda (49 BC) and the

works on the operational manoeuvres that led to the battle of Almenar (War of the Spanish succession, 1710).
Finally, this work will show the potential disadvantages of this kind of technique, as well as the ways battlefield archaeology can benefit from the application of future GIS advances.

***Looking over the Parapet: Seeing beyond the Trench in Great War Archaeology***
**Martin Brown FSA MIFA, University of Birmingham, UK**
Until recently much archaeology of sites of the Great War 1914-1918 has concentrated on the iconic trench, the field fortification which defines the combat experience of the soldier on the Western Front in the popular imagination. It has defined the exploration of the war by exploring and presenting the remains of trench warfare. However this narrow focus for work fails to acknowledge the bigger picture and decontextualises the war, removing battlespace from the landscape and the wider human experience of the conflict from the narrative. Archaeology can make a real contribution to the study of the Great War by exploring human experience, including looking for the marginalised. The war was about more than trench warfare, it was a story of trauma and dislocation for civilians and soldiers alike. These experiences included the ejection of civilians from their homes and a struggle to survive for returning refugees, while for soldiers transformation from civilian to military life, training and transport were all alien experiences long before arrival in the trenches or being witness to combat. Even where military features, including trenches and mine craters, have been investigated it is possible to interpret them in the wider context of the dynamic landscape where the war is a moment, albeit a dramatic and visible moment, in a greater continuum. In this light the archaeological evidence of life before and after the war, as well as in the conflict stage are significant identifiers of human activity and experience. In exploring these broader stories archaeology is able to contribute to the discourse around the wider conflict within which the battlefield is located.
This paper will use a number of case studies to examine the human experience beyond the trench and to demonstrate the potential for archaeology to explore the physical traces of the wider effects of the conflict.

*Session 5: new approaches*

***Challenging Our Perceptions Of Three Medieval Conflicts: It's About 'Time'***
**Tim Sutherland, UK**
The current paper advocates that the perception of a different time to the beginning of the day in the medieval period (6am), compared with the present day (12pm) allows fundamental changes to be made to the interpretation of three historic battles. Using this medieval time frame greatly affects the understanding of the three conflicts that took place in Yorkshire during late March AD1461; the battles of Ferrybridge, Dintingdale and Towton. The perception of a later start of the medieval day means that it is likely that all three conflicts took place within a period of less than twelve hours as opposed to approximately thirty hours that most modern researchers have assumed. It is the author's belief that the three conflicts should be seen as a single and drawn out engagement rather than three separate ones.
This new hypothesis would not only have a dramatic impact upon the way that we perceive these historic conflicts, but also on the distribution and types of artefacts one

might expect from archaeological surveys of the different elements within the larger battlefield.

***Hammer Blow of Empire: War and Resistance in Sixteenth Century New Mexico***
**Clay Mathers, Statistical Research, Inc., Charles Haecker, U.S. National Park Service, and Matthew Schmader, City of Albuquerque, USA**
During the first decades of the 16th century Spanish imperial armies and their native allies made significant impacts on centralized states and paramount chiefdoms in the New World, disrupting native societies from La Florida to Peru. By the early 1540s, their colonial enterprise turned north and west with the entradas of Francisco Vázquez de Coronado in the southwestern US, Hernando de Soto in the southeastern US, and the bitterly contested Mixtón War in western Mexico.
Despite well-documented, widespread and large-scale conflicts between Spanish military forces and native communities throughout the New World, investigations of Late Medieval-Early Modern warfare in the Western Hemisphere are rare. Nevertheless, discoveries in the metropolitan area of Albuquerque, New Mexico in March 2007 have afforded archaeologists, historians and others a unique opportunity to study military organization and tactics during the earliest phase of contact in the American Southwest: i.e., the 1540-1542 Coronado Expedition. This paper presents the discovery of a significant body of military objects relating to the Coronado Expedition at the native puebloan site of Piedras Marcadas and contrast the sustained resistance of native communities in that area, with the more short-lived battle between Coronado's forces and the Pueblo of Zuni earlier in the expedition. These comparisons highlight the value of integrating different types of analyses, at different geographic and analytical scales, and how such approaches can illuminate 16th century battlefields in North America. Results to date suggest that the military history of early Spanish colonialism was extremely complex and variegated, and that earliest contacts between Europeans and Native Americans helped destabilize one of the most powerful native communities in the American Southwest: i.e., the Pueblo groups of the Middle Rio Grande Valley.

***The Origins of Firepower***
**Glenn Foard, University of Leeds, UK**
As battlefield archaeologists we have a grip of what is arguably the most important artefact in the development of European power in the early modern period – the humble lead bullet. Deposited in its millions across the world by Europeans between the mid fifteenth and the mid nineteenth century, it is the archaeological signature of firepower, and firepower was arguably the main reason behind European domination of the world. The character and distribution patterns of bullets are now well known from battlefields across Europe and the USA from the 17th to 19th century. However there is still a major challenge we have hardly begun face – the archaeological study of the origins of firepower. In Britain, from its first battlefield use at St Albans in 1461 to its decisive influence on the outcome of the great forgotten battle at Pinkie in 1547, and from the unique assemblage of the 1545 wreck of the Mary Rose, Britain offers a distinct archaeological perspective on the introduction of gunpowder weapons to the battlefield.

***Bones and "mass graves" at the battlefield of Varus in Kalkriese***
**Susanne Wilbers-Rost, Museum and Park Kalkriese, and Achim Rost, University of Osnabrück, Germany**
Roman military objects and a rampart used for an ambush by the Germans have already become well known from the battlefield in Kalkriese, Northern Germany, where the Roman troops of Varus were attacked on the march and were totally defeated in 9 AD. Another important aspect of this battle – which turned out to be a battle in a defile – are skeletal remains of the dead soldiers. Some were found on the old surface since the bodies were left there after being looted. Others were deposited in pits, together with animal bones, a few years later.
The first part of the paper wants to explain these unusual and unexpected "mass graves" of which eight are known from just one site of the battle area and what we may interpret from size, habit and distribution of these features. The second part will analyse what such bones may tell about the battle, though they are preserved very badly and fragmentarily.

***Crater Analysis at Pointe du Hoc Historic Site, Normandy, France***
**Richard Burt, Robert Warden & Yilmaz Hatipkarasulu, Texas A&M University, USA**
The D-Day battlefield at Pointe du Hoc is one of the best preserved battlefields of the Second World War. Many of the buildings and structures remain in a semi-ruinous state and provide tangible evidence of the damage inflicted by pre-invasion aerial bombardment and naval shelling. However the most easily identifiable effects of the bombing and shelling are the numerous craters that cover the site. The majority of these craters were caused by the seven separate attacks that launched against the medium coastal battery, the first of which was on April 25, 1944 and the final attack at H-Hour on D-Day. Aircraft from US Army Air Force and the Royal Air Force dropped bombs ranging from 200lbs up to 2000lbs. The Center for Heritage Conservation at Texas A&M University has been surveying and documenting this site since 2003 and as part of its site survey has sought to identify individual craters with individual air raids and bomb size in order to evaluate how the site was damaged in the months preceding the invasion.

The position and magnitude of individual craters was determined using various surveying techniques such as: total station surveying, laser scanning and low-level aerial photogrammetry. Individual craters from the raids of April 25, 1944 and June 4, 1944 were identified by overlaying site drawings onto high resolution aerial photographs and analyzed for proximity and contiguity. Individual craters from the raids between these two dates and immediately before the invasion were identified using statistical and GIS techniques.

***Strat, huh, yeah, What is it good for?***
**Jon Price, No Man's Land and Northumbria University, UK**
This paper will examine the problematic of archaeological approaches to 1914-18 war stratigraphy. It draws on examples from a number of sites in France and Belgium, excavated between 1996 and 2008, with which the author engaged as site director or area supervisor. The interpretation of stratigraphy on these sites can suggest events with as short a lifespan as a few seconds, or as long as a year, but presents problems when conventional stratigraphy based approaches are used to decide excavation strategy, or to interpret the record made. This paper contrasts the rigid application of

methodology currently viewed as best practice with the benefits of possible alternative flexible approaches.

***Evidence of Conflict in the Contemporary Built Environment: A Case Study of a V1 Bomb Site in London***

**Richard Burt, Texas A&M University, USA & Peter Doyle, University College London, UK**

From September 7, 1940, when the first force of German bombers attacked the docks and the East End, until March 27, 1945 when the last V2 rocket landed in Stepney, London was an area of conflict; effectively a battlefield. Despite the fact that the majority of buildings in the city suffered damage that ranged from broken windows to complete obliteration, today, there is little apparent evidence of the battle remaining. Time has healed London's wartime scars; bomb damaged buildings have been re-built or demolished and replaced by modern buildings. In some cases, vast areas were cleared for redevelopment in line with Churchill's view that the persistence of wartime damage was to be debilitating to morale.

If visitors can no longer see the evidence of the battle how do they know they are witnessing a battlefield? Our work demonstrates that with appropriate resources and careful analysis, it is still possible to view the evidence of battle. In order to demonstrate this we examined a geographically-constrained site in London, in order to identify evidence of the battle within the contemporary built environment. The site is a small area of the present London Borough of Camden, where, on June 19, 1944 a V1 flying bomb – the first of Hitler's 'revenge weapons' with largely random targeting – exploded. The built environment around the bomb site was predominantly 18th century in origin and included many streets of terraced town homes. The destruction caused by the bomb affected five streets and damaged, to some extent, 67 buildings. The site is now part of the Charlotte Street Conservation Area.

Changes to the built environment that have occurred since 1945 are identified through site analysis and study of archival sources. During the Second World War the London County Council's Architects Department hand coloured Ordnance Survey maps to show the category of damage that occurred to buildings as the result of bombing. It is hypothesized that changes to the built environment that have occurred since 1945 were affected by the category of damage caused by bombing during the war, with those buildings destroyed by bombing replaced by new buildings and the lesser damaged buildings being repaired.

Three separate analysis of the site were conducted to identify evidence of the attack on 19 June 1944:

1. Identification of the conditions before the Second World War.
2. Examination of bomb damage recorded after 19 June 1944.
3. Assessment of current conditions and evidence of attack.

The results of the analysis support the hypothesis. The narrow Coleville Place is an excellent example of how the evidence of battle can still be seen in the contemporary built environment; it is hoped that this survey can be used to inform planners and conservationists interested in the development of conservation strategies for the historic fabric of the City, preserving a layer that illustrates one of the most important points in the history of London, and Britain as a whole.

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## NOTES

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